Food and Agriculture Organization of the United Nations

AFRICAN DEVELOPMENT BANK GROUP

AGRICULTURAL GROWTH IN WEST AFRICA

Market and policy drivers

Food and Agriculture Organization of the United Nations

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Agricultural Growth in West Africa

Market and policy drivers

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Copublished by the African Development Bank
and
the Food and Agriculture Organization of the United Nations

Rome, 2015

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FAO ISBN 978-92-5-108700-8

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Foreword

West African Agriculture is at a turning point. After long periods of limited attention to the sector, West African countries and their Development Partners now clearly recognize the sector's vital importance for broad-based growth, food security, nutrition and poverty reduction. This renewed attention to Agriculture has crystalized around the Comprehensive African Agriculture Development Programme (CAADP), which in West Africa is implemented by the Economic Community of West African States (ECOWAS) and its member states as part of the ECOWAS Regional Agricultural Policy (ECOWAP). The recognition of agriculture's vital role has coincided with fundamental changes in the regional and global context for agricultural growth, bringing about unprecedented opportunities along with new challenges. The combination of strong demand growth, higher agricultural prices, and an improved macroeconomic and policy environment has generated the most conducive conditions for agricultural growth in over 30 years. At the same time, new challenges ranging from climate change to increased price volatility threaten the ability of West Africans to seize these opportunities.

This study on Agricultural Growth in West Africa (AGWA) is thus very timely. It examines Agriculture in its broader framework of a transforming agrifood system, from input supply to the consumer, for the 15 ECOWAS countries, using the term Agriculture (with a capital "A") to designate this entire system. Based on an analysis of the drivers of past and potential future growth, the study derives implications for the design and implementation of more effective and inclusive Agricultural policies and investments. As West African Agriculture is responding to the region's demographic, social and economic transformations, policy making has become more complex. The range of stakeholders has broadened, with private sector and civil society organisations playing stronger roles in policy formulation and implementation. Hence, intersectoral coordination is becoming ever more important. Addressing the multiple demands on the Agricultural sector requires going well beyond the traditional mandates of ministries of agriculture. Crafting Agricultural policies now involves understanding the interconnections among issues as diverse as research, transport investments, monetary policies, and nutrition education. This document collates a rich source of empirical information, knowledge and analysis highlighting these interconnections.

Acknowledging the many opportunities and threats emanating from the changing context for West African Agriculture, the African Developement Bank (AfDB), ECOWAS and the Food and Agriculture Organisation of the United Nations (FAO) decided to join forces in carrying out this analytical work. The study's aim is to provide a stronger empirical foundation to inform the ongoing policy reform and investment choices at the national and regional levels and to serve as a source of information and analysis to a broad range of stakeholders working to build a more robust, sustainable and inclusive West African Agriculture. The study has a forward-looking perspective and is essential reading for policymakers, development partners, scientists, farmers and other players in the agrifood system alike.

Donald Kaberuka
President
African Development Bank

José Graziano da Silva
Director-General
Food and Agriculture Organization
of the United Nations

Kadré Désiré Ouédraogo
President
ECOWAS Commission

Acknowledgements

The Agricultural Growth in West Africa (AGWA) study has been a joint undertaking of the African Development Bank (AfDB), the Food and Agriculture Organization of the United Nations (FAO) and the Economic Community of West African States (ECOWAS). This report is the result of a collective effort built upon the contributions of many organizations and people. The implementation of the study rested with the FAO Investment Centre and was led by Frank Hollinger, in close collaboration with the FAO's Regional Office for Africa and Technical Divisions. The main authors of the study are Frank Hollinger (FAO) and John Staatz (Michigan State University, MSU). Valuable intellectual guidance and comments were provided by James Tefft, Mohamed Manssouri, Henri Josserand, Abdoulaye Mbaye (all FAO), Nango Dembélé, Boubacar Diallo and Steven Haggblade (all MSU), and Panos Konandreas (consultant).

In addition, the following persons played key roles in mobilizing and sustaining the support for the study within the three partner organizations: Dougou Keita, Nejib Kacem and Jonas Chianu at AfDB, Ernest Aubee, Rui da Silva and Alain Sy Traoré at ECOWAS, and Guy Evers, Alberta Mascaretti, James Tefft and Mohamed Manssouri at FAO.

In order to strengthen the empirical base for the study, the study team commissioned a number of background papers and notes that provided inputs into this final report. The authors of these background papers included Arlène Alpha (trade policy), Denis Drechsler (value chains), Andrew Lambert (agro-industries), Panos Konandreas (price volatility, trade), Maurice Taondyandé and Mbaye Yade (budget consumption surveys), and Andrea Woolverton (food consumption and retail case studies). Several persons contributed to the fieldwork on food consumption and trends in Accra and Lagos and on agro-industries in Nigeria. These include Anthony Akunzule, Stephan Frimpong, Joan Nimarkoh, James Tefft, Adeniyi Ologunleko, Bolarin Omonona and Andrea Woolverton. The AGWA team carried out interviews in several West African countries with farmers, agroprocessors, retailers, consumers and other key informants in the agrifood system. The team gratefully thanks them for sharing their knowledge, expertise and insights.

In addition, the Network of Farmers' and Agricultural Producers' Organizations of West Africa (ROPPA) participated during the various stages of the study and provided valuable inputs. These included background papers on the roles and positions of farmer organizations in the West African policy process and on practical experiences of farmer participation in growing and dynamic food value chains. Thanks are especially due to Mamadou Cissokho and Jacques Strebelle for facilitating these contributions and to the Collectif de Stratégies Alimentaires from Belgium for their technical support.

A number of other FAO experts have contributed to the study. These include Michael Marx, Giorgia Nicoló, Mohamed Ag Bendech, Julia Seevinck, Hélène Coulibaly and Catherine Bessy. The authors also benefitted from helpful discussions with members of FAO's Monitoring African Food and Agricultural Policies (MAFAP) team. The food balance sheet analysis in Chapter 5 is based on work done by Nathalie Me-Nsope of Michigan State University with support from the Syngenta Foundation for Sustainable Agriculture. Holger Matthey and Merrit Cluff from the FAO/OECD Outlook provided special data analyses that were helpful in analyzing possible future demand and supply patterns in West Africa. Invaluable administrative support was provided by Mirella Bonacci and Patrizia Veroli of FAO's Investment Centre.

The final report was greatly improved by reviews by Ernest Aubee, Astrid Agostini, Arlène Alpha, Jean Balie, Jesus Barreiro Hurle, Nicolas Bricas, Jonas Chainu, Nango Dembélé, Boubacar Diallo, Stephanie Gallatova, Hélène Gourichon, Steve Haggblade, Peter Hartmann, Edward Heineman, Najib Kacem, Dougou Keita, Siobhan

Kelly, Panos Konandreas, Patrick Kormawa, Alban Mas Aparisi, Mohamed Manssouri, Alberta Mascaretti, Nomathemba Mhlanga, Jamie Morrison, David Neven, Alain Onibon, Hermann Pfeiffer, Philippe Rémy, Adeleki Salami, Saifullah Syed and James Tefft, as well as participants at a review workshop held at the AfDB in July 2013. We also received helpful comments from attendees at an invited panel session on the draft AGWA report that took place during the 4th International Conference of the African Association of Agricultural Economists, held in Hammamet, Tunisia in September, 2013.

The final version of the report was edited by Miriam Sohlberg and proofread by Julia Seevinck. Steve Longabaugh of Michigan State University provided valuable assistance in preparing several of the maps and the figures for publication.

Special thanks are owed to Thorsten Hallscheidt for the graphic design.

While gratefully acknowledging the contributions of all the individuals and organizations mentioned above, the authors accept sole responsibility for any remaining errors of fact or interpretation in this report.

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List of Acronyms

3ADI	African Agribusiness and Agro-industries Development Initiative
ACP	African, Caribbean and Pacific group of countries
AfDB	African Development Bank
AGWA	Agricultural Growth in West Africa study
ALCO	Abidjan Lagos Corridor Organization
AU	African Union
BCEAO	Banque Centrale des Etats de l'Afrique de l'Ouest
BT	Bacillus thuringensis
CAADP	Comprehensive Africa Agriculture Development Programme
CCC	Conseil du Café-Cacao (Cote d'Ivoire)
CEDEAO	Communauté Economique Des Etats de l'Afrique de l'Ouest (ECOWAS in English)
CET	Common External Tariff
CIF	Cost, Insurance and Freight
CFDT	Compagnie Française de Développement des Textiles
CGE	Computable General Equilibrium
CILSS	Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel
CIRAD	Centre International de Recherche Agronomique pour le Développement
CMDT	Compagnie Malienne de Développement des Textiles
COFOG	United Nations' Classification of the Functions of Government
CORAF	Conseil Ouest et Centre Africaine por la Recherche et le Développement
CSSPPA	Caisse de Stabilisation et de Soutien des Prix des Produits Agricoles (Cote d'Ivoire)
DAERE	Department of Agriculture, the Environment and Water Resources (ECOWAS)
DPT	Degressive Protection Tax
EBA	Everything but Arms trade agreement of the European Union
ECL	ECOWAS Compensatory Levy
ECOWADF	ECOWAS Regional Agricultural Development Fund
ECOWAP	ECOWAS Regional Agricultural Policy
ECOWAS	Economic Community of West African States
EPA	Economic Partnership Agreement
ETLS	ECOWAS Trade Liberalization Scheme
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FBS	Food Balance Sheet
FIFF	Food Import Financing Facility
FOB	Free on Board
GAFSP	Global Agriculture and Food Security Programme
GAMA	Greater Accra Metropolitan Area
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
GOANA	Grande Offensive Agricole pour la Nourriture et l'Abondance (Senegal)
GSP	General System of Preferences
GSP+	Enhanced General System of Preferences
HAACP	Hazard Analysis and Critical Control Points (a method for designing food safety systems)
HLPE	High Level Panel of Experts on Food Security and Nutrition
HQCF	High Quality Cassava Flour
IFAD	International Fund for Agricultural Development

IFDC	International Fertilizer Development Center
IFPRI	International Food Policy Institute
IITA	International Institute for Tropical Agriculture
IMF	International Monetary Fund
INSAH	Institute of the Sahel
IPC	Inter-professional Committee
IPCC	Intergovernmental Panel on Climate Change
IRCT	Institut de Recherche Cotonnière et des Fibres Textiles Exotiques
ISF	Inverse Safeguard Tax
ISIC	International Standard Industrial Classification
LBC	Licenced Buying Companies (Ghana)
LDC	Least Developed Countries
LDN	Loi sur le Domaine National (Senegal)
LOA	Loi d'Orientation Agricole (Mali)
LOASP	Loi d'orientation agro-sylvo-pastorale (Senegal)
MBS	Marginal Budget Share
MDG	Millennium Development Goal
MFBS	Marginal Food Budget Share
MFN	Most Favoured Nation
MIR	Marketing Inputs Regionally (a joint project of the International Fertilizer Development Center and ECOWAS)
MTBF	Mid-Term Budget Framework (Nigeria)
MTSS	Mid-Term Sector Strategy (Nigeria)
MVA	Manufacturing Value Added
NAIP	National Agricultural Investment Plan
NBS	Nigerian Bureau of Statistics
NCB	Nigerian Cocoa Board
NEPAD	The New Partnership for Africa's Development
NGO	Non-governmental organisation
NRA	Nominal Rate of Assistance
ODA	Official Development Assistance
OECD	Organization of Economic Cooperation and Development
ON	Office du Niger (Mali)
PAPED	EPA development programme of the European Union
PAU	Politique Agricole de l'UEMOA
PDDAA	Programme Détaillé de Développement de l'Agriculture Africaine (known in English as CAADP)
PNIP-SA	Plan National d'Investissement Prioritaire dans le Secteur Agricole (Mali)
PNISA	Plan National d'Investissement du Secteur Agricole (Mali)
QSR	Quick Service Restaurant
RAIP	Regional Agricultural Investment Plan
REC	Regional Economic Community
ReSAKSS	Regional Strategic Analysis and Knowledge Support System
RESOGEST	Réseau des Structures Publiques en charge de la Gestion des stocks nationaux de sécurité alimentaire au Sahel et en Afrique de l'Ouest
ROPPA	Réseau des Organisations Paysannes et de Producteurs de l'Afrique de l'Ouest (Network of Peasant Organisations and Producers in West Africa)
RRA	Relative Rate of Assistance
SAP	Structural Adjustment Programme
SME	Small and Medium Enterprises
SOFITEX	Société Burkinabé des Fibres Textiles (Burkina Faso)

SPS	Sanitary and Phytosanitary Measures
SSR	Self-Sufficiency Ratio
STI	Safeguard Tax on Imports
SWAC	Sahel and West Africa Club of the OECD
TBT	Technical Barriers to Trade
UEMOA	Union Economique et Monétaire Ouest Africaine (WAEMU in English)
UNCTAD	United Nations Conference on Trade and Development
UNDESA	United Nations Department of Economic and Social Affairs
UNECA	United Nations Economic Commission for Africa
UNFPA	United Nations Population Fund
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
USD	United States Dollar
USDA	United States Department of Agriculture
VAT	Value Added Tax
WAEMU	West African Economic and Monetary Union (known in French as UEMOA)
WAMZ	West African Monetary Zone
WAQP	West Africa Quality Programme
WECARD	West and Central African Council for Agricultural Research an Development
WTO	World Trade Organization

The AGWA study examines, for the ECOWAS region, the opportunities and challenges facing the agrifood system (referred to in the study as Agriculture, with a capital A) emanating from a rapidly changing context for Agricultural growth. It analyses more closely the drivers and trends affecting the demand for and supply of agrifood products, the performance of the Agricultural sector and related policies, and the implications for future policy priorities. Major findings and key messages about the way forward include the following:

Major Findings

Opportunities for West African Agricultural growth are unprecedented

- Market opportunities for West African food producers are increasingly dynamic due to population growth, urbanisation, income growth, dietary diversification and higher output prices. The strongest market growth potential exists for animal products, followed by rice, fish, and fruits and vegetables. Producing and marketing such products are labour-intensive and offer potential for substantial job creation.

- Food demand is transforming from undifferentiated bulk commodities towards food products with differentiated quality attributes such as nutritional and health characteristics, packaging, and ease of preparation, offering important opportunities for value addition. Much of this growing demand is currently captured by imports.

- Global demand for Agricultural products is also expanding, especially in fast-growing emerging economies, providing increased opportunities for West Africa's traditional and non-traditional agricultural exports.

- The Agricultural policy and incentive environment has improved over the past two decades and raised Agriculture's profile at the national, regional and global levels, most recently through the ECOWAP/CAADP process.

- The emergence of more independent, dynamic stakeholder organisations enhances growth prospects.

But these opportunities are combined with new challenges for West Africa's agrifood systems, rendering policy making more complex

- The international market environment has become increasingly volatile, making long-term projections increasingly difficult.

- West African Agriculture is facing growing competition, both on the market side and for its natural resources, including land and water.

- Agricultural policy development and implementation is increasingly complex because of the greater number of stakeholders involved and the multiple demands placed on Agricultural policy, ranging from broad-based income growth through job creation to provision of increasingly nutritious and safe food to environmental protection.

- Restricting food imports to raise prices in order to stimulate regional production will become politically more difficult in view of the increasing numbers and political weight of poor consumers in urban areas and because the majority of West Africans spent a large share of their incomes on food.

- The growing importance of regional integration requires increased policy coordination across ECOWAS member states.

- Achieving the broad set of objectives that West Africans want their agrifood system to accomplish requires actions well beyond the

traditional mandates of ministries of agriculture, requiring better coordination among a range of ministries (e.g., agriculture, health, transport, energy, education) and among levels of government (national, provincial, and local).

- The dietary transition underway, particularly in urban areas, is resulting in a double burden of malnutrition, where undernutrition coexists with increasing levels of overweight and obesity and their attendant problems such as heart disease, hypertension and diabetes.

West Africa's growth remains highly vulnerable to shocks

- West Africa's strong economic growth has been driven to a significant extent by a natural resource boom and extractive industries. As many of these resources are non-renewable, policies need to focus on productively investing earnings from them in order to increase productivity throughout the economy, including the agrifood system, rather than simply using them to finance growing food imports.

- The region remains vulnerable to natural and man-made disasters, as exemplified most recently by the Ebola crisis. Hence, the agricultural growth agenda needs to be closely linked to the resilience agenda.

West Africa's response thus far to these opportunities and challenges has been mixed

- Despite strong output growth over the past 30 years, especially in many food staples, supply response in some of the more dynamic markets has not kept up with demand growth (e.g., for rice, livestock products, and processed products). Furthermore, there has been an inconsistent record in increasing productivity and hence lowering per-unit production costs, as output expansion has often involved environmentally unsustainable extensification. As a result, West Africa's competitiveness has been declining for many tradable agricultural products, as evidenced by growing food imports and the region's declining share in several of its traditional export markets.

- While there are a number of West African Agricultural success stories, most Agricultural value chains suffer problems of poor coordination and limited trust among actors, associated with high costs and limited transmission of information and incentives. Given these weaknesses of domestic supply chains, many of the most dynamic domestic market segments for processed food products are based on imported raw materials. The success stories show the potential of what could be achieved. Crucial challenges include learning from past successes, adapting key lessons from them to other settings, and scaling up.

Policy implementation is a bigger challenge than policy design. Problems of implementation are often related to three factors:

- A tendency to propose solutions that are well beyond the financial and human-resources at the disposal of the implementing entities.

- Frequent policy reversals and ad hoc government interventions creating mistrust between private actors and the government, undermining policy effectiveness and investment incentives.

- Diverging interests and the poor alignment of incentives, either at the national or at the individual level, to implement the proposed policies. Divergent national interests explain some of the difficulty in reaching agreement on regional trade regulations and the lacklustre enforcement of them once they are officially adopted. The lack of alignment of individual incentives with regional and national interests coupled with poor governance and institutional capacity are at the heart of much of the rent-seeking behaviour that still hinders regional trade and the effectiveness of regional and national Agricultural policies.

The Way Forward: Key Messages

Six broad principles should guide Agricultural policies in the region:

1. The diversity of West African agrifood systems requires a differentiated set of policies for and within each segment of the system, from farming through agroprocessing to retailing. A one-size-fits-all approach to policy is likely to fail. Levelling the playing field between food system actors of different sizes, and special support to women and youth are cross-cutting policy priorities, while linkage opportunities with larger food systems stakeholders with transformational potential should not be dismissed.

2. Agrifood system interventions need to be based on a firm understanding of the rapidly evolving nature of consumer demand to identify investment opportunities for different food system stakeholders and guide priorities for supporting public policies and investments.

3. Improving productivity throughout the agrifood system is the only sustainable way to meet both consumer and producer needs simultaneously. Rather than a simple replication of a "Green Revolution", a combination of sustainable intensification, climate-smart agriculture and inclusive-value chain development is needed.

4. Enhancing value addition is essential to capturing more lucrative markets and raising incomes in the agrifood system. This requires an enabling investment environment, improved market and transport infrastructure, and strengthened stakeholder organizations from farmers to consumers.

5. If West African Agriculture is to be competitive in a wide range of products with large global actors such as Brazil, China and India, it needs to capture some of the scale economies those countries enjoy in agricultural research, input markets and technology development, amongst others. ***This is only possible if there is greater regional integration***. The future of regional integration, however, depends critically on the behaviour of the big players, especially Nigeria. In the past, Nigeria and other large players, such as Ghana, Côte d'Ivoire and Senegal, have often taken policy actions that have hindered greater regional integration.

6. Agricultural productivity growth needs to be complemented by measures to enhance resilience.

Achieving more rapid, broad-based and sustainable Agricultural growth in West Africa requires an improved policy environment, critical public-sector investments and strengthened policy implementation.

- ***An improved policy environment*** is needed to induce greater Agricultural investment in productivity-enhancing technologies and institutional innovations by private-sector actors (including farmers); enhances quality and improves risk management throughout the agrifood system; and provides a more predictable and effective set of tools for improving the poor's access to food. Key elements of an effective policy environment are its predictability, focus, participation and inclusiveness (including gender inclusiveness), coherence, and ability to evolve over time as the economy and broader society evolves.

- ***Critical public-sector investments*** should complement and "crowd-in" additional private investment and address critical food policy objectives, such as improved risk management.

  Increasing the level of public investments in and for Agriculture (e.g. up to the CAADP target of 10% of the government budget) is important, but a better investment mix is even more important. Much of the recent increase in agricultural spending has been used for subsidies for private goods, mainly fertilizer and other inputs, as well as farm equipment. The danger is that heavy spending on subsidies may crowd out other public investments in key public goods, which are critical to long-term growth, while at the same time discouraging private investments in input provision.

The public sector should focus its investments in areas with the highest returns for long-term, broad-based growth, and in which the private sector has limited ability or incentives to invest. Key elements include:

- Agricultural research, extension , strengthening stakeholder organizations and promoting development and related human capital development.
- Infrastructure, especially rural roads, market infrastructure, irrigation and a reliable supply of electricity.
- Building the skill base for Agriculture in the twenty-first century, through a transformation of Agricultural education systems, from the primary schools through universities. Transforming West African Agriculture will require a profoundly different set of skills at all levels in the agrifood system than currently exists in most ECOWAS countries.
- Supporting collective action, strengthening stakeholder organizations and promoting institutional innovations for managing risks and reducing transaction costs.
- Working with the private sector to improve food safety and quality.

》 Investment in hardware needs to be complemented by policy and regulatory reforms, such as reform of rules that restrict competition in the trucking industry and thus reduce the returns to improved roads and policy reforms in agricultural finance that are needed to induce greater private grain storage and hence increase returns to investments in storage infrastructure.

》 To reap the full benefits of public investments in infrastructure, capacity development and collective action in terms of stimulating complementary private investments, further improvements are needed in the ease of doing business. ECOWAS countries generally rank in the bottom third of all countries in the world in terms of the World Bank's indicators of ease of doing business (licensing requirements, time to register a business, corruption, etc.).

》 Improving policy implementation requires (1) strengthening the implementation, analytic, and monitoring and evaluation capacities of key agencies and organisations charged with implementation; (2) improving the data base upon which policy decisions are made, and (3) strengthening the alignment between the interests of the different countries, individual actors, and the region as a whole. Perhaps the strongest incentives for transparent and effective policy implementation will result from encouraging strong national and regional private-sector and civil-society stakeholder groups and a free press that can act as counterweights to inefficient and/or corrupt policy implementation.

Synthesis

I. Study background and motivation

After a long period of neglect, West Africa's Agriculture is back on the policy agenda. The region's governments and their development partners now clearly recognise the sector's vital role for economic growth and poverty reduction. At the same time, the context within which the sector operates has changed radically over the past 30 years. West African societies are in the midst of rapid demographic and socioeconomic transformations, with population growth, urbanization, rising incomes and globalization acting as key drivers of change. The Agricultural policy environment has also evolved dramatically; democratization, decentralization and liberalization have broadened the number of actors involved in policy processes and the range of issues in policy debates. At the same time, West Africa's agrifood system faces continuing challenges of a declining natural resource base, recurrent natural and human-caused disasters, climate change, and political instability. Moreover, as regional integration has gained momentum, the role of regional organizations in shaping policies for Agriculture has increased.

These transformations in West Africa are taking place in an evolving international environment characterised by more volatile climatic and market conditions and growing competitive pressures. Several international trends stand out: (1) the growing importance of emerging economies, both as markets for West African agricultural exports and as sources of food imports, technologies and investments; (2) an increasingly globalized and concentrated agribusiness and food retail sector, expanding both its sourcing and sales in developing countries; (3) world agricultural markets shifting from a period of structural oversupply and declining prices towards one of higher and more volatile prices; (4) higher energy prices and increasing integration of world Agricultural and energy markets; and (5) eroding confidence in trade-based food security following export bans by suppliers of key food staples during the 2008 food price crisis, coupled with the stalemate, until recently, of international trade negotiations under the Doha Round.

These changes create promising opportunities but also daunting challenges for West African agrifood systems and render Agricultural policy making increasingly complex. In addition to agricultural production and food security, issues related to sustainable resource management, nutrition, competitiveness, employment generation and linkages with other economic sectors are becoming ever-more critical components of Agricultural policy. It is clear that in order to shape the transformation of the agrifood system, agricultural policy making needs to transcend the traditional realm of Agricultural-sector institutions primarily dealing with on-farm production. Policy makers in the region face the challenge of how to coordinate and implement Agricultural and non-agricultural policies in order to shape the region's structural transformation in ways that contribute strongly to several key objectives simultaneously. These include inclusive economic growth, job creation, poverty reduction, food security, and satisfying increased consumer demands for convenient and healthy food, while doing all of this in an environmentally, economically and socially sustainable way. Meeting these challenges requires addressing the constraints to better agrifood system performance all the way from input provision to delivery of the final product to the consumer. Therefore, in this study we refer to "Agriculture" (with a capital "A") as including the entire agrifood system, from input provision to the consumer's table. (Small "a" agriculture in this study refers to farming, inclusive of both crops and animal production.)

In view of the challenges and opportunities facing West African Agriculture, the African

Development Bank (AfDB), with support from the Government of France, approached the Food and Agriculture Organization of the United Nations (FAO) and ECOWAS about conducting a joint analytical study. The purpose of the Agricultural Growth in West Africa (AGWA) study is to (1) contribute to a better understanding of the evolving context for Agricultural growth in West Africa by examining more closely the drivers and trends affecting the demand for and supply of agrifood products, (2) analyse the ability of the Agricultural sector to respond to those trends, (3) review the evolution and appropriateness of the policy environment to respond to these changes and (4) distil the main implications for future policy priorities. While a full analysis of the agrifood system in its entirety "from seed to waste" is beyond the scope of a single study, the AGWA study pays particular attention to some of the downstream segments such as agroprocessing, trade, food consumption, and food retailing, as well as some value chains of key importance in the region.

The AGWA study examines these issues from the regional perspective of the 15 ECOWAS member countries, complementing previous studies of Agricultural development at the national, continental and global levels. The purpose is to collate scattered and fragmented evidence and analysis on the various aspects of the West African agrifood transformation – including production, consumption, trade, value chains, agro-industries and retailing – in one volume, in order to make it available to a broad audience interested in agrifood policies and investments in the region. Such compilation not only facilitates access of a broad range of stakeholders to the current body of evidence and analysis on the subject but also highlights linkages, synergies and trade-offs among different policy domains, a prerequisite for evidence-based policy making and coordination beyond the narrow confines of traditional sectoral policies. This study therefore targets a broad audience including policymakers and practitioners in national governments, regional organizations, and development partners as well as civil-society and private-sector organizations engaged in agrifood system related policy domains. Students and scholars in the region and elsewhere studying West African Agricultural development may also find the study useful. Given its scope and thematic breadth, it mainly draws on secondary data and a large body of literature. In order to carry out a first literature review and data analysis and to fill information gaps, the AGWA team also commissioned selected background papers and carried out limited fieldwork in areas in which secondary information was grossly inadequate. The fieldwork focused primarily on understanding changing consumer attitudes that are driving the rapidly evolving food consumption behaviour in West Africa's burgeoning megalopolises and the responses of agroprocessors, supermarkets and fast food restaurants to these changes.

The following sections of this synthesis first present the study's major findings regarding the key trends and drivers of change in West African Agriculture. They next discuss how the agrifood system and Agricultural policies have responded to these drivers and trends. The synthesis concludes by presenting major policy priorities and guiding principles to enhance the effectiveness of Agricultural policies in helping West Africa capture the opportunities and deal with the challenges highlighted in the AGWA study.

II. Key trends and drivers of change

West African countries are undergoing rapid demographic and socio-economic changes, with important implications for the demand and supply of agrifood products. Despite variations across the region, the broad trends are clear.

Key demographic trends

West Africa's population is growing fast. Over the last thirty years, it has more than doubled, growing by 2.7% annually. Population growth rates vary between countries, with the poorest countries having the fastest growth. Only a few countries have entered their demographic transitions towards lower birth rates. Hence, the regional population, currently estimated at 300 million, is expected to reach 388 million by 2020 and 490 million by 2030.

West Africa's population is predominantly young, with 44% below the age of 15. Hence, 80 million young people currently between the ages of 5 and 14 will enter the labour market over the next decade.

West Africa is rapidly urbanising. The region is already the most urbanised in sub-Saharan Africa, with almost half of the population living in urban settlements in 2013, up from 33% in 1990. Two main trends stand out: (1) the rapid growth of national metropolitan areas that account for 40% of the urban population, and their primacy over secondary cities and towns, and (2) the proliferation of small towns at the lower boundary of urbanization in rural areas, in proximity to large cities and along major highways and transport corridors.

Strong migratory movements continue, within and across national borders, driven by urbanization, population growth and varying economic opportunities across the region. Intraregional migration has been characterised by high rates of rural-to-urban migration, movements of people from the Sahelian to Sudano-Guinean zones and from the inland countries to the wealthier coastal states.

Despite migration, rural populations continue to grow in absolute terms. Moreover, rural population is concentrated; 16% of the rural population lives on 1% of the rural space, and 51% lives on 10% of the rural space. As a result, rural population growth increases the pressure on land and natural resources and contributes to land fragmentation, especially in high-potential, densely populated areas with good market access. Since the reserves of unutilized land suitable for agricultural production are limited in West Africa, land conversion from forest or rangelands leads to increasing environmental costs and conflicts.

Key socio-economic trends

Overall economic performance has improved markedly. Starting in the late 1990s, most West African countries entered a prolonged period of strong economic growth. However, there were important variations across countries concerning the levels and quality of growth. While Cape Verde, Ghana, Burkina Faso, Nigeria, and Mali saw strong per capita GDP growth, between 2% and 3% per annum over the past 20 years, other countries stagnated or had negative growth in per capita terms, due to conflict, less effective policies and poor governance. Moreover, the inclusiveness of this growth has been diverse; while growth in Ghana and Burkina Faso was broad-based, Nigeria's and Mali's growth was coupled with worsening income distributions. Moreover, all four countries experienced unequal spatial patterns of growth, with widening gaps between northern and southern parts, resulting in a continuous source of tension and concern.

Poverty levels have been declining, albeit by varying degrees. Of the 11 countries for which data are available for multiple years between 1985 and 2008, poverty measured by the US$1.25 poverty headcount ratio declined in eight[1], remained unchanged in one country (Guinea Bissau), and increased in two (Nigeria and Côte d'Ivoire). However, during the mid-2000s more than half of the entire regional population still lived on less than US$1.25 per day. Poverty rates are lowest in Cape Verde, followed by Côte d'Ivoire, Ghana and Senegal. Data with respect to national poverty lines show that poverty remains heavily concentrated in rural areas, with poverty rates two to three times higher than in urban areas.

Despite recurrent crises, food insecurity levels also declined across the region, both in absolute numbers and as a percentage of undernourished persons, and undernutrition rates are generally lower than in other parts of sub-Saharan Africa. The proportion of undernourished people in the total population halved from 20% to 10% between 1990 and 2006-08, with the number of undernourished persons declining from 37.3 million to 28.5 million during the same period. At the same time, problems of over-nutrition (obesity and overweight) have begun to emerge as serious problems in some urban areas, with attendant non-communicable diseases such as diabetes and heart disease.

1 Burkina Faso, The Gambia, Ghana, Guinea, Mali, Niger, Senegal and Sierra Leone.

Middle classes are growing. As a result of economic and demographic growth, the region's middle classes have been expanding and receiving increased attention by policymakers and the private sector. Since "middle class" is a multidimensional term, definitions vary and comparable statistics across countries are rare. Using daily per capita expenditure as a simple proxy and US$2 per day as a lower boundary, 25% of West Africans (about 70 million people) belonged to the middle class in 2008.[2] This regional average is strongly influenced by Nigeria, where only 23% of the population is middle class. The share of the middle-class population was highest in Cape Verde and Ghana (46% each), Côte d'Ivoire (37%) and Senegal (35%).

A further disaggregation of the non-poor population shows that the largest segment, 16 % (40.9 million persons), belonged to the so-called "floating class" just above the poverty line, spending between US$2 and US$4 per capita and day. Above this floating class, 8% (19.2 million persons) fell into the lower middle class, spending between US$4 and US$10 per person per day,[3] and another 4% (10.9 million people) belonged to the upper middle-class, with daily per capita expenditure between US$10 and US$20.

Structural transformation remains incomplete. The demographic and socio-economic changes just described are part of a broader structural transformation, a defining feature of the development process, typically characterised by four interrelated processes: (1) a declining share of agriculture in GDP, (2) the rise of a modern industrial and service economy, (3) rapid urbanization as people migrate from rural to urban areas, and (4) demographic transition from high to low rates of births and deaths.

West African structural transformation is incomplete, with the four interrelated processes progressing at different velocities: while urbanization is progressing fast, there has been little change in the sectoral composition of the economy, and only three countries (Cape Verde, Côte d'Ivoire and Ghana) are moving rapidly towards markedly lower birth rates. The services sector dominates the economy, contributing 42% to the GDP on average over the past decade, followed by agriculture (35%) and industry (23%). The share of the services sector is higher than that seen in other developing regions and agriculture's share is lower, taking into account differences in per capita income. Industry's contribution to GDP only increased in 7 of the 15 countries between the 1980s and the first decade of the 21st Century. Moreover, industrial growth has been mainly in extractive industries – mining and oil – which are capital-intensive and generate little employment. Manufacturing, historically the key driver of growth and structural transformation elsewhere in the world, has underperformed in West Africa.

An important feature of the structural transformation in West Africa has been the shift of labour from underperforming agriculture into the urban and rural informal service economy, which is characterised by low productivity and income levels. Estimates of the contribution of the informal economy to the GDP ranges from 43% (Cote d'Ivoire) to 77% (Niger). A large part of the rural non-farm economy belongs to the informal sector and is only partially reflected in official statistics.

Marked differences persist within the region

These broad trends mask considerable differences between countries and sub-regions. West Africa is a highly diverse region in terms of agro-ecological conditions, population distribution, and the size of the national economies, and this diversity has important implications for the dynamics of regional integration.

Agricultural production conditions are highly diverse, and climate change will exacerbate this diversity. West Africa is comprised of wide variety of ecosystems and an equally high number of production systems. Agricultural activities range from nomadic pastoralism in the far north to root-crop and tree-crop systems in the south. There is a five-fold

2 Based on 2005 purchasing power parity.
3 The term "floating class" refers to the vulnerability of this population segment, which may easily fall back into poverty.

increase in crop output per ha as one moves from the agropastoral systems of the Sahel (approximately US$240/ha) to the tree-crop systems of the south (US$1 125/ha).

West Africa's population is unequally distributed, and migration accentuates this trend. From a demographic standpoint, the region is made up of one giant country, six moderate-sized countries, and eight small ones. Population distribution and migration patterns have been strongly influenced by agroclimatic conditions, land availability and variable economic opportunities among countries in the region. Three-quarters of the West African population lives in humid and sub-humid zones, 20% in the semi-arid zone (Sahel) and 5% in the arid zone. In 2006, coastal cities already accounted for almost 38% of the entire population of the region, compared to 28% in 1950. Given current migration patterns, by 2020 a high-density urban area will have formed running along the breadth of the coastal area of the Gulf of Guinea.

The region's heterogeneity is even stronger in economic terms. Nigeria alone accounts for almost two-thirds of the regional GDP in 2009. The contribution of the three largest economies – Nigeria, Ghana, and Côte d'Ivoire – to regional GDP amounts to 81%, exceeding their share in the total regional population of 67%. Income levels, as measured by GDP per capita, also vary widely across the zone, with Cape Verde, Nigeria, Côte d'Ivoire, Senegal and Ghana having the highest per capita income levels.

Countries are at different stages in their structural transformation. Cape Verde has moved furthest; the country is highly urbanised and the food consumption structure has shifted towards a more European-style diet. On the other end of the spectrum, Niger has barely started its transformation towards a more urban, diversified and higher-income society. Coastal countries are more urbanised, and agriculture's contribution to the economy is less than in the inland countries. Due to these differences, the structural transformation has been faster and more pronounced in the large coastal countries that boast most of the region's urban middle-class.

III. Implications of these trends and drivers of change for Agricultural growth and policies

These drivers and trends create unprecedented opportunities but also new challenges for West African Agriculture and related policies.

Unprecedented opportunities for Agricultural growth stem from:

- ***An increasingly dynamic West African food market,*** due to the combination of population growth, urbanization and higher output prices that has resulted in a rapid expansion of domestic and regional food markets. This market growth is likely to continue and accelerate in the foreseeable future in view of high income elasticities for most food products. The strongest market growth potential exists for animal products, followed by rice, fish, and fruits and vegetables. Producing and marketing such products are labour-intensive and thus offer potential for substantial job creation if the demand can be met through local production rather than imports.

- ***An increasingly diverse food demand, propelled by socio-economic differentiation, need for convenience and globalization.*** Population growth rates of 2 to 3% in most countries will continue to fuel demand for basic calories, especially for the 75% of the population still living on less than US$2 per day. At the same time, a growing middle class population will increase the demand for higher-value and value-added food products. Food demand is transforming from undifferentiated bulk commodities towards food products with differentiated quality attributes. While price remains a key determinant of demand, other product attributes such as nutritional and health characteristics, presentation and packaging, shelf-life, and ease of preparation and convenience are increasingly important in shaping consumer preferences and purchasing decisions. These trends are fuelled by broader access to media, food imports and the advent of international fast food and supermarket chains.

- ***Rapid urbanization and rural urban linkages.*** While these changes are occurring most rapidly in the large metropolitan areas accounting for approximately 40% of the urban population, similar trends are gradually following in intermediate cities and towns. Analysis of budget-consumption surveys has revealed that income elasticities for many food products are even higher in rural areas than in urban areas. This suggests a further food demand boost as rural incomes increase. Nonetheless, currently the bulk of the purchasing power, especially for higher-value products, resides in the urban areas. Targeting these markets presents large opportunities for increased rural producer incomes, which in turn would stimulate rural demand for locally produced products and services.

- ***An expanding global demand for Agricultural products*** especially in fast-growing emerging economies, providing increased opportunities for West Africa's traditional and non-traditional agricultural exports. Prices for agricultural exports have been strong, and West Africa has potential to expand the volume and diversify the composition of such exports, including to Eastern Europe, India and China. While market entry barriers might be higher than on domestic markets, the advantage of exports is that higher prices for export crops do not necessarily imply higher costs for domestic consumers. Rather, the income generated from agricultural exports translates into increased demand for local farm and non-farm products and services, generating growth linkages.[4]

- ***An improved Agricultural policy and incentive environment.*** The level of taxation on agricultural outputs has declined and price transmission from consumers to producers has improved over the last two decades. Moreover, the "rediscovery of Agriculture" by national governments and their development partners in the early 2000s and the CAADP process have strengthened policy processes and frameworks and raised Agriculture's profile at the national, regional and global levels.

- ***The emergence of more independent, dynamic stakeholder organizations, which enhance growth prospects.*** The growing democratization that began in the 1990s led to the emergence of more independent, grass-roots Agricultural professional organizations, such as producer and trader organizations. These organizations contribute to more rapid Agricultural growth in at least three ways. First, they offer expanded scope for collective action – providing critical goods and services to their members such as primary-product assembly, pooling orders for input purchases, and providing advisory services, in the process capturing scale economies for the smaller-scale members. Second, they are increasingly involved in policy debates and design, adding valuable insights about the nature of the constraints and opportunities facing actors in West African Agriculture. Third, through their national organizations and regional federations, they serve as a counterweight to government in defending their members' interests and as a force to pressure for the faithful implementation of announced policies aimed at boosting Agricultural growth.

But these opportunities are combined with new challenges for West Africa's agrifood systems stemming from:

- ***An increasingly volatile international market environment, making long-term projections increasingly difficult.*** Factors such as climate change and increased links between financial, energy and Agricultural markets add to uncertainties about market trends. While most analysts expect higher world prices for agricultural products to prevail over the medium term, the longer term outlook remains uncertain. Amongst other factors, the future direction will depend on whether the generation and dissemination of productivity-enhancing technologies and sustainable natural-resource- management practices will prevail over the negative effects of climate change and a deteriorating natural resource base.

4 While diversification into export markets might have some short-term effects on domestic food prices if productive resources are shifted from domestic food production into export sub-sectors, there are also frequently positive impacts of export-crop production on domestic food production. These include improved access by farmers to key inputs, such as fertilizer and farm equipment, which can be used for production of both domestic food crops and export crops.

- *Increased competition in output markets.* A number of large emerging economies such as Brazil have developed highly competitive Agricultural sectors that play increasing roles on Agricultural markets, worldwide and in West Africa. Higher agricultural commodity prices combined with expectations of future scarcities of food and natural resources have contributed to the mobilization of large sums of financial capital by traditional and non-traditional actors and to a surge of investments at all levels of the agrifood system worldwide. In the medium term, these investments will lead to production and productivity growth, furthering competition on agrifood markets and in accessing natural resources. Hence, West Africa needs to seize this historic opportunity of high prices and strong demand growth by making the necessary investments to address productivity gaps and other structural constraints that currently weaken its competitiveness. Current yield gaps and limited use of improved inputs and technologies are both signs of the weak competitive position of West African Agriculture but also of huge potential for improving this position.

- *Growing competition among different actors and sectors for an increasingly stressed natural resource base, augmenting pressure on land tenure and water rights systems.* This competition has been leading to more frequent, often violent, conflicts and discourages productivity-enhancing Agricultural investments. Competition for West Africa's agricultural land and water is also growing due to burgeoning interest in investing in West African Agriculture by new private-sector actors, including domestic investors, members of the diaspora and foreign firms. The heightened private-sector interest in investing in West African Agriculture has the potential to bring new capital, technologies and human skills to the region's agrifood system. It also, however, raises sensitive political issues about ownership and control in the sector and access to natural resources, especially land (often labelled as "land grabbing"). The latter may threaten livelihoods (particularly for women and pastoralists, who are amongst the first to lose land-use rights) and exacerbate conflicts unless transparent governance mechanisms and proper safeguards are put in place.

- *A persistently high share of food in total household expenditures, rendering the majority of West Africans very vulnerable to food price increases.* Hence, domestic agrifood systems and related policies face a dual challenge of harnessing the opportunities of urban food market growth for the benefit of broad-based growth while keeping food prices low through reduced production and marketing costs, especially for basic staples.

- *A shifting political-economy equation towards consumers, especially those in urban areas, due to the economic and demographic transformations.* In combination with the high share of food in the household expenditures, this shift implies that restricting food imports in order to stimulate regional production will likely become politically more difficult in the future. While the possible overvaluation of the CFA franc may justify some tariff protection of Agriculture in the WAEMU countries, the protracted negotiation of the ECOWAS Common External Tariff (CET) has shown the difficulties of increasing such protection. Since West African countries do not have the financial means to subsidise consumers and producers at the same time, trade policy measures that focus on reducing price volatility through safeguards rather than protecting producers permanently using fixed rates are also likely to be more feasible.

- *A surge in the number of young people entering the labour market each year.* In an era of globalization, with increasing exposure to digital media, rural youth are becoming more aspirational and mobile, with important implications for job creation and the agricultural labour supply. Given the widespread perception that farming is arduous and offers few pathways out of poverty, a growing share of rural youth prefers to migrate into towns and cities, seeking employment in the informal services sector. Although broader agrifood system development offers substantial scope for creating many productive

jobs, capturing that potential will only occur if the educational systems are reformed to provide young people with the skills needed to operate in a dynamic, modernising, private-sector-driven Agricultural economy. Hence, agricultural policies need to be coordinated closely with policies affecting education and skills development as well as broader economic policies including industrialization and small and medium enterprise (SME) development.

- ***An agglomeration of population and purchasing power along the coast, exacerbating intraregional imbalances*** and shifting consumers farther away from the traditional staple-food and livestock production basins in the hinterland. While this demand pull has led to intensification of farming and growing numbers of SMEs engaged in processing, storage, trade and logistics in peri-urban and urban areas, farmers in rural areas and inland countries are less able to respond to this growing demand, especially for bulky and perishable products, due to poor infrastructure and transport systems and inadequate information. Likewise, proximity to ports and major international transport hubs gives imports competitive advantages over domestic production from the hinterland. Hence, the state of the connecting infrastructures–roads, transport systems, marketing facilities and information – coupled with improved road governance and removal of nontariff barriers to intraregional trade, become crucial for the competitiveness of domestic production, vis-à-vis imports. Consequently, the nexus between agricultural policies, infrastructure and transport sector policies, spatial development policies, and trade policies – especially concerning regional integration – is becoming increasingly important.

- ***An economic growth pattern driven mainly by natural resources and extractive industries renders the region vulnerable to international commodity price fluctuations.*** The huge growth in recent years in the region's capacity to rely on imports to help address the burgeoning regional food demand is to a large extent based on exploitation of non-renewable resources and hence may not be sustainable if world prices for these commodities fall. Thus, policies need to focus on how to invest earnings from these non-renewable resources in order to increase productivity throughout the economy, including the agrifood system, rather than simply use them to finance growing food imports.

- ***Persistent vulnerability to natural and human-made disasters.*** West Africa has been fraught with recurrent natural and human-created crises and disasters over the past 50 years, which have led to severe food shortages and destruction of productive capacity in various countries. For example, the civil war in Côte d'Ivoire destroyed much of the country's livestock production infrastructure and greatly disrupted the economies of Burkina Faso and Mali, which were highly dependent on the Ivorian market for regional exports and on port services in Abidjan for their external trade. More recently, terrorist attacks in Mali and northern Nigeria and Ebola outbreaks in several countries have similarly disrupted agricultural production and regional trade. These risks and uncertainties are exacerbated by climate change, price volatility and policy volatility. Hence, the Agricultural growth agenda needs to be closely linked to the resilience agenda. ECOWAS and the African Union have the potential to play important roles in creating a more stable environment for Agricultural growth in the region not only through their support of CAADP but also through their peace-making, peace-keeping and emergency relief roles.

IV. How has the agrifood system responded to changing demand and market trends?

Consumer response

Overall, consumers' diets are becoming increasingly diverse at the national level but converging across the region. Analysis of food-balance-sheet data for the past 30 years shows that while differences across countries concerning food consumption patterns persist, at the national level food con-

sumption patterns are becoming increasingly diverse. The trend towards dietary diversification is particularly marked in the coastal countries and urban areas but is also spreading into the inland countries, smaller towns and rural areas. Factors driving this trend include migration, growing international and regional trade, climate-change-induced modifications in local food production patterns, and foreign direct investment in food processing and retailing, resulting in increased availability of a broader range of food products. Converging trends across the region include (1) increased consumption of rice and wheat-based products, substituting for traditional cereals such as millet and sorghum; (2) strong growth of root and tuber consumption, especially of cassava and yams, which is gradually extending into the Sahelian countries; (3) increased pulse consumption, particularly of cowpeas, in several countries including Nigeria; (4) strong growth of per capita vegetable oil consumption; and (5) expansion of fruit and vegetable consumption. Similar growth trends apply to fish, poultry, dairy products, red meat and beverage consumption.

Demand for convenience in food preparation and consumption is a key driver underlying the evolving food consumption trends. Demand for convenience is fuelled by urban congestion and long commuting time and increased female employment outside the home, reducing the time available for food purchase, preparation and consumption. The demand for convenience is manifested in an increased demand for meals taken outside the home in various forms ranging from street foods to small informal restaurants ("bush canteens") to modern quick-service restaurants. While some of the convenience foods are based on imported raw materials (e.g. noodles, pasta, bread and biscuits, and, particularly, rice), there are also regional convenience foods based on cassava such as gari and attiéké. However, the rapid spread of fried and processed foods in large coastal cities such as Accra and Lagos raises nutrition and health concerns.

A further broad trend is increasing demand for quality food. This trend is driven by rising income and education levels and better access to information. Quality has several dimensions:

- ***Nutritional quality and dietary diversity.*** With rising incomes, there is growing demand for higher-value foods, such as meat, dairy products, fish, and fruit juices. There is also increasing demand for healthful foods such as fruits, vegetables and vegetable oils with unsaturated fatty acids.

- ***Product homogeneity, freshness, shelf-life, packaging and presentation.*** For example, in the case of rice, the homogeneity of the product and the absence of foreign matter are key quality parameters. In the case of poultry meat, taste and freshness are important criteria differentiating domestically produced poultry from imported frozen product. In each case, some consumers are willing to pay more for quality.

- ***Food safety,*** which is often intertwined with nutritional quality in consumers' minds. As with other aspects of quality, the effective demand for food safety increases with disposable income but also with higher education levels and better access to information about food safety issues. Consumers are increasingly concerned about the safety of the food they are eating but have little information about it. Public food-safety standards are just emerging, and their implementation is uneven, so consumers have little trust in them. Branded products of foreign origin are often perceived to be safer, giving them an advantage over domestic products.

The demand for healthy and nutritious food is often trumped by the need for convenience and the attraction to modern or Western lifestyles. This is evidenced by a preference, especially among young urban middle class and aspiring consumers, for branded packaged food products and Western-style quick-services restaurants offering fried chicken, French fries, and burgers. The sizeable advertising budgets of large food manufacturers and fast-food chains reinforce these trends and place smaller domestic producers at a disadvantage.

Retailer response

The response of retailers to the evolving demand has varied across different segments of the food

retailing sector. Retailing in West Africa is still dominated by traditional marketing channels, including open markets, traditional wholesalers, neighbourhood stores and informal food vendors. In recent years, however, modern retailing enterprises (supermarkets and modern fast-food retailers) have grown in urban areas. Because little was known about the modern retailing sector, the AGWA study gave particular attention to its structure, how it has responded to the changing demand structure, its growth prospects and their implications for the broader agrifood system.

The traditional retailing system has responded to the evolving demand by greatly expanding both the number of retailers and the scope of their activities. Most striking has been the rapid expansion of street-food vendors, responding to the need of low-income urban workers for fast, convenient meals. Retailers have also expanded their sale of processed staples and imported canned and dry goods. Traditional open markets have struggled to cope with the burgeoning growth of demand, and are often characterised by crowded and unsanitary conditions. Urban congestion, weak public transport systems and erratic electricity service (which hinders the spread of refrigerators among consumers and hence forces them to shop frequently for perishables) have helped traditional neighbourhood retailers maintain a substantial share of the consumer market compared to larger modern retailers.

There are signs of acceleration of modern food retail growth, but its pace is difficult to predict. Despite the recent growth of supermarkets and quick-service restaurant chains and outlets in major urban areas, modern food retailing is still underdeveloped in view of the market size, urbanization levels and economic dynamism of these countries. Domestic, regional and international players are increasingly aware of these market opportunities, and many have ambitious growth plans. There are signs that the growth of modern food retailing might speed up considerably in view of increased dynamics of the sector over the past five years and the recent entry of regional and international players into both the modern grocery and food services sectors, particularly in Nigeria, Ghana, Côte d'Ivoire and Senegal. The pace of growth and expansion will depend on overall economic dynamism in the region but also on the ability of investors to overcome the challenges related to the business and operating environments, such as access to finance and real estate, unreliable electricity, and underdeveloped domestic supply chains. Even in case of modest growth, development of domestic supply chains could enable domestic producers to access higher value market segments.

Agroprocessor response

Due to their varying size and organizational structures, agroprocessors diverged in their responses to the evolving consumption and market trends. The region remains characterised by a dichotomy between a large number of artisanal and informal agroprocessing firms and a smaller number of industrial-scale agroprocessors. The artisanal sector forms part of a social network economy that facilitates entry into the sector and enhances its resilience but also acts as a constraint for growth and formalization of enterprises. Nevertheless, the sector is an important part of the rural non-farm economy and generates employment and income, especially for women. It is also an important user of local farm produce and fabricates a diversity of inexpensive basic foods for the low-income market. On the other end of the spectrum, the large-scale formal sector, often made up of firms that are parts of multinationals or domestic conglomerates, frequently relies on imported inputs such as wheat and milk powder to produce a range of products for both the mass market and the growing middle class. There is also some large-scale processing of export and industrial crops, most notably cocoa. Like in much of industry in sub-Saharan Africa, there have traditionally been relatively few small and medium-sized formal-sector agroprocessing firms, a phenomenon referred to as "the missing middle."

The large-scale processors that are oriented towards the domestic market have responded to the growing demand for more convenient foods by developing an array of packaged and processed products, such as instant noodles and breakfast cereals, which appeal to a time-poor and mobile population. They

also capture growing demand for higher quality and more diverse food products, such as fruit-flavoured yoghurts, fruit juices, soft drinks. Due to their reputation and the use of strong brands, large domestic and international food processors are better positioned to instil consumer confidence in the quality and safety of their products. While initially their main focus was on the middle and upper market segments, this has changed gradually, and the use of small package sizes and wide distribution networks make their products also available to lower-income mass markets.

The artisanal and small-scale sector has been dynamic in producing a large range of low-cost products with varying quality and food safety levels to the low-income population. These include convenience foods such as gari and attiéké. Agroprocessing SMEs in the formal sector are mainly targeting low- and middle-income customers. Some have successfully created new food products in response to growing demands for convenience, improved hygiene and health. Many such products, including packaged gari, bean and maize flour, pounded yams, and instant fufu, are based on domestic raw materials. Compared with large processors, though, SMEs face tougher challenges with regards to access to finance, technology, marketing, distribution networks and technical and managerial skills. Their main comparative advantages lie in their better knowledge of local markets and food cultures and their greater flexibility and ability to create localized niche markets. However, in order to consolidate and expand their market positions, improving product presentation and packaging and generating consumer confidence in product quality and safety are essential.

Production and value chain response

West Africa's agricultural production performance over the past 30 years has been mixed. In general, production of basic food staples has shown the highest increase per capita. Some crop and livestock products with the most dynamic markets, such as meat, dairy products, rice and vegetable oils, grew much less and were not able to meet increasing demand. Maize, yams, cassava and cowpeas exhibited the strongest growth (3% per capita per year and above), followed by oil crops and vegetables, at annual per capita growth rates of 1% to 2%. Per capita production of millet, sorghum, rice and fruits increased by less than 1% annually for the region as a whole, while that of meat, milk and sugarcane actually declined over the last thirty years. Concerning livestock products, pig meat had the highest annual average growth rates per capita, at 2%, followed by sheep and goat meat, averaging 1.6%. In contrast, beef and milk production declined on a per capita basis.

Agricultural sector growth was generally far below the 6% CAADP target. Despite the strong output growth, agricultural sector growth rates have not been rapid enough to allow West African countries to meet their poverty reduction goals. Agricultural value added only grew by 3% on average per year during 1990-1995, followed by an average annual growth rate between 4 and 5% since then. While 7 of the 15 ECOWAS countries achieved CAADP's 6% target agricultural growth rate in 2009, only 4 were able to maintain that rate in 2010. Yet to achieve the CAADP poverty-reduction goals, the agricultural growth rate needs to exceed 6% every year, while a characteristic of most West African countries is strong year-to-year fluctuations in the growth rate, linked in part to variable weather conditions.

Productivity growth has been low and inconsistent. Agricultural growth in the region has been driven largely by area expansion, whereas land and labour productivity increases have been modest, with yields remaining well below global benchmarks. This has been in sharp contrast to other regions of the world, where yield increases have been the main drivers of output expansion. For instance, the area planted to cereals increased by 3.9% per annum while yields increased by less than 1.0% annually between 1980 and 2009. With the exception of maize, for which average yields grew annually by 2.2% between 1980 and 2009, yields of other food crops increased only modestly or even stagnated. The performances of the cattle and poultry sub-sectors have been even worse over the last 30 years, with average production per animal declining for beef (-0.9%/year) and stagnating for the poultry and dairy sectors.

Nonetheless, in the most recent period (2008-2012), there have been some modest increases in region-wide yields, particularly for some staple crops. These increases may reflect greater access of farmers to fertilizers and improved seeds as a result of major agricultural intensification efforts launched in response to the 2008 spike in world food prices and the more favourable price incentives during this period.

These regional averages mask wide variations among countries. This applies both to productivity levels and trends. For certain crops, average yields may differ across countries by up to a factor of five, reflecting vast differences in production systems, access to inputs, varieties and farmer incentives. These disparities across countries suggest that there is substantial scope for improving yields in low-performing areas by learning from successful approaches in neighbouring countries. Important differences in productivity trends between countries can also be observed. For example, while yields of Nigerian and Guinean rice declined between 1980 and 2009, average paddy yields in the other big rice producing countries of Côte d'Ivoire, Mali, Senegal and Sierra Leone all increased substantially; these figures conceal even more pronounced productivity success stories in certain irrigated areas in these countries (e.g. the Office du Niger in Mali and the Senegal River Valley in Senegal). Similarly, cassava yields have increased much more sharply in Nigeria and Ghana over the past 20 years (in response to the spread of improved varieties developed by IITA) than in several other coastal countries such as Sierra Leone and Liberia; and until the mid-2000s, the performance of the cotton sector in Francophone West Africa was much stronger than in the Anglophone countries.

Despite the modest overall performance, there are also some important success stories of production and value chain responses. Examples include the Ghanaian cocoa sector, the performance of the cotton sector in the Francophone countries from the 1950s through the 1990s, and strong productivity increases in roots and tubers, notably cassava. Moreover, recent initiatives to improve domestic rice value chains in Senegal through coordinated efforts among farm organizations, the private sector and the government also show promise.

International and regional trade response

The production trends are also confirmed by trade data, which reflect the competitiveness of West African Agriculture and its ability to respond to demand trends both on domestic and export markets.

The agricultural and food trade balances for the ECOWAS region have turned negative since the beginning of this millennium. While agricultural and food exports grew quickly, imports grew even faster. Hence, only five West African countries remained net agricultural and/or net food exporters over the period 2006-10. Côte d'Ivoire is by far the region's largest agricultural net exporter. The net trade deficit for food products for the region as a whole averaged US$4 billion in 2006-10, compared with a net trade deficit for all agricultural products of US$2.7 billion. Nigeria had the largest agricultural and food trade deficit, followed by Senegal. This trend towards growing food imports coincided with a period of strong growth of merchandise exports, which has led to a greater capacity of many countries to import. Nevertheless, there are concerns about the sustainability of this import capacity, as it is based heavily on the export of non-renewable resources.

A limited number of food commodities account for the bulk of the increasing food trade deficit. Cereals, especially rice and wheat, are by far the leading item, accounting for 41% of the value of food imports in the period 2006-10, followed by vegetable oils (13%), fish (11%), dairy products (9%) and sugar (9%). Together these five commodity groups account for 83% of the value of food items imported by the region. Vegetable oil imports have grown particularly rapidly, rising from seventh place in 1986-90 (4% of food imports) to second place in 2006-10 (13% of food imports).

Despite growing food imports, self-sufficiency ratios (SSRs) for many basic food staples have declined only modestly. Despite the rapid growth of cereal imports, the dependence of the region on the world market for cereals has only increased

modestly from 12% during the second half of the 1980s to 20% during 2006-10. This increase in import dependence is mainly due to rapid demand growth for rice and wheat, whereas the region has remained self-sufficient in coarse grains (millet, sorghum and maize). Regional SSRs declined for certain other basic food commodities, particularly milk, palm oil, poultry meat and sugar. For wheat, milk and sugar, the region has always depended on imports to meet a large share of its needs, but further reductions in SSRs have been experienced in recent years as per capita consumption of these goods has expanded. As in the case of cereals, there are large differences among countries regarding their degree of dependence on imports for these other basic food commodities.

West Africa's agricultural exports grew strongly but less than those of the rest of the world. The region's agricultural exports grew by 6.2% per year on average during the 1996-2000 to 2006-10 period, some 20% less than the export growth rate of the world as a whole (7.7%). For a number of commodities, West African exports have grown faster than those from the rest of the world[5], whereas those of other important exports such as fish and cotton lint have fallen or remained stagnant during this period. Cocoa has been a remarkable success story, and the region has retained its dominant world market share. On the other hand, a major challenge will be to try to revive some of the region's export value chains whose performance has lagged in recent years, such as cotton and coffee. Another challenge is to incorporate greater value addition into exports. This is being done successfully in cocoa, but has not extended to many of the other exports except for a few high-quality horticultural crops.

Agricultural exports remain highly concentrated in a few countries and commodities. Cocoa-related export commodities alone constitute over half of the region's agricultural exports in value terms, and, if combined with textile fibres and natural rubber, the share increases to over two-thirds. However, the concentration of exports in these three commodity groups was even more pronounced in the past, as the region has experienced some modest diversification of agricultural exports over time. A handful of countries accounts for nearly all of the key exports, with Côte d'Ivoire being by far the leading exporter of several commodities such as cocoa products, natural rubber, coffee, cashews, palm oil and bananas. Again, there is a slight trend towards geographic diversification of exports, with cocoa and rubber plantations currently being expanded in a number of coastal countries. Major export commodities that are produced by a broader number of countries include cotton lint, fish and tobacco. The region also boasts some remarkable successes in entering higher value niche markets, such as green beans, sheanuts, cashews and fruit.

Despite persistent barriers, intra-regional trade flows have increased. Long-distance trade flows, e.g. between Sahelian and coastal countries, have a long tradition and are often engrained in social and ethnic networks. Livestock, cereals and cowpeas are exported from the Sahel to the coast; some cereals also flow from coastal states northward; and tubers, fruits and vegetables of the Guinea savannah zone are brought into the cities in coastal areas and Sahelian countries. These trade flows have increased substantially over the last decades, driven by urbanization and migration. The real size of this trade is unknown, however, since official trade data only capture part of the actual trade flows. Major constraints to further expansion include poor road infrastructure, rules that restrict competition in the trucking industry, administrative barriers, difficulties and risks of transferring funds across countries with different monetary systems, growing insecurity and rent-seeking by police and border officials.

V. Why has supply response lagged behind the growth of demand?

The mixed overall performance of West African Agriculture with respect to production and productivity and the erosion of competitiveness are due to a host of structural problems, many of which have been further aggravated by inappropriate policies. In addition to the disincentives caused by inconsistent government policies and interventions,

5 These include cocoa paste, powder and cake, cashews, sesame seed, sheanuts, natural rubber, mangoes,bananas, papayas, sorghum, and cassava products.

structural problems related to market access, risks and uncertainties, and access to inputs, services and technologies reduce the incentives to undertake productivity-enhancing investments in farming and related upstream and downstream segments. While many constraints and possible solutions are value-chain specific, there are major generic constraints cutting across most agricultural value chains.

Policy volatility and missing investments in critical public goods

Although macro and sectoral reforms implemented during structural adjustment have generally resulted in higher farm-gate prices, these reforms were paralleled by a decline of investments in key public goods – research, extension, rural education and vocational training – and a retreat of the donor community from Agriculture. Due to the poor state of rural infrastructure, a generally weak business-enabling environment, high risks and uncertain profitability, the private sector has often been slow in taking over support-service functions, such as marketing, input supply and finance, from which the government disengaged during structural adjustment. Moreover, government policies have often been erratic, characterised by ad hoc market interventions through trade restrictions, subsidies or short-lived Presidential Initiatives aimed at specific value chains. This policy volatility, combined with poor implementation of announced policies and programmes and frequent policy reversals, exacerbated by a poor business regulatory environment, have generated further market uncertainty and discouraged private-sector investment, including by farmers. In turn, the slow and uneven private-sector response has nurtured governments' latent mistrust about the willingness and ability of the private sector to engage, prompting further rounds of government interventions.

Market access and infrastructure-related constraints

Underdeveloped roads and transport systems remain a key market access constraint. They are also an important disincentive for producers to increase production and adopt productivity-enhancing technologies, as costly transport directly affects the prices producers receive for their outputs and pay for their inputs. Market access costs are high due to geographic distances, the spatial dispersion of producers, small volumes of marketable surplus and the poor state of rural roads. Policies that limit competition in the trucking industry result in transport prices in West Africa that are much higher than in other developing regions and constitute major constraints to Agricultural competitiveness. These constraints not only affect farmers and traders but also agroprocessors (increasing their raw-product assembly costs) and providers of services such as finance, extension, and veterinary medicine. In urban areas, urban congestion and the poor development of public transport systems have limited the growth of large-scale modern retailing.

Despite improvements in main trunk roads, rural communities continue to have by far the lowest accessibility to all-season roads in the developing world. West Africa's quality of transport services, as measured by the Logistics Performance Index, is lower than in other African regions and the rest of the world. While important investments have been made in recent years, especially in the main international corridors and main trunk roads, road density in West Africa remains low compared to other developing regions.

Market infrastructure and wholesaling are struggling to cope with demand growth. The state of physical market infrastructure reduces the efficiency of the marketing system in performing key functions such as product aggregation, storage, sorting and grading of agricultural produce for different market segments, as well as the disposal of sewage and waste. This applies to wholesale and retail market infrastructure, abattoirs, storage (including cold storage) and equipment for other post-harvest operations such as cleaning, drying and packaging, both on and off farm. Quality deterioration and spoilage throughout the marketing system is a further serious problem, especially of perishable products such as fruits, vegetables and animal products. Moreover, poor hygienic conditions in markets can cause threats to human health as well as environmental hazards. This infrastructure gap and the attendant

underdevelopment of the wholesaling industry is a particular constraint for agroprocessors and retailers. They face high transaction costs for product aggregation, quality control, and sorting into batches of homogenous quality. Indeed, the largest problem facing agroprocessors is securing a reliable supply of locally produced agricultural products, particularly staples, of consistent quality and quantity. The most successful industrial agroprocessors that target the domestic market have been those that have relied on imported inputs, such as wheat, milk powder and fruit concentrates to produce juices.

Unreliable electrical supplies (a particularly severe problem in Nigeria) constrain the ability of agroprocessors to operate their plants at capacity, frequently forcing them to invest in expensive generators that drive up their costs of production. Similarly, small-scale processors have to turn to diesel or petrol-powered mills that are more expensive to operate than electrical ones. An unreliable power grid also limits the development of cold chains, thereby constraining the marketing of perishable products, for which demand is growing rapidly and whose value chains have the potential to generate substantial employment.

Many value chains are fragmented, with limited vertical and horizontal coordination among different actors, including weak links with service providers. Loosely coordinated value chains frequently are characterised by poor transmission of incentives from consumers and agroprocessors to farmers concerning demands for specific product qualities, particularly regarding cleanliness, safety and consistency of supply. The weak transmission of information regarding the willingness of consumers and processors to pay for different product qualities is due to:

- Lack of grades and standards that reflect the nature of demand in the market.
- The low volume of marketed surplus per farm, which makes product segregation by quality costly for traders; hence, products of differing qualities are frequently pooled in the marketing system, which dilutes any incentive to award producers of high-quality products.
- Meeting market demands in terms of quality, quantity and consistency of supply often requires specialized investments and skills that are beyond the reach of many smallholders and traders.

Elevated risks and uncertainties

Actors throughout the West African agrifood system face high production and market risks. These risks arise from weather variability, pests and diseases as well as price and policy volatility. Strong fluctuations in production, combined with weak spatial market integration and low volumes of marketed output contribute to high seasonal and inter-annual price volatility. Erratic government interventions and spill-over of international price volatility further complicate the picture. The uncertain availability, timeliness and quality of inputs, advisory services and finance add further risks. Combined, these risks and uncertainties act as strong disincentives for farmers to invest in productivity-enhancing technologies and for other private actors to invest in input supply, support services, marketing and processing.

West African farmers and other value chain actors generally lack access to improved risk-management products and services. These include agricultural insurance, forward contracting and hedging. Even more basic yield-stabilising technologies such as improved soil and water management, irrigation, improved seeds, plant protectants and veterinary drugs are only available to a minority of farmers. In the absence of such products and services, farmers' main response to the various risks and uncertainties is to diversify their limited resources into many different activities. The resulting scales of operation are often too small for adopting improved technologies and lead to higher per-unit marketing costs. Processors' and retailers' response to erratic domestic supply is to revert to imports.

Contract farming and outgrower schemes can mitigate some of the aforementioned risks at farm level, but even agribusiness needs better tools to manage these yield and price risks. Moreover, contract-enforcement risks limit the willingness and ability of agribusiness to engage in and expand

contract farming, especially through resource-providing contracts.

Insecure land tenure and water rights undermine incentives to invest in land improvements and irrigation and to attract outside capital into farming. Moreover, conflicts over land and water destroy social capital and can worsen gender inequality, especially in areas with the highest production and market potential. Population growth leads to land fragmentation and proliferation of very small farms unable to feed the families that cultivate them, let alone commercialize. In addition, the lack of secure land records precludes local governments from establishing land taxes that could provide the fiscal basis for provision of many of the critical supporting services needed by rural communities, such as primary education, health, and extension. In urban areas, agroprocessors and modern retailers report that difficulties in obtaining clear title to land has often been a major constraint to their expansion.

Weak access to improved inputs, technologies and support services

Uneven access to inputs, technologies and support services between men and women constrains productivity growth. Cutting across the discussion below of all the factors limiting productivity growth of West African Agriculture are gender considerations. Social conventions in many countries restrict women's access to factors of production and services such as improved land and credit that are critical to productivity growth. Extension services often are predominantly staffed by men, and extension messages may not be oriented to women's concerns. These restrictions not only bias the benefits of growth away from women; they also reduce overall productivity growth by limiting the growth-enhancing resources available to women, who represent a large proportion of the actors in the agrifood system.

Low and inconsistent use of improved inputs such as seeds, fertilizer, pesticides and veterinary drugs remains the single most important proximate cause of low productivity in West Africa. Overall, the use of improved seeds has remained marginal, average fertilizer use per hectare is extremely low, even compared to other parts of Africa, and the use of farm power, including mechanization, in farming and post-harvest operations is extremely limited.

Both demand-side and supply-side constraints hinder the development of input markets. Demand is limited by uncertainty about profitability due to production and market risks, concerns about the quality of inputs, high input prices and lack of financing. In addition, farmers' knowledge gaps about the appropriate use of inputs such as fertilizer, pesticides and veterinary drugs reduce their effectiveness. Low and inconsistent demand slows the development of private-sector-based input supply chains, which are further constrained by high distribution costs, insufficient access to finance and, in some cases, government interventions.

Fertilizer and equipment are mainly imported, and farm-gate prices are high due to high transport and distribution costs, small volumes, and sometimes inefficient government tendering processes. There are huge economies of scale in the production and procurement of these inputs which, given the small market size in most ECOWAS member countries, lead to a limited number of importers in each market, constraining competition. Effective regional harmonization of regulations could enhance competition and reduce costs. While input subsidies can provide some temporary relief, fiscal costs have proved to be high, and schemes have been fraught with high leakage and operating costs and have sometimes undermined private input supply networks.

Agricultural research systems are underfunded and fragmented. Agricultural research is critical for generating new technologies that enhance and stabilize yields while using scarce inputs and natural resources in the most efficient and sustainable way. Given the need for adaptation to local agro-ecologic and soil conditions, importing technologies works less well in agriculture than in many other industries. The comparatively large number of staple crops, diversity of farming systems, and small national markets make technology development in West Africa more challenging than in other regions. Even though a large number of studies have provided evidence

about the high rates of return to public investments in agricultural research and development (R&D), in West Africa R&D has been severely underfunded for decades, and funding levels are only slowly picking up. In addition, West African research systems face a number of structural constraints including an aging pool of researchers and difficulties in attracting and maintaining new and high quality human resources. Moreover, there are important economies of scale in research and development, limiting the effectiveness of small and fragmented research systems, especially in small countries.

Extension systems are frequently broken. Extension and advisory services are a key link between generators and users of research and technology. Following structural adjustment and the disenchantment with the Training and Visit Extension approach, funding for extension across the region dropped. Since then, countries have been experimenting with a number of different approaches, but no widespread consensus has emerged about which methods work best. In addition to underfunded public extension systems, advisory services are provided by a number of actors including NGOs, donor-funded projects, and in a few cases, private agroprocessors and input suppliers. There is little coordination of programmes across actors. The scale of operations of the different advisory service providers varies widely. Non-state providers typically have small numbers of agents, but more operating funds per agent, while the public services are much larger but often with few operating resources. The effectiveness of the extension system is further curtailed by the limited research activities in the region (and hence, limited new technologies to extend), the poor rural infrastructure and the low level of training of many of the agents. Business advisory services and financial literacy training are even less available.

Weak systems of Agricultural education act as a broad constraint throughout the agrifood system. These weakened systems affect the ability of farmers and SMEs to adopt technologies, innovate and respond to market opportunities. They also undermine the performance and effectiveness of support services and organizations, be they public, private or civil-society based. The weak human-capital base ranges from low levels of literacy among farmers to inadequate numbers of well-trained personnel with skills in such areas as food science and technology, packaging, and marketing. The rarity of employees with such skills has been an important constraint to the expansion of agroprocessing.

Limited access to and high costs of finance slow down investments and technology adoption. The aforementioned constraints related to market access and infrastructure, production and price risks, technologies and skills render the provision of financial services to farmers and other agricultural value-chain actors risky and costly. The limited availability of risk-management instruments, widespread collateral constraints, problems of contract enforcement and a poor loan repayment culture further reduce the appetite of the financial sector to venture into agricultural finance. Efforts to circumvent the underlying structural problems through public agricultural development banks and subsidised credit lines have proved unsustainably costly and inefficient. Some of the dynamic decentralized financial networks in the region have been successful in providing finance to farmers and other value-chain stakeholders, even though meeting only a fraction of the demand. Agribusinesses, traders and input suppliers also play an increasing role in value-chain financing, either by directly providing financing to farmers or buying agents or by facilitating bank financing to them through establishing firm purchasing contracts. Historically, agricultural finance has been more successful in organised export value chains such as cotton. In a liberalized environment, side-selling is a constant threat and more easy to control where product characteristics such as bulkiness or perishability reduce side-selling options or where buyers serve niche markets. Other value-chain finance instruments such as warehouse receipt financing, receivables financing, and leasing are of growing importance. Additional financial services such as savings and payment services are critically important, and their future growth may be fostered by the potential rapid expansion of cell-phone-based banking and money-transfer services in the region.

VI. Evolution of domestic and regional Agricultural policies

From resource extraction to engine of growth

Agricultural policies have evolved dramatically over the past 50 years in response to the changing circumstances facing the sector and the evolving policy objectives of West African countries. Policies immediately after independence focussed primarily on resource extraction from the agricultural sector (especially export agriculture) in order to finance investments in other sectors. From the mid-1980s through the late 1990s, as countries went through structural adjustment, there was a general reduction of explicit and implicit taxation of agriculture and a move towards a more trade-neutral policy concerning export crops relative to import-substituting food commodities. On the other hand, the budget austerity that accompanied the structural adjustment programmes led to a decline in investments in key public goods such as rural infrastructure and agricultural research.

The "rediscovery" of Agriculture and the rise of CAADP since the early 2000s have increased the prominence of Agricultural policy, both nationally and regionally. It was only at the beginning of the 21st Century that African governments and their development partners "rediscovered" Agriculture, epitomised by the launching of the African Union's Comprehensive African Agriculture Development Programme (CAADP) in 2003 and the gradual rebound of government budget allocations and official development assistance to agriculture. Several countries prepared new agricultural strategies or orientation laws and, for the first time, regional agricultural policies were prepared by WAEMU (in 2001) and ECOWAS (in 2005). The general trend has been towards sector-wide approaches aimed at planning and implementing agricultural policies and investments in a more coherent way.

CAADP design and implementation

The 2008 food crisis strongly influenced the design of ECOWAP/CAADP programmes. Although launched in West Africa in 2005, the CAADP process in the region only gained momentum after the food price crisis in 2008. The food price crisis had positive and negative effects on the agricultural policy agenda. On the positive side, it acted as a powerful reminder of the importance of investing in Agriculture and prompted the rapid completion of the design of national CAADP programmes. Hence, all 15 ECOWAS countries had their CAADP Compacts signed between 2009 and 2011, and two thirds had prepared their National Agricultural Investment Plans (NAIPs) by the end of 2011.

On the negative side, many governments reacted in an ad hoc and uncoordinated manner to the food price crisis, and some of the measures adopted were inconsistent with the longer-term goals of advancing regional integration and addressing long-term structural problems. Several countries aimed for self-sufficiency in cereals, particularly rice, as opposed to ECOWAP's goal of promoting food sovereignty at the regional level. Export bans and temporary waivers of tariffs and import taxes, aimed at protecting urban consumers, undermined producer incentives and efforts to advance regional trade integration and policy coordination. On the production side, governments designed crash programmes to expand cereal production rapidly and increase national self-sufficiency levels. These programmes focused heavily on farm-level production, with weak integration of upstream and downstream segments of the value chains and heavy reliance on input subsidies.

The CAADP process has had several positive outcomes, making important contributions to improved, more coherent and inclusive policy processes.

- It has been successful in giving agricultural development greater visibility on the political agenda of many of the countries and moved them towards more sector-wide and regionally consistent agricultural policy and programme development.

- It helped to mobilize and coordinate many donors' support around a common set of objectives as laid out in the national agricultural investment plans (NAIPs) and ECOWAS's Region-

al Agricultural Investment Plan (RAIP). The ECOWAP regional programme and WAEMU's Politique Agricole de l'Union (PAU) also represent important efforts to deal with issues that can be most effectively addressed at the regional rather than national level.

- ECOWAP also constitutes an important step towards harmonising the actions of various intergovernmental organizations in the region, which have been characterized by a proliferation and duplication of policies and programmes.

- In many cases ECOWAP/CAADP processes involved a broader group of stakeholders than had previously participated in the formulation of agricultural policies and programmes.

- By frequently bringing together the national CAADP teams for joint workshops during the process of developing the NAIPs, the ECOWAS Commission helped to create a community of practice across the countries that shared experiences and learned from each other. This not only improved individual NAIP design but also lays a foundation for on-going learning from each other as the national and regional programmes are implemented.

The CAADP process has also had important limitations and challenges

Many NAIPs were built around emergency food production programmes. The NAIPs are heterogeneous in the relative priorities given to different subsectors, activities and value-chain segments. In general, they do focus on commodities where demand is growing rapidly, even though livestock often received comparatively few resources. However, the timing of their design in the aftermath of the food price crisis is reflected in their structure and the relative importance of different programme components. Hence, in several cases NAIPs had to be built around emergency programmes launched in response to the food price crisis that absorbed sizeable financial, institutional and human resources, which were consequently unavailable for longer-term structural investments and policy reforms.

Most NAIPs focus primarily on farm-level production. Although most NAIPs mention the need to develop the entire value chain, the bulk of them devote the vast majority of their funding to farm-level activities, largely through input subsidies and irrigation development. Investments in marketing (particularly the development of improved food wholesaling systems) and processing, food safety, research, extension, and human capital development, all of which will be increasingly critical for a successful structural transformation of the food system, receive relatively little emphasis. Many NAIPs emphasize the need for capacity development, with a strong focus on farm organizations and inter-professions but devote far fewer resources to the capacity-strengthening needs of other agrifood-system stakeholders such as SMEs in processing and marketing. The same applies, with some exceptions, to government institutions charged with programme coordination, implementation and monitoring. There is also relatively little explicit articulation, at both the national and regional levels, between agricultural investment programmes and industrial investment programmes, which generally include a focus on agroprocessing, nor with programmes aimed at improving rural electrification. While most NAIPs also recognize the critical importance of providing more secure land tenure and water rights in stimulating sustained and equitable Agricultural growth, in most cases the links between the investment programmes and efforts to strengthen land and water rights are not well spelled out.

Most of the NAIPs set extremely ambitious production goals. While agricultural growth rates have clearly improved in recent years, the average growth rate targets for CAADP mark a very strong break with the historical pattern. Setting ambitious targets can be part of a strategy to mobilize increased efforts to boost production, but there is a danger that setting overly ambitious targets can create unrealistic expectations among African governments, donors, and the general public. The expectations, if unmet, can in turn lead to disillusionment with an agriculture-led development agenda, engendering yet another set of policy reversals. Moreover, the setting of these very ambitious production targets had major

implications for the structure of public spending on agriculture towards measures to boost production quickly at the expense of longer term investments addressing structural constraints.

CAADP's large funding gaps raise questions about who owns the programmes. Although CAADP is touted as an African-led, African-owned initiative, the proposed CAADP investment plans for West Africa all have very large funding gaps that the countries and ECOWAS are asking external donors to cover. This raises a question of whether the proposed programmes have a realistic chance of being implemented at the scale they have been planned. Even if they are funded, if anywhere from 60% to 90% of a programme is paid for non-Africans, it is reasonable to ask who really owns the programme. ROPPA has complained that the CAADP agenda has been increasingly captured by outsiders, but this may be an inevitable consequence of proposing overly ambitious programmes that are highly dependent on external funding.

Implementation of policies and programmes remains the key challenge. In the end, Agricultural policies are effective only if they can be implemented, and West Africa faces important challenges in strengthening the capacities and incentives of individuals and institutions charged with policy implementation. Available data on the level of agricultural expenditure suggests that only a minority of countries meets the 10% budget target laid out in the Maputo Declaration. Furthermore, for many countries there is no clear evidence of a consistent increase over time in the budget share going to agriculture. For the 12 ECOWAS countries for which data are available for the period 2003-09, the share of the budget going to agriculture increased in five and fell in seven during this period. Moreover, some Sahelian countries had much higher agricultural budget shares prior to CAADP than afterward. Hence, the increased rhetorical attention to Agriculture in the post-2000 era, including the CAADP period, has translated into increased relative budget allocations to agriculture in only a minority of ECOWAS countries.

Improving the quality of spending is paramount. There are often significant differences between the funding allocations in sector budgets and NAIPs and the actual distribution of spending across sub programmes and purposes. Unfortunately, public expenditure reviews on agriculture are only available for a few countries to assess actual expenditures. For example, while Burkina Faso and Mali generally exceeded the 10% budget target throughout the 2000s, they allocated only 5% or less of their total public agricultural spending to agricultural research and under 2% to extension in 2009. Payments to producers (largely subsidies on capital and seasonal inputs) absorbed the largest share of any item in the agricultural budget (33% in Mali and 27% in Burkina Faso). While farm-level capital investments certainly contribute to growth, one can pose the question of whether the relative allocation of resources and farm level subsidies versus research and extension is likely to lead to the long-term sustained agricultural growth rates and structural transformation of the agrifood system called for in the NAIPs.

The importance of intra- and intersectoral policy coordination has been recognized, but implementation remains a challenge. The RAIP and some of the NAIPs recognize that Agricultural development transcends the domain of ministries of agriculture and thus requires coordination on policies and investments across sectors. Coordination mechanisms involving different government agencies and non-state actors are usually part of the implementing structure of the plans. The effectiveness of these mechanisms in practice remains to be tested. At the same time, in addition to CAADP, the food price crisis triggered the proliferation of other initiatives aimed at addressing areas that are deemed under-emphasised or missing in CAADP compacts and NAIPs, such as nutrition, agribusiness and resilience. Most of these initiatives are driven by external stakeholders, with their own objectives, constituencies and funding sources. While they are supposed to be aligned with CAADP, in practice coordination and alignment proves challenging, given the limited human and institutional resources and implementation capacity.

VII.Evolution of trade policies

WAEMU and ECOWAS have made important strides in fostering greater regional Agricultural integration. ECOWAS's integration agenda focuses on creating a customs union, which implies (1) creation of a free-trade area within the Community (via the ECOWAS Trade Liberalization Scheme, or ETLS) and (2) a common trade interface with the rest of the world via a common external tariff (CET) and accompanying safeguard measures. ECOWAS also envisions becoming a full economic union with a common West African currency by 2020.

The adoption of the ECOWAS Common Agricultural Tariff is an important step forward. The adoption of the CET in 2013 was an important achievement, although it is not scheduled to enter into effect until 2015. The ECOWAS CET represents an expansion of the WAEMU CET to include a new, higher fifth tariff band (at 35%), compared with a maximum tariff rate of 20% under the WAEMU structure. Reaching agreement on the CET was long and contentious, as some member states, such as Nigeria, wanted a higher level (50%) for the fifth band and inclusion of a broader array of products (such as rice) within it. There were particularly strong debates about the tariff rates for rice, sugar, and palm oil, reflecting differing views among member states and among other stakeholders regarding how to balance farmer, agroprocessor and consumer interests. In the end, the fifth band covers 2% of total tariff lines and is heavily concentrated on meat products (including poultry), a few fresh and processed horticultural products, processed cocoa products, key vegetable oils and products derived from them (mainly soaps), and fabrics. Like most tariff schedules, the CET generally gives higher protection to semi-processed and processed products than raw materials, with the exception of a few sensitive products like meats.

The impact of the Economic Partnership Agreement (EPA) with the European Union is uncertain. In 2014, after 12 years of negotiations, ECOWAS and the European Union signed a West-Africa-wide EPA. The agreement will open, over a period of 20 years, 75% of West Africa's market to duty-free import of goods and services of EU origin. In return, it immediately allows 100% of West African goods and services duty-free access to EU markets if they meet EU quality standards. How this agreement will affect West African Agriculture will depend, among other things, on: (a) how well West African products will be able to meet EU quality standards; (b) whether EU Agricultural products that benefit from production subsidies will be allowed duty-free access to the West African market; and (c) the cost structure of West African agroprocessors compared to their EU counterparts.

State-sanctioned measures, rent-seeking and structural constraints continue to hinder effective regional integration. Despite substantial progress in improving regional integration since 1975, effective implementation of regional agricultural trade policies remains a major challenge. Progress to date on the ETLS has been slow and incomplete, and the CET was adopted only in October 2013, 17 years after member states agreed to establish it. Constraints to implementation of the ETLS have included state-sanctioned measures (e.g. trade bans), rent-seeking (e.g. roadblocks) and structural characteristics of the economy, such as the rules governing truck transport that restrict competition.

Lack of harmonization of grades and standards, VAT measures and exchange rates also limits regional trade. Progress on harmonization in these areas – important steps in creating an effective regional market – has been slow, particularly between WAEMU and non-WAEMU countries. Envisioned movement to an ECOWAS monetary union has been stymied by lack of progress by the non-WAEMU countries in achieving any sort of exchange-rate linkage. The persistence of multiple independently fluctuating exchange rates in the region makes implementation of some of the planned safeguard measures problematic. A unified West African currency, however, would likely not be linked directly to the Euro, and such delinking for the WAEMU countries would require substantial macroeconomic adjustments on their part.

Implementing the proposed ECOWAS safeguard measures will be no easy task. The CET is to be accompanied by safeguard measures aimed at dealing with price volatility and import surges. All these measures are designed to have automatic triggering mechanisms based on objectively determined measures in order to avoid the ad hoc and unpredictable nature of many trade policy measures adopted by West African countries in the past. However, these mechanisms are complex, and this complexity threatens successful implementation of the programme. Furthermore, while the CET is to be applied regionally, the safeguard measures are to be triggered by conditions facing individual countries, which could create different levels of protection among member states and thereby induce smuggling.

Aligning incentives among member states will be critical to the effective implementation of ECOWAS trade measures. As with other policy measures, the effectiveness of regional trade policies depend on how well they are implemented. The past uneven track record concerning the implementation of key community provisions and protocols raises doubts not only about implementation capacity, but also the extent of political commitment of different member states to these regional agreements. In practice, such regional agreements have been implemented to the extent that they have been in line with national priorities and short-term political needs. Especially since 2008, national responses to the food price crisis have been uncoordinated and mainly driven by national short-term goals.

VIII. The way forward: major design principles for more effective Agricultural policies

Six broad principles should guide Agricultural policies in the region:

1. The diversity of West African agrifood systems requires a differentiated set of policies. A one-size-fits-all approach to policy is likely to fail. Levelling the playing field between food system actors of different sizes, and special support to women and youth are cross-cutting policy priorities, while linkage opportunities with larger food systems stakeholders with transformational potential should not be dismissed.

2. Agrifood system interventions need to be based on a firm understanding of the rapidly evolving nature of consumer demand to identify investment opportunities for different food system stakeholders and guide priorities for supporting public policies and investments.

3. Improving productivity throughout the agrifood system is the only sustainable way to meet both consumer and producer needs simultaneously. Rather than a simple replication of a "Green Revolution", a combination of sustainable intensification, climate-smart agriculture and inclusive-value chain development is needed.

4. Enhancing value addition, in its various forms, is key to capturing more lucrative markets and raising incomes in the agrifood system. This requires an enabling investment environment, improved market and transport infrastructure, and strengthened stakeholder organizations, from farmers to consumers.

5. West African Agriculture can only be globally competitive in a wide range of products if there is greater regional integration.

6. Agricultural productivity growth needs to be complemented by measures to enhance resilience given West Africa's high-risk environment.

1) Develop differentiated policies for a diverse sector

At almost every level, the West African agrifood system is diverse. At the consumer end, three-quarters of the population earns less than US$2 per day and is concerned primarily with expanding its access to inexpensive calories and protein, while the remaining quarter of the population represents a growing middle class that is upgrading and diversifying the quality of its diet.

A similar differentiation occurs in agroprocessing and, to a lesser extent, retailing, with a mix of large-scale and small-scale operations, frequently with few mid-sized formal-sector firms. Even farming is becoming increasingly diverse. Policies and investments need to acknowledge and respond to this diversity within at each segment of the agrifood system and interventions be tailored accordingly. In general, levelling the playing field by supporting micro-, small and medium operators along the value chain should be the main policy priority, but the potential for positive linkages and spillovers with large operators should not be dismissed. Special support to women and youth is a cross-cutting priority.

In the case of agroprocessing, a differentiated policy approach should start from the following considerations:

- Despite their great potential to contribute to value addition and employment creation, small and medium formal-sector agroprocessors face tougher challenges in accessing finance, technology, marketing, distribution networks, technical and managerial skills and maintaining a skilled workforce than do their larger counterparts. SMEs are also more vulnerable to a poor business enabling environment and are challenged to improve product quality, safety and presentation consistently in order to gain consumer confidence, especially in middle- and upper-income market segments. On the other hand, due to their tax and other obligations as part of the formal sector, they have higher costs than their competitors in the informal sector. Policies and programmes for this segment should focus on business and technical skills development, improving food safety and hygiene, upgrading product quality and marketing, and improving access to finance, electricity and raw material.

- Even though only a minority of enterprises in the artisanal sector might be able to upgrade and transition into formal enterprises, there is room to improve productivity as well as product quality and safety. They further constitute a pool of micro-enterprises, some of which might be upgraded to target higher-value market segments, including export markets for fair-trade products. Support for this segment should include similar measures to those for the SME segment but be tailored to the specific conditions and capacity of small informal operators. The more growth-oriented of these enterprises also need assistance in transitioning to the formal sector.

- Large-scale processors contribute to food system transformation by introducing new products, skills and technologies, opening new consumer market segments and forming potential new market outlets for domestic farmers and primary processors. These direct and indirect benefits from large-scale agribusiness investments should be harnessed, e.g. by supporting wholesale modernization and contracting to deal with the raw-product aggregation problems that plague larger processors and modern retailers.

At the primary production level small family farms have an overarching economic and social importance in the region and are therefore naturally the prime target group of agricultural policies. The efficiency of family farms and their ability to respond to market demand and adopt technical change are amply documented in the region and elsewhere. While for most crops there are no clear economies of scale in production, small farms face major scale disadvantages in accessing markets, inputs and support services, due to high transaction costs. Moreover, commercial agriculture is becoming increasingly knowledge-driven as are the more environmentally sustainable techniques for intensification, whereas the majority of smallholder farmers have low levels of functional and technical literacy. Capacity building, collective action, strengthening of farmer organizations and institutional innovations in service provision are necessary to help overcome these diseconomies of scale to some extent and should be a major policy focus.

Although the evolution of farming structures was not the main focus of the AGWA study, many other studies have shown that even among the

smallholders who dominate farming in West Africa there is tremendous diversity, with roughly a third producing the bulk of the marketed surplus. Another third is made up of households that are net buyers of basic staples and which generally lack the resources to farm their way out of poverty, while the remaining third could go either way, depending on their access to markets, support services, and the agricultural policy environment. On top of this overlay of smallholder agriculture is a small but potentially growing group of larger-scale farm operations, often linked to agroprocessors.

Enabling the largest possible number of family farmers to increase and stabilize their yields and incomes should be a policy priority due to the various multiplier effects of smallholder-based growth. At the same time, because not everyone currently engaged in farming will be able and willing to farm their way out of poverty, one can envisage policies to promote different pathways to prosperity for the three subgroups described above:

- *A commercial smallholder path,* built upon competitive, market-oriented family business enterprises in agriculture and related value chains. This path, mainly open to better-endowed smallholders in high potential areas with good market access, focuses on improving farming as a business through increasing total factor productivity in farming, strengthening access to higher value product markets and to factor markets, and improving natural resource management (NRM). Commercial smallholders are also most likely to enter contracting relationships with agroprocessors and food retailers successfully.

- *A strengthened transition path,* which focuses on (1) stabilizing more marginal farm households' production for home consumption (through yield-stabilizing technologies, improved productivity – particularly of its small livestock resources – and improved NRM), (2) helping the better-off among them to increase marketable surpluses and transition into more commercial production, and (3) facilitating access to labour markets and non-agricultural opportunities for those who need to supplement their farm incomes and, over time, transition out of farming. This path also focuses on enhancing access to education (to ease the next generation's transition out of farming) and providing social safety nets to avoid loss of assets due to various shocks such as drought, disease, or the death of a family member. For landless households, the focus is on improving access to labour markets, including migration.

- *A widely shared indirect benefits path,* which affects all groups, but is particularly important for marginal farmers, the landless and urban consumers. This path exploits opportunities from: (1) the demand-induced employment stimulated by growth in the smallholder sector and from lower food prices, which raise real incomes and induce job creation in the non-agricultural sectors, and (2) the growing demand for processed and more convenient foods among the growing urban population and for value-added exports, which expands employment opportunities in the non-farm segments of the agrifood system.

None of the paths can be pursued independently of the others. For example, actions that are critical to the strengthened transition agriculture path, such as financing the investments in education and improvements in labour markets, depend on capturing and reinvesting some of the agricultural surplus generated by the commercial smallholder path. A productive and growing commercial agriculture is critical to expanding the tax base for local governments, which are increasingly called upon to provide the education and health services needed to promote a generational shift out of poverty agriculture.

2) In increasingly buyer-driven value chains, food-system interventions should start from the consumer end

Better understanding of the forces driving consumer demand is a prerequisite for the food system to respond and compete successfully with imports. Consumers are the ultimate financiers of the agrifood system; hence, a better understanding of their

preferences and the determinants of their purchasing decisions is paramount for agrifood system stakeholders, from retailers through processors to farmers. As highlighted before, food demand is evolving from undifferentiated bulk commodities towards product attributes. Any producer who can market a product with a set of attributes that meets consumers' changing circumstances (income levels, time availability, changing knowledge of health and nutrition, etc.) will gain a competitive advantage. This is especially important since food imports and products from multinationals producing in the region are increasingly becoming benchmarks concerning price, consistency of supply, and various product quality attributes.

This need to be attuned to consumer demands applies particularly in the more dynamic upper-income market segments, where consumers are more quality-conscious, but is also true in the lower-income market segments for attributes such as convenience. This is evidenced by the strong increase in consumption of rice and wheat-based products across all income segments in urban and rural areas but also the penetration of lower-income markets by dried and processed food products in small package sizes that are affordable even to poor consumers.

Dependable data on domestic food consumption trends is very limited and usually only available at the bulk commodity level. Conducting market research is expensive and usually beyond the reach of SMEs in farming and processing. Making better information and analysis of food consumption and marketing trends available to agrifood system stakeholders would be a useful support function of the public sector. It would better inform the design of subsector and value-chain strategies and help farmers and processors in their investment decisions. In addition, the public sector could assist associations of small farmers or SMEs engaged in agroprocessing, value chain councils and inter-professional bodies to conduct market research, product testing and develop branding strategies, on a cost-sharing basis.

3) Enhancing productivity and market efficiency is paramount

Responding to market opportunities and increased competition requires productivity growth throughout the agrifood system, increased market efficiency and value-chain coordination. Increasing productivity to drive down unit costs throughout the agrifood system is the only economically sustainable way to enhance producer incomes and competitiveness while at the same time promoting lower-priced food for consumers. More productive use of land, water and other natural resources also reduces pressure from further expansion of production into environmentally fragile areas. Labour productivity growth increases returns to labour, making agriculture more attractive to the young and helps prevent labour shortages at critical stages of the cropping cycle. Increased market efficiency and value chain coordination lead to lower marketing costs, benefiting farmers and consumers alike.

Productivity growth requires a combination of new technologies, inputs and support services and improved access to these by women as well as by men; improved infrastructure and market access; more competitive marketing systems; and institutional innovations that reduce risks and transaction costs of specialization and trade.

At the farm level, sustainable intensification should be the main avenue towards productivity growth. Addressing the problems of agricultural resource degradation and declining land productivity in West Africa will require a more sophisticated approach than simply trying to duplicate the Asian Green Revolution model based on improved seeds, expanded irrigation and greatly increased use of mineral fertilizers. It will require tailoring solutions to local farming systems; shifting from a focus just on increasing use of mineral fertilizers to a focus on soil health; an increased focus on soil and water management rather than just expansion of irrigation; development of improved, locally adapted varieties through a range of breeding techniques; and integrated methods of pest control. These methods are much more management- and knowledge-intensive than conventional farming techniques, implying a need

for their gradual introduction combined with a substantial investment in improving the skill levels of farmers, input dealers, extension personnel and research staff.

In the downstream parts of the value chain, increasing productivity of post-harvest, processing and marketing operations requires (1) investments in improved infrastructure and equipment (transport, storage, electricity and communications), (2) reforms in rules that restrict competition (e.g. in the trucking industry), and (3) better management and improved efficiency of marketing systems and value chains. These measures are needed to enable West African producers to respond more effectively to increasing requirements for quality, competitive costs and consistency of supply in order to avoid being squeezed out of growing markets and, within these, from the most lucrative market segments.

Upstream, an enabling legal, regulatory and policy environment is crucial for the development of private-sector-based input supply chains. Such an enabling environment should encourage innovation and cost reduction through competition and economies of scale in procurement and distribution (e.g., though the creation of effective regional markets for inputs), while ensuring quality and consumer protection.

Across the board, capacity development through education, vocational training, research and institutional strengthening is essential.

4) Enhancing value addition to capture greater market shares

The analysis of production and trade data has shown that the domestic producers are losing market shares in the rapidly growing markets for higher value and value-added food products. Hence, opportunities to capture a larger share of these growing market segments should be pursued more vigorously.

Value addition can take various forms, including processing, sorting, grading, cleaning, storage, packaging and presentation. The appropriate strategy depends on the resource endowments, productive capacity and other location-specific factors in relation to identified market opportunities and market access conditions. Possibilities include:

- Expanding production and marketing of higher-value food categories with strong demand prospects for domestic markets, such as animal products, fruits and vegetables, and fats and oils. In export markets, demand is growing briskly for products like cashews, cocoa powder and shea butter if they meet standards for quality, traceability and compliance with good environmental and labour practices.

- Creating greater convenience in the products offered to consumers, in terms of time, space, and form utility – for example, production of products like instant noodles or gari that can be quickly prepared by those with no access to cooking facilities. Other forms of convenience include making products available in more convenient locations (e.g. along commuting routes), in a range of different serving sizes with clear preparation instructions and in already-prepared forms.

- Developing greater product differentiation within a given food category – e.g. a more differentiated set of grades for rice and meats and broader selection within fruits and vegetables, fruit juices with different degrees of natural fruit content and (in the export market) cocoa products produced and marketed with a broader range of attributes than just bulk cocoa powder (organic, free-trade, etc.). Packaging, preservation, freshness, and shelf-life are further paths for value addition through quality differentiation.

However, before investments in any value-addition strategy are made, it is crucial to ensure that real market demand is being met and that buyers are willing to pay a premium that is sufficiently high to compensate increased costs and leave a profit. Otherwise, adding value for consumers can result in income losses for producers.

There are important roles for the public sector to play in supporting this move to greater value addition while balancing producer and consumer interests. These include:

- Enhancing the awareness of nutritional values, health implications and safety concerns of different fresh and processed food products in order to enable consumers of all income brackets to make better-informed purchasing decisions.
- Strengthening national food safety systems to enhance their effectiveness and consumers' trust in these systems instead of relying on private standards or perceived higher food safety levels of international brands.
- Supporting domestic producers along the food value chain in adopting better hygiene and safety standards through awareness campaigns, capacity development and better access to improved processing technologies. Improving the marketing system for fresh produce, especially fruits, vegetables, meat and fish, through market infrastructure, transport and cold chains in order to reduce spoilage and losses and enhance the availability, safety and quality of these products into urban areas, thereby contributing to a more balanced diet.
- Encouraging the development and modernization of the food wholesaling industry, which in Asia has played a major role in connecting small producers with processors and retailers through quality differentiation and volume transformation.

5) More effective regional integration is critical to achieving many of the needed productivity gains

If West African Agriculture is to be competitive with large global actors such as Brazil, China and India, it needs to capture some of the scale economies those countries enjoy. To do so, West Africa requires more harmonized grades and standards for agricultural inputs and outputs, common procedures for approval and release of improved seed varieties, regionally coordinated systems of agricultural research and higher education, reform of rules limiting competition in transport services across the region and removal of restrictions that limit agroprocessors from sourcing agricultural products across national borders. Such measures are also critical in attracting increased private investment, as the allure of selling to a regional market of over 300 million customers is infinitely more attractive than trying to set up operations in 15 different countries, most of which have a small customer base.

The future of regional integration, however, depends critically on the behaviour of the big players, especially Nigeria. In terms of production, exports, imports, and effective demand, West Africa's Agricultural market is dominated by four big players – Nigeria, Ghana, Cote d'Ivoire and Senegal. These countries account for two-thirds of the population, over 80% of the GDP, three-fourths of agricultural imports and over 80% of agricultural exports. These countries also serve as major sources of demand for their neighbours and are recipients of large intra-regional labour flows. Policy decisions by these four countries – and especially Nigeria – will condition the future of ECOWAP. However Nigeria, like most countries in the region, has in the past set its Agricultural policies largely independently of its neighbours – for example, by imposing trade bans for selected products even from fellow ECOWAS countries. Its involvement in the design of ECOWAP has been surprisingly small given Nigeria's importance in the regional market, and the country's Agricultural Transformation Agenda appears to have been designed with little reference to ECOWAP. Similarly, the decisions of Ghana and Cote d'Ivoire to initial interim EPAs with the European Union in 2007, while necessary to preserve their preferential access as non LDCs to the EU market, complicated the completion of a West Africa-wide EPA. A critical challenge for the future of ECOWAP will be to emphasise areas of strong mutual interest among, on the one hand, the "big four" – particularly Nigeria – and, on the other hand, the other members of the Community. Without this type of alignment, the regional policy may end up being mainly a tool to help smaller countries adapt to the policies developed independently by Nigeria, Ghana, Cote d'Ivoire and Senegal.

6) Agricultural productivity growth needs to be complemented by measures to enhance resilience in a high-risk environment

The willingness of actors to adopt productivity-enhancing innovations throughout the agrifood system depends on their ability to manage risks in an environment subject to recurrent shocks. Without improved tools to manage these risks, productivity enhancing investments will either not be made or be tilted towards the better-off actors, with higher capacity to bear risks, with the result that the benefits of growth will go primarily to the rich. Key elements of a resilience agenda to complement an Agricultural growth agenda include:

- Introducing or scaling up climate-smart agriculture practices that increase the efficiency of resource use while enhancing resilience to climate variability and reducing greenhouse gas emissions. These practices are much more knowledge- and management-intensive than conventional agricultural techniques, implying a need to strengthen skills throughout the agrifood system.

- Strengthened agricultural research systems to develop plant varieties and animal breeds more tolerant to drought, pests and disease.

- Improving water and soil management, including but not limited to improved access to irrigation. Irrigation efforts should include experimentation with a range of scales and institutional arrangements to find the most-cost effective models. In rain-fed areas, the agenda includes improved techniques to manage and conserve water and soil moisture, in part through better soil management. More secure access to a reliable source of water not only reduces production risks but, because of that risk reduction, also increases the willingness of banks and other organizations to extend credit to farmers, further strengthening their resilience.

- Supporting measures to mitigate and cope with price volatility, such as improved storage, expanded regional integration, and warehouse receipt systems.

- Strengthening the security of land and water rights in order to reduce the risks of loss of productive assets, induce productivity-enhancing investments and facilitate labour mobility and hence diversification of income sources.

- Introducing weather-based crop insurance systems especially when linked with cell-phone-based payment that greatly reduce costs. In East Africa such insurance is showing increasing promise of becoming commercially viable.

- Supporting income diversification through both farm and non-farm activities linked to growing market demands.

IX. The way forward: key elements to enhance policy effectiveness

Achieving more rapid, broad-based and sustainable Agricultural growth in West Africa and putting in place the policy priorities outlined in the previous section requires three things:

- An improved policy environment that (i) induces greater Agricultural investment in productivity-enhancing technologies and institutional innovations by private-sector actors (including farmers), (ii) enhances quality and improves risk management throughout the agrifood system, and (iii) provides a more predictable and effective set of tools for improving the poor's access to food;

- Critical public-sector investments that complement and "crowd-in" additional private investment and address critical food policy objectives, such as improved risk management; and

- Strengthened policy implementation.

Improved enabling environment and investment climate

Addressing the productivity challenges facing West African Agriculture in order to achieve sustainable and broad-based growth requires investments. Given that Agriculture is a private-sector

activity, the bulk of these investments must come from the private actors at various levels of the agrifood system: farmers, input suppliers, processors, transporters, and providers of support services. Nevertheless, the ability and incentives of the private sector to make sustainable, productivity-enhancing investments depends to a large extent on the existence of a conducive investment climate. Shaping the incentive framework is a core function of public policies.

Key elements of an effective policy environment are its ***stabiliy and predictability, focus, participation and inclusiveness, coherence and ability to evolve over time*** as the economy and broader society evolves.

Policy stability and predictability

A stable and predictable policy environment is paramount in order to instil confidence in agrifood system operators of all scales to make substantial long-term investments. A key element of a stable and predictable policy environment is that government interventions in input and output markets are rule-based rather than ad hoc.

Important measures to enhance policy predictability include, for example, clearly spelling out the rules under which the state will restrict exports or imports to protect domestic producers or consumers and the conditions under which inventories from national food security stocks will be released. Specific actions needed to improve the predictability of policy include the development of transparent codes for management of national and regional food reserves and clear rules about when governments will undertake trade interventions. ECOWAS could play a key role by highlighting exemplary practices by member states and developing model legislation and management codes in these areas. Another important measure would be to improve data and information concerning critical indicators of agrifood system performance. Areas where data problems are particularly acute include the levels of intraregional trade flows and inventory levels for key staples, particularly cereals, at the farm and trader levels. Lack of reliable data about these core parameters often induces governments – fearing shortages – to impose export bans or release stocks.

A predictable policy environment requires a broadly shared consensus about the public sector's roles and priorities in Agriculture. Despite recent rhetoric about the need for public-private partnerships, there is frequently still a deeply rooted mistrust between the public and the private sector. Often, this mistrust arises because of recurrent policy reversals. These reversals undermine the confidence of the private sector that government policy pronouncements can be trusted, so the private sector is understandably reluctant to make the long-term investments needed to increase food system productivity. Government, in turn, often views such reluctance as proof of the incapacity or unwillingness of the private sector to respond, prompting another set of policy changes and generating a vicious cycle of policy instability.

These vicious circles can be observed in various input and output markets as well as in rural and agricultural finance. Examples include:

- Buffer stocks with unclear rules regarding stocking levels and trigger prices for purchases, sales, and trade, which discourage investments in private storage and the development of warehouse receipt systems and financing;
- Input and credit subsidies, which undermine the development of sustainable, private-sector supply chains and service providers;
- Debt forgiveness programmes prior to elections, which undermine repayment culture, leading to higher interest rates and increased reluctance of banks to finance Agriculture.

Breaking these vicious circles requires developing a broadly shared consensus about the role and priorities of public policies and investments in Agriculture among key stakeholders and disciplined governments sticking to their defined roles despite lobby pressures and short-term political priorities. Promoting broad-based stakeholder consultations and fostering stakeholder involvement in the very early stages of policy development can help develop this shared understanding of public- and private-sector roles.

Policy focus

Focus on the main building blocks rather than just on quick wins. Relaxing the key constraints to broad-based agricultural growth takes time. Agricultural research, a key public good with high returns, requires a long time horizon to generate improved technologies adapted to the variety of local conditions. The same applies to developing input and rural financial markets, addressing infrastructure constraints, and strengthening human and institutional capital, such as building more effective interprofessional organizations. Countries that managed to develop competitive Agricultural sectors and agro-industries such as Brazil, Thailand and Chile strengthened their infrastructures, invested in a constant stream of technologies and built strong institutions over several decades, rooted in a focused, long-term vision. Successful agricultural subsectors in West Africa, such as cotton in Francophone countries (until the early 2000s) and cocoa in Ghana and Côte d'Ivoire share similar characteristics. Even though the role of the public sector and the structure of the private sector differ in these examples, a common denominator is a gradual evolution of policies backed by consistent investments in public goods over long time horizons. On the other hand, crash programmes with overambitious short-term targets and based heavily on subsidies have little chance of leading towards long-term, self-sustained growth. While most strategy and policy documents clearly identify the key long-term structural constraints and related regulatory reform and investment priorities, in practice, West African countries have placed too much emphasis on short-term measures and subsidies.

Participation

Broad stakeholder participation and empowerment are essential to improving the quality of policies and policy processes. The CAADP process calls for strengthening broad multi-stakeholder engagement in policy formulation, implementation, monitoring and evaluation to enhance policy effectiveness and accountability and increase pressure on governments to continue successful policies beyond the next election. Success to date in translating this inclusiveness into practice has been mixed. Key challenges include organising and promoting collaboration among the very diverse agrifood system stakeholders, especially in the private sector beyond the farm, which includes agribusinesses ranging from artisanal processors and small traders to multinationals. Key actions needed include capacity building of different professional and interprofessional organizations and strengthening the platforms for them to participate in policy formulation, implementation, monitoring and evaluation. Central to success is involving these actors early in the initial stages of policy formulation, giving them specific responsibilities throughout these processes and requiring them to account for their performance.

Inclusiveness

While broad stakeholder participation is important to ensure coherence and accountability, specific efforts are needed to level the playing field and empower small and less organised actors' participation in the economic and political arenas (e.g., small farmers, traders, artisanal processors and food services providers and, among these, especially women and youth). Economic empowerment includes specific measures aimed at (1) enhancing access to productive assets, inputs and support services, training and skills development; (2) supporting collective action to engage more effectively with other food systems stakeholders; and (3) strengthening resilience and the capacity to manage risks. Political empowerment includes legal (civil) recognition as citizens and economic actors, along with capacity development and organizational strengthening for more effective participation in policy processes.

Policy coherence: agricultural policies alone cannot do the trick

Many of the key components in creating an enabling environment for rapid, inclusive Agricultural growth involve elements beyond the traditional mandates of ministries of agriculture. Policies regarding trade, the transport sector, industrial development, the financial sector, education and health are all critical. Improved policy coordination and coherence across ministries is therefore paramount. Strengthening arrangements to improve inter-ministerial coordination, such as the intersectoral coordination committees in Ghana and, at the regional level, the ECOWAS Inter-departmental

Committee on Food and Agriculture, will be important in improving intersectoral policy coherence. Critical to the success of these efforts is having a high-level champion for such coordination (for example, the Prime Minister or President) and vesting the coordinating structures with enough authority to induce cooperation across ministries and line agencies. Providing specific budget lines that can only be used in such interministerial efforts may be another way of helping induce better coordination.

Ability of policies to evolve

The need for stability does not imply that policies should remain static. Indeed, in an environment of constantly changing consumer demand, market conditions, technologies and agro-ecologic conditions, stagnation is a recipe for failure. Policies need to adapt to changing environments, but large, abrupt changes, as typified by some of the policy shifts in Nigeria in the past, may create more harm than good. Developing a more on-going approach to policy evolution requires consistent monitoring of policy implementation, strong market information systems and capable policy analysis units. This process should be enhanced by developing close links between policy-making agencies and broad stakeholder groups (e.g. through the platforms discussed above). It is also important that key policy measures not be ensconced in laws or administrative decrees that are difficult to change in a timely way if circumstances warrant.

Critical public investments

Increasing the level of public investments in and for Agriculture is important, but a better investment mix is even more important. Much of the recent increase in agricultural spending has been used for subsidies for private goods, mainly fertilizer and other inputs, as well as farm equipment. Concerning infrastructure, the bulk of the resources is dedicated to irrigation, which, while understandable in light of the challenges of climate change, raises questions about cost and long-term management of such facilities. In contrast, rural roads or market infrastructure receive comparatively little funding. The danger is that heavy spending on subsidies may crowd out other public investments in key public goods, which are critical to long-term growth, while at the same time discouraging private investments in the provision of the goods being subsidised.

In view of the limited public funds, the public sector should focus its investments in areas with the highest returns for long-term, broad-based growth and in which the private sector has limited ability or incentives to invest. While all governments need some short-term measures with quick wins and visible benefits, a better balance is needed between such measures and long-term investments and reforms that address crosscutting constraints and establish the key building blocks for sustained growth. The analysis in the AGWA study, in line with an ample body of literature, suggests the following key areas in this regard:

- ***Agricultural research, extension and related human capital development.*** Research and extension in the region have been generally underfunded and are faced with aging personnel, many of whom will soon move on to retirement. Given the small size of most national research systems in the region and the fact that major production basins for key commodities frequently transcend national boundaries, there are also major scale economies that could be captured through more effective regional coordination of national research and extension efforts.

- ***Infrastructure, especially, rural roads, market infrastructure, irrigation and a reliable supply of electricity,*** for reasons discussed above.

- ***Building the skill base for Agriculture in the twenty-first century.*** Transforming West African Agriculture into a modern driver of economic growth will require a profoundly different set of skills at all levels in the agrifood system than currently exists in most ECOWAS countries. Needed actions include strengthening basic literacy, particularly at the farm level; linking curricula (e.g. in mathematics and biology) in primary and secondary schools to applications in farming and agro-industry;

expanding vocational education programmes in the large range of technical skills needed by workers in a modern agrifood system; attracting more girls into the sciences, given the important role that women play in West African Agriculture; and broadening undergraduate university education in faculties of agriculture to include fields critical in downstream areas of the agrifood system, such as food science, packaging and logistics.

- ***Supporting collective action and institutional innovations for managing risks and reducing transaction costs.*** Many West African value chains face recurrent problems of vertical coordination, including high costs of product aggregation at the farm level and ensuring reliable supplies of products of consistent quality to processors and retailers. Strengthened collective action, both at the farm level (through producer organizations) and among different actors within the value chains (through value chain councils or interprofessional organizations) are needed if Agricultural growth in the region is to be broad based. An alternative to such collective action is for individual large firms to vertically integrate, handling all these tasks internally, but such a model excludes many of the smaller actors from participating in the system in any role other than that of hired labourers.

- ***Efforts to improve food safety and quality.*** Improving food safety has a clear public health justification. Food safety and quality improvements, however, are also traits increasingly important to West African consumers, particularly among the growing urban middle class. Firms that fail to deliver these are at a competitive disadvantage with imports.

Investments in hardware need to be complemented by policy and regulatory reforms. In most cases, investments in "hardware" such as infrastructure alone are not sufficient and need to be complemented by policy and regulatory reforms and investments in "software", such as institutional and human resource capacity to ensure their effective implementation. For example:

- Important investments have been made in recent years to improve road quality on major transport corridors. Nevertheless, the region faces the highest transport costs in the world. The main reasons for this are problems related to road governance and the structure of the trucking industry. Unless reforms in these critical areas are implemented, the potential benefits of large road infrastructure investments will not materialize.

- To complement and induce greater private-sector investments in storage and equipment throughout the agrifood system, legal and regulatory frameworks are needed to enhance agricultural finance, such as for leasing, warehouse receipt financing, collateral registries and credit bureaus.

- To reap the full benefits of public investments in infrastructure, capacity development and collective action in terms of stimulating private investments, further improvements are needed to increase the ease of doing business. ECOWAS countries generally rank in the bottom third of all countries in the world in terms of the World Bank's indicators of ease of doing business (licensing requirements, time to register a business, corruption, etc.); without improvement in these conditions, it is unlikely that West African Agriculture can become competitive globally for anything other than a few tropical products where the region has a strong locational advantage.

- A critical element in improving the regulatory environment is strengthening contract enforcement systems – e.g. through the establishment and strengthening of commercial courts and arbitration systems. Without reliable contract enforcement and commercial dispute resolution processes, transaction costs and risks of undertaking any sort of specialization and trade increase sharply and make it very difficult for the agroprocessors and modern retailers to ensure reliable supplies of agricultural products at consistent quality levels. Contract enforcement, however, needs to be coupled with improved arrangements for risk sharing and resilience within the agrifood system. In a risky environ-

ment, such as that which characterises West African Agriculture, a single-minded focus on contract enforcement without a concern for risk sharing among value-chain actors is a recipe for concentration of resources, as only the better-off will be able to absorb the risks inherent in contracting. Thus, the contract-enforcement agenda needs to go hand-in-hand with an agenda to help build resilience throughout the agrifood system through measures discussed earlier.

- Enhancing access to finance is another policy area and that requires a combination of investments in infrastructure and an enabling business and regulatory environment. Investments in roads, electricity, marketing infrastructure, and irrigation reduce risks and transaction costs for both financial institutions and their clients. Telecommunication infrastructure enables the use of point-of-sale devices and mobile-phone banking to expand access to financial services into remote rural areas. Political and economic stability is not only critical to expand lending but also savings mobilization, which tends to be even more important than lending services for the majority of rural households. Well-functioning value chains reduce some of the risks and transaction costs in agricultural finance and may partially substitute for conventional loan collateral. An enabling legal, regulatory and institutional framework for leasing and warehouse receipt finance and the establishment of collateral registries and credit bureaus can further unlock agricultural finance. Finally, risk management instruments are critical to enable financial institutions to invest a larger share of their loan portfolio in the sector.

Strengthening policy implementation

Improving policy implementation requires (1) strengthening the implementation, analytic, and monitoring and evaluation capacities of key agencies and organizations charged with implementation; (2) improving the data base upon which policy decisions are made; and (3) working to strengthen the alignment between the interests of the different countries, individual actors, and the region as a whole.

Strengthening implementation, analytic and M&E capacity

Given the ambitious scope of the national and regional CAADP programmes, there is need to upgrade sharply the implementation, analytic, and M&E capacity within ministries of agriculture and trade and among private stakeholders that will be counted on to implement the programmes. Such upgrading has several dimensions:

- At the level of national and local governments, many of those charged with implementing policies (e.g. customs officers at the border) frequently lack information about the content of regional and national policies, such as the ETLS. Moreover, even if they know about the policies, they often lack the operating budget and physical facilities to translate the rules into reality, as is the case with the food safety regulations discussed above.

- Local governments, particularly at the district and sub-district levels, are increasingly called upon to implement policies to manage natural resources and local agricultural support services, but have a very weak knowledge of many of these policies, managerial capacity and operating budgets to implement them, and training in M&E to evaluate their impact.

- CAADP programmes call for joint implementation of programmes by governments and stakeholders, such as producer organizations. Improving the managerial and organizational capacity of farmer and interprofessional organizations and of agro-input dealers is an important component of the regional and most national ECOWAP/CAADP plans. Such efforts need to be broadened to include consumer organizations and local governments, which are also key stakeholders in Agricultural development, and to strengthen their analytic (e.g. M&E) as well as managerial and organizational skills.

- Improved analytic capacity among a broader range of stakeholders will also strengthen and make more democratic policy design as well as implementation, allowing these stakeholders

to go beyond just demanding "a seat at the table" when Agricultural policies are formulated and bring their own analysis to bear in policy formulation, implementation, and monitoring and evaluation.

- It is unrealistic for all these organizations to develop their own in-house M&E and analytic capacity. ECOWAS and national governments, however, through co-funding programmes, could help them develop arrangements to mobilize West African technical expertise (for example, from universities in the region, local consulting firms and NGOs) to help raise their level of understanding of key issues and their skills in helping implement, monitor, and evaluate them.

- In terms of strengthening policy analytic capacity within national ministries, it would be very helpful if ECOWAS could continue to sponsor the types of training programmes and networking among the national CAADP design teams begun under ECOWAP to help build a stronger community of practice among such analysts. This would provide very useful opportunities for cross-country learning during the process of ECOWAP implementation.

- Within the ECOWAS Commission, strong capacity upgrading is needed in the Department of Agriculture, Water Resources and Environment (DAERE) charged with overall management of ECOWAP, the new Regional Agency for Food and Agriculture, the ECOWAS Agricultural Development Fund, and the ECOWAS M&E Unit, which is charged with not only coordinating the M&E of the regional programme but also helping to frame a common approach to M&E for the national programmes. The regional ECOWAS investment plan recognises the capacity-building needs of the DAERE, but given the scope of the proposed programmes, these efforts need to stress not only building in-house capacity but also increased capacity to mobilize regional expertise in West Africa's specialized agencies (e.g. within CILSS), universities, and independent think tanks.

- In addition to strengthening capacity within national and regional agencies charged with policy design, implementation, and M&E, there is a need to build regional centres of excellence, in West African universities and think tanks, that can engage in broader, more long-term policy analysis than line agencies in ministries of agriculture and in ECOWAS can. Currently within ECOWAS, this analytic role is carried out largely by ReSAKSS, but there is a need to broaden the number of centres to draw on the expertise in various research and teaching institutions in the region.

Data needs

Lack of comprehensive and reliable data, particularly concerning the downstream segments of the agrifood system, such as agroprocessing, wholesaling, logistics and retailing, plague the development of empirically based policies in West Africa. It also raises the probability of misallocation of public investments in the agricultural sector.

Incentive alignment

In the final analysis, the main challenge in policy implementation is the alignment of individual and group incentives. In ECOWAS, this involves two levels: (1) alignment of the incentives of individual member states versus those of the region as a whole and (2) incentives facing individual agents for enforcement of regional or national policies.

In terms of aligning national and regional incentives, the decision in the regional CAADP programme to make some of the regional programme funding conditional upon national governments harmonising their policies and respecting their commitments to open trade is an important step forward. It should be recognised, however, that on some matters, the economic interests of the ECOWAS member states will differ so much that reaching a regional consensus will be very difficult. Regional policy thus needs to be modest, focusing first on the "low-hanging fruit" where national interests largely converge, as there is already plenty of policy work to do in these areas.

The alignment of individual and group interests in policy implementation is particularly linked to

the problems of bureaucratic red tape and rent-seeking by those charged with policy implementation. In this regard, increasing salaries of government agents, such as customs and police officials, may help reduce their incentives for such behaviour, as would linking the funding of their agencies to performance on independently monitored indicators of ease of doing business. Perhaps the strongest incentives for transparent and effective policy implementation will result from encouraging strong national and regional private-sector and civil-society stakeholder groups and a free press that can act as counterweights to inefficient and/or corrupt policy implementation.

Chapter 1

Introduction

1.1 Why a study of Agricultural policy in West Africa?

After a long period of neglect, West Africa's Agriculture is back on the policy agenda. The region's governments and their development partners now clearly recognise the sector's vital role for economic growth, job creation and poverty reduction. The African Union's adoption of the Comprehensive Africa Agriculture Development Programme (CAADP) and the Maputo Declaration in 2003 marked a new commitment of African governments to the sector. This was followed in 2005 by ECOWAS's adoption of its Regional Agricultural Policy for West Africa (ECOWAP), the subsequent development and adoption of ECOWAP/CAADP compacts by ECOWAS and by all 15 of its member states and the development of investment plans to implement those agreements. The 2008 food price crisis was an important milestone in bringing Agriculture back into the spotlight, and the growing interest of outside private-sector investors in West African agriculture has further brightened that spotlight[6].

At the same time, the context within which the sector operates has changed radically over the past 30 years. West African societies are in the midst of rapid demographic and socioeconomic transformations, with population growth, urbanization, rising incomes and globalization driving dramatic changes. Forty-five percent of the ECOWAS population is now urban compared to only a third in 1990. By 2018, more people in ECOWAS will live in cities than in rural areas, and this urban population, both poor and middle-class, is making striking new demands on the food system. They are demanding increasingly diverse, convenient, and prepared forms of food, offering new market opportunities for West African producers and processors if they can successfully compete with imports. A huge "youth bulge" is entering the labour force every year, and a modernising agriculture and broader agrifood system offers the potential to generate many of the desperately needed jobs for these young people. While farming is still the most important sector in terms of employment and an important contributor to GDP in most countries, economies are diversifying, and other sectors, including agroprocessing, are gaining importance and offer potential for helping meet the employment challenge.

The Agricultural policy environment has also evolved dramatically; democratization, decentralization and liberalization have broadened the number of actors involved in policy processes and the range of issues in policy debates. An example of the new issues facing policy makers is West Africa's emerging "double burden of malnutrition", as problems of over-nutrition (overweight and obesity) begin to emerge, particularly among urban women, alongside continuing problems of undernutrition. In addition, as regional integration has gained momentum, the role of regional organizations in shaping policies in and for agriculture has increased. Along with these new policy dimensions, West Africa's agrifood system faces ongoing challenges of how to deal with a declining natural resource base, recurrent natural and human-caused disasters, climate change, and political instability.

These transformations in West Africa are taking place in an evolving international environment characterised by higher and more volatile climatic and market conditions and growing competitive pressures. Several international trends stand out: (1) the growing importance of emerging economies, both as markets for West African agricultural

6 The increased interest in Agricultural policy is reflected in a number of recent policy studies and strategy documents (e.g., Angelucci et al., 2013; Elbehri, 2013, Kanu et al., 2014 and West African Sub-regional Office UNECA, 2012).

exports and as sources of food imports, technologies and investments; (2) an increasingly globalized and concentrated agribusiness and food retail sector, expanding both its sourcing and sales in developing countries; (3) world agricultural markets shifting from a period of structural oversupply and declining prices towards one of higher and more volatile prices; (4) higher energy prices and increasing integration of world agricultural and energy markets and (5) eroding confidence in trade-based food security following export bans by suppliers of key food staples during the 2008 food price crisis, coupled with the stalemate until recently of international trade negotiations under the Doha Round.

These changes create promising opportunities but also daunting challenges for West African agrifood systems and render agricultural policy making increasingly complex. In addition to agricultural production and food security, issues related to sustainable resource management, nutrition, competitiveness, employment generation, and linkages with other economic sectors are becoming ever more critical components of agricultural policy. It is clear that in order to shape the transformation of agrifood system along various dimensions, agricultural policy making needs to transcend the traditional realm of agricultural-sector institutions primarily dealing with on-farm production. Policy makers in the region face the challenge of how to coordinate and implement agricultural and non-agricultural policies in order to shape the region's structural transformation in ways that contribute strongly to several key objectives simultaneously. These include broad-based economic growth, job creation, poverty reduction, food security and satisfying increased consumer demands for convenient and nutritious food, while doing all of this in an environmentally, economically and socially sustainable way.

The greater openness of regional and international markets in recent years offers new opportunities for growth and investment, but also raises serious concerns about the organization and control of West African agrifood systems. Policy makers and the broader population are concerned not only about whether agriculture and the broader food system can grow rapidly enough to meet the multiple demands being put upon it, but also what shape that growth will take – how inclusive it will be and the extent to which West Africans will have a voice in shaping its trajectory (Kanu et al., 2013). Among the many challenges faced by policy makers, two lie at the heart of many of the policy debates in West Africa:

- ***The food price dilemma.*** Food prices play two critical roles in developing economies (Timmer *et al.*, 1983). On the one hand, they serve as incentives for farmers, traders, and processors to produce; hence, higher prices act as a stimulus to Agricultural production. On the other hand, food prices are also a major determinant of the real incomes of the poor, who devote a large proportion of their revenues on food. Hence, higher prices impoverish those poor people who depend on the market for the bulk of their food. Thus, "getting prices right" for Agriculture is a delicate balancing act, involving weighing the interests of producers and consumers. The long-run solution to the dilemma is to stimulate productivity growth at every stage of the agrifood system through technological and institutional innovations, which allow food production to remain profitable at a lower per-unit cost for consumers. But such productivity growth takes time, so in the short- and medium-term, the dilemma remains. This dilemma has been particularly evident in West Africa since 2008, with policy makers struggling to find ways to balance consumer demands for lower food prices with the desire to increase incentives to farmers to expand their production.

- ***The farm and agroprocessing size and ownership debate.*** While policies in most ECOWAS countries endorse the notion of "family farming" as a foundation of the agricultural development strategy, in practice there is a growing debate in the region about the appropriate mix of large-scale (including foreign-owned) commercial farming and smaller-scale farming enterprises. A similar debate concerns policies towards agroprocessing. The debate has several dimensions, including empirical questions about possible scale economies in different

types of operations, the impact of enterprise size and capital-intensity on job creation, the role of foreign ownership and control, the environmental impacts of different sizes of operations and the vision of the broader role of Agriculture in society. It is also closely tied to the ongoing political-economic debate about large-scale land acquisitions by foreign and domestic investors (so-called "land grabs").[7]

Meeting all these policy challenges requires addressing the constraints to better agrifood system performance all the way from input provision to delivery of the final product to the consumer. Therefore, in this study we refer to "Agriculture" (with a capital "A") as including the entire agrifood system, from input provision to the consumer's table. (Small "a" agriculture in this study refers to farming, inclusive of both crops and animal production.).

1.2 Background, purpose and scope of the study

In view of the challenges and opportunities facing West African Agriculture, the African Development Bank (AfDB), with financial support from the Government of France, approached the Food and Agriculture Organization of the United Nations (FAO) and ECOWAS about conducting a joint analytical study. The purpose of the Agricultural Growth in West Africa (AGWA) study is to (1) contribute to a better understanding of the evolving context for Agricultural growth in West Africa by examining more closely the drivers and trends affecting the demand for and supply of agrifood products; (2) analyse the ability of the Agricultural sector to respond to those trends; (3) review the evolution and appropriateness of the policy environment to respond to these changes; and (4) distil the main implications for future policy priorities. In view of the growing importance of value addition, Agriculture is regarded in the broader context of the agrifood system. While a full analysis of the agrifood system in its entirety "from seed to waste" is beyond the scope of a single study, the AGWA study pays particular attention to some of the downstream segments such as agroprocessing, trade, food consumption, and food retailing, as well as some value chains of key importance in the region.

The AGWA study examines these issues from the regional perspective of the 15 ECOWAS member countries, complementing previous studies of Agricultural development at the national, continental and global levels. The purpose is to collate scattered and fragmented evidence and analysis on the various aspects of the West African agrifood transformation – including production, consumption, trade, value chains, agroindustries and retailing – in one volume, in order to make it available to a broad audience interested in agrifood policies and investments in the region. Such compilation not only facilitates access of a broad range of stakeholders to the current body of evidence and analysis on the subject but also highlights linkages, synergies and trade-offs among different policy domains, a prerequisite for evidence-based policy making and coordination beyond the narrow confines of traditional sectoral policies. This study therefore targets a broad audience including policymakers and practitioners in national governments, regional organizations, and development partners as well as civil-society and private-sector organizations engaged in agrifood system related policy domains. Students and scholars in the region and elsewhere studying West African Agricultural development may also find the study useful. Given its scope and thematic breadth, it mainly draws on secondary data and a large body of literature. In order to carry out a first literature review and data analysis and to fill information gaps, the AGWA team also commissioned selected background papers and carried out limited fieldwork in areas in which secondary information was grossly inadequate. The fieldwork focused primarily on understanding changing consumer attitudes that are driving the rapidly evolving food consumption behaviour in West Africa's burgeoning megalopolises and the responses of agroprocessors, supermarkets and fast food restaurants to these changes.

7 As of mid-2012, the Land Portal, a joint effort by FAO and several other organisations to develop and maintain a global database on international land transactions, listed 98 large agricultural land acquisitions by foreign entities, totalling over 3.8 million hectares, in the ECOWAS zone (http://landportal.info/landmatrix/get-the-detail/by-target-region

FAO led the implementation of the study, in close collaboration with AfDB and ECOWAS. Implementation proceeded in three stages. In the first stage, FAO staff conducted a scoping study that, based on an initial review of existing literature, data sources and on-going research initiatives by development partners and research institutions, identified: (1) the main structural drivers and trends of supply and demand in West African agrifood systems, (2) the policy challenges and opportunities these supply and demand dynamics imply, (3) the extent to which the various issues mentioned are addressed by existing literature and analysis, and (4) critical gaps that needed to be filled to have a well-informed empirical base for policy making.

Based on the initial analysis in the scoping paper and feedback obtained during a stakeholder workshop held at the end of the scoping phase in Rome, the AfDB, FAO and ECOWAS agreed that the next phases of the study should examine a broad range of trends and policy issues affecting the agrifood system transformation at national and regional level rather than focusing on individual value chains or policy areas. The purpose of this broad focus would be to highlight the synergies and connections among the various policy domains, distil the relevant policy implications, and build upon and complement other more specific studies rather than duplicate their work. The study complements the discussion of generic trends, issues and policy implications, however, with specific examples at the level of individual countries and value chains.

During the second phase of the study, an in depth literature review was conducted on several thematic areas, and the FAO commissioned background papers in order to review and analyse existing studies and secondary information and address selected analytical and knowledge gaps. This broad review and synthesis of existing information was complemented by selected field work focussing on particular issues where secondary information and analysis was particularly weak or insufficient. The field work allowed examining certain issues in greater depth and discussing them with key stakeholders in the food system. Field work was conducted in the Greater Accra Metropolitan region in Ghana and the Lagos-Ibadan corridor in Nigeria. These two regions were chosen because they are at the forefront of food systems transformation in terms of urbanization, a growing middle class, changing food consumption patterns and growth of modern food retailing and agro-industries. The focus was on further exploring the attitudes of urban consumers in Accra and Lagos towards different food products and different food retail outlets. The AGWA team also held discussions with managers and vendors in different food retail outlets, with agroprocessors in the Lagos-Ibadan corridor, and with poultry producers in Ghana.

In addition to stakeholder consultations during the fieldwork, the AGWA study team invited the network of West African farmer organizations (ROPPA) to contribute background papers highlighting its perspectives on the changing policy context in the region, along with experiences and opportunities of family farmers' participation in Agricultural value chains.

The background papers, the scoping paper and other empirical information served as inputs to the third stage, the development of this final report.

1.3 The AGWA final report: a reader's guide

Following this introductory chapter, the main body of the report is structured into four parts. Each part consists of two to three chapters addressing the major thematic areas of the study. After the four parts, a final chapter presents the main findings, policy implications and building blocks for the way forward. The chapters are supplemented, in Parts I and IV, by focus sections – in essence, mini-chapters of a few pages each – that provide more detailed discussion of key issues, such as the challenges the region faces in dealing with price volatility and the role of producer groups in shaping Agricultural policy.

In order to facilitate the reader's orientation through the book, the following paragraphs provide a brief overview of the content of the

various parts, chapters and focus sections parts. A more detailed overview appears at the beginning of each part, and the main salient issues and findings are briefly summarised at the end of each chapter.

Part I

Part I (Chapters 2-4) examines (1) the economic, technological and social forces driving growth and change in West Africa's agrifood system; (2) how Agricultural production has responded to those drivers, and (3) the role that international and regional trade have played in the region's Agricultural performance, both in terms of exports and of the region's growing reliance on food imports. **Chapter 2** describes five major forces driving structural change in the West African agrifood system, ranging from demographic transformations to globalization and technological revolutions. The chapter analyses how these changes have evolved in the ECOWAS region as a whole and discusses their wide variation across the individual countries. **Focus Section A**, which follows Chapter 2, further explores the challenge of dealing with price volatility – a concern that has become more acute since the global price spikes of 2008, but which in reality has long plagued West African Agricultural markets.

Chapter 3 next examines how West African Agriculture has responded, in terms of increased production and productivity growth, to the driving forces discussed in Chapter 2. After briefly describing the region's diverse production base, the chapter surveys region-wide trends in agricultural production over the past 30 years, as well as its variation across countries. It then analyses the degree to which this growth has been driven by improvements in productivity versus just expansion of production using existing technologies. The chapter documents a very mixed production response to the rising demand for West African Agricultural products described in Chapter 2. The chapter then goes on to analyse the major reasons for this uneven response, ranging from limited market access of many farmers in the region through underfunded research and extension systems to a weak policy environment.

West African countries have long been deeply involved in international trade, both with overseas partners and with their neighbours. **Chapter 4** analyses West Africa's agricultural trade performance over the past 30 years, both overseas and intra-regionally. The chapter examines the patterns of West Africa's growing food imports and its Agricultural export performance in light of both the drivers described in Chapter 2 and the mixed supply response discussed in Chapter 3. The chapter also documents the changing composition of the region's Agricultural imports and exports and their geographic concentration, spotlighting the predominant role that Nigeria, Côte d'Ivoire, Ghana and Senegal play in the region's overseas trade. The chapter concludes by describing the important but poorly documented role that intra-regional Agricultural trade plays in providing remunerative markets to West African producers and in improving the food security of its consumers.

Part II

Part II (Chapters 5-7) examines the evolving nature of demand facing West African agrifood systems in both domestic and regional markets. It does so at three different levels of analysis. **Chapter 5** uses food-balance-sheet (FBS) data for each of the 15 ECOWAS countries over a period of 30 years to document how per capita availability of macronutrients (calories, protein and fat) as well as the availability of different food groups (starchy staples, animal products, fruits and vegetables, etc.) has evolved from 1980 through 2009. The per capita availability figures (a proxy for average per capita consumption) show striking changes in dietary patterns across the region over this long period, marked by a general improvement in food availability and dietary quality, but with wide variations across countries. The negative impacts of wars and civil strife on per capita availability and diet diversity are clearly apparent, as are the positive effects of strong economic growth in countries such as Ghana and Cape Verde.

Chapter 6 goes beyond the FBS analysis of national average per capita food availability to examine how food expenditures vary between urban and rural areas and among different income groups. To

do so, it analyses results from budget-consumption studies carried out in 9 of the 15 ECOWAS countries. These studies permit investigation of how income growth and urbanization have affected, and are likely to affect in the future, demand for key food items among different population groups. Several of the studies present estimates of income-elasticities of demand and marginal budget shares for different foods in the various countries, parameters that lend insight into the magnitude of likely changes in future demand for different food products in these countries.

Chapter 7 complements the quantitative analyses of the Chapters 5 and 6 with qualitative results from focus-group discussions with consumers and retailers in Accra and Lagos about how key factors, including lifestyle changes, prices, and convenience, are driving food choices in West Africa's megalopolises. These results lend insight into the challenges that West African food producers, processors and retailers must face if they are to compete successfully with imported food products.

Part III

Part III (Chapters 8-10) analyses how retail food distribution systems, agroprocessing industries and agricultural value chains in the ECOWAS zone are responding to the forces of structural change described in Part I and the rapidly evolving demand described in Part II. Starting at the consumer end of the system, **Chapter 8** analyses the status and likely evolution of food retailing in West Africa, with a particular emphasis on modern retailing formats. The role of supermarkets and fast-food restaurants in transforming supply chains and food retailing systems in Asia, Latin America and Southern Africa has been widely studied in recent years, with strong concerns about how smallholder farmers may be excluded from this growing market segment. Yet little was known about the growth perspectives of modern food retailing in West Africa, so the AGWA researchers were asked to investigate this topic. Chapter 8 begins by reviewing the evidence on the emergence and growth of modern food retailing throughout Africa and then focuses on its growth in Nigeria and Ghana. The chapter highlights the opportunities and challenges that modernization of food retailing presents for actors throughout the West African agrifood system as well as the continued importance of traditional retailing formats in the future.

Chapter 9 analyses the structure and performance of agroprocessing in the region, putting particular emphasis on the heterogeneity of this segment of the agrifood system. Agroprocessing in West Africa is characterised by a dichotomy between relatively few industrial-scale firms (many of which process imported inputs, such as wheat and milk powder) and a large number of small-scale enterprises, frequently operating in the informal sector. The chapter highlights the challenges faced by each segment, ranging from the difficulties of the large-scale operators in acquiring reliable supplies of raw products with consistent quality to the challenges of the smaller operations in upgrading the quality and presentation of their finished products.

Chapter 10, the most detailed chapter of Part III, analyses how specific value chains are adapting to the various forces of structural change and demand and identifies how the characteristics of different value chains affect their ability to compete in the new global environment facing West African Agriculture. The chapter illustrates these points by focusing in detail on six value chains that illustrate many of the challenges and opportunities facing West African Agriculture: rice, cassava, poultry, dairy products, cocoa and cotton. This is followed by a briefer discussion of several other value chains for which demand prospects are promising. These include vegetable oil, ruminant livestock, maize, cowpeas, fruits for processing, and cashews.

Part IV

Part IV (Chapters 11 and 12) analyses the implications of the issues discussed in the preceding chapters for public investments and policies at the national and regional levels, including trade policies. These investments and policies aim at spurring Agricultural growth, job creation, and regional integration. Three focus sections delve more deeply into specific policy issues that have been widely debated in West Africa.

Chapter 11 begins by briefly analysing the evolution of Agricultural policies in the region from independence through the structural adjustment period of the 1980s and 1990s to the "rediscovery of agriculture" by African governments and their development partners starting around 2000. It then focuses more in detail on the current Agricultural policies and investment plans in the region, both at the national and regional levels. This includes a discussion of the regional economic policies of WAEMU and ECOWAS, known respectively as the Politique Agricole de l'UEMOA (PAU) and the ECOWAS Agricultural Policy (ECOWAP). The ECOWAP process was merged with CAADP in 2005, and this merged programme (known as ECOWAP/CAADP) has been instrumental in reshaping Agricultural policies and investment programmes at the national and regional levels. Chapter 11 analyses these policies and investment programmes at the national level – highlighting common elements as well as divergent approaches across the 15 ECOWAS member states – and at the regional level to examine how well they respond to the challenges outlined earlier in this report. In so doing, the chapter also examines the coherence between national and regional policies, thereby identifying "policy gaps."

Following Chapter 11, **Focus Sections B, C, and D** discuss policy issues that have become increasingly crucial in recent years: (1) the role of stakeholder groups, particularly the experience of the regional federation of producer organizations, ROPPA, in helping shape policy design and implementation; (2) policy options for improving farmers' access to inputs such as fertilizers, improved seeds, pesticides, and veterinary products; and (3) policies affecting land tenure and water rights.

While the focus in Chapter 11 is primarily on Agricultural investment and development strategies for the domestic market, **Chapter 12** analyses policies affecting the region's trade, both among ECOWAS member states and with the outside world. The chapter focuses on progress to date in promoting regional economic integration in the context of ECOWAS and WAEMU, including the promotion of free trade within these economic communities and the creation of a Common External Tariff and accompanying safeguard mechanisms to mediate their trade with the rest of the world. The chapter also examines ECOWAS's challenges in developing a region-wide Economic Partnership Agreement with the European Union and how regional integration efforts have interacted with its member states' obligations to the World Trade Organization. Chapter 12 also discusses the tools available to the region, beyond the proposed safeguard mechanisms, to deal with the price volatility it faces both within West Africa and in global markets. Finally, the chapter examines the coherence between Agricultural and trade policies in light of the structural changes underway in West African economies.

Major findings and policy implications

The final chapter (Chapter 13) presents the main findings and policy implications of the AGWA study and proposes a way forward to address the challenges and opportunities facing West African Agriculture.

West Africa's wide range of agro-climatic zones creates many opportunities to expand consumers' availability of food and farmers' access to profitable markets through regional trade.

Rapid population growth and urbanization are putting tremendous strain on the market and transportation infrastructure upon which the West African agrifood system depends.

To help meet its rapidly growing demand for food, West Africa's international and regional trade in foodstuffs is expanding rapidly.

Part I

Transformation of agrifood systems in West Africa: drivers and trends

This part of the report examines the economic, technological and social forces driving Agricultural growth and structural change in the agrifood system in West Africa; how Agricultural production and food supply in the region have responded to those drivers; and the role that Agricultural trade has played over the past 30 years both in terms of export performance and of the region's growing reliance on food imports.

Chapter 2 begins Part I by describing the five major forces driving structural change in West African Agriculture: (1) demographic changes; (2) the region's uneven but ongoing structural transformation of its economy; (3) variations in income growth and its distribution (including changes in poverty rates, the rise of the middle class, and the evolving nature of food insecurity in the region); (4) continuing economic and political vulnerability due to recurring natural and human-created crises, environmental pressures including climate change, and price volatility; and (5) globalization and technological change. The chapter highlights region-wide trends in these driving forces as well as the wide variation within them across the 15 countries of ECOWAS. The challenge of price volatility, which has long plagued West African Agriculture but which has become especially acute since 2008, is further explored in Focus Section A, which immediately follows Chapter 2.

Chapter 3 then examines how West African Agri-culture has responded, in terms of increased production and productivity growth, to the driving forces discussed in Chapter 2. It begins by briefly describing the region's diverse production base, and then goes on to examine region-wide trends in production of Agricultural commodities over the past 30 years. The chapter next analyses whether the production growth has been driven primarily by growth in resource productivity or simply through expansion of production using existing technologies. The picture that emerges from this analysis is of a very mixed response to the rising demand for West African Agricultural products described in Chapter 2. The chapter then goes on to discuss the major factors, ranging from limited market access of many farmers in the region to a weak policy environment, that have contributed to this mixed supply response.

Chapter 4 next analyses West Africa's Agricultural trade performance, both with the rest of the world and within the ECOWAS region, over the past 30 years in the context of the drivers discussed in Chapter 2 and the mixed domestic supply response discussed in Chapter 3. Chapter 4 highlights the highly variable degree to which different ECOWAS countries are dependent on Agricultural exports and imports. For the region as a whole, agricultural goods account for less than 20% of total merchandise trade; this low share is due largely to the importance of mineral and oil exports of countries like Nigeria and the consequent capacity to import a wide range of both Agricultural and non-Agricultural products. Yet for some countries agricultural exports and imports dominate their trade balances. Chapter 4 highlights the changing composition of food imports into the region and the region's growing dependence on imports of certain key food commodities such as rice, wheat, dairy products and poultry. The chapter next

examines agricultural export performance over the past 30 years, including analysis of the changing composition of exports, the commodities for which West Africa's comparative advantage appears to be improving and those for which it is falling. The chapter concludes with a discussion of the strategically important but poorly documented role of intra-regional Agricultural trade, highlighting the key products traded intra-regionally and the potential and the constraints to expanding that trade.

Part I thus sets out the basic picture of the forces driving Agricultural performance in the region and how West African Agriculture has responded to those forces. This sets the stage for more detailed analyses in Part II of how demands for Agricultural products are changing in the region and, in Part III, how retailers, agroprocessors, and specific value chains are responding to those changing demands.

Chapter 2

Drivers of Structural Change in West African Agriculture

This chapter sets the scene for subsequent chapters by describing the main drivers and trends that have been shaping the evolution of food demand and consumption and will continue to do so in the future, as well as the structure and performance of West African Agriculture. At first glance, some of these drivers may appear to affect primarily demand for agricultural products, while others influence the supply. Upon closer analysis, however, most affect both. For example, population and income growth both clearly increase the demand for food in the region, but they also strongly influence the supply of labour and capital to West African farmers and agroprocessors. The chapter examines the overall trends for the region of these different drivers and highlights the very large variation across the 15 countries of ECOWAS with respect to many of them.[8]

The chapter analyses five major drivers:

- Demographic change, including rapid population growth, urbanisation and the changing geographical distribution of people within the region;
- The region's on-going but uneven structural transformation of its economy;
- Income growth and changes in its distribution, including a discussion of poverty rates, food security, and the growth of the middle class;
- Continuing vulnerability of overall economic and political progress to due to the recurrence of natural and human-created crises in the region, growing pressure on the region's natural resources, climate change and price volatility; and
- Globalisation and technological change, including the involvement of new global actors in the West African economy, the information revolution and the biotechnology revolution.

2.1 Demographic trends

Demographic changes have been characterised by rapid population growth, high urbanization rates and increasingly unequal population distribution.

2.1.1 Rapid population growth

West Africa's population has been growing fast and this trend is projected to continue until the middle of the century. Over the last thirty years, West Africa's population more than doubled, growing by 2.7% annually. In absolute terms, this translates into an increase from 139 million inhabitants in 1980 to 301 million in 2010. This growth is projected to continue through mid-century, albeit at a declining rate, and the regional population is expected to reach 388 million by 2020, 490 million by 2030 and 736 million people by 2050 (UNDESA, 2011). Growth rates vary widely by country, ranging from 1% per annum for Cape Verde, which is far along on its demographic transition and has heavy outmigration, to 4.5% in Liberia, which is

8 Although this chapter analyses the trends in these key drivers, it does not use these to construct scenarios of alternative possible growth paths for West African economies. For such an analysis, see AfDB, 2011a.

Table 2.1 *Past and projected population estimates of ECOWAS member states*

Country	1950	1990	2010	2020	2030	2050	Share of ECOWAS Total in 2010	2005-10 Growth Rate
	(millions of inhabitants)							(%)
Benin	2.3	4.8	8.8	11.5	14.6	21.7	2.9	3.0
Burkina Faso	4.3	9.3	16.5	22.1	29.1	46.7	5.5	3.0
Cape Verde	0.2	0.3	0.5	0.5	0.6	0.6	0.2	1.0
Côte d'Ivoire	2.6	12.5	19.7	24.5	29.8	40.7	6.6	1.8
The Gambia	0.3	1.0	1.7	2.2	2.8	4.0	0.6	2.8
Ghana	5.0	14.8	24.4	30.3	36.5	49.1	8.1	2.4
Guinea	3.1	5.8	10.0	12.8	15.9	23.0	3.3	2.0
Guinea-Bissau	0.5	1.0	1.5	1.9	2.3	3.2	0.5	2.0
Liberia	0.9	2.1	4.0	5.2	6.5	9.7	1.3	4.5
Mali	4.6	8.7	15.4	20.5	26.8	42.1	5.1	3.1
Niger	2.5	7.8	15.5	22.1	30.8	55.4	5.2	3.5
Nigeria	37.9	97.6	158.4	203.9	257.8	389.6	52.7	2.5
Senegal	2.4	7.2	12.4	16.0	20.0	28.6	4.1	2.7
Sierra Leone	1.9	4.0	5.9	7.2	8.5	11.1	2.0	2.6
Togo	1.4	3.7	6.0	7.3	8.7	11.1	2.0	2.2
ECOWAS Total	**69.8**	**180.5**	**300.8**	**388.1**	**490.9**	**736.8**	**100.0**	**2.6**

Source: UNDESA, 2011.

experiencing a return of people who left the country during the civil war. Table 2.1 shows the trends by country and the dominance of Nigeria in West Africa's overall population.

West Africa also has a predominantly young population with 44% of the population below the age of 15. This age structure implies a huge need for job creation in the coming years, as the 80 million young people between the ages of 5 and 14 will enter the labour market over the next decade.[9] In an era of globalization, with increasing exposure to digital media, rural youth are becoming more aspirational and finding traditional farming, characterized by drudgery, low incomes and high risks, less attractive. They increasingly flock into towns seeking employment in the informal services sector. Likewise, a predominantly young population will accelerate new lifestyle trends and changing consumption patterns, spreading from metropolitan areas into the hinterland.

9 Population figures are from UNFPA (2013)

2.1.2 Urbanization

West Africa's population is rapidly urbanising. Between 1980 and 2010, urban populations grew 4.5% annually, against 1.8% in rural areas. This trend is expected to continue between 2011 and 2050, with urban population growth projected at 3.7% per annum compared to only 0.5% in rural areas (UNDESA, 2011). Already by 2020, half of the projected 388 million people residing in West Africa will live in urban areas, and urbanization it is expected to reach 65% by 2050 (UNFPA, 2010).

While urbanization increases at a fast pace across the region, there are considerable differences between countries in their current urbanization levels, ranging from 61% in Cape Verde to 17% in Niger (Table 2.2).

Several authors have questioned the accuracy of official demographic and urbanization statistics (Hitimana *et al.*, 2009b; Hitimana *et al.*, 2009c;

Table 2.2 *Urbanization rate estimates, 1990 – 2050*

Country	1990	2010	2020	2030	2050
			(%)		
Benin	34.5	44.3	50.7	56.5	66.7
Burkina Faso	13.8	25.7	34.0	41.5	55.2
Cape Verde	44.1	61.8	68.7	73.4	79.5
Côte d'Ivoire	39.3	50.6	57.5	63.1	72.1
The Gambia	38.3	56.7	61.6	65.8	73.3
Ghana	36.4	51.2	57.5	62.8	72.3
Guinea	28.0	35.0	40.2	46.2	58.4
Guinea-Bissau	28.1	43.2	49.7	54.7	63.1
Liberia	40.9	47.8	51.8	56.4	66.1
Mali	23.3	34.3	40.8	47.1	59.2
Niger	15.4	17.6	20.6	25.3	37.1
Nigeria	35.3	49.0	55.0	60.8	71.3
Senegal	38.9	42.3	45.7	50.8	61.4
Sierra Leone	33.0	38.9	43.0	48.2	59.5
Togo	28.6	37.5	42.5	47.9	59.3
ECOWAS[a]	**31.9**	**42.4**	**47.9**	**53.4**	**63.6**
West Africa[b]	**33.2**	**44.3**	**49.9**	**55.4**	**65.7**

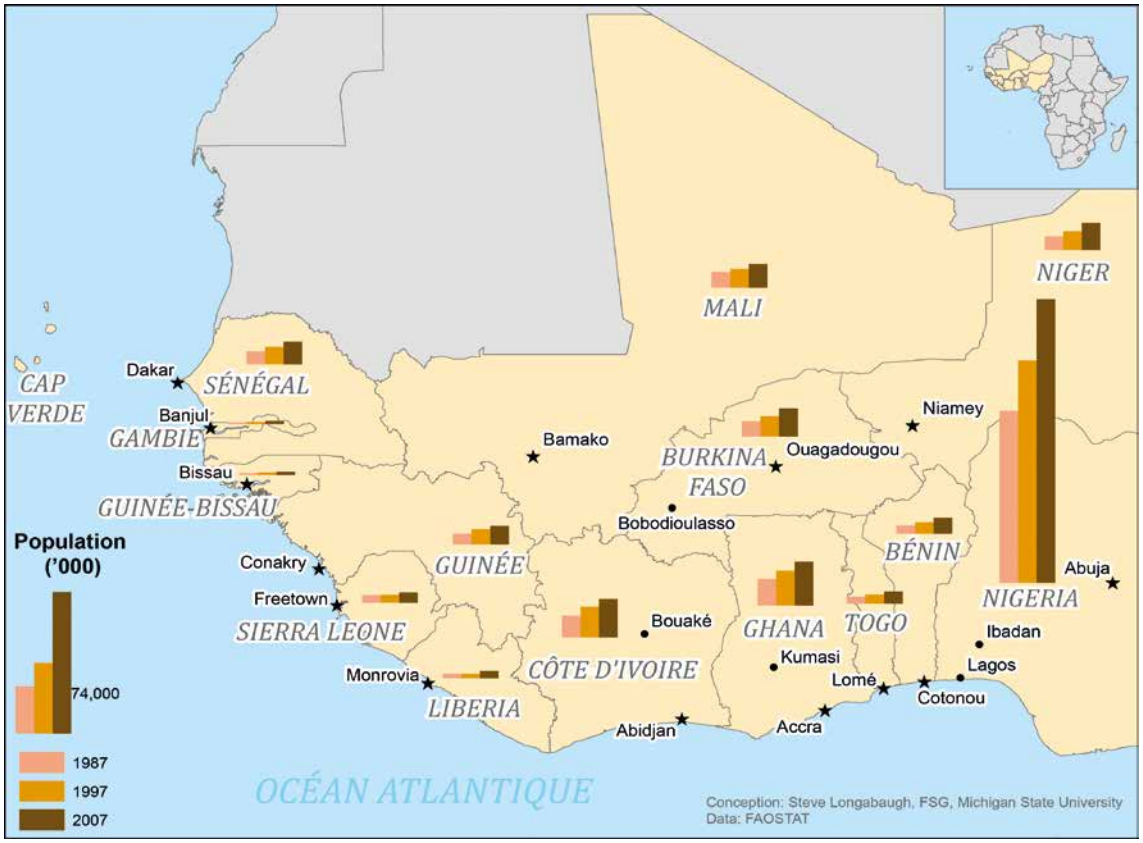
Source: UNDESA, 2011.
[a] Simple average, ECOWAS
[b] Weighted average, West Africa (incl. Mauritania and St. Helena)

Denis and Moriconi-Ebrard, 2008). Moreover, lack of harmonization of definitions of urban populations makes cross-country comparisons and regional aggregation problematic (ibid.). These differences are illustrated by the OECD's Africapolis study, which took an approach different from that of the UN for estimating the urban population in West Africa by combining population census data with satellite images. Applying a threshold of 10 000 inhabitants as the lower boundary for urban agglomerations, the study estimated the entire urban population of West Africa in 2000 at 74.5 million, 18.4 million below the United Nations data based on national statistics.

Data inconsistencies notwithstanding, two overall urbanization patterns stand out throughout the region. First is the primacy of national metropolitan areas over secondary cities and towns. Approximately 40% of the urban population resides in the main metropolitan areas, which on average had about 6.3 times the size of the next largest agglomerations in 2000 (Denis and Moriconi-Ebrard; 2008; Hitimana, *et al.*, 2009c). Second is the proliferation of small towns at the lower boundary of urbanization, whose urban status is not always been recognised politically and statistically. Approximately two-thirds of all agglomerations are in the range between 10 000 and 50 000 inhabitants, totalling about one-fifth of the urban population. New urban settlements are emerging in rural areas, in proximity to large cities and along major highways and transport corridors. As a result, the average distance between urban centres of over 10 000 inhabitants has declined from 111 km in 1950 to 33 km in 2010. While the small towns are the main interface with the rural economy, the metropolitan areas are the main interface with global markets. As will be seen in Chapter 6, in recent years there has been a spread of urban food habits into rural areas (e.g. expanded consumption of wheat and rice products), and these secondary towns are likely an important source of the new foods to rural residents.

Differences in the distribution of the urban population can also be observed between small and

Figure 2.1 *Population growth patterns in West Africa*



Source: Longabaugh, 2012; Data: FAOSTAT

large countries. Small countries tend to show the strongest dichotomy between metropolitan areas and small towns and cities. Large countries such as Côte d'Ivoire, Ghana and especially Nigeria have several large secondary agglomerations and intermediate cities.

Urbanization rates tend to be higher in countries that have experienced stronger economic growth, a correlation also found by the World Development Report 2009 (World Bank, 2009b). However, the direction of causality is not entirely clear. Urbanization can be seen both as a consequence of, and an engine for, economic growth (Allen *et al.*, 2009).[10]

Moreover, the type of urbanization can affect outcomes in terms of overall growth and poverty reduction. Recent evidence based on the analysis of cross-country data sets and long-term panel data from Tanzania suggests that migration into secondary towns has a much larger effect on poverty reduction than migration into metropolitan areas, but a somewhat lower impact on overall economic growth (Christiaensen *et al.*, 2013). Several factors explain the higher incidence of urbanization into secondary and rural towns on poverty reduction, such as the higher likelihood of finding employment (given higher demand for unskilled and semi-skilled labour), lower migration costs and the ability to maintain and exploit closer social ties with the areas of origin. This is consistent with the literature on the positive role of rural nonfarm activities in poverty reduction. Rural towns, which mediate the flow of inputs, goods and services between rural hinterlands and large urban centres are seen as the most effective generators of nonfarm

10 Only three countries showed fast increases in their urbanisation rates despite sluggish or negative growth between 1970 and 2000: Liberia, Sierra Leone and Niger. For the first two countries this is mainly attributable to the armed conflict, while Niger had a far lower urbanisation rate at the end of the colonial period than the other countries in the region (Allen, et al., 2009)

employment for the poor (Haggblade *et al.*, 2007; Lanjouw and Murgai, 2009).

2.1.3 Regional distribution and population densities

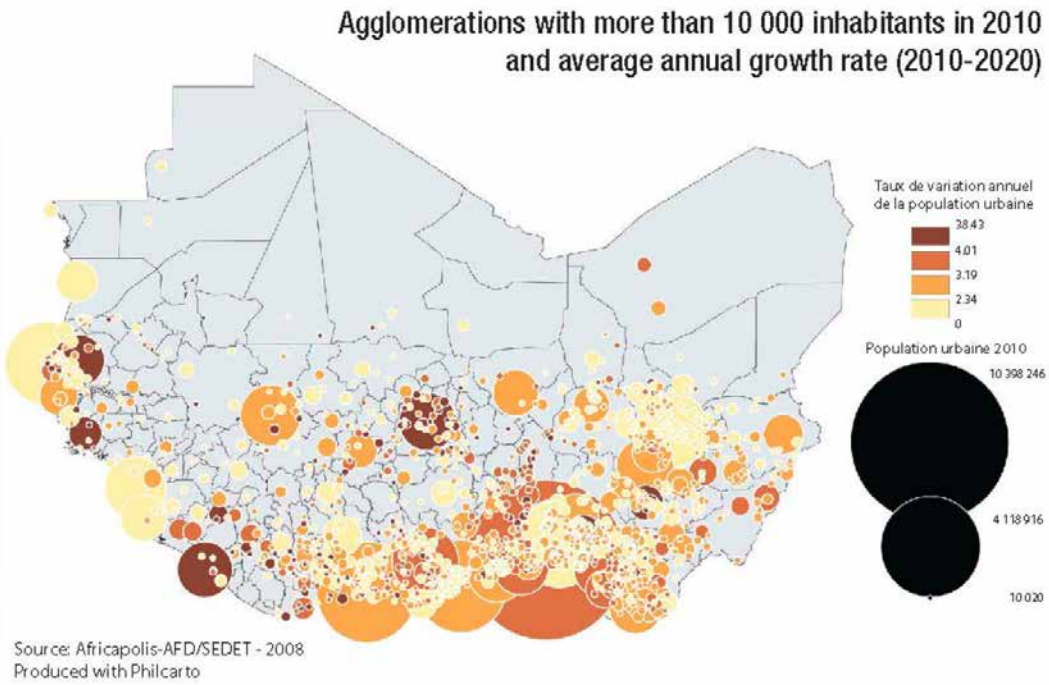
From a demographic standpoint, West Africa is made up of one giant country, six moderate-sized countries, and eight small ones. Nigeria alone, at 158 million, boasts 53% of the total, with two other countries, Ghana and Côte d'Ivoire, accounting for an additional 15%. Hence, these three non-LDCs include two-thirds of the population of the region. West Africa's population is heavily concentrated along the humid coast, and growth, in absolute terms, is concentrated in the coastal states. Population distribution and migration patterns have been strongly influenced by agroclimatic conditions, land availability and variable economic opportunities among countries in the region. Three-quarters of the West African population live in humid and sub-humid zones, 20% in the semi-arid zone (Sahel) and 5% in the arid zone (ECOWAS *et al.*, 2007). Population densities in coastal countries are 6 to 15 times greater than those in the Sahelian countries, making the development of transportation, communication, and marketing infrastructure much cheaper per person served than in the regions farther north.

Intra-region migration has been characterised by high rates of rural-to-urban migration, movements of people from Sahelian to Sudano-Sahelian zones and from these areas to both rural and urban areas of wealthier coastal countries (e.g. Malian and Burkinabé migration to Côte d'Ivoire). Given current migration patterns, by 2020 a high density urban band will have formed running along the breadth of the coastal area of the Gulf of Guinea (Figure 2.2). In 2005, coastal cities accounted for 38% of the entire urban population of the region, compared with 28% in 1950 (Denis and Moriconi-Ebrard, 2008).

2.2 Lagging structural transformation

The demographic changes just described are part of a broader structural transformation of West African economies that is proceeding at an uneven pace.

Figure 2.2 *Projected urban growth rates in West Africa, 2010-2020*



Source: Hitimana, *et al.*, 2009b

Structural transformation is a defining feature of the development process. Typically, it is characterised by four interrelated processes: (1) a declining share of agriculture in GDP (even though the absolute size of the agricultural sector continues to grow), (2) the rise of a modern industrial and service economy, (3) rapid urbanization as people migrate from rural to urban areas, and (4) demographic transition from high to low rates of births and deaths (Timmer, 2012).

2.2.1 Slow sectoral transformation

In West Africa, the structural transformation has been incomplete, with the four interrelated processes occurring at different velocities: while urbanization is progressing fast, there has been little change in the sectoral distribution of the economy, and only three countries (Cape Verde, Côte d'Ivoire and Ghana) are well along in their demographic transitions to lower birth rates. Despite the strong economic growth over the past two decades, official statistics on the sectoral distribution of the GDP show relatively little variation since the 1980s (Table 2.3). The share of agriculture in GDP has declined in countries with high GDP per capita and high growth rates such as Cape Verde, Ghana and Nigeria. In a number of countries, however, agriculture's share of GDP even increased during since the 1980s. However, with the exception of Burkina Faso, these countries had small populations, slow economic growth and were conflict-ridden (Guinea-Bissau, Liberia, Sierra Leone and Niger). More importantly, the share of the industrial sector in GDP only increased in 7 of the 15 countries between the 1980s and the 2000s and remains, on average, at 23%. Within the sector, the main growth drivers have been extractive industries – mining and oil – which are capital-intensive but generate little employment. Manufacturing, which has been the key driver of growth and structural transformation in Asia, has underperformed in West Africa. According to UNIDO and UNCATD (2011), the share of manufacturing in GDP declined from 13% in 1972 to 5% in 2008 for the region as a whole.

Table 2.3 *Average shares of agriculture, industry and services sectors in overall GDP*

1980-1989 and 2000-2009 (%)

	Agriculture		Industry		Services	
Country	1980-89	2000-09	1980-89	2000-09	1980-89	2000-09
Benin	33.8	33.7	14.0	13.7	52.2	52.6
Burkina Faso	29.8	33.8	21.0	22.1	49.2	44.1
Cape Verde	16.6	9.0	19.0	17.5	64.4	73.6
Côte d'Ivoire	27.1	24.2	20.8	24.5	52.0	51.3
The Gambia	34.0	31.1	13.7	14.1	52.3	54.8
Ghana	52.5	36.3	13.8	24.8	33.6	38.9
Guinea	24.0	22.8	33.6	39.1	42.3	38.1
Guinea-Bissau	48.6	55.0	15.7	13.0	35.7	32.0
Liberia	35.8	66.6	27.8	13.5	36.4	19.8
Mali	44.4	37.4	14.8	24.3	40.8	38.1
Niger	38.6	39.3	19.8	17.2	41.6	43.5
Nigeria	–	37.2	–	39.2	–	23.6
Senegal	22.0	16.4	20.7	33.6	57.3	60.0
Sierra Leone	40.0	49.9	15.9	24.4	44.2	25.7
Togo	31.8	39.3	22.0	20.4	46.2	40.3
ECOWAS[a]	**–**	**35.5**	**–**	**22.8**	**–**	**42.4**

Source: World Bank (2011a) Africa Development Indicators

[a] Simple average; data not available for Nigeria in earlier period, so no ECOWAS average for that period.

According to official statistics, the services sector continues to dominate the economy, accounting for 42% of GDP on average during 2000-09 for the ECOWAS countries, followed by agriculture (36%) and industry (23%). The share of the services sector is higher than that seen in other developing regions, taking into account differences in per capita income, and agriculture's share is lower. For example, the average share of the services sector in West Africa is only slightly lower than in Latin America, which has an average per capita income that is nearly eight times higher. Agriculture's share of GDP is only slightly above that of East Asia, the Middle East, and North Africa, although the latter regions have per capita incomes that are three times higher than that of sub-Saharan African countries (Badiane, 2012).

2.2.2 Growth of the informal economy

While the growth of the services sector has been driven to some extent by the recent dynamism in finance, telecommunications and tourism, the dominant trend has been the growth of the informal economy. An important part of the structural transformation in West Africa is a shift of labour from agriculture into the urban and rural informal service economy. In addition, downsizing of government institutions and privatization of parastatals during structural adjustment in the 1980s and 1990s contributed to reducing the formal services sector. Likewise, trade liberalization led to a collapse of some manufacturing enterprises nurtured during industrialization strategies of the 1960s and 1970s. Many of the retrenched employees found a living in the informal economy, including in agriculture.

The figures in Table 2.3 need to be interpreted cautiously because the growth of the informal economy and associated sectoral transformations are not fully captured in official statistics. While agricultural output including subsistence production is usually reflected in national accounts, this is not the case of informal activities in other sectors. As a result, the share of farming in overall GDP tends to be overestimated, whereas important parts of the rural and urban non-agricultural economy are not properly reflected. The latter include informal agricultural trade, cottage food processing and food services which are often primarily carried out by women (see Chapter 9). If the informal sector is defined as including economic activities that do not comply with the obligations to register, keep accounts and pay taxes (Hitimana *et al.*, 2009a), most of West African Agriculture is part of the informal economy. Estimates of the contribution of the informal economy (including Agriculture) to the GDP range from 43% (Côte d'Ivoire) to 77% (Niger) (Hitimana *et al.*, 2011).

Official employment statistics also do not capture the informal economy and are therefore misleading. Especially the share of the agricultural sector in total employment tends to be overestimated. This is partially due to the seasonal nature of most farming activities, particularly under rainfed conditions, forcing farm households to engage in multiple activities, sometimes also on a seasonal basis. Failure to adjust properly for seasonal employment overstates the employment generated by agriculture while at the same time underestimating agricultural labour productivity.[11] Moreover, the majority of non-agricultural activities in rural areas, especially in food processing, trade and catering, are undertaken by women. Still, rural household members often classify themselves as farmers and are reflected as such in surveys and censuses (Allen, *et al.*, 2009; Broutin and Bricas, 2006).

Likewise, not all agricultural producers are rural, as there are an important number of urban households engaged in farming, including vegetable gardening and livestock production on the outskirts of towns and cities. In a number of West African countries, according to official statistics, the agricultural population is far bigger than the rural population.

2.2.3 A growing share of net food buyers

An important implication of this economic and demographic transformation is the shifting relation between net food buyers and net food sellers. By

11 For example, in its 2009 report on trends in agriculture and household living conditions, the Senegalese Ministry of Agriculture estimated the full-time equivalent of agricultural employment at 1.6 million full-time jobs, less than half of the previous official estimate of the agricultural population of 3.4 million in (Hitimana, et al., 2009b).

and large, the urban population is made up of net food buyers whereas in rural areas the situation is becoming increasingly diverse. While data are not available for all the ECOWAS countries, there seems to be a general pattern in many African countries that fewer than half of all smallholders are net sellers of starchy staples (grains, roots and tubers). For example, surveys in Ethiopia, Kenya, Mali, Mozambique, Rwanda, Senegal, Somalia, Tanzania, Zambia, and Zimbabwe between the mid-1980s and 2002 found that in no country were more than half of the smallholders net sellers of staples; the modal figure is closer to one-third. Depending on the country, from 5% to 40% of the smallholders neither bought nor sold staples (Christiaensen and Demery, 2006; Jayne *et al.*, 2006; UNDESA, 2011; Weber *et al.*, 1988).[12] Data from household surveys in Ghana, Nigeria, Malawi and Madagascar found similar patterns, with the amount of land owned being the strongest correlate of net sales position (Zezza *et al.*, 2006).

Two policy implications result: (1) improving food marketing systems needs to address not only strengthening links between rural and urban areas but also rural-to-rural marketing, as many net buyers of staples live in rural areas; and (2) higher food prices do not unambiguously help all rural people, at least in the short run, as many are net buyers of food.

2.3 Trends in income growth and distribution

Economic growth, income levels, and distribution of purchasing power are further powerful drivers shaping demand for agrifood products and structure and evolution of the agrifood system. Despite strong overall economic growth and progress in poverty reduction and food security over the past two decades, important differences between and within countries remain.

12 The figures showing the larger percentages of net sellers were from surveys in more grain-surplus areas that were conducted in the 1980s; while the figures showing smaller percentages were nationally representative studies that took place more recently. Thus, it is most likely that in most of these countries, only about a third of smallholders are net sellers of staples. See for details Staatz and Dembélé, 2007.

2.3.1 Increasing overall economic growth and income

Overall, economic growth has markedly improved over the last 20 years. As shown in Table 2.4, ten out of fourteen countries for which data are available recorded improved GDP growth rates during the 1990s compared with the previous decade. During the first decade of the twenty-first century, all countries except Liberia experienced economic growth, and seven of them had an average GDP growth rate in real terms above 5%. Even in per capita terms, growth has markedly improved, with the majority of countries experiencing positive per capita growth rates. Whereas only 2 of the 13 ECOWAS countries for which data were available during the period 1980-89 experienced growth in per capita GDP, by 2000-09, 11 out of 15 showed a positive trend, and 14 out of 15 had stronger performance than in the 1980s. Top performers during the most recent decade included Cape Verde, Burkina Faso, Ghana, Mali, Nigeria and Sierra Leone (which has been rapidly recovering from war in the 1990s). The impact of civil strife is clearly visible in the figures for various years for Liberia, Sierra Leone, Côte d'Ivoire, and Guinea-Bissau.

The recent strong economic growth has mainly been driven by the primary sector (extractive industries and agriculture) and improved commodity prices. Nevertheless, the economic and political reforms implemented over the last 25 years are bearing fruit in the services sectors as well. Due to improvements in economic management, governance and macroeconomic and sectoral policies (analysed in Chapter 11), other subsectors such as financial services, telecommunications and tourism are beginning to make important contributions to growth. The resurgence has also benefited from increased capital inflows, especially foreign direct investment, aid and debt relief (UNECA, 2012). West African economies also showed remarkable resilience in the face of the global recession following the 2008 financial crisis. Annual real GDP growth hit a nadir of 2.8% in 2009 but by 2011 had rebounded to 6.1% and 6.0% in 2012 and 2013 (West African Subregional Office UNECA, 2013).

Table 2.4 *ECOWAS GDP growth rates and share of regional GDP*

1980-2009 (%)

	2010 GDP/ Capita[a]	Real GDP Ave. Annual Growth Rate			Real GDP/capita Ave. Annual Growth Rate			Share of total sub-regional GDP in 2009
Country		1980-89	1990-99	2000-09	1980-89	1990-99	2000-09	
Benin	1 576	2.7	4.7	4.0	-0.4	1.3	0.6	2.2%
Burkina Faso	1 247	4.0	5.5	5.4	1.4	2.8	1.9	2.9%
Cape Verde	3 954	6.3	5.9	6.4	–	3.4	4.8	0.5%
Côte d'Ivoire	1 885	0.7	3.5	0.8	-3.2	-0.3	-1.3	7.5%
The Gambia	1 400	3.5	2.7	5.2	-0.2	-0.8	2.1	0.3%
Ghana	1 625	2.6	4.3	5.8	-1.1	1.6	3.5	10.3%
Guinea	1 083	–	4.4	3.0	–	1.0	1.0	1.5%
Guinea-Bissau	1 177	3.8	1.4	1.0	2.8	-1.6	-1.4	0.3%
Liberia	416	-3.3	0.2	0.0	-6.7	-1.9	-3.5	0.3%
Mali	1 057	0.5	3.9	5.3	-1.0	2.1	2.8	3.0%
Niger	723	-0.4	2.4	4.3	-2.8	-1.2	0.5	1.8%
Nigeria	2 363	0.8	2.4	6.6	-2.4	0.0	4.0	63.5%
Senegal	1 917	2.7	2.8	4.3	0.0	0.3	1.6	4.2%
Sierra Leone	821	0.5	-5.3	9.5	-1.7	-5.7	5.8	0.6%
Togo	991	1.5	3.6	2.5	-2.3	-0.4	-0.1	1.0%

Source World Bank (2011a) Africa Development Indicators.
[a]GDP per Capita in 2013 US$ (PPP)

Like population, the region's total economic output is heavily concentrated in a few countries (Table 2.4). Despite the overall positive economic performance, income levels, as measured by GDP per capita, vary widely across the zone, with Cape Verde, Nigeria, Côte d'Ivoire, Senegal and Ghana having the highest levels of per capita purchasing power. Nigeria alone accounted for almost two-thirds of the regional GDP in 2009. The three largest economies (Nigeria, Ghana, and Côte d'Ivoire) account for over 81% of the total GDP of ECOWAS. Hence, their economic health is critical to the region. Their economic weight even exceeds their share in the total regional population, which amounted to 67% in 2010 (see Table 2.1). A further group of countries – Senegal, Mali, Burkina Faso, Benin, Niger, Guinea and Togo–each contributes between 1% and 5% to regional GDP. The contribution of the remaining countries – Sierra Leone, The Gambia, Cape Verde, Liberia and Guinea-Bissau – to regional GDP is miniscule, below 1% each.

This huge diversity in demographic and economic terms poses important challenges for the regional integration process. While economic integration is crucial for the smallest and landlocked economies in order for them to benefit from economies of scale, it is less urgent for the larger countries, especially Nigeria.

2.3.2 Poverty has fallen by various degrees

Overall, the consistent economic growth over several years in most West African countries has led to reduced poverty levels. In general, there is a broad correlation between economic growth and poverty reduction, and countries with little or negative GDP growth per capita also experienced worsening poverty levels. Countries such as Ghana, Burkina Faso and Cape Verde that showed a consistent growth record over a longer period have seen the greatest reductions in poverty.

However, the quality of growth clearly matters. The impact of overall economic growth in a

given country on poverty reduction can be muted by income inequalities, due in part to differing economic potentials of various areas within the country. Available Gini coefficient estimates for the ECOWAS countries between 2003 and 2008 (Table 2.5) range between a low of 0.36 (relatively even income distribution) for Guinea Bissau and a high of 0.53 (relatively concentrated distribution) in Liberia.[13] These figures compare with scores internationally that range from approximately 0.23 (Sweden) to 0.70 (Namibia), with the EU coefficient averaging 0.31, the United States scoring around 0.45 and two-thirds of Southeast Asian countries (ASEAN) ranging between 0.30 and 0.40.

Income distribution trends vary between countries. As discussed in more detail in Chapter 7, Nigeria's poverty rate has fluctuated sharply over the past 30 years, and the Gini ratio increased from 0.43 in 2004 to 0.45 in 2010 (NBS, 2012b). ReSAKSS (Taondyandé and Yade, 2012b) calculated changes in Gini ratios over time for four countries (Burkina Faso, Côte d'Ivoire, Ghana, and Mali) for which budget-consumption studies are available for various periods ranging from 1989 through 2009. Income distribution (as proxied by consumption expenditures per person) became more equal in Burkina Faso (between 1994 and 2009), remained unchanged in Côte d'Ivoire (between 1993 and 2008), and became more unequal in Ghana (between 1992 and 2006) and Mali (between 1989 and 2006). In Burkina, the reduction in income inequality came about largely through a reduction in the gap between urban and rural incomes, as urban inequality actually increased during the period. In Ghana and Mali, the increase in income inequality nationally was driven by increasing income inequality in urban areas and between urban and rural areas for both countries and by increasing rural income inequality in Ghana. These contrasting patterns of income distribution illustrate that the gains from economic growth are captured by different segments of the population in different countries; who gains is likely linked, in part, to domestic policy choices. These differences in income distribution will, as we shall see, have important implications for the types of demand facing the agrifood system in each country.

Available data show a wide variation in poverty levels across countries (Table 2.5), with poverty rates much lower in Cape Verde, Côte d'Ivoire, Ghana and Senegal than in the other countries in the region. Table 2.5 shows headcount poverty measures calculated with two different standards: (1) the percentage of the population having purchasing-power parity less than US$1.25 and US$2, which allows comparisons among countries; and (2) the percentage of the population in rural and urban areas in each country falling below the national poverty line as defined in that country's poverty reduction strategy plan. According to estimates of poverty headcount ratios expressed in purchasing-power parities, more than half of the entire regional population lives on less than US$1.25 per day, and three-quarters has less than US$2 per capita at their disposal. Rates of extreme poverty (as measured by the US$1.25 per capita poverty line) are declining in most but not all countries in ECOWAS. Of the 11 countries for which data are available for multiple years between 1985 and 2008, the US$1.25 poverty headcount ratio declined in eight (Burkina Faso, The Gambia, Ghana, Guinea, Mali, Niger, Senegal and Sierra Leone), stayed the same in one country (Guinea Bissau), and increased in two (Nigeria and Côte d'Ivoire).[14] Côte d'Ivoire's increase in its poverty rate occurred as per capita incomes were falling throughout the country, whereas the poverty rate in Nigeria increased during the 1990s (a period of economic stagnation in average per capita GDP growth), and has declined slightly since then.

The figures with respect to national poverty lines show that poverty remains heavily concentrated in rural areas, with poverty rates two to three times higher in rural areas than in urban areas. Budget-consumption studies of seven countries (Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Senegal, and Togo) carried out between 2006 and 2009 found that average total expenditures per

13 A Gini coefficient of 0 means that the poorest 20% of households earn 20% of national income, the poorest 50% earn 50% and so on. A Gini of 100 means that one household earns 100% of national income. The accuracy of Gini calculations depend on reliable fiscal data, and thus the figures must be interpreted cautiously.

14 Calculated from data in World Bank, 2011a Africa Development Indicators.

Table 2.5 *Poverty headcount ratios and Gini coefficients for West African countries*

	Poverty headcount ratio[a]			Percentage of pop. below the national poverty line[b]				Gini Coefficient
Country	Year[c]	$1.25 day	$2.00 day	Year[c]	% rural	% urban	% national	
Benin	2003	47.3	75.3	2002	46.0	29.0	39.0	38.6
Burkina Faso	2003	56.5	81.2	2002	52.4	19.2	46.4	39.6
Cape Verde	2001	20.6	57.7	2006	44.3	13.2	26.6	50.4
Côte d'Ivoire	2008	23.8	46.3	2007	54.2	29.4	42.7	41.5
The Gambia	2003	34.3	56.7	2002	67.8	39.6	58.0	47.3
Ghana	2006	30.0	53.6	2005	39.2	10.8	28.5	42.8
Guinea	2007	43.3	69.6	2006	63.0	30.5	53.0	39.4
Guinea Bissau	2002	48.8	77.9	2001	69.1	51.6	64.7	35.5
Liberia	2007	83.7	94.8	2006	67.7	55.1	63.8	52.6
Mali	2006	51.4	77.1	2005	57.6	25.5	47.4	39.0
Niger	2007	43.1	75.9	2006	63.9	36.7	59.5	34.0
Nigeria	2004	64.4	83.9	2003	63.8	43.1	54.7	42.9
Senegal	2005	33.5	60.3	2004	61.9	35.1	50.8	39.2
Sierra Leone	2003	53.4	76.1	2002	78.5	47.0	66.4	42.5
Togo	2006	38.7	69.3	2005	74.3	36.8	61.7	34.4
Total		**53.8**	**75.4**					**42.7**

Source: World Bank (2011a) Africa Development Indicators.
[a] Purchasing Power Parity (PPP), percent of population.
[b] National poverty lines for rural, urban, and total populations as defined in national Poverty Reduction Strategy Plans (PRSPs).
[c] Selected years between 2003 and 2008.

capita (a proxy for per capita income) in urban areas were from 78% higher than those in rural areas – in Burkina Faso – to 148% higher – in Mali (Taondyandé and Yade, 2012b). Some of the countries that have had the most rapid economic growth in recent years (e.g. Cape Verde, Ghana, and Burkina Faso) have poverty rates that are much lower in urban areas than in rural areas, suggesting that a higher percentage of the urban poor have been lifted out of poverty by this growth than have the rural poor. In contrast, countries that have had sluggish growth and civil disruption (e.g. Sierra Leone, Liberia and Guinea Bissau) have high poverty rates in both urban and rural areas.

2.3.3 An emerging middle class

In the context of Africa's economic rebound, the growth of the middle class has sparked the interest of policy makers and the private sector, including foreign investors. In between the traditional elites and the vast majority of the poor, there is an emerging middle class, mainly in urban areas. This middle class is increasingly recognised by domestic and international companies as a growing market for food and non-food products. Understanding the features of West African middle classes and their food purchasing behaviour is therefore key from a market development perspective aimed at enabling domestic and regional producers to capture a larger share of this market and more successfully compete with imports.

Developing an accurate picture of the key features and size of the middle class is challenging. Like poverty, "middle class" is a multidimensional term that can be defined by various socio-economic variables such as income, expenditure, asset ownership, education levels and professional affiliation, along with less tangible features such as attitudes, aspirations and lifestyles. Middle class households are more likely to have salaried jobs or small businesses and widespread ownership of assets such as refrigerators and mobile phones. They tend to value education, have fewer children and spend more on nutrition and children's schooling. In general,

the values of the middle class tend to align with a desire for greater market competition, better governance, gender equality, and more investment in education, science and technology in their respective countries (AfDB, 2011b).

Defining the middle class and measuring its size along different dimensions is challenged by the dearth of in-depth demographic and socio-economic data.[15] This section draws on some recent evidence on the size of West Africa's middle classes from a study conducted by the African Development Bank based on data from the World Bank's povcal.net database. It further synthezises information on the size and evolution of middle classes in five West African countries for which ReSAKSS analysed survey data (Taondyandé and Yade, 2012b). Some additional characterization of urban middle classes in Ghana and Nigeria is provided in Chapter 7 to set the scene for discussing changing food demand and consumption trends in Accra and Lagos.

The African Development Bank defines three subgroups as comprising the African middle class: (1) the "floating class", defined as people having a daily per capita expenditure, in purchasing power parity (PPP) in 2005 prices, of US$2-4; (2) the lower-middle class, with daily per capita expenditure of US$4-10; and (3) the upper-middle class, with daily per capita expenditures of US$10-20 (AfDB, 2011a). The floating class is a fragile group that is just above the poverty line and can easily fall back into poverty given an economic shock. Nonetheless, as an emerging class, this group is likely to begin to upgrade and diversify its diet, putting new and different demands of the food system. Assuming an average household size of five, the resulting monthly expenditures of the floating class would be in the range between US$300 and US$600 per month. The upper boundaries for the lower- and upper-middle class households would be US$1 500 and US$3 000 per month, respectively.

15 Household surveys tend to underestimate expenditures and assets levels due to under-reporting, and this bias tends to increase with higher income levels.

Table 2.6 *The West African middle class in 2008*

	Floating class[a] population		Lower middle[b] population		Upper middle[c] population		Total population	
Countries	(%)	(millions)	(%)	(millions)	(%)	(millions)	(%)	(millions)
Benin	6.9	0.6	5.9	0.5	4.8	0.4	17.7	1.5
Burkina Faso	10.2	1.6	2.3	0.3	0.9	0.1	13.3	2
Cape Verde	29.7	0.1	11.7	0.1	5	0	46.4	0.2
Côte d'Ivoire	18.2	3.8	11.8	2.4	7.1	1.5	37.1	7.7
The Gambia	22	0.4	12.3	0.2	3.7	0.1	37.9	0.6
Ghana	26.8	6.3	13.5	3.2	6.2	1.5	46.6	10.9
Guinea	6.3	0.6	2.8	0.3	1.5	0.1	10.6	1.0
Guinea Bissau	10.2	0.2	6.4	0.1	1.2	0	17.8	0.3
Liberia	2.9	0.1	1.2	0	0.7	0	4.8	0.2
Mali	17	2.2	4.9	0.6	3.2	0.4	25.1	3.2
Niger	8.7	1.3	3.3	0.5	2	0.3	14	2.1
Nigeria	12.9	19.5	6.2	9.3	3.8	5.7	22.8	34.5
Senegal	23.9	2.9	7.3	0.9	4.5	0.6	35.7	4.4
Sierra Leone	11.4	0.6	4.6	0.3	2.6	0.1	18.6	1.0
Togo	11.6	0.7	7.3	0.5	1.6	0.1	20.4	1.3
ECOWAS	**14.3**	**40.9**	**6.7**	**19.2**	**3.8**	**10.9**	**24.7**	**70.9**

Source: Adapted from AfDB, 2011b

[a] Floating class defined as daily per capita expenditure, in purchasing power parity (PPP) in 2005 prices, of between US$2 and US$4.

[b] Lower-middle class defined as daily per capita expenditure, in purchasing power parity (PPP) in 2005 prices, of between US$4 and US$10.

[c] Upper-middle class defined as daily per capita expenditure, in purchasing power parity (PPP) in 2005 prices, of between US$ 10 and US$ 20.

Table 2.7 *The state of undernutrition in the ECOWAS zone, 1992–2008*

Country	Population	Number of people undernourished					Progress towards WFS[a] target[c]	Proportion undernourished					Progress towards MDG[b] target[c]
	2006-08	1990-92	1995-97	2000-02	2006-08	Change so far		1990-92	1995-97	2000-02	2006-08	Change so far	
	(millions)	(millions)				(%)		(%)				(%)	
Benin	8.1	1.0	1.0	1.0	1.0	–0.3	(rd)	20	18	15	12	–41	(gr)
Burkina Faso	15.1	1.2	1.2	1.4	1.2	–3.0	(yl)	14	12	12	8	–40	(gr)
Côte d'Ivoire	18.7	1.9	2.6	2.9	2.9	50.9	(rd)	15	17	17	14	–2	(rd)
The Gambia	1.6	0.1	0.3	0.3	0.3	143.9	(rd)	14	23	21	19	41	(rd)
Ghana	22.7	4.3	2.3	1.9	1.1	–74.0	(yl)	28	13	9	5	–83	(gr)
Guinea	9.4	1.3	1.5	1.7	1.6	23.5	(rd)	20	19	20	16	–18	(rd)
Liberia	3.5	0.6	0.7	1.1	1.1	85.0	(rd)	30	32	36	32	7	(rd)
Mali	14.0	2.4	2.5	1.9	1.5	–38.1	(gr)	27	25	18	12	–56	(gr)
Niger	14.0	3.0	3.5	3.1	2.3	–22.2	(yl)	37	37	27	16	–55	(gr)
Nigeria	147.0	16.3	10.9	11.9	9.4	–42.3	(gr)	16	10	9	6	–61	(gr)
Senegal	11.5	1.7	2.3	2.6	2.3	32.4	(rd)	22	26	26	19	–14	(yl)
Sierra Leone	5.5	1.8	1.6	1.9	1.9	3.6	(rd)	45	39	43	35	–22	(yl)
Togo	5.7	1.7	1.7	1.9	1.9	7.6	(rd)	43	36	36	30	–31	(rd)
ECOWAS[d]	**276.6**	**37.3**	**32.1**	**33.6**	**28.5**	**-23.6**		**20.3**	**15.3**	**14.2**	**10.3**	**-49.2**	

Sources: FAO State of Food Insecurity 2011, http://www.fao.org/publications/sofi/en/. Population data from UN World Population Prospects 2010, http://esa.un.org/unpd/wpp/Excel-Data/population.html.

[a] World Food Summit (WFS) target: between 1990 and 2015 halve the number of malnourished people in the population

[b] Millennium Development Goal (MDG) target: between 1990 and 2015 halve the proportion of people who suffer from malnutrition

[c] Key to WFS and MDG progress:

(gr)	Target already met or expected to be met by 2015
(yl)	Progress insufficient to reach the target if prevailing trends persist
(rd)	No progress, or deterioration

[d] ECOWAS totals minus Cape Verde and Guinea Bissau

Table 2.6 shows that in 2008, just over 70 million West Africans, almost a quarter of the total population, belonged to the middle class. However, the largest share – 40 million (58% of the total) – were in the floating class, those with incomes just above the poverty line, with the remaining 30 million in the middle and upper-middle classes. These latter groups–those spending over US$4 per day – would, if all in a single country, constitute the second most populous country in ECOWAS.

The West African middle-class population is mainly concentrated in the three largest countries: half lives in Nigeria, with an additional 27% in Ghana and Côte d'Ivoire. However, when ranked by the middle class's shares in the national population the order looks different. Ghana has the highest share of middle-class persons in its total population (47%), followed by Cape Verde (46%), Côte d'Ivoire (37%), Senegal (36%) and Nigeria (22%). The combined share of lower- and upper-middle classes accounted for 20% of the population in Ghana and 19% in Côte d'Ivoire, followed by Cape Verde (17%), The Gambia (16%), Senegal (12%) and Nigeria (10%). Hence, while Nigeria has by far the largest middle class in the region, its share of the national population is comparatively small, mirroring the highly unequal income distribution in the country.

The analysis of budget-consumption studies by ReSAKSS (Taondyandé and Yade, 2012b) also examined changes in the proportion of the population falling in the middle class over time in

Burkina Faso, Côte d'Ivoire, Ghana and Mali. In two of the countries, Burkina Faso and Ghana, the proportion of the population in the middle class expanded substantially over the past 15 years, with the absolute size of the middle class growing at an average annual rate of 10% (albeit from a small base) in Burkina Faso between 1994 and 2009 and by nearly 7% per year in Ghana between 1992 and 2006. In contrast, the size of the middle class stagnated in Mali between 1989 and 2006 (growing at 2.5% per year in urban areas but falling by 2.4% per year in rural areas). In Côte d'Ivoire, the middle class fell by 0.4% per year between 1992 and 2006. As in Mali, there was a modest expansion of the middle class in urban areas (by 0.8% per year) that was offset by a larger decrease in the size of the middle class in rural areas (by 2.0% per year).

The differing trajectories of middle classes among countries and the large share of the floating class just above the poverty level show that the size of the middle-class and its growth remain fragile. They chiefly depend on the level and quality of economic growth and the absence of civil conflicts. Nigeria is an example of the fragility of middle-class growth. Even though time series data were not available for this study, available evidence suggests that a much larger middle-class population existed during the 1970s following the first oil boom. While the recent sustained economic growth likely increased the middle class in absolute terms, its relative size has decreased, as witnessed by the latest national poverty surveys (see Chapter 7).

2.3.4 Food security has been gradually increasing

Food security statistics show a decline of food insecurity levels in the region, both in the absolute numbers and the percentage of the population that is undernourished (Table 2.7). According to FAO's 2012 State of Food Insecurity (SOFI) report (FAO, 2012b), the proportion of undernourished people in the total population halved from 20% to 10% between 1990 and the 2006-08, with the number of undernourished persons declining from 37.3 million to 28.5 during the same period.[16] Undernutrition rates in West Africa are generally lower than those in Eastern, Southern, or Central Africa. However, Table 2.7 also reveals very uneven progress across West African countries in reducing undernutrition, with Ghana, Nigeria, Mali and Niger making strong progress, while Liberia, The Gambia, Senegal, and Sierra Leone doing much worse. Furthermore, even though the rate of undernutrition declined in 11 of the 13 countries for which SOFI reported data (increasing only in The Gambia and Liberia), because of population growth, the absolute number of the undernourished increased in seven countries (Côte d'Ivoire, The Gambia, Guinea, Liberia, Senegal, Sierra Leone, and Togo). Although average food availability per person has been increasing during this period, the access and quality dimensions of food security remain important challenges.

In addition to a lack of basic calories, millions also suffer from micronutrient deficiencies (so-called "hidden hunger") especially of iron, vitamin A, iodine and zinc. These micronutrient deficiencies, particularly among women and children, are often prevalent in rural areas and are in part linked to cultural habits that direct more of the nutrient-dense foods to men. In urban areas, however, they are also in part driven by a shift in eating habits as city dwellers transition to a diet with higher amounts of sugar, fat, and refined carbohydrates (see Part II). While rates of undernutrition have fallen over the past 30 years, problems of obesity and overweight are beginning to emerge as a growing public health concern, particularly in urban areas (Box 2.1).

16 It is important to note that these undernourishment figures are largely based on the availability of food in the region and therefore do not account for issues related to access to food – both intra-country and intra-household. Therefore in actuality food insecurity in the region could be much higher. Furthermore these numbers do not reflect the nutritional status of individuals, particularly the high prevalence of stunted children throughout the region.

Box 2.1 The double burden of malnutrition in West Africa

Despite the preoccupying figures on undernourishment shown in Table 2.7, problems of over-nutrition (obesity and overweight) are also growing in West Africa and are increasingly recognized as public health threats.[1] The need to simultaneously address problems of under-nutrition and over-nutrition, both related to changing dietary patterns in the region, is often referred to as West Africa's "double burden of malnutrition."

The prevalence of obesity in the region is currently estimated at between 6.6% and 10% of the total population, with the rates over twice as high in urban areas as in rural areas and much higher for women than for men. Between 2000 and 2004, almost 50% of the West Africa urban population was overweight or obese (Abubakari, *et al.*, 2008; FAO, 2013b). WHO data indicate that a staggering 44% of all women in Sierra Leone (including rural as well as urban areas) are either overweight or obese (WHO, 2008-2013).

Contributing factors to these trends include more sedentary lifestyles in urban areas and unhealthy diets increasingly dominated by various forms of indigenous as well as Westernized fast food, as urban populations are ever more time-starved and seek quick meal solutions (see Chapter 7). These foods are typically more energy-dense and less diverse than traditional West African diets and include processed foodstuffs high in sugar, salt, and fat. One of the objectives of food processing is to extend its shelf life, but this often involves removing nutrients such as essential fatty acids that limit the foods' lifespans. The result is a diet with increasing amounts of calories but fewer other nutrients ("empty calories.")

As a consequence of these changes, West Africa faces a growing epidemic of non-communicable, diet-related diseases, including diabetes, hypertension and cardiovascular diseases. The overall prevalence of diabetes in Western African countries is estimated to have increased over the last decades by 30 percent. Figures are even more striking for urban Nigeria and Cameroon, where the prevalence of diabetes rose by more than 300 percent between 1985 and 2000 (Abubakari *et al.*, 2008).

The potential costs of these various forms of malnutrition to West Africa, in terms of premature deaths, disability, and lost productivity, are huge. One way of measuring the social and economic costs of these diseases is through a metric called "disability-adjusted life years (DALYs)". One DALY represents the loss of the equivalent of one full year of healthy life compared to an ideal situation where everyone lives into old age, free of disease and disability. The costs of under-nutrition remain by far the highest of all nutritional problems in West Africa, accounting for a loss of 383 DALYs per 1000 people in 2010, compared to only 14 DALYs per 1000 due to obesity and overweight. But the trend in the social costs due to under-nutrition is sharply downward, having fallen by 60% since 1990 (from 947 DALYs per 1000 people in that year). In contrast, the cost of obesity and overweight is increasing, having more than doubled (from 6 DALYs per 1000 in 1990) (FAO, 2013b). Moreover, the diseases related to over-nutrition are chronic and take time to build up over time, so as the population continues to urbanise and ages, the costs will likely increase rapidly. West African governments may be soon obliged to divert human and financial resources from combating undernourishment and stunting, which may be less visible as they are mainly confined to rural settings, to fighting these consequences of over-nutrition, particularly in urban areas.

West African urban consumers are increasingly aware of these problems of over-nutrition, and Chapter 7 discusses their concerns and policy options to deal with the challenge.

1 Obesity and overweight are measured by the body-weight index (BMI), defined as a person's weight in kg divided by the square of her height (in metres). Obesity is defined as a BMI>30, while a person is overweight if the BMI exceeds 25.

2.4 Overall economic and political progress has remained fragile

2.4.1 Recurrent crises

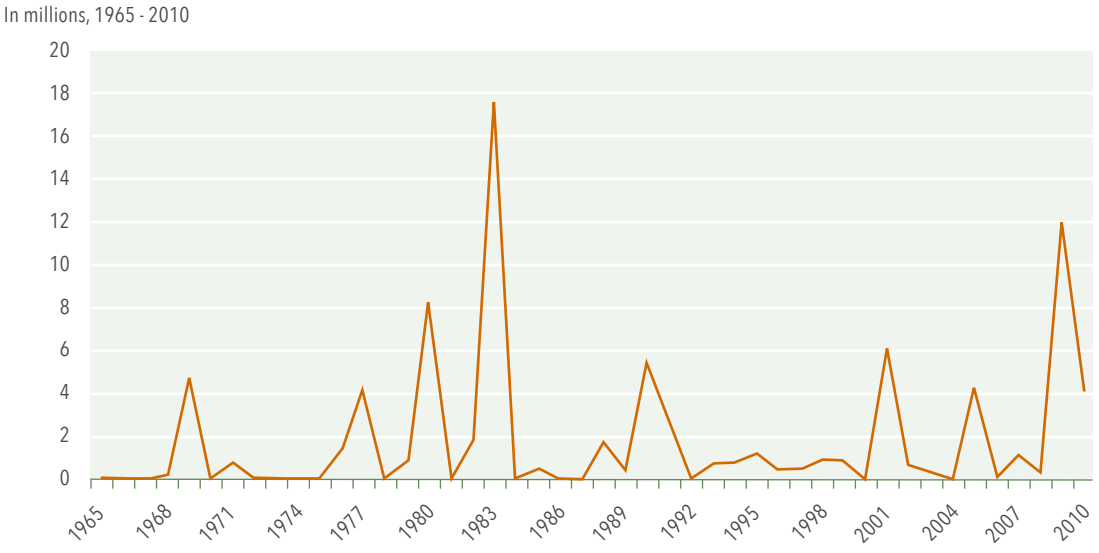
Despite the generally positive trends in terms of per capita income and food availability in West Africa and a trend since the 1990s towards more democratic and open political systems, the region has faced numerous natural and human-created disasters over the past 50 years. These have led to severe food shortages and destruction of productive capacity in various countries[17] Often, instability spills across borders, disrupting regional trade and raising risks to investments in neighbouring countries (as exemplified by the costs imposed on Mali and Burkina Faso by the loss of access to the port of Abidjan during the Ivorian conflict). The persistent vulnerability to natural and human-caused disasters is evidenced by recurrent food crises in the Sahel; the civil wars in Sierra Leone, Côte d'Ivoire and Liberia; and terrorist attacks by non-state actors in Nigeria and Mali. A combination of population pressure, deteriorating environmental conditions and unequal spatial development are likely to perpetuate the region's vulnerability to conflicts and disasters.

17 As Josserand (2011) notes, distinguishing clearly between natural and human-caused disasters is frequently difficult, as natural and human factors often interact to create or worsen a food crisis.

Figure 2.3 shows the number of people affected by natural disasters in Western Africa between 1965 and 2010. These disasters were primarily droughts (concentrated in the Sahelian countries) and floods (predominantly in the coastal states), with the droughts affecting many more people than the floods. As shown in Figure 2.3, the natural disasters occurred irregularly and with highly variable magnitudes. West African countries, particularly in the CILSS member states, have become increasingly adept at managing and mitigating localized natural disasters through improved market-information and early-warning systems and the development of various types of social safety nets. These tools, however, proved less adapted to dealing with periods of global food shortages and spiking prices, as occurred in 2007/08, 2010, and 2012 (see Focus Section A).

Since the 1980s, the frequency of natural disasters has declined relative to human-created crises that are linked primarily to civil unrest (e.g. in

Figure 2.3 *Number of people affected by natural disasters in West Africa*[a]



Source: OFDA/CRED database of natural disasters, University of Louvain, as presented in Josserand, 2011
[a] Figures include ECOWAS countries plus Chad and Mauritania.

Liberia, Sierra Leone, Côte d'Ivoire and, most recently, in Mali). Some of these crises have been of extremely long duration. For example, during the 30 years between 1981 and 2010, FAO/GIEWS reported that Sierra Leone spent 23 years in emergency and Liberia 22 years (Josserand, 2011). In terms of the number of people affected and the severity of the deprivation, the countries most severely hurt by such conflict-driven crises have been, in order of magnitude, Nigeria (due to the civil war of the 1960s), Liberia, Sierra Leone, Côte d'Ivoire, and Guinea-Bissau (ibid.)

The repeated natural and human-created crises have had several important impacts on the development of agrifood systems in West Africa:

- In the absence of risk management tools such as crop insurance, droughts and crop failures frequently lead to farmers being forced to sell off assets to survive; as a result, even when production conditions return to their "normal" state, production frequently recovers only slowly.

- Faced with the risk of natural disasters, farmers place a priority on resilience and risk management at the farm level, often through diversification of their farm and non-farm enterprises. The gain in stability from diversification comes at the expense of losses in efficiency, both at the farm level and in the marketing system that would occur with greater on-farm specialization.

- The instability of local food production due to weather crises increases the incentives facing food processors and retailers to turn to imports rather than local production in order to ensure stable supplies.

- Wars and civil unrest lead to destruction of productive assets and infrastructure, loss of the rule of law, destruction of human capital and the flight of both financial and human capital abroad. Because of the economic interdependence of West African states, crises in one country frequently spill over onto its neighbours.

- Both natural and human-made crises call for emergency relief efforts, such as the widespread distribution of food aid. If poorly designed, such safety-net efforts can undermine incentives for local food production and trade.

Given the inevitability of future natural disasters and the increasing conflict that these may generate over access to increasingly scarce agricultural resources (especially in the context of climate change), strengthening conflict resolution arrangements will need to be an important component of Agricultural development strategies. It will also be critical to design social safety nets in a way that reinforces rather than works against incentives for investment in the broader agrifood system. Both of these imperatives are analysed in Part IV.

2.4.2 Growing pressure on natural resources

Population growth can induce agricultural intensification by improving rural-urban linkages, generating additional demand for food and lowering transaction costs in provision of inputs and support services. In practice, however, West Africa's growing labour-to-land ratio and livestock-to-land ratio have in many cases increased the pressure on the natural resource base. For the region as a whole, the average arable land per rural resident is just 0.5 ha. Approximately 20% of the rural population lives in areas with even higher population densities (Johnson *et al.*, 2008). These higher population densities, particularly in non-irrigated areas, contribute to reduced fallows and a fragmentation of farm sizes into holdings that do not allow sustaining a livelihood, let alone producing a marketable surplus. Population pressure is particularly high in areas with the largest production potential and along major waterways and transport corridors. Consequences can include land fragmentation in highly populated areas with good market access and the expansion of the agricultural frontier and overuse of natural resources in less populated areas.

In more fragile agro-ecological systems, such as in the Sudano-Sahelian zones, population pressure contributes to an overuse of natural resources by reducing fallow periods, expanding crop production

into less suitable areas and enhancing the number of livestock. The expansion of crop farming and livestock numbers has put traditional systems of land management increasingly under stress, with growing conflicts between agriculturalists and pastoralists. The results of these trends have been increased soil mining, loss of vegetative cover leading to wind erosion and silting of lakes and streams, deforestation, and loss of biodiversity[18]. West African soils are generally older than in many other areas of the world (for example, areas with more recent volcanic activity) and are subject to heavy leaching of nutrients. Net soil nutrient losses in 14 of the 15 ECOWAS countries for which data are available varied between 41 kg/ha/year in Senegal to 73 kg/ha/year in Guinea Bissau in 2002/04 (Morris *et al.*, 2007b). Like the rest of the continent, West Africa is losing forest cover due to agricultural expansion, cutting of firewood and the expansion of commercial logging. Africa's rate of deforestation is double that of other regions of the world (ibid.).

The stress on land management systems is accentuated by insecure land tenure in many parts of West Africa, which reduces incentives to invest in land improvement and hinders consolidation of very small plots. Rising global agricultural prices since 2008 have also increased the interest in outside investors in obtaining land in West Africa, and ambiguity in the assignment and enforcement of land rights creates situations where farmers can lose their land without compensation (see Focus Section D on land tenure and water rights in Part IV). Conflicts over land use are on the rise – for example between farmers and herders – and unless the situation improves, are likely to continue to grow as resource degradation induces widespread migration (including across borders) with environmental refugees seeking more productive areas to pursue their livelihoods. A key challenge facing the region is thus how to transition from a situation of resource degradation to one of sustainable agricultural intensification (Box 2.2).

18 In West Africa, these various phenomena are often discussed as different components of "desertification", a term used in the region to cover a broad array of natural resource degradation and climate change effects and not just the southward movement of the Sahara Desert. For details, see ECOWAS, et al. (2012).

2.4.3 Climate change

The vulnerability of West African farming and livestock production systems to weather conditions is being exacerbated by climate change. Climate change is likely to have the most damaging impact in semiarid and arid regions in the Sahel.

From the 1930s to the 1950s there was a period of unusually high rainfall, followed by an extended drought that lasted for much of the 1960s to 1990s. During this period, temperatures rose by around 1°C (Jalloh *et al.*, 2013). Mean annual rainfall and runoff dropped by as much as 30 per cent, with devastating effects on local populations and livelihoods. Since the mid-1990s, better average rainfall conditions have returned, in particular in the continental Sahel (Niger, Northern Nigeria and Chad). These conditions, however, have been accompanied by greater inter-annual rainfall variability.

There is still a fair amount of uncertainty in rainfall-related climate projections for West Africa. Perhaps more than elsewhere, analyses of this region have remained inadequate and the conclusions arrived at by climate projections and their consequences are too uncertain for an effective anticipation of the risks and opportunities linked to climate change (SWAC, 2009). The complicated and uncertain measurement of the climate's future impacts on the region calls for prudence in their analysis (CILSS *et al.*, 2008). The IPCC reports that in the twenty-first century, global warming is expected to be more intense in Africa than in the rest of the world. The average rise in temperature between 1980/99 and 2080/99 is projected to be between 3 and 4°C for the continent as a whole, one-and-a-half times greater than at the global level. The increase would be less marked in coastal and equatorial areas (+3°C), and the highest increase would take place in the Western Sahara region (+4°C) (Pachauri and Reisinger, 2007). Generally, there seems to be consensus on increases in average annual temperatures, although the changes may be unevenly distributed across the region. Temperature increases have not been observed across all areas in West Africa in the last decades. Despite the uncertainty about the capacity of climate models for West Africa and

Box 2.2 From resource degradation to sustainable intensification

Addressing the problems of agricultural resource degradation and declining land productivity in West Africa will require a more sophisticated approach than simply trying to duplicate the Asian Green Revolution model based on improved seeds, expanded irrigation and greatly increased use of mineral fertilizers. Given the diversity of West African agro-ecologies, the weak infrastructure base (including for irrigation) and the challenges of climate change, there have been growing calls to move towards more locally tailored approaches of sustainable agricultural intensification. Although there is no universally agreed-upon definition of sustainable intensification, several common elements emerge in most discussions of the approach:[1]

1. ***Moving beyond an emphasis on just increasing the use of mineral fertilizer to a focus on improving soil health.*** Critical elements of the soil-health approach include combining mineral fertilizers, organic matter, and cultivation techniques such as minimum tillage and intercropping that improve water retention and soil biota. The approach also seeks to improve the efficiency of fertilizer use through better matching of fertilizer formulations to the specific nutrient needs of individual farmers' soils and crops and by improving the timing and placement of applications through techniques such as micro-dosing.

2. ***Moving from one-size-fits-all extension recommendations to differentiated approaches based on West Africa's wide range of farming systems.*** This movement from "best bets" to "best fits" (Fairhurst 2012) involves moving away from blanket recommendations such as the call to raise average mineral fertilizer use in the region to 50 kg/ha towards more targeted solutions to different farming systems that cover a range of productivity, socio-economic and environmental benefits to producers and society at large. Often these approaches involve better integration of livestock and cropping within farming systems.

3. ***An emphasis on plant protection that goes beyond pesticides and herbicides towards integrated pest management.*** This approach emphasises that a healthy agro-ecosystem (including maintaining populations of helpful insects and natural predators of agricultural pests) is a farmers' first line of defence against crop damage.

4. ***Improving crop productivity and robustness to environmental shocks by tailoring germplasm to specific environments and soil conditions*** through a programme of breeding that aims to exploit and maintain the genetic diversity of African crops. The programme is seen as drawing on a range of breeding techniques, including traditional plant breeding, cell and tissue culture, marker-assisted selection, and genetic engineering (although not all proponents of sustainable intensification agree upon the latter).

5. ***Shifting from an emphasis just on expanding irrigation to a focus on improved soil and water management***, including in rainfed areas through cultivation techniques aimed at water conservation, harvesting and retention. In irrigated systems, there is an increased emphasis on improving the efficiency of water use, for example through reducing water losses.

6. ***Developing a supportive policy environment*** that creates incentives for actors to adopt sustainable intensification practices. Examples include more realistic pricing of irrigation water to discourage its waste, improving farmers' access to credit for agricultural equipment that they can use to build

1 See FAO (2011b); The Montpellier Panel (2013); Garnett and Godfray (2012); and Fairhurst (2012).

water-conserving tied ridges and small retention barriers, and movement away from untargeted fertilizer subsidies towards more targeted, voucher-based and limited "smart-subsidy" approaches (see Focus Section C in Part IV).

West Africa boasts some examples of localized success with these sustainable intensification approaches, particularly in the Sahel in restoring highly degraded land, fostering reforestation and raising depleted water tables (Botoni and Reij, 2009; Kabore and Reij, 2004). Other approaches, such as maize-legume intercropping (with the legumes fixing nitrogen and helping suppress weeds early in the growth of the maize) also hold promise, as does the progress in developing drought-resistant maize varieties through genetic engineering.

Fostering the broader adoption of sustainable intensification in West Africa will require addressing two major challenges:

7. These techniques are much more knowledge- and management-intensive to develop, diffuse and use than are one-size-fits-all approaches. Developing and diffusing locally tailored sustainable agricultural intensification will require substantial investment in strengthening knowledge and capacity throughout the agrifood system. Agricultural research systems must work with farmers and other actors, such as input dealers, to develop sustainable solutions; farmer organizations and extension personnel must promote such approaches and acquire indigenous knowledge from farmers that can contribute to improving the proposed solutions; and farmers must learn how to use the new technologies and management tools.

8. There is broad scope for learning across the region, sharing successes and learning from failures, as sustainable intensification approaches are adapted to the region's varying agro-ecologies. At the same time, there is need for better coordination among the many organizations promoting different versions of sustainable intensification within the region. Currently, there are over 40 subregional organizations working in the area of natural resource management and rural development. The efforts are frequently poorly connected, with each organization aiming to ensure its own survival and its legitimacy by developing its own programmes rather than devising ways to complement the others (ECOWAS *et al.*, 2012). ECOWAS, through its regional CAADP programme and its collaboration with CILSS and CORAF, which have been a long-time leaders in promoting regional collaboration on issues of natural resource management and agricultural research, have clear roles to play in promoting greater coherence and collaboration in this area.

the lack of consensus among the various climatic scenarios with regard to changes in precipitation, the IPCC predicts a reduction of average annual rainfall on the order of 10 to 20%. Though there is no consensus among the regional climate models on changes in average rainfall in the region, there is agreement that climate variability (in temperature and rainfall) will likely increase.

In addition to decreases in rainfall, the IPCC report (Pachauri and Reisinger, 2007) anticipates a fall in the ground water levels, following their reduction in recharge, as well as a decrease in the number and size of ponds and watering points. Furthermore, a reduction in the yield of the major crops is expected (e.g. maize, sorghum, rice, and cowpeas) and in cereal production in particular. Brown and Crawford (2008) estimate that temperatures would increase by 2.5°C to 3°C by 2100 and yields of maize would decrease by 6.9% by 2020, but the yield of millet, a more drought-tolerant crop, would not be affected.

One likely consequence of climate change will be increased migration in the region, both within and across countries, as populations in particularly

stressed areas seek other locations to earn their livelihoods. In the context of insecure tenure rights to land and water resources (e.g. for fishing), this potential migration of environmental refugees may further contribute to the recurrent crises discussed earlier in this chapter.

2.5 Globalization and technological change

A number of forces related to the globalising economy and rapid technological change are shaping the evolution of the structure of West African Agriculture. While not an exhaustive list, three of the most powerful ones are the involvement of new global actors in the West African economy, the information revolution and the biotechnology revolution.

2.5.1 Globalization and the involvement of new global actors

Economic reforms since the mid-1980s, combined with other sectoral reforms (discussed in Chapter 11) have led to greater openness of West Africa to international markets at a time when the process of globalization has been accelerating around the world. The development of more sophisticated value chains engaged in global sourcing of products for upscale markets offers new export opportunities for West African farmers and processors, but only if they can meet the firms' minimum order quantities and stringent quality standards.[19] Consumer concerns in importing countries of the North about product safety, environmental quality, and labour conditions have led to strict demands for traceability and compliance with production standards (such as the demands to certify that cocoa was not produced using child labour). At the same time, such demands are also emerging from West Africa's growing middle class (see Chapter 7).

The greater openness of West African markets to imports of processed foods from abroad (e.g. frozen chicken parts and milk powder), often at very low prices, has also threatened the competitiveness of some domestic industries, as discussed in Part III. This competition has led to pressure from West African farmer groups and some processors for increased import protection, under the banner of promoting food sovereignty.

Since the early 2000s, an expanded set of actors, particularly China and India (Broadman *et al.*, 2007), but also Brazil and the African diaspora, has emerged as major sources of demand for African exports and of investment and technical assistance in farming and agroprocessing (sometimes tied to export). The growing relationship between West Africa and these new actors offers new potential to expand and diversify West African Agricultural production and markets, but also has raised concerns in the region about competition (e.g. between Asian and West African trading firms) and control of resources within the sector.

The new actors have also emerged as important providers of imports of agricultural machinery and of light manufactured goods. The expanded availability of inexpensive light manufactured goods (e.g. synthetic textiles and cheap plastic sandals) may have been a boon for West African consumers, but it has stifled local production of competing products and raises questions about whether an Agricultural-led growth strategy in West Africa would have as strong growth linkages (via induced demand for locally produced manufactured goods) as did the Green Revolution in Asia.

2.5.2 Information technology revolution

The rapid spread of modern information and communication technology, especially cell phones, has had a profound effect on Agricultural development in the region. Traders' use of cell phones has improved market integration (Aker, 2010; Aker and Mbiti, 2010), and their increasing availability in rural areas offers new opportunities for their inclusion as a tool for agricultural extension programmes.

19 "Quality@quantity" is a phrase used in agribusiness to describe the requirement of large-scale buyers of agricultural products for consistent quality of products at a volume high enough to allow the buyer to capture economies of scale (Perakis, 2009). As is discussed in Part III, assuring quality@quantity has been an on-going challenge for West African producers and wholesalers who sell both to the export market and domestic processors. Failure to ensure quality@quantity in export markets turns outside buyers away from West African products or leads them to offer steep price discounts. Failure to ensure quality@quantity to West African processors (e.g. feed millers) often leads them to turn to imported raw materials, thereby increasing West Africa's import dependence.

The spread of cell-phone-based mobile banking and the increased ease of remittances from migrants to their families in rural areas thanks to money transfer services, that rely on modern telecommunications, have the potential to improve both, rural finance and the ability of rural households, to respond rapidly to food crises. As the experience of the Arab Spring demonstrated, the spread of such technology also facilitates the mobilization of groups discontented with current government policies, including food policies.

2.5.3 The Biotechnology revolution

The biotechnology revolution, including the development of transgenic varieties, offers opportunities for increasing yields (e.g. through the development of more drought-resistant maize), improving nutrient content, and reducing pesticide use. But there is a strong debate in many West African countries about the desirability of adopting genetically modified organisms (amplified by groups from outside of West Africa on both sides of the issue). Among the concerns raised are safety to humans and the environment, potential loss of local intellectual property rights over indigenous varieties to international firms, and fears of domination of input markets by multinationals. ECOWAS countries and development partners in the region have varying policies with respect to genetically modified organisms (GMOs). The governments of Burkina Faso and Nigeria, for example, have called for GMOs to be part of a diversified strategy to increase agricultural production, as has the African Development Bank. Other countries in the region, however, either oppose the introduction of GMOs or have not taken any official position with regard to the issue.

2.6 Summary of main findings

West Africa is in the midst of a structural transformation of its society, economy and physical environment. Driven by a 2.6% population growth rate, rapid urbanization that will result in over half of West Africans living in cities by 2050, growth and changing distribution of income, expansion of non-farm sectors of the economy, globalization, increased stress on the natural resource base and climate change, this transformation has profound implications for West African Agriculture. Regional averages with respect to all these changes, however, obscure large variation among the 15 countries of the ECOWAS zone. Agricultural and economic growth rates have varied widely across the region, with the impact of civil strife in countries like Liberia, Sierra Leone, and Côte d'Ivoire clearly visible in their poorer performance relative to economic "stars" like Ghana and Cape Verde. Three countries – Nigeria, Côte d'Ivoire and Ghana – account for three-fourths of West Africa's population and 80% of its GDP, so the health of these economies has profound impacts on the rest of the region. Increased regional integration allows the smaller economies of the other ECOWAS countries to benefit from growth in the "big three", but it also makes them vulnerable to disruption in these economies, as evidenced by the impact of the Ivorian crisis on Côte d'Ivoire's neighbours.

A number of forces are influencing the transformation of West African Agriculture through their effects on the demands facing West African producers and the capacity of the agrifood system to respond to those demands. Key among those forces are the following:

- Rapid population growth, with West Africa's total population projected to more than double between 2010 and 2050, from 301 million to 734 million.
- Rapid urbanization, both in large cities (particularly along the coast) and emerging secondary towns throughout the region, which is associated with lifestyle changes including changes in food consumption patterns that are analysed in Part II of this report.
- An on-going but very uneven structural transformation of West African economies, with large numbers of the population employed in low-productivity jobs in the informal services sector.
- Per capita income growth and changes in its distribution, including expansion of the West

African middle class, which now accounts for about 25% of the total population. The proportion of the population in the middle class differs by country, as both the pace of economic growth and how that growth has been shared among different segments of the population varies widely by country.

- Coupled with the emerging middle class, a growing mass market of people still living under the poverty line for whom the price of food is a critical determinant of their real incomes.

- In spite of a trend towards generally higher incomes in the region, highly disruptive recurrent natural and human-created disasters persist in various countries. These range from droughts and floods to civil wars and terrorist attacks, and their effects often spill across borders. Such disasters frequently require strong emergency relief efforts and may divert resources from longer term Agricultural development. If not carefully coordinated with Agricultural policies, these efforts (such as the untargeted distribution of food aid) can also undermine incentives for longer-term Agricultural growth.

- Growing stress on the natural resource base due to population pressure and climate change.

- New opportunities and threats brought about by globalization, including new export opportunities but also strongly increased competition from overseas suppliers in some West African markets. Globalization has also led to the emergence of new international actors (e.g. from Asia, Latin America and the African diaspora) as potential investors and as sources of demand for West African products, and the need to deal with increasingly volatile international commodity prices in recent years.

- New opportunities created by the information and biotechnology revolutions to link West African producers to new sources of demand (and potentially finance through mobile banking) and to respond to the evolving demand with new, more adapted products.

Subsequent chapters in this report analyse the impact of these forces on West African Agriculture and their implications for Agricultural policy in the region.

Chapter 3

Production Response

This chapter briefly reviews how West African Agriculture has responded, in terms of increased production and productivity growth, to the driving forces discussed in Chapter 2. The chapter begins with a description of the region's diverse agricultural production base, which has strongly influenced the region's ability to respond to growing demands for its Agricultural products. The chapter then examines region-wide trends in production of agricultural commodities over the past 30 years, as reported in FAOSTAT. In order to see whether the production increases resulted from simply devoting more resources to agricultural production using existing technologies or from greater productivity, the chapter then turns to an analysis of trends in land, labour and total factor productivity in West African agriculture over the past 30 to 40 years.

The analysis in these first three sections of the chapter demonstrate that production response in West Africa, while vigorous with respect to some products and countries, has been weak and inconsistent in others. The chapter then goes on to discuss the main factors that have led to this mixed supply response, ranging from limited market access in many areas to weak Agricultural research and extension systems in many countries. The limited supply response of West African agriculture has contributed to growing food imports into the region, which are described in Chapter 4. The present chapter thus sets the stage for more disaggregated analysis based on trade data in Chapter 4 and the analysis by specific value chains and agroprocessing industries in Part III.

3.1 A highly diverse agricultural production base

The region's production response to the forces discussed in Chapter 2 is strongly conditioned by West Africa's highly diverse agro-ecological conditions and its vulnerability to weather shocks.

3.1.1 Diversity of agro-ecologic conditions

West Africa is a diverse region characterised by a wide variety of ecosystems and an equally high number of production systems. The region extends from the Sahara Desert in the north, with a typical rainfall of less than 100 mm per year, through the Sahelian transition zones (200-600 mm per year) and the Sudanian savannahs to the rainy forests of the coastal zones of the Gulf of Guinea and Southern Nigeria, which have over 2 000 mm of rainfall per year. Agricultural activities range from nomadic pastoralism in the far north through agropastoral systems based in the Sahel, a mixed cereal-root crop system in the Sudanian savannah areas (the so-called "Middle Belt"), root-crop and tree-crop systems in higher rainfall areas farther south, to the sub-humid and coastal-artisanal fishing system along the Atlantic. There is a five-fold increase in crop output per ha as one moves from the agropastoral systems of the Sahel (approximately US$240/ha) to the tree-crop systems of the south (US$1 125/ha) (Benin *et al.*, 2011). Overall, roughly a third of West Africa's land area is devoted to agricultural uses, of which only one third is used for crop production and the remainder serves as rangeland and pastures.

Crop production is concentrated in areas with favourable combinations of agro-ecologic conditions, population densities, infrastructure and market access. Water availability plays an overarching role in determining production potential. Most crop production takes place in the humid and semi-humid areas. The humid zones along the coast are suitable for the production of roots, tubers, tree crops such as rubber, coffee, cocoa and oil palm, but also leg-

umes, maize and pineapples. Tick-borne diseases and trypanosomiasis, however, severely limit cattle production along the humid coast. The Middle Belt has a more diverse production potential due to its climatic and soil conditions. Crops grown include millet, sorghum, maize, oilseeds (sesame, shea and groundnuts), cashew nuts, cotton, cassava, mango, citrus fruits and beans. Its abundant pasture resources support widespread production of livestock, including cattle, goats and sheep.

In the arid and semi-arid areas of the Sahel, livestock production is more important than crop production, which is mainly confined by water availability and concentrated along rivers, irrigated areas and lowland areas. The Sahelian zone has a long tradition of livestock production based on extensive transhumant systems adapted to seasonal rainfall patterns. Crops grown include millet, sorghum, irrigated and rainfed rice, legumes (especially cowpeas), onions and groundnuts (Blein *et al.*, 2008). There has been an increasing convergence of production in the Sudanian zone, with roots, tubers and maize moving north from their traditional production zones in the south, and Sahelian products such as legumes, sorghum, millet and cattle moving south from their traditional production zones in the north.

3.1.2 High vulnerability to weather conditions

West Africa in general, and the Sahelian region in particular, is characterised by some of the most variable climates on the planet, and this variability increases as one moves north through the sub-humid and semi-arid zones. The semi-arid regions are particularly vulnerable to climatic variability such as droughts and flooding. Most crop production in West Africa is rainfed; hence production levels and pasture conditions are susceptible to fluctuations in precipitation, particularly in the Sahel. Only 10% of the total cropland in ECOWAS and 2% of the cropland in the Sahel is irrigated. Moreover, about half of the population lives in areas with a growing period of fewer than 6 six months. These areas represent slightly more than half of the total cropland (Johnson, *et al.*, 2008). Hence, West African agriculture continues to be characterised by high inter-annual production variability and a low level of intensification. Between 1965 and 2012, annual aggregate coarse grain production recorded nine instances of negative growth in one year followed by double-digit growth the following year; three of these instances have occurred since 2007 (FAOSTAT, 2013).

The irrigation potential of the region varies widely between agro-ecological zones due to the very unequal distribution of rainfall. The Everett dry zone (Burkina Faso, Cape Verde, Mali, Niger, and Senegal) receives less than a quarter of the total rainfall of West Africa for an area accounting for roughly 60% of the whole region. The irrigation potential of this zone is about 16% of the regional potential. Over three-quarters of total rainfall (77%) is accounted for by the humid and semi-humid areas, and Nigeria and Ghana have the highest irrigation potential, accounting for 26% and 21%, respectively (Blein, *et al.*, 2008).

Only 10% of the potentially irrigable lands are equipped for irrigation, with the agricultural water-managed area ranging from 29% of the cultivated area in Sierra Leone to less than 1% in Benin, Ghana and Togo (Sirte, 2008). On the other hand, 86% of inventoried water withdrawals[20] are used for agriculture, a value higher than the global agricultural water withdrawal (70%). Agricultural water use ranges from 71% in the Gulf of Guinea to 95% in the Sudano-Sahelian zone. Growing urbanization and economic diversification will lead to increased competition over the use of available water resources between agriculture and other sectors.

3.2 Trends in regional agricultural production

The performance of the agricultural sector in West Africa over the last three decades has been characterised by strong output growth. Production volumes of most crops, both for domestic and export markets, has grown vigorously since 1980, often outpacing population growth. In value terms

20 Water withdrawal refers to the gross quantity of water withdrawn annually for a given use.

(based on 2012 production), aggregate agricultural production is dominated by yams and cassava, followed by paddy rice, groundnuts, cattle meat, and cocoa beans (Table 3.1). These are followed by four staples (millet, maize, cowpeas and sorghum). With the exception of cocoa, the top items in terms of value of production are all food commodities, destined overwhelmingly for local and regional consumption.

Table 3.2 shows growth rates of major crops between the 1980 and the first decade of the 21st century and production volumes for three-years average from 1987-89 to 2007-09. Cashew nuts show the highest average annual growth rate over the entire period (16%) – albeit from low initial levels – followed by roots and tubers (6.4%), cowpeas (6.3%) and cotton (5.7%). Cereal production increased at 3.9% per annum, outpacing the region's population growth during the period 1980-2009. This increase of cereal output has been mainly driven by maize, which grew annually by 5.8%, resulting in a five-fold cumulative increase. Moreover, the average annual share of maize in total cereal production rose from approximately 14% in the 1980s to 26 % in 2000-09. Production levels of rice, sorghum and millet grew slower and are about two and a half times higher than in the early 1980s. Vegetable production grew by 4.2% per annum. Growth in vegetable production has been particularly strong in the urban periphery of small towns as well as in irrigated perimeters in the Sahel (Blein, *et al.*, 2008).

Growth of livestock production has been slower. Meat and milk production did not grow in line

Table 3.1 *ECOWAS Agricultural production by value*

Millions of 2004-06 US$, 2007-2011

Commodity	2007	2009	2011
Yams	11 147	11 081	13 332
Cassava	6 529	6 104	7 952
Rice, paddy	2 202	2 910	3 282
Groundnuts, with shell	2 202	2 802	2 551
Indigenous Cattle Meat	2 413	2 439	2 503
Cocoa beans	2 400	2 525	2 901
Millet	2 544	2 096	2 383[a]
Maize	1 681	2 085	2 337
Cowpeas, dry	1 468	1 287	1 336
Sorghum	2 028	1 555	1 741
Citrus fruit	1 661	1 887	1 891
Plantains	1 713	1 729	1 750
Vegetables, fresh	1 196	1 127	1 443
Cashew nuts, with shell	1 015	1 238	1 359
Indigenous Goat Meat	1 087	1 185	1 260
Cotton lint	897	827	924
Indigenous Sheep Meat	794	869	962
Taro (cocoyam)	1 450	994	1 000
Indigenous Chicken Meat	690	754	845
Indigenous Pig Meat	836	835	716
Indigenous Sheep Meat	497	526	562
Coffee, green	253	226	196

Source: FAOSTAT, 2011
[a]Figure refers to 2010

Table 3.2 *Volume and growth rates of main crops*

By three-year averages, 1987-2009

	Volume			Annual Average Growth Rate (AAGR)				AAGR per capita
	1987-89	1997-99	2007-09	1980-89	1990-99	2000-09	1980-09	1980-09
Crop	(1 000 metric tonnes)			(%)				(%)
Total Cereals	29 137	37 642	54 875	8.2	2.7	5.6	3.9	1.2
Millet	8 212	10 549	15 897	6.0	2.8	5.7	3.5	0.8
Rice, paddy	5 310	6 959	10 091	6.5	2.1	5.7	3.7	1.0
Sorghum	7 919	10 517	14 363	5.6	4.5	4.3	3.4	0.7
Maize	7 417	9 259	13 986	18.4	1.1	7.0	5.7	2.9
Roots and Tubers	38 349	88 140	124 495	4.8	6.0	3.9	6.4	3.6
Yams	13 470	34 287	47 862	4.7	5.6	3.8	6.9	4.1
Cassava	22 521	46 207	64 387	4.7	5.1	4.1	5.7	2.9
Oil palm fruit	9 358	11 758	13 449	1.0	2.2	1.3	1.9	-0.8
Groundnuts, w. shell	2 628	4 588	6 633	4.3	7.8	4.0	5.0	2.3
Fruit (excl. Melons)	10 536	15 500	18 803	2.1	4.2	2.1	2.9	0.2
Sugar cane	4 347	4 449	5 816	0.5	-0.2	2.2	1.0	-1.6
Coffee (green)	291	371	192	-1.4	2.1	-7.3	-1.1	-3.6
Cow peas, dry	1 480	2 964	4 728	6.2	5.9	6.5	6.3	3.6
Cocoa beans	1 262	1 883	2 604	5.8	5.0	3.3	4.6	1.9
Cashew nuts, w. shell	59	394	1 137	9.0	22.9	7.0	16.0	13.0
Vegetables & Melons	7 208	11 804	15 779	4.2	5.2	3.3	4.2	1.5
Cotton lint	415	872	650	12.5	7.0	-3.6	5.7	2.9

Source: FAOSTAT

Table 3.3 *Volume and growth rates of main livestock products, by three-year averages*

	Volume			Average Annual Growth Rate (AAGR)				AAGR per capita
	1987-89	1997-99	2007-09	1980-89	1990-99	2000-09	1980-09	1980-09
Livestock Product	(metric tons)			(%)				(%)
Total Meat	1 740	2 254	3 166	1.3	3.0	3.4	2.6	-0.1
Cattle meat	540	727	989	-2.3	3.9	3.8	1.7	-0.9
Goat meat	207	321	462	3.5	5.0	3.0	4.3	1.6
Sheep meat	133	215	322	1.6	5.7	3.2	4.3	1.6
Game meat	303	325	392	1.5	0.4	1.3	1.3	-1.3
Poultry meat	295	338	513	4.1	1.3	4.9	2.8	0.1
Pig meat	165	222	338	9.0	3.1	3.9	4.8	2.0
Eggs Primary	366	542	776	3.4	1.6	3.4	3.7	1.0
Total Milk	1 575	2 070	2 971	-0.4	2.5	3.8	2.5	-0.2

Source: FAOSTAT

with demand, with annual growth rates averaging 2.6 and 2.5% during the period 1980-2009, albeit with marked inter-annual fluctuations (Table 3.3). Although cattle herds in Sahelian countries were restocked after the droughts of the 1970 and 1980s, the overall increase of cattle numbers has been modest. In contrast, the number of small ruminants, which have shorter production cycles, grew faster. Pig meat production grew at 4.8% annually, followed by sheep and goat meat. Poultry production

grew only at 2.8%, although egg production averaged 3.7% growth per year.

On a per capita basis, maize, starchy roots and cowpeas exhibited strong growth (3% per year and above), whereas oil crops and vegetables showed a more modest annual growth rate of 1 to 2%. Per capita production of millet, sorghum, rice and fruits increased annually by less than 1%, while that of meat, milk and sugar cane actually declined on an annual basis over the last thirty years. Concerning livestock products, pig, sheep and goat meat achieved annual average growth rates per capita of 2% and 1.6%, whereas cattle meat and milk production declined on a per capita basis. Hence, while the per capita production of basic food staples has shown the highest increase, crop and livestock products with the most dynamic markets, such as meat, dairy products, rice and vegetable oils, showed a weaker performance and were not able to meet increasing demand. As will be seen in Chapter 4, the gap was met by increasing imports of these commodities.

Despite the growth shown in Table 3.2, however, it has not been rapid enough to allow most West African countries to meet their poverty reduction goals. A computation based on IFPRI's multi-market model revealed that West African agriculture would have to generate and sustain an annual GDP growth rate of 6.8% between 2004 and 2015 in order to achieve Millennium Development Goal (MDG) 1's target of reducing extreme poverty by 50% between 2000 and 2015 (Johnson, *et al.*, 2008).

3.3 Trends in agricultural productivity

Agricultural productivity refers to the agricultural output produced for a given level of inputs. While output levels can generally be increased by raising the amount of input use, lower unit costs of production and improved economic competitiveness require improvements in productivity. There are two types of productivity indicators: those of partial factor productivity, which measure output per unit of a given input, such as land or labour; and those of total factor productivity, which attempt to measure the value of output divided by the value of all inputs used in its production. Because of data limitations, most studies in West Africa have focused on measures of partial factor productivity, particularly yields per ha. As discussed below, however, more recent studies (particularly by ReSAKSS) have attempted to measure total factor productivity.

3.3.1 Yields per hectare

Agricultural growth in the region has been driven largely by area expansion, whereas land productivity increases have been modest, with yields remaining well below global benchmarks (Table 3.4). Nonetheless, in the most recent period shown in Table 3.4 (2008-2012), there have been some modest increases in region-wide yields, particularly for some of the staple crops. These increases may reflect greater access of farmers to fertilizers and improved seed as a result of major agricultural intensification efforts launched in response to the 2008 spike in world food prices and the more favourable price incentives they faced during this period. It should also be borne in mind that the figures in Table 3.4 are broad averages across many different production systems in West Africa and, as noted below, in particular settings throughout the region where production conditions are more favourable, yields are substantially higher than these region-wide averages.

This caveat notwithstanding, as shown in Figure 3.2 on page 77, West Africa's agricultural growth (like that of most of sub-Saharan Africa) over the past 30 years has been driven overwhelming by area expansion, in sharp contrast to other regions of the world, where yield increases have been the main drivers of output expansion. For instance, the area planted to cereals increased by 3.9% per annum while growth in yields increased by less than 1.0% between 1980 and 2009 (see Figure 3.2 on page 77). Within this general pattern of extensification, the share of roots, tubers and pulses in the total area under food crop production increased (53%) while cereals witnessed a 7% drop over the last three decades.

The land productivity challenges facing West Africa are pronounced. With the exception of maize,

for which average yields grew annually by 2.2% between 1980 and 2009, yields of other food crops increased only modestly or even stagnated (annual growth rates ranging from 0.0 to 1.3%). The performances of the cattle and poultry sub-sectors, measured in terms of output per animal, have even been worse over the last 30 years, with average yields declining for beef (-0.9%) and stagnating for poultry and dairy sectors (Table 3.4).

With the production initiatives launched in the wake of the 2008 food crisis, cereal yields in the region have begun to increase beyond those shown in Table 3.4, but still lag other areas of the world. Cereal yields averaged 1 152 kg/ha in West Africa in 2008-12 compared to 1 435 kg/ha in East Africa, 1 883 in North Africa and 3 044 in Southern Africa. Average rice (paddy) yields (which include both irrigated and rainfed systems) are also markedly lower in West Africa (2 009 kg/ha) than in East Africa (2 436 kg/ha), North Africa (9 507 kg/ha), and Southern Africa (2 616 kg/ha). Average rice yields in South-Eastern Asia (4 136 kg/ha) and Southern Asia (3 512 kg/ha) are also much higher than the West African average, reflecting the much higher proportion of production produced under irrigation in these regions than in West Africa. Contrary to cereals, average cassava yields in West Africa are higher (at 12 338 kg/ha) than in other regions of Africa, yet substantially lower than levels in South-Eastern Asia (where yields are 52% higher than in West Africa) and South Asia (167% higher).[21]

These regional averages also mask wide variations in intra-regional performance. For example, while yields of Nigerian and Guinean rice declined between 1980 and 2009, average paddy

21 All figures are calculated from FAOSTAT data.

Table 3.4 *Average yields for selected commodities in West Africa and other regions (1990–2012)*

	Western Africa			Sub-Saharan Africa			South-Eastern Asia		
	1990-99	2000-2009	2008-12	1990-99	2000-2009	2008-12	1990-99	2000-2009	2008-12
Commodity	Yield (kg/ha)			Yield (kg/ha)			Yield (kg/ha)		
Wheat	1.902	1.359	1.699	1.781	2.176	2.405	940	1.441	1.776
Rice, paddy	1.640	1.672	2.009	2.153	2.372	2.523	3.242	3.836	4.136
Maize	1.258	1.556	1.715	1.543	1.774	1.983	2.119	3.086	3.813
Millet	700	845	736	651	763	690	668	812	913
Sorghum	838	938	980	808	910	952	1.266	976	1.065
Total Cereals	954	1.102	1.186	1.199	1.372	1.517	3.013	3.677	4.045
Beef and Buffalo Meat[a]	128	123	123	143	151	158	185	197	196
Poultry Meat[a]	0,9	0,9	0,9	1,1	1,2	1,2	1,1	1,1	1,1
Cows milk[b]	217	220	231	455	497	503	667	896	892
Pulses	336	434	500	504	568	633	804	950	1.179
Yams	10.593	10.543	11.277	10.219	10.295	10.824	4.693	4.844	5.172
Cassava	10.023	10.653	12.338	8.244	9.225	10.324	12.318	16.365	18.805
Oilcrops	316	352	362	262	284	303	1.246	1.904	2.195
Oil palm fruit	3.282	3.230	3.261	3.694	3.712	3.863	17.814	18.914	18.868
Cocoa beans	478	475	469	454	461	458	765	688	509
Coffee, green	296	308	258	434	425	431	734	850	958
Sugar cane	45.125	40.062	37.080	62.215	65.506	64.232	59.489	63.763	68.247
Seed cotton	958	1.016	1.083	978	955	978	738	705	1.112

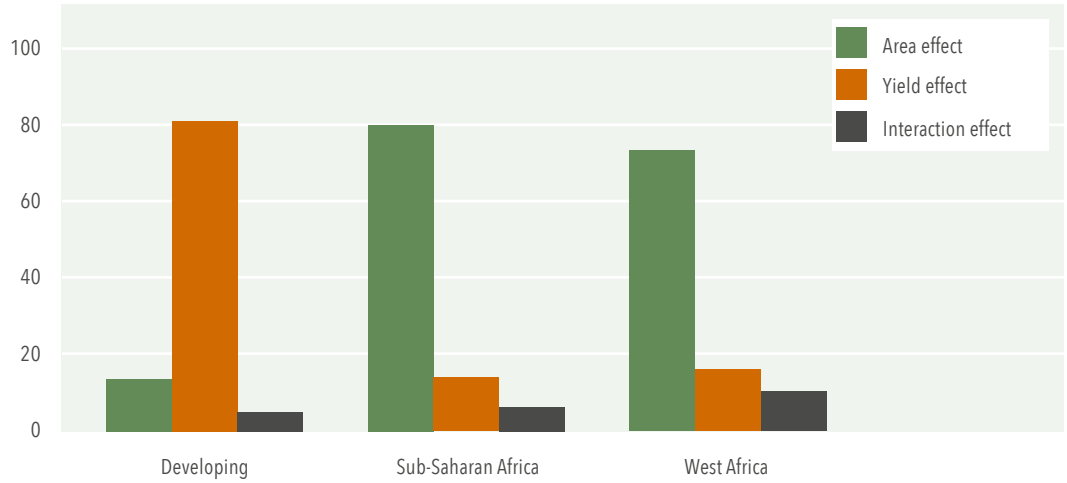
Source: FAOSTAT,
[a] Yield = Carcass Weight (kg/animal);
[b] Kg/animal/year

yields in the other big rice producing countries of Côte d'Ivoire, Mali and Sierra Leone increased substantially; these figures conceal even more pronounced productivity success stories in certain irrigated perimeters in these countries (e.g. Office du Niger in Mali). Similarly, cassava yields have increased much more sharply in Nigeria and Ghana over the past 20 years (in response to the spread of improved varieties developed by IITA) than in several other coastal countries such as Sierra Leone and Liberia; and until the mid-2000s, the performance of the cotton sector in Francophone West Africa was much stronger than in the Anglophone countries (see Chapter 10 for details).

Table 3.5 displays examples of striking differences in country-wide average yields in 2008–10 for selected crops. For certain crops, yields may vary by up to a factor of five, reflecting vast differ-

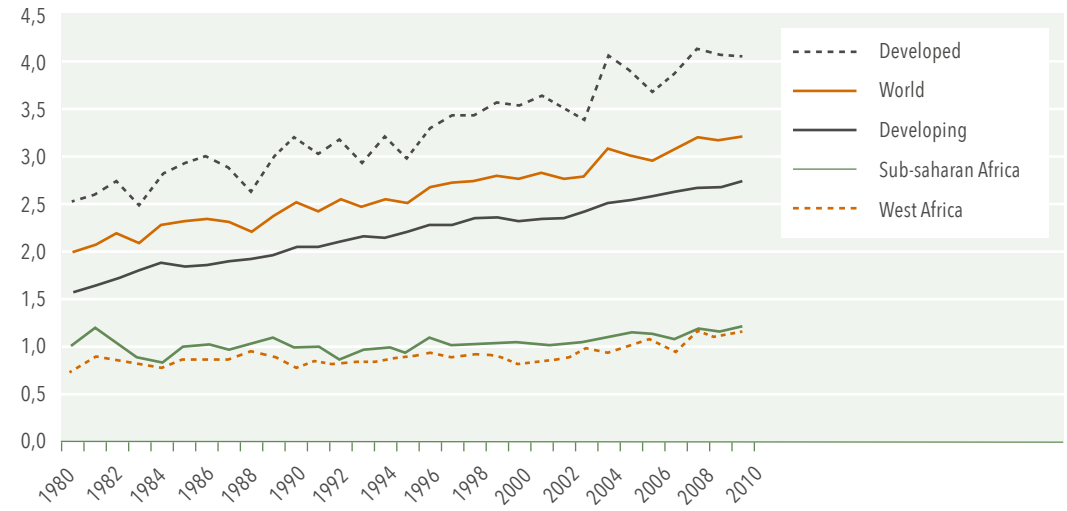
Figure 3.1 *Contribution of area and yield to output growth*

1980-89 to 2000-09 (%)



Source: Konandreas, 2012a.

Figure 3.2 *Trends in cereal yields (mt/ha)*



Source: Konandreas, 2012a

Table 3.5 *Country-average yields for selected crops in West Africa, 2008–2010*

	Cassava	Cowpeas	Groundnuts	Maize	Sorghum	Rice, paddy	Sugar Cane	Oil Palm Fruit
Country	(mt/ha)							
Benin	13.9	–	0.9	1.3	1.1	3.7	100.0	10.3
Burkina Faso	1.5	0.5	0.8	1.5	1.0	2.3	19.0	7.1
Cape Verde	12.9	–	–	0.3	–	–	74.5	10.0
Côte d'Ivoire	7.0	–	1.1	2.0	0.7	1.8	–	5.7
Ghana	14.3	–	1.4	1.8	1.3	2.5	25.4	8.4
Guinea	7.9	–	1.4	1.2	1.2	1.8	53.4	10.2
Guinea-Bissau	11.6	0.2	1.5	0.9	1.0	1.9	27.3	–
Liberia	7.8	–	0.9	–	–	1.3	10.2	–
Mali	16.4	0.4	0.8	2.7	1.1	3.7	73.9	–
Niger	16.1	0.3	0.5	0.8	0.4	1.6	49.4	–
Nigeria	11.9	0.8	1.1	2.1	1.1	1.8	19.4	2.7
Senegal	7.8	0.4	1.0	1.6	1.0	3.7	115.7	10.8
Sierra Leone	5.2	–	0.8	0.9	1.0	1.7	69.7	8.0
The Gambia	3.3	–	0.9	1.2	1.1	1.1	–	2.7
Togo	6.2	–	0.7	1.2	1.1	2.4	–	8.5

Source: FAOSTAT

ences in agro-ecologic zones, production systems, access to inputs, and varieties. These disparities across countries also suggest that there is substantial scope for improving yields in low-performing areas by learning successful approaches from neighbouring countries.

A more aggregate measure of land productivity is given by the value of agricultural output per ha rather than the physical yield of individual commodities. Table 3.6 presents data on the average annual growth rate of land and labour productivity from 1980 through 2010 for different regions of Africa, as measured in value terms. The West African regional figures are strongly influenced by the performance of Nigeria over this period.

Three observations emerge from Table 3.6. First, land productivity in West Africa appears to have grown faster over time than labour productivity. As discussed below, however, this may be an artefact of an overestimation of the size of the agricultural labour force. Second, over the entire period 1980-2010, land productivity (in value terms) has grown more quickly than the Africa-wide average and has exceeded the rate of growth of all other subregions of Africa except Central Africa. Third, the most rapid increase in land (and labour) productivity

Table 3.6 *Average annual growth rates of land and labour productivity for Africa*

	1980-1990		1990-2000		2000-2010		1980-2010	
Region	land	labour	land	labour	land	labour	land	labour
Central Africa	1.7	0	3.5	2.6	4	2.8	2.6	1.6
Eastern Africa	2.1	1.2	0.7	2.4	2.4	0.3	1.5	1.3
Northern Africa	1.1	3.3	1.4	1.6	1.7	3.3	1.4	2.7
Southern Africa	2.5	3.3	3	0.8	0.1	2.3	1.7	1.8
Western Africa	1.3	-1.6	3.1	1.9	2.1	1.2	2.3	0.9
Africa	2.0-	3.1	1.0	1.2	2.2	3.0	1.6	2.3

Source: Benin, *et al.*, 2011

occurred during the decade of the 1990s. This was the era of structural adjustment, when devaluations of local currencies and changes in relative prices induced farmers to expand production of export crops and shift into more high-value products (see Chapter 11).

3.3.2 Labour productivity

In contrast to trends in land productivity, Table 3.6 indicates that labour productivity over the 30-year period 1980-2010 grew more slowly in West Africa than in any of the other regions of Africa. This slow growth rate over the entire period was in part a function of falling labour productivity in the 1980s. The same forces of changing relative prices and shifts in the mix of farm-level production that likely explained the jump in land productivity in the 1990s are likely also behind the increase in labour productivity in that period. In the most recent decade, the rate of growth of labour productivity for the region slowed a bit from the 1990s but exceeded that of East Africa (Benin, *et al.*, 2011).

Labour productivity, however, may have grown more than is generally acknowledged because of a significant but poorly measured shift by rural populations into non-agricultural activities. Josserand reports that based on data from sample surveys in several West African countries, it appears that the ratio of the total population not primarily engaged in farming to the farm population increased from 0.42 in 1970 to 1.17 in 2010. This shift implies that each farm worker is feeding more than twice as many non-farm people as 40 years ago, even when one takes into account the increased food imports discussed in Chapter 4. Some of this increase in food production per worker results from a shift in area planted from export crops to food crops (especially roots and tubers), but some is also undoubtedly due to an increase in farm-level labour productivity (Josserand, 2011).

3.3.3 Total factor productivity

Total factor productivity (TFP) in agriculture, a measure of the value of all agricultural outputs divided by the value of all inputs used in production, can change for two reasons. First, the efficiency with which existing inputs are used can change by reallocating them among different products (e.g. from low-value outputs to high-value outputs). Even if the mix and physical volume of production stays the same, if output prices rise faster than input prices, this will also translate into an increase in efficiency, as the formerly lower-value outputs now have a higher value. Second, technical change (e.g. the introduction of new crop varieties) can increase the amount of output produced by a given set of inputs.

Table 3.7 presents estimated annual average rates of change of TFP for different regions of Sub-Saharan Africa over the period 1961-2005, decomposed into its two parts: gains due to efficiency and gains due to technical change. Several messages emerge from the table. First, in contrast to all the other regions of sub-Saharan Africa, over the long period from 1961 to 2005 (the last year for which data are available), TFP declined in West Africa, driven by a decline in the efficiency with which resources were used. The West Africa results were very much driven by the performance of Nigeria, where the decline in efficiency averaged over 1% per year. For the period as a whole there was a very modest (0.23%) annual gain in technical efficiency, but this was not large enough to offset the decline in the efficiency of resource use. Second, the long-term average obscures very different patterns in each of the sub-periods shown in the table. After modest increases in TFP in the 1960s, driven by technical change, there were huge declines in the efficiency of resource use, both in the subregion as a whole and even more so in Nigeria, during the 1970s (the period before structural adjustment). This was followed by modest but growing TFP growth from the 1980s through 2000, which continued at about 2% per year from 2000 through 2005. Third, in the period since 1980, the overwhelming source of TFP growth in the subregion has been increases in the efficiency of resource use. Technical change, such as would emanate from national and regional systems of agricultural research, contributed extremely little to total factor productivity growth for the region since the 1970s.

Table 3.7 *Percentage change in total factor productivity, efficiency and technical change*

Total Factor Productivity = TFP; efficiency = Eff; and technical change = Tech; annual average in %, 1961-2005

	1961-1970			1970-1980			1980-1990			1990-2000			2000-2005			1961-2005		
Region	TFP	Eff	Tech	TFP	Eff	Tech	TFP	Eff	Tech	TFP	Eff	Tech	TFP	Eff	Tech	TFP	Eff	Tech
Central Africa	-1.67	-1.75	0.08	-1.28	-1.28	0.00	0.29	0.29	0.00	2.34	1.65	0.69	3.02	2.91	0.10	0.20	0.02	0.18
Eastern Africa	-3.49	-3.88	0.42	1.41	1.41	0.00	0.42	0.42	0.00	1.28	1.27	0.01	2.45	2.38	0.07	0.40	0.34	0.06
Southern Africa	-0.28	-1.48	1.23	0.54	0.13	0.42	1.94	1.02	0.94	3.71	2.24	1.54	1.79	-1.53	3.46	1.39	0.27	1.15
Western Africa	0.62	-0.51	1.13	-6.61	-6.62	0.00	0.51	0.51	0.00	2.94	2.89	0.05	2.06	1.98	0.08	-0.70	-0.93	0.23
Nigeria	0.97	-0.22	1.20	-7.47	-7.47	0.00	0.26	0.26	0.00	3.09	3.09	0.00	1.88	1.88	0.00	-0.92	-1.15	0.23
Sub-Saharan Africa[a]	-0.01	-1.02	1.02	-4.36	-4.40	0.04	0.58	0.48	0.11	2.59	2.37	0.25	2.20	1.70	0.52	-0.28	-0.59	0.32

Source: Benin, *et al.*, 2011
[a]29 countries for which data are available

Looking at geographical patterns of TFP, a 2008 ReSAKSS study indicated that coastal countries achieved 2.1% productivity growth per year between 1985 and 2002, whereas Sahelian countries experienced a decline of 0.29% during the same period. The top performers in this period were Nigeria, Ghana and Benin (Johnson, *et al.*, 2008).

More recent analysis for 11 ECOWAS countries for which data are available through 2005 shows that eight countries (Benin, Burkina Faso, Ghana, Guinea, Mali, Nigeria, Sierra Leone and Togo) had positive TFP growth over the more recent period 2000-2005, with six of them achieving annual rates of growth of 2% or more (Benin, *et al.*, 2011). The top performers were Sierra Leone, which was just recovering from civil war (with an annual average growth rate of nearly 10%), Burkina Faso, and Mali. For all countries except Benin, the vast majority of the increase came from improvements in efficiency, with technical change contributing very little. Three countries, The Gambia, Senegal, and Côte d'Ivoire, had negative growth rates for TFP during this period, due entirely to declines in efficiency of resource use.[22]

While technical change appears to have contributed very little to gains in total factor productivity over the past 20 years in West Africa, this does not imply that agricultural research systems have made no contribution in the region. To the extent that research has led to new varieties and/or agronomic practices that have stabilized yields that would have otherwise declined in the face of falling rainfall, there have been important contributions, although these would not be reflected in the TFP calculations.

3.4 Reasons why supply response has lagged the growth of demand

The mixed overall performance of West African Agriculture with respect to increasing agricultural production and productivity is due to a host of structural problems, many of which have been further aggravated by inappropriate policies. These structural problems include (1) the limited market access of many producers in the region, a function of weak infrastructure; (2) the low availability and poor reliability of electrical energy, both in urban and rural areas, which limits value-added activities and manufacture of agricultural implements; (3) the high risks and uncertainties facing actors in the Agricultural sector and limited means of reducing and managing those risks; (4) poor access to improved technologies and inputs; (5) weak systems of Agricultural research, development, and advisory services; (6) similarly weak systems of Agricultural education that are necessary to develop the human capital for 21st Century West African Agriculture; (7) systems of financing that are poorly adapted to the challenges facing actors in the agrifood system; and (8) a poor overall business environment in many countries.

22 Senegal had a slightly positive rate of growth of technical-change-induced TFP during this period, but it was more than offset by declines in efficiency, resulting in a net annual average decline of TFP of a little under 2%.

These structural problems affect the profitability and risks of investments in agriculture and related upstream and downstream segments, hence reducing the incentives facing individual farmers and other value-chain actors to undertake such investments. While many constraints and possible solutions are value-chain specific (see Part III), this section discusses generic constraints cutting across most subsectors and stages of agricultural value chains.

3.4.1 Market access constraints

Limited market access is a key disincentive for producers to increase production and adopt productivity-enhancing technologies, as it directly affects the prices producers receive for their outputs and pay for their inputs. Market access is conditioned by the geographic distance between producers and consumers and by the availability and quality of connecting infrastructures. As the population urbanises and as consumption patterns increasingly shift towards more perishable and higher-value products (see Part II), the state of the connecting systems – roads, communication and market infrastructure and transport – becomes critical, especially since a growing share of the population is located close to the coastal areas which tend to be better connected to the ports than to the hinterland. Physical market access constraints facing domestic rural producers include long distances and travel times, poor road conditions or missing roads, low transport volumes, especially in rural areas, and high transport costs. High costs of and limited access to transport not only affect farmers and traders but also providers of services such as finance, extension, and veterinary medicine. Hence, the road and transport sectors play a key role for agricultural growth.

Limited physical market access and high transport costs. West Africa's quality of transport services, as measured by the Logistics Performance Index, is lower than in other African regions and in the rest of the world (AfDB, 2011c). Transporting agricultural goods to the region's cities and ports, or raw materials to agroprocessors, is essentially done by road. Waterways, despite being widespread, are not well developed for transport, while rail transport has fallen into disuse in most countries with the exception of the Dakar – Mali and the Abidjan-Ouagadougou routes (the latter having been disrupted during the Ivorian crisis).

While important investments have been made in recent years, especially on the main international corridors and main trunk roads, road density in West Africa remains low compared to other developing regions. A World Bank study estimates that 75% of farmers in sub-Saharan Africa are located more than four hours away from the nearest market by motorised transport, compared to 45% in Asia (Sebastian, 2007). Moreover, rural communities continue to have by far the lowest accessibility to all-season roads in the developing world. Infrastructure-related market access constraints are exacerbated by limited availability of transport vehicles and low traffic volumes, especially in remote rural areas.

The low road density needs to be interpreted in the context of the vastness of the territory and low population densities. Measured against income (and, hence, ability to pay for maintenance), even current levels of road density seem rather high (World Bank, 2008). In some countries the asset value of the road network exceeds 30% of GDP (Foster, 2008). Road density differs among countries, however, being much higher in densely-populated areas and more developed countries such as Ghana and Nigeria, compared with the large Sahelian countries and the small, conflict-ridden countries along the coast.

Transport prices in West Africa are much higher than in other developing regions and constitute major constraints to agricultural competitiveness in general, and for smallholder market access in particular. Transport costs are a function of the state of transport infrastructure (roads, ports), costs of vehicles and fuel, wages of transport operators, and the policies and institutions governing the transport and road sectors. While investments in transport infrastructure (roads, port, bridges, etc.) are important preconditions for reducing travel time and vehicle operating costs, this does not necessarily translate into lower transport prices. Recent studies found that road infrastructure along major

international trade corridors is in fair to good condition and no longer is the primary reason for high transport costs (World Bank, 2012a). While costs to transport operators are similar to other developing regions, truck freight rates continue to be much higher (Teravaninthorn and Raballand, 2009). Moreover, trucking times are slowed down by frequent checkpoints and long queuing times at borders and ports.

The trucking environment and market structure in West Africa are characterised by strong market regulation through freight bureaus and shippers' councils, reducing competition. As a result, there are few large, modern trucking companies and fewer new trucks. Hence, road governance and structural issues in the transport sector are the reasons for persistently high transport prices (view Chapter 12 for further discussion). However, road sector interventions so far have focused mainly on constructing and improving hardware, with far less attention given to institutional and governance structures. Even though addressing the latter is likely to produce quick wins for transport users and the whole economy, reforms will have to confront vested interests and are politically more difficult (World Bank, 2009b; World Bank, 2010). Still, there is a risk that, unless transport sector reforms are addressed more vigorously, further investments in road infrastructure will not lead to better services and lower prices for transport users and hence fall short on delivering their full economic benefits to West African societies.

Transport costs remain especially high for producers in rural areas. Transport prices per ton kilometre from farmgate to primary collection markets tend to be three to five times higher than those from secondary (often rural wholesale) markets to wholesale markets located in the countries´ capitals. Hence, 45% of average transport charges accrue during the first 28% of the transport distance (World Bank, 2009a). Hence, the "first kilometre" tends to be the biggest hurdle to connect small rural producers to markets. Here, poor or missing road infrastructure is still the heart of the problem.

However, the challenge of expanding and maintaining the rural road network is huge and requires strategic choices. One way of doing so is to strategically align rural road investments with agricultural development programmes at the national level in order to prioritise those roads likely to have the largest effect on agricultural productivity and market access. This may entail focusing on areas that are still within reach of major urban markets or trunk roads, and where all-year rural roads alleviate a key constraint to market access. Moreover, the type of road needs to be matched with volumes of production likely to be transported. In many rural communities, production volumes may be well below the threshold needed to justify the use of the truck, and simpler roads targeted at two wheeled vehicles or animal-drawn carts may be more suitable. Moreover, financing and technical capacity for road maintenance at local levels remain important challenges. Given the limited revenue-generating capacity of local governments, sufficient budget transfers from the central level need to be ensured. Dedicated road funds with clear responsibilities to co-finance rural road maintenance could be one possibility to ensure adequate, steady funding. Countries such as Mali have also instituted toll systems on some main highways, although such systems are less practical for rural roads.

Market infrastructure gaps. Physical market infrastructure is important for efficient product aggregation and post-harvest handling, including storage, sorting, grading and packaging of agricultural produce. In West Africa, marketing infrastructure is generally insufficient to cope with the burgeoning demand and supply of agricultural produce as more and more consumers rely on the market for their food. This applies to wholesale and retail markets, cold storage and abattoirs. This infrastructure gap tends to be largest in rural areas. As a result, buyers face high transaction costs for product aggregation, quality control, and sorting into batches of homogenous quality. Quality deterioration and spoilage is a further serious problem, especially of perishable products such as fruits, vegetables and animal products, in absence of cold chains. Moreover, poor hygienic conditions in markets and improper sewage systems can cause threats to human health as well as environmental hazards. Urban retail and wholesale markets can rarely cope with rapid urban

growth, and infrastructure facilities are often grossly inadequate (see Chapter 8).

As in case of roads, investments in market infrastructure need to be complemented by investments in "market software", i.e. the policies and institutions governing market infrastructure, as well as the broader marketing functions. These include improvements in (1) planning, governance and management of markets, (2) market and price information systems, and (3) grades and standards in line with consumer demands and food safety regulations.

In many subsectors, value chains are characterised by poor transmission of incentives from consumers and agroprocessors to farmers concerning demands for specific product qualities, particularly regarding cleanliness, safety and consistency of supply. In order to enhance the value addition, farmers and other upstream actors need better information about market segmentation at the consumer level concerning qualities and prices. Moreover, price differentiation at the consumer level needs to be passed on to farmers. Without higher prices for improved qualities, farmers have no incentives to carry out necessary investments or change their farming practices.

The weak transmission of information regarding the willingness of consumers and processors to pay for different product qualities is due to:

- Lack of grades and standards that reflect the nature of demand in the market.
- The low volume of marketed surplus per farm, which makes product segregation by quality costly for traders; hence, products of differing qualities are frequently pooled in the marketing system, which dilutes any incentive to award producers of high-quality products.
- Traders and agroprocessors located in larger towns and cities frequently lacking information about product availability in the hinterland. Hence, they find it easier to import.
- Meeting market demands in terms of quality, quantity and consistency of supply often requires specialized investments and skills that are beyond the reach of many smallholders and traders.

Some value chains (e.g. cotton and cocoa) require capturing important economies of scale in marketing – in order to meet minimum order sizes by overseas buyers – and in acquisition of inputs at lower prices for farmers and ensuring tight vertical coordination in order to be competitive in international markets. West African countries have had difficulties over the past 50 years designing institutional arrangements that coordinate these value chains and are both transparent and accountable to stakeholders (see Chapter 10).

Market information systems in West Africa. Actors throughout the agrifood system obtain market information in a myriad of ways, from word-of-mouth to cell phones to formal market information systems. In the wake of the market liberalizations that swept the region as part of structural adjustment in the 1980s and early 1990s, many governments in West Africa established formal market information systems (MIS). The purposes were initially three-fold: (1) to permit governments and donors to monitor the impacts of market reforms initiated under structural adjustment and the effects on prices of food aid distributions, (2) to level the playing field among different actors in the markets – especially between farmers and traders – in terms of their ability to bargain for prices; and (3) to promote better spatial integration of markets. The public MIS typically collect information through a network of enumerators and diffuse their reports through radio, television, printed media, and in a few cases, by SMS – often on a weekly basis. Regionally, the publicly funded MIS in 10 West African countries are organized into a regional network (RESIMAO – Réseau des systèmes d'information des marches en Afrique de l'ouest), which facilitates sharing of market information across countries, development of improved market monitoring and diffusion techniques and staff development.[23] ECOWAS is helping to support the network as part of the ECOWAP/CAADP programme described in Chapter 11.

23 http://www.resimao.net

The publicly funded MIS – sometimes referred to as "first generation MIS" (David-Benz *et al.*, 2012) – focus primarily on food crops, agricultural inputs and, in some cases, livestock. They have been complemented over the past 10 years by a growing array of other MIS organized by farmer organizations (e.g. in the cocoa value chain in Côte d'Ivoire), NGO's, donor-funded projects, and private companies. Notable among the latter is Esoko-Ghana, which provides clients with market information via SMS and web-access. These "second generation" MIS attempt to address some of the shortcomings of the publicly funded MIS in terms of timeliness of information collection and diffusion, range of product coverage, and more precise description of the product qualities to which the prices refer.

While the spread of MIS throughout the region has improved information available to many actors in the system, problems persist. In the absence of well-defined grades and standards, it is not always clear what the reported prices represent. Many of the MIS report prices that may be up to a week old, which are of limited use for buyers and sellers of perishable products. Many buyers and sellers of such products, as well as larger-scale sellers of staple products, rely increasingly on cell phones to obtain timely market information from colleagues in different markets. Often, the MIS provide information only on prices and market supply conditions, but market actors frequently have need for a wider range of information, such as availability and cost of transport services, location and availability of credit services, access to advisory information, etc. Some of the second-generation cellphone based systems are attempting to provide this broader range of services. While some of the MIS conduct medium-term market outlook studies, their capacity for short-term price forecasting (which is a critical need for sellers of perishable products) remains very limited. Nonetheless, the public MIS continue to play an important role in helping inform governments of market conditions, which is often a critical input into decisions regarding import and export regulations and possible needs for food aid (Kizito, 2011). They also provide important information to smaller farmers in more remote areas, even as larger and more commercial farmers turn to other sources of market information.

3.4.2 Electrical energy

Similar to other regions in sub-Saharan Africa, West Africa's largest infrastructure deficit is in the electrical power sector. This deficit is particularly constraining to the development of agroprocessing. A World Bank study on African infrastructure (World Bank, 2010) states that the 48 countries (with a combined population of 800 million) generate roughly the same amount of electrical power as Spain (with a population of 45 million). Africa has fallen back vis-à-vis other developing regions. While sub-Saharan Africa had almost three times as much power generating capacity per million inhabitants as South Asia in 1970, the situation had inverted by 2000.

Electrical energy costs in Africa are higher than in other developing regions. Many countries rely on small diesel generators, resulting in costs several times higher than those faced by countries with large scale power systems, which are typically hydro-electric-based (World Bank, 2008). High costs are combined with unreliable service, characterised by frequent power outages. This forces agroprocessing firms either to face frequent product losses when power goes out while goods are on the production line or invest in their own generators. The latter, however, drives up their costs of production, frequently undercutting firms´ competitiveness relative to imports.

West Africa's energy generation potential is concentrated mainly in Nigeria (oil and gas), Guinea (hydropower), Côte d'Ivoire (oil and gas), Ghana (oil and gas), Niger (uranium), Benin and Togo (hydropower), and in the shared water basins of the Gambia, Senegal and Volta Rivers. ECOWAS has taken the lead in recent years in promoting a region-wide power grid aimed at facilitating the sale of electricity across borders and allowing the capturing of regional economies of scale in power generation.

3.4.3 High risks

Actors throughout the West African agrifood system face high production risks (due to weather and pests) and price risk (due to volatile markets), and often lack adequate tools to deal with these risks. Their main tool is diversification of their activities, which limits productivity gains from specialization. These risks are compounded by insecurity of land tenure, which discourages long-term investments that could increase productivity. Key among the factors generating these risks are the following:

Low reliance on irrigation to mitigate weather risks. As discussed in section 3.1, the region is highly vulnerable to erratic weather conditions, particularly drought in the Sahelian areas, but has only 10% of its total cropland under irrigation. The expansion of irrigated area has been slower in sub-Saharan Africa compared to other developing regions. Donor investments in agriculture or water infrastructure declined sharply between the 1970s and the mid-1990s as donor attention shifted away from agriculture (World Bank, 2010). There have been major efforts since the mid-2000s to expand irrigated area in some of the Sahelian countries, and national CAADP investment plans of many ECOWAS countries devote substantial resources to expanding irrigation infrastructure (see Chapter 11). Yet the expansion of irrigation in the region hinges upon the ability to contain costs. Physical suitability for irrigation does not necessarily entail economic viability, which is highly sensitive to initial investment, land and water productivity of the crops grown and access to markets and support services. Africa has a legacy of poorly managed and maintained irrigation schemes and investment costs were often much higher than in other developing regions. Best-practice experiences in Africa show that well-designed and implemented irrigation projects can lead to costs no more than USD 3 000 per ha for large-scale irrigation schemes (water distribution component) and USD 2 000 for small-scale irrigation schemes. Large-scale irrigation schemes are only viable, however, if the costs of dam construction can be recovered from hydropower use and irrigation only bears the costs of the water distribution infrastructure (World Bank, 2010). In view of the high costs of irrigation development, there might be some scope for public-private partnerships, as called for in some of the expansion plans for Mali's Office du Niger. However, experiences are yet limited and too recent to draw lessons from the suitability of different management and financing arrangements.

Price volatility. While volatility originating in international markets has been a particular concern following the 2008 price spikes, the main sources of price volatility are often domestic (view focus section A for further details). Erratic climate conditions lead to strong fluctuations in production, which, in combination with weak spatial market integration and overall low production levels result in strong price volatility. These endogenous sources of price volatility undermine smallholders' incentives to invest and commercialize. Weak storage systems and unpredictable government market interventions further contribute to price volatility. Strong price fluctuations also pose threats to contracting relationships between farmers and potential buyers, such as agroprocessors. On the one hand, these buyers have difficulties in fixing prices ex ante in the absence of hedging or other price risk management instruments. On the other hand, risks of contract breach by both parties increase with price volatility, especially in an environment with poor contract enforceability.

Limited access to modern risk management instruments. West African farmers and other value chain actors generally lack access to modern risk management products and services such as agricultural insurance or instruments to manage price risks. This is aggravated by limited access to modern inputs which could help stabilize yield risks, such as plant protectants and veterinary drugs and services, as discussed below. In the absence of such products and services, farmers' main response to the various risks and uncertainties is to diversify their limited resources into many different activities. The resulting scales of operation are often too small for adopting improved technologies and lead to higher per unit marketing costs.

Land access and tenure security. Population growth, climate change and degrading soil quality are exerting growing pressures on land, water and forest resources, with several consequences:

- ***Land fragmentation*** due to declining per capita availability of cultivable land, especially in areas with high population densities, good agricultural potential and market access. The resulting farms are often too small to feed the families that cultivate them, let alone commercialize;

- ***Increasing demand for communal land from outside investors***, both domestic and foreign investors, triggered by the promise of future demand growth and increased profitability in agriculture;

- ***Land conversion and reallocation of water rights***, due to rapid urbanization and expansion of roads and other infrastructure. This not only affects agricultural production directly, especially in high potential areas with access to markets and services, but also poses threads to existing holders of rights to these resources if not properly protected.

As a result of the above forces, tenure systems, property rights to natural resources and the rules for exchanging and protecting these rights are increasingly under stress. Current tenure systems are characterised by legal pluralism, whereby customary tenure systems co-exist and often overlap with statutory systems. Such a situation provides little security for rights holders under each system and constrains an orderly transfer of property rights. Insecure land tenure and water rights undermine incentives to invest in land improvements, irrigation and other fixed assets by existing land users. They also constrain the ability of agroprocessors to acquire land in an orderly and consensual way in order to invest in new processing plants or nucleus farms (typically core components of outgrower schemes). Moreover, conflicts over land and water destroy social capital, especially in areas with the highest production and market potentials (see Focus Section D in Part IV). Finally, the lack of recognized land records precludes local governments from establishing land taxes that could provide the fiscal basis for provision of many of the critical supporting services needed by rural communities, such as primary education, health, and extension.

3.4.4 Access to technology and inputs

Low and inconsistent use of improved inputs such as seeds, fertilizer, pesticides and veterinary drugs remains the single most important factor explaining low productivity in West Africa. Analysis of total factor productivity (TFP) growth over the period 1985-2005, discussed above, showed that technological change accounted for only 1.5% of all TFP growth; the remainder came from efficiency gains due to reallocation of resources to higher value activities, for example as farmers changed crop mixes in response to changing relative prices that resulted from liberalization and as output prices rose faster than input prices (Benin, *et al.*, 2011). Over the long term, however, productivity gains will need to be driven more by technological change, as the scope for improvements in allocative efficiency will decline as the "easy gains" in response to economic reforms are exhausted and as political pressures rise to limit the increases in output prices for food.

Improved inputs not only play an important role in increasing yields but also in stabilising yields and managing production risks. Improved seeds can enhance tolerance to drought, pests and diseases. Lack of access to farm power and mechanization at critical stages during the growing cycle can lead to significant yield penalties. Inadequate mechanization of post-harvest operations such as threshing, drying and cleaning can cause high product losses and quality deterioration. Low fertilizer use not only depresses current yield levels but also contributes to declining yields in the future, as soil nutrients are mined continually (see Chapter 2).

While fragmentary and often outdated, existing data suggest very low levels of modern input use in West Africa, even compared to other African regions.

Uneven access to inputs, technologies and support services between men and women constrains produc-

tivity growth. Cutting across the discussion below of all the factors limiting productivity growth of West African Agriculture are gender considerations. Social conventions in many countries restrict women's access to factors of production and services such as improved land and credit that are critical to productivity growth. Extension services often are predominantly staffed by men, and extension messages may not be oriented to women's concerns. These restrictions not only bias the benefits of growth away from women; they also reduce overall productivity growth by limiting the growth-enhancing resources available to women, who represent a large proportion of the actors in the agrifood system.

Fertilizer. Average fertilizer use per ha is extremely low, even if compared to other parts of Africa, let alone other developing regions (Table 3.8). Over the period 2003-2009, fertilizer nutrient use per ha of crop land in West Africa averaged, on a nation-wide basis, less than 7 kg, ranging from a low of less than 1 kg in Niger and Guinea to a high of 16.5 kg in Mali, where its use is concentrated in the irrigated Office du Niger rice zone and the rainfed cotton zone. West Africa's average fertilizer use per kg was just over half that of Eastern Africa and 15% that of Southern Africa. The West African average of under 7 kg/ha is in stark contrast with a world average of over 100 kg/ha and a regional high of 370 kg/ha in East Asia. The region's already meagre fertilizer use fell starting in 2007 when world fertilizer prices shot up rapidly, in spite of the expansion of fertilizer subsidies in several West African countries.

Seeds. The use of improved seeds is marginal, especially for food crops. Seed coming from commercial seed systems provided only 3% of the millet seed used in Senegal and 2% of that used in Niger in 1997, and the availability of improved maize seed met only one-fifth of the potential demand in Ghana and one-tenth of the potential demand in Nigeria (Niangado, 2010).[24] However,

24 Potential demand was conservatively estimated at 20% of the total area planted to the crop.

Table 3.8 *Fertilizer nutrient consumption, kg/ha, 2003-09*[a]

Country/Region	2003	2004	2005	2006	2007	2008	2009	Average 2003-09
Burkina Faso	10.8	11.8	15.2	12.5	9.4	9.0	9.1	11.1
Côte d'Ivoire	12.6	11.4	7.1	9.0	9.8	7.4	6.3	9.1
The Gambia	9.1	7.4	9.5	9.1	7.9	4.0	6.7	7.7
Ghana	4.4	7.8	3.5	12.0	10.6	9.1	12.4	8.5
Guinea	0.6	0.8	0.7	0.7	1.0	1.0	0.5	0.8
Mali	–	–	15.4	17.2	30.5	12.0	7.5	16.5
Niger	0.3	0.2	0.4	0.5	0.4	0.2	0.4	0.3
Nigeria	6.2	4.4	6.8	9.2	3.8	7.1	2.0	5.6
Senegal	10.6	12.3	9.6	2.2	2.0	2.3	4.9	6.2
Togo	7.1	3.2	8.3	4.7	6.0	0.2	0.9	4.3
ECOWAS average[b]	**6.6**	**8.3**	**6.5**	**8.0**	**6.2**	**6.0**	**3.8**	**6.5**
Eastern Africa	10.8	10.7	11.4	12.3	13.6	14.3	13.3	12.3
Southern Africa	43.6	46.8	36.3	46.3	45.3	42.2	41.9	43.2
Southern Asia	99.0	109.1	119.2	126.4	127.5	133.3	149.5	123.4
Eastern Asia	327.4	296.4	360.7	379.3	412.4	393.5	425.6	370.8
Southeast Asia	97.2	101.8	91.3	93.2	102.9	101.5	100.8	98.4
South America	111.7	118.5	100.2	105.3	129.1	115.9	90.6	110.2
World Average	**99.0**	**99.2**	**103.2**	**107.1**	**112.9**	**105.9**	**108.8**	**105.2**

Source: Calculated from FAOSTAT data.
[a] Total fertilizer nutrients expressed in terms of kg of N, P2O5 and K2O. Hectares = arable land + land under permanent crops.
[b] Average for 10 ECOWAS countries for which data are available. 2003 and 2004 averages exclude Mali

in some cases, systematic use of improved seeds and planting materials has resulted in significant yield increases. Examples include improved rice varieties in the Office du Niger zone in Mali, improved maize seeds in Ghana and stem cuttings of improved cassava varieties in Nigeria.

Farm power and mechanization. Despite the dearth of recent and comprehensive data on mechanization in West Africa, available evidence points to low levels of tractor- and engine-based mechanization. Even animal traction remains underutilized. Furthermore, with the collapse of government-sponsored medium-term credit programmes in many countries following structural adjustment, renewal of existing equipment has slowed and new farmers find it increasingly difficult to purchase new equipment. Mechanization levels of post-harvest operations and irrigation also remain low. The reliance on hand tools and human power not only causes drudgery for farm operators, especially for women, but also creates a strong disincentive for youth to enter and stay in agriculture. It also poses serious limitations to the land area that can be cultivated by a single farm family. Apart from pockets of commercial farming in the region, most progress in farm mechanization has been made in the cotton-based farming systems where financing for equipment could be easily deducted from cotton sales within single-channel marketing outlets.

Input supply and the private sector. While the use of productivity-enhancing inputs has traditionally been very limited, their availability and quality further declined following the abolition of marketing boards and the withdrawal of governments from input and service provision during structural adjustment. The production and distribution of certified seed had been largely a government undertaking up through the mid-1980s, when structural adjustment programmes led most governments to abandon this activity. Many countries operated mechanization centres providing tractor hiring services, albeit at low levels of operational efficiency and financial sustainability. Governments were also heavily involved in the importation and distribution of fertilizer at subsidised costs in order to compensate partially for the disincentives facing farmers due to overvalued exchange rates and high levels of direct taxation (see Chapter 11). Structural adjustment led to an abrupt disengagement of the state in agricultural input provision, and the private sector was expected to take over these functions. However, the private sector has been slow to fill the void due to a number of specific features of agricultural input markets affecting both demand and supply (see Focus Section C in Part IV).

Many of the factors constraining the development of private-sector-based input markets are generic to agribusiness. These include limited access to finance, high distribution costs in servicing a highly scattered demand due to poor infrastructure and high transport costs, and a generally weak business enabling environment. Other constraints are linked to the specific features of agricultural inputs, such as the difficulty of judging their quality through simple visual inspection and their profitability depending on weather conditions and output prices. From the farmers' perspective, investing in expensive improved inputs is very risky in an environment of volatile weather and market conditions and uncertain quality of the inputs, even in cases where access to finance is available. In turn, from an input supplier's or machinery dealer's perspective, lack of an established demand discourages investments in new outlets in rural areas and stocking a broader range of products. So far, the adoption of modern inputs and technologies has developed mainly in tightly coordinated value chains, often through interlocked transactions where, in addition to overcoming constraints to input supply and finance, market risks are limited and advisory services are available.

As a result of these constraints, fertilizer supply systems are underdeveloped in the region and prices, especially in the interior, are higher than in other parts of the world. Port charges and inland transport costs are the single largest cost item, accounting for 20 to 40% of farmgate costs. Domestic production of fertilizer is extremely limited. No country in the region produces substantial amounts of nitrogen-based fertilizers, although in 2013 Nigeria announced expansion of two private-sector production facilities. As of late 2013, Nigeria, in spite of its substantial energy resources and large market, continued to import the bulk of its fertiliz-

er.[25] Several countries in the region have phosphate deposits, and five countries (Burkina Faso, Côte d'Ivoire, Mali, Nigeria and Senegal) have fertilizer blending plants. Throughout the region, a general observation is that the fertilizer industry tends to be oligopolistic at the import level, but much more competitive at the wholesale and retail levels. Tendering processes that are sometimes limited to a few firms reduce competition and provide opportunities for collusion and corruption, leading to further price increases. Moreover, farmers often complain about the unreliable quality of fertilizers available in the market due to the lack of enforced standards for fertilizer combined with the ease of adulterating the product.

The legal and regulatory framework also constrains the availability of improved seeds. Certification plays a crucial role in enhancing confidence in the quality of seeds offered. However, seed policies are often outdated, unduly rigid, and difficult to implement. Procedures for the release of new varieties were designed to meet the needs of public research institutes, and seed certification was primarily an internal quality control mechanism for those institutes. Current requirements lead to long delays in the introduction of new varieties (World Bank, 2012b). Moreover, in the past, each West African country developed its own seed regulatory regime, which makes sourcing seeds from neighbouring countries complicated, lengthy, and expensive (World Bank, 2012a).

Erratic and poorly designed policy interventions in recent years in seed and fertilizer markets have contributed further to slowing down the development of robust private-sector based supply chains. While fertilizer subsidies may be warranted in the early stages of market development and to induce small farmers to begin using fertilizer, they only address one part of the fertilizer profitability calculation – the price of the input. Moreover, as discussed in Focus Section C, the way in which subsidies are administered has a huge effect on their cost-effectiveness. Large programmes of untargeted subsidies can drain resources from programmes of rural infrastructure development and sustainable intensification (see Box 2.2, p. 65). A combination of agricultural research to develop more fertilizer-responsive varieties and reduced transport costs, which both boosts output prices to farmers and reduces their input costs, would offer a more sustainable way of encouraging fertilizer use. This approach could be combined with increased government actions to ensure input quality and to support the development of professional agrodealer networks.

3.4.5 Research and development

Globally, there is ample evidence on the high returns of public spending in agricultural research and development (R&D), compared to other types of spending (FAO, 2012). The power of public research and development has been demonstrated by emerging economies such as Brazil, China and Thailand. Apart from hybrid seeds, the private sector has limited incentives to invest in research in Africa. Given the need for adaptation to local agro-ecologic and soil conditions, importing technologies works less well in agriculture than in other industries. The comparatively large number of main staple crops, the diversity of farming systems and small markets make technology development in West Africa more challenging than in other regions (World Bank, 2013b).

Recent data on private-sector agricultural research and development in West Africa are lacking. In most countries private-sector agricultural R&D appears to be very limited and is concentrated primarily in a few cash crops, such as cocoa, oil palm and cotton (Lucas, 2012). The private-sector's share of total agricultural research in West Africa in 2000 was estimated at less than 1% (Beintema and Stads, 2006). There are, however, two exceptions. In Côte d'Ivoire, much of the agricultural research is carried out by the Centre National de Recherche Agricole (CNRA), a public-private partnership. The bulk of CNRA's funding comes from marketing levies assessed on cash crops, collected through producer and interprofessional organizations, hence the private sector. The other example is Senegal, where government structures dominate the research on food crops

25 The government of Nigeria set up two state-run fertilizer companies, the Federal Super phosphate Fertilizer Company (FSFC) (established 1976) and the National Fertilizer Company of Nigeria (NAFCON), established in 1988, but by 1999 both had quit producing significant quantities of fertilizer. NAFCON was sold to the private-sector firm NOTORE in 2005, and by mid-2009 it began producing urea. While its production is expanding, the vast bulk of Nigeria's urea continues to be imported. For details, see Kwa, 2011 and http://www.notore.com/index.php/about/index.

but where private companies have been major innovators in cash-crops, such as cotton and groundnuts, as well as horticulture and fisheries. Private-sector organizations have also been innovative in food processing, storage and packaging and helping Senegalese exporters meet the tight standards to export into the European market (Stads, 2011).

Given the importance of research and development for improving productivity, NEPAD has established a budget target for countries to spend 1% of their agricultural GDP on research and development in agriculture. In 2008, none of the ten ECOWAS countries for which data are available met this target. Ghana was the highest, at 0.9%, while the average for the ten countries was 0.5%. Nigeria was below the average, at 0.42% but, as discussed below, probably benefitted from scale economies in research unavailable to the smaller countries. Strikingly, public agricultural research expenditures as a percentage of agricultural GDP have fallen sharply from the early 1990s, when the average in Africa across the countries for which data are available was at the 1% level.[26] (ASTI, 2013). Gauging researcher numbers against economically active farming populations (research intensity), only Mali and Nigeria are amongst the top ten countries in Africa with more than 100 researchers per million of economically active agricultural population; the average across countries for West Africa was 69, having fallen from 84 in 1991 (ibid.).

Although the number of researchers in West African public agricultural research systems grew strongly during the 1970s (at 4.5% per year) and the 1980s (3.8% per year), it slowed to just 1.3% per year during the 1990s, following structural adjustment. Low salaries and other disincentives have depleted human resources, and scientific personnel are ageing (World Bank, 2013b). Since 2000, a number of national governments have stepped up their allocations to agricultural research, but overall investment levels in most countries are still below the levels required to sustain agricultural R&D needs.

The ASTI data shows an increase of aggregate public spending for agricultural R&D by 32% in the 13 ECOWAS countries for which data are available between 2001 and 2008, and growth in researcher numbers also accelerated. However, trends in spending levels varied widely by country. In Mali, expenditures in real terms declined by 31% between 2001 and 2008, whereas in Ghana they more than doubled (ASTI, 2013). Looking at a longer time span, comparing average annual real government expenditures on agricultural R&D during the 2001-2008 period with the period 1991-1998 reveals that, of the 11 countries for which data are available, only Benin, Ghana and Nigeria increased their average expenditures. In terms of numbers of researchers, the picture is equally heterogeneous. Despite the overall positive trends since 2001, especially in the larger countries, strong increases in R&D spending in some cases largely reflect salary increases from previously low levels rather than expanding research activities or greater investment in equipment and infrastructure. These increases were necessary, as national research institutions were facing increasing difficulties in attracting and maintaining highly-qualified staff (Stads, 2011).

One of the major challenges in many countries is a rapidly ageing pool of scientists close to retirement. This is in part due to a prolonged period of hiring freezes in many research organizations, especially following structural adjustment. Moreover, in many countries, salary and retirement packages and conditions of service remain poor. As a result, research agencies have difficulty retaining staff once they attain higher degrees and can attract offers of better remuneration and conditions in higher education or the private sector. Attracting and retaining staff is an even more serious problem in countries with small research capacities.

Despite growth in R&D capacity across the region, average levels of staff qualifications deteriorated somewhat. During the 1970s and 1980s, many countries received considerable financial support for staff training, often as part of large World Bank funded projects or through contributions from bilateral donors. By the late 1990s, most donors had either cut or eliminated their funding

26 The decline began in 1997 and continued until 2002, at which point it plateaued through 2008, the last year for which data are available.

for graduate training. More recently, this trend has been reversed by new multi-and bilateral projects. However, reliance on outside funding from donors and development banks carries its own problems as funding tends to be unstable. Over the period 2001-2008, over 98% of the budget of the national agricultural research institutes (NARIs) in Nigeria came from the national budget, and for Sierra Leone, the figure was 93%. Other countries covering the bulk of the NARI funding from the national budget included The Gambia, Niger, and Togo. In contrast, the NARIs of Benin, Burkina Faso, Guinea and Mali all received at least 50% of their funding from donors and development banks, and often faced sharp drops in funding once externally funded projects ended.

There are important economies of scale in R&D limiting the efficiency and effectiveness of small and fragmented research systems, especially in small countries. Evidence points to low returns to public spending on R&D in small African countries because they lack a critical mass of research capacity (Fuglie and Rada 2011). In West Africa, R&D systems are also fragmented. The recent growth of researcher numbers has done little to change this situation, since much of it has taken place in the higher education sector, through the establishment of new higher education units involved in agricultural research. Nevertheless, individual capacity of most systems, in terms of full-time researchers, remains limited. Of the 12 ECOWAS countries for which data are available, in 2008, 4 of them had NARIs with fewer than 100 full-time equivalent researchers (FTEs), an additional 4 had between 100 and 200 FTEs, and 2 had between 200 and 300. Nigeria, on the other hand, had over 2 000 FTEs and thus was likely to have a critical mass in several key areas. The low numbers in most West African NARIs highlights the importance of regional research initiatives to help small countries take advantage of economies of scale and collaborative synergies. Regional approaches to research partnered along similar agro-ecologic and soil conditions hold the promise of overcoming problems resulting from small markets and limited budgets in these countries. Important progress in this direction has been made by regional research institutions such as CORAF and CILSS/INSAH. A recent example is CORAF's West Africa Productivity Programme (WAAP). The programme, which covers 10 countries in West Africa, aims to generate and disseminate improved agricultural technologies by fostering regional research networks in which different NARIs become centres of excellence for the region in R&D for key strategic commodities (e.g., Ghana for roots and tubers, Senegal for certain rainfed cereals and Mali for rice) (Stads, 2011).

3.4.6 Extension and advisory services[27]

Extension and farmer advisory services in West Africa are characterised by a plurality of approaches and actors. This is in contrast with the situation in the late 1980s through the mid-1990s, when the World-Bank promoted Training and Visit (T&V) system was dominant in many of the public extension systems in the region. Disappointment with the high cost and limited effectiveness of the T&V system, however, led to its widespread abandonment. This abandonment, combined by a general retreat of donor organizations from support of agriculture in the 1990s (see Chapter 11), led to shrinking funding for public extension systems and experimentation in many countries in the region with a number of different approaches. No widespread consensus has emerged about which methods work best, and many actors express the view that extension systems in the region are broken and that further experimentation is needed to come up with new models. The effectiveness of extension systems, however, is highly dependent on the productivity of the agricultural research system (and hence having useful technologies and practices to extend) and the state of infrastructure in the country, which conditions the ability of extension agents to reach their clients. The low levels of literacy in many countries also raise the cost of carrying out extension activities, as much of the information has to be delivered in oral form rather than in more cost-effective written formats. On a regional level, there is no central repository of information on agricultural technologies and practices upon which extension services can draw, although in 2005-06 the

27 This section draws on material in Simpson, 2006 and Agricultural and Extension Services Worldwide, 2013.

Institut du Sahel of CILSS developed an on-line technology database system capable of providing such a repository.

Currently, in addition to generally underfunded public extension systems, farmer advisory services in West Africa are provided by many NGOs, farmer organizations, donor-funded projects, and, in a few cases, private firms and state-run companies (primarily for export crops). The role of the private sector is likely to grow with the expansion of outgrower schemes in the region. Private agro-input dealers also sometimes provide advice on use of their products, but the quality of that advice is highly variable. Currently, ECOWAS is working with IFDC on efforts to upgrade the quality of knowledge of these agrodealers and strengthen their ability to give unbiased and accurate information to farmers. The involvement of the region's agricultural universities in extension is generally weak.

The degree of involvement of non-state actors in extension varies by countries; for example, NGOs seem to be less involved in providing extension services in Nigeria than in many other countries in the subregion. There is little coordination of programmes across actors providing these advisory services in most countries, although Ghana has created a "Private Sector Extension Unit" within its Ministry of Food and Agriculture to regulate the extension activities of NGOs, faith-based organizations and private companies (Agricultural and Extension Services Worldwide, 2013). While most advisory service providers emphasize "participatory methods of extension", there is no universal agreement on what that term means, so approaches vary – although farmer field schools are becoming increasingly seen as an effective approach for reaching small, resource-poor farmers.

The scale of operations of the different advisory service providers varies widely. The non-state providers typically have small numbers of agents, but often more operating funds per agent, while the public services are much larger but often with few operating resources. For example, in 2009, various NGOs and farmer organizations in Guinea employed between 5 and 40 extension agents each, while the national extension service had 1 446 staff members. (ibid.) This diversity in size suggests that if there are productive innovations to diffuse, the national systems likely have greater potential to scale up the innovations than do the NGOs. Thus, there might be scope for specialization, with the non-state providers doing pilot testing of different approaches and the state-run organizations involved in scaling-up. Increasing use of modern communication and information technologies may also help in scaling up innovations, although challenges remain in how to transmit key information to illiterate farmers via cell phones and similar technologies.

Another striking characteristic of extension systems in the region is the generally low level of training of many of the agents. This limits their ability to transmit information about more sophisticated techniques, such as integrated pest management, that are increasingly needed in the region. Although many of the crash agricultural production programmes launched in the region in 2008 in the wake of the world food crisis involved hiring new public-sector extension staff, this expansion was often accompanied by only limited training of the new staff members. Strengthening the human capital in both the state and non-state advisory systems will be critical to improving the ability of West African farmers to respond to the growing and changing demands for their products.

3.4.7 Weak systems of Agricultural education

The weak human capital base at all levels of the food system hinder agro-industrial growth. The weak base ranges from low levels of literacy at the farm level in many countries (for example, Mali has one of the lowest levels of female literacy in the world) to inadequate numbers of well-trained personnel in skills such as food science and technology, packaging, and marketing – all critical needs for agro-industry. These weaknesses include:

- ***Basic literacy.*** Adult literacy rates in most of the ECOWAS countries are low, frequently under 50%, particularly for women. High rates

of illiteracy mean that information on new technologies and institutional arrangements needed to move farming from a hand-hoe era to a modern era all have to be transmitted in oral form, which greatly increases the cost of extension efforts and undoubtedly results in poorer retention of knowledge.

- ***Primary and secondary education***. The curriculum content of primary and secondary schools in most countries is not oriented towards applications of concepts (e.g. in mathematics and biology) to either farming or agro-industry.

- ***Vocational education***. Technical training in the skills needed to carry out many of the jobs in a modern agrifood system, from irrigation technician to operator of sophisticated food processing machinery, is a weak link in most West African educational systems. Yet a modern Agriculture will require large numbers of such technicians if it is to grow.

- ***University education***. The undergraduate curricula of most faculties of agriculture in the region focus heavily on topics related to on-farm production (e.g. agronomy and animal science), with relatively little attention to fields critical in downstream areas of the agrifood system, such as food science, packaging and logistics. Crucial elements in developing the needed skills will include encouraging private- as well as public educational institutions and building more productive links between the private sector and educational institutions (e.g. through internship programmes and advisory boards with heavy participation from the private sector) so that the curriculum evolves with the changing skill sets demanded by the job market.

3.4.8 Limited access to and high costs of finance

The aforementioned high risks and transaction costs render the provision of financial services to farmers and other agricultural value-chain actors risky and costly. In addition to the limited availability of risk-management instruments, widespread collateral constraints, problems of contract enforcement and a poor loan repayment culture reduce the appetite of the financial sector to venture into Agricultural finance. Efforts to circumvent the underlying structural problems through public agricultural development banks and subsidised credit lines have proved unsustainably costly and inefficient. Some of the dynamic decentralized financial networks in the region have been successful in providing finance to farmers and other value-chain stakeholders, even though meeting only a fraction of the demand. Agribusinesses, traders and input suppliers also play an increasing role in value-chain financing, either by directly providing financing to farmers or buying agents or by facilitating bank financing to them through establishing firm purchasing contracts. Tight coordination and links between value-chain actors reduces risks and transaction costs and acts as an in-built collateral substitute, whereby a successful track record of repeat transactions is often more important than the existence of formal contracts. Historically, agricultural finance has been more successful in organised export value chains such as cotton. In a liberalized environment, side-selling is a constant threat and more easy to control where product characteristics such as bulkiness or perishability reduce side-selling options or where buyers serve niche markets. Other value-chain finance instruments such as warehouse receipt financing, receivables financing, and leasing are of growing importance. Additional financial services such as savings and payment services are critically important, and their future growth may be fostered by the potential rapid expansion of cell-phone-based banking and money-transfer services in the region.

Globally, there is also a growing number of investment finance organizations looking at opportunities in agribusiness. These funds range from fully commercial equity ventures to impact investors with a double or triple bottom line.[28] However, given West Africa's difficult business environment, finding suitable companies able and willing to accept equity investors has remained challenging.

3.4.9 Poor business enabling environment

28 "Double and triple bottom line" refer to a broader set of objectives. Rather than maximizing financial returns, impact investors place greater emphasis on social and environmental impacts of their investments given decent financial returns.

The slow and uneven entry of the private sector into Agricultural value chains and related services is also due to West Africa's poor business climate relative to other regions of the world. Weak contract enforcement and high transaction costs discourage investment and raise costs and risks for agroprocessors who rely on national markets for their raw materials. For example, of the 183 countries included in the World Bank's 2012 Ease of Doing Business rankings, only one of the 15 ECOWAS countries – Ghana, at no. 60 – ranked in the top third. One additional country (Cape Verde, at 119) barely made it into the top two-thirds, while the remaining 13 ECOWAS member states clustered in the bottom third – from Nigeria, at 133, to Guinea, at 179 (World Bank, 2012b).

3.5 Conclusions regarding production response

West Africa's performance in terms of production performance over the past 30 years has been mixed. Production has kept up with or slightly exceeded population growth for many key staples, through expansion of cultivated area, modest yield improvements, and improvement in labour productivity as rural workers have diversified more into non-farm activities. In certain areas such as oilseed and palm oil production, however, performance has been more dismal. Agricultural productivity performance has been strikingly variable across countries, however, reflecting large differences in agro-ecological and institutional environments but also suggesting the scope for as-yet under-exploited sharing of successes across countries.

Factors constraining production from responding more robustly to the growing and rapidly changing demand include constrained access of producers and processors, particularly in the inland areas, to the burgeoning urban markets due to poor transport infrastructure; rules governing the trucking industry that drive up transport costs; inadequate wholesale and retail market infrastructure, which increase costs of product aggregation, quality control and carrying out trade; and in some countries, weak systems of market information. In addition, unreliable electrical supplies have driven up agroprocessors' costs and have particularly constrained the growth of markets for perishables by limiting the expansion of cold chains. A host factors ranging from unpredictable rainfall to insecure land tenure raise risks throughout the agrifood system and discourage investments in productivity-enhancing improvements. A number of structural problems plague the markets for critical inputs such as improved seeds, fertilizer and farm equipment, often linked to the small size of most national markets for these inputs. Access to these improved technologies is further hindered by financial systems that are poorly adapted to the needs of the agrifood system. Development and diffusion of new agricultural technologies and practices has been slowed because agricultural research systems and advisory services faced funding cuts for many years and are now only beginning to recover. Weak systems of agricultural education, from the primary school level to post-graduate university programmes, have failed to provide most students with the skills needed for a 21st Century, private-sector- driven Agriculture. Finally, the overall ease-of-doing business climate in West Africa generally remains low by international standards, discouraging both domestic and foreign investment in innovations that could raise agrifood system productivity. Part III of this report examines in more detail how West African retailers, agroprocessors and individual value chains have coped with these constraints, while Part IV and the concluding chapter analyze policy options to address them.

Chapter 4

Trade Response

This chapter analyses the trade performance of West Africa at the regional level and highlights important commonalities and differences among West African countries.[29] Trade analysis is a useful complement to the analysis of production data, both because trade contributes to overall Agricultural growth and because trade data, at least for overseas trade, tend to be more reliable than production data and hence serve as a useful cross-check on the trends described in Chapter 3. For example, West African Agriculture's share in world exports and imports are a rough indication of the region's overall competitiveness in the production of different commodities.

The chapter begins by examining Agriculture's role in contributing to the region's overall trade balance and foreign exchange earnings. It then moves on to examine the trade balance for both Agriculture and food in total before examining the region's self-sufficiency ratios for key agricultural commodities. The self-sufficiency ratios compare domestic consumption with imports of given commodities. An increasing self-sufficiency ratio means that domestic consumption is increasingly met by domestic production, a proxy for competitiveness (unless it is driven by higher protection or subsidies). In contrast, declining self-sufficiency ratios imply that production did not fully meet increasing demand, pointing towards lower competitiveness. However, for certain products where countries of the region have no comparative advantage, a declining self-sufficiency ratio can also indicate an increased capacity to import. Finally, the chapter examines the evolution of food imports and how they mirror changes in consumption trends and the regional capacity for value addition.

After examining the import picture in detail, the chapter then turns to the region's performance in terms of agricultural exports. This analysis highlights the changing composition of West African exports and their contribution to export earnings, the trends and dynamics of individual export commodities over time and the changing competitive position of different West African agricultural exports compared to those from the rest of the world since the mid-1990s. The chapter then discusses the importance of intra-regional trade and examines the increasing demand for higher-quality products and better traceability both in overseas and regional markets.

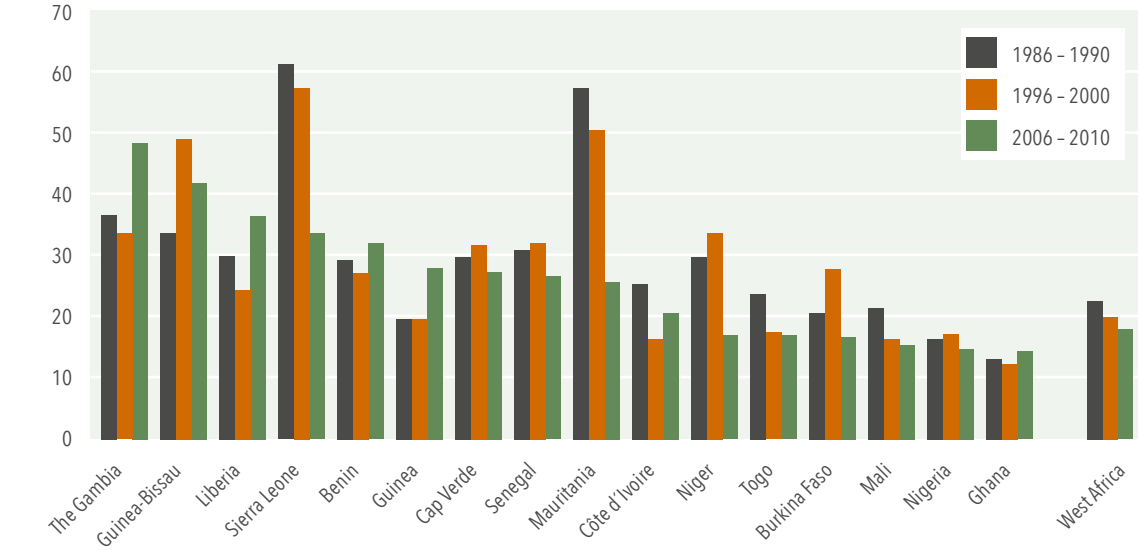
4.1 Agriculture's role in West Africa's merchandise trade

Although West Africa's agricultural trade with that of the rest of the world has been growing over the past decade, agriculture's share of the region's total merchandise trade has declined. On the import side, this has been due to growing imports of industrial and non-agricultural consumer goods, while on the export side it has resulted from the growth of mineral, petroleum and forestry exports. The share of agricultural imports in total merchandise imports stood at 23% in 1986-90, and since then it declined to 20% in 1996-2000 and further to 18% in 2006-10. Much sharper declines have occurred in the share of agricultural exports in total merchandise exports of the region, which declined from 24% in 1986-90 to below 10% in 2006-10.

While the importance of agricultural products in the external trade of the region as a whole has declined, this overall trend hides considerable variation among countries. In the case of imports (Figure 4.1), agricultural products accounted for at least 25% of merchandise imports for half of the countries in recent years (2006-10). For all West African countries, food products represent the lion's share of total agricultural imports.

29 This chapter draws heavily on Konandreas, 2012a, b.

Figure 4.1 *Share of agricultural products in total merchandise imports (%)*



Source: Based on FAOSTAT data.

Differences between countries are much more pronounced regarding the contribution of agricultural exports in total merchandise exports. While for the region as a whole these products account for only 10% of merchandise exports (2006-10), this is due to the weight of some large mineral and petroleum-exporting countries, particularly Nigeria, in that aggregate. For 10 out of 16 West African countries (the ECOWAS states plus Mauritania), the share of agricultural products represented over 25% of merchandise exports in recent years.[30] For seven of these countries, the share was in excess of 40%, reaching 75% in the case of The Gambia (Figure 4.2).

Unlike the regional aggregate, there are also some countries for which the contribution of agricultural products in total merchandise exports has been increasing over time. These include The Gambia, Liberia, Benin and Guinea. For some of these countries, however, food products are not always the dominant part of agricultural exports (in contrast to the pattern for imports). The countries with strong non-food agricultural exports include Liberia (where rubber is a major export), Benin (cotton), Côte d'Ivoire (rubber), Burkina Faso (cotton) and Mali (cotton).

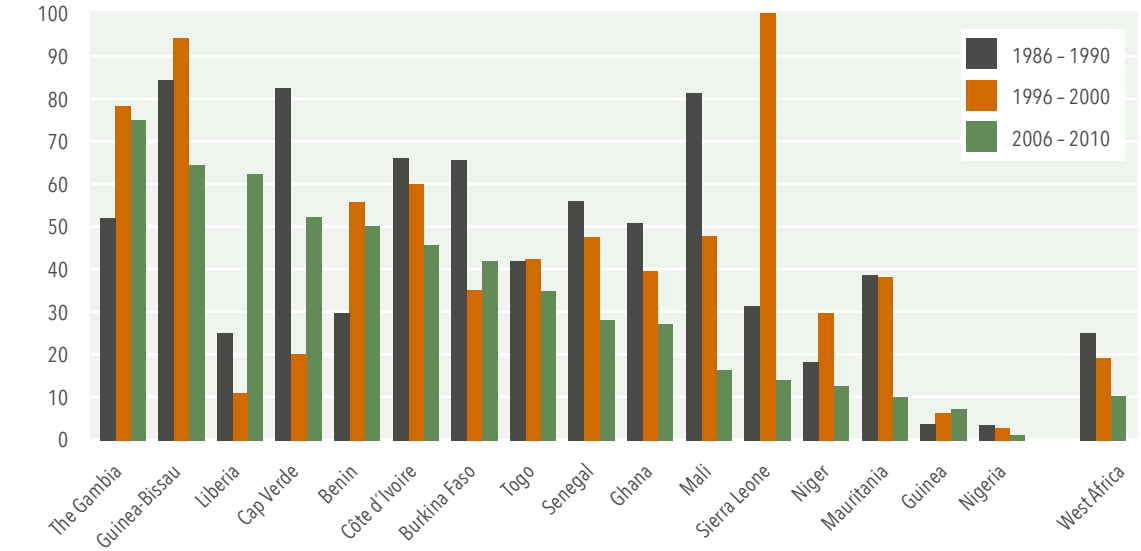
30 Even though Mauritania has not been a member of ECOWAS since 2000, it is included in this analysis given its strong trade links with the rest of the region.

4.2 Aggregate trade balances: merchandise, agriculture and food

Total merchandise trade has been consistently positive for the region as a whole. Beginning in the early 2000s revenues from merchandise exports saw an exponential increase. This increase followed increased exploitation of non-agricultural resources (petroleum, minerals and forestry products), in part driven by the world commodity boom. A correspondingly strong growth in imports of all products ensued (Figure 4.3).

Together with the overall positive balance in total merchandise trade, the agricultural trade balance was also positive through the 1990s and remained on average marginally positive up to about 2005. This position has now been reversed, with agricultural imports exceeding agricultural exports by about US$2.5 billion in recent years, largely on account of high growth of food imports (Figure 4.4). It is clear that the huge increase in agricultural (including food) imports coincided with the enormous increase in net merchandise exports of the region in recent years (Figure 4.5). Therefore, to a large degree the worsening agricultural and food trade balance reflects an increasing capacity to import due to growing non-agricultural revenues and not

Figure 4.2 *Share of agricultural products in total merchandise exports (%)*

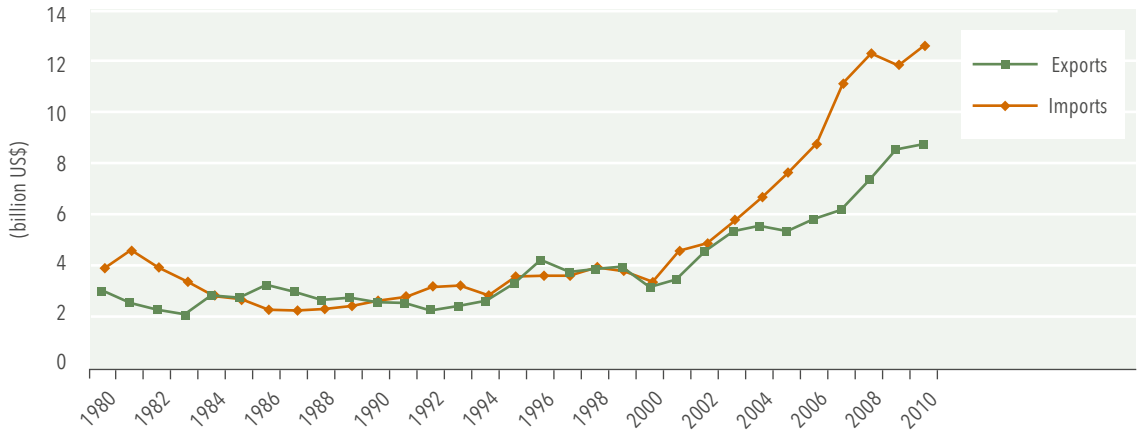


Source: Based on FAOSTAT data.

Figure 4.3 *Total merchandise trade of West Africa with the rest of the world.*

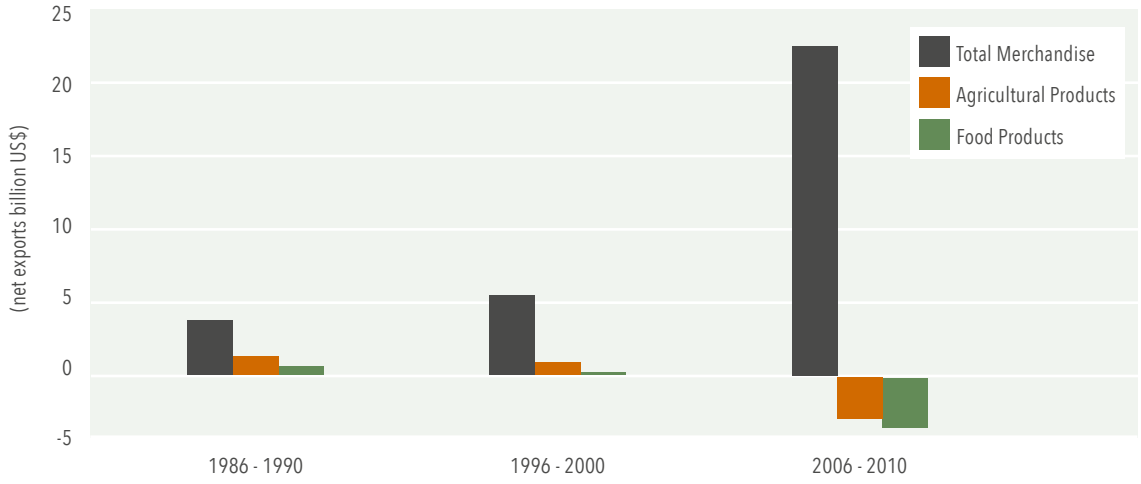
Source: Based on FAOSTAT data.

Figure 4.4 *Food trade balance of West Africa with the rest of the world.*



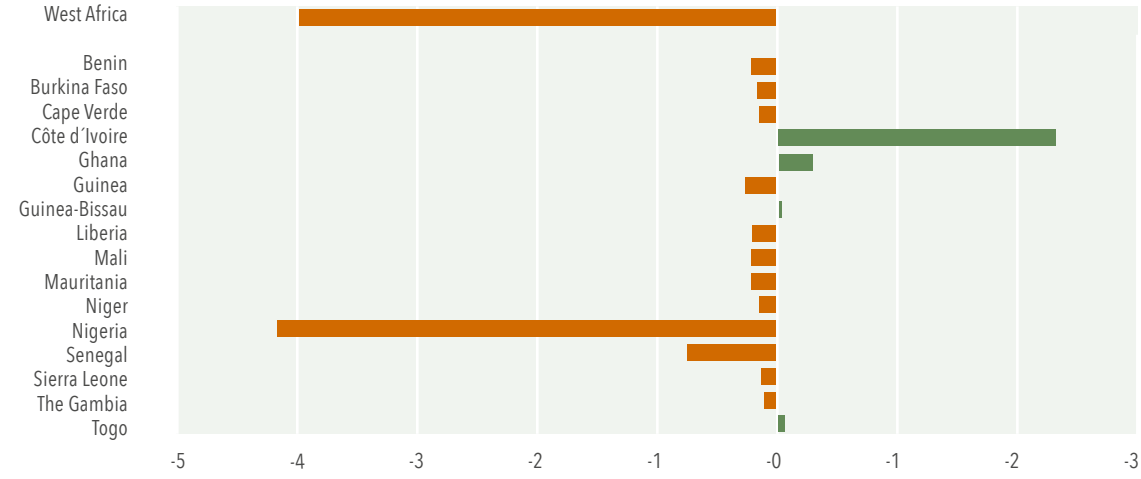
Source: Based on FAOSTAT data.

Figure 4.5 *Trade balances over time of West Africa with the rest of the world*



Source: Based on FAOSTAT data.

Figure 4.6 *Food trade balance (net exports), 2006 – 2010 (million US$)*



Source: Based on FAOSTAT data.

necessarily declining agricultural performance of West Africa. [31]

The regional aggregate trade balance obscures huge variation among countries. In reality, while the merchandise trade balance of the region as a whole is indeed strongly positive, only two countries, Nigeria and Côte d'Ivoire, enjoy that position. Regarding agricultural trade balances, the overall regional trade deficit is shared by most of the countries of the region. Nigeria has by far the largest agricultural trade deficit, while a positive agricultural trade balance is enjoyed by only four countries: Côte d'Ivoire, Ghana, Burkina Faso and Togo, with Côte d'Ivoire in a dominant position due to its huge cocoa exports. Within agricultural products, food trade imbalances are even more pronounced than those of agricultural products overall (Figure 4.6). The net trade deficit for food products for the region as a whole averaged US$4 billion in 2006-10 compared to an aggregate for agricultural products of US$2.7 billion during the same period. Four countries remain in a positive net trade position with respect to food in 2006-10: Côte d'Ivoire, Ghana, Guinea Bissau and Togo.

31 This view is reinforced by data on per capita food availability reviewed in Chapter 5, which show growing food availability per person in most countries during this period.

4.3 Imports: composition, trends and import dependency

4.3.1 Composition

Most agricultural imports, close to 90% in recent years, are food products, compared to just above 80% during most of the 1990s. All food commodity sectors, with the exception of fruits and vegetables, are responsible for the increasing food trade deficit (Appendix Figure A4.1). Cereals are by far the leading item in the food import basket, accounting for 41% of the value of food imports in the most recent period (2006-10), followed by vegetable oils (13%), fish (11%), dairy products (9%) and sugar (9%). Together these five commodity groups account for 83% of food items imported by the region (Figure 4.7).

The composition of food imports has changed somewhat over time. Cereals have remained steadily at the top of the list, as have fish, dairy products and sugar. Vegetable oils, however, have increased sharply, from seventh place in 1986-90 (4% of food imports) to second place in 2006-10 (13% of food imports). As discussed in Chapter 5, during this period West Africans were sharply increasing their consumption of fats and oils.

4.3.2 Geographical concentration of imports

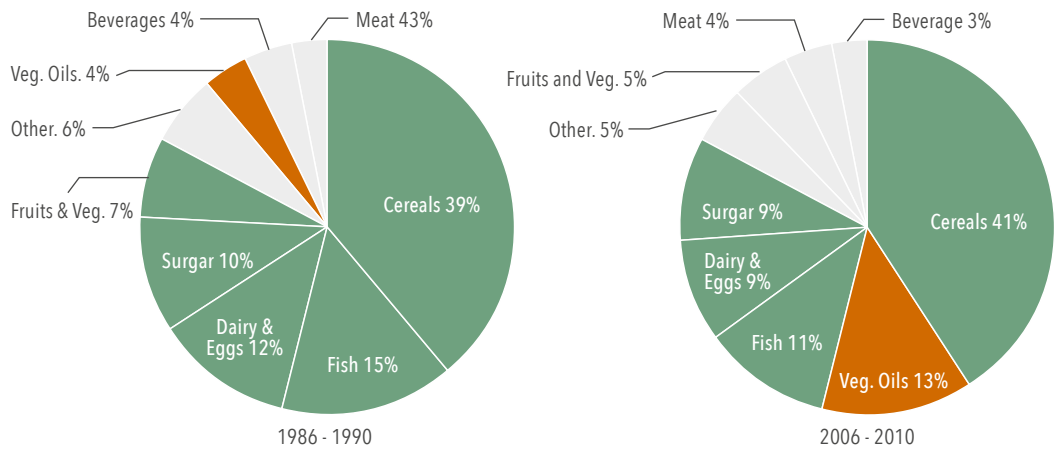
The imports of agricultural products are highly concentrated in a few countries (Table 4.1). Nigeria is by far the largest importer, followed by Côte d'Ivoire, Ghana and Senegal. This geographical concentration of imports follows very closely the population concentration of the countries in the region.[32]

The same geographical concentration of imports is observed for individual commodity groups. Five countries (Benin, Côte d'Ivoire, Ghana, Nigeria and Senegal) account for the bulk of imports (Figure 4.8). The commodity with the highest geographical concentration of imports is fish, where these five countries account for nearly 97% of the region's imports in 2006-10. As noted elsewhere in this study, there is evidence that many of Benin's imports are subsequently re-exported to Nigeria.

What is also evident is the substantial increase in this geographical concentration of imports over time for most commodity groups. For example, in the case of vegetable oils, these five countries accounted for 47% of the region's imports in 1986-90,

32 Overall for all the countries of the region, the correlation coefficient between country population shares and shares of agricultural imports was 0.97 in the 2006-10 period (and 0.99 for merchandise imports).

Figure 4.7 *Composition of food imports into West Africa over time*



Source: Based on FAOSTAT data.

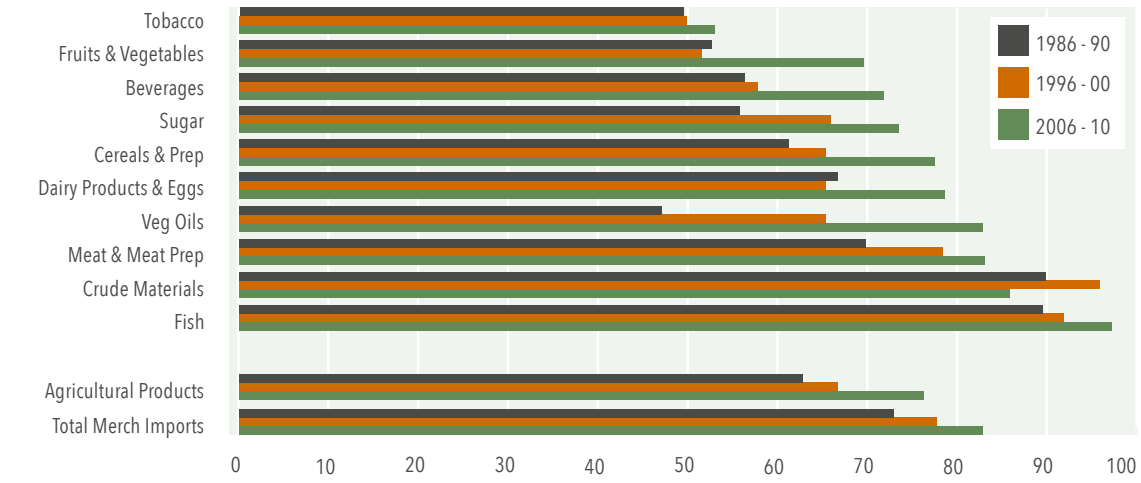
Table 4.1 *Country shares in total regional imports (%)*

	Total Merchandise Imports			Agricultural Imports		
	1986-90	1996-00	2006-10	1986-90	1996-00	2006-10
Benin	2.5	3.1	2.4	3.2	4.2	4.4
Burkina Faso	3.9	3.4	2.5	3.5	4.7	2.4
Cape Verde	1.0	1.2	1.0	1.3	1.8	1.5
Côte d'Ivoire	17.1	17.5	9.9	19.1	14.4	11.4
Ghana	8.4	11.6	12.1	5.0	7.3	9.8
Guinea	4.6	4.4	1.8	4.0	4.3	2.8
Guinea Bissau	0.5	0.3	0.3	0.8	0.7	0.6
Liberia	2.2	1.7	0.8	2.9	2.0	1.7
Mali	4.3	3.8	3.4	4.1	3.1	3.0
Mauritania	1.9	1.7	2.3	4.7	4.2	3.3
Niger	2.9	1.9	2.4	3.9	3.2	2.3
Nigeria	35.8	37.9	51.1	26.2	32.2	42.4
Senegal	9.0	7.0	6.8	12.3	11.1	10.1
Sierra Leone	1.3	1.1	0.8	3.4	3.1	1.4
The Gambia	1.1	1.1	0.4	1.8	1.8	1.1
Togo	3.7	2.3	2.0	3.9	2.0	1.9
West Africa	100.0	100.0	100.0	100.0	100.0	100.0

Source: Based on FAOSTAT data.

Figure 4.8 *Shares of regional imports of top five importing countries*[a]

Benin, Côte d'Ivoire, Ghana, Nigeria and Senegal



Source: Based on FAOSTAT data.

[a] The term Crude Materials includes raw commodities used as inputs for processing into food and other processed commodities. Raw commodities include, for example, soybeans, cotton, cottonseed, natural rubber, and hides and skins

and their share increased to 83% in 2006-10. Rapid economic growth, demographic changes and changes in consumption habits are the likely contributing factors to these trends.

In all commodity groups except meat and meat preparations, Nigeria is by far the largest importer. For some products (vegetable oils, fish, dairy, sugar), it accounts for 50% or more of the region's imports in recent years (2006-10).

4.3.3 Trends and dynamics of individual commodities

The value of total agricultural imports has grown at a rate of 11.5% from 1996-00 to 2006-10, about the same rate at which total merchandise imports of the region have grown. These aggregate rates are more than double the rates experienced during the previous decade (1986-90 to 1996-00), reflecting demographic changes in the region as a whole and growing capacity to import in some countries due to higher export earnings.

Among agricultural products, the fastest growing import commodity group is vegetable oils, with an annual increase in the value of imports of 18% for the region as a whole, followed by meat and meat preparations, beverages, fruits and vegetables. The increase in the growth rates for these last three commodity groups is indeed huge. Vegetable oils are a fast-growing import commodity for all countries. Except for Burkina Faso, Cape Verde, Guinea Bissau, Niger and Senegal, all countries had an annual growth rate of over 10%. Nigeria and Ghana have the highest growth rates for most products.

Imports of several commodities grew at an increasing rate over the past decade. The most important of these, in terms of volumes and values, include:

- Rice and wheat, which grew at 9.8% and 9.6% respectively during the period 1996-2000 to 2006-2010 compared to 7% and 6%, respectively, in the preceding decade.
- Palm oil, with an annual growth rate of 29% between 1996-2000 and 2006-2010 compared to 24% in the preceding decade.
- Dairy products, with net imports of 'total milk equivalent' growing at 14% in 1996-2000 to 2006-2010 compared to 0.3% in the previous decade.
- Chicken meat, with a 22% annual growth rate of net imports during 1996-2000 to 2006-2010.
- Other meats including fresh bovine meat (11%), canned meat (10%), pig meat (15%), fresh sheep meat (23%) and goat meat (10%).
- Non-alcoholic and alcoholic beverages. Net imports of non-alcoholic beverages increased at an annual growth rate of 26% from 1996-2000 to 2006-2010. Among alcoholic drinks, distilled beverages increased by 11%, beer by 11% and wine by 14%.
- Tomato paste, with a growth rate of 17% during 1996-2000 to 2006-2010; peeled tomatoes (15%), carrots and turnips (20%), potatoes (10%), green onions (13%) and various forms of processed vegetables: preserved (15%), dehydrated (22%) and frozen (16%). Among fruit, accelerating net imports include apples at 16%, grapes (14%), oranges (14%), as well as dates (23%) and all kinds of fruit juices.

There are some important products for which the region was a net exporter prior to 1996 but now is a net importer and for which imports are growing at an accelerating rate. Most notably, this includes fish, with an annual rate of increase in net imports of 14% in 1996-2000 to 2006-2010 compared to growing net exports (at 5%) in the previous decade.

While these increases in the value of imports are partly due to world price increases over this period, volumes of imports also increased significantly for several commodities. These include all the top imported food commodities such as rice, wheat, fish, milk, palm oil, sugar, poultry, onions, and tomato paste.

There are some noteworthy trends regarding processed products, indicative of efforts in the region to expand local processing capacity. For example, while wheat net imports have been growing at 13% per year in the most recent period, wheat flour has been growing only at 1%, signifying a growing West African milling capacity. The same is true for certain other processed cereal products, such as breakfast cereals and macaroni, which have been growing at a decelerating rate during the 1996-2000 to 2006-2010 period, at

10% and 5%, respectively – less than half the rates of the previous decade. Other examples of likely expansion of domestic processing capacity include sugar, where net imports of refined sugar have been growing at a rate of 4%, compared to the rate of growth of raw sugar of over five times as much (at 20%) in the previous decade; and tobacco, with net imports of unmanufactured tobacco growing at 8% while cigarettes imports grew at 3%.

Also among processed products, there is a huge growth in the imports of fruit juices of various types. The annual growth rate for all fruit juices (both temperate and tropical juices) averaged some 27% in recent years. Nigeria, the largest importing country in the region, has banned importation of fruit juice in consumer-ready containers, leading to a shift towards imports of concentrates that are reconstituted, bottled and canned domestically. The strong import demand for fruit juices reveals a highly dynamic domestic market in all countries of the region, suggesting that there should be very good potential for development or further strengthening of local processing industries based not only on imported raw material but increasingly on processing locally available fruits.

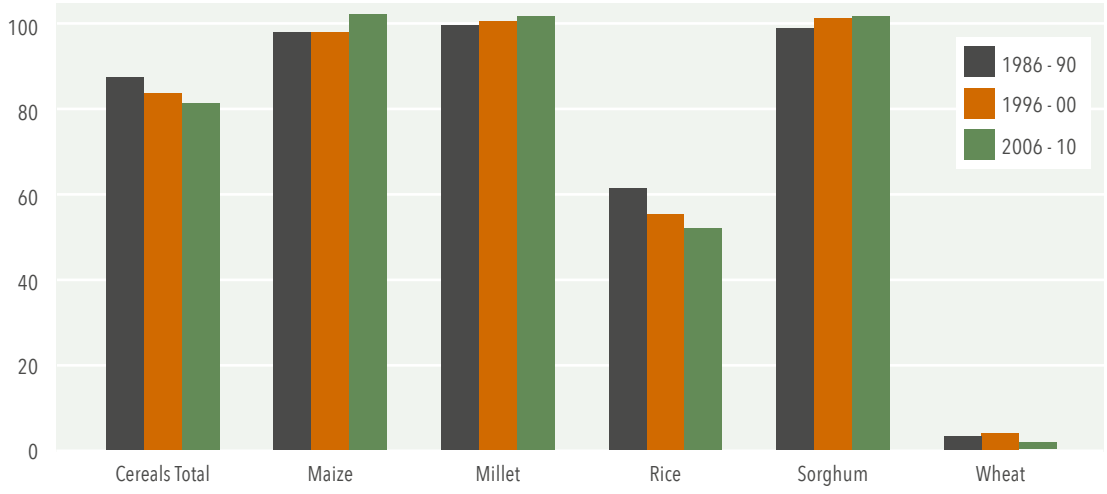
4.3.4 Import dependency

Self-sufficiency ratios (SSRs) for cereals

Cereals are the main item in the food import basket. They are of pivotal importance to the food security of the region, being the leading commodity group imported to meet food needs in normal years and more so in years of domestic production shortfalls. The dependence of the region on the world market of cereals has been on the rise in recent years and is now close to 20%. The region's overall self-sufficiency ratio (SSR) for cereals stood at 88% in the second half of the 1980s, and it has declined to an average of 81% in 2006-10 (Figure 4.9).

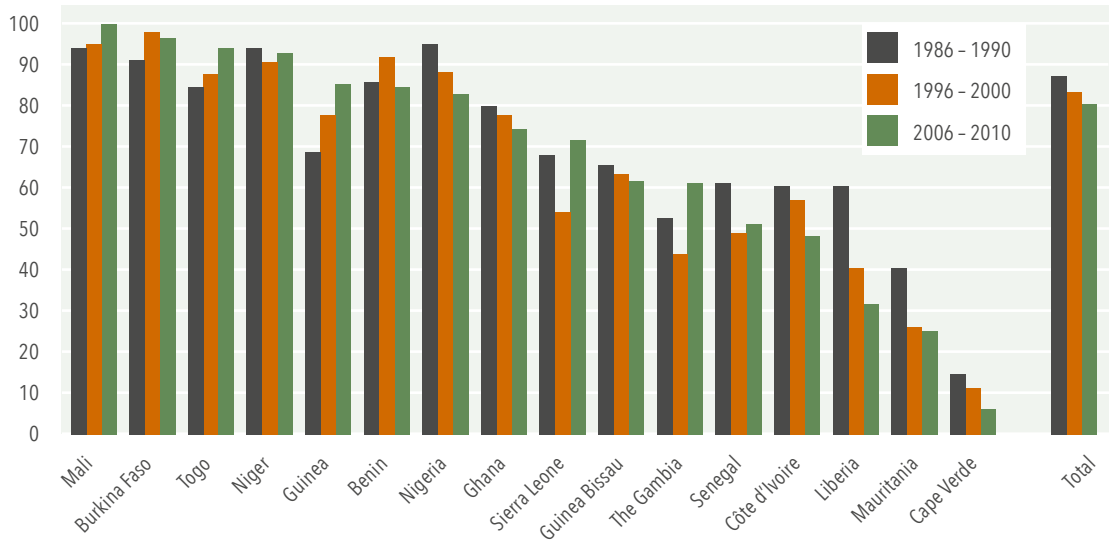
SSRs of individual countries vary widely, ranging from as low as 7% for Cape Verde to 100% for Mali in recent years (Figure 4.10). There are also major differences among countries regarding changes in their SSRs over time. Countries that have improved their reliance on domestic cereal supplies include Mali, Burkina Faso, Togo, Guinea, Sierra Leone and The Gambia. However, the majority of countries increased their dependence on imported supplies, with substantial increases for Nigeria, Côte d'Ivoire, Senegal, Liberia, Mauritania and Cape Verde.

Figure 4.9 *Self-sufficiency ratios of individual cereals in West Africa (%)*



Source: Based on FAOSTAT data.

Figure 4.10 *Self-sufficiency ratios of total cereals by country (%)*



Source: Based on FAOSTAT data.

There are significant differences in SSRs between commodities and countries. Given the limited potential for domestic production in the region, nearly all of the wheat consumed (99%) comes from abroad. Also, none of the countries meets fully its rice consumption needs from domestic production, although some of them do so to a considerable degree (Mali's SSR is 96%, Sierra Leone's is 80% and Guinea's is 80%). Nigeria, the largest rice consuming and producing country in the region, has seen a decrease in its SSR from 83% to 56% from the late 1980s to 2006-10 (Appendix Table A4.1, p.115).

On the other hand, in the case of local grains (millet, maize and sorghum), nearly all countries at least maintained their SSRs and some of them increased their domestic production considerably and moved into an export position. For millet, all countries aside from two (Liberia and Cape Verde) are at least self-sufficient. For sorghum, four countries are not self-sufficient (Senegal, Côte d'Ivoire, Liberia and Cape Verde), while in the case of maize about half of the countries meet their needs from domestic production alone.

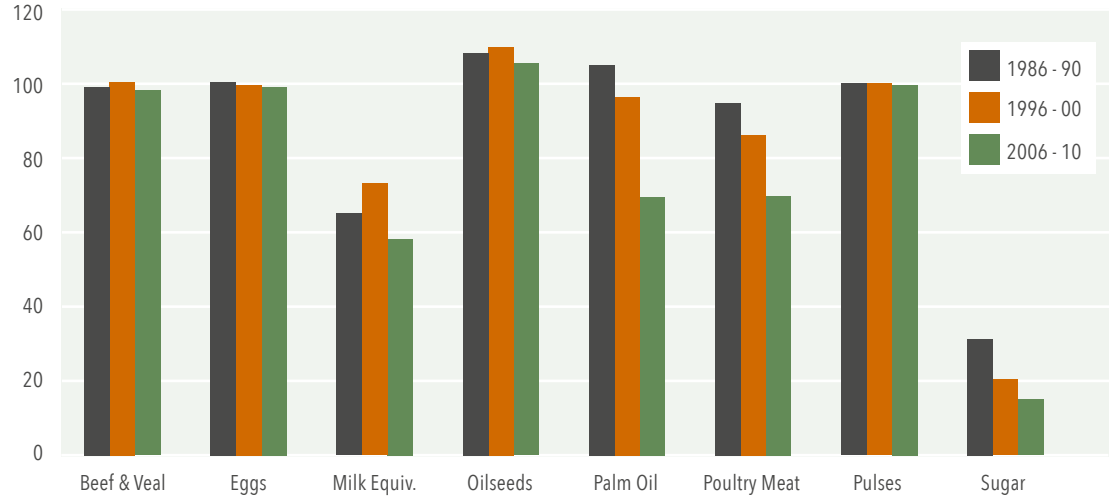
Self-sufficiency ratios for non-cereal commodities

Beyond cereals, regional SSRs are also declining for certain other basic food commodities. This is particularly true for milk, palm oil, poultry meat and sugar (Figure 4.11). From a net exporting position or near self-sufficiency in the 1980s in both palm oil and poultry meat, the region turned into a net importer and has reduced its self-sufficiency ratio to below 70% in 2006-10. For milk and sugar, the region has always depended on imports to meet a large share of its needs, but further substantial reductions in their SSRs have been experienced in recent years as per capita consumption of these goods has expanded (see Chapter 5). In the case of sugar, the region now covers only some 15% of its aggregate needs, half the level of the 1980s.

As in the case of cereals, there are large differences among the countries of the region regarding their dependence on imports in these other basic food commodities (Appendix Table A4.2, p.117). None of the countries is self-sufficient in milk. Six counties (Cape Verde, Côte d'Ivoire, The Gambia, Ghana, Liberia and Nigeria) actually produced less than one-third of the milk they consumed in 2006-10, and their dependence on imports is increasing.

For palm oil, all countries that are producers in the region, except Côte d'Ivoire and Benin, have decreased their SSR considerably in recent years. While palm trees are native to West Africa, the region has been unable to expand production and

Figure 4.11 *Self-sufficiency ratios of selected non-cereal commodities in West Africa (%)*



Source: Based on FAOSTAT data.

productivity to meet domestic and export demand. Other parts of the tropical world (especially Malaysia and Indonesia) are now the main producers and exporters of palm oil. These two countries alone now command an 80% share in global production and are the principal exporters to West Africa and elsewhere (Minal and Bahari, 2011).

Poultry meat is yet another commodity where SSRs for nearly all countries have been declining fast. While the regional average SSR is just below 70%, some countries (Cape Verde and The Gambia) now import over 80% of their expanding poultry meat consumption compared to meeting nearly fully their lower levels of consumption in the late 1980s. Other countries have also increased their dependence on imports to a considerable degree, and some have taken protective measures to limit this situation (e.g. Nigeria's ban on importation of chicken).

Finally in the case of sugar, although several countries never had production in any significant way, among those that did, only Niger appears to have managed to maintain its already low SSR. All other countries have increased their dependence on imported sugar, some to a considerable degree, as per capita consumption has grown.

These developments, largely driven by large increases in domestic demand due to demographic trends as well as rapid increases in export revenues in some countries, are likely to continue. OECD/FAO projects that SSRs for several non-cereal commodities will fall even further by 2020. On the other hand, SSRs for cereals are projected to improve slightly by 2020 on account of projected increases in coarse grains and rice production, but they would still remain well below SSR levels of the past (see Konandreas, 2012b for details).

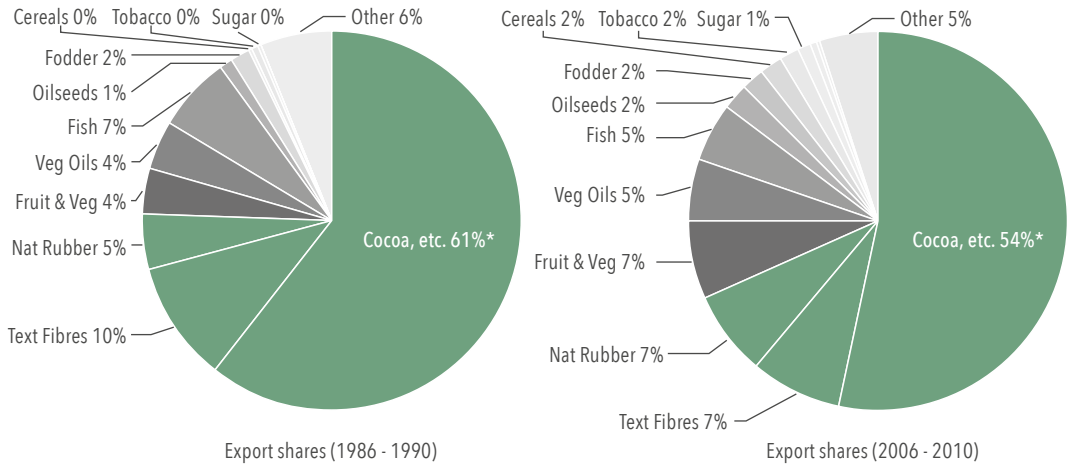
4.4 Exports: composition, trends, and competitive position

4.4.1 Composition and contribution to export earnings

The dominant commodity groups within agricultural exports of West Africa are tropical products. The cocoa/coffee/tea/spices commodity group, together with textile fibres and natural rubber, account for well over two-thirds of its total agricultural exports (Figure 4.12). This concentration of exports in these three commodity groups was even more pronounced in the past, when they accounted for over three-quarters of agricultural exports.

By far the most important agricultural export commodity for the region as a whole is cocoa beans, accounting for nearly 40% of the total value

Figure 4.12 *Composition of agricultural and fish exports over time*



Source: Based on FAOSTAT data.
*Includes Cocoa beans, Cocoa paste, Cocoa butter, Cocoa husks shell, Chocolate Preps and Cocoa powder & Cake

of agricultural exports, and this share has remained relatively stable over time. Other top commodities, but far behind cocoa, are cotton lint (7.5% in 2006-10), natural rubber (7.5%), fish (5%), cocoa paste (5%), cocoa butter (4%), palm oil (4%), cashew nuts (3%) and coffee (2%). Overall, the cocoa-related export commodities account for 54% of agricultural exports.

While palm oil is a major and rapidly growing net import commodity for the region as a whole, it remains also an important export commodity for Côte d'Ivoire and to a lesser degree Liberia. As all other countries are net importers, it is evident that the exports of palm oil shown in the statistics include large amounts of re-exports. Such is clearly a case for Benin where exports during 2006-10 amounted to 170% of domestic palm oil production. The same is likely to be the case for other commodities for which the region is a net importer, such as rice, chicken, and cigarette and tobacco products.

As in the case of imports, the geographical distribution of exports is highly concentrated in a few countries. For the key exports of the region, a handful of countries account for nearly the totality of exports, with Côte d'Ivoire being by far the leading exporter in several commodities. These include cocoa and its by-products, natural rubber, coffee, cashew nuts, palm oil and bananas. More geographically diversified export commodities include cotton lint, fish and tobacco among the main ones.

While the region is a net importer of fish, the types of fish exported and imported are not the same. Fish exports comprise high-value fish species fetching a much higher price than that of imported fish. Per unit values of fish exports by the region averaged three to four times the unit values of the region's imports.

4.4.2 Trends and dynamics of individual commodities

The value of exports of agricultural and food products has been growing at a rate of 6% from 1996-2000 to 2006-10, less than half the rate as in the previous decade (1986-90 to 1996-2000). This growth rate is also less than half that of total merchandise exports of the region; however, the latter has been dominated by petroleum exports and other mineral commodities that have been affected by a global boom in demand and attendant strong export prices.

Top performing commodities are those whose values of net exports are growing at an accelerating rate in the most recent decade (1996-2000 to

2006-10) compared to the previous decade. Among these are cocoa beans and all cocoa by-products, natural rubber, oilseeds, fodder and feeding stuffs, and a small number of fruits and vegetables. Rates of growth over the past decade have been as follows: cocoa beans (7%), cocoa paste (23%), cocoa butter (9%), rubber (11%), oilseeds (11%), fodder and feeding stuffs (9%), all of them at rates greater than in the preceding decade.

Some fruits and vegetables also enjoy this accelerating net export status, such as mangoes and even tomatoes, although the latter's net export value is small. Most of them, however, while increasing, are growing at a slowing rate, and for several fruits and vegetables the region has already switched into a net import position, reflecting growing domestic per capita consumption of these products (see Chapters 5 and 6). Other commodities whose exports have grown, but at a slowing rate over the past decade, include cotton lint (1% growth rate compared to 5% in the previous decade), cashew nuts, sesame seed, bananas, green beans, yams, ginger, papayas, watermelons and eggplants.

Another category of products are those whose net exports have been falling over the past decade. Among the most important of these is coffee, with a net export value declining by 4.9% in the most recent period following a decline of 4.5% in the previous period; palm kernel oil (4% decline); and cottonseed (3.3% decline). The aggregate group of Fruits and Vegetables also falls under this declining net exports category, with an overall 9.5% decline rate compared to a massive positive net export growth in the previous decade.

Finally, there are several commodities in the "emerging net exports" category, implying that they have switched from being imports to net exports between the periods of the study. Notable among these commodities is maize. The value of maize net exports has been growing by 13.7% between 1996-2000 and 2006-10, compared to growing net imports (4.3%) during the preceding decade. In absolute terms, the value of other commodities in this emerging net exports category is small; however, some of them have had an impressive net export growth performance that could make them promising candidates for continued growth. Some commodities in this category include almonds (83% growth rate), flour of roots and tubers (33%), green chillies and peppers (25%) and Brazil nuts (72%).

4.4.3 Competitive positioning of agricultural exports

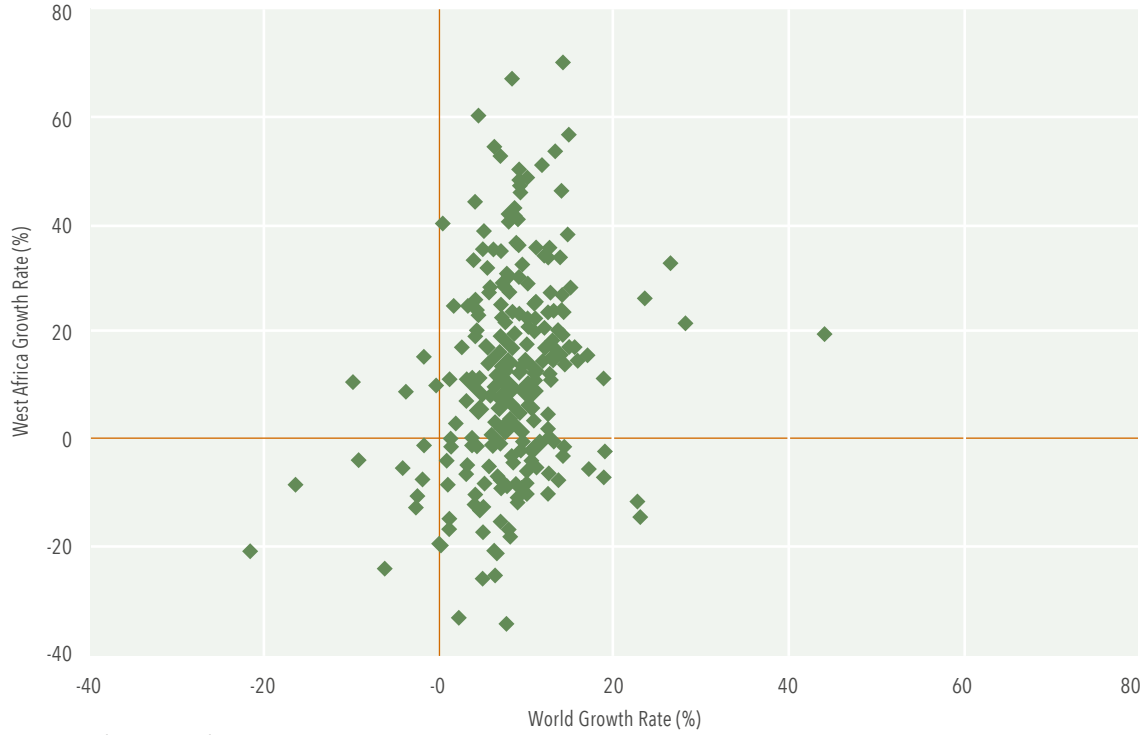
Overall, the region is a relatively small player in world trade. The share of the region in world exports of agricultural products amounted to a mere 0.89% in recent years (2006-10 average), slightly better than the region's share in total merchandise exports of 0.67%. Its share in agricultural products has declined considerably over time while that of total merchandise exports has increased on account of petroleum exports. West Africa's annual rate of growth of agricultural exports was 6.2% during the 1996-00 to 2006-10 period, some 20% less than the rate for the world as a whole of 7.7%.

The opposite was the case for total merchandise exports, where the region's aggregate annual rate of growth was 13.3% compared to the world total of 9.4%. This differential between West Africa's and world growth rates is not a recent phenomenon, and in fact it was more pronounced during the preceding decade (1986-90 to 1996-2000). However, the export performance of West Africa compared to the world varies widely, with some commodities clearly doing much better than the world averages and some performing much worse. Figure 4.13 compares West Africa's export performance by commodity to that of the rest of the world. Each commodity's performance is mapped into one of the four quadrants of the figure. Out of all agricultural products for which West Africa had average aggregate exports of US$5 000 or more in 2006-10 (265 commodities in total), the majority of them (183 commodities) are mapped in the upper right-hand quadrant, implying a positive growth in both West Africa and the world as a whole.

Within these commodities, there are several for which West African exports are doing much better than those from the rest of the world. These include cocoa paste, cocoa powder and cake, cashew nuts, sesame seed, sheanuts, natural rubber, mangoes, bananas, papayas, watermelons, sorghum, flour of

Figure 4.13 *Mapping growth rates of main West African export commodities* [a]

1996 - 00 to 2006 - 10



Source: Based on FAOSTAT data.

[a] 265 commodities with average regional exports above US$5 000in 2006-10

roots and tubers, dried cassava, cassava starch, and linseed oil. A fair number of the principal export commodities of West Africa generally correspond to dynamic sectors of the world market, growing at a rate comparable to that of the world's average. In addition to the above commodities, these include cocoa beans, palm oil, sesame seed, and cocoa husk shells. For some products within the category of "overachievers" the high export growth rates registered were largely due to re-exports. These include, among others, cigarettes, palm oil, rice, olive oil, wine, flour of wheat, chicken and turkey meat, macaroni, infant foods, and tomato paste.

At the other extreme, there are ten commodities for which both West Africa and the world have a negative growth rate. Some of them include cottonseed cake, kolanuts, pineapple juice, copra and different types of skins.

For 68 commodities, the performance of West Africa is negative while the world's is positive. These include some important commodities, such as fish, green and roasted coffee, cottonseed, carded cotton, cotton lint, palm kernel, palm kernel oil, palm cake, coconuts, coconut oil, spices, dry onions, garlic, plantains, lemons and limes, citrus juice, honey, sesame oil, groundnut oil, groundnuts shelled, pineapples, and wet salted cattle hides.

Fish, traditionally a major export commodity of West Africa, has experienced a negative export growth rate although world exports have been growing by 6%. Similarly, exports of cotton lint, also one of the major export commodities of West Africa (a 6.2% share in the world market and a 7.5% share in West Africa's agricultural exports), have been practically stagnant during the 1996-2000 to 2006-10 period (at 0.3%). This apparent lack of dynamism in West Africa's cotton exports may be due to competition from other major cotton suppliers, including those that subsidise production. Also the disruption of the cotton value chain linked to restructuring and mismanagement of the value chain in countries like Mali may have contributed to the decline (see Chapter 10 for details).

Finally, four export commodities are "achievers in adversity", i.e. growing in West Africa despite declining world exports. These include cottonseed oil, cassava flour, natural gums and must of grapes.

Out of the 265 commodities considered, in 78 of them (nearly 30%) West Africa had a negative rate of growth compared to only 14 (some 5%) for the world as a whole. This difference explains the slower growth in West Africa's aggregate exports of agricultural products compared to that of the world as a whole.

While the region has a small share in world agricultural trade, for some commodities it is a major player in world export markets. For 20 commodities the region accounts for over 5% of world exports, and for some of them it is the sole or main exporter. Among the largest by far are cocoa beans and cocoa-related products, cashew nuts, cotton lint and natural rubber, which make the bulk of the contribution to export earnings of the region.

4.5 Intra-regional trade

West Africa has long been linked together through interregional trade, dating back to the caravan trade of pre-colonial times. Major north-south and east-west flows of livestock, coarse grains, cowpeas, and horticultural products such as onions have existed for many years and have increased substantially over the past 30 years in response to the growth of urban consumption centres along the coast that are far removed from the major production basins for many of these products. Re-exportation of rice and wheat, often induced by differences in exchange rates and fiscal policies across countries, have also been widespread in certain areas (e.g. between Nigeria and its neighbours and between The Gambia and Senegal). In addition, Nigeria's frequent imposition of import bans on products such as frozen poultry has stimulated a lively clandestine trade in these items between the country and its neighbours, particularly Benin. As consumption patterns have diversified within the region (see Part II), there has also been an expansion in trade of staples such as gari, attiéké and yams from the coastal states toward the Sahel (Soulé and Gansari, 2010).

4.5.1 A largely under-reported trade

Unfortunately, data on intra-regional trade are fragmented and of uncertain quality.[33] The elimination of official export taxes for regionally traded goods as part of the regional integration processes of WAEMU and ECOWAS reduced incentives of customs services to carefully record such flows, and often traders try to avoid official control posts to avoid having to pay bribes to cross the borders. As a result, official data underestimate the importance of intra-regional trade vis-à-vis extra-regional trade. Official estimates of the volume of all intra-regional trade put it at no more than 16% of the total value of commercial trade of the region (Soulé and Gansari, 2010). The official data show a low degree of sourcing of imports from within the region, particularly for the coastal states, whose seaports provide easy access to international suppliers. Nigeria, the largest market in the region, has the lowest share of supplies sourced intra-regionally according to official trade data. This apparent low reliance on regional markets may be driven by the sheer volume of imports by Nigeria, which may not be easily secured within the region on a regular basis. Another reason could be well-established trade channels with firms from outside the region, more competitive prices and more consistent quality considering the large volumes being imported.

Between 2009 and 2013, CILSS, with assistance of the USAID-supported ATP and EATP projects, began monitoring cross-border trade for ruminant livestock, cereals, and onions at 50 key observation points in West Africa in order to obtain better estimates of the volume and value of regional agricultural trade (Josserand, 2013). The resulting information shows that regional agricultural trade is much larger and more diverse than is generally recognized. For example, using data from this monitoring system and reasonable assumptions about livestock production and offtake rates, Josserand estimates that official statistics capture no more than a third of the value of cattle and small ruminant exports of Burkina Faso and Mali to other countries in the region (ibid.). Offi-

33 For further analysis of regional staple food trade view Maur and Shepherd (forth coming)

cial figures on the regional grain trade, as reported through FAOSTAT, are even more deficient. For example, while official data show millet and sorghum exports from Mali in 2010/11 totalled 280 tonnes, the CILSS study recorded 4 827 tonnes over a similar period. For Nigeria, the figures were even more shocking: official statistics recorded only 45 tonnes of millet and sorghum exports, while the CILSS monitoring noted over 53 000 tonnes (ibid.). Already in the1990s, studies by Seyni and Soulé estimated the total regional cereal trade between Nigeria and its immediate neighbours (Benin, Nigeria, Chad and Cameroon) at nearly 500 000 tonnes per year (Soulé and Gansari, 2010).

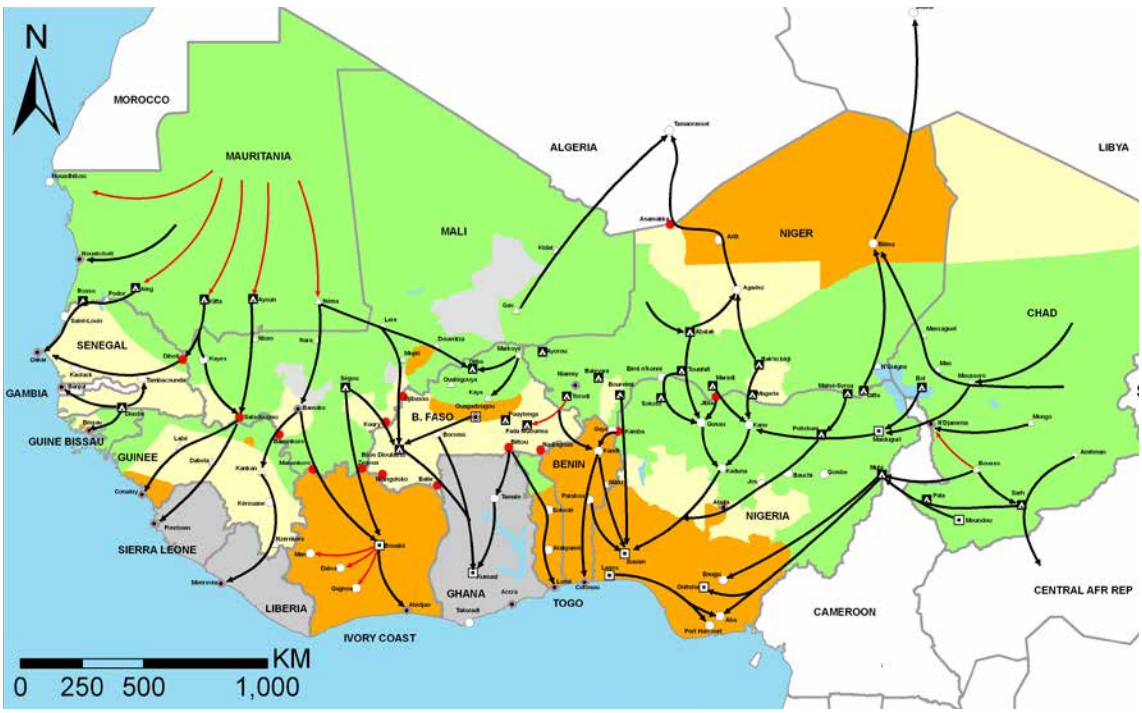
4.5.2 Major products traded regionally

Regional trade is an important contributor to the food security of West African countries, allowing them to access a broader range of products than they produce domestically and helping them to balance fluctuations in national production with imports and exports. It is also a growing source of income for West African farmers given the growing regional demand for an expanding range of food products. Among the key agricultural commodities important in regional trade are the following:[34]

Ruminant Livestock. Exports of cattle, sheep and goats typically flow from the Sahelian and Sudano-Guinean zones towards the demand centres of the humid coast, where disease problems limit ruminant livestock production (Figure 4.14). There are also some exports of sheep and goats to North Africa, particularly at times of major Muslim holidays such as Tabaski. In recent years, demand from Nigeria has led to expanded flows of cattle eastward from Mali and Burkina Faso towards Nigeria, but the volume of this trade fluctuates depending on the Naira/CFA franc exchange rate (Makadji *et al.*, 2013). The regional trade in livestock has proven resilient in adapting to various political and economic shocks affecting West Africa. For example, the Ivorian crisis of the 2000s combined with the paving of the road between Bamako and Dakar led to a major shift in Malian cattle exports

34 FEWSNET provides maps of the regional trade flows for many of these products. Because of space considerations, only the map for livestock flows is included below.

Figure 4.14 *Regional Ruminant Livestock Trade Flows, 2010*



Source: FEWSNET

from Côte d'Ivoire to Senegal, while the emergence of Liberia and Sierra Leone from civil wars led to an expansion of exports of both cattle and small ruminants from the Sahel to these countries (ibid.). As discussed in Chapter 10, a major challenge for the regional ruminant livestock trade will be expanding its capacity to respond to the likely rapid expansion in demand for meat along the coast in the coming decades.

Coarse grains (millet, sorghum, and maize). Trade in coarse grains flows in both a north-south and a south-north direction, depending on the season. The largest flows appear to be between Nigeria, Benin, and Niger, with over 50 000 tonnes of millet and sorghum flowing northward, while Nigeriens export livestock and cowpeas to their southern neighbours. The Niger/Nigeria trade is strongly influenced by the Naira/CFA franc exchange rate. In 2005, when the Naira jumped strongly in value, the direction of the grain trade reversed, contributing the Niger's severe food shortage that year (Kelly *et al.*, 2008). Ghana, Benin, Togo and Côte d'Ivoire all export maize to their northern neighbours (and Ivorian maize also transits through Mali to Senegal), particularly during the Sahelian hungry season starting in June, which corresponds to the period of the main maize harvest in the coastal countries. Later in the season, the direction of the flow frequently reverses, with maize from Mali and Burkina flowing southward as well as eastward to Niger. In recent years, rising demand for maize to be used as poultry feed has further stimulated regional trade in this grain, although inconsistent quality and reliability of trade flows often leads feed millers along the coast to look to overseas suppliers instead.

Rice. All countries in West Africa are net importers of rice, but there is a substantial trade in re-exported rice across borders (Haggblade *et al.*, 2012; Soulé and Gansari, 2010). In addition, some of the major rice producers in the region (e.g., Guinea and Mali) export some locally produced, higher-valued rice (e.g. parboiled rice from Guinea) to their neighbours, while compensating with imports of cheaper Asian rice to cover some of their domestic consumption.

Cowpeas. As described in Part II, cowpeas are an increasingly important source of high-quality protein in several countries, particularly Nigeria, Niger, Ghana, Burkina Faso and Mali. Nigeria is the world's largest producer of cowpeas, but is a net importer, with Niger being the largest exporter in the region. Though largely uncaptured by official statistics, border monitoring in the mid-1990s estimated Niger's cowpea exports to Nigeria at nearly 35 000 tonnes (Soulé and Gansari, 2010). Burkina Faso and Mali are also major suppliers to the coastal states, such as Ghana and Togo. Given the drought tolerance of cowpeas, which makes them particularly adapted to changing climatic conditions in the Sahel, and the growing demand for low-cost protein sources by coastal consumers, it is likely that the regional cowpea trade will continue to grow.

Horticultural products. Niger, and to a lesser extent Mali and Burkina Faso, have been major exporters of onions in both fresh and dried forms to the coastal countries for many years. During certain market windows, this trade competes in the coastal markets with imports from Europe, particularly the Netherlands. Since the 1994 CFA franc devaluation, the range of horticultural products in regional trade has broadened, as the devaluation made regionally produced products more competitive with imports from Europe. Particularly strong growth has been experienced in potato exports from Mali to Côte d'Ivoire and tomato exports from Burkina Faso to Ghana.

Roots and tubers. As documented by FEWSNet, there has been a growing trade in cassava products and yams, both among the coastal countries and from the coastal countries to the Sahel, as consumers in the Sahelian countries begin to diversify their staple food consumption away from just cereals (see Part II). Increasingly, processed cassava products are marketed by modern retailers in the Sahelian countries as a quickly prepared alternative carbohydrate product for the emerging middle class.

4.5.3 Constraints and growth prospects

As discussed in detail in Chapter 12, poor road infrastructure, rules that restrict competition in the

trucking industry, administrative barriers, difficulties and risks of transferring funds across countries with different monetary systems, growing insecurity and rent-seeking by police and border officials all restrict the volume and raise the costs of regional trade. These factors also push much of the trade toward the informal sector, as traders try to circumvent official channels, in most cases to avoid a direct or indirect cost in doing business, especially a cost perceived to be unjustifiable and unfair. This, in turn, leads the trade to remain largely unrecorded, which hampers the development of more trade-friendly policies. Many of the efforts being carried out currently by regional organizations such as ECOWAS and WAEMU, discussed in Chapter 12 attempt to address these constraints.

Despite these constraints, expansion of intra-regional trade offers the largest export opportunity for many of the countries in the region over the coming 10 to 20 years. Given current demand projections for major agricultural commodities in the region, if imports from outside of West Africa continue to cover 15% of the region's food consumption as they have in the past, regional trade will have to expand four-fold by 2040 to cover the remaining consumption gap, mainly in the coastal countries (Josserand, 2013). Moreover, given the proximity of the neighbouring markets and the generally lower quality standards in these markets compared with export markets in the North, regional exports represent the easiest markets for West African countries to capture. They can also serve as training grounds for developing the supply chains that can eventually penetrate overseas markets.

4.6 Quality demands in regional and overseas export markets

In both overseas markets and regional markets, demand is becoming more differentiated. As discussed more in Part II, in regional markets, one segment of the market consists of the large number of low-income consumers whose primary emphasis remains on obtaining basic calories and proteins at low cost. A second segment is made up of an emerging middle class that puts increasing importance on quality and diet diversity. Within both groups, however, diets are evolving, with the potential for very rapid growth in the demand for animal products, fruits, vegetables, cooking oils, and processed foods if per capita incomes continue to grow robustly in the region (see Chapter 6). The ability of individual West African countries to capture these markets on their doorsteps will depend on their ability to be consistent and reliable suppliers of quality products at competitive prices. Consumers see overseas imports as providing benchmarks in terms of price, quality, food safety and consistent availability; and failure to meet such benchmarks (e.g. through disruptions of supply due to export bans) will shift demand increasingly away from West African suppliers.

The overseas export demand facing West African Agriculture is also changing, with Asia growing in importance as an export destination (e.g. for West African cotton) and strong competition from new competitors in certain value chains, such as Vietnam in coffee. While there still remains ample room for expanding export earnings from bulk commodity exports, especially from the Guinea-Savannah zone (World Bank and FAO, 2009), export markets are increasingly demanding in terms of quality control and product differentiation (Drechsler, 2011). Such quality control requires tighter vertical coordination in value chains, for example through delivery contracts between farmer organizations and exporters that specify production and post-harvest handling practices. Thus, West African Agriculture faces a dual challenge in the overseas export market similar to that it faces in the domestic and regional markets: driving down the real cost of output to serve the mass market, which still has a commodity focus; and responding to a growing demand from higher-income consumers for more diversified and higher quality products. These issues are explored in more detail in Chapter 10.

4.7 Summary of main findings

West Africa has become increasingly dependent on international markets for several key foods, such as rice, wheat, fish, dairy products, meats (particularly

poultry), fruit juices, and vegetable oil. Imports, however, are heavily concentrated among the "big four" countries of Nigeria, Ghana, Côte d'Ivoire and Senegal and appear to be linked as much to those countries' increased capacity to import, due to rising export earnings resulting from the world commodity boom, as to their lacklustre agricultural growth. Nonetheless, the growing trade imbalance for some of these products, driven by rapidly growing demand for them throughout the region (see Part II), raises questions about the scope for import substitution. As we shall see in Part III and IV, the desire for such import substitution is driving much of Agricultural policy as well as agroprocessors' strategies in the region.

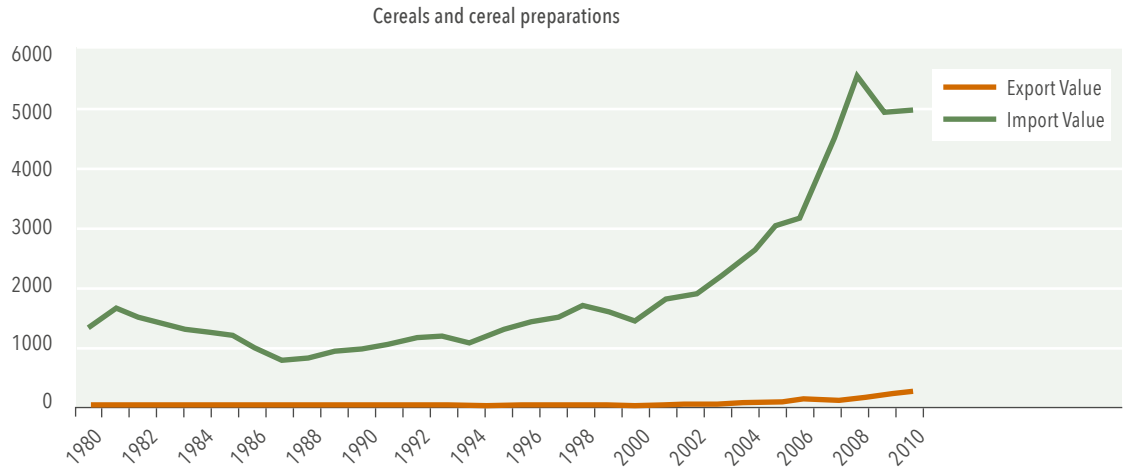
On the export side, the region is heavily dependent on cocoa exports, which are overwhelmingly dominated by Côte d'Ivoire and Ghana. There are a few promising "growth exports" such as natural rubber and some fruits. A major challenge, however, will be to try to revive some of the export value chains that have previously been major foreign-exchange-earners but whose performance has lagged in recent years, such as cotton, cashews, and coffee. Another challenge is to incorporate greater value-added into exports. This is being done successfully in cocoa (see Chapter 10), but has not extended to many of the other exports aside from a few high-quality horticultural crops.

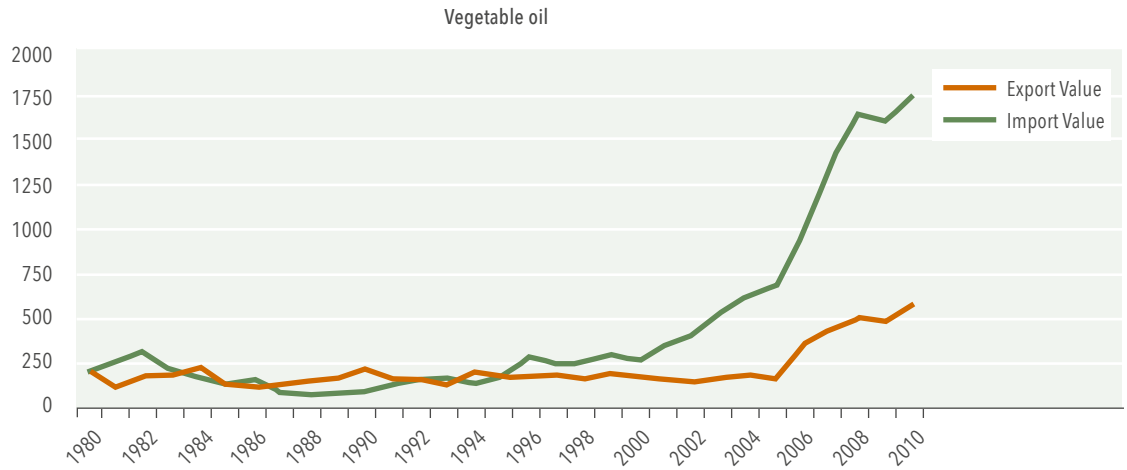
Trade, however, involves not only exchange with countries outside of the region. While data on intra-regional trade are weak, it appears currently to be a grossly under-reported and under-exploited opportunity to expand markets and diversify consumption patterns and export earnings. Such trade is particularly important for the smaller and inland countries of West Africa in order for them to benefit from economies of scale and enjoy a wider range of consumption options. The desire to build an integrated regional market as part of a strategy of economic diversification lies at the heart of ECOWAS and its agricultural policy, ECOWAP. The opportunities and challenges involved in this endeavour are explored in Chapters 12.

In both the regional market and the international market, demand is becoming increasingly differentiated, with both a strong demand for bulk commodities and a growing demand for higher quality, value-added products. The forces driving these changes in demand are explored in detail in Part II, while Part III analyses their implications for the structure and vertical coordination of West African agricultural value chains and retailing systems.

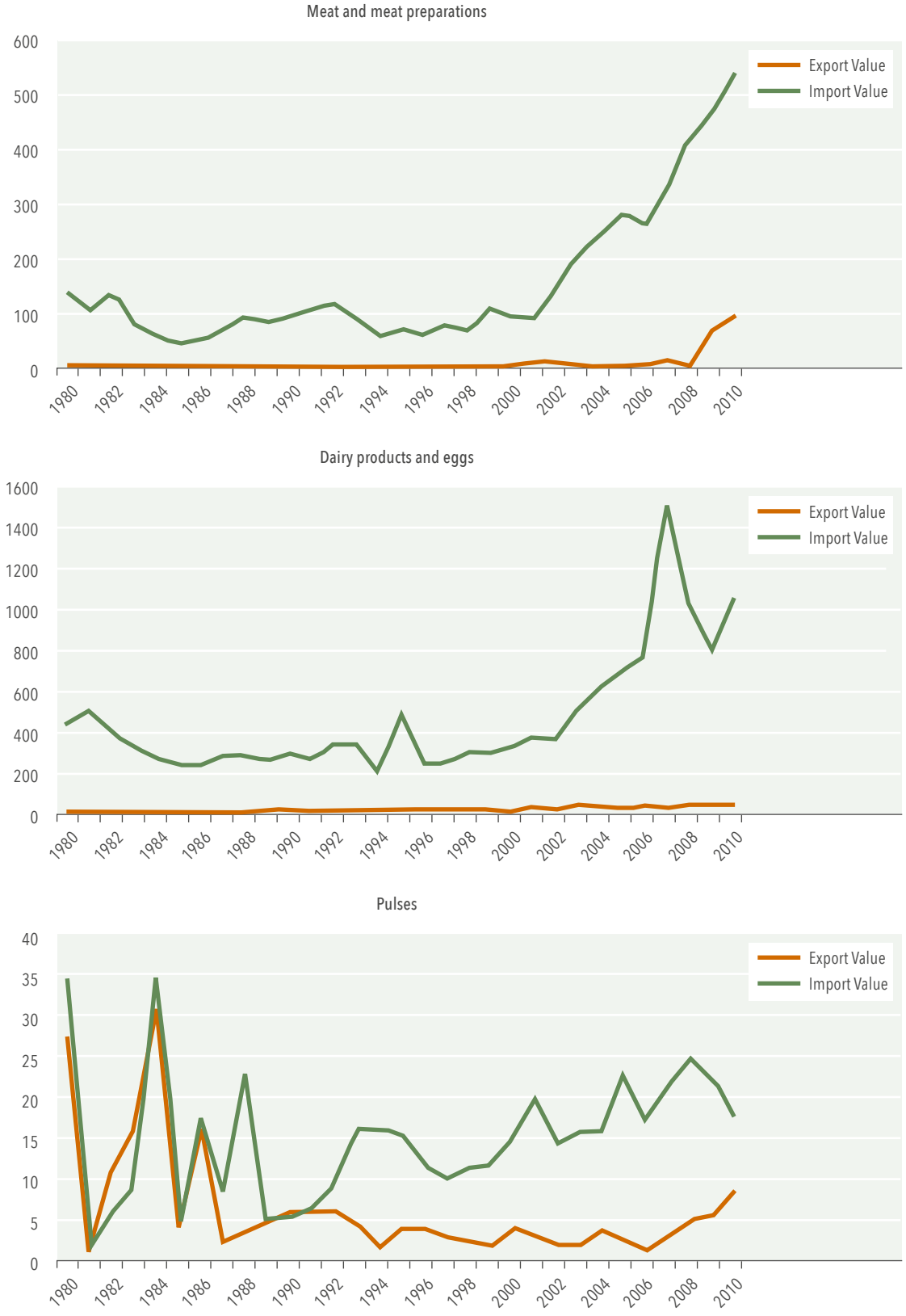
Appendix to Chapter 4

Appendix Figure A4.1 *Aggregate trade balances of West Africa with the rest of the world.*
Value of Imports and Exports (million US$), 1980 -2010

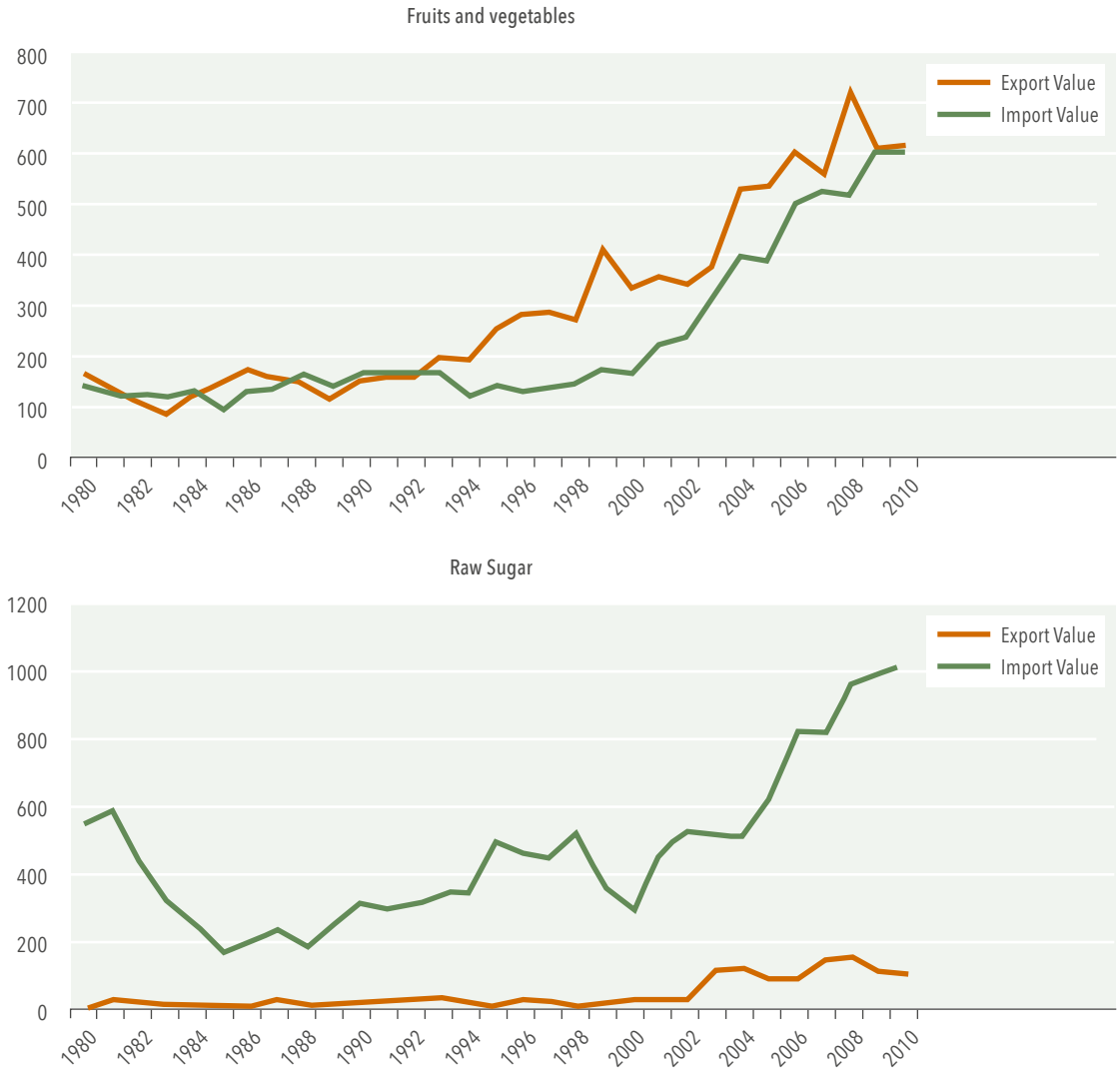




Appendix Figure A4.1 *Aggregate trade balances of West Africa with the rest of the world (continued).*
Value of Imports and Exports (million US$), 1980 -2010



Appendix Figure A4.1 *Aggregate trade balances of West Africa (continued)*
Value of Imports and Exports (million US$), 1980 -2010



Source: Based on FAOSTAT data.

Appendix Table A4.1 *Evolution of SSRs for cereal commodities by country*

	Year	Cereals Total	Maize	Millet	Rice	Sorghum
Benin	1986-90	86.0	100.0	100.0	7.1	113.0
	1996-00	91.9	106.9	100.0	21.6	104.9
	2006-10	84.6	107.3	112.4	19.3	105.7
Burkina Faso	1986-90	91.5	86.1	99.5	29.7	98.6
	1996-00	91.6	100.2	99.9	25.7	100.1
	2006-10	96.8	108.7	102.9	34.1	104.8
Cape Verde	1986-90	14.9	26.0	0.0	0.0	0.0
	1996-00	11.2	21.3	0.0	0.0	0.0
	2006-10	6.8	25.7	0.0	0.0	0.0

Source: Based on FAOSTAT data.

Appendix Table A4.1 *Evolution of SSRs for cereal commodities by country (continued)*

	Year	Cereals Total	Maize	Millet	Rice	Sorghum
Côte d'Ivoire	1986-90	61.0	103.3	96.7	51.9	78.9
	1996-00	57.1	101.6	99.5	43.9	80.8
	2006-10	48.3	96.8	100.0	34.1	79.2
The Gambia	1986-90	53.0	93.9	102.7	21.1	100.0
	1996-00	43.7	87.7	100.0	13.0	100.0
	2006-10	61.8	120.5	107.2	21.4	110.1
Ghana	1986-90	79.9	98.4	100.0	36.5	97.0
	1996-00	77.9	97.8	100.0	38.0	98.6
	2006-10	74.7	106.4	100.0	28.7	101.3
Guinea	1986-90	69.2	99.2	100.0	66.5	100.0
	1996-00	77.2	97.7	100.0	77.2	100.0
	2006-10	85.7	106.4	105.4	79.7	100.0
Guinea-Bissau	1986-90	65.9	95.6	100.0	60.1	96.8
	1996-00	63.7	89.6	100.0	53.2	100.0
	2006-10	62.2	88.7	100.0	52.8	107.5
Liberia	1986-90	61.4	0.0	0.0	64.7	0.0
	1996-00	40.7	6.2	0.0	63.0	0.0
	2006-10	32.4	0.0	0.0	39.0	0.0
Mali	1986-90	94.9	93.1	103.4	75.0	103.9
	1996-00	95.8	104.6	101.1	84.9	101.1
	2006-10	100.3	109.6	103.1	96.4	107.9
Mauritania	1986-90	40.9	65.9	100.0	36.1	89.8
	1996-00	26.4	96.5	76.4	37.4	92.0
	2006-10	25.3	76.3	100.0	29.2	101.3
Niger	1986-90	94.1	26.9	99.4	59.3	95.0
	1996-00	90.5	15.8	98.9	23.3	95.6
	2006-10	93.2	28.5	101.1	16.1	104.2
Nigeria	1986-90	95.1	100.2	100.3	82.6	99.3
	1996-00	88.3	99.2	100.6	64.3	101.1
	2006-10	83.2	101.2	102.0	56.4	100.4
Senegal	1986-90	61.5	86.6	95.6	22.0	82.2
	1996-00	48.9	65.7	99.8	11.8	94.3
	2006-10	51.8	89.1	100.0	24.2	96.2
Sierra Leone	1986-90	68.4	80.8	100.0	70.7	100.0
	1996-00	53.9	36.5	100.0	62.3	100.0
	2006-10	72.0	74.9	100.0	80.3	100.0
Togo	1986-90	85.2	101.7	100.0	32.5	97.6
	1996-00	88.0	103.1	100.0	50.3	100.0
	2006-10	94.3	114.0	100.0	44.5	103.9
West Africa	**1986-90**	**87.7**	**98.5**	**100.0**	**61.6**	**98.9**
	1996-00	**83.3**	**98.2**	**100.1**	**54.9**	**100.5**
	2006-10	**81.4**	**102.4**	**101.9**	**51.8**	**101.7**

Source: Based on FAOSTAT data.

Appendix Table A4.2 Evolution of SSRs for selected non-cereal commodities by country

	Year	Beef & Veal	Eggs	Milk Equivalent	Oilseeds	Palm Oil	Poultry Meat	Pulses
Benin	1986-90	100.0	99.9	66.4	167.8	111.6	86.2	99.7
	1996-00	100.0	99.3	43.7	244.1	134.5	26.9	99.6
	2006-10	99.7	99.8	42.6	116.8	143.0	22.6	99.8
Burkina Faso	1986-90	100.0	99.8	67.5	118.6	0.0	100.0	100.9
	1996-00	100.0	100.0	80.6	127.6	0.0	99.9	99.4
	2006-10	100.0	100.0	85.9	142.4	0.0	99.8	100.8
Cape Verde	1986-90	91.9	98.9	26.5	61.4	0.0	98.4	82.9
	1996-00	85.3	94.1	31.3	38.3	0.0	53.8	46.4
	2006-10	67.3	94.1	32.8	94.3	0.0	8.3	44.5
Côte d'Ivoire	1986-90	59.5	99.7	8.5	100.6	152.0	87.2	92.0
	1996-00	96.8	99.5	18.8	101.4	128.7	92.0	97.2
	2006-10	82.7	99.3	22.4	108.7	140.8	95.5	92.0
The Gambia	1986-90	100.0	77.8	32.7	135.0	100.0	100.0	100.0
	1996-00	99.8	41.6	29.1	123.2	64.5	36.8	89.2
	2006-10	98.9	34.3	14.1	121.1	7.1	19.2	88.9
Ghana	1986-90	100.0	99.6	43.1	108.7	101.9	78.7	98.5
	1996-00	91.0	99.4	40.9	118.0	105.8	55.8	99.9
	2006-10	78.5	99.9	19.0	114.7	62.9	26.7	83.1
Guinea	1986-90	100.0	100.0	74.7	102.6	100.0	85.0	100.0
	1996-00	100.0	100.0	73.7	108.3	97.1	85.8	96.0
	2006-10	100.0	99.7	78.3	100.2	66.4	53.2	97.7
Guinea-Bissau	1986-90	100.0	100.0	73.1	142.1	103.6	95.1	97.1
	1996-00	100.0	100.0	87.2	119.1	89.8	85.9	84.7
	2006-10	100.0	100.0	83.2	97.4	58.0	62.2	73.1
Liberia	1986-90	100.0	99.8	6.4	95.5	115.9	80.7	95.4
	1996-00	100.0	73.7	12.5	100.0	112.4	71.4	24.0
	2006-10	100.0	58.0	6.9	99.7	75.2	58.5	42.6
Mali	1986-90	100.0	100.0	89.7	113.5	0.0	100.0	100.7
	1996-00	100.0	100.0	87.6	114.4	0.0	99.9	100.0
	2006-10	100.0	99.6	92.8	109.4	0.0	99.3	99.0

Source: Based on FAOSTAT data.

Focus Section A

Food Price Volatility in West Africa: Impacts, Causes, and Policy Options

Agricultural prices vary, seasonally and from year to year, for a variety of reasons. Price variation is expected by participants in agricultural markets and is neither detrimental to allowing efficient markets to develop nor a disincentive to short- and long-term investments in the sector. It becomes a concern when the amplitude and the frequency of price changes are so large that consumers and producers face serious problems in coping with the changes. This situation is described by the term price volatility. Since the 2008 spike in world food prices, the term volatility has often been used in debates in West Africa as synonymous with price increases, but historically large and frequent falls in agricultural prices have been at least as frequent and problematic as price spikes. It is important to distinguish between increased price volatility and a higher level of average prices, as different policies are needed to deal with each.[35]

Nature and impacts of price volatility

Staple foodstuffs, particularly in unprocessed form, are often characterized by inelastic demand, whereby the quantity demanded changes little with a variation in price. Conversely, inelastic demand inplies thar even small changes in supply result in disproportionate changes in prices. The impacts are larger in the thin markets that characterize many West African countries, wherein a large proportion of production is consumed on the farm. In such situations, a relatively small change in output can result in a large change in marketed surplus, leading to large changes in market prices. In the absence of compensating imports or stocks to augment domestic supplies, food crop production shortfalls result in large increases in price of food, with devastating effects for poor households. Conversely, a bumper domestic crop can lead to a collapse of producer prices unless surplus production can be absorbed in the export market or used to build up domestic stocks. These depressed prices can have disastrous effects on farmers as well as other participants in the domestic food system. The effects can be particularly devastating for poor smallholders who do not have access to credit and thus may have to sell farm equipment and livestock to cope with price collapses, which then constrains their ability to expand production in the future when prices increase.

Sources of price volatility

Price volatility comes from two sources. One part is imported from the volatility of international markets with which West Africans trade, and one part is endogenously generated from supply and demand shocks internal to the region. As a general rule, imported volatility is more important in countries that trade extensively internationally, depend heavily on food imports, and adopt policies that allow fluctuations in international prices to be transmitted into domestic markets. Also, as a general rule, landlocked countries with high transport costs from the port to internal markets (such as the Sahelian countries of ECOWAS) and high marketing and other transaction costs, or countries that consume staple foods not traded internationally, are much more susceptible to endogenous than imported volatility.

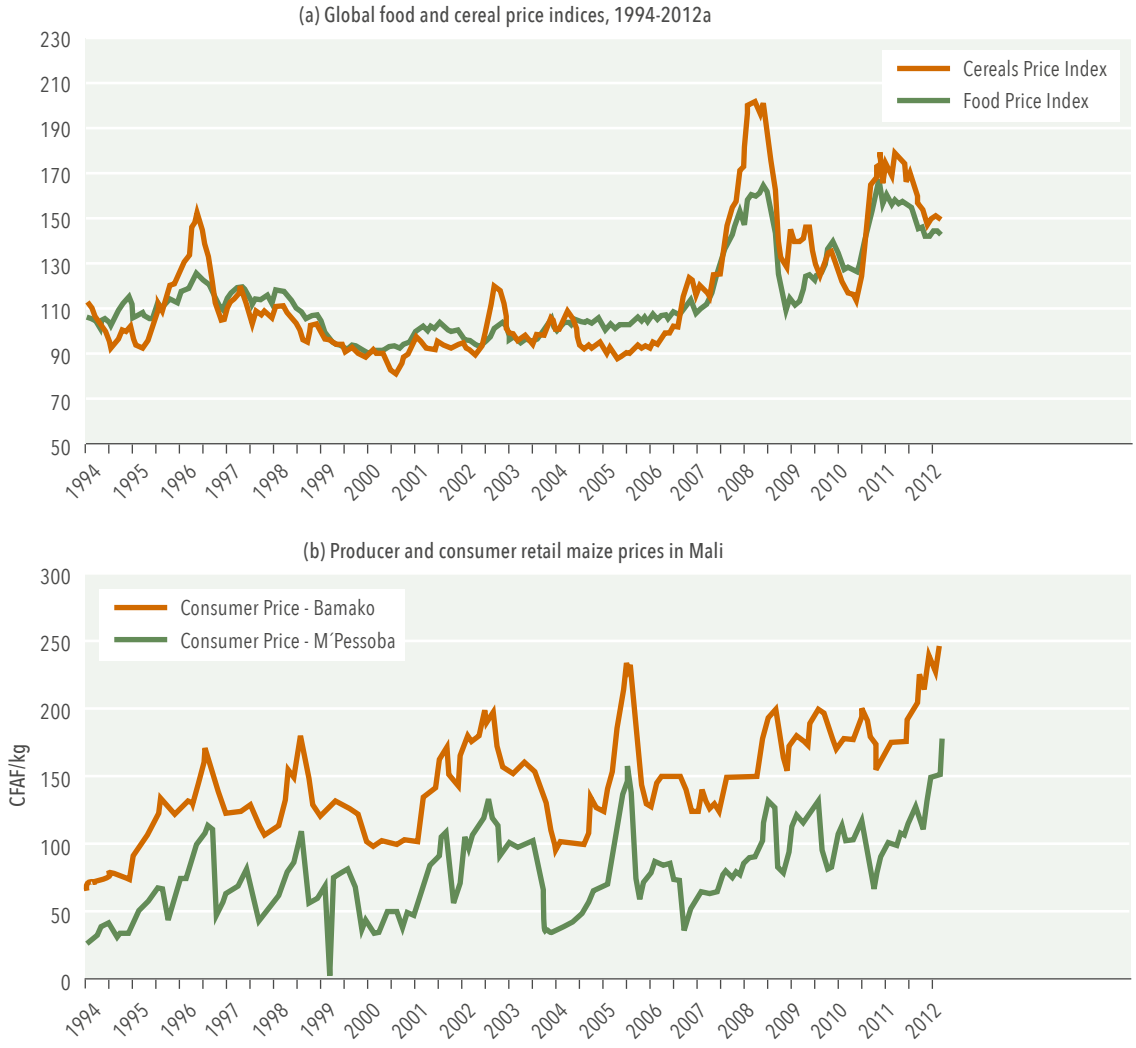
Figure A.1 illustrates these two sources of volatility. Panel (a) shows the volatility of world food prices as measured by the FAO food price and cereal price indices, while Panel (b) shows the

35 Analysis by IFPRI (Minot, 2012) shows that while prices for many basic staple foods became more volatile in international markets during the period 2007-2010 compared to 2003-2006, in the 11 African countries for which time-series data were available, prices for these commodities generally did not become more volatile, although they did increase in absolute magnitude.

variability of farm and retail-level prices in Mali over the same period. What is striking is that while world prices (a potential source of imported price volatility) varied in recent years by a factor of two, farm-level maize prices varied by a factor of up to four, suggesting that locally generated factors were at least as important as imported factors in generating the price volatility facing Malian farmers.

The sources of global price volatility, including factors such as extreme weather events, decreased carryover stocks and the imposition of biofuel mandates in OECD countries, have been well documented in the literature. (For recent summaries, see Konandreas, 2012a; and HLPE, 2011). Factors contributing to endogenous volatility include the thinness of domestic markets; weather and pest shocks; weak transport infrastructure; high transaction costs of regional trade; weak information on the level of production and stocks in the region, which creates uncertainty for both traders and governments, often leading to poorly informed market actions; and the unpredictability of government policy interventions, particularly regarding regional and international trade.

Figure A.1 *Examples of imported and internally generated price volatility*



Sources: (a) FAOSTAT, and (b) Observatoire du Marché Agricole (2014)
[a]2002-2004 = 100

ECOWAS experience with price volatility

Price spikes and price troughs are the two extremes of the price spectrum, and both have been a challenge for the ECOWAS countries. Regarding food price spikes, the most recent experience was in 2007-08, 2010-11 and again in 2012. The global food crisis of 2008 induced some major international grain-exporting countries, such as India and Thailand, to restrict exports in order to protect their domestic consumers. Some grain exporters in West Africa, such as Burkina Faso and Mali, likewise banned exports. The trade restrictions reduced volumes available in international and regional markets, thereby increasing price volatility. They also created doubts among national policy makers about the reliability of international and regional markets as a way of ensuring domestic food security – thereby leading to policies aimed at increasing the level of national food self-sufficiency and moving away from regional- and trade-based food security. In the long run, such policies deprive these countries of the potentially stabilizing effects that trade could offer in smoothing out domestic production variability.

It is not surprising that considering the heavy dependence of West Africa on imports for some key staples such as wheat and rice, local consumers felt the brunt of the price spikes since 2008. For example, between July 2007 and July 2008 rice prices rose by 43% in Mali, by 50% in Niger, by 64% in Burkina Faso and by 112% in Senegal (Demeke *et al.*, 2011). All countries have been affected, but the coastal countries more so because their consumption basket is more heavily laden with imported wheat and rice compared to the Sahelian countries, which consume more sorghum, millet and maize. However, even for those commodities, prices increased considerably (for example for millet by 28% in Mali, 39% in Niger, 46% in Burkina Faso and 8.5% in Senegal, during the 2007-08 period). Partly, this was also due to consumers not being able to afford the imported rice and wheat and shifting to local grains. Production of these locally grown crops also dropped significantly in 2007, which amplified the inflationary pressure of high international prices in 2007-08.

As would also be expected, in a region where households spend up to 75% of their income on food and where many of them are already at risk nutritionally, high prices had detrimental effects on short-term food security. Reduced consumption was a general consequence of the crisis, and civil unrest and large-scale riots were also a common response in many West African capitals (Aker *et al.*, 2011).

While recent years have been characterised by a period of high world food prices, the opposite has often been the case in the past. For a region with a high degree of dependence on the world food market, periods of depressed world food prices have often been associated with import surges. In primarily agricultural economies, unfair competition for domestic producers of competing commodities resulting from these import surges[36] has been an important food security issue.

FAO analysis, spanning a decade and involving selected commodities and developing country situations, attempted to identify the incidence of import surges, their sources and impacts, and the actual measures that government and private sectors have taken in response.[37] In the ECOWAS region, some specific commodity groups have been particularly affected by such surges, including poultry, rice and dairy products.

In the case of poultry, 52% of the total cases of import surges identified between 1995 and 2003 concerned Africa, of which nearly half were West African countries (FAO, 2006b). A general opening of economies under regional trade agreements combined with structural adjustment requirements of donor organizations limit countries from increasing applied tariffs, even if significantly below bound rates committed to WTO. In the case of Côte d'Ivoire, poultry imports expanded six-fold between 1998 and 2004. In Ghana and Senegal, a lowering of tariffs led to a four-fold import rise over 2000-05. The Ghana Poultry Farmers Association led a successful campaign to increase tariffs

36 Although there is no universally accepted definition of import surges, they are generally described as sudden and often relatively short-lived increases in imports (Rakotoarisoa et al. (2011).

37 This work is summarised in a recent volume by Rakotoarisoa, et al. (2011). Analyses of import surges by OXFAM include Ceesay et al. (2005; Diagne (2004; Fowler (2002).

on poultry imports from 20% to 40%; however, the new tariff rate could not be implemented due to conflict with other protocols and government obligations, allegedly under IMF pressure (Sharma, 2011; for more details, see Chapter 10).

In the case of rice (FAO, 2006c), Africa also saw the highest occurrence of import surges (some 56% of the global total identified between 1983 and 2003, with West Africa accounting for 40% of them). Several contributory factors have been identified, including exchange rate appreciation in some countries. However, in some cases, such as in Côte d'Ivoire (in 2000, 2001 and 2002) and in Ghana (in 1998 and 2001), low world prices have been the primary factor behind import surges.

In the case of dairy products (FAO, 2006a), Africa accounted for 49% of total import surges identified between 1999 and 2003 in skim milk powder (SMP) and 55% of those in whole milk powder (WMP). Of these, West Africa accounted for nearly 50% for both dairy products. A mix of external and domestic factors has been identified for the occurrence of import surges in dairy products. These include domestic and export subsidies in main exporting countries, combined with low import tariffs in importing countries, currency appreciation in some of them, as well as constraints in domestic dairy development due to high cost structures of local production, inadequate marketing and transportation infrastructure (see Chapter 10 for more details).

Overall, countries in the ECOWAS region have often been affected by import surges, with external factors such as low import prices and dumping of products as contributing factors. However, domestic causes such as low productivity, lack of competitiveness, trade and market reform policies, weak institutions and market failures have often been key internal constraints contributing to import surges. Thus, the FAO studies do not support a widely held view that trade liberalization itself was the main cause of import surges, but one out of many contributors to the surges.

The consequences of import surges also varied widely across products and countries, and the perceptions about their impacts were also mixed among various stakeholder groups. While import surges caused minor or no decline in profit or market shares in some cases, they provoked the collapse of the entire sector in other cases. Similarly, while small-scale producers felt harmed by import surges, others such as large-scale producers, processors, traders and especially consumers often claimed benefits from the import surges. This raises a difficult political economy dilemma in dealing with the surges.

Selected policy options to deal with price volatility in the region

There are a number of policy instruments available within the ECOWAS region to mitigate and deal with the effects of both endogenously generated and imported agricultural price volatility.

Stabilizing production systems

Strengthening the resilience of domestic production is a key factor in reducing endogenous market volatility. Investments in irrigation and better soil and water management are particularly critical, especially in light of climate change. Research into crop and animal varieties that are more resilient in the face of weather conditions can also reduce variability in supply and hence limit volatility. These types of investments are planned both in the regional and national CAADP agricultural investment plans discussed in Chapter 11.

Promoting more fluid trade within the region

The routine imposition of informal trade bans by some member states during periods of high prices is not only in violation of the ECOWAS Treaty but, by making regional markets thinner, aggravates price volatility at the regional level. Proposals currently included in the regional ECOWAP programme (described in Chapters 11 and 12) to reduce barriers to regional trade would help move the region towards a notion of regional food security and away from the notion of national food self-sufficiency. By making regional trade more reliable, such measures would also open up opportunities

for investors to exploit regional economies of scale in agricultural production, storage, processing and distribution, as well as risk-management possibilities, thereby creating incentives for increased investment. This would not only increase aggregate regional food output but also result in a broadened and diversified food commodity basket which is also an effective defence against price volatility.[38]

Improving market information and coordination

Improving the information base. Lack of access to timely market information hinders market transparency, price transmission and the efficiency of markets. Information on informal trade flows within the ECOWAS region and on inventory levels at the farm and commercial levels is particularly weak. Lacking such information, governments frequently are tempted to restrict exports, fearing that "too much food is flowing out of the country." Not knowing actual volumes traded, governments are also unable to gauge imports, especially during periods of crises, with potentially adverse fiscal and food security consequences. Therefore, an important first step in improving the information base to better respond to price volatility would be to build upon current efforts of CILSS to better quantify informal cross-border trade in basic foodstuffs and develop improved tools to gauge the levels of commercial and farm-level inventories in the system.

Putting in place a trade surveillance system. For the ECOWAS to be successful against the threats of import surges during periods of depressed world prices and for timely scheduling of cereal imports in situations of increasing prices, an effective trade surveillance system at the regional level is needed to provide timely market information and give an early warning of impending problems. In addition, there is need for analytical capacity to consider possible response options and assess credibly possible regional and country-specific impacts. Such actions fall under the mandate of the proposed regional agricultural information system, ECOAMIS, which presumably would work closely with the recently constituted AMIS (Agricultural Market Information System) coordinating structure at the FAO (FAO, 2011a). The information system needs to be complemented by creation of mechanisms within the ECOWAS structure for technical consultations on possible national and regional policy responses and remedial actions in cases of external threats to food security, as well as for advocating a strong political will to act regionally and not nationally.

Strengthening physical and logistical infrastructure in the region

In addition to streamlining agricultural and trade policy across the ECOWAS and improving information systems, there are also important physical, institutional and logistical constraints that impede the movement of supplies from surplus to deficit areas. In particular, during periods of shortage, expeditious mobilization and transport of supplies through national borders to the deficit areas are critical in avoiding price escalation at the local level. To take advantage of the potential of regional trade to play a greater role in dampening price volatility, the following issues need to be addressed:

Reducing high transaction and transfer costs. High transaction and transfer costs affect the whole supply chain and many factors are responsible, both physical and policy related. These high costs discourage trade and increase marketing margins, with the result that a given change in price at the retail level translates into much larger proportional change at the farm level. The limited availability of navigable waterways as well as an inadequate railroad network implies that the bulk of trade in the region is carried out by the more expensive trucking mode, which adds considerably to the cost of the commodity ultimately paid by consumers. This is particularly true during the rainy season when journeys are longer and delays are frequent, leading to an increase in cost by about one-third. What is also damaging from the food security perspective is that the rainy season coincides with the lean season when the already-high price of grain becomes even higher because of the increased transport charges.

38 When food consumption patterns become more diversified, markets become more interlinked and stable than in cases where one commodity dominates food consumption patterns (Jayne et al., 2009).

Quick improvements in reducing transfer and transaction costs could be made by easing regional transport and transit formalities and cracking down on petty corruption, which is highly disruptive to the free movement of foodstuffs. This would require capacity building of border personnel and harmonization and enforcement of border formalities, and monitoring and reporting bad practices, inter alia through the *Observatoire des Pratiques Anomales (OPA)*.[39] Also important would be the promotion of better understanding and appreciation by traders of their rights and obligations emanating from the faithful application of official rules and regulations at the border and creating more effective mechanisms for traders to pursue grievances in case of alleged abuse.

Helping finance the building of storage capacity. Lack of efficient storage facilities in the region is one of the factors that limit temporal arbitrage and contribute to high seasonal price variability. Although public financing of storage capacity might not be justified on narrow economic considerations, this should be viewed as a public good with important externalities in terms of strengthening food security and in providing possibilities for local communities to avoid the pressure of selling their crops immediately after harvest at depressed prices and having to repurchase food during the lean season at much higher prices. Public financing of a portion of the cost of storage facilities does not imply, however, that such facilities should be managed by the public sector. The ECOWAP proposal for public-private partnerships in commercial storage and its support for expanded development of tradable warehouse receipt systems (see Chapter 11) are examples of models that merit experimentation. However, these initiatives need to be accompanied with improved grades and standards for the commodities being stored, as lack of formal grading standards makes it difficult to assure credible valuation of the inventory, thereby making collateralization of commodities very difficult.

39 OPA was established in 2005 jointly by the WAEMU and ECOWAS with the financial support of USAID and the World Bank, in partnership with the West Africa Trade Hub. Its objective is to facilitate trade by monitoring unlawful harassment faced by truckers along interstate highways in West Africa.

National and regional food stocks

Public stockholding operations are generally of two types: those aiming at price stabilization and those with the objective of safeguarding security of supplies. Public stockholding with the first objective in mind is often referred to as ***buffer stocks or price stabilization stocks/reserves***. The public intervention in this case is to buy commodities at harvest when prices are low, thus supporting prices to producers, and release stocks into the market during the lean season when prices are high, thus keeping prices in check. In general, the mechanism involved is a price-band, whereby action is triggered based on minimum and maximum target price levels. To the extent government intervention is able to defend these trigger levels, buffer stocks can help protect farmers' incomes and avoid excessive price increases for consumers. For such a policy to be successful, however, governments must be prepared to do whatever it takes to defend trigger levels (i.e. commit to open-ended expenditures to buy or sell product), which may or may not be possible depending on how the price-band is set and available resources. A narrow price-band and one that bears little relationship with import and export parity levels is difficult to maintain and invariably renders the policy costly and ineffective. For example, analysis by IFPRI (Minot, 2012) for 11 African countries between 2003 and 2011 showed that price volatility was higher in countries such as Malawi and Zambia that actively used buffer stocks to try to stabilize prices than in countries like Kenya and Mali that did not. This suggests that price stabilization efforts, if not carefully designed and implemented, can actually increase rather than decrease volatility.

Public intervention that aims at safeguarding security of supplies is often referred to as ***food security stocks or emergency stocks/reserves.*** The aim of such stocks is normally to target vulnerable segments of the population under direct distribution schemes (i.e. outside the market) and, occasionally, to augment domestic food supplies during years of national shortages. Short-term food security is thus the main objective of such stocks and not to influence price behaviour, although the latter is inevitably affected to some degree depending on the magnitude

of intervention. Hence the size of the food security stocks and their management are key considerations, both as regards costs as well as on how they may interfere with the market. For example, release of public stocks should not interfere with the discharge of private-sector stocks, in order to minimize disincentives and avoid crowding out the positive role of private storage in the market (Wright, 2009).

Factors involved in deciding on size would include historical variability of domestic production, import dependency and delays in securing imports, dependability of suppliers and affordability of likely volume of imports. It is clear that all these factors need to be carefully weighed taking into account both cost/benefit and food security considerations. Stocks tie up capital, are expensive to maintain and are prone to physical deterioration and losses. One option that has been used in many countries to help deal with these costs, and which ECOWAS is considering, is to hold a portion of the reserve in physical form with the remainder as a financial reserve, used to purchase additional product as needed.

Regional food reserves are arrangements of regional country groupings for pooling resources into a common regional reserve, to be drawn upon based on pre-agreed rules. The constitution of such regional reserves typically entails the earmarking of a certain percentage of each country's national reserve into the regional food reserve. The benefits of pooling resources at a regional level include economies of scale, greater price stability, enhanced regional cooperation and integration, facilitating movement of supplies across borders, and enhancing regional market information and monitoring of available food supplies. However, at times governments are reluctant to commit to such reserves, because of costs, a perceived loss of sovereignty over national food reserves, distrust of neighbours, legal obstacles, and a lack of commitment to honour the rules of the reserve during times of national food stress (ActionAid, 2011). Chapter 12 discusses ECOWAS's current plans to create a regional food security reserve.

Providing targeted support to farmers

ECOWAS countries have limited financial possibilities for providing subsidies to farmers. Any resources allocated in this area could best be used in the form of targeted and "market-smart" input subsidies (including subsidies for irrigation and equipment for improved soil/water management) to increase productivity of specific food security crops rather than price supports for farmers. In countries where a large part of the population spends most of its income on food, an input subsidy does not penalize poor consumers (which is the case of an output support policy) while providing an incentive to farmers (by reducing production costs). However, care is needed in the design of such programmes in order to make them effective and financially sustainable (see Focus Section C).

Trade measures vis à vis the rest of the world

Retaining flexibility in border protection. In the absence of budgetary resources to support farmers, tariffs can play an important role for domestic market stability and for protecting producers in years of low world prices. ECOWAS countries should preserve some flexibility in the form of bound tariffs above applied levels to defend against external volatility, partly emanating from policies in some OECD countries, reform of which is likely to be slow. However, existing flexibility in bound tariffs is not uniform across countries, with some of them having bound tariffs at multiple levels of those actually applied and others are already in a binding position.

While ECOWAS countries negotiated their bound tariffs at the WTO as individual entities, now the region is a customs union with a common external tariff and this will necessitate renegotiation of a common external bound tariff. It is important in this process that ECOWAS retain an effective margin of flexibility. This will require careful negotiations not only with other members of the WTO but also, and prior to that, careful assessment of the needs of the region for such protection, taking into account the sensitivi-

ties between ECOWAS countries as regards the degree of trade openness they would be prepared to have. Clearly, this will also depend on the other safeguard instruments envisaged under the Doha Round (see Chapter 12).

Rationalizing the selection of Special Products (SPs). Of particular interest for some of the ECOWAS countries are the two new provisions being negotiated under the Doha Round on Special Products and on the Special Safeguard Mechanism (SSM). The broad criteria to be used in the designation of SPs are food security, livelihood security and rural development. For a customs union with a common external tariff (CET) like ECOWAS, the list of SPs would have to be uniform for all member countries. The ECOWAS region has made important progress in this process in the context of promoting "strategic products for food sovereignty." The latter include all main cereals (millet, sorghum, maize and rice) as well as roots and tubers, fruit and vegetables, and animal products. However, it appears that more product specificity will be needed as regards the eventual list of SPs than the above general product categories and this may necessitate additional debates and consultations between the ECOWAS members. As regards the SSM, it is important to clarify how that may relate with the three ECOWAS additional safeguard instruments agreed under the CET negotiations.

Strengthening safety nets

Safety nets are tools to help manage the impacts of price volatility rather than limit volatility per se. There is already considerable experience in ECOWAS on safety net programmes to protect the poor and vulnerable in periods of stress. While these include measures that work though food markets, most of the interventions in the region are targeted, such as food-for-work and school feeding (WFP, 2011). Some countries dramatically increased investments in food-based safety nets following the 2007-08 food crisis. For example, Burkina Faso increased total spending on food transfers, including subsidized targeted food sales, direct food transfers, nutrition and school feeding, by more than 50% during 2008 and 2009.

Community granaries are an important safety net measure and are common in some countries in the region. Their record of performance is very mixed, with some operating very well and others plagued with serious management problems. The ECOWAP mobilizing programme on reducing vulnerability to food insecurity described in Chapter 11 calls for greater experimentation in various forms of safety nets (including such granaries) and drawing lessons from such experiences across the region.

Selected policy options at the international level

Imported price volatility is a function of the structure of international markets. While not directly under their policy purview, ECOWAS and national leaders could contribute to reducing global price volatility by advocating through international forums for a number of reforms in the rules governing the international agricultural trade. These include rationalising biofuel policies in OECD countries, strengthening WTO disciplines on export restrictions, reforming agricultural support policies in OECD countries that contribute to price troughs, rationalising food aid instruments and implementing the Marrakech Decision to improve the access of countries to financing that would ensure their ability to import food during periods of high world prices (see Chapter 12 for details).

Income growth, urbanization and globalization are driving diversification of West African diets. These changes offer new market opportunities for West African producers but also greater competition from overseas suppliers.

Time-poor urban consumers are seeking more convenient meals, spurring demand for processed food products and various forms of fast food.

But growing concerns about food safety and nutritional quality are driving the demand for imported food products, which many consumers consider safer.

Part II

Demand and Consumption Trends in West Africa

Growing incomes, urbanization, changing lifestyles and access to a broader range of foods act as powerful drivers of change. Around the globe, with growing incomes, consumers tend shift from traditional cereals and starchy roots towards rice and wheat. Moreover, demand for fruits and vegetables, animal proteins and processed foods increases. As incomes increase and food choices enlarge, consumers become more concerned about quality and safety of food products. Time-poor consumers in urban areas, both rich and poor, increasingly demand more convenient forms of food. These trends drive changes in types of food demanded, its nutritional composition, and the food retailing and processing systems that supply it.

Part II looks at how these changes in food demand are playing out in West Africa. Although the transformation of demand patterns for food in response to the forces discussed above has been well-documented for many other parts of the world, it is a topic that has been under-researched in West Africa. Existing work on food consumption in West Africa is mainly concerned with macro-nutrient availability from the perspective of food and nutrition security, whereas relatively few studies have analysed how changing patterns of demand affect market opportunities facing West African producers. As shown in Chapter 2, urban populations, especially those above the poverty line, account for growing shares of domestic and regional food markets. Understanding the factors conditioning their demand, as well as the demand of the three-quarters of the population that remains below the poverty line, is key to enabling domestic producers to increase their share of the growing and rapidly changing West African food market and compete more successfully with food imports. Otherwise, there is a risk that domestic producers will be squeezed out of the most profitable segments of the market, losing opportunities for domestic value-addition and its potential strong backward linkages to the farm sector.

The three chapters in Part II analyse how the demands facing West African agrifood systems are changing in response to the dramatic population growth, urbanization, income growth, changes in income distribution and globalization described in Part I. The primary focus is on demand in national and sub-regional markets, although similar forces are also at work in export markets.

In documenting these trends, Chapter 5 analyses data from national food balance sheets over the past 30 years to identify trends in per capita availability of calories, protein and fat as well as apparent average per capita consumption of different types of food in each of the 15 countries of West Africa. While the food balance sheet analysis reveals how average per capita availability of different foods has evolved in the ECOWAS countries over the past 30 years, it says nothing about how food consumption has varied between urban and rural residents and among different income groups among the population.

To address these issues, Chapter 6 turns to more in-depth quantitative analysis of budget-consumption surveys. These delve below the national averages in order to understand how income growth and urbanization have affected, and are likely to affect

in the future, demand for key food items among different population groups. Chapter 7 complements the quantitative analyses of the preceding two chapters with qualitative information from focus-group discussions with consumers and retailers in Accra and Lagos. It provides further information on key factors, including lifestyle changes in urban areas that are driving the demand for different types of food in West Africa's burgeoning cities. Part II sets the stage for the chapters in Part III, which analyse in more detail how West Africa's retail distribution systems, agroprocessing industries and Agricultural value chains are responding to this rapidly changing demand.

Chapter 5

Trends in Apparent Per Capita Food Consumption

Every year the FAO compiles food balance sheets (FBS) for each of the 15 member states of ECOWAS. The chapter analyses data from these FBS over a 30 year period (1980 – 2009) to identify broad trends in apparent average per capita availability of calories, protein, and fat in these countries, as well as changes in the contribution of major food groups to diets in the region. These food groups include cereals, roots and tubers, animal products, pulses fruits and vegetables, vegetable oils, sugar and sweeteners, and alcoholic beverages. The analysis of these broad trends in per capita food availability sets the stage for more detailed analysis of food consumption by income group and urban/rural residence in Chapters 6 and 7.

5.1 Performance in terms of increasing macronutrient availability

Food balance sheets (FBS) provide estimates of the amount of food available for human consumption at the retail level, not actual consumption. In this chapter, the figures derived from the FBS are referred to interchangeably as "per capita availability" and "apparent per capita consumption". Comparing FAO FBS for the 15 ECOWAS countries over the period 1980–2009 provides information on how well the West African food system has performed in terms of supplying macronutrients (calories, fat, and protein) to the population in these countries, as well as the changing contribution of different major food groups to the diet in the various countries.

The FBS estimates, however, need to be interpreted cautiously, as they are highly dependent on the quality of the data used in constructing the food balance sheets. Specifically, FBS estimates of per capita availability are derived by taking estimates of national production of various food products, adjusting them for imports and exports, changes in stocks, non-food use (such as animal feed and industrial uses), and wastage between harvest and the retail level (including processing losses). The net food availability at the retail level thus calculated is then divided by the estimated population, and then converted into various nutrients using a food composition table. Thus, the accuracy of the estimated national average per capita availability of various food items (and the nutrients derived from them) is a function of the accuracy of the data for each of the components that goes into the calculation. Given the weakness in many countries of the underlying data on several of these elements (e.g. regarding changes in stocks and population levels), one should at best use FBS data to identify broad patterns and trends in per capita food availability. Furthermore, as production statistics on non-cereal crops in West Africa have generally improved over the past 30 years, one needs to be cautious in interpreting FBS data that show apparent increases in the per capita availability of these products. It is not always apparent whether the figures reflect real increases in availability or more complete statistical enumeration of national production over time.[40]

Bearing these caveats in mind, analysis of per capita availability of calories, protein, and fat, based on data from FAO food balance sheets for the period 1980–2009 show general improvement in macronutrient availability over the period and some upgrading of dietary quality, but with significant variation across countries (Me-Nsope and Staatz, 2013). As shown in Appendix table A5.1 (p.142), four countries – Burkina Faso, Mali, Ghana and Nigeria – increased apparent per capita calorie availability by 50% or more between 1980–85, a period of drought and severe food shortage in the Sahel, and 2007–09. If true, this is a remarkable achievement

40 For more details on these caveats, see Farnsworth, 1961; and Me-Nsope and Staatz, 2013.

given the rapid population growth in these countries. These are also the four countries that, according to the FBS, had the lowest per capita calorie availability at the beginning of the period; by the end of the period, the FBS for Ghana, Nigeria, and Burkina Faso recorded the highest per capita calorie availability of any countries in the region, and Mali was above the regional mean.

All the remaining countries, except Benin, Côte d'Ivoire and Liberia, increased their estimated per capita calorie availabilities on the order of 6 to 15%. Benin experienced a 29% increase in calculated per capita calorie availability. In Côte d'Ivoire, estimated per capita calorie availability fell by 7% over the 30-year period, while in Liberia it fell by 11%, although it has begun to recover during the post-war period starting in 2004. Ironically, according to the FBS, Côte d'Ivoire and Liberia had the highest estimated per capita calorie availability of all countries in the ECOWAS region at the beginning of the period (1980-82).

Turning to estimated per capita protein availability (Appendix Tables A5.2 through A5.4), a slightly more complex story emerges when one takes into account not only total per capita protein availability but also its source. In general, proteins from animal sources have a more complete mix of the essential amino acids required by human beings; thus, the percentage of total protein coming from animal sources is a rough indicator of protein quality.[41] In terms of changes in estimated per capita availability of total protein between 1980-85 and 2004-2009, the same four countries – Burkina Faso, Mali, Ghana and Nigeria – showed the greatest increases, on the order of 40 to 50%. Yet the bulk of the increase came from vegetal sources. Given that basic staples such as cereals contain 10 to 12% protein, it follows that a 40 to 50% increase in calorie availability (the bulk of it from such staples) would lead to a proportionate increase in total protein availability. In Mali and Burkina Faso, only 11 to 12% of the increase in total per capita protein availability came from animal sources. For Ghana, the figure was 20%, indicating some upgrading of diet quality, while in Nigeria, the estimated per capita availability of animal protein actually fell by 10%, with all the increase in total per capita protein availability attributable to plant sources. For Nigeria, however, part of the increase came from higher per capita availability of pulses – particularly cowpeas – which are a high-quality source of protein. The picture that emerges for Burkina, Mali, and Nigeria is thus one of, on average, people eating more food as incomes increased, but giving first priority to increasing total calorie intake, with little upgrading in terms of increasing animal protein consumption.

A very different picture emerges for Cape Verde, the ECOWAS country with the highest per capita income. While total per capita protein availability increased by only 6% between 1980-85 and 2004-09, there was a large substitution of animal protein, whose per capita availability increased by 54%, for protein from vegetal sources, which saw a decline of 14%. In Cape Verde, diets became more animal-based as incomes rose.

For the remaining ten countries in the region, estimated total per capita protein availability increased in six countries (Niger, The Gambia, Benin, Guinea, Sierra Leone and Togo) by proportions ranging from 5% to 29%, with relatively little or no increase in per capita availability of animal proteins. In the remaining four countries (Guinea Bissau, Senegal, Côte d'Ivoire and Liberia), total estimated per capita protein availability fell by between 1% (in Guinea Bissau) and 25% (in Liberia). In Senegal, however, there was a modest increase in per capita animal protein availability, indicating some modest upgrading of protein quality in the context of falling overall per capita availability.

5.2 Starchy staples

The trade data reviewed in Chapter 4 pointed to the increased consumption of rice and wheat in the region, resulting in burgeoning imports of these two cereals. While consumption of these two internationally traded staples has certainly increased, when one examines FBS data that also

41 It is only a very rough indicator, however. The quality of protein (in terms of amino-acid mix) from plant (and to a lesser degree, animal) sources varies widely, and by combining certain plant sources of food (for example rice and beans), one can obtain protein quality rivalling that from animal sources. Most protein coming solely from cereals, however, is more limited in one or more essential amino acids than are most animal proteins; the bulk of proteins in the diets of many West Africans come from cereals.

includes domestically produced starchy staples, a more complex picture emerges of how average per capita apparent consumption is changing. The patterns vary across countries (Table 5.1), but key elements of this evolution include rice, wheat, millet and sorghum, and maize.[42]

5.2.2 Rice

Concerns about growing rice consumption and imports have been at the centre of food policy debates in West Africa for the past 20 years. Historically, rice has been the most important staple in Guinea Bissau, Senegal, Sierra Leone, and Guinea and the second most important staple (after cassava) in Liberia. Rice's appeal as a "fast food" that is easier to prepare in urban settings, along with expansion of production in a few countries like Mali, have led to increases since the 1980s in apparent per capita consumption of rice in all the ECOWAS countries where it is not the dominant staple, with the exception of Côte d'Ivoire and The Gambia, where per capita availability stagnated.[43] The most dramatic increases were in Cape Verde, where apparent annual per capita consumption increased by 31 kg between 1980-85 and 2004-09; Mali (also a 31 kg increase), Guinea (25 kg increase), Benin (23 kg increase), and Ghana (19 kg increase). In Nigeria, annual per capita availability increased by 5 kg/capita over the period.[44] Thus, rice's relative importance as a starchy staple has been increasing in many countries, and, since much of it is imported, the value of rice imports has swelled by almost 10% (Chapter 4). Table 5.1 shows that significant differences remain in apparent per capita rice consumption across the region, ranging from 96 kg in Guinea to only 16 kg in Niger.

5.2.2 Wheat

Per capita apparent consumption of wheat (which is largely consumed in the forms of bread, pasta, and noodles) increased in 10 of the 15 ECOWAS countries over the period 1980-85 to 2004-09, stagnating or slightly falling in Benin, Cape Verde, Côte d'Ivoire, Niger and Togo. Despite annual growth rates around 2% in many countries, the absolute increases in per capita terms were modest – for example, an increase of 5 kg over 30 years for Nigeria – given the relatively low initial consumption levels. The largest per capita increases were in Senegal (12 kg), Ghana (10 kg), and The Gambia (8 kg). Yet, as in case of rice, uneven apparent per capita consumption levels across the region suggest scope for significant growth, especially in view of the popularity of wheat-based products as convenience foods in urban areas (see Chapter 7).

Because virtually all of West Africa's wheat is imported, these increases in apparent per capita consumption, combined with strong population growth, translated into burgeoning wheat imports over the period. Yet the relative contribution of wheat in the diet, compared to other starchy staples, remained very modest.

5.2.3 Millet and sorghum

Apparent per capita consumption of millet and sorghum has been stable or declining from the early 1980s through 2009 in almost all countries in the region where these cereals are important staples. Since total apparent per capita consumption of starchy staples has been increasing in almost all countries, the relative importance of millet and sorghum as staples has declined in the region. They remain overwhelmingly dominant only in Niger. Even though they are still very important sources of calories in Mali, Burkina Faso, Senegal and The Gambia, they are losing ground relative to other starchy staples.

5.2.4 Maize

For maize, the picture is more diverse. Apparent per capita consumption of maize increased markedly over the period 1980-85 to 2004-09 in 6 of the 15 ECOWAS states (Burkina Faso, Mali, Senegal, Nigeria, Ghana, and Togo). In Burkina Faso, Senegal, Nigeria and Togo, the increases were greater than the per capita increases in rice availability. Togo, Benin, Burkina Faso and Ghana had the highest per capita apparent consumption levels during 2005-09, between 35 and 66 kg. Maize is

42 More detailed information by country is available in Me-Nsope and Staatz, 2013.
43 Per capita availability of rice also fell in Liberia during the period, with imported wheat increasingly substituting for rice during the years of civil war.
44 Given the importance of unrecorded trade between Benin and Nigeria, it is possible that some of the increase in recorded per capita availability in Benin actually represented rice transhipped to Nigeria.

Table 5.1 Per capita apparent consumption of cereals[a] and CAGR[b]

	Rice		Wheat		Maize		Millet		Sorghum	
Country	kg/year	CAGR	kg/year	CAGR	kg/year	CAGR	kg/year	CAGR	kg/year	CAGR
Benin	32	5.2%	7	-2.0%	58	0.2%	3	3.3%	15	-0.4%
Burkina Faso	19	2.3%	7	2.3%	47	4.5%	69	1.3%	88	1.0%
Cape Verde	50	3.9%	41	-0.2%	34	-4.0%	0	n.c.	0	n.c.
Côte d'Ivoire	59	-0.1%	16	-1.2%	20	-1.5%	1	0.0%	1	-0.5%
The Gambia	49	-2.1%	24	2.0%	11	0.6%	58	2.6%	15	1.1%
Ghana	26	5.6%	17	2.6%	35	0.7%	6	-0.6%	10	0.7%
Guinea	96	1.3%	13	1.1%	10	-1.9%	1	-8.3%	1	-8.3%
Guinea Bissau	85	0.1%	13	3.1%	18	1.0%	18	1.2%	10	-2.9%
Liberia	73	-2.0%	27	4.9%	1	n.c.	0	n.c.	0	n.c.
Mali	55	3.4%	9	1.3%	29	3.5%	63	0.7%	44	0.3%
Niger	16	2.0%	5	-1.0%	3	1.2%	139	0.0%	41	0.0%
Nigeria	22	1.5%	20	1.1%	25	4.7%	36	1.3%	41	0.6%
Senegal	72	0.3%	32	1.9%	28	2.6%	27	-2.8%	9	-3.8%
Sierra Leone	89	-0.3%	13	2.1%	4	0.6%	4	-0.5%	3	0.8%
Togo	22	3.6%	10	-0.6%	66	1.8%	6	-2.9%	22	-0.4%

Source: Calculated from FAOSTAT, food balance sheet data
[a] Per capita cereal consumption average of 2005–2009
[b] CAGR = compound annual growth rate in per capita cereal consumption. Calculated for 1980-1984 to 2005-2009.
n.c. = rate of growth not calculated, as zero/insignificant per capita availability reported in first period.

not a significant staple in three countries (Niger, Liberia, and Sierra Leone), and in the remaining six countries, per capita availability stagnated or declined slightly, with the exception of Cape Verde, where it fell sharply as part of a strong transformation of the diet towards a more "Western" pattern, apparently fuelled by strong income growth, urbanization, and declining national maize production.

5.2.5 Cassava

The level of apparent per capita consumption of cassava has been growing, in some cases dramatically, especially along the humid coast. The highest apparent per capita consumption levels were recorded in Ghana, Liberia and Benin, followed by Nigeria, Togo, Côte d'Ivoire, and Guinea (all above 100 kg). While apparent per capita consumption stagnated in several of these countries over the period 1980-82 to 2007-09, it increased by 35% in Nigeria, 68% in Ghana and 25% in Benin. Moreover, cassava became more heavily consumed in several countries where it was not the predominant staple in the 1980s, with the largest increases occurring in Sierra Leone (where per capita availability jumped from 29 kg/year to 68 kg/year between 1980-82 and 2007-09), Guinea Bissau, Senegal, and Guinea.

5.2.6 Yams

While yams are an important staple in fewer countries, their apparent per capita consumption has grown more strongly than cassava in these countries. Yams remains the most important staple, in volume terms, in Côte d'Ivoire and the second most important staple in Ghana, Nigeria, Benin, and Togo. Moreover, the per capita availability of yams over the period 1980-82 to 2007-09 has grown much faster in Ghana, Nigeria, and Togo than has that of either rice or wheat. For example, during this period, apparent per capita consumption of yams increased by 87 kg/person/year in Ghana, compared with only 19 kg/person/year for rice and 8 kg/person/year for wheat. For Nigeria, the corresponding figures were a 61 kg/person/year increase for yams compared to 6 kg/person/year for rice and 5 kg/person/year for wheat.

Table 5.2 Per capita apparent consumption of roots and tubers[a] and CAGR[b]

	Cassava		Yams		Sweet potatoes		Irish potatoes		Other Roots and Tubers	
Country	(kg/yr)	CAGR	(kg/yr)	CAGR	(kg/yr)	CAGR	(kg/yr)	CAGR	(kg/yr)	CAGR
Benin	142	0.8%	139	2.1%	7	-0.8%	0	n.c.	0	n.c.
Burkina Faso	0	-9.0%	3	-4.7%	4	0.5%	0	n.c.	0	n.c.
Cape Verde	8	0.6%	0	n.c.	9	-0.4%	29	4.0%	0	n.c.
Côte d'Ivoire	106	-0.1%	187	0.1%	2	2.3%	1	-1.2%	0	n.c.
The Gambia	5	-2.1%	0	n.c.	0	n.c.	5	9.2%	0	n.c.
Ghana	209	2.1%	123	3.2%	4	n.c.	0	n.c.	56	0.6%
Guinea	101	1.3%	2	-6.2%	18	1.6%	0	n.c.	0	n.c.
Guinea Bissau	27	9.9%	0	n.c.	0	n.c.	0	n.c.	46	0.0%
Liberia	147	0.3%	6	-1.0%	5	-1.3%	0	n.c.	7	0.0%
Mali	2	n.c.	5	3.7%	15	11.3%	6	n.c.	0	n.c.
Niger	9	-4.4%	0	n.c.	3	-2.0%	0	n.c.	0	n.c.
Nigeria	113	1.5%	79	5.2%	15	11.3%	4	n.c.	0	n.c.
Senegal	18	6.6%	0	n.c.	3	3.8%	6	3.2%	0	n.c.
Sierra Leone	66	3.2%	0	n.c.	5	2.1%	0	n.c.	0	n.c.
Togo	109	-1.1%	80	-1.1%	0	n.c.	0	n.c.	2	-2.2%

Source: Calculated from FAOSTAT food balance sheet data
[a] Per capita cereal consumption average of 2005–2009
[b] CAGR = compound annual growth rate in per capita cereal consumption. Calculated for 1980-1984 to 2005-2009.
n.c. = rate of growth not calculated, as zero/insignificant per capita availability reported in first period.

5.2.7 Irish potatoes

Data from focus group discussions presented in Chapter 7 suggest that in countries with rising per capita incomes and rapid urbanization there may have been an increase in the per capita consumption of Irish potatoes, particularly in the form of chips (French fries) as part of the rise of fast food outlets. The food balance sheet data provides weak evidence of this. Irish potato annual per capita availability did increase dramatically in Cape Verde (by 18 kg over the period 1980-85 to 2004-09) as part of the structural transformation of that country's diet in response to rapid income growth, urbanization, and declining national maize production, but in most other countries increases, if they occurred, were modest. Surprisingly, food balance sheets for Ghana show Irish potato availability per capita at less than 1 kg/capita/year in recent years. Whether this reflects reality or a weakness in the underlying statistics on potato production and trade in Ghana is unclear, but it is at odds with data discussed in Chapter 7 suggesting increased urban consumption of potatoes.

5.2.8 Sweet potatoes

Sweet potatoes, which receive little attention from agricultural research systems and policy makers in the region, make modest contributions to starchy staple calories in several countries, and per capita use did not change in most of them. In both Nigeria and Mali, however, FBS data indicate an increase in apparent annual per capita consumption of 15 kg over the period 1980-85 to 2004-09 and an increase of 6 kg in Guinea. These increases may reflect a growing shift to root and tuber crops, which have a higher yield per ha of calories than cereals, as population pressure increased in these countries.

5.2.9 Share of total starchy staple calories

Calculating the share of the different staples in the total calories derived from starchy staples (Table 5.3) reveals the following overall trends:

- In most countries (10 out of 15), the share of total starchy staple calories coming from rice has increased. The countries with a declining

share of rice already had a high level of apparent per capita consumption during the early 1980s (Guinea, Guinea Bissau) or were affected by prolonged periods of Civil War (Liberia, Sierra Leone). The absolute level of apparent rice consumption in Nigeria increased over this period, but its share of total starchy staple calories declined slightly because apparent per capita consumption of maize, yams and cassava grew even faster. In countries where rice had a low share in total calorie consumption during the early 1980s, this share has increased. Among these countries, Cape Verde had the strongest increase (from 13% to 40% of total calorie availability from starchy staples), while the share more than doubled in Benin, Togo and Ghana. Niger, Burkina Faso and Côte d'Ivoire witnessed more modest increases. Overall, however, rice's share in total apparent calorie consumption from starchy staples increased more modestly than would be suggested by just looking at the import statistics.

- Wheat's share in apparent calorie consumption from starchy staples has increased in nine countries and remained stable in four, decreasing only in two countries. However, growth has been more modest than in case of rice, except for Senegal, Liberia and The Gambia. In all countries except Cape Verde, wheat contributes 10% or less to total calorie availability from starchy staples.

- Surprisingly, the share of roots and tubers in total calorie consumption from starchy staples increased in ten countries and declined only in five. Their growing importance is particularly noticeable in some large traditional consumers such as Nigeria, Côte d'Ivoire, and Sierra Leone, but also in non-traditional consumers such as Senegal and Mali. Roots' and tubers' share of total starchy staple calories is highest in Ghana (58%), followed by Côte d'Ivoire (50%) and Benin (45%). In Nigeria, it has increased from 23% to 30%. Although apparent per capita consumption of roots and tubers has increased in a few of the Sahelian countries, their contribution to total starchy staple calories remains under 5% in these countries.

- Maize's share varies, increasing in eight countries and declining in two. Its importance has increased most vigorously in the Sahelian countries, except Niger, and in Nigeria and Togo. It declined strongly in Cape Verde (from 59% to 24%) and, in a less dramatic fashion, in Ghana, Benin and Côte d'Ivoire.

- The strongest decline across the region has been in the relative share of millet and sorghum. This decline has been particularly noticeable in countries where millet and sorghum are important staples (e.g. Burkina Faso, Mali, Nigeria and Senegal), with the exception of Niger and The Gambia, where it increased. Nevertheless, sorghum and millet are still the dominant sources of calories in the inland Sahelian countries and remain important in The Gambia and Nigeria.

5.3 High quality protein sources

Table 5.4 reveals huge differences in apparent per capita consumption levels of different animal protein sources and pulses across the region. Apparent per capita red meat consumption is highest in the inland Sahelian countries, Cape Verde, Guinea Bissau and Côte d'Ivoire, more than twice as high as in most of the coastal countries. Apparent per capita poultry meat consumption is highest in Cape Verde, followed by Benin. Despite high annual average growth rates across the region, apparent per capita consumption levels of poultry meat are still low compared to red meat and fish in most countries. For example, while per capita poultry availability has grown on average by 8% per annum over a 25 year period in Ghana, it only reached 4.5 kg per capita, despite massive increases in poultry imports. Figures are low compared with a 28.5kg per capita availability of fish and seafood. Apparent per capita egg consumption, which has grown less vigorously, has remained low, with Cape Verde (4 kg) and Nigeria (3 kg) being the region's top per capita egg consumers. Apparent annual per capita milk consumption has grown most strongly in Ghana (3.4%) followed by Cape Verde (2.1%) and Togo (1.3%). Most countries, however, experienced only modest growth, and several even saw declines

Table 5.3 *Share of selected starchy staples in calorie availability from starchy staples*

1980-84 and 2005-09

	Roots and tubers		Maize		Rice		Wheat		Other Cereals	
Country	1980-84	2005-09	1980-84	2005-09	1980-84	2005-09	1980-84	2005-09	1980-84	2005-09
Benin	44	45	32	26	7	18	7	3	10	8
Burkina Faso	4	1	11	21	7	9	2	3	76	65
Cape Verde	5	8	59	24	13	40	23	27	0	0
Côte d'Ivoire	46	50	14	10	30	32	9	7	1	1
The Gambia	2	1	6	7	59	36	8	14	24	40
Ghana	57	58	21	13	5	13	6	7	11	7
Guinea	23	22	10	5	49	61	5	7	13	5
Guinea Bissau	10	14	9	10	57	55	3	6	21	16
Liberia	26	33	0	0	70	52	3	15	0	0
Mali	1	4	9	30	21	30	4	4	66	48
Niger	6	2	1	2	6	10	3	3	83	84
Nigeria	22	30	6	13	15	12	10	9	46	30
Senegal	1	5	8	16	45	48	10	16	36	16
Sierra Leone	9	17	3	3	79	68	5	8	4	4
Togo	45	34	23	33	6	13	7	5	19	14

Source: Calculated from data in Me-Nsope and Staatz, 2013

Table 5.4 *Per capita availability of high quality protein sources*

Availability (2005-09) and CAGRa (1980-84–2005-09)

	Domestic Red Meat		Poultry		Other Meat		Fish & Seafood		Eggs		Milk (dry equiv.)	
Country	(kg/yr)	CAGR[a]	(kg/yr)	CAGR	(kg/yr)	CAGR	(kg/yr)	CAGR	(kg/yr)	CAGR	(kg/yr)	CAGR
Benin	5.2	-1.5%	11.1	3.1%	0.8	-2.6%	8.5	-1.0%	1.0	-2.7%	0.9	0.5%
Burkina Faso	12.9	2.8%	2.2	1.5%	0.6	-1.6%	1.8	0.6%	2.0	2.8%	1.7	-1.4%
Cape Verde	24.9	5.0%	14.6	11.1%	0.2	n.c	13.0	-3.5%	4.0	5.7%	11.6	2.1%
Côte d'Ivoire	11.4	-0.4%	1.5	-1.8%	7.9	-0.9%	13.5	-0.9%	1.0	0.0%	0.8	-3.7%
The Gambia	5.1	-1.7%	3.9	7.1%	0.9	-2.2%	26.0	1.8%	2.0	2.8%	2.7	-0.4%
Ghana	8.2	0.7%	4.5	8.0%	4.6	-1.7%	28.5	1.2%	1.0	2.8%	0.8	3.4%
Guinea	7.0	2.3%	1.1	4.5%	0.6	-1.5%	10.5	1.4%	2.0	2.8%	1.4	0.8%
Guinea Bissau	13.2	0.0%	1.6	5.2%	0.0	n.c	1.5	-2.0%	0.7	3.0%	1.6	-0.2%
Liberia	3.3	-0.8%	4.4	4.0%	2.3	-4.1%	5.0	-4.0%	2.0	1.2%	0.4	-4.6%
Mali	15.0	0.9%	3.0	1.7%	2.9	-0.3%	8.5	0.0%	0.4	-1.8%	6.0	0.5%
Niger	20.0	0.6%	0.8	-2.1%	3.3	0.7%	3.0	4.7%	0.3	-2.4%	5.4	0.0%
Nigeria	6.2	-0.5%	1.6	-0.4%	0.9	-1.3%	11.0	-0.5%	3.5	0.6%	0.8	-1.6%
Senegal	10.7	0.5%	3.3	2.8%	1.3	-0.2%	25.5	0.6%	2.0	2.8%	3.1	-1.1%
Sierra Leone	2.4	-0.4%	2.9	1.9%	1.8	4.5%	26.0	1.2%	1.5	1.6%	0.5	-3.6%
Togo	4.4	-0.2%	4.5	3.0%	0.8	-1.8%	7.0	-1.6%	1.0	2.8%	0.6	1.3%

Source: Calculated from FAOSTAT, food balance sheet data
n.c. = rate of growth not calculated, as zero/insignificant per capita availability reported in first period.
[a] compound annual growth rate

in per capita apparent consumption of milk. Pulses are important sources of high quality proteins in the Sahelian countries and Cape Verde but also in Nigeria, Benin and Sierra Leone (Table 5.5). Per capita apparent consumption of other meat, including bushmeat and pig meat, declined in most countries. Fish and seafood remains the most important high quality protein source in the coastal countries, with differing trends across countries.

Given the important differences in patterns of apparent per capita protein consumption across the region, the following paragraphs discuss the main trends by groups of countries.

5.3.1 Inland Sahelian countries: red meat and beans

Per capita animal protein availability has grown by between 10% and 43% in Burkina Faso, Mali, and Niger over the past 30 years. In these countries, the main animal protein sources are beef, mutton and goat meat. In Mali and Niger, milk and dairy products (associated with large pastoral populations) are also important animal protein sources, as are fish in Mali. Over the period 1980-85 to 2004-09, apparent per capita consumption of beef doubled in Burkina Faso (to 7.5 kg/year), increased by 37% in Mali (to 8.6 kg/year) and grew 56% in Niger (to 13.5 kg/year). Mutton and goat meat availability per capita also increased in Burkina and Mali (to 3.1 kg/capita and 6.2 kg/capita, respectively), but fell by 23% in Niger. Apparent per capita poultry consumption increased by 50% in both Burkina and Mali (to 2.2 kg and 2.9 kg, respectively) while "other meat" (which includes bushmeat) fell. Yet meats and milk are not the only high quality protein products consumed in these countries. Pulses (mainly cowpeas) are very important in the diets of all three countries, with the per capita availability of pulses exceeding that of red meat in Burkina and in Niger (Table 5.5). At nearly 30 kg per year, annual per capita pulse availability in Niger was by far the highest of any country in the region. Moreover, apparent per capita pulse consumption increased substantially in all three countries over the period 1980-85 to 2005-09, with the increases ranging from 37% in Burkina to 113% in Mali. In these low-income countries, cowpeas and other pulses serve as "poor people's meat", so it is likely that as incomes grew, even among the poor, households shifted to pulses as a first step in increasing their high quality protein intake.

Table 5.5 *Per capita pulse availability*

Availability (2005-09) and CAGRa (1980-84–2005-09)

	Pulses	
Country	(kg/yr)	CAGR[a]
Benin	14.5	3.3%
Burkina Faso	13.0	1.3%
Cape Verde	9.5	-1.2%
Côte d'Ivoire	2.1	4.1%
The Gambia	2.3	-3.0%
Ghana	0.8	-0.8%
Guinea	6.0	-0.6%
Guinea Bissau	2.2	0.2%
Liberia	2.8	3.0%
Mali	8.5	3.1%
Niger	29.5	1.5%
Nigeria	9.5	3.5%
Senegal	4.7	0.6%
Sierra Leone	12.5	1.8%
Togo	6.0	-1.1%

Source: Calculated from FAOSTAT, food balance sheet data
[a] Compound annual growth rate (CAGR) in pulse availability calculated between 1980-84 and 2005-09.

5.3.2 Coastal Sahelian countries: diverse patterns of change

The coastal Sahelian countries include Cape Verde, Senegal, The Gambia and Guinea Bissau. In all these countries except Guinea Bissau, fish and seafood were the largest sources of animal protein in the 1980s. The countries have followed very different patterns of apparent consumption of animal protein since then. The most dramatic changes have taken place in Cape Verde, where apparent fish consumption per capita fell by nearly 60% between 1980-85 to 2004-09 (from 31 kg/year to 13 kg/per year) and was substituted by a dramatic increase in apparent per capita consumption of pig meat (up from 5.3 kg/year to 20 kg/year) and poultry (from 1 kg/year to 14.6 kg/year). Egg and milk consumption also grew rapidly and pulse consumption fell as Cape Verde shifted to

a diet more characteristic of industrialized countries. In contrast, both The Gambia and Senegal increased per capita availability of fish which averaged 26 kg/ capita in The Gambia in 2005-09 and 25 kg/capita in Senegal and far outstripped all other protein sources in terms of volume. In both Senegal and The Gambia, there were large percentage increases in the per capita availability of poultry meat during the period (up 455% in The Gambia and 101% in Senegal), but absolute levels remain low. By 2005-09, per capita availability of poultry meat averaged 3.9 kg in The Gambia and 3.3 kg in Senegal. In Guinea Bissau, the largest source of animal protein by far was, and remains, pig meat. Over the period, there was a modest decline (1 kg per capita, or 14%) in apparent per capita pork consumption, which was offset by increases in per capita availability of beef and poultry.

5.3.3 Countries of the humid coast: less fish, more poultry

The eight countries of the humid coast include the economic powerhouses of Nigeria, Ghana, and Côte d'Ivoire, along with Benin, Guinea, Liberia, Sierra Leone, and Togo. In the early 1980s, fish was by far the most important source of animal protein in all eight of these countries. By 2004-09, per capita fish availability had fallen in five of the eight countries (Benin, Côte d'Ivoire, Liberia, Nigeria, and Togo) by between 21% (in Côte d'Ivoire) and 64% (in Liberia). In Nigeria, the decline was 10%. In contrast, Ghana, which had the most robust economic growth of the group, saw its annual per capita fish and seafood availability increase by 36% between 1980-85 and 2004-09, growing from 21 kg/person to 29 kg/person. In all countries where per capita fish availability rose, it was due to an increasing proportion of sea fish (partly reflecting imported frozen fish) relative to freshwater fish in the diet. "Other meat", which includes bushmeat, declined in six of the eight countries, likely reflecting the loss of wildlife habitat. While fish remained the most important animal protein source in six of the eight countries, its relative importance declined in most countries, as apparent per capita consumption of other animal protein sources increased. The most dramatic and widespread of these was the increase in per capita poultry meat availability as a result of the increase in poultry imports discussed in Chapter 4. For example, annual apparent per capita poultry meat consumption in Ghana increased by 570% between 1980-85 to 2004-09, rising from just over 0.6 kg to 4.5 kg. Increases of over 100% (often from initially low levels) also occurred in Benin, Guinea, Liberia, and Sierra Leone.

Nigeria, on the other hand, which imposed periodic bans on the import of frozen poultry to protect domestic producers, recorded an 8% decline in poultry meat availability per capita according to the FBS data. However, the very large reported per capita increases in poultry availability per capita in Benin (rising from 5.2 kg in 1980-85 to 11.1 kg in 2005-09) may in part reflect poultry meat that was clandestinely re-exported to Nigeria. As noted earlier, recorded per capita availability of animal protein actually fell in Nigeria from 1980-85 to 2005-09. This included a 62% decline in per capita beef availability (falling from over 5 kg/ person to 2 kg) and a 31% decline in apparent consumption of "other meat." These declines were partially offset by a more than doubling of mutton and goat meat (to 2.8 kg/person), pig meat (which increased from 0.5 kg to 1.4 kg/person) and a 50% increase in per capita availability of eggs. Fish, however, remained the most important single source of animal protein in the country. Nigeria also expanded its apparent per capita consumption of pulses (mainly cowpeas) by over 100% during this period, as did Benin, substituting a lower cost vegetal source of high quality protein for declining per capita red meat availability.

5.4 Fruits and vegetables

Statistics on horticultural products in West Africa are notoriously weak, so figures on the evolution of fruit and vegetable availability from the food balance sheets need to be interpreted cautiously. With this caveat in mind, the following patterns emerge from the FBS (Table 5.6).

5.4.1 Fruits

Table 5.6 shows that apparent annual per capita consumption of fruits historically has been much

Table 5.6 *Per capita apparent consumption of fruits and vegetables*

Consumption (2005-09) and CAGRa (1980-85–2005-09)

	Fruits		Vegetables	
Country	(kg/yr)	CAGR[a]	(kg/yr)	CAGR[a]
Benin	34	-0.2%	48	1.0%
Burkina Faso	5	-1.9%	16	-1.3%
Cape Verde	64	2.9%	57	9.1%
Côte d'Ivoire	76	-1.1%	36	-0.4%
The Gambia	5	0.0%	33	4.3%
Ghana	147	2.2%	34	2.4%
Guinea	104	-0.5%	53	-1.6%
Guinea Bissau	30	-1.5%	28	1.6%
Liberia	47	-0.7%	24	-1.2%
Mali	29	2.2%	50	0.2%
Niger	14	2.7%	50	4.1%
Nigeria	61	-0.1%	60	1.8%
Senegal	16	1.0%	60	5.3%
Sierra Leone	36	-0.1%	47	0.0%
Togo	8	-1.6%	27	0.5%

Source: Calculated from FAOSTAT, food balance sheet data
[a] CAGR = compound annual growth rate

higher in the countries of the humid coast (ranging from around 40 to over 100 kg/capita in the 1980s) than in either the inland Sahelian countries (from 6 to 18 kg/capita during the same period) or the coastal Sahelian states (on the order of 20 to 30 kg/capita). The sole exception to this pattern was Guinea Bissau (classified here as a coastal Sahelian state), whose per capita availability of fruit resembled more that of the humid coastal states. During the period 1980-85 to 2004-09, apparent per capita fruit consumption increased in five countries – Cape Verde, Mali, Ghana, Niger, and Senegal. It stagnated in three countries (The Gambia, Nigeria, and Sierra Leone) and declined in the remaining seven ECOWAS states.

Two variables stand out in the pattern of change in apparent per capita fruit consumption. First, income growth matters. The two countries with the most dramatic increases in apparent per capita consumption, both in absolute and percentage terms - Cape Verde at 106% and Ghana at 72% - were also the countries that had the most rapid increases in per capita income over the period.[45] On the other hand, five of the seven countries where apparent per capita fruit consumption declined were among the countries with the poorest trends in economic performance (Côte d'Ivoire, Liberia, Guinea Bissau, Guinea and Togo), often associated with civil conflict. The two exceptions to this pattern were Benin and Burkina Faso, but in each of these countries, the absolute decline was only about 2 kg/person. In three countries (Nigeria, Sierra Leone, and The Gambia), apparent per capita consumption remained unchanged. In Nigeria, the figure held steady at the relatively high level of approximately 60 kg; in Sierra Leone, the corresponding figure was 36 kg, while The Gambia maintained apparent fruit consumption at the very low level of 6 kg/capita.

The second generality that emerges from the data is that in four out of the five countries where apparent per capita fruit consumption increased (Cape Verde, Mali, Niger and Senegal), initial levels in the 1980s were low by regional standards. This suggests that with significant income growth in these types of Sahelian countries, demand for fruit could expand rapidly. The budget-consumption studies reviewed in Chapter 6 support this hypothesis.

5.4.2 Vegetables

Table 5.6 indicates that apparent per capita consumption of vegetables increased more broadly across the region than did that of fruit over the period 1980-85 to 2004-09. Per capita availability rose in nine of the countries, held steady (less than 5% change) in two, and fell in only four. The four countries that experienced declines (Côte d'Ivoire, Guinea, Liberia and Burkina Faso) were also countries that experienced declines in apparent per capita fruit consumption. The most spectacular growth was in Cape Verde, where apparent per capita annual consumption of vegetables increased by 777% over the period, growing from 5 kg/capita early in the period to 61 kg/capita at the end. Ghana expanded apparent per capita vegetable consumption by 79%,

45 Niger, which had very modest per capita income growth over the period, also registered strong percentage growth in per capita fruit availability (93%), but the absolute gain was modest, as it started from a very low initial base of 7 kg/capita in 1980-85.

and Nigeria by 55%. But not all countries that showed rapid expansion in apparent per capita vegetable consumption were among the countries showing the fastest per capita income growth. Three Sahelian countries that had relatively low levels of per capita vegetable availability in the 1980s increased that figure by over 100% over the 30 year period: Senegal (264%), The Gambia (187%), and Niger (170%). This finding illustrates that changes in consumption patterns are driven by more than just income growth; factors such as shifts in the population's location within the country and availability of local production (e.g. growth of horticultural production during the dry season to raise rural incomes) may also be important drivers of consumption.

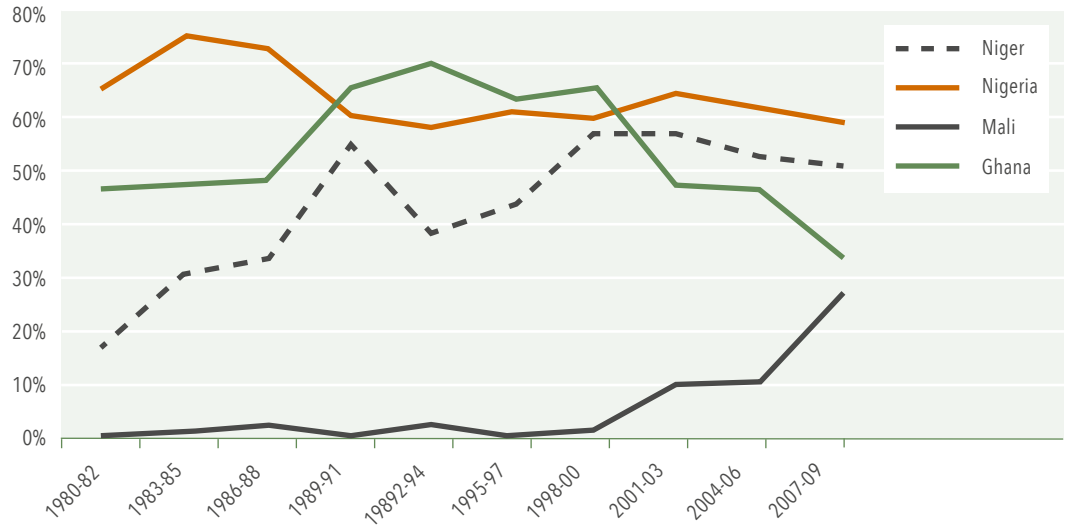
5.5 Vegetable oil

While some of the increased per capita availability of fat in most countries over the past 30 years was due to more animal fat in the diet, a large part reflected expanded per capita availability of vegetable oil. Recorded per capita availability of vegetable oil grew in all countries of the region except Benin and Sierra Leone between 1980-85 and 2005-09. Four of the countries that recorded the largest percentage gains were Sahelian (Burkina Faso at 71%; Niger, 50%; Mali, 45%; and The Gambia, 65%), while three were on the humid coast (Ghana, 55%; Nigeria, 50%; and Togo, 63%). The composition of vegetable oil consumption also changed (Figure 5.1). Along the humid coast, palm oil and palm kernel oil are the dominant oils, but their share of total vegetable oil has declined modestly in most countries, as the total apparent per capita consumption of other vegetable oils increased. In contrast, palm oil and palm kernel oil availability per capita, driven by inexpensive imports from Asia, has increased in the inland Sahelian countries, where other oils (groundnut, cottonseed) have traditionally been important.

The rapid rise in apparent per capita vegetable oil consumption across the region reflects a strong effort by consumers to improve what were often fat-deficient diets. If the current trends continue, future demand for vegetable oils in the region will continue to burgeon, raising challenges both to the agrifood system and public health as diets in some places move from fat-deficient to fat-surplus.

Figure 5.1 *Share of palm & palm kernel oil in total vegetable oil availability*

1980-82 to 2007-09



Source: Calculated from FAOSTAT, food balance sheet data

5.6 Sugar and sweeteners

Like vegetable oils, there were widespread increases in per capita availability of sugar and sweeteners across the region. Annual per capita quantities increased, often dramatically, between 1980-85 and 2005-09 in 10 of the 15 ECOWAS states, stagnated in 3 (Sierra Leone, Côte d'Ivoire, and Nigeria), and declined modestly in Togo and Senegal. Particularly dramatic increases occurred in Ghana (425%), Benin (400%), Guinea Bissau (217%), Mali (213%) and Cape Verde (66%). The increases reflect both direct consumption of sugar (e.g. with tea) as well as increased consumption of sugar and other sweeteners incorporated into various processed foods and beverages. The growth in sugar consumption is a common phenomenon as incomes increase in low-income countries, and if these trends continue, one can anticipate continued strong demand for sugar. Like the strong demand for vegetable oil, this offers opportunities for West African producers, but also raises concerns about future public health, such as increasing problems of diabetes and obesity.

5.7 Alcoholic beverages

The FAOSTAT food balance sheets show that in 10 of the 15 ECOWAS countries, annual per capita availability of alcoholic beverages, mainly beer, exceeded 10 litres/person.[46] Among these countries, average per capita availability per year over the period 2007-09 ranged from 13 litres in Togo to 67 litres in Nigeria. Over the period 1980-85 to 2004-09, apparent per capita consumption of alcoholic beverages increased in seven of these ten countries, by rates ranging from 6% (in Sierra Leone, which at the beginning of the period had one of the highest levels in the region, at 47 litres) to 200% in Cape Verde (where it grew from 13 litres to 39 litres). If such growth trends continue, this may open new markets for import substitution of the grains used by West African breweries. Nigerian breweries, for example, have substituted substantial quantities of locally grown sorghum for imported grains, and in 2011, SAB-Miller, the largest brewing company in the world, introduced a cassava beer in Mozambique. SAB-Miller is a major player in Nigeria, brewing most of its beer using locally produced sorghum, and it recently introduced cassava beer in Ghana and is considering doing so in Nigeria (Adeyemi, 2012; Olowa *et al.*, 2012).

46 The 10 countries are Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea-Bissau, Nigeria, Sierra Leone, and Togo. The FAOSTAT food balance sheets provide estimates of beverage availability in terms of kg. For ease of exposition, figures are reported here in litres rather than kg, assuming that these beverages have approximately the same density as water (1 kg/litre).

5.8 Summary of key findings and policy implications

The trends in availability of per capita supplies of calories, protein, and fat, as revealed by the food balance sheet analysis, are striking. They show that on average, many West African countries have done a remarkable job over a 30-year period in improving per capita food supplies through a combination of own production and imports. Particularly strong growth came in countries that have experienced solid economic growth in recent years such as Ghana, Nigeria, Cape Verde, Burkina Faso and Mali. In contrast, nations that have suffered civil disruption, such as Liberia, Sierra Leone, and Côte d'Ivoire, stagnated in their apparent per capita consumption of these macronutrients. Regarding the per capita availability of different food groups, the picture that emerges is threefold: (1) a growing per capita availability of most food commodities in most countries, (2) a diversity of dietary patterns across the region (e.g., inland Sahelian versus coastal countries), and (3) increased diversification of dietary pattern within countries, albeit at different velocities.

Broad trends across the region include the increased per capita availability of starchy staples, meat and fish, sugar and sweeteners, vegetable oils, and alcoholic beverages. Per capita availability of individual food commodities and subgroups, however, vary significantly among countries. Traditionally, diets in Sahelian inland areas were mainly based on sorghum and millet, red meat and pulses, whereas in coastal countries, roots and tubers, maize and fish were predominant. While these basic differences still hold, food availability patterns at the national level have become increasingly diverse. Both the

relative importance of major food groups (cereals, roots and tubers, and livestock products) and individual food commodities within these groups have evolved. The trends towards dietary diversification at the national level is particularly marked in coastal countries but can also be observed in inland Sahelian countries.

Concerning starchy staples, one broad trend has been a strong increase of apparent rice and wheat consumption in most countries of the region. Per capita availability of rice is much higher than that of wheat in almost all countries, but the level of apparent consumption of both cereals varies widely by country. These differences suggest scope for continued significant growth of demand for both cereals, particularly in countries where per capita consumption levels are still low. The popularity of rice and wheat-based products as convenience foods in urban areas will also contribute to this growth (see Chapter 7). A second trend has been the declining importance of millet and sorghum as staples throughout the subregion, except in Niger. Concerning maize, the picture has been more varied, with per capita apparent consumption increasing in the Sahel and in some coastal countries while declining in others. Apparent per capita consumption of cassava has been growing, in some cases dramatically, especially along the humid coast (e.g. in Nigeria, Ghana, and Benin). Moreover, per capita cassava availability also grew in several countries where it was not the predominant staple in the 1980s, such as Sierra Leone, Guinea Bissau, Senegal, and Guinea. While yams are an important staple in fewer countries, their per capita availability has grown even more strongly than that of cassava in those countries that consume the most yams.

The above analysis indicates that trends in per capita starchy staple availability have been more diverse than simply rice and wheat substituting for traditional staples, as the trade data reviewed in Chapter 4 might suggest. Apparent per capita consumption of maize, yams and cassava has also grown strongly in several countries. The "rice and wheat" story is really a rice, wheat, cassava, yams, and maize story, with important variations among countries.

Concerning high-quality protein, two broad trends stand out: (1) growth in apparent per capita consumption of meat from ruminant livestock and pulses (mainly cowpeas) in the inland Sahelian countries, and (2) some substitution of poultry meat for fish along the coast. Moreover, there are still huge differences in apparent per capita consumption levels of different animal protein sources and pulses among countries. Apparent per capita red meat consumption is highest in the inland Sahelian countries, Cape Verde, Guinea Bissau and Côte d'Ivoire, more than twice as high as in most of the other coastal countries. Fish and seafood remains the most important high-quality protein source in the coastal countries, with differing trends across countries. For poultry meat, apparent per capita consumption is highest in Cape Verde, followed by Benin. Despite high annual average growth rates across the region, apparent per capita consumption levels of poultry meat are still low compared to red meat and fish in most countries. Pulses are important sources of high-quality proteins in the Sahelian countries and Cape Verde but also in Nigeria, Benin and Sierra Leone.

Vegetable oil. Per capita availability grew in all countries of the subregion except Benin and Sierra Leone between 1980-85 and 2005-09. Moreover, the composition of vegetable oil availability has changed, with a declining share of palm oil and palm kernel oil in the coastal countries and the opposite trend in the Sahelian countries. While increases in apparent per capita palm oil consumption in the Sahel appear to be driven by inexpensive palm oil imports from Asia, the diversification into other vegetable oils in the coastal countries might at least partially be due to the growing health concerns of consumers.

The growth of per capita fruit and vegetable availability has not been confined to countries with strong per capita income growth but is also apparent in Sahelian countries, albeit from low absolute levels. This finding illustrates that changes in dietary patterns are driven by more than just income growth; factors such as demographic shifts within the country and changes in local horticultural production systems may also be important drivers of consumption.

Final remarks. The increased overall per capita availability and greater diversity of food is positive from a food security and nutrition point of view, although FBS data do not provide information on access and use at the household and intra-households levels. On the other hand, the strong growth in apparent consumption of sugar and sweeteners and vegetable oils, especially palm oil, raises questions for public health in the future, such as increasing problems of diabetes and obesity. Similar concerns apply to the increased consumption of alcoholic beverages.

The FBS data, however, provide only figures on changes in estimated national average per capita availability of different types of foods. Comparison of the trends among countries that have experienced strong economic growth (e.g. Cape Verde and Ghana) with those whose economies have stagnated or declined (e.g. Côte d'Ivoire and Liberia) give some hints into how changes in per capita income growth influences demand patterns; however, one needs to be cautious in interpreting such comparisons due to the many other possible conflating variables that could affect the results (e.g. disruption of supply chains due to civil strife, cultural preference for certain foods). Furthermore, the FBS data provide no information on how demand varies within a given country based on where a person lives (city or countryside), by income or by profession. For these types of information, which are critical in assessing how demand will evolve in the future, one needs to turn to other sources. Budget-consumption surveys (Chapter 6) and focus-group interviews with consumers and retailers whose business depends on understanding trends in consumer demand (Chapter 7) are two such sources of information to which we now turn.

Appendix to Chapter 5

Appendix Table *A5.1 Daily food energy availability by country*

1980-82 through 2007-09 (kcal/capita/day)

	1980 to 1982	1983 to 1985	1986 to 1988	1989 to 1991	1992 to 1994	1995 to 1997	1998 to 2000	2001 to 2003	2004 to 2006	2007 to 2009	1980-85–2004-09 (% chg.)
Non-coastal Sahel											
Burkina Faso	1745	1788	2256	2386	2544	2530	2495	2585	2656	2647	50.1%
Mali	1590	1783	2109	2186	2172	2215	2319	2436	2539	2604	52.5%
Niger	2067	2053	1998	2011	1878	1980	2145	2180	2256	2439	14.0%
Coastal Sahel											
Cape Verde	2239	2412	2596	2357	2458	2360	2382	2381	2525	2631	10.9%
The Gambia	1984	2214	2532	2486	2339	2245	2260	2268	2309	2501	14.6%
Guinea Bissau	2049	2176	2228	2245	2286	2211	2159	2211	2264	2421	10.9%
Senegal	2296	2281	2157	2187	2172	2137	2132	2164	2283	2432	3.0%
Coastal non-Sahel											
Benin	1937	1973	1990	2238	2254	2322	2361	2428	2481	2567	29.1%
Côte d'Ivoire	2846	2687	2581	2478	2423	2430	2447	2458	2498	2629	-7.3%
Ghana	1656	1825	2015	2052	2368	2483	2559	2664	2802	2909	64.1%
Guinea	2295	2297	2379	2403	2473	2444	2421	2431	2501	2628	11.7%
Liberia	2498	2412	2478	2297	2217	2167	2177	2062	2123	2243	-11.1%
Nigeria	1850	1756	1972	2192	2464	2532	2590	2555	2665	2741	49.9%
Sierra Leone	2068	1942	1962	1949	1975	2057	2002	2012	2097	2158	6.1%
Togo	1967	1879	1793	1921	1880	2013	2010	2054	2133	2297	15.2%

Source: Me-Nsope and Staatz, 2013 (based on FAOSTAT, data)

Appendix Table A5.2 *Non-Coastal Sahel: Daily protein availability*

(gram/capita), 1980-82 to 2007-09

	1980 to 1982	1983 to 1985	1986 to 1988	1989 to 1991	1992 to 1994	1995 to 1997	1998 to 2000	2001 to 2003	2004 to 2006	2007 to 2009	1980-85 to 2004-09 (% chg.)	Total change (%)
Burkina Faso												
Vegetal	47	47	61	64	70	67	66	69	70	71	50.0%	88.7%
Animal	7	7	8	8	9	10	10	10	10	10	42.9%	11.3%
Total	54	54	69	72	79	77	76	79	80	81	49.1%	
Mali												
Vegetal	31	37	44	45	47	47	49	51	52	53	54.4%	88.1%
Animal	17	15	15	17	15	16	16	16	18	19	15.6%	11.9%
Total	48	52	59	62	62	63	65	67	70	72	42.0%	
Niger												
Vegetal	48	45	45	44	42	42	49	48	52	62	22.6%	87.5%
Animal	17	14	12	12	12	13	14	15	16	18	9.7%	12.5%
Total	**65**	**59**	**57**	**56**	**54**	**55**	**63**	**63**	**68**	**80**	**19.4%**	

Source: Me-Nsope and Staatz, 2013(based on FAOSTAT data).

Appendix Table A5.3 *Coastal Sahel: Daily protein availability*

(gram/capita), 1980-82 to 2007-09

	1980 to 1982	1983 to 1985	1986 to 1988	1989 to 1991	1992 to 1994	1995 to 1997	1998 to 2000	2001 to 2003	2004 to 2006	2007 to 2009	1980-85 to 2004-09 (% chg.)	Total change (%)
Cape Verde												
Vegetal	45	48	55	45	39	37	39	37	39	41	-14.0%	-162.5%
Animal	20	19	16	17	22	22	24	25	28	32	53.8%	262.5%
Total	65	67	71	62	61	59	63	62	67	73	6.1%	
The Gambia												
Vegetal	37	39	43	41	39	37	38	40	40	45	11.8%	60.0%
Animal	11	12	12	13	11	12	13	14	14	15	26.1%	40.0%
Total	48	51	55	54	50	49	51	54	54	60	15.2%	
Guinea Bissau												
Vegetal	36	37	36	36	36	35	34	35	36	37	0.0%	0.0%
Animal	8	8	9	9	9	9	8	8	7	8	-6.3%	100.0%
Total	44	45	45	45	45	44	42	43	43	45	-1.1%	
Senegal												
Vegetal	50	49	49	48	42	41	42	37	41	44	-14.1%	127.3%
Animal	15	16	18	18	20	17	17	16	17	17	9.7%	-27.3%
Total	**65**	**65**	**67**	**66**	**62**	**58**	**59**	**53**	**58**	**61**	**-8.5%**	

Source: Me-Nsope and Staatz, 2013 (based on FAOSTAT data).

Appendix Table A5.4 *Coastal non-Sahel: Daily protein availability*

(gram/capita), 1980-82 to 2007-09

	1980 to 1982	1983 to 1985	1986 to 1988	1989 to 1991	1992 to 1994	1995 to 1997	1998 to 2000	2001 to 2003	2004 to 2006	2007 to 2009	1980-85 to 2004-09 (% chg.)	Total change (%)
Benin												
Vegetal	36	37	40	45	45	46	47	48	49	52	38.4%	103.7%
Animal	10	10	9	8	9	8	9	10	9	10	-5.0%	-3.7%
Total	46	47	49	53	54	54	56	58	58	62	29.0%	
Côte d'Ivoire												
Vegetal	43	41	39	38	37	37	37	37	37	40	-8.3%	43.8%
Animal	17	16	17	16	13	11	11	12	12	12	-27.3%	56.3%
Total	60	57	56	54	50	48	48	49	49	52	-13.7%	
Ghana												
Vegetal	26	28	31	31	37	38	39	41	42	43	57.4%	79.5%
Animal	12	13	14	14	14	14	15	14	16	17	32.0%	20.5%
Total	38	41	45	45	51	52	54	55	58	60	49.4%	
Guinea												
Vegetal	46	46	48	48	47	45	45	45	45	47	0.0%	0.0%
Animal	6	6	6	6	7	7	8	8	8	9	41.7%	100.0%
Total	52	52	54	54	54	52	53	53	53	56	4.8%	
Liberia												
Vegetal	38	36	36	34	31	34	33	28	29	32	-17.6%	54.2%
Animal	11	12	11	8	7	7	7	5	6	6	-47.8%	45.8%
Total	49	48	47	42	38	41	40	33	35	38	-24.7%	
Nigeria												
Vegetal	32	33	39	43	46	49	51	50	53	55	66.2%	104.9%
Animal	11	8	7	7	6	7	7	8	8	9	-10.5%	-4.9%
Total	43	41	46	50	52	56	58	58	61	64	48.8%	
Sierra Leone												
Vegetal	33	32	33	33	34	36	37	38	40	40	23.1%	75.0%
Animal	10	8	7	7	7	7	7	9	12	11	27.8%	25.0%
Total	43	40	40	40	41	43	44	47	52	51	24.1%	
Togo												
Vegetal	39	38	36	38	39	41	40	41	42	46	14.3%	110.0%
Animal	7	7	8	8	7	8	7	6	6	7	-7.1%	-10.0%
Total	**46**	**45**	**44**	**46**	**46**	**49**	**47**	**47**	**48**	**53**	**11.0%**	

Source: Me-Nsope and Staatz, 2013 (based on FAOSTAT data).

Appendix Table A5.5 *Daily fat availability by country*

(gram/capita), 1980-82 to 2007-09

	1980 to 1982	1983 to 1985	1986 to 1988	1989 to 1991	1992 to 1994	1995 to 1997	1998 to 2000	2001 to 2003	2004 to 2006	2007 to 2009	1980-85 to 2004-09 (% chg.)
Non-coastal Sahel											
Burkina Faso	33	39	48	48	52	53	54	59	59	61	66.7%
Mali	40	37	45	51	48	45	48	53	54	56	42.9%
Niger	37	36	32	33	31	38	41	47	49	54	41.1%
Coastal Sahel											
Cape Verde	55	65	69	66	81	79	70	69	73	79	26.7%
The Gambia	45	48	51	55	65	60	71	73	74	67	51.6%
Guinea Bissau	50	54	58	55	58	55	51	52	54	60	9.6%
Senegal	61	59	51	51	67	62	63	64	65	69	11.7%
Coastal non-Sahel											
Benin	48	49	40	41	41	40	46	51	53	47	3.1%
Côte d'Ivoire	50	48	45	45	44	46	49	51	50	49	1.0%
Ghana	36	37	40	37	38	35	39	39	45	50	30.1%
Guinea	50	47	42	43	51	52	53	55	60	61	24.7%
Liberia	47	54	48	46	62	64	58	55	57	55	10.9%
Nigeria	49	44	48	53	59	58	60	62	66	67	43.0%
Sierra Leone	61	56	59	56	58	60	48	48	55	55	-6.0%
Togo	29	30	32	39	39	43	39	46	47	50	64.4%

Source: Me-Nsope and Staatz, 2013 (based on FAOSTAT data)

Chapter 6

How do Urbanization and Income Levels affect Food Consumption? Insights from Budget-Consumption Studies

In order to understand better the impacts of urbanization and income growth on the evolution of the demand for food in the subregion, AGWA commissioned analysis by ReSAKSS/West Africa of budget-consumption surveys in eight countries: Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Senegal, and Togo (Table 6.1). These countries reflect a range of experiences with respect to their degree of urbanization, as well as their per capita income levels and growth rates over the past 20 years. Data were sufficient to carry out detailed analyses for all of the countries except Benin. In five of the countries (Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Senegal), two budget-consumption studies were available – one during the late 1980s or during the early1990s, and the other from 2005 or later – thus allowing examination of how food expenditure patterns have changed over time (Taondyandé and Yade, 2012b).[48] The chapter complements this analysis with data from two budget-consumption surveys from Nigeria carried out in 2003/04 and 2009/10 (NBS, 2007; NBS, 2012a).

This chapter analyses the shares of the food budget that consumers in each of these countries devoted to the main food groups and to individual commodities. For the countries included in the ReSAKSS study, it also examines these expenditure patterns by income quintiles, urban and rural residence, and between the two survey periods in order to see how food expenditure patterns vary across the population. It then quantifies how income growth affects consumption patterns by estimating income elasticities of demand and marginal food budget shares for these commodities, by country, and discusses the implications of these findings for potential domestic market growth as incomes increase.

Table 6.1
Budget consumption surveys analysed by ReSAKSS

Country	During 1990s	During 2000s
Benin		2007
Burkina Faso	1994	2009
Côte d'Ivoire	1993	2008
Ghana	1992	2006
Mali	1989	2006
Niger		2005
Senegal	1994	2002
Togo		2006

47 The study was based on field work carried out with national teams in each country in collaboration with ReSAKSS and Michigan State University. See Taondyandé and Yade, 2012b, for details.

6.1 Methodological issues

Despite the usefulness of budget-consumption surveys in better understanding the impact of key drivers, such as income and urbanization, on food demand, some caveats apply in the interpretation of their results. First, most budget-consumption surveys only measure household food expenditures but not actual food consumption. Even though the latter could be estimated by dividing expenditures for individual food items by their prices at the time of data collection, the accuracy remains questionable in view of the quality of available price data. Second, data are only collected in a single year, which might not be typical in terms of prices and thus distort the relative expenditure shares of different food items. Third, the surveys discussed here were conducted in different years in the different countries, which needs to be taken into account when comparing differences between countries and trends over time. Hence, the results of budget-consumption surveys should be interpreted with caution and checked against other data sources such as food balance sheets.

6.2 The importance of food expenditures in households' budgets

Food expenditures account for a high percentage of total household expenditures in the ReSAKSS survey countries, ranging from 39% in Côte d'Ivoire to 62% in Benin (Table 6.2). The 2009/10 Nigeria National Budget Survey put the figure for Nigeria at 65% for the population as a whole, ranging from 55% in urban areas to 72% in rural areas (NBS, 2012a). These figures showed very little change since the 2003/04 survey, which found 64% of total expenditures nation-wide going to food; the figure for urban areas was 58% while that in rural areas was 67% (NBS, 2007).

In all seven countries for which data are available on expenditures by income group, the percentage of household expenditures going to food increased steadily as per capita household incomes fell, absorbing from between 55% and 70% of total expenditures of the poorest fifth of the population, against 30% to 55% in the top income quintile, depending on the country. Table 6.2 also shows that the decline of food in overall household expenditures is very modest over the first four income quintiles, remaining above 50% for all countries except Côte d'Ivoire, and only declines significantly in the highest income quintiles. This pattern emerges in part because the differences between median incomes are much more marked between the fourth and fifth quintiles compared to differences that exist between the other quintiles.

These figures highlight two main policy issues: (1) the food price dilemma facing policy makers, and (2) the disproportionate share of upper income segments in total food expenditures. With consumers spending such a high percentage of their total budgets on food, there is very little room for consumers, especially poor consumers, to absorb increases in food prices without cutting consumption. Therefore, the scope for encouraging domestic food production through higher prices (e.g. by increasing import tariffs) may be very limited from a political standpoint. On the other hand, the large shares of the middle- and upper-income segments in total domestic food-market expenditures point to the importance of better understanding these groups' demands and their implications for domestic food market development.

6.2.1 Evolution of urban food expenditures

Table 6.3 shows the proportion of total food expenditures that takes place in urban areas and how that share has changed over time in the six countries for which two surveys were available. It shows the increasing importance of urban food markets across commodity groups and countries. Urban food expenditures accounted for 30% of total food expenditures in Burkina Faso (2009), 38% in Nigeria (2009/10), 40% in Mali (2006), and between 50% and 60% in Côte d'Ivoire, Ghana and Senegal at the time of the last surveys. The overall figure for Nigeria appears low, given the degree of urbanization in the country, but urban shares are higher

Table 6.2 *Percentage of total household expenditures going to food, by income quintile*[a]

		Income Quintiles (low to high)					
Country	Year	Q1	Q2	Q3	Q4	Q5	National
Benin	2007						61.7
Burkina Faso	2003	69.6	68.3	65.4	60.4	41.7	53.6
Côte d'Ivoire	2008	51.3	49.8	46.8	43.1	29.9	38.6
Ghana	2006	60.6	59.0	57.1	53.6	45.0	51.0
Mali	2006	58.3	59.2	57.5	51.6	31.4	43.4
Niger	2005	60.5	62.9	64.7	63.6	55.5	60.1
Senegal	2002	54.8	53.0	53.1	52.8	47.1	45.3
Togo	2006	65.7	63.9	61.2	55.2	43.5	51.6

Source: Taondyandé and Yade, 2012b
[a]Q1= lowest income quintile, Q5=highest

(and increasing over time) for high-value products such as animal products, fruits and vegetables, and beverages. However, despite the growth of urban food consumption in absolute and relative terms, rural food markets remain important, especially in the less urbanised countries.

In terms of how urban food expenditures are distributed across different food groups (Table 6.4), Côte d'Ivoire experienced a noticeable shift between the two surveys from cereals and "other food products" towards animal products and fish, fruits and vegetables, and roots and tubers. Ghana and Senegal underwent similar changes, though less pronounced. While in Ghana, the share of meat expenditures remained at a high level of 27%, in Senegal it increased from 29% to 33%. In Mali, cereals and meat and fish increased their budget shares at the expense of vegetable oils and other food products.

Nigeria, in contrast, recorded an increase in the share of urban food expenditures going to starchy staples in 2009/10 compared to 2003/04, a sharp drop in the budget share going to animal products, and an increase in the share going to fruits and vegetables. These changes may reflect consumers' adaptation to the high food prices prevailing in 2009/10, as they sought to protect their basic calorie consumption by cutting back on more expensive animal products. The largest increase in urban budget share for Nigeria in

Table 6.3 *Share of urban in total food expenditures for major food groups (%)*

	Burkina Faso		Côte d'Ivoire		Ghana		Mali		Nigeria		Senegal	
Food Group	1994	2009	1993	2008	1992	2006	1989	2006	2003/04	2009/10	1994	2002
Cereals	21.9	28.4	42.7	52.1	48.2	54.2	27.7	37.6	25.9	27.8	40.4	49.9
Roots & tubers[a]	41.9	40.4	18.5	38.8	55	55.4	47.5	68.2	18.9	38.5	67.6	69
Pulses	15.5	27.8					23	38	b	34.8	21.1	37
Oils and oilseeds	29.7	34.9	41	51.6	44.4	48.8	29.8	39	24.4	36.6	44.8	49.3
Fruits and vegetables	40.2	39.8	44.5	57	47.9	52.6	35.3	53.6	22.2	43.8	52.7	64.8
Animal products and fish	31	37.5	65.7	61	42.7	50.6	45.1	53.4	26.4	42.8	58.2	74.6
Beverages	27.5	25.5	34.6	49.4	41.7	58.4	29.7	41.1	b	53.2		
Other food products	34.8	27.1	84.1	63.1	52.8	56.9	39.2	44.2	31.4	35.4	42.3	48.5
Total food expenditures	**26**	**30**	**46**	**53.7**	**52.8**	**56.9**	**34.2**	**44**	**25.3**	**37.5**	**47.2**	**58.3**

Source: Calculated from data in Taondyandé and Yade 2012; National Bureau of Statistics 2007; National Bureau of Statistics 2012.
[a]Includes plantains for Nigeria
[b]Not reported separately; likely included in "Other food products".

Table 6.4 *Evolution of food budget shares in urban areas (%)*

	Burkina Faso		Côte d'Ivoire		Ghana		Mali		Nigeria		Senegal	
Food Group	1994	2009	1993	2008	1992	2006	1989	2006	2003/04	2009/10	1994	2002
Cereals	36.9	52.2	32.9	24.8	20.5	23.1	29.6	36.4	25.7	22.2	32.1	26.9
Roots & tubers[a]	1.9	0.9	8.8	12.1	21.0	15.6	1.6	2.8	10.8	23.2	2.4	2.9
Pulses	2.3	3.3					0.7	1.3	b	9.0	0.3	0.4
Oils and oilseeds	8.1	5.7	5.2	6.6	5.6	4.7	7.8	5.6	7.1	3.7	13.5	11.3
Fruits and vegetables	9.0	8.1	9.5	16.9	10.1	13.8	12.2	11.6	11.4	20.2	13.2	14.0
Animal products and fish	13.6	12.5	17.7	25.6	27.1	27.7	23.3	25.8	24.2	10.2	29.4	33.1
Beverages	13.8	6.9	3.2	2.2	6.8	7.2	5.2	6.2	b	6.4	n.a.	n.a.
Other food products	14.2	10.4	22.6	11.7	8.9	7.9	19.6	10.4	20.8	5.1		11.4

Source: Calculated from data in Taondyandé and Yade 2012; National Bureau of Statistics 2007; National Bureau of Statistics 2012.
[a]Includes plantains for Nigeria
[b]Not reported separately; likely included in "Other food products".

2009/10 compared to the earlier period was for roots and tubers, suggesting that consumers may have switched to these locally produced goods as prices for internationally traded cereals spiked. Gari, in particular, may have been a convenient "fast food" substitute for rice during this period of high rice prices. Data for Burkina Faso from 2009, also show a strong expansion of cereals at the expense of all other food groups compared to the earlier (1994) survey, likely for similar reasons, as consumers tried to defend basic calorie consumption at the expense of dietary diversity.

6.3 Structure of food expenditures by major food group

Table 6.5 presents the latest data on the share of the food budget going to major food groups in each of the eight countries included in the ReSAKSS study along with comparable information for Nigeria. In seven of the nine countries, cereals have the highest share in total food expenditures. These include four Sahelian countries (Burkina Faso, Mali, Niger and Senegal) and three coastal countries (Nigeria, Côte d'Ivoire and Togo). In the case of Côte d'Ivoire, the high share of cereals is mainly due to the importance of rice. In Nigeria, roots, tubers, and plantains account for the second largest share of the food budget, closely following cereals. In contrast, in Benin and Ghana livestock products and fish accounted for the largest share of food expenditure, followed by roots and tubers (Benin) and cereals (Ghana). In the other countries, animal products come in second place, accounting for 10% of total food expenditures in Burkina Faso in 2009 and 25% in Senegal in 2002. Nigeria has the lowest budget share of any of the countries devoted to animal products, but this is at least partially offset by the high budget share (9%) devoted to pulses, a high-quality protein source. Overall, food expenditures are more concentrated on a single food category in the inland Sahelian countries compared to the coastal countries: the main food group–cereals–accounts for between 44.5% (Mali) and 60.9% (Niger) of total food expenditures.

6.3.1 Starchy staples: large expenditures and changing composition

The budget-consumption studies show the central role that starchy staples play in the food budgets of West Africans and how those expenditures are changing over time as the population becomes more urbanised and as incomes grow.

Budget shares. Starchy staples (cereals and roots and tubers combined) account for between 30 and 50% of total food expenditures in coastal countries. In inland Sahelian countries their share is even higher. Due to the importance of starchy staples in total food expenditures, increases in starchy staple prices hit consumers particularly hard. Previous studies have found that in response to higher staple food prices, West African consumers often

Table 6.5 *Structure of food expenditures by major food group (%)*

Food Group	Benin 2007	Burkina 2009	Côte d'Ivoire 2008	Ghana 2006	Mali 2006	Niger 2005	Senegal 2002	Togo 2006	Nigeria 2009/10
Cereals	22.5	55.1	25.7	22.8	44.5	60.9	31.4	20.8	27.8
Roots and tubers	10.2	0.6	16.8	15	1.9	0.8	2.4	8	22.6[a]
Pulses	3.7	3.6			1.6	1.8	0.6	2.7	9.7
Oils and oilseeds	8.6	4.9	6.9	5.1	6.5	3.3	13.4	6.4	3.7
Fruits and vegetables	11.6	6.1	15.7	13.9	9.9	4.8	12.6	14.9	17.3
Livestock products and fish	30.1	10.0	22.6	29.2	22.2	12.1	25.8	17.8	8.9
Beverages	6.7	8.1	2.4	6.6	6.9	4.2		6.2	4.5
Other products	6.7	11.5	10.0	7.4	6.4	12.0	13.7	23.2	5.4

Source: Taondyandé and Yade, 2012b; NBS, 2012a.
[a]Also includes plantains for Nigeria

cut back on diet quality (reducing consumption of fruits, vegetables, and animal protein) to "defend" their consumption of starchy staples; they sometimes also cut back on health and educational expenditures in order to try to reduce the impact of the higher prices on caloric intake (Camara, 2004; Diagana *et al.*, 1999). Data from the budget-consumption studies suggest that the same phenomenon occurred in Burkina Faso in 2009 and Nigeria in 2009/10 in response to the surge in food prices (see Table 6.4).

Starchy staple expenditures take a particularly large share of the food budget of the poor. In six of the seven countries for which detailed information is available in the decade 2000-09, the percentage of the food budget amongst urban consumers going to starchy staples declined as incomes rose (Appendix Table A6.1, p. 165). For example, in Niger the lowest-income quintile spent 61% of its food budget on starchy staples, compared to 44% for the highest-income quintile. The one exception to this pattern was Burkina Faso, where urban consumers spent between 48 and 55% of their food budget on these staples in all five income quintiles. In rural areas, budget shares going to starchy staples were at the same level or higher than those in urban areas for five of the six countries surveyed, being lower only in Togo (Appendix Table A6.2). The rural budget shares, however, varied much less across income groups; as incomes grew in rural areas, the tendency was to expand consumption of starchy staples proportionately to the increase in income. This probably reflects in part the lower average incomes in rural areas; as incomes rise in the rural areas, the first priority appears to be to increase total caloric consumption.

Changing composition of starchy staple expenditures with income growth and urbanization

Urban food expenditures. While budget shares remain high for starchy staples across income groups, the composition of starchy staple expenditures varies by income and across countries. The surveys conducted during the last decade show the predominant share of rice in total food expenditures of urban populations in most countries. In five out of eight countries, urban consumers spent between 15% and 25% of their total food expenditures on rice. Only in Ghana, Nigeria and Togo were the shares lower (between 11% and 14% in Ghana, 9% on average for Nigeria and between 6% and 7.5% in Togo). With the exception of Niger, urban rice expenditures in the Sahelian countries were higher than those for millet and sorghum combined, despite the higher per capita consumption of the latter as shown in the food balance sheets. In the humid coastal countries with the exception of Nigeria, urban rice expenditures were close to (in Togo and Ghana) or exceeded (in Côte d'Ivoire) total expenditures for roots and tubers. These data show the importance of rice as a convenience food despite its higher cost per calorie compared with traditional cereals and starchy roots. It appears that in urban Nigeria, however, gari may be playing more of a role as a convenient fast food, in part perhaps because of trade restrictions on polished rice (see Chapter 12).

Strikingly, the poorest income quintiles spent similar or larger shares of their food budgets on rice than did those with higher incomes in most countries. With the exception of Burkina Faso, the share of rice in total urban food expenditures decreased with rising incomes. This was most pronounced in Côte d'Ivoire, where the share of rice in total food expenditures amounted to 25% in the lowest income quintile but only 13.5% in the highest quintile. A similar trend can be seen in Ghana and Togo, even though the differences between income quintiles are much less. In Mali and Niger, it is the second-lowest income quintile that spent the highest share of its total food budget on rice (25% and 21%, respectively).

In Senegal, the country with the highest per capita income of the four Sahelian countries and the country with the longest tradition of heavy rice consumption, urban budget shares devoted to rice fell sharply as incomes rose, as higher-income consumers diversified their diets away from starchy staples. Likewise, in both urban Ghana and urban Côte d'Ivoire, the share of the budget going to rice declined as incomes rose (as did the budget share going to all starchy staples), as consumers in these countries diversified their expenditures towards fruits, vegetables, and animal products. In absolute terms, however, per

capita expenditures on rice continued to increase as incomes rose. In contrast, in the lower-income countries of Mali and Niger, the share of the urban food budget going to rice was high (between 19 and 25%) and varied little among 80% of the income distribution, dropping only amongst the highest income groups.

Burkina Faso is an exceptional case where the share of urban food expenditures for rice increased consistently from lower to higher income quintiles (from 16% to 25%). Likewise, the share going to wheat increased from 2% to 5%, while the share going to millet and sorghum plummeted from over 14% to 3%. Thus, as their incomes rose, urban Burkinabé shifted increasingly to imported staples. In less dramatic fashion, the budget shares devoted to millet and sorghum fell amongst urban consumers as incomes rose in the other Sahelian countries analysed as well (Mali, Niger, and Senegal), and budget shares for both wheat and roots and tubers increased.

In line with the per capita consumption levels reported in the food balance sheets, the share of wheat in total urban food expenditures is still low in the survey countries, except in Senegal. In the poorest countries (Burkina Faso, Niger and Togo), the share of urban expenditures for wheat increased with rising incomes. In countries with higher wheat consumption, there was little variation across income groups (Ghana), or urban expenditure shares first increased and then decreased as incomes went up (Senegal). This suggests that urban wheat consumption is likely to expand with growing incomes, even though from a much lower basis compared to rice.

Also consistent with food balance sheet data, per capita maize expenditures were highest in Burkina Faso, followed by Niger and Togo. In the first two countries, urban expenditure shares are stable across income quintiles, around 16% and 11%, respectively. In the other countries, maize's shares in total expenditures decreased with growing incomes. This applied even more to sorghum and millet, especially in the Sahelian countries where they still account for a significant share of total urban food expenditures, especially among the poor. The urban expenditure share of roots and tubers was stable across income quintiles in countries where these form an important part of the traditional diet (Ghana, Togo) or declined only slightly with higher incomes (Côte d'Ivoire). This suggests that in these countries households tend to diversify their diets by reducing the share of their incomes spent on maize and rice, rather than on starchy roots and tubers. It may also reflect the suitability of processed forms of cassava, such as gari and attiéké, as urban fast foods that can substitute for rice.

Rural food expenditures. In rural areas (Appendix Table A6.2, p. 165), the patterns differed from those in urban areas, reflecting in part lower cash incomes and lower opportunity cost of time. In the rural areas of all four Sahelian countries, budget shares for millet and sorghum were the highest of all the staples and varied little across the first four income groups. Rural households spent a lower share of their incomes on rice, although this share was growing or stable in most countries. Rural inhabitants in Senegal, Côte d'Ivoire and Mali spent the largest shares of their incomes on rice amongst the survey countries, ranging from 15% to 25%. Rural households spent a lower share of their incomes on maize compared to rice, except for Togo. Moreover, in all countries except for Burkina Faso and Niger, maize's share in overall food expenditures declined with rising incomes. Wheat consumption remained under 2% of rural food expenditures except in Senegal, where it varied between 5% for the lowest-income quintile and 8% for the highest-income group; the highest-income quintile in rural Senegal devoted more of its budget to wheat products than to millet and sorghum. In all countries, higher income quintiles spent more on wheat than did their poorer peers. This is consistent with the trends in urban areas and suggests strong increases in wheat demand with growing incomes, albeit from a much lower base than rice. Expenditure shares for roots and tubers in total in rural Ghana were lower than in urban areas, but increased in proportion with incomes. In Côte d'Ivoire, rural households spent double the share of their incomes on roots and tubers compared with their urban peers, especially in the three middle income segments.

Changing composition of starchy staple expenditures over time. The ReSAKSS study also examined changing expenditure patterns for food over time for five countries for which budget-consumption studies were available in the late 1980s/early 1990s and from 2005 onward (Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Senegal). These comparisons show some strong shifts among starchy staple expenditures over time (Appendix Tables A6.3 and A6.4, p.167). The share of cereals increased in Burkina Faso, Mali and Ghana while declining in Côte d'Ivoire and Senegal in both urban and rural areas.[48] This increase was mainly driven by the strong growth of rice consumption, whose share in overall food expenditures increased in all the countries, except for Senegal. However, real expenditures for rice in absolute terms also increased in Senegal. [49]A second consistent trend across the five countries is the decline of millet and sorghum in total food expenditures (except for rural Burkina Faso). For the other two cereals, the picture was more diverse: maize's share of the food budget only increased in Burkina Faso, Mali and urban Senegal, while decreasing in the other countries. Wheat's share of the food budget increased in countries with low initial consumption levels (Burkina, Ghana and Mali), but fell in Côte d'Ivoire and urban Senegal, where expenditure shares were already high in the early 1990s. According to ReSAKSS, the strong decline in wheat consumption in Côte d'Ivoire could be attributable to the devaluation of the CFA franc.

Roots' and tubers' budget shares evolved differently in the two main consuming countries covered by repeat surveys: in Côte d'Ivoire the share increased in urban areas (from 8.8% in 1993 to 12.1% in 2008), but fell markedly in rural areas (from 31.7% to 22.2%). For Ghana, the surveys revealed a decline in urban areas from 21.0% to 15.6% between 1992 and 2006 but little change in rural areas. Thus, while absolute levels of expenditure increased for roots and tubers in Ghana (due to strong income growth over the period), the budget-consumption studies suggest less dramatic growth of root and tuber consumption in Ghana than do the FBS data.

48 According to ReSAKSS, the strong increase of cereal consumption in Burkina Faso needs to be interpreted with some caution, given that the survey instrument used in 1994 was not very detailed and some cereal expenditures in that year might be recorded under "other food products."

49 Calculated by dividing total per capita expenditures by deflated food prices in 1994 and 2002.

Growing demand for processed staples. As West African consumers become more urbanised and the opportunity cost of their time increases with income growth and a more hectic urban lifestyle, they increasingly seek staples in more convenient, processed forms. This is clearly seen in Table 6.6, which shows the percentage of consumer expenditures for basic staples in raw and processed forms across rural and urban areas in six countries. The proportion of staples purchased in processed form is higher in urban areas than in rural areas of all six countries.[50] The proportion of staples purchased in processed form also jumps sharply as one moves from a low-income country like Niger, where virtually all staples were purchased in unprocessed form, to an emerging economy like Ghana, where 70% of maize and 60% of cassava expenditures went for processed products in urban areas. A key variable driving this shift is the opportunity cost of time, particularly of women, who do most of the food preparation in the region. In countries where many people, especially poorly educated young women, have few opportunities for remunerative employment, the demand for processed products remains limited, as home processing is a cheaper alternative. In contrast, in countries such as Ghana, where incomes are rising rapidly and urban women have more employment opportunities outside the home, the growth in demand for processing services expands rapidly. This shift suggests that if West Africa succeeds in sustaining strong, broad-based income growth, there will likely be an explosive growth in the demand for processed staple food products, particularly in urban areas.

Summary: starchy staples. The picture that emerges of starchy staples consumption from the budget-consumption studies is one in which: (1) despite a slight decline in budget shares over time, these products, especially rice, continue to account for a high percentage of the total food budget, especially for low- and middle-income consumers, making their prices very politically sensitive; (2) there is a strong shift as incomes increase in the Sahelian countries away from millet and sorghum towards

50 Although detailed data are not available for Nigeria, the 2009/10 budget-consumption survey provides some evidence of similar patterns. For example, over 60% of total national expenditures on "bread and similar foods" occurred in urban areas, compared to only 30% of national expenditures on all cereal products.

rice, maize (in Mali and Burkina Faso) and, to a lesser extent, wheat; (3) the budget shares of rice and wheat are increasing in Ghana, where incomes have grown strongly, relative to roots and tubers, although absolute expenditures on roots and tubers continue to increase over time. The more recent surveys show that the expenditure shares of roots and tubers are fairly stable across income quintiles in other countries where these form an important part of the traditional diet, such as Togo and Côte d'Ivoire; (4) while these trends are more strongly seen in urban settings, they are also occurring in rural areas, as what was primarily an urban transformation of the diet a generation ago has become a national phenomenon.

The studies also demonstrate that consumption of rice, and to a lesser extent, wheat products, is not just driven by the rich, particularly in urban areas. While the budget shares and absolute levels of consumption of these predominantly imported staples is highest among the high-income groups (except in Senegal, where the budget shares fall for the highest income groups), these staples, particularly rice, claim from between one-fourth to over half of total expenditures on staples by the lowest-income quintile in seven countries surveyed.[51] Finally, the studies suggest that as per capita incomes increase

51 Compared to rice, which is consumed largely as imported, wheat is mainly consumed as bread, pasta and biscuits, and the imported raw material may only account for parts of the costs of these finals products. Therefore, increases of wheat prices have a lower impact on consumers than in case of rice.

Table 6.6 *Shares of total expenditures on unprocessed and processed starchy staples, various countries*

	Burkina Faso, 2009			Mali, 2006			Niger, 2005		
Staple	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
Millet									
Millet Grain	80.9	96.0	94.5	98.5	99.9	99.5	99.8	100.0	100.0
Processed/prepared forms	19.1	4.0	5.5	1.5	0.1	0.5	0.2	0.0	0.0
Sorghum									
Sorghum grain (white & red)	93.1	99.2	98.8	100.0	100.0	100.0	100	100	100
Sorghum flour	6.9	0.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Maize									
Maize grain (white & yellow)	78.0	93.2	86.9	81.9	92.9	89.8	92.5	98.3	96.1
Processed/prepared forms	21.9	6.8	13.1	18.1	7.1	10.2	7.5	1.7	3.9

	Senegal, 2002			Côte d'Ivoire, 2008			Ghana, 2006		
Staple	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National
Maize									
Maize grain (white & yellow)	85.7	89.4	89.0	15.6	23.2	20.7	31.2	48.3	40.2
Processed/prepared forms	14.3	10.6	11.0	84.4	76.8	79.3	69.8	51.7	59.8
Millet[a]									
Millet Grain	46.1	92.7	80.5	25.1	30.4	27.1	–	–	–
Processed/prepared forms	53.9	7.3	19.5	74.9	69.6	72.9	–	–	–
Sorghum[a]									
Sorghum grain (white & red)	a	a	a	26.4	30.6	29.5	–	–	–
Sorghum flour	a	a	a	73.6	69.4	50.5	–	–	–
Cassava									
Fresh cassava	–	–	–	26.1	52.7	40.8	39.7	48.3	44.0
Processed/prepared forms	–	–	–	73.9	47.3	59.2	60.3	51.7	56.0

Source: Calculated from data in Taondyandé and Yade, 2012b
[a] Figures for Senegal are for millet and sorghum combined

and populations become more urbanised, there will be a strong growth in the demand for processing services for such staples.

6.3.2 Fruits and vegetables

Appendix Table A6.1 (p.165) shows that across all seven countries surveyed in the 2000s, the share of the food budget allocated to fruits and vegetables was nearly constant across all income classes in urban areas. This finding implies that per capita fruit and vegetable expenditures in urban areas increase roughly proportionally with income growth. In rural areas, the pattern is less uniform, with the budget share allocated to fruits and vegetables decreasing as rural incomes rise in Burkina Faso, Ghana, and Mali; increasing in Côte d'Ivoire, Niger and Togo; and holding steady across the different income quintiles in Senegal (Appendix Table A6.2, p.165). Except for Burkina Faso, however, the changes in the fruit and vegetable budget shares were very modest across income groups in rural areas.

Even though the short-run relationship between income levels and fruit and vegetable expenditures is uneven across countries, as revealed in the cross-sectional surveys of the 2000s discussed above, the longer-term relationship, as revealed by comparing surveys over time, appears to be strongly positive. The comparison of the budget-consumption studies from the late 1980s and early 1990s with those in the 2000s reveal that for urban areas, budget shares allocated to fruits and vegetables increased over time in Côte d'Ivoire, Ghana and Senegal and declined slightly in Mali. The only substantial reduction in urban budget share going to fruits and vegetables was in Burkina Faso, where it fell from 9.0% in 1994 to 8.1% in 2009. The latter year was one of high staple food prices; as mentioned earlier, it appears that Burkinabé consumers tried to deal with the higher staple food prices by cutting back expenditures on other products. In rural areas, the budget shares going to fruit and vegetable expenditures increased in four of the six countries, held steady in Senegal, and declined only in Mali. The crop year 2005/06 in Mali was marked by high prices due to drought and locust attacks, which may have caused Malian consumers to devote a higher proportion of their budget to basic staples. Overall, then, the budget-consumption study results appear consistent with the FBS analysis presented in Chapter 5 that showed fairly broad-based increases in apparent per capita fruit and vegetable consumption across the region over the past 30 years.

6.3.3 Animal products, including fish

The most dramatic findings that emerge from Appendix Tables A6.1 and A6.2 concern the strong increase in expenditure shares for meat, fish, and dairy products as incomes increase. In both urban and rural settings, the budget shares allocated to animal products rise with growing incomes. In urban Burkina Faso, Mali, Niger, and Senegal, budget shares allocated to animal products more than double between the poorest 20% of the population and the richest 20%. In rural areas, the increases are slightly lower yet still substantial. Only in urban Ghana (where per capita incomes were highest among the seven countries) and rural Niger (which has a large pastoral population) do budget shares for animal products remain fairly stable across income groups (implying, nonetheless, increases in absolute consumption as incomes rise). Overall, the figures reflect a strong desire by consumers to upgrade the quality of their diet by increasing consumption of animal protein as their incomes increase.

In four of the six countries for which data are available, Table 6.4 shows that urban consumers increased the proportion of their food budget going to animal products over time. The two exceptions were Burkina Faso and Nigeria, where higher starchy staple prices in 2009/10 may have forced consumers to reallocate their food budgets to those staples to defend their basic calorie consumption. In rural areas, the food budget shares allocated to animal products increased over time only in Côte d'Ivoire and Mali (Appendix Table A6.4, p.167). Because incomes were growing over time, however, absolute per capita expenditures on animal products increased in all urban and rural areas of the countries covered by the ReSAKSS study except rural Senegal, where they remained unchanged (Taondyandé and Yade, 2012b). In relative terms,

the most consistent increase in budget share across countries was for dairy products (driven largely by increased expenditures for imported milk powder). Both budget shares and absolute expenditures for dairy products increased across all rural and urban areas of the five countries surveyed except for rural Burkina Faso and rural Senegal, where they declined.

Across the five countries analysed by the ReSAKSS study, the absolute expenditures per capita for meat and poultry increased over time in all urban and rural areas except rural Senegal, where they declined slightly. In relative terms, meat and poultry accounted for the largest share of expenditures on animal protein in urban Burkina Faso, Côte d'Ivoire, and Mali in the late 1980s/early 1990s, while fish absorbed the highest proportion of the animal protein budget in Ghana and Senegal. By 2008, the data indicate a massive shift in relative budget shares towards fish in both urban and rural Côte d'Ivoire (which ReSAKSS attributes to increased consumption of inexpensive frozen fish – as suggested by a strong growth of fish imports during this period from 9.4 kg to 17.9 kg per capita) and a decline in the budget share going to red meat and poultry (Appendix Tables A.6.3 and A6.4). This substitution may have been due in part to the disruption of the livestock trade from Burkina Faso and Mali to Côte d'Ivoire as a result of the Ivorian conflict. In urban Senegal, there was a modest increase in the total food budget share going to meat and poultry between 1994 and 2002, but the budget shares of all other animal protein products also increased over that period, so the share of meat and poultry expenditures as a percentage of total animal protein expenditures remained stable. In contrast, in rural Senegal, the total budget share (as well as absolute expenditures) going to animal protein fell sharply between 1994 and 2002. This was largely driven by a decline in meat consumption, as both the budget share and the absolute expenditures on fish and seafood increased.

Ghana experienced an increase in the overall share of the food budget going to animal products between 1992 and 2006. In urban Ghana, relative shares of the total expenditures on animal products were remarkably stable over time. In rural Ghana, there were modest increases in the shares going to meat and dairy products and a small decline in the relative share of fish expenditures between 1992 and 2006. Nonetheless, in 2006, fish still accounted for 73% of animal protein expenditures in rural Ghana and 55% in urban Ghana.

Unfortunately, the ReSAKSS analysis did not disaggregate meat expenditures between red meat and poultry, so it is not possible to use these data to examine the degree to which imported frozen poultry has substituted for either red meat or fish, as suggested in Chapter 5. We will examine that question in more detail in Chapter 7 based on interviews with consumer focus groups in Accra and Lagos.

6.4 Quantifying the relationship between income growth and demand

In order to quantify how demands for different types of food groups are likely to change as per capita incomes increase in the region, ReSAKSS used the budget-consumption data to estimate income elasticities of demand and marginal budget shares (MBS) for the various urban and rural income groups. Income elasticities of demand and MBS both express the relationship between per capita income growth and growth in demand for different products, but they express the relationship in different ways. Income-elasticities of demand show the percentage growth in the expenditures for a product or food group given a one percent change in income. In contrast, marginal food-budget shares show the share of any additional spending on food that will go to a given product or food group (see Box 6.1).

6.4.1 Income elasticities of demand

ReSAKSS reports that the estimated income elasticity of demand of food as a whole is approximately 1.0 for the set of countries analysed, ranging from 0.7 for Senegal to 1.1 in Togo. In contrast, estimates of the income elasticity of demand for all food, beverages and tobacco in high-income countries range from about 0.35 to 0.50 (ERS, 2012). The

Box 6.1 Income elasticity of demand and marginal budget shares

The income elasticity of demand is the ratio of the percentage change in the expenditures for a given product or food group to the percentage change in per capita income.[1] The elasticity thus expresses how quickly, in percentage terms, demand for the product changes as the rate of income growth changes. The basic relationships are shown in the table below. In high-income countries, income elasticities of demand for staple foods are typically very low (under 0.2) and often negative (ERS, 2012). The higher the elasticity, the faster will be the growth of demand as per capita incomes increase.

In a few cases, demand for a product may actually fall as incomes increase, as consumers shift to more preferred substitutes. Economists refer to such products as "inferior goods."[2]

Meaning of different values of the income elasticity of demand

Income elasticity of demand value (η)	Meaning
$0<\eta<1$	Demand grows as per capita income increases, but at a slower rate than income growth
$\eta>1$	Demand grows at a faster rate than per capita income growth
$\eta<0$	Demand falls as per capita incomes increase ("inferior good")

An example illustrates the use of these elasticities in quantifying future growth in demand for various products. The ReSAKSS study estimated the income elasticity of demand for meat products in urban Burkina Faso at 1.4 (Table 6.7). If per capita incomes in Burkina Faso increase at 2.4% per year (the rate projected by the UN Population Division for the period 2010-30) and the urban population grows at 5.4% per year (also a UN projection), then total demand for meat products in urban Burkina Faso will increase at 5.4% + 2.4% x 1.4 = 8.76% per year – a rate that would result in the doubling of demand every eight years.

The marginal budget share (MBS) for a food group expresses the percentage of a given increase in total expenditures (either for all consumption or for all food items) that will be spent on a particular food group. For example, if total per capita consumption expenditures in Ghana increased by 100 cedis and consumers spent 5 of those cedis on additional purchases of rice, the MBS for rice would be 5. Alternatively, the MBS can be defined with respect to changes in total food expenditures rather than all consumption expenditures. In that case, it is referred to in this report as the marginal food-budget share (MFBS). The MFBS represents the percentage of any additional spending on food that will go to a particular food item. For example, if out of an increased total food expenditure of 100 cedis per capita, our Ghanaian consumer spent 10 cedis on rice, the MFBS for rice would be 10.

1 In the budget-consumption studies analysed in this study, total per capita expenditures on all goods and services are taken as a proxy for per capita income.
2 The term "inferior good" is not meant to convey any connotation about the nutritional quality of the product in question. Indeed, in early stages of economic growth, consumers often shift their purchases from whole-grain products to products based on more highly refined flours. Although in economic terms the whole-grain products are "inferior goods", from a nutritional standpoint they are often superior to the highly refined products.

high income elasticity of demand for food in aggregate in West Africa implies that per capita demand for food will increase at roughly the same rate as growth in per capita incomes. This is consistent with the description given earlier in this study of a mass market in which many consumers are still trying to expand their basic intake of food as their incomes rise.

Table 6.7 presents the estimates of income elasticities of demand for the different foods in rural and urban areas of each country. Several salient features emerge from this table:

- Elasticities are high for almost all food products, sometimes exceeding 1.0. This implies that per capita expenditures on these items will grow at a faster rate than per capita income growth. This applies particularly to wheat products, meat, dairy products, beverages and stimulants, and fruits and vegetables, as well as for outside dining.

- The main exception is millet and sorghum (taken together), which, excluding Niger, has a low to moderate income elasticity of demand in most countries. The data indicate that in urban Burkina Faso millet and sorghum is an inferior good, with consumers decreasing their consumption of it as incomes increase. Only in Niger, where millet and sorghum remains the main staple and a significant part of the rural population remains undernourished, does the elasticity of demand exceed 0.5. The elasticity estimates indicate that even for Niger, however, demand for all other staples will grow at a faster rate as incomes increase than will the demand for millet and sorghum. Other commodities with income elasticities below 1.0 in most or all countries include maize and sugar.

- Elasticities for almost all food groups are higher in rural areas than in urban areas. In part, this likely reflects lower per capita incomes in the rural areas, as poorer people tend to increase their food consumption more than the rich as incomes increase. But it also indicates that the structural transformation of West African diets described earlier (more consumption of wheat and rice, increased fruit, vegetable, meat, dairy products, oils, and sweeteners) is not just an urban phenomenon. Rural residents are also changing their diets as their incomes increase, often at a faster rate than their urban counterparts. One implication of this finding is that even though West Africa is becoming increasingly urbanised, improvements in food marketing and processing systems need to occur in rural as well as urban settings, as rural residents are also demanding an increasingly diversified diet.

- Looking at individual staples, elasticities are high across all countries for wheat products and for rice in most countries (especially in rural areas). The elasticities for rice and wheat products exceed 1 in both rural and urban areas of Ghana, suggesting further rapid growth in demand for those products if Ghana continues its solid economic growth. The income elasticities of demand for yams and cassava are also very high for Ghana, exceeding those for wheat and rice in the rural areas and being amongst the highest for any of the staples in the seven countries studied.

- Elasticities for cassava and yams were estimated for only three countries. The elasticities are lowest in Côte d'Ivoire (0.5 to 0.7), are greater in Togo (0.7 to 1.4), and, as mentioned earlier, are very high in Ghana (1.0 to 2.2). In all countries, the elasticities are higher for yam than for cassava, indicating that even though cassava is the focus of several production initiatives, future income growth may also put upward pressure on the price of yams.

- The high elasticities for fruits and vegetables (close to or above 1.0 for most countries), oils and oilseeds, sugar and beverages are all broadly consistent with the picture of growing demand for these products that emerged from the food balance sheet analysis presented in Chapter 5.

- Elasticities are very high for animal products, particularly for meats (red meat plus poultry) and dairy products. The higher elasticities for

these meats and dairy products relative to fish is consistent with the story that emerged from the FBS analysis of increased consumption of these products relative to fish in several of the countries analysed.

- Expenditures on outside dining were analysed only the surveys for Côte d'Ivoire and Togo, but the elasticities that emerged were the highest of any food category – nearly 4.0 in Côte d'Ivoire. These figures presage a potentially explosive growth in the demand for restaurant and street-food dining as incomes increase.

- Although the analysis carried out on the budget-consumption data focuses on commodity groups rather than processed products, some insight into the potential demand for processed products can be gained by looking at the elasticities for wheat products, dairy products, and outside dining. Practically no wheat is consumed in the region as grain; most is consumed as bread, noodles, or pasta. Similarly, most dairy products consumed in the region are in processed form, primarily milk powder. Hence, the demands for wheat and dairy products are largely demand for processed products. Similarly, outside dining involves consumption of processed products (along with the associated services of being served and entertained by the experience). It is telling that the elasticities for this combination of goods are the highest of any food groups in the diet, suggesting that as incomes grow, the demands for processed foods are likely to grow extremely rapidly.

6.4.2 Marginal food-budget shares

The MFBS more accurately reflect absolute increases in expenditure on a given food group as incomes increase, as a lower percentage increase in a large-expenditure item (such as rice) often absorbs more of any increment in food spending than does a large percentage increase in a low-expenditure item (such as wheat).

Table 6.7 *Income elasticities of demand for food products, by country and place of residence*

	Burkina Faso		Côte d'Ivoire		Ghana		Mali		Niger		Senegal		Togo	
Product	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Rice	0.9	1.4	0.4	0.7	1.25	1.17	0.5	1.2	0.8	1.4	0.6	0.9	0.8	1.2
Wheat products	1.5	1.7	1.0	1.2	1.11	1.24	1.3	0.8	1.7	1.5	0.7	1.1	1.2	2.0
Maize	0.4	0.7	0.0	0.5	0.74	0.81	0.4	0.5	0.8	1.3			0.2	0.7
Millet and sorghum	-0.2	0.6				0.19	0.2	0.5	0.5	0.9	0.5	0.9	0.5	0.6
Cassava			0.5	0.7	0.98	1.65							0.7	1.1
Yam			0.6	0.5	1.27	2.19							1.0	1.4
Banana-plantains			0.6	0.7	0.37	1.31								
Beans/cowpeas									0.6	1.1			0.5	1.0
Pulses							0.7	1.1						
Fruits and vegetables	0.9	1.0	0.8	0.9	0.94	1.31	0.7	0.7	1.0	1.3	1.0	1.4	1.0	1.1
Oils and oilseeds	0.9	1.1	0.6	0.7	0.51	0.88	0.7	0.9	1.1	1.2	0.6	1.0	0.8	1.0
Meat	1.4	1.5	1.0	1.2	1.16	1.46	1.0	1.3	1.3	1.3	1.3	2.4	1.3	1.6
Fish and seafood	0.9	1.2	0.7	0.8	0.99	0.89	0.6	0.9	0.9	1.0	1.0	0.9	1.0	1.2
Dairy products	1.5	1.3	1.3	1.4	1.34	0.51	1.1	1.3	1.2	0.9	1.1	2.1	1.7	2.1
Sugar							0.6	0.8			0.6	1.0		
Beverages and stimulants	1.0	1.1	1.3	1.3	1.81	1.61			1.1	1.4			1.3	1.1
Outside dining			3.2	4.3									1.6	1.3
Other food products	0.7	1.0	1.2	1.5	1.67	1.37	0.8	0.9	1.0	1.1	1.0	0.9	0.9	0.9

Source: Taondyandé and Yade, 2012b

Figures 6.1 through 6.4 display the calculated MFBS for the survey countries, both in rural and urban areas. The stories that emerge from these figures are similar to those from the elasticity analysis, but give a better picture of the magnitude of the absolute changes in demand for the different food groups as total spending on food increases.

Starchy staples

The MFBS for starchy staples (Figures 6.1 and 6.2) are striking in several respects.

- The strong potential future demand for rice is evident, both in rural and urban areas. In Mali, for example, urban consumers would spend 14% of any increase in per capita food expenditures on rice; in rural Mali, the figure is 25%. In four of the seven countries, the MFBS for rice are higher in rural areas than in urban areas, indicating that rural consumers in these countries are more eager, given an increase in income, to raise their per capita rice consumption than are their urban counterparts.[52] Thus, the increase in rice consumption around the region is a rural-driven as well as an urban-driven phenomenon.

- The strong desire by rural residents of Burkina Faso and Niger for additional calories is evident in the very high MFBS for all starchy staples, especially millet and sorghum. Over 40% of any additional food expenditures in rural Burkina would go to staples (24% to millet and sorghum); in rural Niger, the corresponding figures are 59% for all starchy staples and 42% for millet and sorghum. Thus, while the long-term demand perspective for these cereals is not vibrant for urban areas (for example, the MFBS for millet and sorghum in urban Burkina is negative – indicating that per capita consumption falls as the food budget expands), they remain important and potentially growing sources of calories for poor rural populations in these inland Sahelian countries.

- The MFBS for wheat is larger in urban areas than in rural areas of all the countries analysed except Ghana, reflecting the current low levels of wheat consumption in the rural areas. In the urban areas, the MFBS for wheat varies between 3.5 and 7.1% except for Mali, where it is under 1%. But in Niger and Mali, the MFBS for maize in urban areas exceeds that of wheat, indicating that as urban Malians and Burkinabé spend more money for food, they will increase expenditures for maize more they will for wheat products. In rural areas, the maize MFBS exceeds that of wheat for all countries for which data are available except for Ghana, where the MFBSs are roughly comparable. Taken together, these findings imply that as total expenditures on food increase, spending for maize, in absolute terms, will grow more than that for wheat products in almost all the countries analysed here.

- In the three countries for which data are available on roots and tubers (Côte d'Ivoire, Ghana and Togo), the MFBS for yams and cassava exceed those of wheat in rural areas, and, for Ghana, in urban areas as well. In rural Ghana, MFBS for cassava is close to that for rice. In urban Togo, the MFBS for yams exceeds that for wheat, while in urban Côte d'Ivoire, the MFBS for cassava is only slightly lower than that for wheat. These figures indicate that as total food expenditures grow, expenditures for cassava and yams will grow, in absolute terms, at a pace at least comparable to that of wheat (but less than that for rice) in these coastal countries.

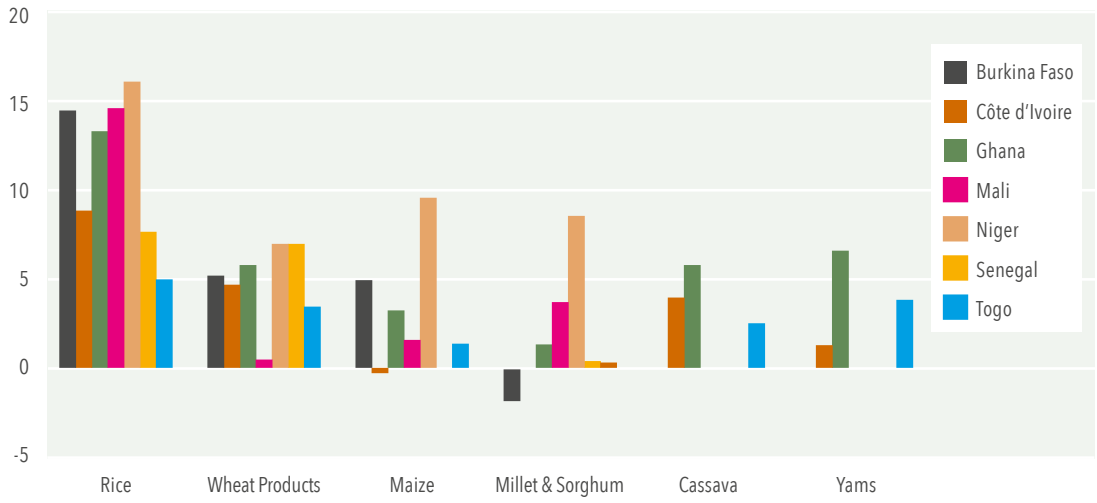
Animal products

Figures 6.3 and 6.4 present the MFBS for animal products, which indicate the proportion of any increase in food expenditures that would go to animal products. The elasticity estimates showed that these were among the products whose demand, in percentage terms, would grow the fastest as per capita incomes increased. The following observations stand out from these MFBS:

- The MFBS for animal products in total are high, especially in urban areas, ranging from 20% in Togo and Niger to 44% in Senegal,

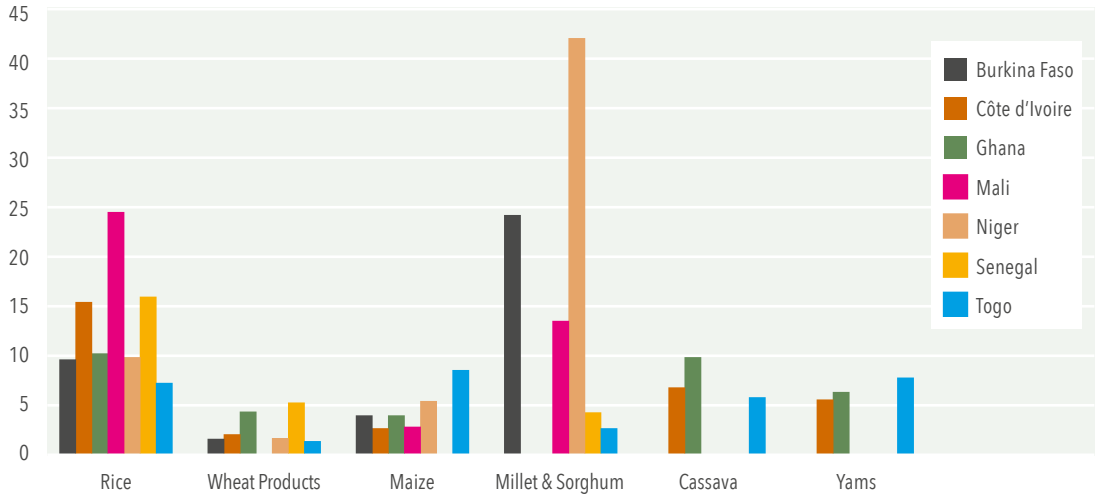
52 The rural consumers are starting from a much lower initial level of per capita rice consumption; their higher MFBS indicate that they are trying to "catch up" with the urban pattern of consumption.

Figure 6.1 *Marginal food-budget shares for basic staples in urban areas*



Source:Taondyandé and Yade, 2012b.
Data from the following years:
Burkina Faso (2002), Côte d'Ivoire (2008), Ghana (2006), Mali (2006), Niger (2005), Senegal (2002), and Togo (2006).

Figure 6.2 *Marginal food-budget shares for basic staples in rural areas*

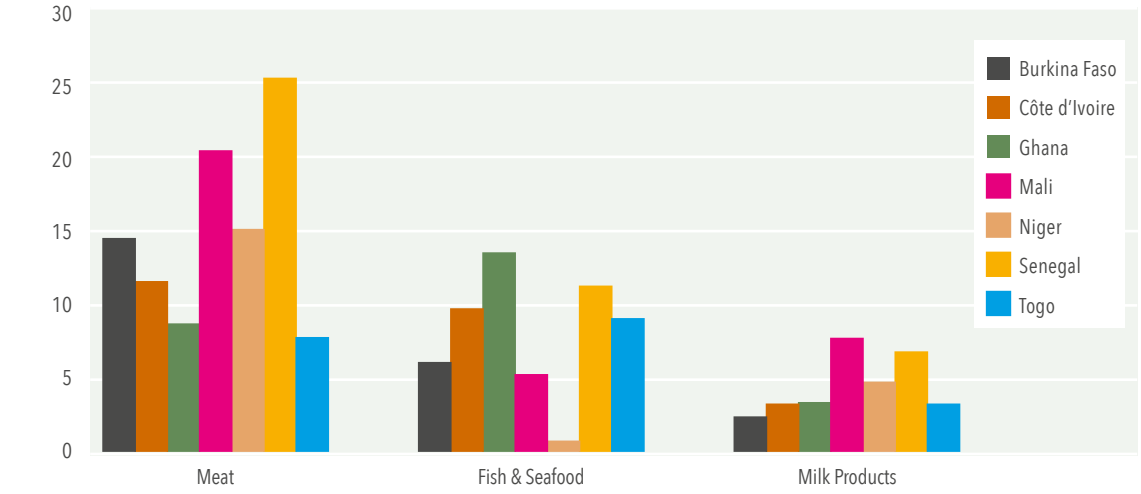


Source:Taondyandé and Yade, 2012b.
Data from the following years:
Burkina Faso (2002), Côte d'Ivoire (2008), Ghana (2006), Mali (2006), Niger (2005), Senegal (2002), and Togo (2006).

indicating that a substantial share of additional spending on food would go to these products.

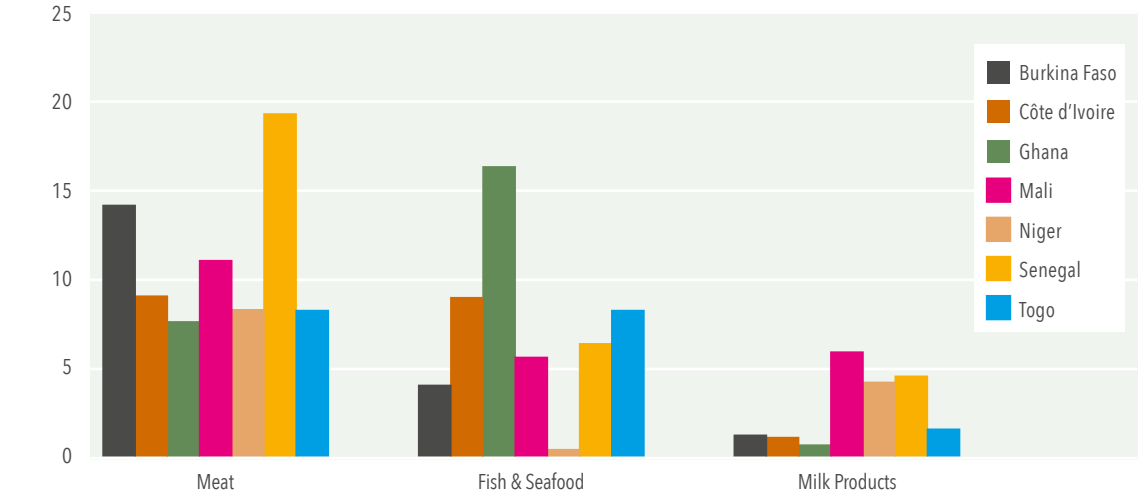
» In both urban and rural areas, the MFBS are highest for meats (red meat and poultry meat combined), followed by fish and then dairy products. Even though the income elasticities of demand for dairy products generally exceeded those of meat (indicating that expenditures on dairy products would increase at a faster percentage rate than would expenditures on meat as incomes increased), the MFBS indicate that the absolute volume of expenditures on meat products would increase at more than double the pace of spending on dairy products. This suggests that the infrastructure to handle meat marketing will have to expand more, in absolute terms, than will that for dairy products.

Figure 6.3 *Marginal food-budget shares for basic animal products in urban areas*



Source:Taondyandé and Yade, 2012b.
Data from the following years:
Burkina Faso (2002), Côte d'Ivoire (2008), Ghana (2006), Mali (2006), Niger (2005), Senegal (2002), and Togo (2006).

Figure 6.4 *Marginal food-budget shares for basic animal products in rural areas*



Source:Taondyandé and Yade, 2012b.
Data from the following years:
Burkina Faso (2002), Côte d'Ivoire (2008), Ghana (2006), Mali (2006), Niger (2005), Senegal (2002), and Togo (2006).

- The absolute volume of expenditures on meat in response to an increase in incomes would also be greater than that on fish for every country except Ghana and Togo.

- For almost every product in every country, the MFBS for animal products in urban areas are higher than those in rural areas, reflecting the higher initial levels of consumption of animal products in urban areas and the priority given by consumers in some countries, such as Burkina Faso and Niger, to spend a large part of any increments of their food budget on starchy staples. The higher MFBS in urban areas, combined with rapid urbanization in these countries, suggest that a large proportion of the future increases in expenditures on animal products will take place in urban areas.

Other products

MFBS for fruits and vegetables, on a national level, range from a little over 5% in Mali and Niger to nearly 14% in Togo, Ghana and Côte d'Ivoire, with the figures higher in urban areas than in rural areas for every country except Ghana. These figures point to a potentially robust increase in absolute expenditures for fruits and vegetables in urban areas in response to income increases, generally exceeding that for fish and dairy products. This strong growth suggests the potential for fruit and vegetable value chains to be important future sources of income and employment. MFBS for oils and oilseeds are generally lower, ranging at a national level from 4 to 7%. In the four coastal countries (Senegal, Ghana, Togo and Côte d'Ivoire) where palm oil and peanut oil are traditional parts of the diet, these MFBS are higher in rural areas than in urban areas, while the reverse is true in the three inland countries of Burkina, Mali, and Niger. The MFBS for meals taken outside the home are extremely high in Côte d'Ivoire and Togo, the only two countries where this item was covered in the surveys. In urban Togo, almost 30% of any increment in spending on food would go to such meals, while in urban Côte d'Ivoire, the figure was 17%. This finding, like the elasticity data, suggests that as incomes increase, there could be an explosive growth in the demand for prepared foods, particularly in the cities.

6.5 Synthesis: main findings and policy implications

The analysis of budget consumption surveys revealed that the overall share of food in total household expenditures remains high, ranging from 39% in Côte d'Ivoire to 65% in Nigeria during the last decade. While food expenditures shares decline as incomes grow, this decline is limited over the first four income quintiles, where it remains above 50% in all countries except Côte d'Ivoire. The decline is more noticeable between the fourth and the fifth income quintile given that the middle and upper income segments largely fall into the top income quintile. Two policy implications result: First, the high share of food in total household expenditures makes large population groups vulnerable to food price increases. Hence, the scope for encouraging domestic food production through higher prices (e.g. by increasing import tariffs) may be very limited from a political standpoint. Second, the high food expenditure shares even in the fifth quintile translate into a disproportionally high share of middle- and upper-income households in total food expenditures and growing domestic food markets. Understanding this demand in terms of quality, safety and presentation of food products is key from a domestic food policy perspective, aimed at successfully competing against imports.

Concerning food commodity groups, cereals accounted for the largest share of total food expenditures in seven out of nine countries covered by the surveys analysed in this chapter, followed by livestock and fish. Only in Ghana and Benin did livestock and fish constitute the largest expenditure category, followed by cereals (in Ghana) and roots and tubers (in Benin). In Nigeria, expenditures on roots and tubers were only slightly below those on cereals. Food expenditures were more diversified in the coastal states than in inland Sahelian countries. Within the cereals group, rice had the largest share in the urban food expenditures in five of the nine countries. Moreover, in most countries, the poorest income quintiles spent similar or larger shares of their food budgets on rice than did higher income quintiles. This shows the importance of rice as a convenience food even for the poor. In Senegal, the country with the highest per capita rice consumption among the survey countries, urban budget shares devoted to rice fell sharply as incomes rose. This suggests that urban Senegalese households gradually substitute higher value food such as livestock products for rice as their incomes increase. Similar trends with respect to budget shares were found for Ghana and Côte d'Ivoire for starchy staples as a group. However, even though budget shares for these staples fell as incomes rose, per capita expenditures still increased in absolute terms with rising incomes. This confirms that middle- and upper-income households remain very important sources of demand for starchy staples in these countries.

In rural areas, rice and wheat are less important than in urban areas. However, the comparison with earlier survey data shows their growing importance for all income segments. Millet and sorghum and, to a lesser degree, maize still account for important shares in rural food budgets in inland Sahelian countries. Wheat consumption remains under 2% of food expenditures except in Senegal. In all countries, higher income quintiles spent more on wheat then did their poorer peers, both in rural and urban areas. This suggests that one can expect strong increases in wheat demand with growing incomes, albeit from a much lower base than rice. Only in urban Senegal, with the highest wheat consumption level among surveyed countries, does the share of the food budget devoted to wheat products decline slightly with rising incomes. Food expenditure shares for fruits and vegetables increased over time in the six countries (including Nigeria) for which two surveys were available. No marked differences between income segments could be found. In turn, expenditure shares for meat, fish and dairy products increased strongly with rising incomes in both urban and rural areas. As shown by the food balance sheet analysis, the relative importance of fish and meat varies between countries. While in Senegal in Ghana, expenditure shares of meat increased at the expense of fish, the opposite trend could be observed in Côte d'Ivoire.

Income elasticities were high for most food commodities, including wheat products, meat, dairy, beverages, fruits and vegetables. Income elasticities were higher in rural than in urban areas. This suggests that rural income growth would induce a disproportionate increase in food demand accompanied by a rapid change in the composition of the food basket. The analysis of marginal food budget shares shows the strongest market growth potential for animal products, followed by rice, fish, and fruits and vegetables. Producing and marketing such products is labour-intensive and thus offer potential for substantial job creation if the demand can be met through local production rather than imports. Such products are also highly perishable and thus require tight coordination of their value chains if they are to deliver quality products and avoid food-safety problems.

While in percentage terms, wheat consumption is growing quickly as incomes increase, in some of the countries surveyed, maize, yam and cassava expenditures are projected to grow in absolute terms as much or more than expenditures on wheat. Finally, the studies point out that the demand for processed forms of staple foods and for food eaten away from home is strongly responsive to increases in income, pointing to potentially very rapid increases in the demand for processing and marketing services, particularly in urban areas, as per capita incomes grow. A key variable driving this shift is the opportunity cost of time, particularly of women, who do most of the food preparation in the subregion. In countries where many people, especially poorly educated young women, have few opportunities for remunerative employment, the demand for processed products remains limited, as home processing is a cheaper alternative. In contrast, in countries such as Ghana, where incomes are rising rapidly and urban women have more employment opportunities outside the home, the growth in demand for processing services expands rapidly. This shift suggests that if West Africa succeeds in sustaining strong, broad-based income growth, there will likely be an explosive growth in the demand for processed staple food products, particularly in urban areas.

In order to understand more about the nature of these demands for processed products and food eaten away from home, as well as shifting demands for different types of animal products in dynamic urban settings, Chapter 7 analyses information gleaned from discussions with consumers and retailers in urban Ghana and Nigeria.

Appendix to Chapter 6

Appendix Table A6.1 *Percentage of the food budget allocated to different foods, by income group, in urban areas (%)*

Country	Quintile (urban)	Rice	Maize	Millet/ sorghum	Wheat	Roots & tubers	Total starchy staples	Fruits & vegetables	Animal products
Burkina Faso (2009)	1	16.4	16.6	14.6	2.3	0.6	50.5	8.7	6.8
	2	18.9	18.1	14.8	2.4	0.4	54.6	7.6	7.5
	3	21.7	16.2	9.1	3.6	0.7	51.3	8.5	8.8
	4	21.8	15.4	5.9	4.4	0.8	48.3	8.9	11.8
	5	25.2	16.6	3.1	5.2	1.1	51.2	7.6	16.1
Côte d'Ivoire (2008)	1	24.9	5.6	0.4	2.3	12	45.2	16.2	18.4
	2	23.7	3.9	0.6	3.3	10.6	42.1	16.6	21.3
	3	20.8	2.3	0.4	3.8	10	37.3	16.8	24.1
	4	17.2	1.8	0.4	4.4	9.6	33.4	17.3	26.2
	5	13.5	1.0	0.4	4.7	8.0	27.6	17.0	29.5
Ghana (2006)	1	13.9	8.1	0.5	5.4	13.0	40.9	14.9	25.6
	2	12.5	6.8	0.2	5.7	14.4	39.6	14.1	26.7
	3	12.2	5.5	0.2	6.1	12.3	36.3	14.2	28.4
	4	11.6	4.8	0.3	5.7	12.6	35.0	13.8	29.1
	5	11.1	3.7	0.1	5.9	12.9	33.7	13.3	27.4
Mali (2006)	1	20.5	5.5	14.8	3.8	1	45.6	11.1	16.1
	2	24.8	2.5	13.5	4.5	1.4	46.7	10.8	17.5
	3	22.5	2.7	11.5	3.9	2.3	42.9	11.6	20.7
	4	21.9	2.1	8.2	5.0	3.2	40.4	12.3	22.2
	5	14.0	1.9	6.3	4.8	3.8	30.8	11.5	36.5
Niger (2005)	1	18.7	10.6	29.9	1	0.8	61.0	7.1	7.8
	2	21.2	11	22.2	1.8	0.5	56.7	6.9	10.4
	3	20.4	11.5	18.8	2.4	0.9	54.0	7.6	12.7
	4	18.7	11.2	14.9	4.2	1.3	50.3	8.4	14.3
	5	16.1	10.1	10.4	5.8	1.7	44.1	9.6	19
Senegal (2002)	1	18.9	0.1	3.1	11.3	2.3	35.7	12.4	9.3
	2	15.3	0.1	2.6	12.8	2.6	33.4	13.3	12.7
	3	13.5	0.2	2.4	13.1	2.7	31.9	13.3	16.2
	4	10.9	0.2	1.9	11.8	3	27.8	14.4	20.4
	5	12.7	0.2	1.3	9.1	3.1	26.4	14.6	27.5
Togo (2006)	1	7.5	11.1	1	1.4	8.9	29.9	16.4	13.2
	2	7.8	8.6	0.8	2.6	8.4	28.2	15.6	15.5
	3	7	7.4	0.5	3.4	8.6	26.9	15.7	17.7
	4	6.9	5.8	0.2	3.6	8.2	24.7	16.4	19.2
	5	5.6	4	0.2	4.1	8.1	22.0	16.1	22.1

Source: Adapted from Taondyandé and Yade, 2012b

Appendix Table A6.2 *Percentage of the food budget allocated to different foods, by income group, in rural areas*

Country	Quintile (rural)	Rice	Maize	Millet/ sorghum	Wheat	Roots & tubers	Total starchy staples	Fruits & vegetables	Animal products
Burkina Faso (2009)	1	5	7.3	35	1.2	0.4	48.9	7.1	7.3
	2	5.9	9.2	38.7	1.1	0.3	55.2	6.5	7
	3	7.4	10.5	36.4	1.3	0.6	56.2	5.7	7.2
	4	8.5	10.2	33.9	1.5	0.6	54.7	5.4	9.3
	5	10.2	10.2	35.8	1.5	0.6	58.3	4.4	10.2

Appendix Table A6.2 *Percentage of the food budget allocated to different foods, by income group, in rural areas (continued)*

Country	Quintile (rural)	Rice	Maize	Millet/ sorghum	Wheat	Roots & tubers	Total starchy staples	Fruits & vegetables	Animal products
Côte d'Ivoire (2008)	1	21.9	10.3	0.8	1.1	16.9	51.0	13.7	14.7
	2	21.2	7.4	0.8	0.9	21.6	51.9	13.2	16.4
	3	20.4	5.4	0.3	1.4	20.2	47.7	15	17.3
	4	19.9	4.7	0.3	1.7	20.8	47.4	14.6	18.8
	5	17	3.9	0.4	2.2	16.3	39.8	14.2	22
Ghana (2006)	1	8.6	9.3	6.3	2.8	5.1	32.1	15.7	24.6
	2	10.1	7.5	1.5	3.9	8.1	31.1	15.4	31.5
	3	11.6	6.9	0.8	4.1	9.9	33.3	14.3	32.7
	4	10.6	6	0.7	4.4	12.1	33.8	14.7	31.3
	5	10.5	5.3	0.5	4.6	13.3	34.2	13.3	30.7
Mali (2006)	1	10.6	6.1	29.1	1.6	1	48.4	9	13.1
	2	14.2	4.9	28.1	1.9	0.7	49.8	8	14.8
	3	17.6	5.4	24.6	2	1.1	50.7	8	14.8
	4	17.4	5.7	24.1	2.2	0.9	50.3	7.3	16.5
	5	19.5	3.7	17.4	3	1.3	44.9	7.9	22.6
Niger (2005)	1	4.2	4.2	58.1	0.4	0.6	67.5	2.5	10.1
	2	5	3.7	56.8	0.5	1	67.0	3.1	10.2
	3	6.4	4.4	54.4	0.8	0.6	66.6	3.1	11.2
	4	7.2	3.8	50.3	1.4	0.7	63.4	4	11.1
	5	8.9	5.5	44.1	1.6	0.8	60.9	4.7	12.2
Senegal (2002)	1	25.8	1.1	10	4.5	1.3	42.7	9.9	3.6
	2	21.5	1.2	8.5	6.8	1.8	39.8	10.8	4.6
	3	21.8	1.2	7.6	7.5	1.9	40.0	11	4.9
	4	20.7	0.9	7.6	7	1.9	38.1	11	6
	5	22.6	0.6	6.3	7.6	1.9	39.0	10.4	8.4
Togo (2006)	1	6.5	11	1.6	0.5	5.3	24.9	10.7	12.5
	2	7.4	8.3	1.2	0.8	6.7	24.4	12.4	12.8
	3	7.8	7.5	0.8	1	7.2	24.3	13.7	14.5
	4	8	8	0.8	1.6	7.5	25.9	13.2	14.7
	5	7.9	5.8	0.9	2.2	8.3	25.1	13.8	18.8

Source: Adapted from Taondyandé and Yade, 2012b

Appendix Table A6.3 *Evolution of the percentage of food expenditures on different food items in urban areas (%)*

	Burkina Faso		Côte d'Ivoire		Ghana		Mali		Senegal	
Product	1994	2009	1993	2008	1992	2006	1989	2006	1994	2002
Cereals	**36.9**	**52.2**	**32.9**	**24.8**	**20.5**	**23.1**	**29.6**	**36.4**	**32.1**	**26.9**
Rice	15.8	22.6	11.3	18.1	7.9	11.8	14.9	19.5	17.1	13.3
Maize	7.6	16.5	2.9	2.2	7.2	4.9	1.5	2.5	0.1	0.2
Millet and sorghum	9.9	6.7	0.2	0.4	0.2	0.2	11.0	9.4	2.1	1.9
Wheat products	2.9	4.3	18.5	4.1	4.7	5.8	2.0	4.5	12.1	10.9
Other cereal products	0.6	2.1			0.4	0.4	0.2	0.4	0.6	0.6
Roots, tubers, & plantains	**1.9**	**0.9**	**8.8**	**12.1**	**21.0**	**15.6**	**1.6**	**2.8**	**2.4**	**2.9**
Cassava & cassava products			3.0	5.5	8.3	6.7				
Yam & yam products			2.8	3.3	7.4	5.9				
Other roots & tubers			0.4	0.7	1.4	0.4				

Appendix Table A6.3 *Evolution of the percentage of food expenditures on different food items in urban areas (%) (continued)*

	Burkina Faso		Côte d'Ivoire		Ghana		Mali		Senegal	
Product	1994	2009	1993	2008	1992	2006	1989	2006	1994	2002
Plantains			2.5	2.6	3.9	2.7				
Pulses	2.3	3.3					0.7	1.3	0.3	0.4
Oils and oilseeds	8.1	5.7	5.2	6.6	5.6	4.7	7.8	5.6	13.5	11.3
Fruits and vegetables	9.0	8.1	9.5	16.9	10.1	13.8	12.2	11.6	13.2	14.0
Animal products and fish	13.6	12.5	17.7	25.6	27.1	27.7	23.3	25.8	29.4	33.1
Meat	7.5	5.9	11.7	9.0	8.2	8.4	14.8	16.4	11.3	12.8
Dairy products	1.5	2.5	1.9	2.0	2.8	2.9	2.9	4.3	5.8	7.5
Eggs & egg products			0.7	1.1	1.5	1.3			0.4	0.6
Fish & seafood	4.6	4.1	3.4	13.5	14.6	15.2	5.6	5.0	12.0	12.2
Beverages & stimulants	13.8	6.9	3.2	2.2	6.8	7.2	5.2	6.2		
Other food products	14.2	10.4	22.6	11.7	8.9	7.9	19.6	10.4	9.0	11.4

Source: Taondyandé and Yade, 2012b

Appendix Table A6.4 *Evolution of the percentage of food expenditures on different food items in rural areas*

	Burkina Faso		Côte d'Ivoire		Ghana		Mali		Senegal	
Product	1994	2009	1993	2008	1992	2006	1989	2006	1994	2002
Cereals	49.4	56.4	35.7	26.6	19.8	22.3	40.0	47.6	42.4	37.7
Rice	7.2	8.5	16.6	19.2	6.5	10.6	8.3	17.1	19.7	22.2
Maize	5.8	9.9	7.2	5.3	7.2	6.2	3.8	4.9	2.3	0.9
Millet and sorghum	34.9	35.8	0.7	0.4	1.6	1.0	26.4	22.9	16.2	7.4
Wheat products	1.4	1.4	11.3	1.7	4.0	4.3	0.8	2.4	4.1	7.1
Other cereal products	0.1	0.7			0.5	0.2	0.7	0.4	0.2	0.2
Roots, tubers, & plantains	0.9	0.6	31.7	22.2	15.5	14.3	0.9	1.0	1.0	1.8
Cassava & cassava products			10.6	7.9	8.8	7.5				
Yam & yam products			12.8	9.7	3.3	3.6				
Other roots & tubers			1.9	1.2	0.8	0.4				
Plantains			6.4	3.4	2.6	2.9				
Pulses	4.5	3.7					1.2	1.7	1.0	0.9
Oils and oilseeds	6.7	4.5	6.4	7.2	6.4	5.6	9.5	6.8	14.9	16.3
Fruits and vegetables	4.7	5.3	10.1	14.3	9.9	14.1	11.6	7.9	10.7	10.6
Animal products and fish	11.4	8.9	7.2	19.1	32.8	30.9	14.6	17.8	18.9	15.7
Meat	6.3	3.5	4.3	3.9	5.8	6.4	6.5	8.4	7.8	3.6
Dairy products	1.6	2.0	1.4	0.6	1.1	1.4	3.0	3.9	4.2	2.7
Eggs & egg products			0.3	0.3	1.3	0.8			0.8	0.1
Fish & seafood	3.5	3.5	1.2	14.3	24.6	22.4	5.1	5.4	6.2	9.4
Beverages & stimulants	12.8	8.7	5.2	2.6	8.6	5.9	6.4	6.9		
Other food products	9.4	12.0	3.7	8.0	7.2	6.8	15.7	10.3	10.9	16.9

Source: Taondyandé and Yade, 2012b

Chapter 7

The Rising Middle Class and Evolving Food Demand in Ghana and Nigeria

In order to get greater insight into the forces shaping urban food demand in the large coastal cities of West Africa, the AGWA team carried out focus-group interviews with consumers and retailers in Lagos and Accra. These were complemented by analysis of West African business forecasting studies that focus on the implications of West Africa's growing middle class for the food processing and retailing industries. Together, these sources of information provide a deeper understanding of how and why West Africa's rapid urbanization has profound implications for the future of Agriculture in the subregion. Unless otherwise noted, material in this section is based on AGWA field research carried out in Ghana and Nigeria in 2011 and 2012.

The chapter first provides contextual information about key features of the structural transformation in Ghana and Nigeria, focusing on urbanization, income and poverty levels and related trends. This information also includes evidence on the size and other key features of the urban middle-class, complementing the more general discussion of these topics in Chapter 2. The remaining sections of the chapter present key findings from the consumer interviews concerning evolving food demand and consumption patterns. This discussion includes analysis of consumer attitudes concerning product attributes and the determinants for eating away from home and choosing different food retail outlets. The chapter concludes by drawing implications of these findings for food system development.

7.1 Context: key features of structural transformation in Ghana and Nigeria

This chapter starts with a brief snapshot of the structural transformation in Ghana and Nigeria to provide some context for the discussion of changing food consumption. It highlights common features and differences between the two countries concerning important socio-economic parameters and then discusses some key features concerning the size and evolution of urban middle classes in both countries.

7.1.1 Trends in economic growth and employment

Growth. Both countries recorded consistently strong economic growth over a long period of time, starting during the mid-1980s in Ghana and the mid-1990s in Nigeria. In both countries, the industrial and services sectors grew faster than agriculture, leading to a gradual decline of agriculture's share in GDP. In Ghana, the services sector has overtaken agriculture in terms of its share of GDP; in 2009-10 services accounted for 49.5% of GDP, followed by agriculture (31.7%) and industry (18.9%). In Nigeria, industry has become the largest contributor to GDP, accounting for 40.7% in 2009-10, whereas agriculture and services contributed 32.7% and 26.6%, respectively (World Bank, 2011b). The industrial sector is dominated by extractive industries (mining, oil and gas) and construction, while the share of manufacturing has remained stagnant at levels of approximately 10% of GDP. Growth of the services sector has been driven by financial services, information technology and communications, and trade. The services sector is mainly inward-looking, with service exports largely restricted to tourism.

Employment. While agriculture remains the main source of employment, the importance of the services sector has grown strongly. In 2000 (the last year for which data are available), agriculture,

fisheries, and forestry accounted for 54% of total employment in Ghana, compared with 31% for the services sector and 16% for industry. For Nigeria, the equivalent figures for 2007 were 49% for agriculture, 43% for services, and 8% for industry (ILO, 2013). [53] The low share of the industrial sector in total employment, especially for Nigeria, is due to the importance of extractive industries, which are capital intensive. The majority of the population is self-employed, and the percentage of salaried employees remains low. Salaried employment is concentrated in urban areas in industries like banking, manufacturing and the public sector. Still, only a minority of the economically active population is employed in the formal sector. The share of the informal sector in total employment is estimated at 80% in Ghana at the national level, against 72% in Accra and 65% in Kumasi (Kolavelli *et al.*, 2012). Like other sub-Saharan African countries, employment appears to have lagged behind growth of the labour force, resulting in rising unemployment levels.

Urbanization. Both countries have seen strong growth of urban populations, with urbanization rates close to 50%. Lagos, the largest city in Nigeria, with a 2008 population of around 14 million, dwarfs other Nigerian urban centres and is the second fastest growing city in Africa (after Kinshasa) (UN Habitat, 2010). It has the highest literacy rate in Nigeria (94%), and like Accra it is home to a growing middle class. Accra has a higher per capita income and is more cosmopolitan than the rest of Ghana. With its approximately 2.6 million inhabitants in 2006, the Greater Accra Metropolitan Area (GAMA) accounts for about 20% of the total urban population of Ghana (World Bank, 2011a).

Geographical imbalances. Both countries are characterized by strong geographical imbalances in terms of incomes and living standards. Lagos is part of the South West region, which has the highest per capita annual household expenditure of the six Nigerian regions, amounting to US$5 536 in 2010 compared to US$1 455 in the poorest region, the North East. (Euromonitor International, 2012). According to the Ghana Living Standards Survey conducted in 2005/06, almost 75% of Accra's households fall in the highest income quintiles of the country, with 5% in the lowest quintile. GAMA households spent on average 2.5 times more per day than the national average. Nationwide, per capita expenditure in urban areas is 1.6 times higher than in rural areas. The mean household size is 3.5 in urban areas, against 4.4 in rural areas. GAMA alone accounts for 22.6% of total household expenditure in Ghana, and other urban areas account for another 32.6%. However, the share of food expenditures is lower in urban areas (43.7%) than in rural areas (62.4%) (GSS, 2008).

7.1.2 Poverty levels and middle classes in Ghana and Nigeria

Ghana: sharply declining poverty levels and the growing middle-class. The strong and consistent economic growth has led to a sharp reduction in poverty rates from 51.7% (in 1991/2) to 39.5% (in 1998/9) and further to 28.5% (in 2005/6). The absolute number of poor people has also fallen. This halving of poverty rates within 15 years is the record in sub-Saharan Africa (Kolavelli, *et al.*, 2012). The ReSAKSS analysis of household surveys from 1993 and 2006 suggests that average annual household income in urban areas almost doubled during this period, from US$1 006 to US$1 959, measured in 2010 US$PPP (Taondyandé and Yade, 2012b). This is equivalent to an increase of the daily per capita expenditures from approximately US$3 to US$6. During the AGWA field work, consumers in Accra were also asked about their own definition of the income levels constituting lower, middle and upper income classes. Averaging the answers suggests that households earning between GHC 400 and 1 250 per month (US$200 and US$625) considered themselves as middle-class. If the average household size is four persons, this would result in daily per capita incomes for these households of between US$1.60 and US$10.40. According to AfDB (2011; see also Chapter 2), 13.5% of the population (equivalent to 3.2 million persons) belongs to the lower middle-class (with daily per capita expenditures between US$4 and US$10) and another 6.2% of the population (equivalent to 1.5 million persons)

53 Official statistics tend to over-estimate agriculture's contribution to employment and underestimate employment generated the services sector. This is due to the seasonality of labour requirements in agriculture and the difficulties of capturing the large informal services sector in areas such as trade and transport.

belongs to the upper middle-class (spending between US$10 and US$20 per day).

But strong income inequalities persist. The richest 20%, with an average household size of 2.5 persons, accounted for 46.3% of total household expenditures, whereas households in the lowest expenditure quintile with an average household size of 6.4 members only spent 7.1% of the total (GSS, 2008). Income distribution is more skewed in urban than in rural areas. In urban Ghana, the richest 10% of the population spent on average US$6 024 per year, while the poorest 10% spent only US$459 (measured in 2010 PPP). Moreover, per capita expenditures of the richer income strata grew faster than those of the poorest strata between 1992 and 2006. The richest 30% accounted for about 60% of the total incremental consumer expenditure in urban Ghana over this period, whereas the poorest 30% spent only 10% of this increment (Taondyandé and Yade, 2012b).

Nigeria: a more uneven and volatile trend, reflecting the country's more unstable economic performance. Nigeria had a sizeable middle-class during the 1970s, fuelled by the oil boom. The middle class then dwindled as oil prices declined and the country fell into a fiscal crisis followed by austerity measures. This decline of the middle class is reflected in the country's soaring poverty rate, which increased from 27% in 1980 to 65% in 1996.[54] Between 1997 and 2004, the poverty incidence decreased to 54%, in parallel with improved economic performance. However, more recent data from 2009 pictures a co-evolution of strong GDP growth and rising poverty levels between 2004 and 2009. According to the latest poverty profile based on the Harmonized Living Standard Measurement Survey conducted in 2009, 69% of the population was classified as poor. Further disaggregation shows that the share of the moderately poor slightly decreased while the share of the most poor increased considerably between 2004 and 2009. Using an absolute poverty line, the poverty incidence increased from 54.7% to 60.9% between 2004 and 2010 (NBS, 2012a).[55] The Gini coefficient on incomes increased from 0.43 to 0.45.

Data on the size and income levels of the Nigerian middle-class are sketchier, and available data from different official and private sources are inconsistent.[56] According to the Nigerian Bureau of Statistics (NBS), approximately 49 million Nigerians (33%) belonged to the non-poor category in 2010, earning more than two-thirds of the mean income. The AfDB study on the African middle-class (AfDB, 2011b) reports that 6.2% of Nigeria's population (equivalent to 9.3 million persons) fall into the lower middle class (with a per capita daily expenditure of US$ 4-10) whereas 3.8% (equivalent to 5.7 million persons) belonged into the upper middle class (US$10-20/day per capita expenditure) in 2008 (see Chapter 2). The private sector has more optimistic views about the current size as well as the future dynamic of the Nigerian middle class. Managers of agribusiness firms interviewed during the AGWA field work in March 2012 expressed doubts about the accuracy of official survey data in capturing the size and other characteristics of the middle class. They pointed to the likely underreporting of assets and incomes in the large informal urban sector and to the growing wedge between expenditures and reported income levels in higher-income strata. The optimistic private-sector view concerning the prospects for the Nigerian market is echoed by a recent survey on the Nigerian urban middle-class conducted by Renaissance Capital (2011). The survey report notes that that according to IMF estimates, Nigeria's GDP rose fivefold from US$46 billion in 2000 to US$247 billion in 2011, while the population increased only by a little more than one third over the same period, from 119 million to 160 million. Future growth scenarios remain positive, and per capita GDP is expected to increase from US$1 541 in 2011 to almost US$2 000 by 2016, according to IMF projections.

54 This is the poverty rate as defined by Nigeria's national poverty line. The poverty line defines an individual as poor if she or he earns less than two-thirds of the average per capita expenditure, regionally deflated (NBS, 2012a). Further disaggregation is made between the extreme poor (earning less than one-third of the mean income) and the moderately poor (earning between one- and two-thirds of the mean income).

55 The reasons for this strong increase in poverty despite consistent per capita GDP growth are not clear. Given the high share of food and transport in total household expenditures, increases in food and oil prices certainly contributed to this seemingly contradictory trend. Moreover, unemployment has been on the rise, growing from 13.4% in 2004 to 23% in 2011 (NBS, 2012a).

56 Unfortunately, budget-consumption survey data were not available for the analysis conducted by ReSAKSS, which could have provided detailed information on the size and evolution of different income strata over time.

Implications for food demand. Whatever the current size of the middle class in Ghana and Nigeria, it can be expected to grow, at least in absolute terms, in tandem with the strong economic growth and population growth projected for both countries. What are the implications of this growth of the middle class for food demand? Given the large share of food in total household expenditures, ranging from 50% in Ghana[57] to over 60% in Nigeria, and high income elasticities for most food products, income growth will translate into strong increases of food demand.[58] Due to the skewed income distribution, the non-poor population will account for a disproportionate share of this growing demand. As shown in table 6.2 in Chapter 6, the richest quintile of the population in Ghana still devotes 48% of its total expenditures to food and beverages (Taondyandé and Yade, 2012b). In Nigeria, the top income quintile accounted for 40% of total expenditures for food and non-alcoholic beverages, and the upper half of the population for about three-quarters. At the same time, income distribution in Nigeria is even more skewed: According to Euromonitor (2011), the richest 10% of Nigerian households spent on average US$14 783 per year in 2010, 44.8 times more than the poorest 10% (US$319).

The growing importance of middle and upper-income strata in urban markets has important implications for food system development. Better understanding this market and the factors determining the food choices of urban middle- and higher-income consumers is paramount for informing a food systems development strategy aimed at increasing the market share of domestic products. At the same time, given the increasingly skewed income distributions, cities like Lagos and Accra are also home to large, low-income populations. Thus, food systems need to cater to both a large population seeking inexpensive calories and proteins as well as a growing middle class seeking a more diverse and higher-quality diet. A third important implication results from an important demographic trend: Due to strong population growth, both countries boast a massive, young consumer market. Hence, understanding the food preferences of urban youth is key for domestic food producers to capture this market increasingly served by imports.

7.2 Main results from the consumer interviews

As part of the AGWA study, interviews were conducted with urban consumers in Accra and Lagos between October 2011 and March 2012. In Ghana, consumer data were gathered via focus groups and an in-market survey targeting both modern and traditional food retailers. For the in-market survey, consumers were interviewed at two types of grocery retailers: a traditional open market and a modern grocery market.[59] Consumer data in Lagos were gathered via focus groups only.

The focus groups captured different demographics of the urban middle class in terms of income levels, age, gender and occupation (Table 7.1). Groups included polytechnic students, civil service workers, and full-time workers in different fields. Most consumers had at least a secondary education; many had some polytechnic or university training. Only few owned vehicles; most relied on public transportation. The number of household members ranged between 4 and 6, except for the students living on campus. Self-reported monthly income is ranged from US$75 to $250 in Accra and between US$239 and US$1 646 in Lagos. Adjusted by household size, daily per capita incomes ranged from US$0.80 to US$3.30 in Accra, and US$1.66 and US$10.00 in Lagos. Using the AfDB classification and assuming some downward bias in the self-reported income, the interviewed households belong mainly to the floating class and lower-middle class.

Consumers were asked about how their eating habits are changing and why; which foods

57 This includes food purchases (40%) and the imputed value of home consumption (10%) in Ghana (GSS, 2008)

58 The higher share of food expenditures in Nigeria may be due higher food prices caused by the combined effects of protectionist measures to reduce imports and high costs of domestic food production, processing and handling due to infrastructure-related constraints. High food prices reduce the purchasing power of net food buyers, especially urban populations, and dampen the growth of food demand, especially in the lowest income strata.

59 The term "traditional food retailers" refers to grocery retailers in an open or "wet" market, characterized by many individual vendors selling commodities, both indoors and outdoors. If a building exists, it is often owned by the municipality. "Modern grocery retailing" refers in this chapter to supermarket-based retailers where the retail outlet is owned by one person/company and all vending occurs inside this outlet. Prices are generally negotiable in a traditional grocery environment, but usually not negotiable in a supermarket.

Table 7.1 *Focus group sample characteristics, Accra and Lagos, 2011–12*

Consumer demographics	N	Age (mean)	Gender mix (Female/ Male)	Education attained (mean years)	HH size (mean)	Average Reported monthly HH income	Average reported monthly HH income	Monthly income per person	Daily income per person
Accra Ghana in-market survey						(GHC)	(US$)	(US$)	(US$)
Traditional market	81	34	68/13	10.8	4.8	230	115.0	24.0	0.80
Modern grocery	57	40	32/25	12.4	4.0	330	165.0	41.3	1.38
Accra Ghana Consumer Focus Groups						(GHC)	(US$)	(US$)	(US$)
Group1: Polytechnic students (female)	11	22	11/0	9.0	1.0	200	100.0	100.0	3.33
Group 2: Polytechnic students (male)	20	23	0/20	9.0	1.0	150	75.0	75.0	2.50
Group 3: Civil service workers	12	42	6/6	13.4	4.3	435	217.5	51.2	1.71
Group 4: Full-time workers	13	32	6/7	9.8	4.4	500	250.0	56.8	1.89
Lagos Nigeria Consumer Focus Groups						(NGN)	(US$)	(US$)	(US$)
Group 1: Single men working FT/PT	7	32.5	0/7	14.8	4.8	38 500	239.1	49.8	1.66
Group 2: Married men working FT	8	34	0/8	15.0	3.6	141 500	878.9	244.1	8.14
Group 3: Ladies working FT and making HH food purchasing decisions	9	54	9/0	15.3	5.5	265 000	1646.0	299.3	9.98
Group 4: University students	9	21	5/4	14.0	5.2	116 000	720.5	138.6	4.62
Group 5: Day labourers/trades people	6	40	0/6	12.0	4.3	45 000	279.5	65.0	2.17

Source: AGWA field surveys

they prefer to eat and their current availability in the market; how they make decisions about which foods to purchase and where; their level of confidence in food quality; and how they defined healthy food. Retailers were also interviewed regarding their approaches to serving the urban consumer in their respective countries.

7.2.1 Demand for convenience

Convenience is probably the number one factor influencing consumer food choices in Accra and Lagos today. Men and women are increasingly working away from home, driven by the overriding need for an increase in income to pay for food, shelter, clothing and other household expenses. Working days are long, often 10 hours, with an additional 2 to 4 hours of commuting time. Because of urban congestion and changing lifestyles in both cities, even the middle-class is "time-poor"; hence convenience is a major factor shaping demand for food for all groups in these cities. With growing numbers of family members entering the workforce, there is less time available to buy and prepare food. In order to cope with this new reality, a growing share of urban dwellers tends to look for ready-made food as much and as nearby as possible. According to the latest budget consumption survey conducted in 2006 (GSS, 2008), households in Ghana spent on average 127 Cedis per annum on prepared meals, accounting for 9.7% of total food expenditures. Urban households spent 39% more, 177 Cedis on average, for prepared meals.

Eating away from home. An important consequence of urban congestion is that most workers cannot return home for noonday meals, thereby increasing the demand for prepared foods. This has led to a burgeoning of away-from-home eating (especially at lunch time) and consumption of snacks. In the words of one Accra consumer, "We eat at least four meals outside the home a week. We need foods to be fast and convenient." The traditional model of one family member taking responsibility for meal planning and food preparation for the household has fractured in most urban environments. Meals taken together are becoming less frequent, and eating is increasingly individualized. Consumer interviews further revealed

that traditional mealtimes are being replaced by spontaneous food purchases on street corners or in small kiosks. The survey results in Accra indicate that low-income workers eat outside the home more frequently than middle-income workers. Earlier surveys revealed that lack of access to cooking facilities among the poor, particularly recent migrants, is a further driver for eating out (Maxwell *et al.*, 2000).

These factors have fuelled demand and led to a massive market expansion of convenience and fast-food options in urban centres. Increasingly it is street-food vendors, cafeterias at work or at school, small restaurants and fast-food outlets that provide family members with one or even several meals per day. Street foods play an important role as both a cheap and quick meal option and as an income-generating strategy. The meals and snacks served on the street cater to a wide variety of customer tastes and range from traditional recipes of rice or maize with vegetables and beans to more modern items including various types of fried or grilled meats, potatoes and bread.

Interviews suggest some differences according to gender and other demographic variables concerning the frequency of eating out. According to the market survey in Accra, men are eating more meals away from home than are women (4.5 versus 3 per week), whereas working women are more willing to bring in food for lunch. Lagos focus group discussions revealed clear differences between the "eating out" habits of single and married consumers. All single males reported eating five to seven meals away from home or nearby to work. Single females (primarily students) also reported eating out, but tended to have more access to kitchen facilities during the day. In strong contrast, few women with families reported ever eating out. They rather carry their lunch to work and eat dinner at home every day, while eating out is confined to special occasions. These differences highlight the role of evolving and more diverse urban lifestyles depending on gender and family situations.

Convenience food. In terms of product choice, increasing time pressure is the key driver behind the burgeoning demand for quick and easy-to-prepare food products and dishes. The desire for convenience is reflected in the very rapid growth in consumption of rice and packaged foods, especially low-cost wheat-based products such as noodles, pasta and bakery products like bread, biscuits and meat pies. "Grab and go" small snacks are also gaining popularity. "Everyone loves plantain chips," but wheat products are most prominent in the snack category. The youth and men, in general, see pastries and biscuits as snacking options more so than do older women.

Rice has overwhelmingly become the number one convenience food in both Accra and Lagos. While rice consumption has a longer tradition in Nigeria, it has not been a major food staple in Ghana until recently. According to focus group discussions, 10 to 15 years ago in Accra, rice was an "occasional" food, sometimes eaten annually during festivals such as Christmas or Easter or at important funerals, such as that of a paramount chief. Today, rice is eaten on a daily basis in Accra. Its main advantage over traditional dishes based on roots, tubers and maize is the ease and speed of preparation. Rice consumption has intensified with the introduction of the rice cooker and milled rice. Urban dwellers particularly demand rice that cooks and swells faster, leading to a preference of imported rice (which has lower moisture content and hence swells more) over local rice. Moreover, quality becomes increasingly important for time-constrained household members who are no longer willing to spend time hand-picking out stones and chaff. Among higher-income consumers, packaged high-quality rice is an emerging packaged product category. Among all income groups, fast-food dishes based on rice (with beans, chicken, or fish) are increasingly popular.

In addition to more recent convenience foods, many of which are linked to imports of products, raw materials or eating habits (noodles, chicken parts, rice), a number of traditional food staples have been adapted to meet the growing needs for speed and convenience. Gari and attiéké stand out as typical West African convenience foods based on cassava. Moreover, the growth of the small restaurant sector offering precooked traditional menus is another example.

Packaged foods markets in Nigeria. The growing demand for packaged food, especially rice, pasta and bakery products, is also reflected in market information provided by Euromonitor International. Table 7.2 depicts the size of the packaged food market in Nigeria in 2011 and the shares of the main products groups. Dried processed food is the largest category, which includes packaged rice,

Table 7.2 *Market size and share of packaged food products in Nigeria, 2011*

Packaged Food Categories	Value in NGN (billion)	Value in US$ (million)	Share
Dried processed food	248.7	1 611.0	31.6%
Noodles	64.5	418.2	8.2%
Bakery	232.1	1 503.6	29.5%
Dairy	165.6	1 072.9	21.0%
Sauces, dressings and condiments	72.9	472.0	9.3%
Oils and fats	41.5	268.7	5.3%
Baby food	9.5	61.4	1.2%
Canned processed food	6.4	41.4	0.8%
Frozen processed food	4.8	31.0	0.6%
Ice cream	2.4	15.2	0.3%
Sweet and savoury snacks	2.3	14.9	0.3%
Soup	1.4	9.0	0.2%
Total packaged food	787.6	5 101.1	100.0%

Source: Euromonitor International, March 2012
(Data were extracted from the Euromonitor International, 2012Passport database in March 2012)

Table 7.3 *Past and projected growth in sales of packaged food products in Nigeria*[a]

By volume, 1998-2016

	Sales Volume Growth				1998-11 CAGR	2011-16 CAGR
Categories	1998	2005	2011	2016	(%)	(%)
Noodles	37.7	54.4	143.3	214.8	10.8	8.4
Bakery	599.8	913.2	1 007.1	1 146.4	4.1	2.6
Baby food	3.6	4.7	5.6	6.2	3.3	2.1
Dried processed food	927.9	1 062.8	1 348.7	1 623.7	0.9	3.8
Sauces, dressings and condiments	77.0	92.1	103.8	112.7	2.3	1.7
Soup	1.7	1.7	2.0	2.3	1.3	3.4
Dairy	208.3	184.8	232.2	285.9	0.8	4.3
Frozen processed	6.6	6.0	7.4	8.7	0.8	3.3
Sweet and savoury	5.2	4.6	5.4	6.4	0.3	3.2
Canned or preserved	12.2	10.8	12.2	13.9	0.0	2.7
Ice cream	5.5	3.4	3.8	4.6	- 2.7	3.7
Oils and fats	163.0	113.2	108.7	112.2	- 3.1	0.6

Source: Euromonitor International, March 2012

[a] These market data represent food purchases occurring in the food retail market via different food retail sites, including food service, store-based retail. The latter includes supermarkets and hypermarkets, small shops such as convenience stores and kiosks, and open markets. Non store-based retailing such as by ambulant vendors or street hawkers and self-produced consumption are not captured. Data are assembled from various industry sources, market surveys and official sources.

instant noodles and dried pasta. Bakery products are the second largest category, which is dominated by biscuits and bread, followed by cakes and pastries. Dairy products and sauces, and dressings and condiments rank third and fourth place. Canned/preserved food and frozen processed food still play a minor role.

Table 7.3 shows the growth rates of the main packaged food product categories in volume terms between 1998 and 2011, along with the forecasted compound annual growth rates until 2016. Asian-style noodles showed the strongest growth rate between 1998 and 2011 and are projected to remain the most dynamic packaged food product. Packaged rice already accounts for two-thirds of the value of dried processed food and is projected to grow at 3.3% in volume and 2.7% in value terms per annum between 2011 and 2016, against 8.4% and 8.9% for instant noodles (Euromonitor International 2012). Sauces, dressings and condiments that complement rice and pasta-based dishes have also grown strongly.

7.2.2 Protein choices: fish is king, but chicken, eggs, and beans are cheaper

In the case of protein choices, consumer interviews revealed trade-offs between price, convenience and health attributes. As noted in the food-balance-sheet analysis in Chapter 5, fish is still by far the predominant source of animal protein in Nigeria and Ghana. However, especially in Accra, there has been a noticeable shift in recent years from fish towards chicken, according to consumers.

Low-cost imported frozen chicken has transformed chicken from an occasional food treat to a frequent menu item, both in home-cooked food and in meals taken outside the home. Chicken meat has become much more affordable to poor urban consumers, who are buying different chicken parts rather than whole birds. Moreover, supermarkets offer various qualities at different prices, including cut up pieces and whole birds either frozen, chilled, dressed, or live, for specific uses. Consumers can stop by a cold store or supermarket and pick up a few affordable pieces of imported, frozen chicken for dinner that night. Even more recently, consumers have begun to be able to purchase "chilled, dressed" and ready-to-cook chicken at more modern supermarkets. In the past, a live broiler or layer was the only option. Between 10% and 15% of Ghanaian consumers interviewed in traditional and modern markets report that they never buy live chicken.

Chapter 5 showed that per capita meat consumption in Nigeria is lower than in Ghana, but that Nigerians consume larger quantities of pulses as an important source of protein. In the case of chicken, the lower per capita consumption is likely due to chicken's higher price than in Ghana as a result of the import ban on poultry and higher domestic production and logistics costs. Hence, while chicken is still an important item in the Nigerian protein market, its degree of substitution for fish has been less than in Ghana. In both countries, the spread of fast-food chains such as KFC, Chicken Republic and Mr Biggs has also encouraged chicken consumption among the middle class, where dining out is becoming an increasing form of family entertainment.

No clear picture emerged from the focus-group discussions regarding preferences between chicken and fish. In general, fish was considered more healthy than chicken but also more expensive. The discussions indicated that cost considerations are leading urban consumers increasingly to seek out other protein sources. Among the lower-income groups, especially in Lagos and Abuja, beans and cowpeas are an important alternative. Students interviewed in both Accra and Lagos eat eggs more frequently than other consumers, in part because eggs are a cheaper protein source than either chicken or fish, and in spite of the students' concerns about the safety of those eggs.[60] There is also growing consumption of dairy products. Flavoured yogurt and blends of yogurt and fruit juices are increasingly popular in both cities.

7.2.3 Traditional foods

Urban consumers seem to be at a crossroads with respect to convenience and traditional foods. Consumer interviews revealed that urban consum-

60 Students in Lagos refer to the egg sandwiches they buy on campus as "risky burgers."

ers still prefer their traditional foods based on starchy roots, maize, beans and plantains, but are increasingly forced to turn to more convenient foods that are faster to prepare and more readily available in restaurants and street food outlets. Traditional dishes are often based on fermented products such as doughs, gari, pounded yam, and bean flour. Many focus-group participants stated that although they would prefer to eat traditional foods, they are increasingly unable to do so because of the trends described in the previous section. The demand for speed and convenience is resulting in a gradual departure from traditional cooking and eating habits. This applies to home cooking as well as to fast-food vendors. Women participating in the focus groups in Ghana said that they "cook mostly on the weekends and heat it up during the day. There is no time to cook every day." However, the ability to store food depends on access to and reliability of refrigerators and electricity.

During the rapid market survey in Accra, consumers were asked about their main food choices when eating out. While 45% of all interviewed persons eat mainly "modern" fast food (42.8% rice and chicken, 2.2% pizza), roughly the same percentage eats mainly traditional foods such as kenkey (18.8%), fufu and soup (11.6%), banku (9.4%), fried yam and plantain (2.9%), and beans and plantain (0.7%).[61] Another 7.2% are eating snacks, and 4.3% stated that they do not eat out at all. These food choices are offered by myriads of small restaurants, food stalls and "bush canteens" (see Chapter 8). However, there appears to be a tendency towards "Western" food and a reduction of variability in food choices for the population forced to eat out. Some focus groups in Ghana complained about the limited food choices outside home: "Chicken is everywhere. We used to eat chicken a few times a year – it was a treat. Now it is very common and boring." This suggests that there is a latent demand for convenience foods based on traditional dishes.

Some modern quick-service restaurants have responded to this demand by offering both traditional and "Western" dishes, especially in Nigeria. These outlets targeting middle-market segments serve popular traditional cuisine such as *ebba*, pounded yam and *moimoi* along with mainstream dishes built around fried chicken, fish and rice. In Ghana, the modern fast-food and quick-service sector mainly offers fried chicken and rice, whereas local cuisine such as fufu, gari and stews are more restricted to canteens and small restaurants. However, even these outlets increasingly offer modern convenience dishes. Hence, the dominant trend seems to be towards dishes perceived as "modern" and "Western." This shift is also reinforced by lifestyle changes and the desire to "be modern", especially among young urban dwellers. Western quick-service restaurants such as KFC are regarded as trendy and up-market and are populated by middle and higher-income persons. For a premium, the franchised new entrants bring a foodservice ambience that is perceived as up-market and accessible to most consumers, even if they can only afford an ice cream.

7.2.4 Value addition based on traditional foods

As mentioned above, there are a number of West African answers to the need for speed and convenience based on traditional food staples: Gari and attiéké but also bean flour are easy to prepare and readily available in traditional market outlets. Several efforts have been made to add value by enhancing product quality, hygiene, presentation and packaging in order to offer these products in modern food marketing channels such as supermarkets. For example, research in Ghana indicated a potential market for hygienically prepared and packaged cassava products among young Ghanaian professionals (Collinson *et al.*, 2003), and several domestic processors have responded by offering such products, e.g., Garipack. Attempts have further been made to engineer instant products for traditional dishes such as Poundo yam, fufu flour, banku flour and banku dough. During the focus-group interviews, consumers were asked about their opinions of currently available processed traditional products.

Surprisingly, consumers interviewed did not show clear preferences for the current market offerings in "convenient" traditional foods. Various

61 Kenkey is fermented maize dough, fufu is pounded yam or cassava, and banku is a fermented maize or cassava dough, often cooked in banana leaves.

reasons for not purchasing processed traditional products were given. Most were related to quality, presentation and packaging, whereas price was not a prime concern. In the focus-group discussions in Ghana, the consumers of all ages questioned the freshness and taste of products such as Garipack. Buyers in the open market try different garis and often have their preferred supplier. Not being able to try and taste Garipack acts as an entry barrier for some consumers. Those consumers who do buy products such as Garipack say that the packaged variety is "not polluted [with foreign materials] like at the market." In general, packaging and labelling need improvement. Some consumers in Accra commented that no clear instructions about the preparation of instant fufu were given on the package (e.g. concerning the amounts of water and powder to be mixed), resulting in trial and error with unsatisfactory results. Others were also concerned with the thin packaging being able to "be torn by a fingernail." It thus appears that if processed forms of these roots and tubers are to compete effectively with rice, further technical work is needed to make them more acceptable to consumers.

In Lagos, discussions revolved about Poundo Yam as an alternative to hand-pounded yam, whose preparation is time-consuming and cumbersome. Men voiced a strong preference for traditionally pounded yam. They said that "it is African to use our hands and pound." Since it is mainly female hands pounding the yam, women had different and more diverse views. Especially female students and working women said that they would consider using Poundo Yam since they didn't mind the taste and expected to be time-constrained. Most women who were making choices for their families said they generally did not buy Poundo Yam. The feedback was relatively negative and centred around texture and labelling. The Poundo "turned to water overnight…this turned me off and made me think it was made of non-natural ingredients." Many women want ingredients to be written on the label as well as nutritional information.

These results show that developing a market for value-added foods based on traditional dishes and food staples is not straightforward. In addition to overcoming technical constraints concerning product quality, food processing companies targeting upper market segments need a better understanding of consumer tastes and preferences and of the determinants of purchasing decisions. In the case of some traditional dishes, offering convenience and instant food products may face stronger resistance from consumers, especially when completing with the traditionally-prepared dishes as a reference for taste and quality. On the other hand, the increased need for convenience, especially in the wake of growing female employment, is likely over time to reduce this resistance. In any case, continuous product innovations and attractive packaging, labelling and advertising are critical for success.

7.2.5 Concerns about quality and food safety, healthfulness and cost

The transformation of diets in Accra, Lagos, and Abuja, combined with more sedentary urban lifestyles, have raised concerns among consumers about the nutritional quality, safety and costs of their foods. Focus group discussions and interviews with food processing companies conducted as part of the field work revealed that middle-class Nigerians have become increasingly concerned about the amount of fat in their diet and the adverse health effects resulting from high cholesterol levels. The importance of reducing the fat content of meals has been widely accepted. According to the focus group discussions, in many urban social circles, it is no longer culturally acceptable to maintain a high-fat diet. Participants stated that "an individual's family doctor will disapprove it, employers who provide health schemes disapprove it and 'good mothers' don't allow their children to consume high-fat foods in more than modest amounts". This growing awareness about health implications of food has created a marketing opportunity for producers of low-fat meats or vegetable oils with higher content of unsaturated fatty acids. There is also growing concern about excessive sugar intake, as consumers are increasingly aware of the related health risks such as diabetes. Overall, the middle-class consumers participating in the focus group discussions were

well-informed about the health implications and nutritional values of different foods. However, issues of availability and affordability of nutritious foods were flagged strongly.

According to the Lagos consumers interviewed, the preferred healthy diet generally would consist of "fruits, more vegetables, less red meat, more fish, guinea fowl and fewer carbohydrates (pounded yam is a preferred carbohydrate)." Older women said that they "would like to eat healthy salads, but there are no healthy salad dressings available [e.g. there is only 'creme'], so salad is not a great option. Olive oil may be available, but it is expensive and likely adulterated." Palm oil is a mainstay in food preparation and is increasingly considered unhealthy as lifestyles change. Holding income constant, there was a strong feeling across respondents in the Lagos focus groups that diets should evolve with age, which provides insight into how preferences may change with changing age distributions. "At a certain age…around 40, we should eat less red meat and more fish and chicken. We still buy beef for children. Children want beef meat – they don't want too much fish."

Accra consumers interviewed in the surveys said that a healthy diet would be "tilapia…steamed vegetables with a little salt, whole cereals and legumes …and boiled yams and cocoyam." Yet, these diet trends do not seem common in the urban population, particularly with the youth. According to the young people interviewed, street food "must be cheap and fast." Students said that "time is the main factor in deciding what to eat, price is next." They also say there are few affordable, healthy options. These trends of this demographic, such as their desires for convenience and health, are particularly important to follow as they represent the future educated consumer demographic in Lagos and Accra.

Nutritious food is too expensive. A common complaint among the consumers interviewed is that the only convenient foods in urban areas are high in oils (including palm oil, which is increasingly considered by consumers as unhealthful) and carbohydrates – for example, fried chicken and rice. Although demand for many fresh foods has been growing robustly in both Nigeria and Ghana as a whole and are projected to continue to do so, many consumers felt that in congested Accra and Lagos, healthier options such as fish, fresh fruits and vegetables, and juices were increasingly expensive relative to the fast-food alternatives. Many respondents indicated that they would like to shift to a more healthy diet if their incomes would allow it, but given their current incomes and relative prices, they feel such a diet is out of their reach. This suggests that if costs of supplying more healthful items such as fresh fruits and vegetables could be reduced, there is potentially a strong market for such goods.

Across the various groups interviewed, consumers were interested in seeing more "natural" juice in the market. Consumers referred to no additives, no extra sugar and 100% fruit – "pure juice would be healthier to take. It is unprocessed." The youth said that they would "take more juice if there were more natural [budget-friendly]." Carbonated soda (e.g. Coca-Cola or Fanta) or malt, frequently taken as a lunch-time drink in Nigeria, sells for 75-150 Nairas per bottle. Some consumers said that they would pay up to 300 Naira (two times the price of soda) if they "were sure the juice was not processed." Other consumers are limited to the cheapest options. Accra consumers said that "a small bottle of pineapple juice would be 3 GHC (US$1.50) and difficult to find at a quick-food place, whereas Fanta is easy and around 50 pesewas (US$0.25)". If the juice is indeed six times more expensive than Fanta and more difficult to find, the chances of expanding its consumption are slim.

If domestic agro-industry is to be effective in offering healthy options, price competition is a must. However, from the in-market survey, the majority of Accra consumers stated they believe quality is more important than price, which is an important finding for both agro-industry and nutrition strategies that should be further investigated. The experience with the rapid spread of mobile phones across Africa, even among lower-income segments of the population, shows the potential to introduce products with strong utility even to consumers with low purchasing power.

Quality and food safety. As consumers shift to more processed and prepared foods, they are increasingly relying on others – often unknown to them – to prepare their food, including workers in food manufacturing plants, street vendors, and restaurant employees. This shift from home food preparation to reliance on others has led to questions about how consumers can be assured that their food products are of high quality and safe. Ghanaian and Nigerian consumers do not see "healthy foods" and "safe-to-eat foods" as separate categories, but as closely interrelated. Although consumers interviewed in these studies expressed a strong desire for more local "African" foods, there is scepticism about whether consumers can rely on the quality of such products.

Consumers expressed a high desire for reliable diet and food safety information but little confidence in the information and labelling currently available. For example, only 1% of respondents interviewed in traditional markets and 5% of those interviewed in modern food markets in Accra indicated satisfaction with the information available on food quality and standards for poultry. Many consumers doubt the integrity of packaged foods, fearing adulteration, and are sceptical of official quality certification systems. In the face of such concerns, consumers try to develop personal relationships with their food vendors to help ensure quality.

For packaged foods, consumers reported that they frequently choose internationally branded products over local alternatives, trusting more the quality of the international brands (especially those from the EU and North America). An extreme example of this preference concerns weaning foods for infants. A 2007 study in Accra found that consumers routinely paid three times more for an imported weaning food produced by Nestlé than for a locally manufactured alternative ("weanimix") that had been jointly developed by the Ghanaian Ministry of Health and UNICEF to meet the nutritional needs of young children (Nagai *et al.*, 2009). Clearly, developing more reliable and credible food labelling, food safety and quality assurance programmes will be critical if West African food processors are to compete successfully with imports, particularly in the more upscale segments of the market.

Food safety is also a concern in view of the trend towards eating out and the importance of street food and informal restaurants. Meats such as chicken, fish or sausage are typically fried due to preparation and eating ease and served hot to ensure food safety. Lower-income consumers tend to choose rice dishes and eggs, as these foods are cheaper and often viewed as relatively safe to eat. Fish is a relatively expensive food to buy at a canteen. In all cases, consumers are careful about which vendors they patronize.

7.3 Synthesis: main findings and policy implications

Ghana and Nigeria have had strong economic growth over prolonged periods of time leading to growing incomes and urban middle classes. However, the quality of growth in terms of its impact on broad-based poverty reduction differed between both countries. While Ghana's broad-based growth led to halving of poverty rates within 15 years, Nigeria presents a more mixed picture. Despite the country's higher per capita income, poverty levels remained higher than in Ghana and have increased recently. Still, its middle-class population, defined as those who spend between US$4 and US$20 per person per day, is estimated at approximately 12 million, against 4.8 million in Ghana. In addition, the floating class, which spends between US$2 and $4 per person per day, is estimated at 19.5 million in Nigeria and 6.3 million in Ghana. These higher-income households account for a disproportionate share of the food market. In Nigeria, the top income quintile is estimated to account for 40% of total expenditures for food and non-alcoholic beverages, and the upper half of the population for about three quarters.

The case studies confirm that diets and food markets in Accra and Lagos are rapidly transforming, driven by increasing incomes, urbanization and globalization. The market remains segmented among a large number of low-income

people seeking low-cost calories (starchy staples) and proteins (pulses and cheap types of meat and fish) and a growing and increasingly diverse middle class aspiring to upgrade its diet with higher-value animal products, fresh fruits, vegetables, and juices. Yet both groups face time and transport pressures created by urban congestion and significant lifestyle changes associated with urbanization; these pressures are driving an increasing demand for processed and more convenient foods such as rice. Particularly important shifts have been from traditional staples (especially roots and tubers) towards rice and wheat-based products and towards packaged products (noodles, pasta, bread, and chicken pieces), as well as increased demand for predominantly fried prepared foods and snacks.

Consumer interviews revealed that consumer food choices are a complex function of demand for convenience, affordability, healthfulness, and the tension between food traditions and modern/Western lifestyle features. Often, consumers face trade-offs, e.g. between convenience and health, or between affordability and safety. Overall, food consumption patterns are becoming increasingly diverse, combining traditional cuisine on weekends, fast food and snacks during weekdays and rice or wheat-based convenience food for dinner at home. There are also differences between food preferences and availability of respective food options.

Demand for convenience emerged as the most important crosscutting factor determining what to buy, where to buy and where to eat. Across income segments, time constraints drive the demand for outside eating and for quick and easy to prepare food such as rice, pasta, noodles, bakery products, and snacks. The supply of fried chicken, French fries and rice has grown strongly in response. Some consumers complained about increasingly limited choices, especially concerning more healthy dishes. While most consumers expressed their preference for traditional foods, the need for convenience forces them to change their diets. This suggests market potential for convenience food products based on traditional food staples and dishes. Experiences with such product offerings such as packaged gari and instant pounded yam reveal that consumer acceptance is a challenge. High standards in packaging, product presentation, labelling and advertising are key to overcoming these challenges.

The urban middle-class consumers interviewed of different age groups in Accra and Lagos were well aware about health implications of various food products and dishes. Consumers expressed strong desire to eat more fruits and vegetables, juices based on natural fruits, and vegetable oils with unsaturated fatty acids. Limited availability and high prices were ubiquitously cited as main constraints.

The demand for healthy and nutritious food and for more traditional dishes is often trumped by the need for convenience and the attraction to modern or Western lifestyles. This is evidenced by the preference, especially among young urban middle class and aspiring consumers, for branded packaged food products and by Western-style quick-service restaurants offering fried chicken, French fries, burgers, etc. The large advertising budgets of large food manufacturers and fast food chains reinforce these trends. Food safety is another important concern of urban consumers, especially those with higher income and education levels. The latent mistrust in the safety of the domestic processed and packaged food products drives consumers towards international brands of food products and fast-food outlets due to the perceived higher quality of imported items, placing domestic producers at a systematic disadvantage, particularly for higher-value market segments.

In this context, there are important roles for the public sector to manage this transformation in a more beneficial way for consumers and the domestic food system. These include:

- Enhancing the awareness of nutritional values and of health and safety concerns across the entire population.
- Strengthening the national food safety system to enhance consumers' trust in the system.

- Supporting domestic producers along the food value chain in adopting better production standards. This requires balancing the equally valid policy objectives of ensuring healthy food to consumers with the socio-economic importance of the large informal sector engaged in food production and value chains.

- Improving the marketing system for fresh produce, especially fruits and vegetables and meat and fish, in order to enhance the availability and quality of these products in urban areas, thereby contributing to a more balanced diet.

- Encouraging the development and modernization of the food wholesaling industry, which in Asia has played a major role in upgrading product quality for food processors and quick-service food operations (Reardon *et al.*, 2012).

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The diversity of retail formats in West Africa requires a diversified set of policies. While supermarkets are expanding in West Africa, traditional markets and small shops will remain the dominant formats for years to come.

West African agroprocessors face serious problems in sourcing reliable quantities of raw materials from their suppliers at consistent quality, forcing many of them to imports.

West African stakeholders are reinventing how various value chains are organized –ranging from cocoa, where the region is the dominant world supplier, to the poultry industry, where it faces strong import competition.

Part III

How are West African Agrifood Systems Responding to Market Trends?

This part analyses how retail food distribution systems, agroprocessing industries and agricultural value chains in the ECOWAS zone are responding to the forces of structural change in the agrifood system described in Part I and the rapidly evolving demand for Agricultural products described in Part II. Part III looks at the food system "from farm to fork." Following the emphasis of the AGWA study on the role of demand in driving food system change, however, Part III starts at the fork and then moves back up to the farm. A full review of the food system including storage, logistics, assembly, and wholesale and retail markets is beyond the scope of this report and is also constrained by data availability.

Rather, the analysis in the first two chapters of Part III focuses on the current and potential roles of modern retailing (Chapter 8) and agroprocessing (Chapter 9) in transforming West African Agriculture. Both these segments have drawn increasing policy attention in recent years as possible vectors of dramatic change in agrifood system organization and performance. Chapter 10 then examines how specific value chains are adapting to the various forces of structural change and demand and identifies how characteristics of different value chains affect their ability to compete in the new global environment facing West African Agriculture. The chapter focuses in detail on six value chains that illustrate many of the challenges and opportunities facing West African Agriculture, followed by a briefer discussion of several others for which demand prospects are promising. The value chains analysed in detail include:

- ***Rice and cassava***, considered "strategic" products by ECOWAS. These value chains have experienced dramatic increases in production in some of the ECOWAS countries due to technological and institutional innovations but are now facing challenges in capturing or developing new market opportunities that require tighter quality control.
- ***Poultry and dairy products***, for which demand is growing strongly but which face very strong competition in the regional market from overseas suppliers; and
- ***Cocoa and cotton***, two value chains that historically have been West African success stories in the export market but which now are seeking new institutional models to deal with current challenges.
- The other value chains with strong growth potential that Chapter 10 briefly discusses include vegetable oil, ruminant livestock, maize, cowpeas, fruits for processing, and cashews.

In responding to changing demand patterns, market rules, and technologies, the retail distribution system, agroprocessing, and broader value chains face several common challenges. These include:

- The need to provide reliable, convenient, safe and low-cost food for the mass market made up of low-income consumers whose primary concern is ensuring their access to low-cost calories and proteins. These consumers, however, are also frequently time-poor and hence also demand increased convenience in their food. Meeting this combined demand for low

cost and convenience requires driving down unit costs of production throughout the whole value chain through capturing available scale economies, adopting technologies that reduce unit costs, and reducing transaction costs throughout the value chain. It also requires establishing and enforcing norms for quality assurance and food safety.

- Responding to the burgeoning demand from the growing middle class for a more diversified diet, with particular growth in the demand for perishable foods such as fruits, vegetables, and animal products and for more processed and prepared foods. Meeting this growing demand will require strengthening linkages between input suppliers, farmers and processors to ensure product quality and consistency. It also requires that firms strive to make consumers' experience with buying and consuming the firms' products easier and more enjoyable than those of rivals.

- Managing the uncertainty surrounding these markets, including uncertainty concerning availability and quality of supplies, shifting demand, and the policy environment.

- Doing all this within the constraints imposed by existing infrastructure and policies.

The chapters in Part III examine how the various segments of the West African food system are addressing these challenges and make suggestions about policies that could enhance their response.

Chapter 8

Modern Food Retailing in West Africa: Emerging Trends and Outlook

One of the key questions posed to the organisers of the AGWA study at its outset was whether the "supermarket revolution" which has been well documented in Asia, Latin America, and Southern Africa, would soon sweep over West Africa, transforming food retailing and excluding small farmers from supplying this growing retail market. This chapter is aimed at addressing that question. It examines trends and potential future growth paths for retailing formats such as supermarkets and Quick Service Restaurants (QSRs), and puts them in the context of the broader food retailing system.

The information available on modern retailing in West Africa is extremely fragmentary. In order to understand possible future trajectories for modernization of food retailing in West Africa the chapter first briefly reviews experiences in other parts of the world, particularly in Southern and Eastern Africa, and their implications for broader food system development. Section 8.2 then takes a closer look into the experiences with supermarkets in sub-Saharan Africa, focusing on the forerunners: Kenya and South Africa. Both countries offer insights into possible pathways and implications for supermarket development in the rest Africa. The rest of the chapter examines the grocery and food services sectors in West Africa, with a focus on Ghana and Nigeria. The chapter concludes by discussing the future outlook of modern food retailing in West Africa and related policy implications.

8.1 Background: global evidence on the "supermarket revolution"

The rapid growth of modern food retailing in developing countries and its impact on the broader food system have been a major focus of research on food systems transformation since the early 2000 (Weatherspoon and Reardon, 2003; Reardon and Timmer, 2007, 2012; Tschirley *et al.*, 2010). Most of this work has focused on supermarkets, a term used synonymously with modern grocery retailing including food retail stores of various formats such as supermarkets, hypermarkets, and convenience and neighbourhood stores (Reardon *et al.*, 2008). There is no sharp distinction in the literature between modern and traditional food retailing, as this difference is context-specific. However, modern grocery retailing is generally characterised by (1) self-service formats, (2) improved shopping ambience in terms of space, hygiene, air conditioning, etc., and (3) consistent supply of a broad assortment of food products of different qualities and brands. Food services are another important segment of food retailing, comprising hotels, restaurants and catering. Modern food services include quick service restaurants (QSRs) of different formats. Modern food service as well as modern grocery are typically characterised by chains of outlets operating under different brands. Franchising is a common instrument to enable the rapid spread of modern food retailing without requiring heavy capital investments by the franchise owner.

The so-called "supermarket revolution" refers to the rapid expansion of modern grocery retail formats in developing countries since the early 1990s. While it took over a century for modern food retailing to become the dominant force in the United States and Western Europe, its expansion in developing and emerging economies happened much faster. Notably in Latin America, Central and Eastern Europe, Asia and some countries in Southern Africa, supermarkets have grown from niche players to dominant forces in food retailing during periods of one to two decades, inducing far-reaching changes in the entire food system.

Evidence suggests that supermarket expansion in developing and emerging economies has so far occurred in three waves: the first wave started in the early 1990s in South America, Central and Eastern Europe, East Asia (outside China) and South Africa. The share of supermarkets in total retail sales in these areas increased from about 10% in 1990 to about 50 to 60% in the mid-2000s. This was followed by a second wave starting in the mid-to late 1990s in Mexico, Central America and much of southeast Asia, with supermarkets' shares increasing to 30 to 50% since the mid- to late 1990s. A third wave can be observed since the late 1990s and early 2000s in countries such as China, India and Vietnam (Reardon and Timmer, 2007). Expansion into other parts of the developing world, including West Africa, has been uneven and generally at a much slower pace than expected a decade ago (Tschirley, *et al.*, 2010).

Structural drivers for the expansion of modern food retailing include urbanization and rising incomes, trade liberalization, growing middle classes and increased female urban labour force participation. Modern food retailing responds to emerging consumer demands for a variety of food products under a single roof and in a safe and comfortable shopping environment. Strong national and international brands instil consumer confidence in the safety and quality of food, especially in environments where public food safety standards are poorly enforced. In addition to these structural drivers, the rapid growth of supermarkets during the past two decades was boosted by a massive increase of foreign direct investment (FDI) in food processing and retailing, and eventually food logistics, triggered by the opening up of various developing regions to trade and foreign investors since the 1980s (Reardon and Timmer, 2012). Since then, supermarket chains expanded from saturated OECD markets into emerging markets that offered higher initial profits and first-mover advantages.

Evidence from Latin America, East Asia and some African countries (South Africa, Kenya) reveals certain common features of supermarket expansion in developing countries. Typically, supermarkets start out by serving a small upmarket and expatriate clientele in large cities. With growing middle classes and increased efficiencies in procurement and domestic supply chains, supermarkets start competing for customers in the lower middle-class segments and beyond. The diversification of the client base is accompanied by geographic expansion into secondary cities and eventually rural towns. In terms of products, supermarkets tend to focus first on processed, packaged and dried foods before entering into fresh food markets. The "first-mover" fresh foods purchased in supermarkets have been storable, staple commodities or, more rarely, imported fresh fruits and vegetables (FFV) and foods experiencing first-stage processing consolidation such as poultry, beef, and pork (Weatherspoon and Reardon, 2003; Neven and Reardon, 2004). Domestic sourcing of fresh fruits and vegetables gradually expands, depending on the maturity and response of the domestic supply chain. Typically, fresh fruits and vegetables account for some 10 to 15% of supermarkets' food sales in developing countries, and supermarkets' shares in fresh food markets have remained limited.

The rapid expansion of supermarkets in several developing regions spurred interest of researchers, policy makers and donors on the impacts of the expansion on the broader food system in general and on small farmers and retailers in particular. Supermarkets are modernising and innovative forces for the entire food system by developing consistent supplies of quality-differentiated products and driving efficiencies in supply chains and logistics. Consumers benefit from a larger choice of products, usually of higher quality and, eventually, lower prices. Private standards introduced by supermarkets offer consumers some assurance of quality and food safety in environments characterised by the absence or poor enforcement of official standards. Supermarkets' procurement practices provide incentives for domestic producers to increase the quality and consistency of their products and introduce efficiencies in the supply chain logistics. Finally, once supermarkets have moved beyond upmarket niches and supply larger numbers of middle- and lower-income customers, traditional marketing channels have to respond by improving product quality and safety as well as product presentation and hygiene at and around market places.

Despite these positive impacts of supermarkets for consumers and the broader agrifood system, there are concerns about the ability of domestic suppliers, especially small farmers and SMEs, to adjust in order to meet the demands of supermarkets. Are domestic SMEs in food processing and trade able to meet the requirements concerning quality, consistency and volumes? Are small farmers able to enter and remain in preferred-supplier lists for fresh produce? Other issues include the possible displacement of traditional grocery retail outlets such as open markets, small kiosks and neighbourhood stores and the related impacts on employment and food prices. Finally, there are concerns about market power exerted by large supermarket chains, especially in countries where they dominate food retailing.

Notwithstanding the limited share of supermarkets in domestic fresh fruit and vegetable markets, most of the research and policy attention has focused on this product segment and the related procurement practices of supermarkets. This interest has been due to the importance of fresh fruits and vegetables to ensure a balanced diet of the rural and urban population on the one hand, and as a potential avenue for smallholders to diversify away from low-value staples into higher value products and markets on the other hand. Fruits and vegetables are seen as "smallholder-friendly" due to the labour intensity and alleged absence of economies of scale in production. Supermarkets were seen as a new and fast-growing potential marketing channel for smallholders, offering higher income opportunities, especially if the supermarkets bypassed intermediaries and established direct supplier relationships. Likewise, there was a concern of small producers being gradually replaced by larger farms, as has frequently happened in fresh produce export value chains. Other product categories requiring processing have received far less attention. Hence, not much is known about the ability of domestic processed and packaged food to enter the supermarket channel and of domestic SMEs in food processing to become regular suppliers of modern food retailers. Moreover, the growth of the modern food services segment and its procurement practices has received little attention.

8.2 Evidence from sub-Saharan Africa

8.2.1 Market penetration

South Africa and Kenya have been the forerunners of supermarket development in Africa. In both countries the number of supermarket outlets and their shares in food retailing expanded rapidly between the mid-1990s and the mid-2000s. In South Africa, supermarkets accounted for 50-60% of total food retailing in 2002. In Kenya, surveys conducted by Michigan State University in 2003 estimated supermarkets' shares in total urban food retailing at 20% (Neven and Reardon, 2004). In line with experiences elsewhere, the share of supermarkets in urban fresh fruit and vegetable markets was much lower, estimated between 2% (Tschirley, *et al.*, 2010) and 4% (Neven and Reardon, 2004). However, the volume marketed through supermarkets was already half of the country's fruit and vegetable export volumes at that time.

In view of this rapid and early expansion, most supermarket literature in Africa has focused on Kenya and, to a lesser extent, South Africa. Supermarket chains from these two countries have also expanded throughout Eastern and Southern Africa and, more recently, into Ghana and Nigeria. Hence, experiences in these pioneer countries can be useful for understanding potential future developments in West Africa along with their likely impacts for the food system and related policy implications. This especially applies to Kenya, which has comparable socio-economic and demographic indicators with larger West African countries.

A striking feature of supermarket development in Africa is the importance of domestic rather than international players in both Kenya and South Africa. Here the rivalry between two market leaders has spurred the initial expansion, followed by other, smaller chains. In South Africa, the initial expansion was driven by ShopRite and Pick n Pay, each controlling about 40% of the modern food retail market segment in 2002. The rest of this market segment was made up by a few smaller chains,

including SPAR, Woolworth, and a large number of independent supermarkets. These chains used different formats including hypermarkets, supermarkets, superettes (small format supermarkets) and convenience stores in order to target different market segments. In 2010, the third largest player, SPAR, had expanded its market share to 20%. Competitive pressure has led to the rapid expansion into townships, smaller towns and rural areas. In 2011, US retail giant Wal-Mart acquired South-African retailer Massmart, which will further spur competitive pressure.

In Kenya, the share of supermarkets in food retailing grew by 18% per annum between 1995 and 2003, albeit from a small base (Neven and Reardon, 2004). In addition to the long-term drivers such as growing urbanization and middle classes, the expansion of supermarkets was propelled by liberalization of import and domestic markets, which increased the accessibility of a wide range of products at more competitive prices. The two dominant players driving the initial rapid expansion were Uchumi and Nakumatt.[62] While Nakumatt has focussed on the upper-income market, Uchumi targeted a broader clientele of varying income levels. Smaller chains such as Tusker, Naivas and Ukwala located their outlets close to major bus stops and transport hubs, targeting middle and lower-middle income urban households. The top five supermarkets collectively accounted for roughly two-thirds of modern food retail sales. The rest was made up by smaller, independent supermarkets and convenience stores, some of which were located in smaller towns and some located in high-income neighbourhoods, catering to specific demands of expatriates and other higher income groups. In 2003, nearly 60% of the stores were located outside of Nairobi, and basically every provincial capital had one or more supermarkets (Neven and Reardon, 2004). Small and independent stores opened new markets and were then followed by the five bigger chains.

Despite the initial rapid growth of supermarkets in both countries and their dominant position in South Africa, traditional food retail channels have remained important. Even in South Africa, only 47% of fresh fruits and vegetables are estimated to pass through the supermarket channel, with the remaining 53% via other channels including open markets and other small retailers (USDA, 2011). This is in part due to the existence of modernised wholesale markets enabling other retail channels to compete with supermarkets in this segment. For staple foods and packaged foods, small neighbourhood stores (spazas), kiosks and hawkers (street vendors) remain important, especially in townships and rural areas. There is a growing awareness among manufacturers and transporters of the importance of spazas as distribution channels. About 20% of the estimated 100 000 spazas reported having their supplies delivered directly by manufacturers of soft drink, dairy and bakery products (USDA, 2011).

In Kenya, growth rates of supermarkets slowed during the latter part of the last decade, partially due to economic problems of the largest chain (Uchumi) but also due to the persistence of a highly unequal income distribution, which results in a still limited middle class and a large share of low-income households. The traditional distribution system composed of open markets, traditional wholesalers, small shops and a large informal sector continues to dominate food distribution (Dihel, 2011). The share of traditional channels in total food retailing (urban and rural) is estimated between 80% (USDA, 2012b) and 90% (Deloitte and Planet Retail, 2011).

In Kenya, the 2003 MSU survey in Nairobi found that supermarkets'[63] market penetration was highest in staple foods (32% of total food expenditures of surveyed households), followed by dairy products (15%), meat (4.5%) and fresh fruits and vegetables (4.5%). The reason for this uneven penetration is that staples and dried products are easier to store and handle than fresh produce. Moreover, due to the larger volumes, supermarkets can negotiate better prices with manufacturers or importers of packaged food products and pass these prices on to consumers. They further attract consumers with a broader assortment compared with traditional stores.

62 Both are domestic firms. Uchumi resulted from the privatization of a government-owned enterprise and is listed at the stock exchange, whereas Makumatt is owned by an Indian Kenyan family.

63 luding supermarket chains and small, independent supermarkets.

Concerning the depths of market penetration, the 2003 survey found that 80% of all surveyed households in Nairobi bought part of their food from supermarkets at least once a month. Even in the poorest income quintile, 60% of the households reportedly made small purchases at nearby supermarkets, even though at lower frequency, usually about once per month, and for small values at a time. The two main incentives to buy at supermarkets are the larger assortment and low prices for key staples such as sugar, maize flour, oil, wheat and bread. However, poor households purchased almost no fruits and vegetables in supermarkets due to their higher prices compared to other outlets. In Zambia, a survey conducted in the four largest cities found a higher share of middle and upper income customers in supermarket food sales. Two-thirds of all food sales in supermarket chains went to the top 20% of the income distribution whereas the bottom 60% accounted for only 12% of sales. Moreover, three-quarters of all fresh fruit and vegetables sold through supermarkets were purchased by the top income quintile (Tschirley, *et al.*, 2010).

Income, access to refrigerators, vehicle ownership and proximity are key factors that determine the likelihood of shopping in supermarkets. They allow households to make fewer trips and store greater quantities at home, especially of fresh products. This compensates for disadvantages posed by distance and urban congestion. Moreover, younger and better educated persons tend to shop more in supermarkets compared to other demographics.

Evidence from different countries shows the selective adoption of supermarkets by consumers who continue to shop for different items in different retail outlets at different frequencies. Even high-income households in Zambia continue to shop in various traditional outlets. In Kenya and Zambia, the top 20% of income earners of the surveyed households spent between two and three times more in traditional shops, markets, and informal retail outlets than in supermarket chains (Tschirley, *et al.*, 2010). This confirms the importance of proximity and urban congestion in shopping behaviour even for households where income is less of a constraint.

8.2.2 Procurement

In order to supply supermarkets, producers need to meet stringent requirements concerning volumes, consistency, quality, food safety, packaging and timing of delivery. Only producers able to meet these requirements will enter and remain on preferred supplier lists. Both in South Africa and Kenya, domestic producers and processors have been able to respond to supermarkets' procurement requirements. Domestic packaged foods compete well with imports, and Kenyan producers are particularly strong in dairy products and snacks. According to USDA, between 55% and 85% of supermarket grocery sales in Kenya are sourced domestically. As mentioned before, empirical research is mainly focused on the procurement practices for fresh fruits and vegetables and their implications for the domestic supply chain. The key findings are briefly summarised below.

Overall, evidence shows that leading African retailers gradually introduce similar sourcing practices as their peers elsewhere in the world. These include a gradual shift towards specialized wholesalers and direct procurement from preferred suppliers. For example, Shoprite has its own regional distribution centres for fresh produce handled by a subsidiary company under the Freshmark name. The growers and packers selling to Freshmark are responsible for all post-harvest activity including washing, packing, labelling and barcoding. Payments are made within 20 to 30 days. Growers are expected to make daily deliveries in their own rented refrigerated trucks and bring their produce to these distribution centres from which the various stores in the respective regions are supplied. Freshmark preferably buys from large farmers who are also able to supply the export markets and meet requirements for quality and consistency of supply. It only reverts to imports if no suitable domestic suppliers can be found. Its distribution centres also supply other smaller retailers (Weatherspoon and Reardon, 2003). In 2003, 90% of the fruit and vegetable supply in South Africa was sourced directly from outgrowers, managed by the distribution centre, and only 10% through wholesale markets. In South Africa, Freshmark worked with 300

outgrowers, mainly larger farmers, most of them also supplying export markets.

In other African countries, Freshmark also procures from small farmers, sometimes through spot transactions and sometimes through NGO-facilitated outgrower schemes, such as in Zambia (Haantuba and de Graaf, 2008). For its regional expansion, initially it procures from South Africa until a critical number of stores has been established – usually at least three – to make a distribution centre profitable (Weatherspoon and Reardon, 2003).

In Kenya, Uchumi used a decentralized procurement system based on a preferred supplier programme. Over time, the company moved progressively from brokers and wholesalers towards direct purchases from farmers, which allows it a better control over quality, supply reliability and price stability. At the same time, it increasingly relied on larger farmers with good irrigation infrastructure able to supply all-year-round. Payment is made two to four weeks after delivery. Delivery has to be frequent, daily for some perishable vegetables such as tomatoes. Nakumatt, in contrast, relied on specialized wholesalers for its fruit and vegetable sourcing. These wholesalers bought from a larger and more diverse supplier base, including many small farmers, and carried out value-adding activities such as sorting, packing and cutting in house. Their diverse clients included institutional customers (schools, hotels, and government organizations); the differing quality preferences of the wholesalers' clientele allowed them to be less restrictive in their procurement criteria.

Overall, procurement systems have been moving towards centralization and shifts from traditional brokers to specialized/dedicated wholesalers, and from spot markets to use of preferred supplier systems, and then to use of private quality standards. These trends tend to favour medium to large farmers who are in a better position to meet the requirements in terms of volumes, quality and consistency. There is mounting evidence that smallholders, individually or as groups, face tough challenges to enter and remain in preferred supplier lists of supermarkets (Tschirley, *et al.*, 2010). In Kenya, Neven *et al.* (2009) found that the majority of smallholder producers face stiff entry barriers due to initial requirements concerning investment capital (e.g. physical infrastructure and transport), working capital (inputs), and social capital (effective rural organization to achieve volumes and consistency in supply and share fixed costs). Another study based on a survey in central Kenya conducted in 2008, found that off-farm income, education, and vehicle ownership or access are key determinants enabling farmers to participate in supermarket chains. Many of the small farmer suppliers have been supported by an NGO linking farmers to supermarkets and providing invoice discounting services to bridge the payment gap. The study also found that net incomes were almost 50% higher for farmers selling to supermarkets compared to traditional channels. In the case of small-scale farms, supplying to supermarkets generated an even higher income gain of 67% on average (Rao and Qaim, 2010).

While large farmers dominate fresh fruit and vegetable production for export markets, medium-sized farmers dominate production for supermarkets. However, medium and large farms depend overwhelmingly on hired labour, which is higher-paid on average than other farm workers and employed year-round. Following international experiences, the future development of the sector could lead to inclusion or exclusion of small farmers. In some cases with rising rural wages, larger farms might regularly substitute capital for hired labour. In other cases, large farmers have engaged in outgrower schemes with smaller producers to expand.

8.2.3 Supermarket expansion beyond Kenya and South Africa

South African and Kenyan retail chains have been expanding into other African countries, especially in Southern and Eastern Africa, competing with smaller domestic players. Shoprite opened its first store in Zambia in 1995 and expanded heavily in the following years. In 2003, the company had operations in 13 counties, and this number increased to 16 in 2012, including Ghana and Nigeria. Other large South African retailers such as Pick n Pay, Massmart and Woolworth have also expanded in neighbouring countries.

SPAR operates in nine African countries, including, recently, in Nigeria. Kenyan market leader Nakumatt opened its first store in Rwanda in 2008 and now operates stores in Uganda, Rwanda and Tanzania. Uchumi has opened its first store outside Kenya in Dar es Salaam and plans to open seven stores in Uganda (Jacobs, 2012). Franchising has been used as a strategy for expansion into other markets, as it requires lower initial capital investments. However, the first anchor stores are often owned and managed by the parent company.

In general, the penetration of supermarkets across Africa has been slower than anticipated in the early 2000s following the rapid growth in Kenya and South Africa and the initial wave of investments in other countries. However, there are recent signs of acceleration. So far, mainly national and regional players invested in the sector, apart from limited entry of French chains in some francophone countries (Casino has entered Cameroon, Gabon, Madagascar and Senegal through franchising) (Bra, 2012). However, the entry of Wal-Mart in South Africa by acquiring a 51% share in the South African retailer Massmart is expected to accelerate growth and competitive pressure in the African supermarket sector.[64] It has embarked on an aggressive price competition strategy in 2012, putting its competitors under pressure (Jacobs, 2012; Deloitte and Planet Retail, 2011). Wal-Mart is aiming to expand Massmart's share in grocery retailing in South Africa and other African countries. In addition to sustained economic growth, urbanization and growing middle classes, regional integration enhances the possibilities for cross-border sourcing, especially in the case of fresh produce.

8.3 Modern food retailing in West Africa

Information on the state of modern food retailing in West Africa is extremely limited. There are no studies on supermarkets or food services, their business models and procurement practices available in the public domain. Even basic information about the size and structure of food retailing in West Africa is scarce. Capturing the size and structure of food retailing is particularly difficult given its diversity and the importance of the informal economy. Food retail volumes or turnover are not reflected in public statistics, and private market information and research firms largely confine their activities to Nigeria. Even these private market research firms usually rely on industry sources and extrapolate information obtained from certain respondents, largely from the formal sector, and from the trade press.

This section is based on information published by the Foreign Agricultural Service (FAS) of the United States Department of Agriculture on Ghana, Nigeria and Senegal, and from Euromonitor International on Nigeria.[65] In addition to secondary information available, the section draws on interviews in Accra and Lagos conducted as part of the AGWA study in order to better understand the perceptions and views of food retailers and consumers on issues, challenges and future directions of different food retail channels. While the emphasis was placed on modern food retailing, operators and customers in traditional markets were also interviewed.

8.3.1 Structure of grocery retailing

Overall the grocery retail sector in the three countries is still at an early stage of transformation, and modern food retailing is still in its infancy. Food distribution is dominated by traditional channels and a large informal sector to an even greater degree than in Eastern and Southern Africa. Traditional open markets are the main food distribution channels, accounting for half of overall food retailing in Senegal and two-thirds in Ghana and Nigeria (USDA, 2010; USDA, 2007 USDA, 2012a). These markets typically consist of small stalls of 5 to 10 m^2 clustered in large open areas. Most grocery wholesalers are also located on or

64 Massmart is a managed portfolio of ten wholesalers and retail chains, each focused on high volume, lowmargin, low-cost distribution of mainly branded consumer goods, through 228 outlets, and one buying association serving 478 independent retailers and wholesalers, in 12 countries in sub-Saharan Africa. However, its operations outside of South Africa are mostly small, accounting for only about 10% of total sales. While Massmart is the second largest retailer in South Africa, it only has five% market share in grocery retail (Deloitte and Planet Retail, 2011).

65 However, the estimates published on food retail market sizes vary considerably between sources and years, and they are not always clear about the extent to which the traditional and informal sector is included in the estimates. Hence, the estimates of the size of the food retail markets and the shares of the main retail channels cited in this section should be considered as rough estimates of orders of magnitude.

close to open markets (between 60% to 70% in Ghana and Nigeria, respectively). Open markets not only have a dominant position in basic food staples (cereals, roots and tubers) but also in fruits and vegetables, meat, eggs and fish. They are also important outlets for packaged foods and frozen meat and fish, both domestic and imported. In Ghana, frozen chicken imports are mainly distributed through cold stores, many of which are located in open markets. Most importers also operate as wholesalers and retailers. In Ghana and Senegal, many supermarkets are owned by importers. Most importers have satellite outlets or representatives in the main open markets. Over time, there has been some consolidation and shortening of food import chains. For example, in Ghana an estimated 40% of imported food products are purchased by retailers directly from importers who maintain warehouses and distribution points in several locations (USDA, 2012a).

Focus-group interviews in Accra and Lagos revealed that the attractiveness of open markets is due to their broad range of goods and lower prices compared to other food retail outlets. Customers usually bargain for prices except for imported high-value products and international brands of packaged foods. Some consumers also prefer the freshness of products in the open markets and the possibility to taste and inspect unpackaged staples such as gari. At the same time, consumers complain about congestion, poor hygienic conditions, product presentation and a stressful shopping environment. Moreover, travel to these markets can be time-consuming, particularly in large cities. Hence, most customers in larger cities tend to buy larger quantities of food staples and packaged foods.

Open markets also serve as the main sources of supply for small independent food retailers, who tend to source from wholesalers or sub-wholesalers on or around these markets. Small, independent stores comprise a wide spectrum of outlets, ranging from superettes to neighbourhood stores and kiosks. They normally sell food staples, packaged foods and beverages in small quantities and sizes, along with non-food items. Some of the larger stores are directly supplied by importers as part of their distribution and promotion strategies. Only a small fraction of neighbourhood stores sells frozen foods due to limited and unreliable access to electricity. Although prices are slightly higher than in open markets, their proximity makes them the first choice of many households, especially those in the lower-income brackets with limited access to refrigerators and transport. As in case of supermarkets, households' ability to buy and store fresh produce depends on their access to refrigerators and reliable energy supply. Moreover, many small neighbourhood stores sell on credit to frequent and trusted customers and thus play an important role in food security for poor urban households with irregular cash incomes. At the bottom end of the food retail spectrum are mobile food vendors, street hawkers and roadside stalls selling food staples, fruits and vegetables as well as packaged foods to the mobile population.

8.3.2 Modern grocery retailing

According to industry estimates, the share of modern food retail outlets including supermarkets, hypermarkets, gas marts and convenience stores only reaches 1%-2% of total food retailing in Ghana, Nigeria and Senegal. In 2012, most modern grocery retailers only had between one and five outlets. Yet, the modern food retail segment has become more dynamic over the past five to ten years, marked by the entrance of international supermarket chains and franchises. In view of recent sustained per capita income growth rates and similar expectations for the future, investors see considerable growth potential in larger West African countries, especially in Nigeria – the second largest market in sub-Saharan Africa. Ghana and Nigeria compare well with Kenya in terms of key economic and business indicators such as per capita income, population size, ease of doing business and income distribution, but are far behind concerning food distribution and retail market development. The following paragraphs provide a brief snapshot of modern grocery retailing in the three countries.

Nigeria. While supermarkets, and especially international brands, are a more recent phenomenon in Ghana, they have a much longer track record in Nigeria. The oil boom during the 1970s and the

resulting growth of middle- and upper-income classes attracted several national and international concerns to invest in the Nigerian retail market. Brands like Leventis Stores, UAC Stores, UTC Stores, Bhojsons, SCOA and Kingsway opened stores in Nigeria's major cities of Lagos, Ibadan, Port Harcourt and Kano. Given the underdeveloped domestic supply chain, these retailers largely depended on imports to meet consumer demands in terms of product diversity, quality and reliability of supply. The socio-economic downturn during the 1980s and early 1990s and ensuing economic policy measures resulted in an adverse business environment for supermarkets. On the one hand, public spending cuts and retrenchment of public-sector employees led to a decline of the middle class and a worsening of the income distribution, forcing large population groups back into the open markets and neighbourhood stores. On the other hand, import bans and mounting import restrictions related to the cost and availability of foreign exchange made it increasingly difficult to secure regular supplies of food items. Hence, by the late 1990s, most of the above-mentioned retailing chains had stopped their operations. Only a few smaller local players survived the turmoil.

Since the early 2000s, modern food retailing has regained traction in Nigeria, fuelled by improved macroeconomic stability and strong growth. In September 2008 the government significantly reduced the number of items prohibited for import and reduced the duty on others. Hence, a major impediment for modern food retail expansion, especially in its early stage, has been relaxed. As a result, multinational retail and food service chains have entered the country, alongside increased investments by local entrepreneurs in the modern food retail and food service sectors. Even with all of the challenges posed by Nigeria's economy, the private sector views the consumer food delivery market as too large and too dynamic to be ignored.

Property developers are also expanding their activities in Nigeria, often in tandem with major retailers. The opening of The Palms, a first-of-its-kind shopping mall in Lekki, Lagos, in 2006, ushered in South African retail giants Shoprite and Game. Shoprite and Game are the anchor tenants of this 40 000 m^2 site, each occupying about 5 500 m^2. While Game stocks a wide range of merchandise from groceries, electronics, furniture and other household goods, Shoprite concerns itself with mainly fast-moving consumer goods. Shoprite currently also operates three outlets in Lagos, one in each Abuja, Enugu State and Kwara State. Two outlets in Kano and Ibadan were scheduled to open in late 2013.

The entry of Shoprite into Nigeria has been followed by SPAR, a Dutch brand operating a franchise model in seven African countries. During 2009, SPAR entered a franchise agreement with the Artee Group, which was established by Indian immigrants to Nigeria in 1988 and which operates five retail outlets in Lagos, Abuja and Port Harcourt. The first SPAR store in Nigeria opened in 2010 in Lagos, and a second one followed in 2011 in Abuja. Having acquired six additional locations for SPAR supermarkets, the Artee Group plans to begin the conversion of Park 'n' Shop to the SPAR brand, though the Park 'n' Shop brand will be retained for shopping centres. SPAR announced its plan to open 20 additional outlets during the next three years. Other notable domestic supermarket brands include Cash N Carry, Goodies, Addide, Grand Square and Amigo.

The entry of three international retail chains and their expansion plans set the stage for increased competition in the sector. Game, a subsidiary of the South Africa-based retailer Massmart, provides Wal-Mart a direct entry into the Nigerian market. Game operates stores in seven African countries including Ghana and Nigeria.

Ghana. In Ghana, the number of supermarket brands and outlets is more limited than in Nigeria. In 2006, a USDA report listed 10 brands, 4 of which had three outlets and the rest were single stores (USDA, 2007). Most were owned by Lebanese residents of Ghana, and all owners were also importers. Until the mid-2000s, these stores carried primarily imported packaged products targeting expatriates and domestic high-income markets. The food retail market in Ghana was estimated at US$1 billion in 2006 (USDA, 2007). Local,

unprocessed foodstuffs and staples including fresh fruits and vegetables, fish and meat accounted for almost half (46%) of the overall market, followed by imported high-value food products (34%) and products partially or completely processed and packaged in Ghana (20%).

With the growth of the middle-class and the entry of Shoprite in 2007, supermarkets have been diversifying their product offerings and are targeting a broader range of customers. Shoprite had already intended to open a hypermarket in Ghana in the late 1990s but then decided to enter the market with a smaller supermarket format, U-Safe, given the market and business environment. As Ghana's formal retail market strengthened, Shoprite closed most of the smaller U-Safe stores with the opening of one hypermarket in 2007 in the Accra Mall. Larger home-grown players such as MaxMart and Koala have remodelled and expanded their stores substantially towards "mini-hypermarkets" with a broader product range. The strong recent growth performance and the expected future growth of investments and consumer spending in Ghana fuelled by the emerging petroleum industry is expected to sustain growth of modern food retailing, at least in urban areas. For example, as of March 2013, Wal-Mart was actively exploring the possibility or entering the Ghanaian market.

Senegal. In Senegal, larger supermarkets are almost exclusively located in Dakar. In total, there are about 200 supermarkets and mid-sized grocery stores in the Senegalese capital, which boasts a large expatriate community and a sizeable middle class. Over the past 10 years, several modern supermarkets have opened in Dakar, including five outlets of the French Casino chain and the Hypermarket Exclusive, owned by Indians. There is also a growing number of gas-station-type convenience stores. Several domestic chains (e.g. Pridoux, Select, and Filfili) are owned by French and Lebanese expatriates (USDA, 2010).

8.3.3 Food services

In view of the trends towards eating away from home discussed in Chapter 6, the food services sector has been growing strongly. Little is known about the structure and size of the food services sector in West Africa, which consists of hotels, restaurants and catering. Evidence suggests that the sector is as equally diverse as the grocery sector, ranging from large international hotels to small restaurants and street-food vendors. However, information about numbers of operators and outlets of the different food service segments and their turnover is scarce and fragmentary.

Industry sources state that the restaurant industry in Nigeria has been growing quickly and quick-service restaurants (QSR) have been growing particularly fast. This sector is composed of traditional casual restaurants and food stalls, street-food and modern quick-service outlets. While exact data are not available, street-food vendors and small casual restaurants comprise the bulk of the quick-service sector. These outlets are particularly important for low-income households, but they cater to broad segments of the urban population. Similar to traditional small grocers, accessibility and locational convenience are key determinants of their popularity in congested urban areas.

In addition to these traditional and informal outlets, the formal QSR sector including formal-sector fast-food restaurants has also grown rapidly over the past decade. Modern QSRs fill the gap between the traditional casual restaurant and street-food sector on the one hand and conventional up-market restaurants on the other hand. They respond to the growing demand for ambience and improved safety and hygiene conditions as well as to changing urban lifestyles. In Nigeria, the formal QSR sector is larger and started earlier than in Ghana. Mr Biggs is the industry pioneer.[66] Starting as a coffee shop in the Kingsway department store in the 1960s, it was the first Nigerian food services company to use a franchise model. Mr Biggs has grown to over 170 locations and extended into Ghana. Other important players include Tetrazzini, Big Bite, Mama Cass, Tantalizers, Chicken Republic and Pizza Republic. According to industry sources, the modern-fast food industry in Nigeria grew by 30% per year between 2000

66 The Mr Biggs restaurant chain is a division of United African Company, a Nigerian conglomerate with investments in a range of economic subsectors.

and 2009. Total revenues generated by the 800 outlets were estimated at US$400 million in 2009 (Research and Markets, 2010).

For both countries, the entrance of international QSR franchises has reoriented the QSR segment, bringing new standards, status, ambience and a robust branding culture. While Mr Biggs was originally the most modern QSR in the market, entrants such as KFC from the United States and Barcelos from South Africa have challenged the competition in terms of ambience and brand recognition. KFC entered Nigeria in 2009 and Ghana in 2011. Chicken Republic and Pizza Republic are also major players with unique profiles. These brands are not just multi-national transplants; they were established by a Nigerian entrepreneur who had been living abroad for 16 years. While they are domestic brands,[67] the founder designed them to mimic international competitors and has been successful in doing so. Since Chicken Republic's launch in 2004, the brand has grown to more than 65 company-owned and franchised stores valued at US$120 million. In a discussion with the AGWA team, the firm's founder stated that the market is being driven by youth: "They want to associate themselves with modern brands and modern ways of eating."

Standard brands such as KFC and Chicken Republic signal to consumers a consistent product and ambience, but equally importantly, they bring high standards for food safety. According to a KFC employee formerly working in a domestic fast-food outlet, operational standards at KFC are higher throughout the entire process from food purchase, storage and preparation to customer service. These include clear standards for operational issues such as how to thaw chicken, when to change the cooking oil, and employee hygiene. As a rule, food in these outlets can only be kept for a certain period and cannot be re-used. Employees must clean the dining area in a routine fashion according to a schedule. Applying these standards requires workforce training and incentives.

A majority of QSRs, especially the international franchises, offer a relatively limited menu. The menus are centred on chicken, fried or rotisserie, with other common accompaniments such as rice or french-fried potatoes. Some also offer sandwiches, meat pies and burgers. According to outlet representatives, the menu-item cost structures are designed to enable all consumers to afford at least something. For example, KFC employees say that their most popular menu item is the ice cream cone, as many people who cannot afford an entire meal want to order at least one menu item.

Although KFC has many stand-alone outlets in Nigeria, many of the "high-ambience" QSRs are located in shopping districts, malls, or in conjunction with other eateries. Consumers view these outlets to be some of the most "upmarket" dining options, aside from fine dining.

There are other domestic players, offering a diversified menu based on traditional foods. These include Mama Cass, Tantalizers, Tetrazzini and Big Bite, which mainly target upper-middle-class customers. The foods are prepared and presented in a buffet. For example, Mama Cass started as a small cafeteria during the early 1990s offering bakery products, snacks and rice. It has now eight outlets in Lagos and Abuja and one in Abeokuta and serves a range of traditional dishes along with snacks, bakery and confectionary products, and poultry. The company purchases poultry, fish and yogurt from preferred suppliers and periodically checks their quality in a laboratory. The company's catering business has been growing rapidly over the past five years. Tetrazzini and Big Bite are other examples of domestic chains offering broader selections of both traditional and Western dishes. According to the staff interviewed, the demand for African dishes has been stagnant whereas the demand for Western dishes has grown.

In Ghana, the domestic QSR sector is less developed and focuses mainly on fried foods such as chicken, rice and fish. Papaye is the only domestic QSR chain, but its menu is focussed on fried chicken, French fries and rice rather than on traditional dishes. However, international fran-

67 The Republics are now part of Food Concepts PLC, a Nigerian public company housing these brands plus a fine-dining full-service restaurant, a bakery as well as a poultry farm.Food Concepts states that its goal is to "revolutionise the food sector in West Africa and to deliver extraordinary satisfaction to our stakeholders."

chises such as Chicken Republic, Pizza Republic, Mr Biggs, Barcelos and KFC have also entered the Ghanaian market.

Food ingredients are procured both domestically and through imports, depending on country and product category. Food staples, bread and pastries, and most fruits and vegetables are mainly procured domestically, primarily from preferred suppliers to guarantee quality and consistency of supply. Products that are partly imported include rice, poultry (in the case of Ghana), fish, potatoes, and some dairy products. The degree of domestic sourcing is higher in Nigeria due to a larger domestic processing industry for packaged foods such as noodles, pasta, fruit juices and poultry meat, along with import restrictions for these and other product categories. Fast-food chains in Lagos largely rely on imported processed and canned vegetables because of their reliability and quality compared to domestic suppliers.

More detailed work is needed about the sourcing patterns of the food services sector and the role of specialized agents and wholesalers as well as direct contracting with suppliers. While concerns about volumes and consistency of supply are similar to those of the modern grocery sector, quality requirements may be lower for some segments of this industry. This could imply lower entry barriers for smaller farmers to supply the food services sector, as long as their supply can be aggregated.

8.3.4 Main constraints facing modern food retailing

Interviews with grocery retail managers in Accra and Lagos revealed some of the key challenges underlying the slow growth of modern food retailing in Ghana and Nigeria. These can be summarised as follows:

- ***Availability and cost of real estate.*** Interviewees in both countries highlighted the difficulties to find appropriate real estate in suitable locations to expand their stores. Lengthy and often non-transparent procedures for obtaining permits were cited. Real estate in the major city centres is expensive, and building new premises requires even larger capital outlays, often beyond the financial capacity of many domestic operators. Especially large regional players such as Shoprite prefer locations in shopping malls or centres that attract larger numbers of customers, but these have been developing slowly. These factors particularly constrain the growth of hypermarkets, whereas smaller formats are less affected.

- ***Urban congestion.*** A second constraint for hypermarket expansion is urban congestion, especially in large cities like Lagos and Accra. This is accentuated by many consumers' lack of access to convenient forms of transportation (cars or well-functioning public transport). Again, smaller formats and convenience stores located in various locations across major cities but with coordinated procurement functions might be better suited for congested urban environments.

- ***Human resources.*** There is scarcity of skilled human resources to perform key management and operational functions and serve customers. This requires investments in on-the-job training and often the use of expatriates.

- ***Unreliable electricity supply*** is a further constraint, especially for expanding fresh, frozen and chilled produce sections, as the reliance on generators drives up operating costs. Supermarkets in Nigeria reported difficulties to keep generators running throughout the night. Even small changes in the cold-storage temperature can result in product losses, especially for highly perishable items such as fish. Unreliable electricity supply also discourages consumers from buying refrigerators, which limits the demand for large purchases of perishable items. Consumers lacking refrigerators have to make more frequent, smaller purchases of such perishables, which is often more convenient to do from small-scale retailers in their neighbourhoods.

Underdeveloped domestic supply chains

Sourcing domestic products that meet supermarkets' requirements in terms of quality, packaging and consistency of supply remains a key challenge.

So far, most products in Ghanaian supermarkets are imported, with the exception of some basic food staples, fruits and vegetables. However, the latter are mainly procured on an ad hoc basis from wholesalers in open markets. Domestic sourcing of meat requires extensive quality control on a piece-by-piece basis, since buyers cannot rely upon the enforcement of public food safety standards even in large abattoirs. Shoprite in Accra mainly sells imported frozen poultry. In addition, however, it procures fresh poultry meat from two poultry farmers close to Accra. Due to lack of supply of processed meat and in order to ensure quality and safety, whole birds are purchased and then slaughtered and prepared into different cuts. Consumers are willing to pay a premium for fresh domestic meat, and there are important opportunities for developing niche markets in modern food retail outlets. However, domestic poultry producers and their associations have made little use of such opportunities.

In Nigeria, the degree of domestic sourcing is higher due to the availability of larger producers and processors and the persistence of import bans for certain key commodities. Some of this sourcing is not just local, but involves shipments across Nigeria. Supermarkets procure poultry meat from large, integrated farms that also process and package meat. For example, the Amigo Supermarket in Abuja buys chicken (some using brokers) from Zartec, the country's largest poultry producer based in Ibadan, and also sources vegetables and fruits from the Jos plateau in the central highlands. Exclusive Stores in Abuja sources its fruits and vegetables partially from a preferred supplier in Jos, complemented by brokers and purchases from the open market. This supermarket also supplies imported fruits and vegetables preferred by its expatriate and upper-income customers. Prices for imported fruits and vegetables are approximately double those of the domestically produced versions. The main problems with domestic supplies of fresh and packaged products are related to quality, presentation, packaging, and consistency of supply. Key problems of imported items are related to delays in shipments and customs clearing.

While Nigerian food retailers have better access to domestic fresh and packaged products than do their Ghanaian counterparts, prices tend to be higher than in neighbouring countries due to import restrictions and an adverse business climate. These price differences encourage large-scale smuggling of goods from neighbouring countries, which are distributed through a wide web of small and informal stores and markets. Given their exposure to public scrutiny, modern grocery retailers and QSRs can only procure products that are either produced domestically or have entered the country via legal channels. This places formal retailers at an additional disadvantage concerning prices vis-à-vis competing distribution channels.

8.4 Outlook

Overall, urban food distribution remains dominated by traditional channels including open markets, traditional wholesalers and retailers. However, there are signs that the growth of modern food retailing might speed up considerably in the coming years in view of the increased dynamics of the sector and recent entry of regional and international players into both the modern grocery and food-services sectors. Compared to the countries' market size, urbanization levels and economic dynamism, modern food retailing in Ghana and Nigeria is underdeveloped. Domestic, regional and international players are increasingly aware of the opportunities, and many of them have ambitious growth plans. Experiences in other African countries, especially Kenya, show that the expansion of modern food retailing can happen very quickly. Still, there are formidable challenges related to the business and operating environment and urban congestion. Stated growth objectives of major domestic and international players therefore need to be treated with some caution.

Growth is certain, but its pace is difficult to predict. The future will see the entry of more multinational modern food retail operators as well as increased participation of local brands. The pace of this expansion and its impact will depend on the overall business environment, the continuation of economic growth and its pattern (which will affect the size of the middle class), trends in urban infrastructure (especially electricity sup-

ply and public transport) and how quickly supply chain bottlenecks can be addressed. Even in the case of moderate growth, modern food retailing will have spill-over effects on the broader domestic food systems and offer increasing niche market opportunities for domestic and regional suppliers. Modern retailers are introducing new benchmarks in terms of product quality, safety, presentation and packaging, ambience and customer service. As the modern food retail channels grow (both in the grocery and food services segments), competitive pressure is likely to force them to cut costs by developing domestic sourcing strategies. This is likely to stimulate the development of specialized wholesalers as key links with domestic suppliers. As supply chains tighten up and logistics improve, there will also be more opportunities for direct procurement by modern grocers and QSRs from local producers and processors. Opportunities for promoting and placing domestic brands for high-quality domestic products, fresh and packaged, will increase. These include meat, dairy products and fruit juices, but also rice and instant preparations of traditional food staples (such as gari and instant yam), if presentation, packaging and quality consistency can be improved.

Irrespective of the pace of growth of the modern supermarkets segment, it is unlikely to obtain a dominant position in food retailing in the foreseeable future. Hence, the traditional channels remain important for the large majority of customers in both rural and urban areas. Yet if these other segments are to respond effectively to the competitive pressures emanating from modern retailers, food wholesaling in West Africa needs to improve. Improvements in food wholesaling have played a central role developing better performance among a wide range of retail formats in Latin America and in Asia, and supermarket chains have often played a key role in stimulating the growth of modern wholesalers (Seidler, 2001, Reardon, *et al.*, 2012),. Large supermarket chains often carry out some of the wholesaling functions for themselves as well as for other retailers and QSRs, sourcing products via preferred supplier arrangements. But these chains typically continue to obtain some of their products from brokers and other dealers. Independent wholesalers play a key role in supplying other types of retailers, particularly some of the smaller chains and independent retailers. Wholesale markets, by aggregating large volumes of product in a single location, serve as important venues for transparent price discovery that generate important market information about demand and supply conditions for all actors in the value chain. The aggregation of product also allows sorting of products into various qualities, targeted to different market segments.

Yet wholesaling throughout sub-Saharan Africa has for many years lagged behind the rapid growth of cities (Tollens, 1997). Common problems of urban wholesale marketplaces include urban congestion around outdated facilities located in city centres, deteriorated physical infrastructure (e.g. cold chains) with poor hygienic conditions, and poor management of facilities. Historically, wholesale markets have often been managed by municipal authorities who frequently looked upon them as a way of generating revenue through market taxes rather than as a tool to serve the rapidly changing needs of wholesalers and retailers. Given that wholesale markets generate some public goods in terms of market information useful to all actors in the value chains, some public financial support of such markets is warranted. In addition, because their physical location has important implications for public infrastructure, traffic flow, and public health, municipal officials need to be involved in their planning (Argenti, 2000). But if they are to serve the needs of the private sector effectively, the private sector needs to have a strong voice in their management, which is only likely to come about if the private sector has its own capital invested in these facilities as well. Thus, such facilities need to be public-private partnerships.

Not all wholesaling will take place in physical wholesale markets; in addition to large supermarket chains, independent retailers may undertake various forms of collective organization (e.g. creations of voluntary chains and retailer cooperatives) that involve creating a wholesaling organization that serves all the members of the group. It is striking, however, that agrifood policy in West Africa has generally paid little attention to the wholesaling function, focusing either at the farm level or the retail level.

8.5 Main findings and policy implications

The rapid growth of supermarkets in developing countries and its implications for the larger food system has received much attention during the last decade. Supermarkets and modern quick-service restaurants introduce new standards in food retailing in terms of the range of product offerings, product quality and safety, product presentation, shopping and dining ambience, and, eventually, prices. Moreover, their procurement practices contribute to the modernization of domestic supply chains, e.g. by enhancing the efficiency of logistics and introducing traceability of products. They provide domestic producers – farmers and processors – reliable access to growing domestic markets. However, small farmers and processors often find it difficult to supply supermarkets and meet their procurement requirements in terms of quality, volumes, and delivery schedules.

In Africa, South Africa and Kenya have been the leaders in supermarket development. Both countries experienced a rapid expansion of supermarkets between the mid-1990s and early 2000s. While supermarket expansion in other African countries progressed at a much slower pace, there are signs of acceleration given the recent entry of global supermarket chains and prospects of continued strong economic growth. Hence, experiences in these two countries can provide some useful insights for other countries, including in those in West Africa. In line with international practices, Kenyan and South African supermarkets expanded their market shares for packaged foods much more rapidly than for fresh foods, given the challenges of setting up reliable supply chains for the latter. Contrary to other regions of the world, this growth has been driven by domestic players that have eventually expanded into other countries. Since both countries have strong food processing industries, these were able to supply the bulk of supermarkets' product offerings for processed and packaged foods. However, despite the initial rapid expansion of supermarkets, other food marketing channels remain important, especially for fresh produce. Urban congestion and time and income constraints lead to only a partial adoption of supermarket shopping even among urban middle-classes. Neighbourhood stores, convenience stores and open markets remain important. In the case of fruits and vegetables, supermarkets followed a well-known trend towards centralized procurement systems, initially through specialized wholesalers and then through subsidiary procurement centres. Small farmers face difficulties to enter and remain in supermarkets' preferred supplier lists.

In West Africa, modern food retailing is still in its infancy, and urban food distribution remains dominated by traditional channels including open markets, traditional wholesalers, neighbourhood stores and informal food vendors. However, there are signs that the growth of modern food retailing might speed up considerably in view of increased dynamics of the sector over the past five years and the recent entry of regional and international players into both the modern grocery and food services sectors. Despite the recent growth of supermarkets and quick-service restaurant chains and outlets in countries like Nigeria and Ghana, modern food retailing is still grossly underdeveloped in view of the market size, urbanization levels and economic dynamism of these countries. Domestic, regional and international players are increasingly aware of these market opportunities, and many of them have ambitious growth plans. Nevertheless, important challenges remain on the supply side related to the business and operating environments, access to financing and real estate, unreliable electricity, and urban congestion. Hence, while growth of modern food retailing is certain, its pace is difficult to predict. It will chiefly depend on the continuation of broad-based economic growth and on the extent by which the aforementioned constraints are attenuated.

Even in case of modest growth, modern food retailing will have spill-over effects on the broader domestic food system by stimulating the development of specialized wholesalers and direct domestic procurement systems, and by offering niche market opportunities for domestic and regional suppliers. However, it is unlikely that modern food retailing will obtain a dominant position in the foreseeable future. Hence, policy should have a neutral stance concerning modern food retailing. General improvements of the business and operating

environment (e.g. concerning utilities, ease of doing business, contract enforcement and improved access to finance) will benefit all players in the food system. The main policy and investment priorities should be on upgrading the conventional retail and wholesale systems, which still serve as the main conduits for domestic food products. Improving the efficiency, cleanliness and ambience in the traditional marketing system, especially open markets, would have broad benefits for consumers and suppliers alike. Needed actions include measures to improve logistical efficiency for traffic flow and the loading and unloading of goods, in combination with better garbage collection, sewage service and other hygiene improvements. Such measures will enhance the safety and attractiveness of such markets for customers.

Modern grocery retailing enhances food choices, especially for packaged and processed food. These products respond to urban consumer demands for convenience and modern lifestyles. Higher-value branded products also tend to be safer. However, highly processed food products with long shelf lives often have lower nutritional value compared to less altered foods. Hence, improving the availability, quality and safety of fresh produce and dry staples with high nutritional value such as legumes is an important priority from a nutrition security perspective. Similarly, given trends towards consuming more packaged food and fried dishes, providing health and nutrition education, along with improved food labelling, will be important in helping consumers make informed food choices.

Chapter 9

Agroprocessing and Agro-industries: Current State, Opportunities and Challenges

This chapter takes a closer look at the agroprocessing sector in West Africa in the context of the broader structural transformation. After a brief introduction, the chapter highlights key features of agroprocessing in the region in terms of different enterprise segments and their relative importance across industries and market segments. The chapter then turns to the performance of agroprocessing, highlighting key challenges and opportunities for the different enterprise segments in various subsectors. The final section highlights policy issues and options for upgrading agroprocessing and agro-industries.

9.1 Background: agroprocessing and agro-industries

With the exception of fresh fruits and vegetables, most primary agricultural products undergo some type of processing before their consumption. This even applies to basic food staples such as rice, cassava and livestock products. Agroprocessing is the transformation of agricultural raw products through mechanical, biological and chemical alterations, or combinations thereof.[68] It often involves several subsequent processes (e.g., oil extraction followed by refinement), referred to as primary, secondary, or even tertiary processing. Processing converts agricultural raw material or commodities into agrifood products for human and animal consumption or for further industrial use, e.g. in the chemical and pharmaceutical industries. It changes the quality, safety and health attributes of agricultural commodities and agrifood products by modifying their attributes in terms of shelf-life, colour, texture, nutrient content or volume.[69]

Part II has shown that the demand for processed products in West Africa has been increasing with rising incomes, urbanization, and lifestyle changes that reduce the time that urban consumers are willing and able to spend on food purchase and preparation. Food attributes such as shelf life, convenience in preparation, safety, nutritional value, packaging and presentation are all becoming more important, albeit at different velocities among different countries and population strata. Hence, the importance of agroprocessing industries within agrifood chains is increasing. Moreover, their structure and performance have important implications for the costs, quality and safety of agrifood products. The performance of the sector in terms of processing efficiency and product quality is both related to and dependent on the performance of upstream and downstream segments of the value chain. The former determines the availability and quality of raw material and other ingredients throughout the year, whereas the latter influences marketing and distribution costs. Agro-industry performance also depends on an efficient supply chain for processing equipment, spare parts, and maintenance services and on the condition of basic transportation, communication, and energy infrastructure.

The terms agro-industries and agroprocessing are often used interchangeably. While agroprocessing only refers to the post-harvest transformation of agricultural products, agroindustries also include the upstream part of agricultural value chains (e.g. input and equipment manufacturing). This chapter focuses on agroprocessing as the downstream part

68 Examples include de-hulling, shelling, and milling (mechanical alteration), fermentation (biological alteration) and pasteurization (chemical alteration).

69 A distinction needs to be made between processing and value addition. From an economic point of view, processing only adds value if consumers or users of the processed product are willing to pay a premium exceeding the cost of processing. Moreover, value addition does not necessarily require and is not limited to processing. Other transactions such as sorting, grading, storing, packaging, transporting and trading also add value. Furthermore, processing or other operations that are carried out at an economic loss represent value subtraction rather than value addition.

of agro-industrial activities. Agroprocessing differs widely in terms of scale, complexity, technology and labour and capital intensity, ranging from basic village-level cottage industries to large modern industrial processing plants. At the smallest scale, agroprocessing is carried out at the household level, sometimes on a seasonal basis.

9.2 Key features of agroprocessing in West Africa

The West African agroprocessing sector reflects this diversity in terms of size, range of commodities, mechanization and technology levels, reliance on domestic and imported raw materials, internal and external market orientation, quality awareness, degrees of value addition, and vertical and horizontal integration. Various typologies have been proposed based on the scale of operations, enterprise size and level of formality and technology (Ilboudou and Kambou, 2009; Broutin and Bricas, 2006). However, the boundaries between categories are often blurred and are usually commodity-, product- and context-specific.

A detailed understanding of the size, structure and performance of the agroprocessing sector is limited by a dearth of data and analysis. Official data tend to be fragmented, outdated or overly aggregate, i.e. mainly at the level of major subsectors such as foods and beverages and their contribution to Manufacturing Value Added (MVA). More detailed data on the number of enterprises of different sizes, their production and technology levels, and ownership and management structure are rarely available, not even at an industry level. Moreover, official data only capture the formal part of the sector while a significant share of processing and value addition takes place outside of the formal economy. These data limitations pose serious constraints to evidence-based policy making and programme design for the sector. Not surprisingly, there are few studies on agro-industries in the region apart from scattered reports on single sub-sectors such as cotton or cocoa.

Despite these caveats, this chapter discusses some key features of agroprocessing in West Africa concerning its structure and performance and their implications for policies and upgrading strategies. The chapter mainly draws on: (1) a literature review conducted by an international agribusiness specialist as part of the AGWA research, (2) interviews with agrifood companies conducted during the AGWA fieldwork in Lagos and Accra, (3) information on the Nigerian packaged food market from Euromonitor International, (4) additional literature research and (5) the authors' own experiences in the region.

9.2.1 Geographical distribution

Agroprocessing takes place throughout the region, but formal-sector firms are most heavily present in the "big three" countries of Nigeria, Côte d'Ivoire and Ghana. Table 9.1 presents a ranking of 13 of the 15 ECOWAS countries for which data are available; the table ranks the countries in terms of their volumes of production of raw material and primary processed products for several major crops as reported by FAOSTAT. The importance of export-crop processing (palm oil, cocoa, and rubber) is particularly striking in Côte d'Ivoire, while Nigeria ranks first in rice and cassava, as well as industries based on imported inputs such as wheat and milk powder, which are not listed in the table.

The location of processing plants within a given country depends on a number of factors, including access to markets and raw materials, infrastructure and utilities, as well as incentives such as tax breaks and subsidies. Reliable access to raw material of dependable quality and competitive cost stands out as a key determinant. Import-dependent companies tend to be located close to major ports or large consumer markets. Processors of perishable and bulky raw material such as sugarcane, cassava, oil palm and fresh produce tend to be located close to major production areas. Small processors are often located close to raw material sources and can sometimes out-compete larger companies for those raw materials given the smaller plants' lower assembly costs (see the discussion in Chapter 10 on rice and cassava).

***Table 9.1** Ranking of countries by the size of their agroprocessing sectors*

Ranked by volume of production of raw material and primary processed products.

Country	All crops[a]	Rice	Cassava	Palm nut oil	Sugar cane	Cocoa	Cotton	Rubber
Nigeria	16	1	1	3	4	3	1	3
Côte d'Ivoire	25	5	4	1	8	1	5	1
Ghana	28	7	2	2	2	2	8	5
Guinea	43	3	5	6	13	6	6	4
Benin	49	10	3	8	3	8	4	13
Liberia	57	8	7	7	13	7	13	2
Mali	60	2	11	13	5	13	3	13
Togo	60	13	6	4	13	4	7	13
Sierra Leone	61	4	8	5	13	5	13	13
Senegal	64	6	9	13	1	13	9	13
Burkina Faso	71	9	14	13	7	13	2	13
Niger	79	14	10	13	6	13	10	13
Guinea-Bissau	86	11	12	13	13	13	11	13

Source: AGWA background research based on FAOSTAT data

[a] The "all crops" figure represents the sum of the individual rankings for the crops listed in this table. The lower this score, the larger (in volume, compared to the other countries in the region) a national processing subsector industry is deemed to be. While the aggregate score implies comparisons across different subsectors solely on the basis of the volume of raw material processed, which varies greatly between subsectors, it provides a rough guide to the relative size of the entire agroprocessing sector in each country. On the other hand, the subsector scores allow direct comparisons between countries on a like-for-like basis. The ranking does not include the processing of imported raw materials such as sugar, wheat and dried milk, but since Nigeria leads the region in all three commodities, followed by Côte d'Ivoire and Ghana, the overall rankings of the leading countries would not change if these products were included in the calculation.

9.2.2 Size distribution

The agroprocessing sector is highly segmented and marked by a strong dichotomy. At the top, there are a limited number of medium and large enterprises, often affiliates or subsidiaries of multinationals or domestic conglomerates, with high levels of capitalization and technology and with strong brands. At the bottom, there are vast numbers of micro- and small operators, mostly in the informal sector, using rudimentary technologies. In between, there is a relatively small number of small and medium sized agro-industries in the formal sector. This phenomenon, often termed "the missing middle", is also found in other manufacturing sub-sectors in Africa (Dinh *et al.*, 2012). The shares of the different enterprise segments in volumes and values of output vary by commodity, as will be further discussed below.

The relative importance of small, medium and large companies and their respective shares in value addition is highly subsector- and commodity-specific. As mentioned above, data on the number and key features of processing enterprises and their breakdown according to countries and subsectors are scarce and rarely accessible in the public domain. Available evidence such as value chain studies and industry reports[70] on various countries in the region and the AGWA field work conducted in Ghana and Nigeria suggests the highly diverse picture (see also Chapter 10 on selected value chains).

Large-scale industries tend to be concentrated in subsectors exhibiting strong economies of scale and capital intensity in processing and where reliable access to raw material of dependable quality can be established. This is the case for industries relying on imported raw materials such as wheat (e.g. flour mills[71], pasta and noodle manufacturers and large bakeries), milk powder (dairy products,

70 Including industry reports from the market research company Euromonitor International on Nigeria.

71 For example, Flour Mills of Nigeria is the market leader by capacity but new entrants into the market, such as Dangote, Honeywell, and BUA, are increasing their market shares. The entrance of these new and aggressive millers, which are both domestic and foreign, into the Nigerian flour milling industry has increased competition based on price and quality. Nigeria's millers commonly export to ECOWAS countries under the free-trade treaty to take advantage of strong demand for pasta, wheat and bread in the region. Nigerian companies also benefit from 30 per cent export incentives and do not pay local duties (AGWA field research).

flavoured drinks, yoghurts, and cheese), fruit juice concentrates, and, to some extent, rice (where, for example, Nigerian mills process imported rough rice). Medium and large industries based on domestic raw materials can be found in the traditional export crops (e.g. cotton gins, cocoa grinding, and rubber processing), in plantation crops (sugar mills and refineries, and oil mills, especially for palm oil).Other medium- to large-scale industries can be found in the beverage sector (breweries, soft-drinks), paddy rice and maize milling, poultry production, aquaculture and fish processing, and the production of branded animal feeds.

These industries have flourished to the extent that they have been able to establish a reliable raw material base. This is generally easier if: (1) there are limited alternative uses for the raw material (e.g. industrial crops like rubber), (2) the raw material is highly perishable and bulky and needs to be processed or packaged soon after harvesting (e.g. sugarcane, oil palm, export bananas and other fresh fruits), and (3) specific varieties restrict alternative uses (e.g. sorghum varieties developed for beer brewing).

While many large-scale, capital-intensive operators are linked to multinational companies, there are also several strong domestic and regional players. The latter are usually parts of domestic conglomerates, mostly in Nigeria. Employee numbers in firms within this group are estimated to be in excess of 100 but fewer than 500 per plant. Medium-sized formal sector industrial operations with between 50 and 100 employees also exist in some of the commodities mentioned above, notably milling of paddy rice, maize, animal feeds and palm oil, as well as in rubber conditioning and cassava processing for starch and flour. Micro- and small enterprises are primarily engaged in either artisanal or semi-industrial processing of oil crops, paddy, cassava, maize and animal feed compounding with processed inputs. The larger units may be nominally incorporated into the formal business sector, but the vast majority operates informally (Lambert 2012).

In many commodity sub-sectors, operators of different sizes and technology levels co-exist, usually targeting different markets in terms of product quality, price, and geographical location. Examples of such subsectors include milling of grains and pulses, oil extraction, feed milling, and bakeries. Micro- and small operators mainly serve local markets and the low-income segments of the urban population. Large companies have moved beyond just targeting upper- and middle-income market segments with their branded products and are increasingly targeting lower-income groups as well. Examples of product categories targeting the mass market include beverages (soft drinks, beer); dried packaged foods such as noodles, pasta and snacks; and sauces and condiments (e.g. Maggi cubes). The main instrument for market segmentation is the use of different package sizes, with small packages often carrying particularly high profit margins multiplied by large sales volumes. Large companies benefit from their broad distribution networks, strong brand names and large advertising budgets. The artisanal sector dominates many of the traditional staple food chains, such as cassava processing, fish smoking, and production of fermented maize doughs (a staple in some of the coastal countries).

9.2.3 Historic evolution and trends

The sector's diversity derives from its dual origins – as an important player in the global trade of agricultural commodities on the one hand and as a component of local cuisine and of households' food-security strategies on the other hand. Agro-industries linked to plantation crops have a long history in the region, with many of them dating back to colonial times. Additional large agroprocessing enterprises were established post-independence as part of the import substitution strategies pursued in the region. Initially, the agro-industry sector was promoted to add value to perishable agricultural products (e.g., palm oil and sugar cane). As part of the import-substitution strategy, governments supported the establishment of large, mechanised processing enterprises in order to capture economies of scale. In addition to the above-mentioned subsectors, these enterprises also targeted food crops such as maize, cassava, yams, fruit juice and tomato processing.

Many of the companies established soon after independence were owned and/or managed by the government. Apart from management problems, these companies faced major challenges on the market side, as their products were frequently less successful in the market than anticipated. Moreover, raw material sourcing was a persistent bottleneck, leading to low capacity utilization rates, undermining profitability. In some cases, large companies were unable to compete successfully with small companies in accessing raw material, such as, for example, in the Malian rice sector (see the discussion in Chapter 10). Due to these shortcomings, most state-owned agro processing companies were eventually privatised or closed (Broutin and Bricas, 2006).

During the period of import substituting industrialization until the mid-1980s, there was little interest in micro-, small- and medium-sized agroprocessors in the region, except for some NGO programmes and efforts by CILSS to promote processing of local cereals through its PROCELOS programme.[72] This changed only during the 1990s, when donors and national research institutions "discovered" small and medium enterprises (SMEs) in food processing as an important avenue for value addition and employment generation in the non-farm rural economy. A broad range of technologies of different scales were designed and piloted, often successfully. The development of improved processing equipment was accompanied by product testing to ensure safety and quality. However, these efforts, such as those of PROCELOS, were often limited to pilot projects and pilot enterprises, with the hope that demonstration effects would trigger replication and up-scaling. However, this mainstreaming frequently did not occur as envisaged due to poor business enabling environments, unavailability of broader access to key support services and finance, and weaknesses in product presentation, packaging, marketing and distribution.

Despite its enormous size, the artisanal food-processing sector has long been below the radar screen of programmes to develop food-processing, which were mainly targeted at somewhat larger and more formal SMEs (Broutin and Bricas, 2006). For many products, however, micro- and small enterprises remain a very important segment of the industry, with processing carried out by small, independent units, often involving small-scale mechanization such as milling, oil pressing, and de-hulling. This enterprise segment also has a long track record as provider of cheap foods and dietary diversity for the rural and urban population. It has grown strongly since the early 1990s due to the diversification of West African diets discussed in Part II and the reduction of activities of large-scale agroprocessors in the early 1990s following structural adjustment. The region boasts a huge diversity of dishes and diets based on various preparations of domestic food staples such as roots and tubers, beans, cereals, and oil-palm fruit, which often require some processing. The processing is frequently performed at the household level, often as a part-time activity to preserve farm produce and earn some cash income. The prevalence of household-level processing explains the high share of small-scale food processing carried out by women, often in combination with trade or food services.

After the 2008 food price crisis, there has been resurging interest by domestic and international investors in the Agricultural sector, including agroprocessing. Fuelled by recent strong economic growth, interest of foreign investors in Africa has increased. Between 2000 and 2010, net FDI flows totalled US$33 billion against only US$7 billion between 1990 and 1999 (Dinh, *et al.*, 2012). Even though the bulk of FDI went into extractive industries, the agrifood sector has also received increased attention. Much of this interest is focused on the upstream and downstream segments of the agrifood system, including input supply, agroprocessing and, to some extent, modern food retailing. In addition to traditional players with long-standing presence in the region such as Nestlé, Cadbury (now part of Kraft United Foods), and SIFCA, investors from emerging economies such as India and Southeast Asia are increasingly active in the region. An example is OLAM International, founded by members of the Indian diaspora in Senegal. OLAM began operating in West Africa

72 http://www.fao.org/docrep/X5158F/x5158f1a.htm.

in 1989 and now operates in 11 countries. While initially focusing on commodity imports and exports, the company has been investing in upstream activities such as rice milling as well as fully integrated ventures including farms. The company is engaged in a range of commodities including cocoa, sesame, cashew, wheat, and tomato paste, but also sells a number of branded and packaged products. It also bought a stake in the SIFCA Group, the largest private-sector company in the agro-industrial segment in Côte d'Ivoire, with operations in palm oil, rubber and sugar. Moreover, a number of equity funds and related investment vehicles targeting agribusiness have been set up in recent years, with various levels and combinations of public and private shareholdings.

9.3 Overall sector performance and trends

9.3.1 Declining shares in total industrial output

Agro-industry has traditionally been an important part of the manufacturing sector in West Africa, although its importance varies significantly among countries. Overall, West Africa's manufacturing base has been declining as a share of total economic output over the past 40 years. While the share of the industrial sector in West African GDP grew from 27% in 1970 to 37% in 2008, that of manufacturing declined from 13% to 5% during the same period (UNIDO and UNCATD, 2011). According to ECOWAS (2010), the manufacturing sector accounted for 7.4% of the regional GDP in 2006. Moreover, over 80% of the region's overall manufacturing and value was generated in four countries – Nigeria (40%), Côte d'Ivoire (23%), Ghana (10%) and Senegal (9%). Even though this trend can partially be attributed to the phenomenal growth of Nigeria's oil production, it also mirrors the limited competitiveness of the manufacturing sector and its downsizing following structural adjustment. See the discussion in Chapter 10 for further details.

Agro-industries are an important part of manufacturing, although their share varies across countries. According to the International Standard Industrial Classification (ISIC), agro-industries comprise six main groups, namely food and beverages; tobacco products; paper and wood products; textiles, footwear and apparel; leather products; and rubber products. Recent UNIDO data for the whole of Africa show that agro-industry plays a significant but shrinking role in the continent's manufacturing value added (MVA). In 2009, agro-industry's share in MVA was 27%, compared with 35% in 2000. The decline is attributable to stronger growth in the medium- to high-technology sector, amounting to 5.7% per annum, against 1.1% per annum for the food and beverages subsector. Likewise, Africa's share in world food and beverage manufacturing declined from 2.4% to 1.6%, whereas its share in chemical manufacturing increased from 1.6% to 2.2% during this period. Within the agro-industrial sector, food and beverages is the biggest subsector, accounting for 16.6% of MVA in 2009, followed by tobacco (2.6%), wood (1.8%), textiles (4.7%, in which locally produced cotton is a major component), and leather (1.2%). However, as discussed throughout Part I, regional averages mask important diversity among countries. Even though no comprehensive data on the share of agro-industry in West Africa's manufacturing could be accessed for this report, ECOWAS' West African Common Industrial Policy (WACIP) refers to agro-industry as the largest subsector within manufacturing. Earlier data on Ghana (2003) and Senegal (2002) show that the agro-industry's contribution to total MVA was between 50% and 60% (Yumkella *et al.*, 2011). Within agro-industries, food and beverage industries accounted for about 60% in Ghana, followed by wood processing (excluding furniture).

9.3.2 Many of the most dynamic agro-industries depend on raw material imports.

While no direct comprehensive data on volumes and values of processed agricultural products are available, trade and consumption data provide some broad indications about growth trends and dynamics. Trade data suggest increased regional processing capacity of wheat milling and related products such as pasta, breakfast cereals, along with sugar refining and tobacco manufacturing (see section

4.3.3 in Chapter 4). The strong growth of wheat imports and the increase of wheat consumption revealed by food balance sheets of various West African countries (see Chapter 5) illustrate the dynamic of the wheat milling and downstream industries such as bakeries, confectionary, noodles and pasta. Tables 7.2 and 7.3 in Chapter 7 show the importance of dried processed foods (including noodles, pasta and packaged rice), bakery and confectionary products, dairy products, and sauces, dressings and condiments in the Nigerian packaged food market and their strong growth prospects. International and domestic brands play an important role in the packaged food market. The rice industry shows a similar dynamic, with the recent influx of larger-scale mills in Nigeria, Ghana and other countries.

The demand and consumption analysis in Part II further revealed strong demand for dairy products including yogurts and flavoured drinks, and this demand is mainly served by medium- to large-scale processors using imported powdered milk. The same applies for fruit juices, which largely draw on imported fruit concentrates. In the vegetable oil category, which currently relies heavily on imported palm oil, however, there are emerging signs of import substitution through foreign direct investment in oil-palm production and processing by large East Asian palm oil companies in coastal countries (e.g., Sime Darby in Liberia) as well as European companies such as Unilever in Côte d'Ivoire.

9.3.3 Huge productivity gaps within a dualistic industry structure persist.

A dual industry structure – an abundance of micro and small firms on the one hand and a limited number of medium and large firms – is not confined to agro-industries but characterises the manufacturing sector at large. Given the large differences in capital- and labour-intensity between the large and small firms, it is not surprising that there is also a persistent labour productivity gap between the two types of firms. Söderbohm (cited in Dinh, *et al.*, 2012) reports a tenfold gap in the value-added per person between manufacturing firms employing more than 50 workers and those employing fewer than 10 workers. Moreover, he finds that "small manufacturing enterprises almost always stay small."

A study by La Porta and Shleifer (cited in UNIDO and UNCATD, 2011) on the nature of business informality in 24 African countries shows that firms that operate outside the legal framework have lower productivity than small formal firms. Furthermore, they are smaller in size, produce based on orders, are run by managers with low human capital, do not have access to external finance, do not advertise their products, and largely sell to informal clients for cash. The analysis also highlights something very important from an industrial policy point of view: informal and formal firms occupy very different market niches, and the former rarely become formal since there is very little demand by formal firms for informal products, indicating that informal firms trade more directly with the public rather than business-to-business. There is also some evidence that informal firms do not become formal as they grow.

The persistent market and enterprise segmentation and limited upward mobility of small, informal operators along the technology and size ladder is due to a combination of several factors:

- ***Skills and human resources:*** managing a medium-scale enterprise operating in a formal market environment requires a different skill set than managing a small enterprise, creating entry barriers;

- ***Different cost structures:*** informal firms benefit from cheap labour (largely family-based), lack of labour regulations and avoid taxes and other regulations. At the same time, their informality restricts their access to financial services, outside capital, technologies, services and more lucrative segments of the output markets.

- ***Access to land and capital:*** Informal firms have very restricted access to land needed to expand their operations. Even though start-up financing might be mobilized within the informal network economy, accessing growth finance is a big challenge. Lack of formalization and

registration of land and other productive assets reduces their collateral value, undermining access to growth finance.

Most small and micro-food processors are part of a social network economy that is more geared towards risk diversification and sustainable livelihoods than towards enterprise growth and profit maximization. This has important implications for the performance of small operators and their ability to survive and thrive in a harsh business environment. On the one hand, social networks play a key role in the establishment and operation of micro and small enterprises, helping them to cope with risks, market imperfections and asymmetric power structures. They are used to mobilize initial investment and working capital through a vast array of informal financial institutions and instruments such as rotating savings and credit associations, tontines, and microfinance institutions. They also facilitate access to information, markets and production inputs. Even long-distance trade in the region often operates through informal networks.

On the other hand, being part of a social network economy also implies responsibilities and obligations towards other members of the network and exerts strong pressure on entrepreneurs who succeed to redistribute income to poorer members. This especially applies to networks within kinship structures, which tend to impose strict rules. Entry into the kinship network takes place by birth, and exit is impossible. Horizontal networks based on neighbourhood, places of origin, activity, age or religion are generally more open and flexible concerning entry and exit (Broutin and Bricas, 2006).

Hence, while social networks subsidise start-up and facilitate operations, they tax expansion and growth. Members of network economies have developed numerous strategies to disguise wealth and reduce their "tax burden" to the broader network.[73] One of them is to grow by multiplying small-scale enterprises rather than expanding the scale of a single unit operation. This strategy can be due to several reasons. First, running a number of small enterprises, say mills, spreads the risks of technical breakdown over several units. Second, each additional entity requires only limited amounts of investment and working capital. Third, a portfolio of small businesses spreads market risks. Fourth, small units are less capital- and more labour-intensive, allowing the owner to employ many members of a given social network, thereby contributing to her or his social status and social capital. Fifth, access to raw material to achieve high utilization rates can be easier using a portfolio of small units distributed over various locations. Sixth, a diversified enterprise portfolio also presents advantages of proximity to customers. Given the multiple risks facing small entrepreneurs, such growth paths are rational and may explain in part the dearth of medium-sized enterprises in West African food systems (Broutin and Bricas, 2006).

The micro- and small-enterprise segment in food processing plays an important role in employment generation and livelihood diversification, especially for women, and in providing affordable food products for large numbers of rural and urban low-income households. The great variety of products also contributes to dietary diversity. Moreover, while many medium and large companies rely on imported raw materials, micro and small enterprises mainly process domestic agricultural products. However, as noted above, these enterprise segments are also plagued by low levels of technologies and skills, resulting in low labour productivity and incomes. Rudimentary technologies and hygiene levels often lead to poor product quality and safety.[74] Moreover, product presentation and packaging are poorly developed and constrain access to more dynamic markets that offer higher income opportunities.

Despite its apparent weaknesses, the artisanal sector, made up of micro-firms operating informally, has often been successful in adapting products to changing consumer demands and sometimes in outcompeting enterprises in the formal sector. The weaknesses of small informal operators have often led to their relative neglect by policies and programmes aimed at agroprocessing

73 For example, women engaged in small-scale trade, processing or other activities save and invest part of their profits in savings-based informal financial institutions. In Sahelian countries, wealth is often invested in cattle kept by mobile herders, out of sight of social-network members.

74 However, food safety is not always a problem among micro and small operators; it varies widely among products (Broutin and Bricas, 2006)

and private-sector/SME development, which are most often focused on the formal, medium to large enterprise segment. While it may be unrealistic to expect a large-scale transformation and growth of the vast number of operators, the sector is by no means as static and homogeneous as often perceived. There are various examples that have shown the ability small operators to adapt to changing consumer demands and provide a variety of traditional food products to low- and middle-income households. For example, the production of gari is dominated by small units, sometimes operating in clusters in proximity to major cassava producing areas. Gari has all the attributes of a convenience food, with strong demand in both urban and rural areas. While there are certainly opportunities to upgrade hygiene and sanitary standards of small gari producers and improve packaging, the acceptance of such improved products over artisanal ones, even among middle-class consumers, is not automatic, as the discussion in Chapter 7 has shown.

There are other cases where artisanal producers have been more successful in adapting to changing consumer demands than have industrial processors. Broutin and Bricas (2006) describe the example of the transformation of dried yams into chips, which can be stored, transported and eventually further processed into flour that can be prepared with boiling water into an instant food called amala. Two large companies, Nestlé in Côte d'Ivoire and Cadbury in Nigeria, also developed and introduced dehydrated instant yam products, but they did not show great success, apparently because consumers did not perceive sufficient value added over the traditional products (based on the artisanally produced flour) to pay the price difference.

In Senegal during the late 1980s the government initiated a programme to promote millet consumption in Dakar in order to reduce import dependency on wheat and create markets for domestic producers. Initially, the programme focused on supporting an industrial mill (la Societé Sentenac) to produce packaged millet flour and semolina. The product was successfully introduced into the market, accompanied by a strong advertising campaign. This initial success of the products encouraged several small enterprises to develop similar products with the support from development projects. These small companies diversified into several millet-based products, targeting the bakery sector to incorporate millet flour into their bread (baptised pain riche). The CFA franc devaluation gave another boost to this small sector of approximately 50 companies. In the early 2000s, Sentenac withdrew from millet processing, shifting back into wheat milling, which it considered more profitable, and leaving the market for millet-based products to small operators. Total production of packaged millet amounted to about 5 000 tonnes in 2001 out of a total millet consumption in Dakar estimated at 45 000 tonnes (in 1998). The remainder of the consumed millet was transformed (de-hulled and milled) either by artisanal processors in the market or in the consuming households (Broutin and Bricas, 2006).

These examples show the potential of different strata of micro and small enterprises to transform traditional products in ways that makes them more appealing to urban households, targeting various market segments and income groups.

9.4 Opportunities and constraints for expanding agroprocessing in West Africa

9.4.1 Opportunities

Demand and consumption trends suggest substantial opportunities for agroprocessing to enhance domestic value addition and better link the Agricultural sector to domestic, regional and international demand. For domestic and regional markets, the following subsectors boast significant potential (for details, see Chapter 10):

- ***Rice milling***: targeting various market segments, with an emphasis on improved quality.
- ***Maize and cassava processing:*** into flours, starch, syrups and glucose.
- ***Vegetable oil production***: including palm oil and other vegetable oils with a higher content

of unsaturated fatty acids (e.g. sunflower and sesame oils) to respond to consumers' increasing demand for more healthy fats.

- ***Sugar:*** given the growing demand for soft drinks, pharmaceuticals, confections and snacks. So far in West Africa, sugar growing takes place mainly on estates, but examples in Southern and Eastern Africa show opportunities for outgrower schemes; an example in West Africa is the Savannah Sugar Company Limited in Adamawa State in Nigeria, established by CDC.

- ***Fruit juices:*** introducing natural fruit juices for the increasingly health-conscious middle-class population and establishing fruit concentrate production plants.

- ***Beer:*** substitution of imported barley by sorghum (practiced by Guinness in Nigeria and Ghana) and cassava (practiced by SAB Miller in Mozambique and now starting in Nigeria and Ghana).

- ***Animal feed:*** based on maize, soybeans, oilseed cakes, and cassava pellets.

- ***Cocoa grinding:*** Globally, grinding is moving increasingly into cocoa-producing countries, with the international chocolate companies focusing more on manufacture of the confections, new product development, and marketing. West Africa's share of global cocoa grindings is 16%, located mainly in Côte d'Ivoire, Ghana and Nigeria. Cocoa grinding is mainly large-scale, given its capital requirements.

- ***Cotton textiles:*** A UNIDO feasibility study (Gherzi Textil Organization, 2011) identified potential in Côte d'Ivoire and Nigeria to expand textile manufacturing if issues such as irregular electricity supply (see below) can be resolved.

- ***Meat processing:*** Given the projected rapid growth in demand for meat in the region (Part II) and the poor condition of many current abattoirs that endangers public health, new investment in slaughter facilities through public-private partnerships is needed in most countries.

- ***Dairy processing:*** As noted in Chapter 10, in the inland Sahelian countries, small-scale dairy processing plants based on local milk production have been expanding recently. Large-scale dairy processing will likely remain heavily dependent on imported milk powder, but given the growing demand for products like yoghurts, opportunities exist for expanded local value addition based on the imported powder.

- ***Cashew processing:*** Africa produces more raw cashew nuts than any other region of the world, and West Africa accounts for 80% of that production. Côte d'Ivoire and Guinea-Bissau are the largest producers. Yet the region only processes 5% to 6% of its output, with the remainder exported raw to Vietnam or India for processing. In contrast, Tanzania and Mozambique, the largest producers in East Africa, process between 20% and 30% of their nuts. The cashew industry in West Africa is attracting increased interest from Brazilian, European and U.S. investors. There are important technical and safety issues to be addressed in cashew processing (as the raw nuts are toxic to the skin), but the scope exists to expand processing markedly.

Almost all of these industries present substantial opportunities for strengthening backward linkages with farming. Likewise, as discussed before, strengthening farm-agribusiness linkages is crucial for enhancing the performance of agroprocessing by increasing capacity utilization rates. In several subsectors, contract farming and outgrower schemes have been used successfully in West Africa and elsewhere. Examples include sugarcane, fruit juices, palm oil, and sorghum for beer brewing. In the case of staple foods, outgrower schemes are less common and performance has been more mixed. For these crops, improving spot markets and their links to wholesaling by strengthening infrastructure for post-harvest handling, storage and transport might be more promising. In this scenario, wholesalers would play a key role in supplying agroprocessors and would in turn work either through their own agents or farmer organizations to assemble the products at the farm or rural-market level. (See Chapter 11 for a discussion of policy issues surrounding wholesalers.)

9.4.2 Constraints

Despite the increased interest and potential in agroprocessing and agro-industry development in West Africa, a number of important factors continue to stifle the sector's growth and competitiveness and its forward and backward linkages in the agrifood system. While many of these constraints and the options to overcome them are value-chain specific, a few well-known structural constraints apply across the entire sector. These are briefly discussed below.

Poor vertical coordination with domestic farming is perhaps the most important issue affecting agro-industry development in the region. The limited ability to consistently procure raw material of dependable quality results in low utilization rates of the installed processing capacities, undermining profitability and competitiveness. (See Chapter 10 for examples from several different value chains.) Weaknesses in physical infrastructure, utilities or the business environment are more easily overcome or circumnavigated than dysfunctional markets and weak contracting systems. Many of the constraints faced by processors originate in deficient raw material supply, which can be traced back to farmers' lack of timely access to appropriate inputs due to market distortions or market failure. It is also linked to farmers' small range of risk management tools, which forces them to deal with risk mainly through diversification. As a consequence, most smallholders produce only very small marketable surpluses of any given crop, raising processors' costs of raw-product assembly. Poor farmer responses to processors' raw material needs are also market-related, wherein buyers are reluctant to provide an assured outlet for products or reward quality, fearing farmers will not observe contractual agreements.

To a great extent, the success of the wheat, sugar refining and rice-polishing industries in responding to burgeoning domestic demand is their assured access to sufficient supplies of good quality raw material, which are offloaded from the vessels that deliver the goods from the world market and then are transferred with relative ease to their industrial-scale processing plants in the vicinity of the ports. It is likely that if the maize, paddy rice, cassava and vegetable oil processing industries had the same ease of access and assured quality and quantity of raw materials, they too would achieve performance levels similar to those of the import-processing industries.

Poor physical infrastructure, especially concerning transport and trade, increases transport time and costs, reducing the competitiveness of domestic agro-industries vis-à-vis imports. The issues concerning long-distance traffic, road governance and the organization of the trucking industry are further discussed in Chapter 12. In addition, the poor state of rural feeder roads discourages agro-industries from sourcing locally.

Energy, especially electricity, is a key input to mechanization of production, processing and operating cold storage. Unreliable power supply and frequent electricity outages are common across the region and hurt agroprocessing in five ways. First, large- and medium-scale processors and distributors of perishable products all along the food chain are forced to invest in generators, which drive up their costs substantially. Second, when firms do operate on the electrical grid, they often face electrical surges that can damage their equipment. Third, small-scale processors, especially in rural areas where access to electricity is rare, are forced to operate petrol- or diesel-powered equipment (e.g. small mills) rather than electric-powered equipment whose operating costs are lower. Fourth, the lack of reliable electrical supply in certain areas leads processors to concentrate more in major urban areas rather than closer to raw product supplies or else bear the cost of generating their own electricity. Fifth, the lack of reliable electrical power also discourages households from buying refrigerators, which constrains demand for some perishable processed products, such as dairy products. Electricity is frequently cited as the biggest problem of agro-industries in Nigeria, and some investors, international and domestic, targeting the regional market are relocating to Ghana because of Nigeria's unreliable electrical supply (AGWA field research).

Access to and cost of finance is another core issue frequently featuring at the top of the list of constraints cited in business-climate and enterprise surveys (see Box 9.1). While investment capital is critical for upgrading equipment and expanding productive assets, the importance of working capital is sometimes overlooked. Working capital is the lubricant of agro-industries, allowing them to purchase raw material and keep sufficient inventories to maintain high capacity utilization rates. Yet the demand for working capital is also a function of the organization of the value chain, particularly the efficiency of the links between agroprocessors and their sources of raw materials and other key inputs. To the extent that the supply chains providing critical inputs (raw products, packaging materials, spare parts, etc.) to the processors are unreliable, the processors may be forced to build up inventories of the inputs when they are available rather than working on a just-in-time delivery basis. The need to hold these inventories drives up working capital needs, so developing better vertical coordination in the input supply system is one way to reduce the working-capital constraint. A similar situation applies on the output side; to the extent that wholesalers and retailers of the processed product have limited access to working capital, they may require supplier credit from the agroprocessor, driving up the processor's need for working capital.

On the other hand, agroprocessors with good access to working capital finance are in a position to pay cash upon delivery, often a key factor determining their ability to compete with other product buyers. Larger companies may even be able to prefinance inputs and technical advice to outgrowers. In export chains such as cocoa, international buyers sometimes provide finance to exporters or other domestic aggregators in order to ensure adequate supply, and this finance is passed on upstream to primary aggregation levels, allowing cash payment. In the case of commodities such as cocoa, finance may only be provided against inventories which are often stored in bonded warehouses under the supervision of a collateral manager.

Access to and costs of finance vary considerably between enterprise segments: multinational and large domestic companies tend to have access to international bank finance at much lower costs than those offered by domestic financial institutions. Micro- and small enterprises tend to have little access to formal finance, but this is partially compensated by informal finance, e.g. within social networks. However, the amounts, terms and conditions for such finance are often insufficient to support enterprise growth. Small and medium enterprises in the formal sector tend to face the greatest challenges. While their financing needs are too large to be met by informal sources or

Box 9.1 Reasons for agroprocessors' limited access to financing

The reasons for agro-processor's limited access to and high costs of finance are manifold. In addition to constraints at the client or enterprise level, they range from poor macroeconomic management to limited capacity of the domestic financial system to provide adequate financial services. Even though macroeconomic management has improved in most countries over the past 20 years, inflation rates remain important, particularly in the non-CFA franc countries, driving up interest rates and eroding the value of deposits. Often governments need to pay high prices for public debt instruments (e.g. treasury bills), which provide comfortable investment opportunities for banks, undermining their incentives engage in much more difficult and risky activities such as lending to SMEs, especially in agriculture-related activities. High levels of informality and poorly-functioning registries for assets (e.g. real estate, equipment, mobile assets, and accounts receivables) reduce the ability of micro, small and medium enterprises to use their assets as collateral to obtain larger loans on better terms. Moreover, poor contract enforcement due to a slow and overwhelmed court system results in financial institutions' requiring high collateral in order to cover their risks, leaving good business propositions underfunded.

microfinance, their access to formal bank finance is restricted by collateral constraints, their elevated risk profiles and the transaction costs of the loans. Even the recent surge of equity investment vehicles is mainly targeting the upper segment of the market.

Skills and human resources are often insufficient in various fields, including food-processing and equipment technology, business development, marketing and finance. This skill shortage especially applies to small operators, who frequently even lack basic operational and management skills. However, even medium-scale domestic firms often lack knowledge and access to best practices on key operational functions such as cost accounting, financial management, logistics for distribution and supply-chain development, product development and branding. Beyond general business development, agroprocessors need additional specific training and advisory services in more technical fields such as good manufacturing practices including hygiene, food safety and quality management. These knowledge gaps place domestic operators at an additional disadvantage vis-à-vis their international peers.

Secure access to land. Secure access to land for setting up production sites is a key problem due to the complexity of land tenure systems and delays in formalization of long-term property rights. Especially for larger investments, secure long-term rights are an important prerequisite to instil investor confidence. Informal operators also face problems of obtaining secure access to land, which is a major constraint to expanding their businesses.

Ease of doing business: regulatory constraints. Table 9.2 shows the evolution of ECOWAS member states' performance on the World Bank's Ease of Doing Business index over the 2006-2011 period. Two observations stand out. First, rankings for West African countries are very low on a world-wide basis, with only 2 of the 15 ECOWAS countries, Ghana and Nigeria, ranking above the bottom third of all countries globally on average over the six-year period.[75] Second, there has been no uniform improvement in rankings across the area over time. For example, while Ghana has clearly improved, Nigeria's performance has de-

75 A higher number on the table represents a lower performance.

Table 9.2 *ECOWAS member states' ease of doing business rankings, 2006-2011*[a]

Country	2006	2007	2008	2009	2010	2011	Average
Ghana	109	87	82	87	77	60	83.7
Nigeria	108	108	114	121	134	133	119.7
The Gambia	127	131	128	135	141	145	134.5
Cape Verde	128	132	137	147	142	129	135.8
Sierra Leone	155	160	163	156	143	150	154.5
Mali	162	158	160	162	155	148	157.5
Senegal	158	162	168	152	151	157	158.0
Burkina Faso	165	161	164	155	154	151	158.3
Togo	149	156	159	166	162	158	158.3
Côte d'Ivoire	157	155	155	163	168	170	161.3
Benin	147	151	157	172	172	173	162.0
Liberia	169	170	167	159	152	155	162.0
Niger	171	169	171	174	171	172	171.3
Guinea	167	166	172	171	178	179	172.2
Guinea-Bissau	176	176	179	181	175	181	178.0
Average ECOWAS 15	149.9	149.5	151.7	153.4	151.7	150.7	

Source: World Bank, extracted from Euromonitor International, 2012 online database.
[a] Rankings out of a total of 185 countries world-wide.

clined significantly, despite the Nigerian economy having grown strongly over the period. Overall, the 15 ECOWAS countries showed no improvement, although individual countries show very different trends, precluding many region-wide generalizations. Nonetheless, in many countries weak contract enforcement is a particular problem, as are financing constraints resulting in the unwillingness or inability of agribusiness and input suppliers to move beyond cash and spot transactions into pre-financing and forward contracting.

Table 9.2 shows performance relative to other countries. It is possible that business conditions may have improved in an absolute sense in many countries in the region over this period; such an improvement could increase incentives to invest to serve the local and regional market. But for certain types of FDI, particularly those targeted at the export market for products that can be produced in many different tropical countries, it is the performance relative to other parts of the world that is particularly important, as West Africa is now competing in a global market.

9.4.3 Agro-industry as a policy orphan

Strengthening the up- and down-stream linkages of agro-industries, including agroprocessing, can help stimulate sustained growth in both the agricultural sector and the food and fibre markets that it targets. On that basis alone, agro-industrial development should be a policy priority. However, the central concerns of agro-industry span the domains of several sector ministries and agencies – agriculture, industry, health, and trade – none of which primarily deal with agro-industries. For example, ministries of agriculture primarily focus on farm-level production, and up- and downstream functions have received less attention. On the upstream end of the value chain, agricultural ministries have often been directly involved in procuring and distributing inputs and technologies and have a limited track record in supporting private-sector based Agricultural input supply chains and support services. Downstream, the main focus has traditionally been on post-harvest handling or value addition on-farm, or through farmer organizations. Support to agri-business, including SME's in agroprocessing, and to strengthening of farm-agribusiness linkages has rarely been part of agricultural ministries' core functions. Ministries of trade and industries and related agencies implement policies and programmes geared towards manufacturing, private-sector and SME development in general. Although these policies and programmes address many of the generic constraints facing enterprises in manufacturing and trade, they often lack specificity concerning the particular challenges facing agro-related enterprises, such as those related to food safety, quality, coping with seasonality and ensuring reliable access to dependable raw material supplies.

Hence, given the absence of a government agency with a clear mandate or a specific policy framework, agro-industries have long been a "policy orphan." Its plight and potential have only recently been recognised by global and regional players. Consequently, until recently, there have been few comprehensive approaches to agro-industrial development at the national and regional levels, in stark contrast to the CAADP process discussed in Chapter 11, which is focused primarily on production agriculture. While ECOWAS has a regional industrial policy that includes agroprocessing, CAADP is not explicitly linked to it.

Things are beginning to change, however. In 2010, at the request of the African Union, FAO, UNIDO and IFAD launched the African Agribusiness and Agro-Industries Development Initiative (3ADI) with the following objectives (African Union *et al.*, 2010a, pp. 7-8):

1. Leverage the current attention to Agriculture for development in Africa to accelerate the development of agribusiness and agro-industries sectors that ensure value-addition to Africa's agricultural products, respond to domestic market requirements and contribute to intra-Africa trade;

2. Enhance the governance of agribusiness and agro-industry and support a well-coordinated effort by African countries, African Regional Economic Commissions (RECs), relevant UN and other international agencies and the

private sector to share knowledge and harmonise programmes in ways that capture synergies, avoid fragmented efforts, and enhance developmental impacts;

3. Support an investment programme that will significantly increase the proportion of agricultural produce in Africa that is transformed into differentiated high-value products, such that by 2020 more than 50% of Africa's food products sold in local and national markets are in the processed form and such that the proportion of Africa's agricultural exports that are processed into final consumer products more than doubles, fully meeting food safety standards demanded by consumers in the continent and in the global market.

The 3ADI programme operates by providing a combination of technical assistance (e.g. from UNIDO) to investors in identifying opportunities and constraints to agroprocessing in key value chains and then helping connect agroprocessors with financing sources, including through the African Agriculture Fund, a private equity fund managed by the firm Phatisa.[76] Through its coordination with the CAADP market access pillar (see Chapter 11), 3ADI is also well-placed to help lobby for policies more favourable to agroprocessing and agro-industry. As of early 2013, 3ADI was supporting value-chain development and agroprocessing projects in six West African countries: Burkina Faso, Ghana, Liberia, Niger, Nigeria, and Sierra Leone.[77] In addition to 3ADI, other efforts such as the Grow Africa Initiative launched at the World Economic Forum in Davos in 2012 and the complementary New Alliance for Food Security and Nutrition promoted by the United States, aim at increasing FDI and African investment in both production agriculture and agro-industries, in coordination with CAADP. It will be important that these new initiatives do indeed coordinate both at the national and the regional levels with CAADP to help ensure policy consistency.[78]

As discussed in Chapter 11, at the regional level, ECOWAS has created an Interdepartmental Committee on Food and Agriculture that will include representatives from ECOWAS departments dealing with agriculture, industry and trade to help guide the implementation of the regional agricultural programme. At the national level, some countries have responded by establishing specialized agribusiness units in agricultural ministries (e.g. in Ghana), or by creating inter-ministerial coordination mechanisms (e.g. in Senegal). While these are important steps into the right direction, their effectiveness in fostering coordination within and between ministries and other agribusiness stakeholders remains to be seen. In addition to government agencies at various administrative levels, agri-business development requires close collaboration with a very diverse and heterogeneous private sector, which is often poorly organized.

9.5 Main findings and policy implications

With growing income, urbanization and female employment outside the home in West Africa, the demand for processed food is increasing. Food attributes such as shelf life, convenience in preparation, safety, nutritional value, packaging and presentation are all becoming more important, albeit at different velocities among different countries and population strata. Moreover, the structure and performance of the domestic agroprocessing sector have important implications for the costs, quality and safety of agrifood products. Development of agroprocessing is critical for adding value to domestic raw materials and strengthening the linkages between the agricultural sector and a growing and increasingly diverse demand for food and non-food products. It provides strong opportunities for employment generation and livelihood diversification in the context of West Africa's rapidly growing labour force and the structural transformation of food consumption patterns. Parts of agroprocessing, particularly at the SME level, are easier to enter than other segments of the industrial sector, due to their relatively limited capital, technology and human resource requirements. However, as witnessed by growing imports of processed foods and the limited share of processed

76 http://www.phatisa.com/The_Fund_Manager/AAF/

77 In 2012, 3ADI's mandate was extended to cover selected LDCs outside of Africa; when operating outside of Africa, it is known as the Accelerated Agribusiness and Agro-Industries Development Initiative. See www.3ADI.org for details.

78 ROPPA has raised concerns that the heavy emphasis in some of these new initiatives on FDI threatens family farming and the control of the CAADP agendaby local stakeholders. See Focus Section B in Part IV for more details.

agricultural exports, the regional agroprocessing sector is not yet fully capable to respond to the growing demand.

The West African agroprocessing sector is highly diverse in terms of size, range of commodities, mechanization and technology levels, reliance on domestic and imported raw materials, internal and external market orientation, quality awareness, degrees of value addition, and vertical and horizontal integration. The sector is marked by a strong dichotomy. On the top, there are a limited number of medium and large enterprises, often affiliates or subsidiaries of multinationals or domestic conglomerates, with high levels of capitalization and technologies and with strong brands. At the bottom, there are vast numbers of micro- and small operators, mostly in the informal sector, using rudimentary technologies. In between, there are also relatively few small and medium sized agro-industries in the formal sector. This phenomenon, often termed "the missing middle", is also found in other manufacturing sub-sectors in Africa.

The relative importance of small, medium and large companies and their respective shares in value addition is highly subsector- and commodity-specific. Large-scale industries tend to be concentrated in subsectors exhibiting strong economies of scale and capital intensity in processing and where reliable access to raw material of dependable quality can be established. This is the case for industries relying on imported raw materials such as wheat (e.g. flour mills, pasta and noodle manufacturers and large bakeries), milk powder (dairy products, flavoured drinks, yoghurts, and cheese), fruit-juice concentrates and, to some extent, rice (where, for example, Nigerian mills process imported rough rice). Medium and large industries based on domestic raw materials can be found in the traditional export crops (e.g., cotton gins, cocoa grinding and rubber processing) and in plantation crops (sugar mills and refineries, and oil mills, especially for palm oil). Other medium- to large-scale industries can be found in the beverage sector (breweries, soft-drinks), paddy rice and maize milling, poultry production, aquaculture and fish processing, and the production of branded animal feeds. These industries have flourished to the extent that they have been able to establish a reliable raw material base. Although industrial agroprocessors form an important part of the manufacturing sector in most countries, formal-sector firms are most heavily present in the "big three" countries of Nigeria, Côte d'Ivoire and Ghana.

The artisanal sector has a long track record as provider of cheap foods and dietary diversity for the rural and urban population. It has also a great importance in employment creation and empowerment, especially for women, and as a user of domestic agricultural produce. Micro- and small enterprises are primarily engaged in artisanal or semi-industrial processing of oil crops, paddy, cassava, maize and animal feed compounding with processed inputs. The larger units may be nominally incorporated into the formal business sector, but the vast majority operates informally.

In many commodity sub-sectors, operators of different sizes and technology levels co-exist, usually targeting different markets in terms of product quality, price, and geographical location. Examples of such subsectors include milling of grains and pulses, oil extraction, feed milling, and bakeries. Micro- and small operators mainly serve local markets and the low-income segments of the urban population.

The performance of the agroprocessing sector has been hampered by a number of well-known constraints related to physical infrastructure (roads, electricity), finance, skills and human resources, secure access to land, and other aspects of a poor business environment. Perhaps the most important constraint is reliable access to raw material at dependable quality and competitive costs, resulting in low utilization rates of installed capacities. The importance of raw material supply is illustrated by the fact that industrial processing flourished in industries primarily using imported raw materials such as wheat, milk powder or fruit-juice concentrates.

Despite these challenges, growth opportunities for agroprocessing exist in a number of subsectors. These include rice milling, maize and cassava processing, vegetable oil production, sugar milling

and refining, fruit juice production, beer brewing, animal feed production, cocoa grinding, as well as cotton and cashew processing.

The following are key considerations in crafting more effective policies to support West Africa's agroprocessing sector.

A differentiated and balanced approach. Agro-industrial development requires a differentiated and balanced approach that recognises the diversity of operators in the sector and the respective weaknesses, challenges and opportunities of each enterprise segment. Large companies can introduce new technologies and set benchmarks in product quality, sourcing arrangements and distribution. Due to their leverage, they can mobilize international finance, access domestic and international markets for branded and higher value products, and provide important market outlets for domestic producers. Under certain enabling conditions, they can engage in resource-providing contracts with farmers and their organizations to overcome constraints in input and output markets, financing and other support services. Small and medium-sized companies in the formal sector have specific knowledge of local markets and can adapt products based on domestic raw materials to consumer demands accordingly. While multinational companies tend to supply their global brands into West African markets with little adaptation, domestic companies can blend traditional culinary preferences with convenience and safety attributes that appeal to urban consumers. Informal food processors are important users of local raw materials and providers of affordable and diverse foods to low-income populations.

Public policies and development programmes should aim at enhancing the enabling environment for agro-industrial development in general while levelling the playing field between different operators. Improving the general enabling environment requires reforms and investments to address bottlenecks concerning transport and communication infrastructure, power supply, rule of law, contract enforcement, land access and tenure security. These measures benefit all economic operators across sectors and enterprise sizes. Levelling the playing field requires transparency and clear rules for large investors such as those envisaged in the Voluntary Guidelines for Land Tenure (FAO, 2012c) and the Principles for Responsible Agricultural Investments.

Improving the sourcing of local products and strengthening the inclusion of family farmers. Governments could also provide incentives for enhancing domestic sourcing of raw materials and small farmer inclusion in supply chains. These could take the form of fiscal incentives, cost sharing for targeted infrastructure development, capacity building and training. Provisions could also be included in land concessions for plantation development, i.e. the need to complement the development of a nucleus estate with outgrower schemes and strengthening of producer organisations. Contract enforcement, risk sharing, and conflict arbitration mechanisms could also be strengthened.

Strengthening the vertical coordination between farmers and agroprocessors requires developing a collaborative as opposed to an adversarial relationship between the two parties. Potential conflicts of interest arise over prices and policies regarding imports of competing raw agricultural products (e.g. raw sugar to be further refined in domestic processing plants). While some such conflicts are inherent in buyer-seller relationships, they can be mitigated through a focus on improving system-wide efficiency (e.g. through adoption of new technologies and institutional arrangements) and a transparent accounting system that helps assure each party that it is equally sharing in the risks and rewards. Another recurrent problem is agroprocessor-provided input financing to farmers. If the processor is the sole buyer of the output, then credit recovery is straightforward. If, however, multiple potential buyers exist, farmers who take credit from the processor sometimes sell to others ("side-selling.") Even if the farmer uses the receipts to repay the input loan (which often does not occur), the processor loses the volume of input needed to operate the plant at capacity. Problems of side-selling have led to breakdowns of processor-provided farm credit as value chains have liberalized (see Chapter 10). Alternatives such as farmers sharing in the equity investment in the plant (e.g. building up their

equity participation over time through a marketing cess) could change the incentives facing farmers, as they would now have an ownership interest in the plant. For such an approach to succeed, however, transparency in the accounts would be essential.

The dangers of policies that simply mandate that agroprocessors source product locally, such as the current requirement for inclusion of cassava flour in bread in Nigeria (discussed in Chapter 10), are that they are very top-down and may not correspond with consumer tastes and preferences; furthermore, they may also overestimate the industry's capacity to adjust to the policies in the mandated time. Instead of mandatory instruments such as quotas for using local raw materials, the use of other types of incentives is preferable. These should start from the consumer end, based on market research, which is currently severely underdeveloped in West Africa.

Strengthening SMEs. Governments and donors can help to level the playing field for domestic SMEs that are disadvantaged in their access to finance, human resources, knowledge and technologies, as well as product marketing and distribution. For example, SMEs do not have the means to engage in market research, promotions and advertising campaigns as do their large domestic and international competitors. Possible support measures include co-financing of new product development, e.g. through consumer testing, market research and business development on a demand-driven basis. Associations of SMEs can play an important role in collective marketing and promotional activities. In other parts of the world, collectively supporting such activities has been an important activity of value-chain-wide commodity associations or value-chain participant councils – similar in some ways to the *interprofessions* being promoted in many of the francophone countries (Shepherd *et al.*, 2009; Staatz and Ricks, 2010). Any such initiatives need to be accompanied by investments in and monitoring of quality and safety standards in order to establish consumer confidence and support domestic brand development.

Innovation and technology development. While a range of technical solutions have been developed by national and international technology development and research centres, widespread adoption and adaptation of such technologies is still a challenge. This requires mainstreaming technologies within private equipment manufacturers and developing and equipping supply chains, including with spare parts and repair facilities.

The incentives to register as a formal enterprise could be enhanced through reforms of the business enabling environment, streamlining regulations concerning licences, taxes and reporting requirements.

Training on food safety, hygiene and good manufacturing practices. National education systems need to be strengthened in specific agribusiness-related areas. These include technical fields such as food technology, packaging and equipment design and repair, but also hygiene, quality management and supply-chain management. In addition to increasing technical education in these areas, enterprises in the informal sector could be assisted by basic business development and financial management training and related support services, sensitization on food safety and hygiene issues (especially for high-risk commodities) and introduction of low-cost improvements in production methods to achieve better food safety and hygiene.

Improved standards for food quality and food safety. Food safety is first and foremost a public health concern. However, as consumers' incomes rise, food safety and quality (including clear nutritional labelling) become key demand issues for an increasing number of people and hence a determinant of the competitiveness of West African agroprocessors vis-à-vis imports. These concerns give advantages to strong national brands and imports that have developed credibility regarding their quality with consumers. To compete, other agroprocessors need to strengthen their credibility with respect to these attributes. Clear public standards regarding food safety and quality can help domestic firms, especially SMEs, increase their credibility.

Yet in developing and enforcing improved quality and food safety standards, West African policy makers need to strike a careful balance between

public health concerns, the purchasing power of the poor, and the ability of the large number of micro-enterprises and SMEs engaged in agro-processing to upgrade their practices quickly. The strict and rapid application of food safety standards derived mainly from international benchmarks would likely imply the closure of vast numbers of small food processors and vendors. Therefore, in practice, implementation of food safety standards in West Africa (which are indeed largely based on international standards) is usually flexible and rather tolerant. The problem with this approach is that sanctions are applied arbitrarily. An alternative approach would be to develop intermediate standards for the general public that are more in line with the productive capacities of local processors and purchasing power of the large majority of the population. These standards would need to be linked to a clear and credible roadmap for their upgrading.

Chapter 10

Response of Selected Value Chains

This chapter examines the responses of selected value chains in West Africa to the evolving demand and supply conditions in regional and international markets described in Parts I and II. Given space limitations, the chapter makes no pretence of being a comprehensive review of how all important value chains in the region have responded to these changes.[77] Rather, the chapter presents overviews of six value chains, analysing their ability to respond to a changing market environment, lessons learned from that response, and remaining challenges and opportunities facing them. The chapter covers: (1) two value chains that have experienced large increases in production due to technological and institutional innovations but are now facing challenges in capturing or developing new market segments that require tighter quality control (rice and cassava); (2) two value chains that face very strong competition in the regional market from overseas suppliers and whose prospects, in the absence of strong protection, are limited mainly to the development of important niche markets (poultry and dairy); and (3) two value chains for export crops that have historically had strong success (cocoa and cotton) but are now seeking new institutional models as they face current challenges. The chapter also briefly highlights several other value chains where demand prospects are very strong, offering opportunities for future expansion of production if reliable output of consistent quality products can be assured. The last section of the chapter discusses cross-cutting issues and challenges for value chain development and upgrading, and implications for policies and investments.

In this study, we define a value chain as "the full range of activities that are required to bring a product from its conception to its end use. These include design, production, marketing, distribution, and support to get the product to the final consumer" (Dunn, 2005). The value chain thus includes the entire network of actors involved in input supply, production, processing, marketing and consumption of the product. It is typically composed of several, sometimes competing, supply channels that target particular market segments. This is particularly apparent in the discussion below about rice, which has several different production and marketing sub-channels, each involving different actors and serving different consumers. This chapter looks at performance largely from the perspective of the overall value chain rather than individual sub-channels. Nonetheless, in analysing the challenges and opportunities facing the different value chains, it discusses the importance of different market segments and the roles of small, medium and large enterprises within these segments. Given space limitations, the chapter does not analyse the effectiveness, sustainability and impact of policy and programme interventions at the sub-channel and individual enterprise levels.

The chapter largely draws on secondary information including "grey literature" such as unpublished documents from donors and background papers prepared by national consultants as part of the AGWA research. This is complemented by information obtained from interviews with key value chain stakeholders, especially from the poultry sector in Ghana and various agroprocessing enterprises in and around Lagos.

79 The literature on value chains in West Africa is immense. Elbehri, 2013 provides detailed analysis of several major West Africa Agricultural value chains, both for food and export crops. For reviews of other studies, see Drechsler, 2011 and Lambert, 2012.

10.1 Value chains oriented towards West African consumers

10.1.1 Rice[80]

Rice is widely consumed throughout West Africa, with about 46% of consumption imported. As shown in Part II, demand is growing rapidly in rural as well are urban settings, driven by the desire for a staple that is readily available and is easy to prepare. Because domestic production in the region has not kept pace with demand, imports have soared (Chapter 4).

Paddy production in the ECOWAS zone averaged 10.6 million mt in 2008-10. Although production takes place throughout the region (Figure 10.1), three countries accounted for two-thirds of the production in this period: Nigeria (34%), Mali (19%) and Guinea (14%) (FAOSTAT). Rice is produced in a wide variety of systems throughout the region. These include, among others, irrigated systems under full water control in major rice development areas in Mali, Senegal, and Nigeria; irrigation under partial water control systems throughout the region, including seasonally flooded lowlands (bas fonds); mangrove production in coastal countries such as Sierra Leone, Liberia and Guinea; and upland production, which has expanded recently with the introduction of New Rice for Africa (Nerica) varieties.

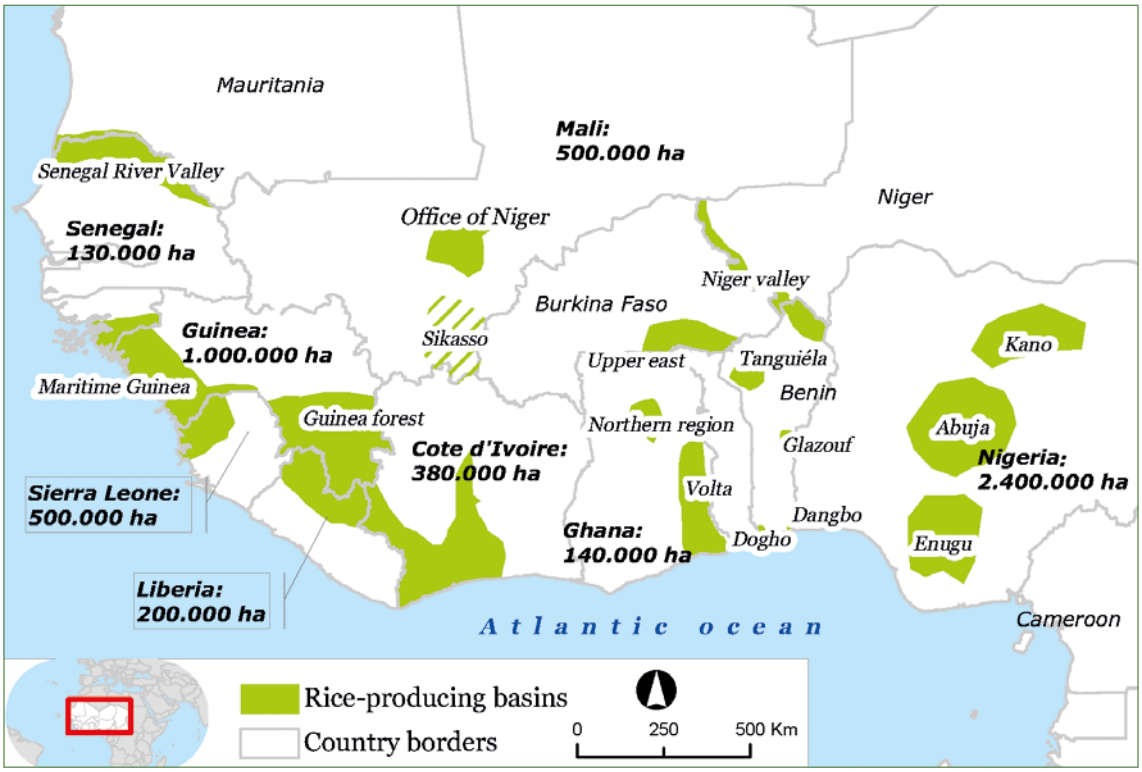
Production and productivity levels vary widely across these systems. For example, typical yields of rainfed, unimproved bas fonds and uncontrolled flooding systems in Mali are estimated at around 800 kg/ha, while yields in the best controlled, large-scale gravity-fed irrigated systems, using improved technologies, can exceed 6 mt/ha (USAID, 2009a). Most rice producers in the region are small-scale farmers (predominantly women) growing rice for home consumption under systems at the lower end of the productivity scale. If they generate small surpluses above home-consumption needs, they are typically traded in local markets or exchanged with neighbours. For these farmers, rice production is not really a commercial enterprise. To the extent that rice from these systems does enter commercial circuits, the small amount of surplus produced per farm leads to high per-unit assembly costs, lowering incentives of traders to buy from these farmers. Some of the recent national rice initiatives launched in the wake of the 2008 food price crisis, however, aim at increasing the productivity of these systems, which implies the need to upgrade the marketing channels if these systems are to become more commercially oriented.

In contrast, in the better water-control areas of larger irrigation schemes, such as in the Senegal River valley and Mali's Office du Niger, rice production, while still taking place predominantly on small farms (under 10 ha), is more commercially oriented, and men are more involved in its production. Frequently 40% or more of output is sold, and it is typically milled locally, bought by local rice traders, and moves into both urban and rural markets. A few large-scale rice farms have also emerged in the region recently, sometimes linked to outgrower schemes and a milling facility, as West African and foreign investors begin to see local commercial rice production as an alternative to imports for supplying the major urban markets.

Parallel to the supply channels just described is a very large import supply channel, with the bulk of the rice coming from Asia, and serving the large coastal and inland urban markets. Increasingly this rice reaches rural markets as well, as rice consumption in rural areas grows (see Chapter 6). Key actors in this supply channel are importers who are typically based in the capital cities. In most countries, particularly those with smaller populations, there are only a few large wholesalers who dominate the trade, given the scale economies and need for access to substantial financing to operate in the international rice trade. These wholesalers then sell to sub-wholesalers and a whole range of retailers (sometimes on credit), who in turn sell to consumers. Most consumers buy their rice in shops or open markets on a per kg basis or in large sacks. Imported rice destined for the upscale market is frequently sold in small consumer-ready packages in shops and supermarkets. In some cases (particularly in Nigeria) local processors have begun producing highly cleaned,

80 This section draws heavily from USAID, 2009b; del Villar *et al.*, 2011; and Lambert, 2012.

Figure 10.1 *Rice production basins in West Africa*



Source: del Villar, *et al.*, 2011.

carefully packaged and branded rice to middle-class consumers.

The import market is also differentiated, with its largest part devoted to the mass market, but with imports of higher quality rice targeting upper-income consumers. In Nigeria, in an attempt to boost domestic milling of rice, the government has banned imports of non-parboiled (polished) rice, limiting imports to rough and brown rice.

Rice preferences are highly differentiated across the region, and agroprocessing procedures and import patterns reflect these differences. For example, Senegalese consumers overwhelmingly prefer 100% broken rice, considered to be low quality on the international market; Guinean and Nigerian consumers prefer parboiled rice, and Nigeria also has the largest market for whole grain, higher quality rice (including large quantities of imported, parboiled rice). Within each country, consumers further differentiate themselves according to cost and quality considerations. In Mali, for example, the agricultural market information system distinguishes four major market segments: the bulk of the market (80-85%) is accounted for by 35-40% broken rice, of mediocre quality, originating from both national production and imports. A further 10% of the market is made up of somewhat higher quality 10-15% brokens, while the remainder of the market (5 to 10 %) is split between long-grain rice (with no brokens), originating mainly from local production, and imported aromatic rices that are used mainly on special occasions (Diarra *et al.*, 2011). Preferences between imported and locally produced rice also vary by country and income segment, but there is a general perception that imported rice is of more consistent quality, with fewer impurities.

To accommodate these diverse production systems and consumer preferences, processing of rice also takes various forms across the region, involving both parboiling and milling. Milling is largely small-scale, using Engelberg-type de-hullers that are frequently up to 30 years old, often imported

from India, and that produce variable quality milled rice (USAID, 2009b).[81] Nonetheless, these mills have the advantages of relatively low investment costs and of being located close to the farmer (many are mobile), reducing assembly costs for paddy and allowing the farmers to recover the husks easily for livestock feed. In some countries there has been expansion of mini- and medium-scale mills, which produce a more consistent quality and have higher conversion rates of paddy to milled rice and larger capacities, allowing the operators to target the growing middle-class demand for a higher quality product. Because of these mills' higher initial investment and maintenance costs and their need for a larger volume of paddy to operate at capacity, they are better suited for situations of concentrated production (such as in the full-water-control irrigated areas) than in areas of more scattered and less commercially oriented production as in upland and bas fonds zones.

Experience with large-scale industrial mills has, in the past, generally been poor. In situations where they have faced competition from the small-scale mills, they have often had problems in attracting enough paddy to operate close to capacity (USAID, 2009b; Diarra, *et al.*, 2000; Lambert, 2012). The ability of the small mills to outcompete for paddy likely reflects their lower assembly costs (being smaller and hence having to aggregate supply over a smaller area) and/or higher recovery rate of milled rice for a given quantity of paddy.[82] The potential advantage of the large mills in terms of higher quality output (fewer broken grains) can be lost if paddy is not dried carefully; hence, close coordination with growers is needed to ensure consistent paddy quality. Failure to obtain such quality has led some large millers to integrate backward into farming to produce their own paddy. Indeed, ensuring quantity and consistency of quality has been the Achilles heel for competitiveness of West African rice processors for many years. The difficulties of attracting sufficient paddy of consistent quality in Nigeria led large millers to lobby successfully for a ban on polished rice imports, leading to a substitution of imports of rough and brown rice (largely from the US) that is milled domestically.

The 2008 spike in world rice prices and the restrictions on rice exports by major exporters such as India and Vietnam focused the attention of government officials and the private sector on options for expanding rice production in West Africa. Many governments in the region launched programmes to expand domestic rice production, inspired in part by past successes such as that of Mali's Office du Niger (Box 10.1). Private-sector actors, including both domestic and multinational, also began investing in domestic production and milling, betting that West Africa could be competitive with imports from Asia under the new higher world prices for rice. A number of recent studies (e.g., del Villar, *et al.*, 2011; Adjao, 2011; Diallo *et al.*, 2012) confirm these views, suggesting that West African production costs (at least at the farm level) are comparable to those in Asia under market conditions prevailing in 2008-10.

Some of the recent private-sector investments involve attempts to develop contracts with small- and medium-scale farmers to furnish paddy to new, larger-scale mills that aim to produce a more consistent quality product to compete with imports. These efforts are works in progress, so it is not possible to draw definitive conclusions about their success. But there are some early indications that problems of contract enforcement and vertical coordination are in some cases hindering aggregation of sufficient volumes of paddy to allow the large mills to run near capacity. For example, the multinational Olam initially developed an outgrower scheme in Nigeria to supply its modern rice mills (USAID, 2009b). Fuelled by initial success and mounting political pressure, the company quickly increased the number of outgrowers with which it contracted but ran into increased management problems such as side-selling of rice by farmers

81 Engleberg-type mills de-hull and mill rice by passing the rice between two steel rollers. The advantages of these machines are their relatively low initial cost, simple design and easy maintenance. They typically can process between 200 and 1 000 kg of paddy per hour. Their disadvantages are that they produce a fairly high number of broken grains of rice and often have a lower paddy-to-milled rice conversion ratio than other types of mills. The small or mini-rice mills (minirizeries) referred to below typically have rubber rather than steel rollers, which yield a more consistent quality of output with fewer broken grains; these mills also have a higher hourly volume of output. Their higher initial investment cost, need for frequent replacement of the rollers, and requirements for a larger supply of paddy (which may be costly to assemble when roads are in poor condition) have discouraged their adoption until recently in West Africa. For more on the milling technology, see Barker *et al.* , 1985.

82 For example, in the early 1990s, the small Engelberg-type mills in the Office du Niger in Mali had a higher recovery rate than the large state-owned mills (Diarra, *et al.*, 2000). The latter, however, were old and in poor repair. Normally, one would expect a large mill to have both a higher recovery rate and a higher quality of output, but if they cannot attract enough paddy to operate near capacity, their unit cost of milling can easily exceed that of the small mills.

who had received inputs from the company on credit. According to an interview with an Olam representative during the AGWA field work in Nigeria in March 2012, the company has now leased a 3 000 ha farm in order to vertically integrate into production because of problems of assuring adequate supplies of paddy from smallholders. Similarly, in Mali, the firm Grand Distributeur Céréalier au Mali, which has been reprocessing rice bought from small mills to produce a higher-quality product for the upscale market, obtained a lease in 2010 for 7 400 ha of land to produce paddy and other products directly for its processing and marketing operations (Michigan State University Food Security Team, 2011). These examples suggest that the problems of supply aggregation and contract enforcement at the producer level remain critical. Producer organizations can play an important role in this aggregation process, as they have done in Mali's Office du Niger. A 2009 regional value chain analysis by USAID, however, argues that efforts to strengthen rice producer organizations in the region have focused too much on strengthening horizontal linkages among farmers and not enough on how the organizations need to coordinate their actions vertically with other actors in the value chain, e.g. through interprofessional organizations (USAID, 2009b).

Looking forward, two potential storm clouds loom on the horizon for expanded rice production in West Africa. First, OECD/FAO world price outlook projections through 2021 foresee declining real prices for rice as per capita rice consumption declines in Asia (due to rising per capita incomes leading to diet diversification) and as Cambodia and Myanmar enter the market as major low-cost exporters. The OECD/FAO projections foresee the world rice/coarse-grain price ratio falling from 2.5 in recent years to 1.8 by 2021 and the rice/wheat price ratio falling from 1.8 to 1.6 (OECD/FAO, 2012). Even with the long-term trend towards lower prices, however, year-to-year volatility will remain an important risk. Second, climate change may result in less favourable production conditions and lower water availability (particularly in the Sahelian regions), raising production costs. The lower price of rice relative to other cereals may further spur rice consumption in West Africa, while lower real world prices and the effects of climate change may reduce the profitability of production in the region.[83]

One implication of these factors is that efforts to expand rice production in the region need to pay particular attention to holding down per-unit costs throughout the value chain. At the farm level, improving input availability will be critical in this effort (see Focus Section C in Part IV, p. 315). It is important, however, that such cost-savings at the farm level represent savings to the economy as a whole (e.g. via more productive seeds and better water control) and not simply transfers of resources (via subsidies) to farmers from other parts of the economy. Savings in the post-harvest segments of the value chain are also critically important. These will require, inter alia, transmittal of financial incentives to farmers for careful drying and storage of paddy to ensure better processing outcomes, improved systems for paddy aggregation and assured delivery to processors, and improvements in wholesaling, packaging and marketing of the milled rice. Recent evaluations of the rice value chain (e.g. USAID, 2009b) argue that lack of consistent quality in milled rice is a major constraint to West African producers capturing a larger share of the market currently supplied by imports.

It will also be important, however, that rice development policies and programmes recognise the highly differentiated nature of the market for rice in most West African markets. In particular, there remains a very large proportion of the population that is low-income and is willing to make a trade-off between the cost of their rice and some degree of product quality. Larger mills produce a cleaner and more homogenous product than do the small local mills, but the widespread ability to date of the small mills to outcompete the large mills for paddy suggests that the small mills have a lower unit cost of processing than do the large facilities. There is a danger that in the quest to improve the quality of domestically produced rice, policies will subsidise industrial mills (e.g. via tax exemptions for imported equipment), thereby favouring a shift

83 A critical unknown is how Asian rice production systems will also adjust to the changing demand patterns in Asia and to climate change. Rice yield increases in Asia have been slowing in recent years, and some Asian producers (e.g. Vietnam) are already diversifying into higher-value products.

to the higher-cost processing and denying low-income consumers access to cheaper rice. This is not to suggest that efforts to introduce medium- and large-scale mills and improvements to small-scale milling systems (e.g. use of de-stoning machines for paddy prior to milling and increased use of mills with rubber rollers) should be hindered. There is certainly a growing market among the middle class for higher-quality domestic rice, and even lower-income consumers frequently complain of impurities in their rice. The shift to new milling systems, however, should be market-driven. If the large-scale mills successfully resolve their problem of ensuring a reliable volume of local paddy, they may also achieve scale economies that lead them over time to displace the small mills.

Because of the differentiated nature of both rice production systems and consumer preferences for rice in West Africa, it is unlikely that a single strategy will upgrade all the supply channels of the value chain. On the one hand, improvements in farm-level productivity in the low-yield upland and bas-fonds systems could help improve the food security of the farm families growing the rice and begin to respond to the growing demand for rice in rural areas. There is evidence, at least for Mali, that the marginal cost of increasing production in these systems would be lower than in the more input-intensive full water-control systems (Adjao, 2011). Yet upland and bas-fonds systems are riskier than systems of full-water control, particularly in the Sahelian countries, so risk considerations may push investments towards the more capital-intensive production systems. Capturing a larger share of the burgeoning urban markets for rice, however, will require improving productivity in these irrigated systems and linking that production with improvements in milling and marketing (USAID, 2009b). This, in turn, will require better coordination between farmers and millers, e.g. through interprofessional organizations, to improve post-harvest handling of paddy to ensure better milling outcomes.

Finally, given the political sensitivity of rice prices, there are frequently pressures for tax exemptions on imports that work against encouragement of domestic production. For example, political sensitivity of rice prices has led to some market distortions in Nigeria that are self-defeating, such as the partial exoneration from import duties on unpolished rice that has led to investment in port-side rice milling capacity far from Nigeria's rice producing areas (Lambert, 2012).[84]

84 For more details on rice pricing policies and their impacts on incentives for producers in Nigeria, Ghana, Burkina Faso and Mali, see the set of studies on the rice sector produced by the FAO's Monitoring African Food and Agricultural Policies (MAFAP) project, available at http://www.fao.org/mafap/products/countryreports-technical-notes/en/.

Box 10.1 The rice story in the Office du Niger, Mali

Mali's Office du Niger (ON) has been called "a large irrigation scheme that works" (Aw and Diemer, 2005). Currently covering over 120 000 ha of irrigated land that is cultivated primarily by smallholders, the ON was originally developed by the French colonial authorities in the 1930s for irrigated cotton production. This proved infeasible, and the ON was soon converted to a major rice production zone. Following independence in 1960, Mali's government adopted a state-led approach to rice production in the zone, initially promoting collectivised production. The ON administration dictated that only rice could be produced on the irrigated fields of the zone, provided farmers with inputs and extension instructions, and held the monopoly on all paddy purchases and milling in the zone (through five large state-owned mills). It in turn sold the milled rice through OPAM, the state grain board, which then marketed it through contracts with four large wholesalers who also dominated the rice import trade. Prices throughout the system were set by the government. Productivity in this system was low, and by the late 1970s, the ON had accumulated large debts, and its irrigation infrastructure was deteriorating. With support of the World Bank, the European Union, France and the Netherlands,

the ON undertook a series of reforms from 1982 through the early 2000s that resulted in a remarkable transformation of the zone, increasing production, productivity, and farmer incomes rapidly. Rainy season rice yields nearly quintupled from 1982/83 to 2002/03, rising from 1.6 mt/ha to 6.1 mt/ha, helping to drive down Mali's dependence on rice imports from 50 percent to under 20 percent (Aw and Diemer, 2005; Diarra, *et al.*, 2000).

Key elements in the ON success during this period were the following:

- Rehabilitation of irrigation infrastructure coupled with empowering farmer organizations to play an increased role in the management and maintenance of the irrigation perimeters.
- Research into improved rice varieties and production techniques, including encouraging a shift from broadcasting seeds to transplanting.
- The development of a management contract between the state and the ON that linked funding to performance on a number of specific benchmarks and that called for a gradual withdrawal of the ON from marketing and processing to concentrate on water provision.
- Liberalization of paddy milling and rice marketing. In 1987, the state abolished the ON's monopoly on rice milling and marketing within its borders.
- With support from the Netherlands, small, mobile rice mills were introduced into the ON, which were operated by village associations, private individuals, and women's groups. The numbers increased rapidly, from 1 in 1987 to 383 in 1992. Because of the small mills' higher conversion rate of paddy into milled rice and their low assembly costs for paddy, they were able to outbid the large mills for paddy, and by 1995 the large mills had been driven out of business.
- The rapid spread of the small mills created a new source of supply of rice for sub-wholesalers of rice in Bamako and other urban areas. These merchants had previously been dependent for their supplies on the four large rice wholesalers in Bamako who dominated both the import trade and previous sales of rice from the ON. The rice value chain thus became more competitive, driving down marketing margins.
- The 1994 CFA franc devaluation resulted in sharp boost in rice prices denominated in local currency, strengthening farmers' incentives even more to increase production.

The sequencing of the reforms was critical to their success. The initial investments in infrastructure rehabilitation and improved production technology created the potential for a strong supply response once farmers' incentives were improved thanks to the liberalization of milling and rice marketing. This was in contrast with Mali's experience with the liberalization of coarse grain markets, where the production response was tepid, especially for millet and sorghum for which improved production technology was more limited. It was equally important that the marketing reforms preceded the currency devaluation. If the devaluation had occurred before the marketing liberalization had made the market for domestic rice much more competitive, it is likely that most of the increase in the consumer rice price resulting from the devaluation would have been captured by the tight oligopoly of Bamako-based rice wholesalers who previously had controlled both the domestic and import trade. As it happened, the strong demand by sub-wholesalers in Bamako for rice from the ON following the devaluation (to compete with the now much more expensive imported rice) led to rapid transmission of the higher prices to farmers in the Office. Within two weeks of the devaluation, the share of the Bamako consumers' price received by ON farmers jumped from 67 percent to 82 percent, while the wholesalers' share increased only from 2 percent to 3 percent (Diarra *et al.*, 2000).

Since the mid-2000s, two factors have constrained further productivity growth in the ON. First has been the difficulty of developing reliable input marketing in the zone after the withdrawal of the Office from its marketing activities. Farmer organizations have taken the lead in organising input provision on credit to their members, but it has taken time to develop a reliable system. Second, population growth has led to fragmentation of parcels. In the absence of legal market for land rentals or sales, it has proven difficult to consolidate holdings into farm sizes in many parts of the ON that can support a family, leading smaller farmers to default on their water payments to the ON and face eviction (Michigan State University Food Security Team, 2011). On the other hand, over the past 10 years, the Malian government also leased large undeveloped areas of the ON in exchange for extension of the irrigation system in these areas. The terms of these leases were not always transparent, leading to further debates about land tenure rules in the zone. Improving the land tenure system in the zone is likely to be the next major reform challenge for the Office du Niger.

10.1.2 Cassava

Nigeria is the world's largest producer of cassava, and the crop is grown widely in the region, particularly in the coastal states. As shown in Parts I and II of this report, cassava production and availability per capita have expanded rapidly in many coastal countries of West Africa since the 1980s, and apparent per capita consumption has also been growing in several of the Sahelian states. The growth in human consumption has been driven by four phenomena. First, because of its high yield of carbohydrates per ha, cassava represents an inexpensive source of calories, and thus is attractive to West Africa's large low-income population. Second, during the period 2007-08, grain prices appear to have increased more rapidly than those of cassava, inducing consumers to substitute cassava products for cereals.[85] Third, some processed forms of the product, such as gari, are quick and inexpensive to prepare, offering a convenient substitute for rice.[86] Fourth, in the Sahelian countries, diet diversification by the middle class has led them to include processed forms of cassava, such as gari and attiéké, into their meals as a substitute for other staples.[87] As discussed below, industrial use of cassava and its incorporation into animal feed has also been growing. Although the region is the world's largest cassava production zone, exports of processed cassava out of the region have remained small.[88] In contrast to rice, West African cassava producers face no competition from imports of cassava products or of the raw roots, which are very bulky and perishable and hence not traded internationally.

On the supply side, research at the International Institute of Tropical Agriculture (IITA) in Ibadan, Nigeria, in the mid-1970s led to the development of varieties with improved virus and mealy-bug resistance that had 40% higher yields than traditional varieties even when no fertilizer was applied (Nweke *et al.*, 2002). The IITA research focused not only on varietal selection but also on the development of improved, small-scale processing technologies, particularly mechanised peelers, chippers, and graters. Economic returns to using the new varieties in combination with the new processing equipment were higher than using any other combination of traditional or improved varieties and processing technologies. (Camara, 2000). Thus, the IITA package proved attractive

85 Between June 2007 and June 2008, cereal prices in Mali, Senegal, Ghana and Cameroon rose between 40 and 80%, while the price of cassava, plantains and beans increased on the order of 15% (Minot, 2011).

86 Gari is a granulated, partially gelatinised form of cassava flour that has been roasted or fried (often with palm oil), yielding a product that can be stored for up to 8 months without refrigeration. Because it is already partially cooked, its subsequent preparation for consumption requires less fuel than do most other staples, adding to its attractiveness to low-income and time-poor consumers.

87 Attiéké is produced from fermented cassava pulp and resembles rice in texture. It is widely consumed in Côte d'Ivoire. In its fresh form, it is highly perishable, but in recent years, dried "instant" attiéké has become increasingly available and is sold in packaged form in several countries in the region.

88 In 1997, Ghana exported 51 000 mt (FAOSTAT), of which 20 000 tonnes were in the form of cassava chips to the European Union for use as cattle feed (Nweke and Haggblade, 2010). Since that time, annual exports from Ghana have fallen to 12 000 to 18 000 mt. There are also reportedly some unrecorded exports of gari from Benin via Togo to Central Africa (Soulé *et al.*, 2013).

to farmers and began to diffuse rapidly in Nigeria starting in 1997. It spread more slowly in other countries, beginning to be adopted in Ghana in 1993 and only later in Côte d'Ivoire.[89]

Cassava is a versatile crop with many potential uses, including human consumption, animal feed and industrial uses such as starch, syrups, alcohol and polymer production (Figure 10.2). The roots of "sweet cassava" varieties can be consumed directly after peeling, but those of most varieties contain cyanic acid, necessitating processing before consumption (peeling, leaching out the acid, grinding or grating, and drying). Processing in West Africa takes place on two scales: a micro-industry level (often undertaken by women) to produce food products such as gari, attiéké, and flour; and industrial processing into starch, syrups, flour, animal feeds, and (soon) beer. IFAD (cited in Soulé, *et al.*, 2013) estimates that 30 million people in West and Central Africa, mainly women, derive income from cassava processing, most of it small-scale.

Prior to independence, colonial authorities promoted cassava as a famine-reserve crop, as it has no specific maturation date and hence can be stored in the ground until needed. Nweke, *et al.* (2002) argue that the transformation of the cassava value chain goes through four stages:

1. Initially, cassava is grown primarily as a famine reserve crop.

2. Next, it becomes more widely used as a rural food staple.

3. As production and processing expand, it becomes an important cash crop for urban consumption.

4. Finally, it also becomes an important component of livestock feed and a raw material for industrial processes.

89 Adoption in Ghana may have been delayed by the country's overvalued exchange rate during the late 1970s and early 1980s, which gave imported staples like rice a price advantage over domestically produced staples such as cassava. In Côte d'Ivoire, the government pursued policies that held down the price of rice relative to other staples, thus favouring rice consumption over cassava. In addition, Ivorian small-scale cassava processors reported that the IITA mechanical graters, which were originally designed mainly for gari production, were not as well suited as manual graters for the production of attiéké, the main processed cassava product consumed in Côte d'Ivoire (Camara, 2000).

The past 30 years has seen cassava in West Africa shift from stage 2 to stage 3 in most countries, but there has only been timid movement towards stage 4. Estimates by Kormawa and Akoroda in 2003 for Nigeria (reported in Lambert, 2012) indicate that industrial use accounted for 16% of total production (10% for chips; 5% to produce a syrup concentrate for soft drinks and less than 1% for starch). Small-scale processors focus on producing food products such as gari, attiéké, chips for animal feed, and cassava flour, often with variable quality. Industrial scale processors not only can produce food and animal feed products, but also products not feasible for small-scale processors, such as starch, syrups, and ethanol. Nonetheless, small and large-scale processors may end up competing for the same roots to process, which can hinder the ability of the large-scale processors to operate at capacity.

Although cassava can be stored in the ground unharvested until needed, once harvested it must be processed within 24 to 48 hours to avoid deterioration. Thus, large-scale processing requires careful just-in-time coordination between farmers and processors in order to ensure that processing plants can operate near capacity while avoiding gluts. The roots are about two-thirds water by weight, and hence transport costs are high. Lambert (2012) estimates that an efficient industrial processing plant needs to draw supplies of roots from no farther than 30 km, implying that the processor needs to have reliable delivery contracts with many farmers close to the plant, use mobile processing equipment to do initial chipping/drying near the farms, or be vertically integrated into farm-level production itself. In contrast, small and medium-scale processors face a much simpler task of sourcing raw product, buying roots from spot markets or directly from farmers on an as-needed basis.

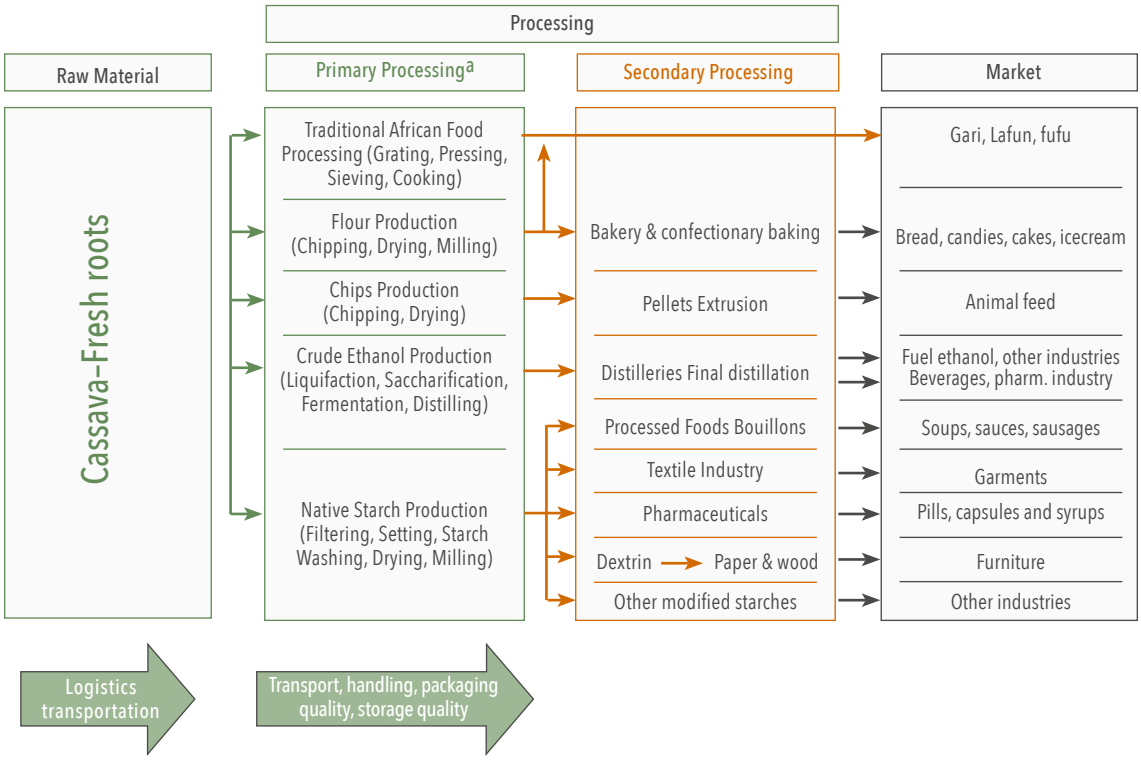
Attempts to move to from small-scale to large-scale processing (again, mainly in Nigeria), which could allow more consistent quality control, have also run into problems of aggregating and coordinating supply of the roots for processing. Frequently, plants operate at 40% or less of their capacity due to inadequate supply of roots. The problem arises for at least three reasons. First, because cassava production is rainfed, most farm-

ers plant and harvest their crop at the same time, leading to seasonal gluts and shortages of the roots.[90] Second, even if they had contracted with the plants for delivery of their crop, farmers frequently would sell to others if higher prices were offered. This suggests that the smaller-scale processors, as in the case of rice, may have been able to outbid the large processors for raw product due to their lower raw-product assembly costs and/or greater economic efficiency in processing. Third, large-scale processors face the ubiquitous problem in Nigeria of unreliable electrical service, requiring them either to shut down production when power is cut (losing the value of all the products on the production line) or operating with generators, which greatly increases their production costs.

90 Because cassava can be harvested at different times, this problem is potentially resolvable through differential pricing of the root depending on its delivery date to the plant. It is not clear why processors did not adopt such a pricing strategy.

Attempts to deal with the supply aggregation problem have met with mixed results. Beginning in 2009, the USAID MARKETS project and IITA partnered with Ekha Agro Processing, Ltd., Nigeria's largest producer of glucose syrup, to help the company develop a more reliable sourcing system for its roots. It had previously relied on purchases from farmer cooperatives, but the failure to get firm delivery commitments from these groups led the plant to operate only at 10% of capacity. The partnership with the USAID project and IITA worked to develop contracts with more than 20 000 cassava outgrowers and cluster farmers to deliver 400 tonnes of roots per day to the company's plant in Ogun state, near Lagos. Despite the development of these contracts and the company maintaining 3 000 ha of land for its own production of roots to supplement those bought from farmers, the plant has only managed to increase capacity utilization to 50% (AGWA field research).

Figure 10.2 *Structure of the Nigerian cassava value chain*



[a]All processes above include peeling and washing

Source: Federal Government of Nigeria, 2006

Problems of vertical coordination along the value chain are illustrated by Nigeria's experience with the Presidential Initiative on Cassava Production and Export launched by the Obasanjo administration in 2005 (Lambert, 2012; AGWA field research). The Initiative set a target of increasing production from 35 million mt in 2005 to 150 million mt by end of 2010. Included in the initiative was an initial requirement for inclusion of 10% high-quality cassava flour (HQCF) in bread – a measure aimed at reducing the country's reliance on imported wheat. The initiative encouraged farmers to expand cassava production through the distribution of cuttings of improved varieties and with the promise of a greatly expanded demand by the baking industry. The prospect of this larger market for cassava flour also led to an influx of investment by small-scale processors. With the assistance of various development projects, 120 new micro cassava processing centres valued at over N1 billion (US$6.4 million) were established across country. Bakers, however, were reluctant to substitute the HQCF for wheat flour, citing the lack of quality control on cassava flour produced by the small-scale processing facilities. Farmers, in the meantime, had expanded production and were stuck with no market for their expanded output. Even though the target for HQCF incorporation into bread was reduced to 5% after 2007, the initiative was seen as a failure by 2010. A consumer survey in Lagos carried out in 2011 found that none of the respondents interviewed said that they had ever tasted the cassava bread (AGWA field research).

With the launching of Nigeria's new Agricultural Transformation Agenda in 2011 (see Chapter 11), the goals of the previous Presidential cassava initiative have been revived and new objectives added, such as expanded production of cassava-based alcohol (to be blended with petrol). The new policy calls for reinstatement of the 10% HQCF blending requirement with wheat flour for bread effective in 2012, with the percentage increasing to 40% by 2015. In 2012, Nigeria imposed an additional 65% ad valorem tax on imported wheat, bringing the total tariff on wheat to 100%, both to encourage the shift to HQCF in baked products and to help fund the new cassava initiative. The government has taken a number of other actions, including creating a multi-stakeholder committee to manage the newly created Cassava Bread Development Board, removing import duties on enzymes used in producing HQCF, and focusing on large-scale processing with tighter quality control to try to avoid the pitfalls of the previous cassava initiative. The government anticipates 18 large industrial scale HQCF plants will be established soon to generate the 1.2 million tonnes of HQCF required under the Federal government's very ambitious target of 40% inclusion rate of HQCF in wheat bread (Lambert, 2012). But the organizational challenges in coordinating the supply of roots to these plants are likely to be very high in a setting where contractual compliance is viewed by many farmers as optional and where side-selling is rampant. These challenges may force many of the plants to vertically integrate into large-scale farming themselves.

Thus, the cassava value chain in West Africa has had some major successes in becoming an increasingly commercial crop processed predominantly by small-scale operators and generating millions of jobs. The growth of gari and attiéké consumption are examples of small, informal-sector processors and related value chain operators responding to consumer demands for a convenient, affordable staple that is an alternative to rice. But the ability of the cassava value chain to take the next step to become a more fully commercial crop feeding into a modern processing industry and capturing regional, domestic and export markets for products ranging from animal feed to starch to pharmaceuticals has been hampered by weak coordination linking farmers to the processors. A major test of the ability to design improved contractual arrangements will be the brewer SAB-Miller's plans to launch production of a cassava-based beer in Nigeria in 2013.

In addition to improving coordination to promote large-scale processing, there is also a big potential for small- and medium-scale processors to improve their incomes and value added by improving product quality, safety, packaging and branding in order to respond to growing urban demand through modern retail systems and also service diaspora markets for traditional products

that are perceived to be nutritious and well presented. The modernization of the small-scale food processing sector will require systematic upgrading of industrial processes, equipment operation, food hygiene and business management and will require concerted public-private sector collaboration, for example through value-chain participant councils.

10.1.3 Poultry

Consumption of both eggs and poultry meat have been growing substantially in West Africa over the past 30 years (see Part II). West African poultry producers have been able to satisfy almost all of the growing market for eggs in the region. In contrast, for those countries that have kept their borders open to international trade in poultry products, most of the growth in poultry (primarily chicken) meat consumption has been captured by imports. The loss of market share in poultry meat reflects not only the ability of exporters from Brazil, the US and Europe to deliver poultry products to West African ports at low costs (for reasons explained below) but also the difficulties that West African countries have had in adopting the institutional arrangements needed to ensure the tight coordination of inputs such as feed, veterinary products, and day-old chicks required by modern industrial poultry production.

Poultry production in West Africa involves three distinct systems: small-scale traditional systems, somewhat larger semi-commercial systems, and large-scale commercial systems.[91] Traditional systems account for around 70% of birds in most West African countries. In these systems, growers raise a small number of birds for home consumption, with small surpluses destined for the market. The birds scavenge for food, receiving few if any purchased inputs and no veterinary care or vaccinations. There is no distinction between birds raised for egg production and those for meat. Productivity in this system is low due to high mortality and relatively slow growth of the birds. The system has the advantage, however, of requiring very low investment, making it a widely used system to produce animal protein for the family and to generate supplementary income and liquidity, especially for women. The birds, which are local breeds, are adapted to the local production conditions. Since much of the consumption is located in areas with few cold chains, production from this system faces little competition from imports. Semi-commercial production, which is common in peri-urban and urban areas, tends to be the main source of commercial production of meat and eggs in the inland Sahelian countries. Production is based on improved local breeds or cross-bred stock, although often there remains little differentiation between layers and broilers. Producers provide simple housing for birds, purchase at least some of the feed, and provide veterinary services when available. Production is more commercially oriented, aimed at urban markets. Formal marketing contracts are rare, however; most output is sold through oral contracts with retailers (e.g. for eggs) or on spot markets. The formal marketing contracts that do exist have little influence on choice of technology, supply of inputs, or quality of output. Some of this production is seasonal, targeting major holidays such as Christmas or New Year's Day, when poultry consumption increases.

Large-scale commercial production typically involves mechanised production facilities, in which feed costs usually represent 70% to 75% of the cost of production. For this reason, the success of these operations depends critically on developing stable, low-cost feed supplies. Production is based on genetically improved stock that are specialized for either egg or meat production. Disease control measures (vaccinations, biosecurity practices) are also critical in maintaining productivity, especially as West Africa lies on major flyways of migratory birds that can spread avian influenza and other diseases. Feed conversion rates are high under a controlled production environment in specialized housing, with broilers reaching market weight in as little as six weeks. Spent layers are sold for

91 This categorization differs from FAO's 4-way classification of poultry production systems in use globally (http://www.fao.org/docs/eims/upload//224897/factsheet_productionsectors_en.pdf). The FAO classifies poultry production into 4 sectors: (1) Industrial integrated systems with a high level of biosecurity and birds and products marketed commercially, (2) commercial systems with moderate to high biosecurity and birds/products usually marketed commercially, (3) commercial poultry production systems with low to minimal biosecurity and birds/products entering live bird markets and (4) village or backyard production with minimal biosecurity and birds/products consumed locally. Since very few West African producers fall into FAO's sector 1, in the discussion below, sectors 1 and 2 are combined and labelled "commercial systems." The following description of the three production systems is drawn largely from Farrelly, 1996, and from a series of case studies of poultry markets in West Africa carried out by researchers from the University of Washington and summarised by Schneider *et al.* , 2010.

processing, for example into soups, or on spot markets. Success of this system depends not only on the adoption of the improved technology but also a set of contractual and institutional arrangements to manage the risks inherent in such capital-intensive operations. In industrial countries, typically firms involved in selling the chickens or eggs establish contracts with growers, providing them with day-old-chicks, feed, veterinary inputs or services, and technical directions on growing practices to be followed, while the farmers provide labour, housing, and handle disposal of waste. In West Africa, given problems of contract enforcement, it is more common for all these operations to be integrated within a single firm.

Table 10.1 shows distribution of poultry numbers in West Africa. Nigeria has the largest number, 39.2% of the total, followed by Ghana (9.3%), Côte d'Ivoire (9.1%), Senegal and Burkina Faso (each 7.9%). Although Nigeria has the largest number of birds, it ranks fourth from the bottom of the 15 ECOWAS countries in terms of birds per capita; Togo, Senegal, Burkina Faso and Mali have the highest numbers of birds per capita. Growth rates of flocks have varied substantially over time and by country, for reasons discussed below. A particular shock was the 2006 outbreak of avian influenza. Given the weak biosecurity practices of most growers, especially traditional producers where no effort is made to isolate poultry from contact with wild birds, the threat of major damage was large. Nigeria was the site of the initial outbreak, with over 1 million birds destroyed or dying there. Although this was a small proportion of the total flock, more serious was the reaction of Nigerian consumers. Fearing the disease, consumers initially boycotted chicken, leading to a fall in poultry prices of over 80% (Schneider, *et al.*, 2010). In response to the outbreak, most countries in the region banned imports of poultry products from any country having suffered infection.[92] As noted below, some countries, such as Senegal and Burkina Faso, have maintained the import bans to the present time, using the phytosanitary controls as a non-tariff barrier to protect domestic producers.

92 As explained below, Nigeria had already banned imports of frozen poultry and eggs in 2002 to protect domestic producers from foreign competition.

Table 10.1 *Poultry numbers in West Africa*

2008–2010 averages; CAGR uses three year averages for 1981–2010

				Compound Annual Growth Rate		
Country	Total poultry flock (million birds)	Share of ECOWAS total	Birds per capita (2010)	1981-83–1988-90	1991-93–1998-2000	2001-03–2008-10
Benin	15.9	3.4%	1.9	-2.3%	3.1%	3.0%
Burkina Faso	37.1	7.9%	2.4	4.2%	2.4%	5.7%
Cape Verde	0.6	0.1%	1.3	6.3%	-0.8%	3.5%
Côte d'Ivoire	42.4	9.1%	2.3	3.3%	2.0%	4.2%
Ghana	43.6	9.3%	2.0	-0.5%	6.6%	7.6%
Guinea	20.5	4.4%	2.3	2.6%	4.0%	5.5%
Guinea-Bissau	1.5	0.3%	1.1	6.3%	5.1%	0.1%
Liberia	6.8	1.5%	1.8	4.0%	0.4%	4.6%
Mali	35.5	7.6%	2.4	5.3%	1.4%	3.6%
Niger	15.1	3.2%	1.1	1.1%	1.1%	3.2%
Nigeria	183.3	39.2%	1.2	4.1%	0.2%	4.3%
Senegal	37.1	7.9%	3.3	4.2%	5.1%	4.8%
Sierra Leone	8.9	1.9%	1.7	3.4%	0.7%	21.3%
The Gambia	0.8	0.2%	0.5	6.7%	-2.0%	3.7%
Togo	18.9	4.0%	3.6	14.4%	4.7%	7.4%
ECOWAS TOTAL	468.1	100.0%	1.7	3.5%	1.7%	4.9%

Source: Calculated from FAOSTAT data

Poultry value chains

Egg value chain. West African producers appear to have become increasingly competitive in egg production. The ratio of domestic to world prices of eggs has fallen sharply since 2000; by 2007 domestic prices in most countries were at or below world prices (Schneider, *et al.*, 2010). Most countries in the region are self-sufficient in eggs, and, as indicated in Part II, consumers have increasingly turned to eggs as an inexpensive source of high-quality protein. For example, in a survey of Accra consumers interviewed in late 2011 as part of the AGWA fieldwork, 62% of respondents reported eating eggs at least once a week, compared with 35% reporting consuming frozen chicken (the most frequently consumed type of chicken) and 82% reporting consuming dried fish (the most frequently consumed form of animal protein). The widespread consumption of eggs is due to their low cost, availability in small amounts, perceived healthfulness and cleanliness.

Commercial egg production, however, is challenged by variability in feed prices, especially of maize and of protein sources, such as groundnut and soybean meal. The widespread absence of contracting between producers of these feed products and local poultry producers reduces the capacity of poultry producers to anticipate their costs and, in some cases, induces them to integrate backward into crop production themselves. Interviews with Senegalese poultry feed manufacturers also reveal that their perception of the unreliable quality of maize imported from Mali often leads them to turn to imported maize. Moreover, when production of cereals falls in West Africa, competition between use of grain for feed and for human consumption becomes more acute, driving up prices unless trade policies are flexible enough to allow imports to flow in to stabilize prices. This is a generic problem in countries where the bulk of coarse grain production still goes to direct human consumption, unlike in middle- and upper-income countries (including major poultry exporters like Brazil and the US), where most of domestic coarse grain consumption is in the form of livestock feed. In Nigeria, abrupt changes in government policies, including the imposition of import bans on cereals and oilseeds that are the object of special government production initiatives, have also created major challenges for egg producers. The adverse effects of these trade restrictions on poultry producers have been exacerbated by increased competition for cereals from agroprocessors (breweries and breakfast cereal manufacturers), which have further bid up the prices of these inputs (AGWA field research). In some of the smaller countries in the region, especially those dependent on more semi-commercial systems of production, irregular access to other critical inputs, such as veterinary products and day-old chicks, also pose challenges.

Thus, while the egg value chain has not faced large challenges from extra-African imports in most countries, its further growth is conditioned, like that of rice processing and cassava processing, on actions aimed at improving the reliability, quality, and cost of the agricultural raw materials that serve as its key inputs.

Poultry meat (broiler) value chain. In contrast to egg producers, producers of broilers in West Africa have faced strong international competition over the past 20 years. Although poultry consumption has grown strongly in many countries, most of this increase has been met by imports. To understand the forces at work, it is useful first to discuss the nature of the demand for poultry meat in West Africa and review events that have strongly affected poultry trade into the region, and then examine the experiences of three different countries (Ghana, Nigeria, and Burkina Faso) that have had very different policy responses to these events.

Demand for poultry meat in West Africa.

In West Africa, consumption of poultry (largely chickens, but also including guinea fowl, turkeys, and ducks) traditionally was reserved for special events, as it was in much of the rest of the world before the industrialization of production drove down prices dramatically. West African consumers preferred free-range birds, purchased live, and slaughtered at home. Since poultry was frequently prepared in stews, consumers also preferred birds with tougher meat that would maintain its integrity when stewed for a long time. The introduction of chicken products, both domestic and imported, produced in large-scale commercial operations has led to market segmentation. While birds produced

in traditional and semi-commercial operations are still preferred for special occasions, the lower-priced "industrial" birds offer consumers a cheaper product, available already dressed and often cut up in parts, that is quicker to prepare and more suited to time-constrained urban lifestyles. Thus, the two products exist side-by-side in the market, but with substantial price differentials between them; consumers choose among them based on relative prices and tastes (Table 10.2). See also Chapters 5-7 which discuss the growing demand for poultry in the context of West African's overall food budgets, food consumption shares, and changing consumption patterns.

Table 10.2 *Chicken prices in Accra in early 2012*

	Average Price of Product (cedis/kg)	
Type of chicken product	Modern Market	Traditional Market
Live chicken	–	9.07
Frozen chicken	8.60	4.61
Chilled chicken	9.56	–
Ready-to-eat	8.75	–

Source: AGWA field studies.

The poultry meat market in Ghana has become differentiated between imported frozen poultry meat and locally produced birds. The latter are of two types: spent layers, sold typically after approximately 72 weeks, when their egg production rate per day falls below about 55%; and broilers. The spent hens are sold live in local markets and are generally destined for stews. The broilers are sold in various formats, from live animals to whole dressed birds to cut-up parts. Consumers surveyed as part of AGWA research in Accra in 2011 indicated a preference, other things being equal, for local poultry. Other things are not all equal, however, as local production is most often sold either as a live or whole dressed bird, requiring a larger expenditure of money and time to prepare it. Hence, the Ghanaian poultry is more targeted for special occasions, while the imported poultry has become a more frequent item in the diet, both at home and in quick-service restaurants.

Import surges and import bans

The impact of the WAEMU CET on West Africa's poultry trade. Beginning in the mid-1980s, and rapidly accelerating in the late 1990s, imports of frozen chicken began arriving in West African markets. For example, between 1996 and 2003, annual chicken imports from the European Union into ECOWAS countries increased from 12 500 mt to 86 000 mt (Schneider, *et al.*, 2010). The adoption of the WAEMU common external tariff (CET), initially just in the WAEMU countries and subsequently extended to all ECOWAS countries, set the ad valorem tariff rate for poultry at 20%, well below the previous rate practiced in many countries. This prompted a further increase in imports, which increasingly came not only from the EU but also North America and more recently Brazil, which has emerged as a low-cost producer in the world market.

Differing policy responses to the import surge: Ghana, Nigeria and Burkina Faso. The experiences of Ghana, Nigeria and Burkina Faso illustrate differing policy responses to the import surge of low-cost poultry products from abroad and some of the consequences of those decisions. Ghana, after initially trying to protect its domestic producers with higher tariff rates, accepted the import surge. Nigeria banned frozen poultry imports starting in 2002 in order to protect domestic producers, particularly the larger scale commercial producers. Burkina Faso, which faced fewer imports due to the natural protection offered by its landlocked location, used phytosanitary regulations to restrict imports, protecting its semi-commercial family-farm producers of poultry.

Ghana.[93] Modern poultry production expanded rapidly in Ghana starting in the 1960s. However, by the mid-1980s, low-priced frozen chicken meat from Europe and North and South America began entering the Ghanaian market, undercutting the prices received by local broiler producers. The resulting strong price competition from imports led to an initial attempt by the Ghanaian government to protect domestic producers through the imposition of a 40% import tariff in 2003, but under pressure from the IMF and the World Bank, this was cut back to 20% (the level of the WAEMU common external tariff), in addition to a VAT of 12.5% and various other levies equalling 4.9% (for

93 This section draws heavily on material collected during AGWA field research and on Killebrew *et al.*, 2010a.

a total protection rate of 37.4%). In spite of this level of protection, most of the largest broiler producers went out of business or shifted exclusively to egg production, the number of feed mills fell from 30 in 1988 to 12 in 2010, and of 16 hatcheries that were producing day-old chicks in the early 2000s, only 7 were still operating in 2011.

The growth of frozen chicken meat imports into Ghana has been phenomenal over the past 20 years, increasing from none in the period 1980-85 to an average of 70 000 mt per year over the period 2005-09. During this period, per capita availability of poultry meat increased seven-fold, from 0.7 kg/year to 4.8 kg/year, with 69% of the increase coming from imports (FAOSTAT). The competitiveness of the imports stemmed from several factors:

- Low production costs in the exporting countries as a result of economies of scale, made possible in part by well-functioning and coordinated markets for inputs such as maize and soybean meal and contracting arrangements between integrators and producers that gave strong incentives for cost minimization.

- The ability of the exporters to ship frozen chicken parts rather than whole birds to West Africa. This gave the imports a double advantage:

  - It allowed the exporters to Ghana (and other countries in West Africa) to segment their exports among different markets, selling the high-value parts such as breasts to high-income markets in the North that pay a premium for them while shipping lower-value products (such as wings and backs) to West Africa. For example, of 51 shipments of imported poultry recorded by the Ghanaian Veterinary Service Directorate in July 2011 (weighing just over 2 000 mt), 41% of the shipments and 44% of the weight were accounted for by chicken backs. The rest were largely wings and leg quarters (calculated from data collected during AGWA field research). In contrast, Ghanaian broiler producers had to sell their entire birds on the local market and did not have the option of sending the higher-valued portions to high-income markets in the North.

  - The availability of frozen parts was more convenient for many consumers in that they could (1) purchase a small amount of chicken rather than a whole bird and (2) the chicken was already dressed, while many of the birds produced locally were sold live and had to be killed and dressed (see Chapter 7 for details). While Ghanaian commercial producers sell dressed birds, most sell them as whole birds, as only a handful have capacity to process them into cut parts (Killebrew, et al., 2010a). If they developed such capacity, they could begin to exploit a niche market for chilled, local chicken, but this would require major upgrading of their cold chains, quality control, and branding.

- Export subsidies from Europe may have played a role in helping the frozen chicken get a foothold in the Ghanaian market.[94] Imports from the EU remain important, but Brazil is the largest exporter, and its exports are free of export subsidies.

- The frozen parts are widely available, as any shop or market outlet with access to a freezer can stock and sell the imported chicken, as opposed to chilled or live chickens, which are generally available only in open markets or modern retail establishments.

The ability of the Ghanaian commercial broiler value chain to compete with imports has been further challenged by the variable quality of domestically produced veterinary drugs and day-old chicks and the high price of their imported counterparts, large variability in feed costs due to the feed/food competition for grain mentioned earlier, and operational challenges in terms of poor roads and unreliable electricity supply that increase costs and hinder the ability to process and distribute processed poultry to the main centres of demand (especially Accra).

94 As of late 2012, EU export subsidies on poultry stood at 325 Euros/mt (http://www.bloomberg.com/news/2012-04-19/eu-to-cut-beef-export-subsidies-by-33-on-elevated-prices- 1-.htm). These subsidies have become a point of contention between the EU and Brazil. While the US pays no explicit export subsidies, some countries (e.g. China) charge that US farm subsidies to the grain industry drive down US feed costs, giving US poultry an unfair advantage in international markets (http://www.nationalchickencouncil.org/statement-on-ustr-announcement-by-usa-poultry-egg-exportcouncil-and-national-chicken-council-on-china-anti-dumping-case-on-chicken/).

The response of the Ghanaian government to date has been to allow consumers to benefit from low international poultry prices in order to expand their consumption, even though a majority of the increase is captured by imports. Nonetheless, as per capita poultry and egg consumption in the country is increasing, due not only to lower chicken prices but also growing incomes, poultry numbers in Ghana have grown at a faster rate over the period 2001-03 to 2008-10 than any other country in the region except Sierra Leone, where the growth represents recovery from the civil war (Table 10.1).

As discussed in Chapter 12, the newly revised ECOWAS CET proposes to impose an import tariff on poultry meat of 35% rather than the current 20%. Given the cost differentials between Ghanaian and Brazilian producers, however, it seems unlikely that this modest increase in border protection will be enough to allow Ghanaian poultry producers to recapture the bulk of the domestic market (assuming that the VAT and other levies on imported poultry remain unchanged). A more realistic objective in the short- to medium-run is to focus on developing niche market strategies while addressing the basic structural constraints facing the value chain over the medium to long term.

Nigeria.[95] Nigeria's commercial broiler industry is much larger than that of any other country in the region, and is concentrated in the southern states surrounding Lagos. Since the 1980s, the Nigerian government also promoted semi-commercial production (known in Nigeria as "backyard production") as a poverty alleviation measure in the central and northern parts of the country. Faced with the increased international competition, Nigeria has taken a protectionist approach to defend those investments, banning imports of frozen chickens and eggs starting in 2002.

The impact of the import ban has been mitigated, however, by two factors. First, import bans on maize, soybean meal, and groundnuts in the context of special production initiatives for these products have driven up input costs for poultry producers, offsetting some of the benefits of the poultry import ban. Second, the ban has created incentives for widespread smuggling of imported chicken from neighbouring countries, particularly Benin, into Nigeria. Benin has become the second largest importer of chicken meat in the ECOWAS zone (after Ghana), with imports exceeding 112 000 tonnes in 2009 (FAOSTAT food balance sheets). An estimated 90% of the total is re-exported clandestinely to Nigeria, often without refrigeration, raising serious public health risks (Killebrew, *et al.*, 2010b). The Poultry Association of Nigeria (as reported in AGWA field research) alleges that in order to preserve the chicken in the absence of a cold chain, smugglers often treat it with chemicals, some of which are carcinogenic.

While the protection allowed the Nigerian broiler industry to grow, consumer access to inexpensive poultry products has been much more limited in Nigeria than in Ghana. Whereas apparent per capita consumption of poultry increased sevenfold in Ghana between 1980-84 and 2005-09, in Nigeria it actually fell slightly, from 1.7 kg/year to 1.6 kg/year (see Chapter 5). Nigeria's experience thus illustrates some of the trade-offs policy makers face in balancing consumer and producer interests when designing food policies.

Burkina Faso. In contrast to Ghana and Nigeria, Burkina Faso has no large-scale commercial broiler operations, with production of eggs and broilers taking place in traditional and improved village-level systems and in semi-industrial units (with a maximum of 30 000 birds, but many with fewer than 1 000) located around Ouagadougou and Bobo Dioulasso, the two largest cities. The semi-industrial units are oriented primarily to egg production, while the improved village production supplies much of the urban market with chickens and with Guinea fowl eggs (ROPPA, 2012a; Schneider and Plotnick, 2010).

In contrast to the coastal states, imports of poultry products account for less than 1% of the market in Burkina Faso. The low level of imports is due to:

- The country's natural protection thanks to its landlocked location. Ouagadougou is over 750

95 This section draws mainly on material in Killebrew *et al.*, 2010b and from AGWA field research.

km from the ports of Lomé, Abidjan, Cotonou and Tema, with weak cold chain links between those cities and Burkina Faso. The high transport costs from the coast contribute importantly to the competiveness of local production relative to imports.

- Burkina's very strict enforcement of phytosanitary rules regarding avian diseases, which restricts imports from several countries.

- Strong consumer preferences for locally produced, "traditional" chicken because of its flavour.[96]

Table 5.4 in Chapter 5 shows that per capita availability of poultry in the country is 2.2 kg/person/year, about half that of Ghana but above the level in Nigeria. It appears unlikely that imports from abroad will displace local production to any great extent in the future. ROPPA, however, sees a threat to the village-level and semi-industrial production coming from the potential installation of larger commercial production units, driven by pressures from consumers, government, and major employers such as mining enterprises, to reduce the price of food in the country (ROPPA, 2012a). For such units to succeed, however, they would need to master the problems of obtaining stable supplies of consistent quality feed and other inputs, problems that have challenged current producers in Burkina Faso and commercial producers along the coast.

Future perspectives for the West African poultry value chain.

OECD/FAO outlook projections foresee the real prices of poultry meat remaining stable from 2012 through 2021, with poultry meat remaining the least expensive meat source on global markets. In West Africa, demand for poultry is likely to be pushed higher by the projected rise in global fish prices over the 2012-2021 period (OECD/FAO, 2012), which will induce fish consumers to shift towards cheaper sources of animal protein. The growth of international trade in poultry products is expected to slow from an annual rate of 5.5% over the past decade to under 2% through 2021, with up to 89% of the increase in exports coming from low-cost producers Brazil and the US. These countries are low-cost producers not only because of their production technology but also because of the institutional arrangements in place to ensure reliable input availability and fulfilment of contractual obligations that are critical to the success of large-scale commercial poultry production. Such institutional arrangements are largely absent in West Africa.

It thus appears that while egg production will likely remain competitive in West Africa, it will be difficult for broiler producers in the coastal states to capture a large portion of the mass market from imports in the next five years in the absence of strong protection measures (high tariffs or outright import bans). Even with poultry moving to the higher "fifth band" of tariff protection (35%) under the proposed ECOWAS CET (see Chapter 12), it will be difficult for West African producers to compete with imports for the mass market unless the underlying structural challenges facing the value chain are addressed, and it will take time to do so. The market will remain segmented, with continuing demand for locally produced free-range birds for special occasions, and cheaper imported chicken and turkey parts (especially low-cost backs, necks and legs) meeting a demand for lower-cost and easily prepared meat. There is likely some scope to expand the niche market among upscale consumers for locally produced, well-packaged, and traceable chilled chicken, but this will require a significant upgrading of processing, packaging, distribution and branding. It is also important to continue to encourage "backyard" poultry production as a way of upgrading diets and incomes in rural areas.

The contrast between the experience of Ghana's and Nigeria's poultry value chains illustrate trade-offs faced by policy makers. Ghana, by allowing the inexpensive imports, has offered its consumers an additional source of inexpensive protein, and consumption has risen seven-fold, but many Ghanaian broiler producers, particularly commercial operations, have not been able to compete and have gone bankrupt or converted entirely to egg production. Nigeria, on the other hand, has

96 These chickens are commonly referred to in Burkina Faso as "poulets bicyclettes" because they are often brought to market by vendors riding bicycles or motorbikes. The tradition across many income classes of consuming grilled chicken from roadside vendors and small restaurants further boosts the demand for local chickens.

protected its domestic commercial producers, but at the expense of stagnant per capita availability of poultry meat in the country and the exposure of Nigerian consumers to possibly dangerous imported products smuggled into the country in unhygienic conditions.

Landlocked countries, such as Burkina Faso (and Niger and Mali as well), will likely remain competitive with imports due to their natural protection, relying mainly on improved village-level and semi-commercial operations to supply most of the urban demand for poultry meat, with some larger-scale operations for egg production. Yet in these countries as well, improved contractual arrangements to ensure greater stability in the supply of critical inputs (particularly feed and veterinary supplies) will be critical to their long-term success – especially as transportation and cold chains that link these countries to the major ports improve over time and thus reduce the delivered cost of imported frozen poultry products to the inland markets.

10.1.4 Dairy Products

Current situation.

Even more than the poultry meat value chain, the dairy value chain is dominated by imports, particularly of milk powder, a substantial proportion of which is reconstituted into fluid milk or processed into products such as yoghurt in West African processing plants. Nigeria is the largest importer of dairy products in Africa, accounting for almost half of the imports into the ECOWAS zone. Nigeria is followed by Senegal, Ghana, and Côte d'Ivoire; these four countries absorb approximately 80% of total dairy product imports into the region (Lambert, 2012; AGWA field research). Even in a landlocked country such as Mali, 80% of the dairy products consumed in the Bamako area are derived from imported powder. Pastoral milk production, however, remains an important source of food and income generation (particularly for women) in more northern rural areas of Mali and neighbouring countries (Michigan State University Food Security Team, 2011).

Like poultry producers, dairy producers in West Africa operate in three different types of production systems. In the northern parts of the region, pastoralists (mainly Fulanis) produce milk as part of a transhumance-based production system. The milk production is locally consumed, sold or bartered, often for grain; this enterprise is mainly the domain of women. The herds, based on zebu (Bos p. indicus) breeds, are managed for both dairy and beef. Milk production per cow is low, seldom exceeding a couple of litres per day, and highly seasonal, depending on pasture conditions. Over the past 20 years, as agriculturalists in the Sudano-Guinean zones have increasingly incorporated cattle into their farming systems, they have often hired Fulanis to manage their cattle for them, and milk production from these animals is similar to the system just described. A second system involves medium-scale production (from a few cows to a few dozen) in peri-urban areas in the Sahelian countries and northern parts of the coastal countries. This system involves both pure zebu breeds and crosses with European breeds. The producers, typically organised in cooperatives, sell to local small-scale dairy processors that in turn sell fresh milk and some processed products (e.g., fermented milk products) to urban consumers. Production is also seasonal, depending on feed resources, but these producers provide more purchased inputs to their animals, including feed concentrates, veterinary care, and sometimes artificial insemination. A third, and by far the smallest system, involves commercial production using imported European (Bos p. taurus) breeds. This production is largely concentrated in the few highland areas where these animals can survive without special housing or extensive veterinary treatments against trypanosomiasis and tick-borne diseases that are widespread in the coastal countries.

As detailed in Part II, the consumption of dairy products, including processed products such as yoghurts, is growing rapidly in the region and likely to continue to grow quickly in those countries experiencing strong economic growth. In addition to milk powder imports, there is also importation of UHT milk from abroad, as well as its local production from imported milk powder. For some of the processed products such as yoghurts, however, there are also substantial imports, as West African consumers are often wary of the quality of locally

produced products, even if they are based on imported milk powder.

The reliance on imports has been driven by the low cost and year-round availability of the imported products in contrast to local production, which varies substantially between rainy and dry seasons. The low cost is in turn due in part to the higher productivity of dairy herds based on Bos p. taurus breeds in temperate-climate countries as compared with the zebu breeds that predominate in West Africa. There are few areas in West Africa, such as the Jos Plateau in Nigeria, that are suitable for the higher-productivity temperate-climate breeds. Efforts to introduce them into other areas have led to the need for costly controlled environments, making production unprofitable, although in some areas cross-breeds between local and imported cattle have had some success. Production using local breeds in the coastal areas (where demand is highest due to the large cities) frequently runs into disease problems, such as trypanosomiasis and tick-borne maladies.[97] In addition to the inherent productivity advantages of dairy production in more temperate zones, substantial subsidies from OECD countries to their dairy industries – including export subsidies in the past – have put West African producers at a severe disadvantage.[98]

In recent years, world prices of milk powder have increased sharply, hitting a record level of over US$4 000/mt in 2007/08 (OECD/FAO, 2012). This, combined with rising per capita incomes, has led to expansion of commercial milk production in peri-urban areas of some of the landlocked Sahelian countries, based on small-scale processing plants supplied mainly by small-scale producers. In addition, there has been some expansion of commercial production in the Jos Plateau of Nigeria. This production is driven by a strong consumer preference in these areas for fresh milk (allowing the dairies to charge a premium for their product) and a degree of natural protection due to their inland location. Cooperatives have played a key role in many of these efforts, both in input provision and in organizing milk assembly and processing. Major challenges remain, however, in ensuring access to quality feed year-round (lack of which leads to large seasonality in production) and in milk marketing (Michigan State University Food Security Team, 2011).

Future perspectives for the West African diary value chain.

OECD/FAO projections foresee real prices of milk powder on the world market declining slightly from 2011 levels but remaining at a plateau of around US$3 000/mt through 2021, well above the levels of US$1 500-2 000 seen in the 1990s and early 2000s[99]. While the higher prices of imports and the strong potential demand growth as incomes rise in West Africa may offer some scope for expansion of local dairy production, this will likely be confined to peri-urban areas in the inland countries and a few isolated highland areas such as the Jos Plateau, where disease problems are less than along the coast and where transport costs offer some degree of natural protection. In other areas, it is unlikely that West African producers, using either zebu or cross-bred cattle, will be able to compete with imported products that originate from intensive (and often subsidised) dairy systems in the North.

If West African dairy processors can assure local consumers of the quality of their products, however, there is likely strong potential for value addition through processing, based largely, but not exclusively, on imported inputs.

10.2 Value chains oriented towards exports

In contrast to rice, cassava, poultry and dairy products, which in West Africa are overwhelmingly oriented towards consumption within the region, cocoa and cotton are export commodities, with only a very small proportion of total production

97 Although India has been able to build the world's largest dairy sector based on zebu cattle, there are three critical differences between India's experience and the current situation in West Africa: (1) Indian producers did not face the problems of bovine sleeping sickness (trypanosomiasis) that severely limits production in more humid areas of West Africa; (2) the much higher human population density in India reduced per-unit marketing costs for milk, a highly perishable product; and (3) India's dairy development strategy in the 1960s and 1970s relied on heavy quantitative restrictions on imports, which would be difficult for West Africa to implement under WTO rules.

98 EU dairy export subsidies, which were substantial from the 1980s to the mid-2000s, had fallen to zero by 2012 with the spike in world prices for dairy products.

99 All prices are in 2005 dollars.

consumed in West Africa. Following the long-term decline of international prices for traditional West African agricultural exports such as cocoa and cotton and difficulties to maintain the quality and quantity of production following liberalization (described below), the attention of policy makers and donors shifted in the 1990s increasingly towards non-traditional exports, such as fruits, vegetables, and nuts. Despite some notable successes, the overall importance of non-traditional exports has remained limited. With rising global commodity prices, however, the prospects of traditional West African agricultural export crops have improved. These subsectors include large numbers of small farmers and have strong potential for contributing to overall growth and poverty reduction. Export markets for these products tend to be larger, and hence production increases are less likely to depress prices.

Effectively competing in global markets for these export crops requires the capturing of several types of scale economies, including:

- Scale economies in maritime shipping and meeting minimum order size of overseas buyers.
- Implementing systems of quality assurance to meet export markets' increasing demands for quality in terms of traceability and assurance of compliance with various production standards – for example with respect to labour conditions and environmental sustainability.
- Implementing disease control measures industry-wide in situations where compliance by all producers is necessary to prevent outbreaks that could threaten the productivity and reputation of the country as a reliable exporter (e.g. spraying programmes in the cocoa industry).

To the extent that the raw products are processed domestically before export, processors face the same problems of ensuring reliable supplies of raw material and other inputs as described earlier for large-scale processing of cassava and rice. On the other hand, developing systems to capture these scale economies and ensure vertical coordination may be easier in export crop value chains than in value chains oriented primarily towards domestic consumption. Export commodities typically move through only a few ports, making the marketing channels less complex than those for domestically consumed foods, which are sold in hundreds of thousands of locations across the region. There are also frequently fewer buyers for the export commodities, which reduces the problems of farmers' not respecting delivery commitments (side-selling), but which also opens the door to farmers' not receiving competitive prices for their output. The existence of constriction points in export value chains makes it easier to use indirect cost recovery mechanism for value-chain financing, e.g., through marketing assessments or export taxes. Unfortunately, such systems are prone to misuse, as the following discussion will illustrate. Nevertheless, financing arrangements within export crops can have important spill-over effects such as the use on food crops of fertilizer obtained through the export-crop value chain or the linkage of farmers to mutually owned financial institutions linked to the export crop but catering to the broader financing needs of the farm household.

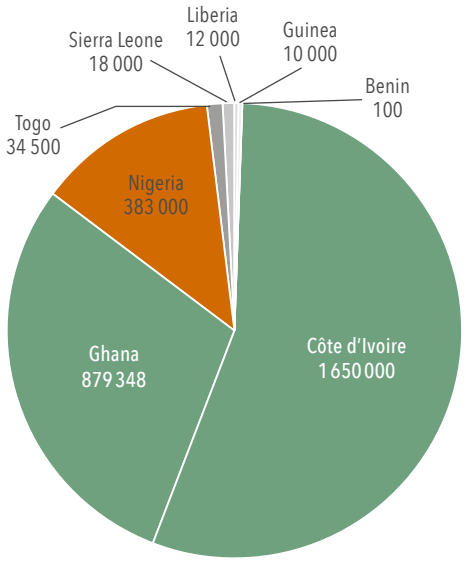
10.2.1 Cocoa

As shown in Chapter 4, cocoa is by far West Africa's leading agricultural export, and the region is the dominant force in world markets. Three West African countries – Côte d'Ivoire, Ghana and Nigeria – along with Cameroon accounted for 58% of global production in 2009/10, with Côte d'Ivoire – the world's largest producer – alone accounting for over one-third (FAOSTAT).[100] Other West African producers include Togo, Sierra Leone, Guinea, Liberia, and Benin (Figure 10.3). Some of these countries have important cocoa plantations that were abandoned during civil conflicts and are now being revitalized. In West Africa, 90% to 95% of all cocoa is produced by smallholders with farm sizes of two to five hectares. Production is labour-intensive, with little farm-level mechanization (Traoré, 2009). A general problem in many producing countries is the aging of trees,

100 Other major global producers, in order of importance, are Indonesia (the third largest producer after Côte d'Ivoire and Ghana), Brazil, Ecuador, and Malaysia.

resulting in falling productivity levels. However, the potential for substantial productivity increases even in old trees by applying inputs and improved agricultural practices has been demonstrated in Ghana and, more recently, Liberia.

Figure 10.3 *West Africa cocoa bean production, 2012 (in mt)*



Source: FAOSTAT data.

While the majority of cocoa continues to be exported in the form of beans, in-country grinding of beans to produce cocoa powder and cocoa butter for export and the domestic markets has been growing over the past 30 years. West African governments have encouraged investments in grinding capacity by both international and local firms – e.g. through lower export taxes in Côte d'Ivoire for exporters who process some of their beans in-country – in order to capture more of the value added from the value chain. Worldwide, cocoa grindings in producing countries accounted for 37% of the global total in 2005/06, and by 2011, Côte d'Ivoire had overtaken the Netherlands as the world leader in cocoa grinding capacity (Lambert, 2012; Agritrade, 2012).[101] Cocoa processing is capital intensive, and the industry is dominated by large multinational firms.

101 The government of Côte d'Ivoire has set a target of increasing grindings from 35% of its total crop in 2012 to 50% by 2015.

Vertical coordination challenges in the cocoa value chain.

Several characteristics of cocoa production have important implications for the vertical coordination challenges faced in the value chain.

1. Cocoa is a perennial crop. Once planted, a cocoa tree takes at least three years to enter into production, and trees stay productive for up to 30 years. Because of the time lag between planting new trees and their becoming productive, supplies expand only slowly in response to higher prices. Once the trees are productive, however, they continue to produce, so although farmers can take actions that affect their yields, production generally falls only slowly in response to lower prices.[102] These rigidities in supply response contribute to cyclical price fluctuations that are typical for perennial crops and for meat production.

2. Once harvested, farmers extract the seeds from the pod, ferment them for several days (which creates the chocolate flavour) and then dry them before sale. The care with which these operations are carried out has a large effect on the quality of the beans. Because buyers obtain beans from many different farmers and the beans are usually pooled, farmers who are not careful in the post-harvest operations can impose large costs on those who are careful by degrading the quality of the entire pool. Therefore, to maintain quality, value chain participants must devise and enforce incentives for careful quality control, especially at the farm level.

3. Traceability concerns are rising among buyers of cocoa in industrial countries, e.g. with respect to sustainable production practices and non-use of child labour. Addressing these concerns requires tighter coordination among stakeholders in the value chain.

4. Disease control is critical in maintaining tree productivity and quality, and disease in one

102 Officially recorded production in an individual country may fall more in response to low prices than does actual production, as farmers frequently smuggle their cocoa to neighbouring countries where prices are higher.

grower's trees can spread easily to a neighbour's. Thus, there is need for collective efforts at disease control, typically through spraying.

5. Once in the hands of the buyer, the beans are sorted and stored. The dried beans are then shipped to a domestic or overseas processor to be shelled and roasted. The beans are ground into cocoa liquor (or paste) and then refined to produce cocoa butter and cocoa cake. Cocoa cake is used to make cocoa powder. Chocolate is made by mixing cocoa butter with cocoa liquor, an extract from cocoa cake and other ingredients, such as sugar and milk. While cocoa butter can be substituted by many other vegetable fats, such as palm or shea oil, cocoa powder has no substitute. Hence, in reality, cocoa processors face two separate markets, one for cocoa butter in which they face competition from other vegetable oils, and one for cocoa powder, which has no substitutes.

6. There are large scale economies in the assembly, processing, and sale of cocoa beans and cocoa products on international markets compared to the optimal scale of farm-level production. The scale economies in international marketing reflect both technical issues (such as scale economies in maritime transport) and the minimum lot size for the major cocoa auction markets and the large international firms that buy cocoa. One of the original justifications for creating marketing boards for cocoa and similar crops in West Africa was to assist small farmers in connecting to this international market effectively and to provide them with some countervailing bargaining power in international markets. In reality, once created, these boards became tools for taxing cocoa farmers, frequently buying at low prices and reselling on the international for much higher prices.

Different policy approaches to cocoa: Nigeria, Ghana, and Côte d'Ivoire.

At independence, the three major cocoa producers in the region, Nigeria, Ghana, and Côte d'Ivoire, opted for state control over the cocoa value chain, both to deal with some of the structural issues discussed above and because control of cocoa exports represented a convenient way to generate substantial government revenues. As discussed in Chapter 11, all three countries taxed their export-crop sectors heavily; for example, prior to liberalization, cocoa generated 20% of government revenue in Côte d'Ivoire (Traoré, 2009). The models of government control differed across the three countries. Nigeria and Ghana opted to use the Cocoa Marketing Boards that had been established under British colonial rule. These boards held the monopoly on all cocoa purchases in the country and all export trade. Each board set pan-territorial prices for its country for the cocoa they purchased from farmers and attempted to stabilize prices paid to farmers. The boards had the potential to stabilize farm-level prices, albeit at a low level, because they earned substantial margins on their marketing operations; for example, in 1993, Ghanaian producers received only 30% of the FOB[103] price of their cocoa (Ruf, 2009).[104] The boards also provided extension services to growers and spraying to control black pod disease. As part of their marketing activities, the boards also instituted grading and quality control measures, typically at rural assembly points, that resulted in Nigerian and Ghanaian cocoa earning a reputation for high quality in international markets in the 1960s and 1970s.

In contrast, Côte d'Ivoire's marketing agency, the *Caisse de Stabilisation et de Soutien des Prix des Produits Agricoles (CSSPPA)*, authorised licensed buying agents of exporters (known as *traitants*) to purchase the cocoa from growers. The CSSPA specified the producer price (which was established each year on the basis of production costs rather than world prices) and payment schedules for *traitants* to remunerate them for their marketing services. The CSSPPA also established an export reference price. If the exporter negotiated a price with international buyers higher than the reference price, the exporter paid the difference to the CSSPPA; if the negotiated price was less than the reference price, the CSSPPA reimbursed the

103 Free on board

104 The three countries also participated in international efforts to stabilize the price of cocoa through the buffer stock scheme run by the International Cocoa Organization (ICCO). The ICCO's efforts, however, like those of most other international commodity agreements, failed, and the ICCO's last stocks were liquidated in 1997 (Traoré, 2009).

exporter the difference. Quality control was left in the hands of the *traitants* (Traoré, 2009).

Nigeria's reforms. In 1961, Nigeria accounted for 18% of world cocoa exports. By 2011, it accounted for less than 1% (Nigeria Federal Ministry of Agriculture and Rural Development, 2011). From the 1960s through the mid-1980s, the heavy taxation of cocoa farmers through the marketing board system; sharp declines in world cocoa prices following the commodity boom of the mid 1970s; [105]overvaluation and non-convertibility of the naira; and the outflow of resources from agriculture that accompanied Nigeria's oil boom all contributed to sharp declines in Nigeria's cocoa production and exports. In addition, some production was smuggled to neighbouring CFA franc countries to earn convertible currency. As a result, the revenues of the Nigerian Cocoa Board (NCB) fell sharply, reducing its ability to deliver services to farmers. In 1986, as the broader economic crisis in Nigeria worsened, the country adopted a structural adjustment programme (SAP). As part of the SAP, the NCB was abolished and the value chain was opened to private traders (ibid.).

The abolition of the NCB had mixed effects. On the one hand, prices, production, and exports all increased. For example, recorded production increased from 150 000 mt in 1987 to 253 000 mt in 1988 (FAOSTAT), although it is likely that some of this increase in recorded production reflected cocoa that in previous years was smuggled out of the country now being exported through Nigeria. Farmers' share of the FOB price soared from around 20% prior to the reforms to 70%. On the other hand, with the elimination of the NCB's quality-control activities, the quality of Nigerian cocoa quickly declined and so did the price premium that Nigerian cocoa previously enjoyed on international markets. A large number of new actors entered the trade, many of whom were interested primarily in trading the liberalized products to gain foreign exchange to import other commodities rather than building long-term business relationships in the value chain. As a result, the reliability of shipments to international buyers also fell sharply, making it increasingly difficult for Nigerian exporters to sell future delivery contracts, which were now seen as very risky. Consequently, although prices rose for farmers, so did price volatility. In addition, Nigerian cocoa processors, who had previously been aided by low domestic prices, found it increasingly difficult to compete with exporters for beans, and many had to reduce production or close (Traoré, 2009).

Today, Nigeria's cocoa value chain beyond the farm level is characterised by a mixture of large multinational firms, engaged in both export of beans and local processing, and some small and medium-scale firms involved in processing cocoa that goes into locally produced beverages. In 2011, the Nigerian government included cocoa as one of the key commodities in its new Agricultural Transformation Agenda (see Chapter 11). The aim is to double cocoa output by 2015 though expanding plantings (adding 100 000 to 150 000 new ha of cocoa production) and providing farmers with improved seedlings and expanded access to fertilizers. One of the reasons for inclusion of cocoa in the Transformation Agenda is the labour intensity of production. The Agenda estimates that 185 000 new jobs will be created across the value chain between 2012 and 2015 if the production targets are met (Nigeria Federal Ministry of Agriculture and Rural Development, 2011). The Agenda argues, however, that in order to succeed, some entity needs to take the lead in ensuring the quality control and extension functions that were formerly assured by the NCB. The Agenda calls for the creation of Marketing Corporations, "owned by the value chain", that could fulfil this role, citing the Ghana Cocoa Board (see below) as an example of a possible model.

Ghana's reforms. The history of Ghana's cocoa value chain up through the mid-1980s parallels that of Nigeria in many ways. Ghana's cocoa marketing board, known as the Cocobod, held a monopoly on all internal trade and exports of cocoa. From the early 1960s to the early 1980s, officially recorded production fell by 60%, and Ghana's share of the world market fell from 35% to 10%. By 1977, Côte d'Ivoire had surpassed Ghana as

105 The wholesale price of cocoa on the New York exchange fell from over US 3 200 per mt in 1977 to just over US$1 500 per mt in 1982 (Ruf, 2009).

the world's largest cocoa producer (Traoré, 2009; Ruf, 2009). In 1983, Ghana began its Economic Recovery Programme, supported by the World Bank and the IMF, which addressed many of the country's macroeconomic problems such as the overvaluation of the cedi and recurrent government budget deficits. The cocoa sector responded to the improved economic climate, which, by reducing overvaluation of the currency, resulted in higher producer prices. Production increased from 168 000 mt in 1983 to over 312 000 mt in 1992 (FAOSTAT). Taxation of the sector remained high, however, with growers only receiving 30% of the FOB price in 1993 (Ruf, 2009). In 1992/93, in hopes of further stimulating cocoa production, Ghana launched a partial liberalization of the value chain. The Cocobod authorised Licensed Buying Companies (LBCs) to purchase cocoa from farmers as long as they respected the minimum prices set by the board; they also were obliged to sell to the Cocobod at fixed prices, which essentially fixed marketing margins. The Cocobod retained its quality-control role, verifying close to the farm level the grades and weights of beans bought by the LBCs. The Cocobod also maintained its role in providing extension and spraying programmes.

Ghana's partial liberalization thus created a marketing structure in rural areas similar to that which existed in Côte d'Ivoire prior to that country's liberalization of its cocoa value chain. One main difference was that in Ghana, quality control remained in the hands of the marketing board rather than in the hands of the individual buyers. The Cocobod also helped organise large bidding packages for fertilizer each year, leading to lower input prices for farmers.

Since the Cocobod essentially sets output prices throughout the system, the LBCs compete mostly on non-price terms for beans, offering farmers timely cash payments, extending credit, providing extension information, and providing inputs on favourable terms. The reforms were accompanied by a falling rate of taxation on cocoa exports and other export crops (see Chapter 11); by 2007, Ghanaian growers were receiving 70% of the FOB price of their beans. As the attractiveness of cocoa production grew, the number of LBCs operating in rural areas increased, resulting in a more competitive market (Anang, 2011). In a survey of 80 randomly selected cocoa farmers in Western Ghana in 2008/09, 93% ranked the performance of the LBCs highly and said that the reforms had improved the cocoa marketing system (Anang *et al.*, 2011). Particularly important has been the continued involvement of the Cocobod in disease control (the board has provided free mass spraying programmes since 2001) and quality control. Ghana cocoa continues to receive a quality premium on international markets well above that offered for Ivorian and Nigerian cocoa.[106] Ghana has also worked to increase the proportion of the crop that undergoes initial processing domestically. After independence, Ghana nationalized all grinding mills, but with the liberalization it has opened up to private investment. In 2009, the country ground approximately 150 000 mt, or 21% of its total cocoa bean production, and the private firm Cargill built a new plant at Tema with an additional 65 000 mt of capacity (Traoré, 2009).

Côte d'Ivoire's reforms. The decline of world cocoa prices from the mid-1980s through the early 1990s, combined with an ill-advised attempt by the Ivorian government to withhold cocoa from the world market in an attempt to drive up prices, contributed to a profound economic malaise in the country. In response, the government first authorised a partial liberalization of the sector in 1995/96, authorizing private firms to export cocoa and limiting the CSSPPA to 15% of the export market. In 1999, the CSSPPA fully withdrew from cocoa marketing; its role was reduced to that of an advisory and regulatory agency, and it was subsequently disbanded. With the withdrawal of the CSSPPA from the market, all price-stabilization efforts of the government ended and farm-level prices became linked to world prices, resulting in greatly increased price volatility at the farm level. At the same time, export taxes remained high, holding down producer prices. The market became increasingly dominated by multinational firms. In the initial years after the reforms, however, vertical coordination decreased,

106 The Cocobod also is in charge of marketing Ghana's shea nuts and shea butter. This market has strict quality standards, as improper processing can lead to the presence of carcinogens that exclude the product from lucrative foreign export markets. Ghana is the recognised leader in West Africa for its work with producer groups to ensure that its shea products meet those standards (Perakis, 2009).

as these firms were not able to work out long-term supply arrangements with growers, who focused primarily on selling to whoever offered the best short-run price; as a result, the average quality of cocoa produced declined (Losch, 2002). In more recent years, firms such as Nestlé have expanded efforts to launch extension programmes with growers as part of initiatives to help secure their supplies and improve quality in the face of growing world demand for cocoa (Lucas, 2012).

Remarkably, despite the turmoil and civil war in Côte d'Ivoire from 1999 through 2010, cocoa production continued unabated (varying between 1.2 and 1.4 million mt/year) and investment in domestic grinding capacity increased. Rural infrastructure declined, however, and many aging trees were not replaced. As a precondition for IMF debt relief, in November 2011, the Ouattara government launched a further reform of the Ivorian cocoa sector, with the aim of restoring some of the price stability lost with the abolition of the CSSPPA and improving vertical coordination in the value chain.[107] The reforms involve three pillars:

- The establishment, in 2012, of a central body, the Conseil du Café-Cacao (CCC), composed of representatives of all value-chain stakeholders, responsible for the management, regulation, development and price stabilization of cocoa.
- The establishment of a new marketing arrangement whereby all exporters are required to engage in the forward sale of 70 to 80% of the next-year's crop through twice-daily auctions. The forward sales are intended to allow the establishment of a benchmark price for growers and ensure farmers a guaranteed minimum share of 60% of the CIF[108] price.
- The establishment of a reserve fund at the Central Bank of West African States (BCEAO) to cover risks beyond the normal operations of a price guarantee system – aimed primarily at allowing orderly adjustment in case of a major drop in world prices.

In addition, the reforms have abolished a major tax break given to exporters who grind some of their beans in-country. Exporters who ship all their beans overseas for processing had argued that this tax break put them at a major disadvantage in sourcing beans in Côte d'Ivoire. Its abolition may slow down the recent rapid expansion of grinding capacity in the country.

Challenges and perspectives for the cocoa value chain.

West Africa remains a dominant producer in the world cocoa market, and it is also accounting for an increasing share of world cocoa grindings. Demand for cocoa products is growing, particularly in Eastern Europe and Latin America, and there is a growing market in high-income countries for high-quality chocolate products that are certified as having been produced under environmentally sustainable conditions. Ghana has been able to exploit some this high-end demand through the creation of its "Ghana Quality" label for its beans and cocoa powder. There is also some scope for further value added through expanded production of cocoa-based beverages in countries like Nigeria and Ghana, where demand is growing. Further expansion into confections, however, is unlikely given the domination of European and North American firms in this part of the industry.[109] In Côte d'Ivoire and Nigeria, the grinding industry and the export of beans are dominated by multinational firms, so the scope for expansion of local processors, at least in the initial, highly capital-intensive grinding industry, is small.

The experiences of Nigeria, Ghana, and Côte d'Ivoire illustrate the challenges in developing institutional arrangements for addressing scale economies, structural vulnerability of growers to price instability (given the long-term nature of their investment in trees) and vertical coordination in the value chain. The three countries created various forms of state marketing agencies to try to address these challenges, but in the absence of effective measures for growers to discipline the behaviour

107 The following discussion is drawn from Agritrade, 2012.
108 Cost, insurance and freight
109 The trend in recent years has been for international chocolate manufacturers to outsource more of their cocoa grinding to producing countries, while concentrating on confection manufacturing, new product development, and marketing (Traoré, 2009). The manufacture of chocolate confections is more difficult in warm climates, given the low melting point of chocolates, which then require refrigerated storage to maintain their integrity.

of these agencies in the years following independence, the boards became primarily tools for resource extraction from the sector and were often plagued by inefficiencies in their operations. The experiences of Côte d'Ivoire and Nigeria in abolishing their boards, however, have shown that in the absence of new arrangements to address these structural problems, simply liberalising the sector does not necessarily lead to good performance. Both Nigeria (via the proposal to create Marketing Corporations) and Côte d'Ivoire (via the creation of the CCC) are now moving back towards greater state involvement in managing the value chain, in part inspired by Ghana's reform of its Cocobod.

There are also increased efforts by multinational processors to develop long-term relationships with growers to increase productivity, quality and traceability, including certification of compliance with sustainable production practices and the non-use of child labour.[110] For example, the Sustainable Tree Crops Programme is a public-private partnership managed by IITA with support from USAID and the World Cocoa Foundation, which is funded by the chocolate industry. The programme seeks to "maintain increased productivity of high quality tree crop products, over the long term, with an emphasis on farm rehabilitation and reclamation of deforested land; improve efficiency in the marketing chain, so that it delivers fair prices to farmers and quality products to end users; make African tree crop products competitive in international markets; improve the socio-economic situation of farmers; and conserve the natural resource base and biodiversity."[111] The challenge will be to develop such arrangements that share risks and returns equitably among the different stakeholders in the value chain.

Given the importance of cocoa export tax revenues for the major producing countries, there has been very little discussion in West Africa of allowing cocoa buyers to source beans from any country in the ECOWAS zone, in spite of the Community's principle of the free movement of goods within the zone. Yet as grinding capacity increases in West Africa, grinders will have a growing interest in sourcing beans regionally rather than just nationally. In reality, some regional sourcing has always occurred, as farmers and traders frequently smuggle beans across borders based on relative prices. An important policy question for the future is whether such regional sourcing will be legalized, which would then require harmonization of price stabilization programmes across the producing countries.

10.2.2 Cotton in francophone West Africa[112]

Cotton in the francophone countries was one of West Africa's first "green revolutions", with yields quadrupling over a 40-year period and production expanding even more rapidly. In 1960, the countries of the CFA franc zone of West and Central Africa accounted for only 1% of the world's cotton fibre production and 11% of the production in sub-Saharan Africa. Over the next 40 years, production grew at a compound rate of 9% per year, and by 2000 these countries accounted for 4.4% of total world production and 69% of that in sub-Saharan Africa (Tefft, 2010). By 2010, the CFA franc zone of West and Central Africa had become the second largest cotton exporter in the world after the United States, and cotton was a major source of income for over 2 million West Africans (Lambert, 2012).

Since the early 2000s, the sector has faced crisis due to several causes, prompting a restructuring of the value chain in most countries. Understanding the reasons for cotton's initial successes and subsequent difficulties yields insights into broader

110 Concerns about the use of exploitative forms of child labour in cocoa production, particularly in Côte d'Ivoire, became a major issue in North America and Europe in the early 2000s. In response to these pressures, the major international chocolate manufacturers signed a voluntary protocol (the Harkin-Engel protocol) aimed at eliminating all child slavery from cocoa production by 2005 and removing the "worst forms of child labour" from the industry. The major chocolate companies, working through the World Cocoa Foundation, developed certification systems with growers in order to comply with the protocol. In recent years, the concerns about child labour have resurfaced. In November, 2012, the chocolate manufacturer Hershey was sued by a stockholder group that alleged the company was knowingly sourcing beans from farmers in West Africa who did not comply with the Protocol (Hsu, 2012).

111 http://www.cocoafederation.com/issues/stcp/index.jsp

112 Nigeria historically has also been a major cotton producer in West Africa; over the period 2001-10, it was the second largest producer in the region after Burkina Faso, closely followed by Mali (FAOSTAT). However, Nigeria's cotton value chain has been characterised by low yields and falling employment over time. While Nigeria has historically processed a much higher percentage of its cotton production domestically than have the francophone countries, of 175 textile firms that existed in 1980, only 25 still existed in 2012 (Lambert, 2012). The Nigerian government has concluded that the past performance of the cotton sector has been poor, and has targeted it for major changes under the new Agricultural Transformation Agenda (Nigeria Federal Ministry of Agriculture and Rural Development, 2011). Since the purpose of this section is to focus on a value chain that has been regarded, at least during part of the postindependence period, as a major success, we concentrate on the cotton experience in the francophone countries.

economic coordination issues facing West African Agriculture.

Key elements of the francophone model [113]

The French introduced cotton growing as a commercial enterprise in West and Central Africa during the last decades of the colonial period as part of a strategy to supply cotton to the French textile industry. As part of that strategy, the French government created a government-owned parastatal, the CFDT (Compagnie Française pour le Développement des Fibres Textiles), to develop the cotton system as an integrated supply chain, from the provision of inputs to farmers to the sale of lint to the textile firms. The basic CFDT model remained in place in most of the francophone countries until the early 2000s. The CFDT itself remained as the chief actor in the cotton value chains of the countries until the early 1970s, when its operations were nationalized; it remained, however, a major stakeholder in the national companies that emerged out this process, such as the CMDT in Mali (Compagnie Malienne pour le Développement des Fibres Textiles).

The key elements of the integrated model of cotton production in these countries were the following:

- Cotton was promoted among smallholders, who typically grew cotton in rotation with coarse grains (millet, sorghum and maize), and cotton usually did not exceed one-third of their area in any given year. The cotton companies developed extension recommendations that took account of this type of farming system and often explicitly developed efforts, such as the CMDT-supported maize programme in the mid-1980s, to boost productivity of the entire farming system, not just cotton.

- The CFDT and later the national companies held a legal monopoly on all cotton purchases and ginning in the country. The overwhelming majority of the lint was exported via a subsidiary marketing firm and cotton seed was processed by other company-owned subsidiaries to produce oil (for soap and human consumption) and cotton-seed meal, which was used for animal feed.

- The cotton company announced a guaranteed purchase price before planting season and provided inputs (seed, fertilizers and pesticides) to the farmers on credit along with extension advice. Thus, unlike almost any other crop, farmers had both a guaranteed market and a price known before planting, along with access to inputs on credit.

- Because the company had a monopsony on purchases, at harvest time it deducted the credit owed for inputs from the payment to the farmers for their cotton, solving the widespread problem in other agricultural value chains of credit recovery.

- Through the 1990s, the farm prices were set with only a weak link to world prices, allowing the companies to offer a degree of price stabilization. In years of high world prices, the companies accumulated surpluses that were drawn upon (sometimes with additional funding from national governments) to support farm prices when the world price of cotton declined.

- The CFDT-affiliated system of national companies was linked to an international cotton research effort supported by the French government. In 1946, the French established a cotton and textile research institute, IRCT (Institut de Recherche Cotonnière et des Fibres Textiles Exotiques), which was later merged with the French Agricultural Research Centre for International Development – CIRAD (Centre International de Recherche Agronomique pour le Développement). The IRCT/CIRAD research system, linked later to national agricultural research systems, carried out varietal selection and production-systems research across West and Central Africa, gaining regional economies of scale in a research effort that contributed strongly to the rapid growth in yields. For example, of the six major varieties grown by Malian farmers in the early 2000s, at a time when Mali was the largest cotton producer in sub-Saharan Africa, only one was

113 The following paragraphs draw heavily on Gergely and Poulton, 2009 and Tefft, 2010.

developed in Mali, the other five having come from research efforts in neighbouring countries.

- Starting in the 1970s in Mali and spreading to other countries, the cotton companies began encouraging the growth of village associations/cooperatives and hired them to handle much of the initial cotton assembly from farmers and the provision and recovery of credit.[114] The associations invested part of the revenues earned from these operations into village schools, health centres and wells. In addition, to help improve the management of the associations, the companies (especially in Mali) provided functional literacy programmes for adults in the cotton areas.

- In some countries, particularly Mali, the cotton companies were given broader rural development mandates for the zones in which they operated. Some of the activities contributed directly to cotton production, such as developing training programmes for local blacksmiths to manufacture and repair animal-traction equipment, and some involved actions such as construction of feeder roads that not only helped expand cotton production but also had broader development impacts.

Cotton revenues played a major role in capitalizing farms in the cotton zones through the financing of farm equipment (particularly animal-traction equipment), fertilizer – some of which was used on other crops – and veterinary inputs and services. As a result, cotton growers also expanded production of other crops and livestock. For example, those farmers most involved with cotton production in Mali's CMDT zone also produced the bulk of the marketed surplus of rainfed cereals in that area during the late 1980s (Dioné, 2000).

Increasing difficulties: was the system a victim of its own success?

As cotton production grew rapidly in the CFA franc zone, the cotton companies began to face increasing difficulties. As the companies grew, so did their management problems. These were aggravated starting in the mid-1980s when the world cotton price started to fall, due in part to changes in US domestic cotton support policies and to China shifting from being a net importer to a net exporter of cotton. The increasing overvaluation of the CFA franc further eroded the competitiveness of West African cotton. Given the large number of farmers now growing cotton, the companies found it increasingly difficult to support the farm price without incurring substantial losses, and increasingly turned to national governments for support. Governments responded by establishing performance contracts (contrat plans) for the companies, but these were not wholly successful in improving performance due to the opacity of the cotton companies' accounting systems, which made it difficult to establish reliable estimates of their costs (Tefft, 2010).

The 1994 devaluation by 50% of the CFA franc provided a temporary respite to these problems, as the international price of cotton denominated in CFA francs jumped. Farmers responded by expanding areas planted, but yields stagnated, in part because the price of imported inputs also jumped with the devaluation. The recovery, however, was short-lived, as world prices began to decline again in 1995. In addition, given the size and the resources controlled by the companies, they became increasingly subject to political pressures and manipulations in the countries, pressures that increased as the countries democratised. This was epitomised by the "disappearance" in 2000 of the Malian company's US$36 million stabilization fund at a time when prices in the country had fallen precipitously. Many in the Malian press attributed the disappearance, which was never fully explained by the company or the government, to its being used to finance the electoral campaigns of leading politicians. In part in response to these problems, increasingly autonomous farmer organizations began to demand a greater voice in price-setting and other management decisions in the value chain.

Falling world prices, due in part to continuing subsidies to cotton growers in the US, and increased management problems in the cotton companies in the early 2000s hit the value chain

114 The initial development of farmer associations in the cotton area in Mali grew out of farmers' discontent with what they perceived as dishonest weighing and grading of raw cotton at the village level by CMDT agents. For details, see Tefft, 2010.

hard. Production of cotton lint in the West African CFA-zone countries fell by 200 000 mt between 1998-2000 and 2001-2003, half of the decline attributable to a boycott of cotton production by Malian farmers in 2001 that resulted from a cut in the farm price that was brought about in part due to the disappearance of the stabilization fund. Malian production fell by 50% in 2001/02 (FAOSTAT; Tefft, 2010). These problems led to strong pressures to restructure the system, with the World Bank calling for liberalization of the sector, arguing that competition among buyers would lead to higher farm prices and better company performance. Many government and farm leaders resisted, fearing, among other things, a collapse of the input delivery/credit system if the single-channel marketing system was broken up.[115]

The proposed reforms included: (1) strengthening of farmer associations and their increased involvement in providing critical services, (2) opening of ginning and input supply to private actors, (3) gradual withdrawal of the government from the management of the cotton sector and the parallel empowerment of cotton sector "interprofessional committees" (IPCs) and (4) introduction of price-setting mechanisms that attempt to ensure a better link between farm prices and world prices (Gergely and Poulton, 2009). As part of its reforms, Burkina Faso also proposed to link its pricing mechanisms to a national "smoothing fund" to be managed not nationally but at the BCEAO, which would be aimed at avoiding brutal year-to-year changes in the producer price. This proposal looks similar to the price stabilization tool proposed in the most recent reform of the Ivorian cocoa value chain discussed above.

What has emerged from the reform process thus far is a mixed picture across countries. In most countries, the cotton-seed processing plants formerly owned by affiliates of the national cotton companies have been sold to private operators. Benin and Burkina Faso have both opened ginning and input provision to private entities, but have yet to allow ginners to compete among themselves for seed cotton supplies.[116] Benin appears to be moving in the direction of shifting from a public monopoly to a private monopoly. In Mali, the plan has been to liberalize the CMDT by creating four separate companies, each with a monopoly in its own area of operation, but to date the sale of the CMDT has not gone forward. In most countries, there has been some movement to create the IPCs, but it is not clear that they have the capacity to date to provide the type of vertical coordination previously provided by the integrated system. National governments also appear reluctant to relinquish control over the sector, given its economic and political significance for the countries. For example, while Burkina Faso has allowed private ginners, as of 2009 they processed only 15% of total output, and SOFITEX, in which the state retains 35% ownership, remained by far the largest ginner in the country (Gergely and Poulton, 2009).

Challenges and perspectives for the cotton value chain.

Stakeholders in francophone West Africa are searching for a new model of organizing the cotton value chain that builds on the successes of the previous integrated system but that is globally competitive and accountable to farmers and taxpayers. Key contributors to past success included:

- A sustained government commitment, spanning 40 years, to building the value chain, including investing in research, local infrastructure and support services.
- The tight vertical coordination throughout the system that linked input supply, extension, a regional research system and output marketing.
- The commercial orientation of the CFDT, which promoted cotton as a business enterprise to farmers and not just a rural development project.
- The increasing emphasis over time to strengthening farmer organizations and empowering

115 Experience in other African countries that have liberalized their cotton sectors has shown that credit recovery has often become a problem once such single marketing channels have been abolished. See Tschirley *et al.* , 2009, for details.

116 In Burkina, each private ginner operates in its own exclusive zone, while in Benin seed cotton is allocated to ginners administratively.

them to play a key role as part of a vertically coordinated system.

The dilemma facing stakeholders is how to design financially sustainable institutional arrangements that capture the vertical coordination and economies of scale of the prior integrated system, but that also face enough internal and external discipline to hold down costs, offer attractive prices and related services to stakeholders, and promote technical advancement. In many ways, the dilemma is similar to that facing the cocoa value chain discussed above. It is not apparent that replacing the national monopolies of the state-directed cotton companies with private monopolies, either on a national or subnational level, will lead to better performance. The maintenance of the monopolies, even in subnational zones, is linked to the need for assured credit recovery. An alternative would be to run all input loans and payments to farmers for their cotton through a single banking clearinghouse through which all cotton companies would operate. Such an arrangement would ensure credit recovery while allowing the companies to compete with each other for seed cotton. It would require, however, mandatory participation by all the cotton companies. To date, such a proposal has not been part of the reform programmes.

It remains to be seen whether the IPCs will be able to promote the level of coordination that the national companies provided. The IPCs are still young, and it is not clear how much authority they will be granted to act autonomously from government. It seems highly unlikely at this stage that they would be able to organise the type of regional research programme operated by the previous system.[117]

In addition to these organizational issues at the national level, three issues will become increasingly important at the regional level. First is the question of whether private ginners in the newly configured value chain will be able to source cotton across national borders. Such sourcing could reduce assembly costs and increase competition for farmers' seed cotton, but it would require coordination across countries regarding export tax revenues and credit recovery. Second, currently only about 5% of cotton produced in the CFA franc zone is processed in the region into textiles. This low level is in part related to high electric energy costs in the region that make textile processing uncompetitive internationally (ECOWAS, 2010). ECOWAS's efforts to extend and interconnect the West African electrical grid will be critical if local processing is to expand. Third, the countries of the region have adopted very different paths with respect to adopting genetically modified (BT) cotton.[118] Currently, only Burkina Faso has authorised its use, although Nigeria has set a goal of quickly authorizing its use as part of the country's Agricultural Transformation Agenda. Given porous borders, it is inevitable that the seeds will move to neighbouring countries. In the absence of protocols in these other countries governing transgenic crops and agreements with buyers about whether they will accept BT cotton, unregulated spread of the technology could prove disruptive. This is an area where regional coordination is clearly needed.

10.3 Other value chains with strong growth potential

The AGWA background studies identified a number of other value chains with strong growth potential. Space limitations do not permit a full discussion of these value chains here, but key characteristics of these value chains are summarised below.[119]

10.3.1 Vegetable oil

West Africa has a strong structural deficit in vegetable oil, rapidly rising demand (see Part II) and heavy reliance on imports, particularly inexpensive palm oil from Indonesia and Malaysia. This heavy reliance on imported palm oil is ironic, as West

117 Since 1990 Senegal has had more experience than any other country in the region in promoting IPCs for a wide range of agricultural value chains. Their performance has varied widely, in part as a function of the degree to which stakeholders believed that they, as opposed to government, had major responsibility for key coordination tasks in the value chain (Duteurtre and Dieye, 2008).

118 BT cotton refers to cotton varieties in which genes from the Bacillus thuringenisis bacteria have been inserted. The genes produce a protein that is toxic to a narrow range of insect larvae that are very damaging to cotton, greatly reducing the need for farmers to apply insecticides to their cotton crop.

119 For more details of most of these, see Lambert, 2012 and Elbehri 2013.

Africa dominated the world palm oil industry in the 1960s, with Nigeria alone accounting for 27% of world exports in 1961 (Nigeria Federal Ministry of Agriculture and Rural Development, 2011). Other important oilseeds in the region are cottonseed, groundnuts and, to a lesser extent, soybeans, sesame, and (recently) sunflowers. There is also strong demand globally for vegetable oils – especially palm oil with its bio-fuel applications – and FAO/OECD projections (2012) foresee continued strong international demand through 2021. The region has good agronomic potential and a long tradition in production of the basic raw materials, such as cotton seed, oil palm fruits and kernels, groundnuts and sesame. The strong demand for palm oil internationally has also led to increased direct foreign investment in oil palm plantations in West Africa. Like many other value chains in the region, there is both small-scale and industrial processing.

Challenges for the various vegetable-oil value chains in West Africa include:

- The need to upgrade the quality of many of the small-scale processors to meet quality and health standards and adopt improved technologies and better business practices. The health concerns are particularly acute with respect to groundnut and cottonseed oil. In groundnuts, the major concern is widespread contamination with aflatoxin, a carcinogen linked especially to liver cancer. For cottonseed, the liberalization of the market in countries like Mali has resulted in the growth of small-scale cotton presses that are selling unrefined cotton oil for human consumption, which is dangerous because it contains gossypol, a natural phenol that is toxic to human red blood cells.

- Developing better models to link smallholders to industrial processors in order to ensure reliable, high quality supplies of raw materials (similar to the challenges discussed above for cassava). In contrast to Southeast Asia, palm oil is native to West Africa and as such is well integrated into the local diet. Hence, there are many small oil mills and presses competing for oil palm fruit, which increases the risk of side-selling by small farmers who have contracted to produce for industrial processors. In Southeast Asia, where unrefined palm oil is not a central part of the diet, the risk of side-selling is much lower. For this reason, Malaysia, Indonesia and other countries used oil palm outgrower schemes successfully for rural development and poverty reduction.

- In cases where palm oil plantations are being contemplated, the terms of access of investors to large tracts of land need to be made more transparent so that the rights of current inhabitants of the land are respected.

- There is a need for regional governments and RECs to study and adopt best practices learned from around the world, including Southeast Asia, in order to ensure social and environmental safeguards are included in any concessions or leases for large-scale development.

10.3.2 Ruminant livestock[120]

The coastal areas of West Africa, where demand for animal protein is rising rapidly, are structurally deficit in cattle, sheep, and goats; production is constrained inter alia by trypanosomiasis and tick-borne diseases. These areas have historically relied on imports of live animals from the Sahelian zones, with Mali, Burkina Faso, Niger and northern Nigeria being major exporters.

Demand prospects appear strong for these value chains, as indicated by the high income elasticities of demand for meat products discussed in Part II. These value chains, however, need to be concerned about holding down production and marketing costs given the potential competition from other animal protein sources, particularly inexpensive imported poultry, in the coastal markets. The capacity of the value chains for ruminant livestock to respond to growing coastal demand for meat is likely to be constrained by three factors:

- Growing demand for animal products in the exporting countries themselves, which will raise prices for export-grade animals.

120 This section draws on Borlaug Institute for International Agriculture, 2012, and Michigan State University Food Security Team, 2011.

- Low productivity of the herds, which is primarily due to poor nutrition as a result of seasonal variation in pasture resources and a weak animal feed industry.

- Climate change, which will put pressure on traditional pasture resources and likely lead to increased conflicts between herders and agriculturalists. Some such conflicts have also arisen as irrigation projects have increasingly encroached on dry-season grazing areas. It will be critical to develop improved land use rules that are capable of accommodating livestock production systems under these changing conditions and to develop more intensive models of production in areas where feed supplies (e.g. by-products from agroprocessing) are available.

Attempts by the inland countries to capture value added by shifting from live animal to meat exports will be constrained by the poor state of refrigerated transport between the inland and coastal markets, the higher prices paid for offal and other by-products (the "fifth quarter") in the coastal states, and the policy of some of the coastal states (e.g. Nigeria) to foster the construction of abattoirs near their northern borders in order to capture the value added from imported animals.

The regional livestock trade, which historically has been overwhelmingly in the hands of the private sector, has shown remarkable resiliency in adapting in recent years to disruption caused by civil strife in major import markets, such as Côte d'Ivoire. Yet, regional trade continues to face numerous barriers, ranging from rent seeking by government agents at roadblocks along major trade routes to the imposition of taxes on livestock by importing countries (e.g., value-added taxes in Senegal) in contravention of ECOWAS and WAEMU agreements. Addressing such problems is one focus of the ECOWAS CAADP regional programmes discussed in Chapters 11 and 12.

10.3.3 Maize

As shown in Chapter 3, maize production has been grown rapidly in many countries in the region over the past 20 years. The growth is attributable to the existence of improved technology and inputs (particularly improved seeds and fertilizer) and strong demand growth, both for human consumption (as maize has substituted for millet and sorghum in several countries) and for animal feed. The feed demand is driven particularly by the growing egg industry and increasing demand by fish-farmers, and feed manufacturers increasingly source maize regionally as well as nationally. The emergence of small-scale processing of maize into grits, flour, and other consumer-ready products has also helped spark consumption. Demand prospects globally for maize are strong (driven in part by biofuel policies in the United States), with OECD/FAO projecting higher real prices through 2021 and higher maize prices relative to both wheat and rice (OECD/FAO, 2012).

Like rice and cassava, processing of maize for both human consumption and animal feed takes place both in SMEs and larger-scale industrial operations. Nigeria has the largest number of industrial processing operations, producing starch, animal feeds, high-fructose corn syrup, dextrose, and corn oil. Small- and medium-scale processors focus mainly on maize meal, flour, grits and animal feeds. While small-scale milling at the village and household level seems to operate satisfactorily in serving much of the mass market, industrial processing and the feed industry have been hindered by the volatility of quantities, prices and quality of maize available from West Africa's mainly small-scale producers. Both large and small processors usually act as passive buyers of maize from traders or farmers, with little up-stream involvement, to the detriment of raw material quality and availability. A particularly serious problem is aflatoxin contamination, estimated by IITA to affect over 60% of the maize grain harvested in Nigeria (Lambert, 2012). Aflatoxin is dangerous for both humans and animals and can greatly affect the rate of feed conversion among animals. Addressing this problem requires improved actions across the value chain, from encouraging the use of resistant varieties to improved harvest, drying and storage procedures.

Historically, West African maize markets were only weakly integrated into the international mar-

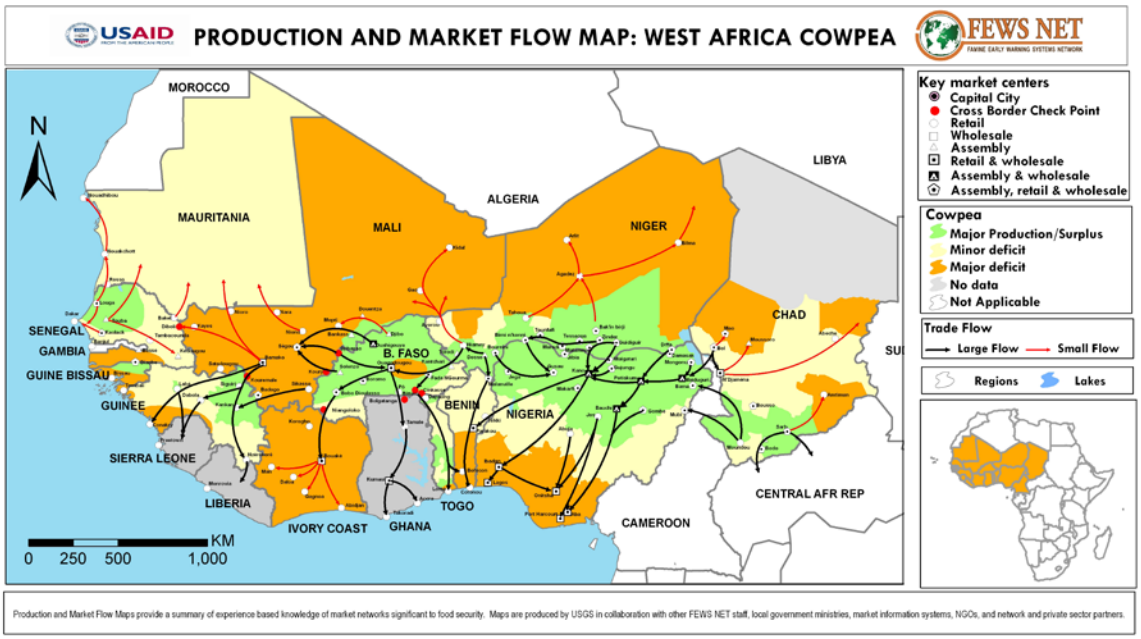
kets, but integration has grown in recent years, particularly in the coastal states where egg producers (e.g. in Senegal) increasingly rely on imported maize because of its more reliable availability, prices and quality than local supplies. Capitalizing on the strong potential of this crop to spur further growth will involve, like many of the other value chains reviewed here, efforts to organise the aggregation of supplies from the farm level, improved coordination of production with the needs of processors, and the improved control of quality along the entire value chain in order to compete with imports. Reducing barriers to regional trade will also be important in allowing processors to source maize more easily across national borders.

10.3.4 Cowpeas

Part II highlighted the high level and strong growth of pulse consumption in several countries of the region, particularly in Nigeria, Niger, Mali, Burkina Faso and Benin. By far the most important of these pulses is cowpeas. West and Central Africa account for about 80% of the world's harvested area of cowpeas, with Nigeria being the world's largest cowpea producer and its largest importer. Niger is the world's second largest producer. Other producers in the ECOWAS region, in order of importance, include Burkina Faso, Mali, Benin, Ghana, Togo, Senegal, and Côte d'Ivoire (Langyintuoa *et al.*, 2003). Cowpeas are produced predominantly in the drier inland areas of West Africa due to their drought tolerance and the lower insect pressure in these areas, and a well-developed trade moves them south to major coastal markets (Figure 10.3).

Cowpeas growers are likely to face growing demand for their crop for three reasons: (1) cowpea grain provides a relatively low-cost, high-protein source ("poor people's meat") to the large number of low-income consumers in West Africa who are trying, with very low incomes, to upgrade their diets; (2) the high-protein cowpea hay is a valuable livestock feed, and demand for it is growing as forage markets expand in response to the increasing profitability of livestock production, especially in peri-urban areas; and (3) processed cowpea products, particularly cowpea fritters and steamed cakes, are very popular street and snack foods in urban areas such as Accra and Lagos, appealing to the growing, time-poor urban population (Nagai, 2008). As a drought-resistant crop, cowpeas are also likely to be an important part of farmers'

Figure 10.4 *Cowpea production and trade flows in West Africa*



Source: FEWSNet

farming systems as they adjust to climate change in the Sahelian and Guinea-savannah areas of West Africa.

After de-hulling (done either manually or in small mills), cowpea grains can be consumed without further processing, while processing for preparation of products like fritters or cakes is currently done either in the household or in small-scale neighbourhood mills. There is little evidence to date that large-scale industrial processing is competitive with the small-scale milling given current consumption patterns (Nagai, 2008). In contrast to the other value chains discussed here, the major constraints seem not to be aggregation for large-scale processing, but rather increasing production at the farm level to meet growing demand and improving storage systems to deal with cowpea weevil (bruchid) infestation, which can lead to heavy damage of grains. Research and extension programmes by IITA, the USAID-funded Dry Grain Pulse Collaborative Research Program, and Purdue University, with partners throughout the region, are currently addressing these problems.[121]

10.3.5 Fruits for processing

Demand for fruit juices is strongly growing throughout the region (Part II), particularly in Nigeria, Ghana and Côte d'Ivoire. Euromonitor (cited in Lambert, 2012) forecasts future demand growth in Nigeria at 8% per year. Surveys indicate that consumers consider fruit juices (either consumed directly or incorporated in flavoured yoghurt drinks) as a more nutritious alternative to soft drinks, although the latter are more widely consumed due to their low cost. In order to stimulate the growth of the domestic fruit juice processing industry, Nigeria has banned the importation of fruit juice in consumer-ready containers. This has led to a shift in imports to fruit juice concentrates, which are reconstituted domestically. Currently, the region imports about US$50 million per year in fruit juices and concentrates. In addition to Nigeria, Ghana, Côte d'Ivoire and Sierra Leone all have fruit juice processing facilities.

Since the fruit juice processing sector is growing strongly and private regional capital is well entrenched, the main challenge for the industry is to develop capacity for domestic supply of raw materials, both fresh and processed, into concentrates and pulps. A few firms in Nigeria have integrated backward into production or have developed outgrower schemes, but the problems of ensuring quality raw materials consistently and developing equitable systems to share risks and benefits among farmers and processors remain in this value chain as in others discussed earlier in this chapter. Given the time lags involved in orchard establishment, developing financing arrangements for establishing new production will also need to be addressed.

10.3.6 Cashew

As shown in Chapter 4, despite very low yields, West Africa has become a major raw cashew exporter, and the region's share of the global market is growing. Nigeria, Côte d'Ivoire, Guinea-Bissau and Benin are all major producers. In addition to strong global demand, there is a growing internal market, particularly in Nigeria, for cashews as a snack food. The challenge now is to increase farm yields and dramatically increase capacity for processing into high quality kernels for export to world markets. There are numerous examples in East and Southern Africa (e.g. Condor in Maputo, Mozambique) of successful processing operations exporting products of the highest quality, HAACP certified, to international markets. As India industrializes and domestic demand for cashew reduces India's export capability, West Africa can take a leading role in cashew nut processing provided supply is ramped up and quality is enhanced and becomes independently certified. Development of a major processing industry requires significant private investment in new facilities, however, and the organization of producers to ensure a reliable supply of quality nuts so that the plants can operate close to capacity.

121 The bruchid infestation (1) induces farmers to sell soon after harvest to avoid insect damage, with the result that they receive lower prices for their product than if they could hold it off the market and sell later; and (2) results in farmers and traders often using insecticides on the stored beans, which if applied improperly can be harmful to human health. A joint IITA-Purdue University project, with support from the Bill and Melinda Gates Foundation, is promoting the triple bagging of stored cowpea grains in polyethylene bags as a safe alternative. By cutting off the oxygen supply to the insects, they die before they can cause significant damage. For details, see Sanon *et al.*, 2011.

10.4 Summary of key points and conclusions

This chapter has reviewed the opportunities and constraints facing several value chains in responding to the changing demands facing West African Agriculture. Of the six value chains examined in some detail, rice is the most diverse in terms of its geographical dispersion, range of production and processing systems and consumer preferences as well as its number of marketing sub-channels that respond to the diverse demand. Overall, it appears that West African rice production, at least at the farm level, is increasingly competitive with Asian rice given the high world prices prevailing since 2008. Yet constraints appear widespread at the processing level, especially in ensuring consistent product quality. A widespread shift to large-scale milling does not seem to be the solution, however, as small mills frequently have been able to outbid the large mills for paddy given the former's lower costs of aggregating paddy in situations of low levels of production and poor transportation infrastructure. Improving the performance of this value chain will require differentiated approaches targeted at the various sub-channels rather than a "one-size fits all" approach.

The cassava value chain has been remarkably dynamic in recent years, with greatly expanded farm-level production and small-scale processing into products like gari thanks to new cultivars and improved processing technologies. The value chain employs millions of people, predominantly women, across the region and processed cassava products like gari effectively compete with imported rice as a home-grown West African "fast food." Cassava also has the potential to be an input into a wide range of industrial products, from starch to pharmaceuticals, yet problems of assuring a consistent supply of raw product to industrial cassava processing plants has been an on-going challenge. Most of the large-scale processing plants (which are predominantly located in Nigeria) operate far below capacity, and government initiatives to spur cassava consumption in that country by mandating that cassava flour be included in bread have run into serious problems of product availability and quality. Overcoming the vertical coordination problems of raw product aggregation will be essential if cassava is to become a major industrial input as well as a key raw product for small-scale processors.

Poultry and dairy products are two West African value chains facing very stiff competition from low-cost imports. In the case of poultry meat, imports from low-cost producers like Brazil, which benefits from its tightly organized production system and abundant supplies of feedgrains, have captured a large share of the market in coastal countries like Ghana that have remained open to imports. Other countries, like Nigeria and Senegal, have protected their domestic producers through import bans, but at the cost of denying their consumers an inexpensive source of high-quality protein. The inland countries, such as Burkina Faso, have benefitted from a degree of natural protection against such imports. The market for poultry in countries like Ghana has become segmented between the cheaper frozen imports and locally produced, more costly but more appreciated local birds. While opportunities exist to expand niche marketing of local poultry, it appears unlikely that West African producers will be cost-competitive with imports in the near future for the low-cost market. A similar situation exists in the dairy value chain, which is dominated by imports of milk powder. Local milk production in the coastal states is severely hampered in most areas by endemic cattle diseases and the lower productivity of native breeds compared to temperate-climate dairy breeds that can only be raised in a few areas in West Africa. There is some scope for expanded production in the inland states, where consumers are willing to pay a premium for fresh milk, but, even in these countries, the main focus of the commercial dairy industry in the urban areas will be on producing processed products from imported milk powder.

The chapter also analysed two value chains that historically have been pillars of export earnings for West Africa: cocoa and cotton. Cocoa remains West Africa's major agricultural export and has greatly expanded local processing in recent years. Yet the major producing countries have struggled to find a governance structure for their cocoa value chains that captures economies of scale and deals with the need for collective action while still

being transparent and accountable to farmers and other stakeholders. The chapter's review of the on-going reforms carried out by Ghana, Nigeria and Côte d'Ivoire of their cocoa value chains illustrates how elusive striking such a balance can be. A similar story emerges with the analysis of the cotton value chains in the francophone countries of West Africa. The integrated cotton system in these countries spurred one of West Africa's first green revolutions starting in the 1950s, but since the 2000s the value chain has struggled to deal with volatile world market prices, political pressures that have sometimes compromised its management, and increased demands for accountability to farmers. The various reforms currently underway in all of the francophone-country cotton systems illustrate the need for the institutions governing value chains to evolve as the production technologies, markets and broader societal institutions change.

The chapter also briefly discussed a number of other value chains in West Africa that appear to have strong demand prospects, including vegetable oil, ruminant livestock, maize, cowpeas, fruits for processing (especially into juices) and cashews.

In addition to the challenges that are specific to the individual value chains discussed above, three general conclusions emerge from the analysis of the value chains examined in this chapter. First, many of the value chains, particularly for staple crops, involve both small-scale and large-scale processing. While the small-scale processors often have advantages in serving low-income consumers, they require considerable upgrading to ensure greater product consistency and product safety. Some of the upgrading involves improving access to simple technologies and practices – for example for de-stoning paddy before processing by small millers. Others involve more system-wide efforts, such as the need to improve storage and handling processes across the value chain to reduce aflatoxin contamination in groundnuts and maize. Yet given the importance of these small and medium processing enterprises to serve an important part of the mass market at low cost while generating substantial employment, they warrant efforts to improve their performance.

Second, the larger-scale processing enterprises have the potential to capture scale economies and provide a broader range of outputs that are critical to capturing new markets, such as industrial products derived from cassava. Yet across most of these value chains, the problem of aggregating and coordinating raw product supplies to these industries is a recurrent problem. Those value chains that have been successful in expanding large-scale processing, particularly into higher-value products, have frequently had an actor or group of actors that have played a central role (dubbed "channel captain" in some of the value chain literature) in ensuring vertical coordination within the chain, including the critical tasks of quality control and supplying access to improved technology. These channel captains have ranged from dominant firms (e.g. the national cotton companies in the francophone countries) to quasi-public agencies (such as Cocobod in Ghana). Yet in many instances, it has been difficult to design such organizations so that they succeed in providing such coordination and, at the same time, are responsive to stakeholders and transparent in their management. The current efforts in many of the francophone countries to build and strengthen interprofessional committees and Nigeria's plan to create public-private Marketing Corporations are efforts to find this balance.

Third, the case studies illustrate that the challenges faced by value chains evolve as the value chains develop and the markets in which they operate change. Thus, there is no "one-size-fits-all" set of recommendations for value chain development. Rather, there is a need to put in place institutional arrangements through which value chain stakeholders can develop continually evolving strategies to address the challenges and opportunities facing them.

In addressing these challenges, at least two approaches deserve special attention. One is the role that interprofessional committees (sometimes called "commodity associations" or "value chain participant councils") can play in helping ensure some of the greater coordination needed within value chains, particularly between farmers and processors, in order to capture new market opportunities. These types of primarily private-sector

led organizations have been used with mixed results in both high-income and developing economies, including West Africa, to address system-wide problems. These organizations have engaged with design and implementation of grades and standards, development of new products and development of tools to adjust supply to anticipated demand over time (Shepherd, *et al.*, 2009). Lessons learned from these experiences identify at least three key design elements for such efforts to succeed (Staatz and Ricks, 2010):

- ***Identifying an impartial organizing entity.*** It is critical that someone or a core group in the interprofessional committee be perceived and accepted by the participants as an objective, impartial, and contributory organizing entity. The role of the organizing entity includes helping to frame the debates about the nature of value-chain-wide challenges and opportunities and, ideally, helping to provide unbiased information to illuminate the discussions, problems, and performance-enhancing alternatives. This role might be played, for example, by a national agricultural research institute or independent think tank. A key question is what role government agencies should play in the committees and whether they would be perceived as an impartial organizing entity.

- ***Membership structure.*** This issue involves deciding which organizations and individuals should be represented on the committee. This, in part, involves deciding the boundaries of the value chain. For example, will consumers be included? What about by-product processors (e.g., cotton seed processors as well as ginners in cotton IPCs)? The individuals on the committees should be acknowledged industry leaders, "broad thinkers," and those who are open to exploring possibilities for working with other value-chain participants for needed improvements rather than simply defending, in a syndicalist way, the interests of their own groups. Ideally, these people also are leaders of stakeholder organizations within the value chain, such as farmer or processor associations. Including such participant organization leaders in the committees allows these key individuals to link back to their memberships effectively, leading to broader discussion, input, and information into the issues the committee is addressing and broadening the ownership and implementation of its proposed solutions.

- ***Financing.*** A critical issue is whether the organization should seek dedicated funding for its activities. While obtaining external "core" funding for the activities of the IPC may allow it to act more quickly on key decisions (such as to undertake consumer testing of a new product), a possible disadvantage is that such funding may attract participants to the council who are mainly interested in gaining access to the funding for their personal benefit. In order to avoid this sort of rent-seeking, it is often preferable to rely on in-kind contributions of time and resources by the IPC members for the committee's main ongoing activities, complemented with applications for small grant funding for specific information-gathering or outreach activities (Chitundu *et al.*, 2009).

A second important issue to explore is the scope for expanding farmers' equity participation in processing plants. A recurrent problem facing industrial scale agroprocessors in West Africa is unreliable supply of high-quality raw agricultural products for their plants. Attempts to design contracts with outgrowers to meet these needs have frequently been undermined by side-selling and lack of respect of contracts. Farmers sometimes charge that processors also do not always respect their contractual commitments – for example, using complaints about quality to drive down prices to farmers. If, over time, farmers built up an equity participation in the plants, they would have greater incentives to see the plant succeed as well as a stronger voice in dealing with plant managers regarding contracting practices with farmers. One challenge is how to build up this ownership stake over time while still returning a price to farmers that is attractive enough for them to continue to produce for the plant. Such arrangements are probably most feasible for production of perennials (e.g. tree crops) where the farmers are "locked in" to the value chain for a long period and thus have a strong incentive to invest in its future success.

Building effective and equitable partnerships among value chain participants is critical to the future competitiveness of West African Agriculture.

Strengthening the skill base for a 21st Century West African agrifood system will require far greater investment and regional cooperation in Agricultural research and education.

It is easier to make policy declarations (e.g. for open regional trade) than to implement them. Effective policy design requires careful attention to the incentives of those charged with implementation.

Part IV

Policies for Agrifood Systems Development in West Africa

Part IV analyses how well current polices address the challenges discussed in Parts II and III of this report. As mentioned in Chapter 1, Agricultural policy seeks to promote several goals: produce more food for a rapidly growing population; create productive jobs for the burgeoning labour force; contribute to efficient economic growth; reduce poverty; respond to consumers' increasingly sophisticated demands for food that is convenient, nutritious, and of better quality; and do all this in a way that is economically, socially, and environmentally sustainable.

Several dimensions of policy affect the chances of meeting these goals.

- ***Macro dimensions*** affect the overall incentives facing economic actors to invest and carry out productive activities in Agriculture and other sectors. These dimensions include macroeconomic policies such as:
  - Exchange rates, which affect the relative prices of tradable goods (including most agricultural products) and non-tradable goods;
  - Interest rates, which affect the relative prices of labour and capital and hence influence the choices of technology used in production and processing (which in turn affect the scope for job creation); and
  - Fiscal policies, which affect overall taxation levels and the tax burden of different sectors.

  Macro dimensions also include a myriad of other factors (administrative rules, levels of corruption, etc.) that determine the ease of doing business in a particular country or region.

- ***Sectoral dimensions*** include policies affecting trade, pricing, and rules governing a particular sector or industry. Given the breadth of the agrifood system (which involves activities ranging from agricultural input provision to farm-level production, postharvest handling and storage, processing, marketing, retailing, export and consumption), the sectoral policies that affect agrifood system performance cover much more than agriculture. They include, for example, policies for industry, trade, transport, health, education, and the financial industry as well as science and technology.

- ***Policy formulation dimensions*** deal with who has a voice at the table when policies affecting Agriculture are formulated and who has the most influence when policy options or alternatives are chosen. One characteristic of the evolution of Agricultural policy formulation over the past 30 years in West Africa has been the broadening of the number of stakeholders involved in policy formulation. This has made policy formulation both more inclusive and more complex.

- ***Policy coherence*** involves the degree to which different policies (within sectors, across sectors, and across countries and regions) reinforce each other or work at cross-purposes. Policy coherence is a key element to consider in shaping national Agricultural policies both because the determinants of agrifood system performance are so multi-sectoral and because West African states have made important trade and

cooperation commitments at the regional and international levels.

- ***Implementation dimensions*** involve the capacity and the incentives of governments and other stakeholders (donors, civil society and private sector) to translate announced policies into action (e.g. policy instruments used and projects or programmes implemented).

The two chapters and three focus sections in Part IV analyse West Africa's experience in dealing with these various dimensions of policy and highlight key Agricultural policy issues for the future.

Chapter 11 begins by providing a brief overview of the evolution of agricultural and food policies in the region from independence through the structural adjustment period of the 1980s and 1990s to the "rediscovery of agriculture" by African governments and their development partners starting around 2000. For each period, the chapter briefly discusses the main elements of the Agricultural policies followed, how effective they were in meeting their objectives, and what forces led the policies to change. Chapter 11 then turns the bulk of its attention to examining the current Agricultural policies in the region, both at the national and regional levels. The "rediscovery of agriculture", combined with ongoing regional economic integration efforts by WAEMU and ECOWAS, led to the development of regional agricultural policies and programmes for each organization, known respectively as the Politique Agricole de l'UEMOA (PAU) and the ECOWAS Agricultural Policy (ECOWAP). The ECOWAP process was merged with the African Union's Comprehensive African Agriculture Development Programme (CAADP) in 2005, and this merged programme (known as ECOWAP/CAADP) has been instrumental in reshaping Agricultural policies and investment programmes at the national and regional levels. Chapter 11 analyses these policies and investment programmes to examine how well they respond to the challenges outlined earlier in this report.

Following Chapter 11, three focus sections discuss policy issues that have become increasingly crucial in recent years: (1) the role of stakeholder groups (particularly farmer organizations) in helping shape policy design and implementation, (2) options for improving farmers' access to inputs such as fertilizers, improved seeds, pesticides, and veterinary products; and (3) policies affecting land tenure and water rights.

While the focus in Chapter 11 is primarily on Agricultural investment and development strategies for the domestic market, Chapter 12 analyses policies affecting the region's trade, both among ECOWAS member states and with the outside world. The chapter pays particular attention to ECOWAS's progress towards its goals of creating a unified West African market, adopting a common external tariff and accompanying safeguard measures to govern trade with countries outside of the region, and moving eventually to a full economic union. The chapter also analyses how these efforts have interacted with the efforts to develop a regional Economic Partnership Agreement with the European Union and with ECOWAS countries' participation in the WTO. It also discusses measures that ECOWAS countries and the region as a whole could take, beyond the proposed safeguard measures, to deal with the challenges of price volatility in regional and international markets. The chapter concludes by raising some broader questions regarding the future of Agricultural trade policy in the region.

Chapter 11

National and Regional Agricultural Policies: Evolution and Current Challenges

This chapter analyses the evolution of Agricultural development policies in West Africa over the past 50 years, both at the national and the regional levels. It first briefly examines the early post-independence strategies designed primarily to extract resources from agriculture to finance growth in other sectors of the economy. Next, the chapter analyses the reasons why, partly as a consequence of the shortcomings of these strategies, West African governments were forced to adopt structural adjustment programmes (SAPs); it also examines the impacts of those programmes on Agriculture. Beginning in the early 2000s, as countries began to emerge from the SAPs, African governments and their development partners "rediscovered" the importance of Agricultural development, and the chapter discusses how this rediscovery led to the CAADP process and support for programmes through WAEMU and ECOWAS to promote greater regional agricultural integration in West Africa. The bulk of the chapter then examines the strengths and weaknesses of the national and regional policies and investment plans that emerged from the ECOWAS-led CAADP programme in West Africa, known as ECOWAP/CAADP. The focus of this chapter is primarily on Agricultural investment and market development strategies, while Chapter 12 focuses on trade policy.

The chapter seeks to answer the following questions:

1. How has the Agricultural policy environment in West Africa changed over the past 50 years in terms of content and process and what were the key drivers of those changes?

2. How effective were these different policy approaches in achieving their stated objectives?

3. How well do recent policies, as embodied in CAADP, respond to the structural challenges facing West Africa's agrifood system described earlier in this study?

Finally, the chapter turns to the vital question of programme implementation, identifying key challenges in moving the national and regional CAADP programmes from design to reality.

11.1 Agricultural policies from independence through the mid-1980s: A state-led development approach

11.1.1 Main elements of the approach

In the period immediately after independence, the main concern of most West African governments was to achieve rapid progress in industrialization through import substitution. Agriculture was regarded as provider of cheap food, foreign exchange and labour to fuel growth in the non-agricultural sectors, and policies were designed to extract resources to contribute to non-agricultural growth. Agricultural policies in the immediate post-independence era were also conditioned by a small urban population, which made consumer subsidies fiscally manageable, and relatively abundant land that allowed growth of agricultural output by simply expanding the area under cultivation using existing technologies. In the CFA franc countries, a third factor influencing agricultural policies was the need to hold down government budget deficits to meet conditions imposed by the French treasury for guaranteeing the parity of the currency with the French franc. Since wages of

government employees were a major component of the budget, this constraint meant holding down wages, which in turn led to pressures to hold down urban food prices.

In the context of one-party states that prevailed in most countries, policies were developed by central governments, with little input from farmer groups or the private sector. There were certainly exceptions to this generalization, such as Côte d'Ivoire's policies to promote cocoa and cocoa development, which reflected President Houphouet-Boigny's political base among the middle- and large-scale producers of these crops, and agricultural policies in Liberia, where foreign-owned rubber companies had a strong influence in the "Firestone Republic." Despite the creation of ECOWAS in 1972, each country defined its policies largely independently of its neighbours.

Agricultural marketing policies in many countries were driven by a general perception that markets for agricultural inputs and outputs were volatile, unreliable, and characterized by uneven bargaining power between farmers and traders, leading to exploitation of both farmers and consumers. Governments therefore frequently tried to supplant private marketing agents with state structures, such as marketing boards, often with legal monopolies. Again, West Africa was not monolithic in its approach, as epitomized by the contrast between the approaches taken soon after independence by Côte d'Ivoire, which was much more open to foreign (primarily French) and domestic private investment, and the more state-dominated approach of Ghana under Kwame Nkrumah.

Government views about existing agricultural marketing systems often had some basis in fact, as frequently markets operated in a context of weak transport and communication infrastructure, leading to poor market integration; information asymmetries that led to missing markets (particularly for inputs and credit) and uneven bargaining power; and strong seasonal and year-to-year price fluctuations characteristic of thin markets. The government-created marketing structures often tried to address these problems by purchasing produce at fixed, pan-territorial prices, attempting to stabilize consumer prices through public storage, and providing subsidised inputs and support services. Marketing boards and agricultural development banks played important roles in providing inputs and finance and in assuming marketing risks. They principally supported cash crops but also supported some food crops, particularly in government-supported irrigation zones, such as the Senegal River valley and Mali's Office du Niger. In West Africa, however, the degree of state control over staple-crop marketing never reached the levels experienced in the Southern and Eastern African countries that had large-scale European settler farms and whom the state marketing systems were designed to protect.

11.1.2 Impacts of the approach

The impacts of these policies were reflected in:

- Declining farm-level prices, especially for cash crops but sometimes for food crops as well. These lower prices reduced incentives to produce and led to a flow of resources out of agriculture to finance non-agricultural sectors, including government services and import-substituting industrialization;
- Growth in illegal cross-border trade in the region;
- Lagging agricultural growth rates and falling per capita incomes; and
- Shortages of foreign exchange and fiscal deficits.
- Reduction in agricultural incentives and increased intersectoral transfer of resources.

The transfer of resources out of agriculture to other sectors of the economy was achieved by turning the terms of trade against agriculture. This implicit taxation of agriculture was achieved through low official producer prices for many commodities (especially export crops) relative to world prices. In part, the low prices farmers received resulted from highly overvalued exchange rates. Farm-level prices were further depressed by the inefficiency of

some of the parastatals, which, lacking a market mechanism to discipline their behaviour, frequently experienced bloated operating costs. Although West African governments and donors promoted agricultural growth during this period through state-led schemes and projects, these often faltered due the depressed farm-level prices that undercut farmers' incentives to produce.

Studies of policy-induced impacts on agricultural incentives in Côte d'Ivoire, Ghana, Nigeria, and Senegal and more focused studies of such incentives on the cotton sector in Benin, Burkina Faso, Mali and Togo reveal that implicit taxation of the agricultural exports increased sharply in most of these countries from independence in the 1960s through the early 1980s (Anderson and Masters, 2009). Two key indicators used in these studies to measure the change in agricultural incentives are the Nominal Rate of Assistance (NRA) and the Relative Rate of Assistance (RRA). The NRA measures the percentage by which government policies (including, among others, those affecting exchange rates, marketing board pricing, export taxes, input subsidies, and taxes on competing imports) changed the gross returns to farmers relative to what they would have been in the absence of those policies. An NRA of less than zero signifies net taxation of the agricultural sector, while a positive NRA indicates a net subsidy. Agricultural producers, however, are affected not only by the rate of taxation or subsidy on the products they produce but also by the rate of taxation or subsidy on non-agricultural products that they buy. The RRA measures the relative degree of protection given to agriculture versus non-agriculture in the economy and hence is a measure of the intersectoral terms of trade facing farmers (and thus the extraction of resources from agriculture to other sectors). An RRA that is greater than zero signifies that agriculture receives net protection once the NRA for agriculture has been adjusted for the taxation or subsidy facing the non-agricultural sector; a negative RRA represents net taxation once the intersectoral terms of trade are also taken into account.

Table 11.1 and Table 11.2 summarise information on the evolution of net taxation rates on agriculture for several West African countries from the 1960s through 2004. For Côte d'Ivoire, Ghana, Nigeria and Senegal (Table 11.1), the analysis covered all major agricultural products (those accounting for at least 70% of agricultural GDP), while for Benin, Burkina Faso, Mali and Togo (Table 11.2) the analysis focused solely on the cotton sector.

Several key points emerge from the tables:

Overall rates of net taxation for the agricultural sector (Table 11.1) and for the cotton sector (Table 11.2) were high through 1984 for all countries except Nigeria, as countries used a range of policies to extract resources from the agricultural sector for use elsewhere in the economy. The extreme case was Côte d'Ivoire, where in 1975-79, policies imposed implicit and explicit taxation equivalent to US$1 072 per person engaged in farming. The four countries shown in Table 11.2 all produced cotton under a similar institutional arrangement (national companies holding monopoly purchasing rights and linked to the French multinational CFDT/Dagris), so it is not surprising that the net rates of implicit taxation on cotton producers were nearly identical across these countries until 2000, when the countries began, at different speeds, to reform their cotton sectors. From the 1970s through 1984, shortly before the countries began implementing structural adjustment programmes (SAPs), the gross rates of taxation of cotton producers, as indicated by the NRAs, were on the order of 50% to 60%.

The one exception to the apparent taxation of agriculture in the pre-SAP era among the countries shown in Table 11.1 was Nigeria, where the NRAs were positive, indicating net subsidies to farmers. The overall NRA for agriculture, however, obscures very different patterns of net taxation for export crops and import substitutes such as rice, sugar, poultry, and milk. All four countries, including Nigeria, implicitly taxed their exportable agricultural products, in some cases at very heavy rates (up to 76% for Ghana during 1980-84). In contrast, the agricultural import substitutes received net subsidies. Indeed, it was the very high rates of protection of these products in Nigeria (e.g. through tariff policies and trade bans) that made Nigerian agriculture as a whole appear subsidised. The differential

Table 11.1 *Change in Agricultural incentives: net rates of assistance and relative rates of assistance to Agriculture (%)*

Côte d'Ivoire, Ghana, Nigeria and Senegal, 1961-2004.

	1961-64[a]	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04
Côte d'Ivoire									
NRA Agricultural Sector	-25.3	-29.3	-28.1	-30.8	-32.2	-24.3	-19.5	-20	-24.5
NRA Agricultural Exportables	-47.2	-50.3	-48.7	-57.3	-57.9	-44.2	-47.9	-41.8	-46.3
NRA Import-competing products (ag)	13.7	-0.1	15.7	42.6	18.9	22.6	15.2	14.8	16.6
RRA (ag/non-ag)	-42.1	-44.6	-40.7	-48.7	-50.2	-43.1	-39.5	-32.6	-35.4
Ghana[a]									
NRA Agricultural Sector	-9.0	-19.8	-14.9	-25.6	-21.2	-6.3	-1.7	-3.0	-1.4
NRA Agricultural Exportables	-23.9	-54.5	-46.6	-74.4	-76.3	-53.3	-33.1	-19.4	-19.6
NRA Import-competing products (ag)	15.4	10.8	11.7	27.2	44.6	53.4	26.7	17.5	28.3
RRA (ag/non-ag)	-18.0	-38.4	-30.8	47.5	-39.3	-18.7	-9.2	-11.7	-8.0
Nigeria									
NRA Agricultural Sector	20.7	11.9	6.7	6.3	9.4	8.2	3.9	0.4	-5.4
NRA Agricultural Exportables	-34.3	-49.3	-57.2	-51.5	-43	-53.4	-24.3	-19.5	-18.5
NRA Import-competing products (ag)	216.4	176.8	152.4	87.8	67.2	92.8	39.7	28.9	-9.1
RRA (ag/non-ag)	52.3	29.0	20.8	22.6	45.6	27.4	28.8	26.2	-7.0
Senegal									
NRA Agricultural Sector	-9.3	-7.2	-22.4	-22.7	-20.5	4.7	5.6	-6.1	-7.5
NRA Agricultural Exportables	-18.7	-16.6	-39.5	-42.5	-39.7	-9.1	-6.7	-13.5	-19.5
NRA Import-competing products (ag)	19.9	15.0	14.1	24.4	14.1	56.3	61.1	8.5	15.3
RRA (ag/non-ag)	1.5	8.4	-3.1	2.4	24.4	11.3	7.2	3.7	-2.2

Source: Compiled from data in Anderson and Masters, 2009
[a] For Ghana, data start in 1960.

treatment of these two types of crops also helps explain why, as discussed in Chapter 10, Nigeria lost large market shares in its traditional tropical exports (palm oil and palm kernels, groundnuts, cocoa and cotton) at a time when the agricultural sector as a whole was receiving net protection. The net taxation of exports and the net subsidization of import substitutes pushed these countries away from an agricultural strategy based on comparative advantage and towards greater self-sufficiency.

For Ghana and Côte d'Ivoire, the RRAs exceeded the NRAs, indicating that the non-agricultural sector was less taxed on average than the agricultural sector. This differential treatment imposed an additional implicit tax on farmers through shifting terms of trade against agriculture. In contrast, in Nigeria and Senegal, the reverse pattern was true in most years. In those two countries, the heavy implicit protection given to agricultural import substitutes resulted in an implicit tax on the non-agricultural sector, perhaps thereby constraining the growth of non-agricultural employment.

As a result of the protection offered to import-substituting industries, the contribution of the manufacturing sector to GDP grew between the 1960s and the mid-1980s in six of the nine West African countries for which comparable data are available (Table 11.3).

Growth of smuggling. Differences in prices for tradable commodities across countries because of differences in agricultural and trade policies sometimes led to large price differentials between neighbouring countries, inducing a large informal trade of agricultural products across borders. For example, the Gambia became a major importer of rice from the world market, most of which was re-exported to Senegal (where the rice sector was protected), and part of the highly touted "Ivorian agricultural miracle" of the 1970s probably

Table 11.2 *Net rates of assistance (%) for cotton farmers*

Benin, Burkina Faso, Mali and Togo, 1970-2005

Country	1970–74	1975–79	1980–84	1985–89	1990–94	1995–99	2000–05
Benin	-44	-49	-49	-5	-24	-22	-6
Burkina Faso	-44	-48	-58	-8	-26	-28	1
Mali	-56	-55	-59	-17	-25	-33	3
Togo	-41	-46	-60	-14	-25	-24	-13
Unweighted average	-46	-49	-56	-8	-24	-26	-5

Source: Baffes, 2009

Table 11.3 *Manufacturing value added as a percent of GDP*

Annual Averages, 1961-2011

Country	1961-69	1970-85	1986-2000	2001-11
Benin		9.6	7.8	7.8
Burkina Faso	13.9	17.0	15.2	10.8
Cape Verde			9.1	
Côte d'Ivoire	10.3	11.0	18.7	18.9
The Gambia	3.0	4.4	7.2	6.0
Ghana	12.8	10.7	10.0	8.8
Guinea			4.2	6.3
Guinea-Bissau		21.2	8.0	10.4
Liberia	2.9	5.7	4.5	5.4
Mali	6.7	6.9	7.0	3.1
Niger	3.0	5.2	6.5	6.5
Nigeria				3.1
Senegal		13.9	15.5	14.9
Sierra Leone	6.0	5.9	6.0	2.8
Togo	9.1	7.3	8.8	8.6

Source: Calculated from data in World Bank Africa Development Indicators, 2013

reflected inflows of agricultural products from neighbouring countries which subsequently were counted as Ivorian production.[122] Very large informal flows of agricultural products, inputs, and manufactured products developed between Nigeria and its neighbours. While such trade did allow some exploitation of comparative advantage across countries and capturing of limited regional scale economies, in the absence of explicit policies to do so, because it was illegal, the trade involved high transaction costs and fostered corruption of customs and police officials.

122 Kamuanga, 1982, documents how the state-controlled marketing system for rice in Mali's Office du Niger depressed farm-level prices in the late 1970s and led to smuggling of paddy from Mali to Côte d'Ivoire.

Lagging agricultural growth rates and falling per capita incomes. Figure 11.1 displays annual growth rates in production for several types of commodities over four periods: the immediate post-independence era (1961-69), the period leading up to structural adjustment programmes in most countries (1970-85), the period of structural adjustment and immediate post-structural adjustment (1986-2000), and the period from 2001 through 2011, when agriculture came back on the development agenda. The figure shows growth rates for two staples in which the region is nearly self-sufficient (cereals and beef), two import-substitutes (poultry and sugar), and two export crops (cocoa and cotton). Given the

predominance of Nigeria in the production of most agricultural products in the region, Figure 11.1 shows annual growth rates both for the ECOWAS zone as a whole and for the region minus Nigeria. For cocoa, the figure displays ECOWAS with and without the production of Côte d'Ivoire, currently the world's largest cocoa producer.

For almost all major categories of products shown in Figure 11.1, production growth rates fell from the 1960s to the period immediately preceding structural adjustment, but the patterns of change varied by type of product. The declines were most precipitous for the two export crops, cocoa beans and cotton lint, with the decline in the growth rate of cotton being greatest in the area outside of Nigeria (mainly the CFA franc countries). These declines reflected in part the heavy taxation of these crops. For cereals, the growth rate for the region as a whole actually increased, due entirely to an increased growth rate for Nigeria (the growth rate outside of Nigeria fell), and growth rates of poultry production also increased for the region as a whole. The growth rate for beef declined sharply outside of Nigeria in the period 1970-85, and that of sugar for the region as a whole also declined from the very high rates of growth in the 1960s (from a small base).

The slowing growth in agricultural production, combined with a growing population, contributed to a slow-down in per capita incomes, although there was considerable variation across countries (Table 11.4). In the 1960s, 70% of the ECOWAS countries for which comparable data are available had positive growth in real per capita incomes, but this had fallen to 38% in the 1970-85 period, immediately before structural adjustment. The unweighted average of real per capita income growth across the ECOWAS countries turned negative during the 1970-1985 period.

Growing shortages of foreign exchange and fiscal deficits.[123] Overvalued exchange rates made imports artificially cheap and exports less competitive

123 For more details on the points discussed in this paragraph, see World Bank, 1981.

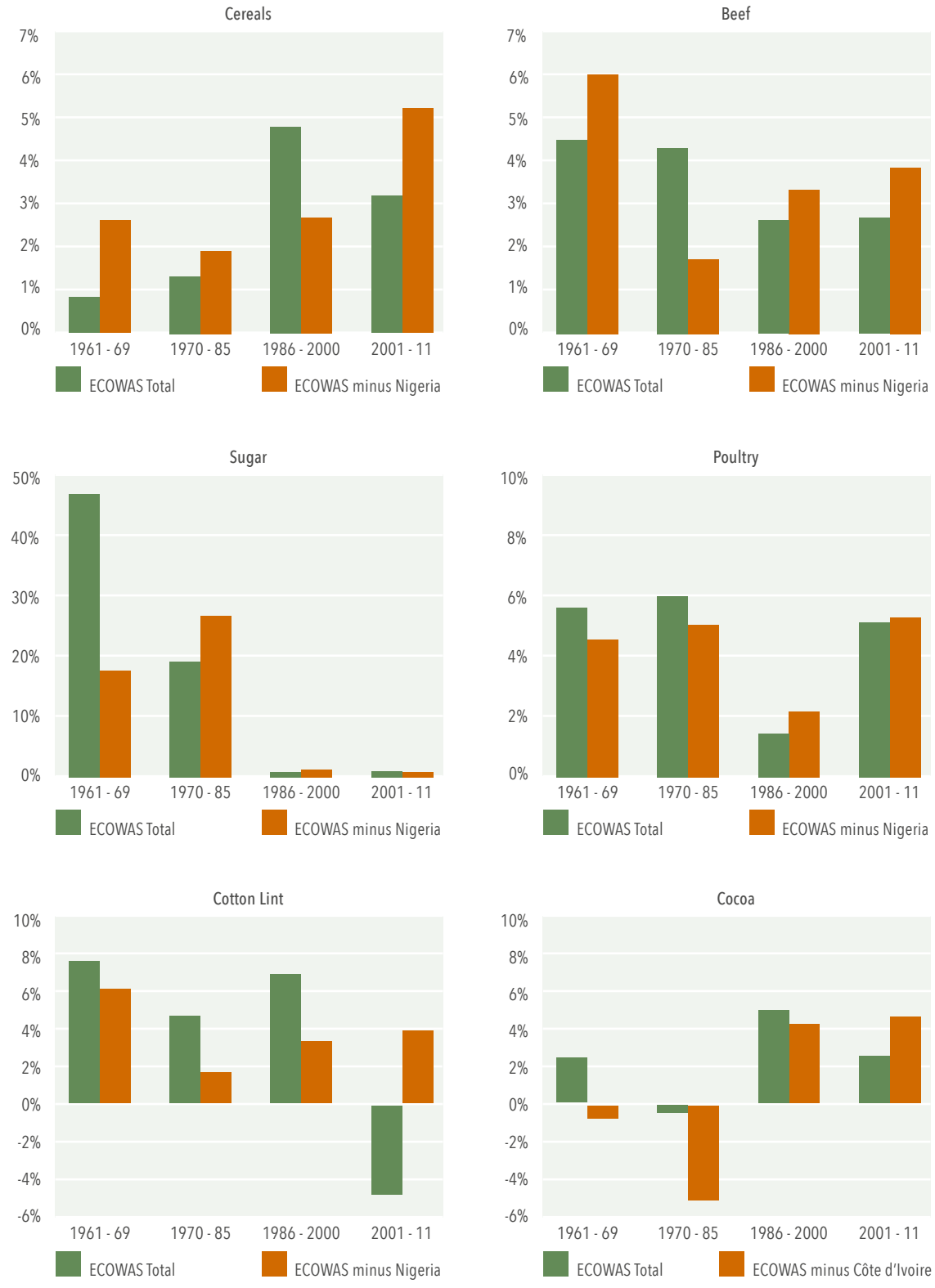
Table 11.4 *Growth rates of per capita GDP*

In 2005 PPP, constant international dollars

	1960-1969	1970-1985	1986-2000	2001-2010
Country		(%)		
Benin	1.4	0.5	0.5	0.8
Burkina Faso	1.4	1.5	1.6	1.8
Cape Verde			2.8	5.2
Côte d'Ivoire	4.0	-1.1	-1.1	-0.4
The Gambia		1.2	-0.7	2.3
Ghana	-0.8	-3.0	1.6	3.8
Guinea			0.9	0.9
Guinea-Bissau		-0.5	0.1	-0.2
Liberia	1.7	-2.4	-10.6	-1.8
Mali		0.8	1.6	1.6
Niger	0.0	-2.1	-1.5	0.6
Nigeria	-1.1	-1.5	1.0	4.4
Senegal	-1.4	-0.8	-0.3	1.7
Sierra Leone	2.9	0.1	-4.3	4.2
Togo	5.9	-0.2	-0.5	0.8
Unweighted mean	1.4	-0.6	-0.6	1.7
Unweighted mean excluding Sierra Leone and Liberia			0.5	

Source: Calculated from data in World Bank, World Development Indicators, 2011.

Figure 11.1 *Annual growth rates in production for selected commodities*



Source: Calculated from FAOSTAT data.

in international markets, draining foreign exchange reserves of many countries, particularly those outside of the CFA franc zone. The burgeoning costs of parastatals and the fact that they did not pay taxes contributed to the fiscal deficits. For example, by 1976-77, the cumulative deficit of the Malian grain marketing board totalled US$80 million, equivalent to three times its annual grain sales (Humphreys, 1986). These deficits were exacerbated by weak overall economic performance, which reduced tax revenues. Some West African countries had borrowed heavily in the 1960s and early 1970s, and then were hit hard by the economic recession, inflation, and soaring interest rates that struck the world economy in the late 1970s, making it difficult to service their debt. In the Sahelian countries, the fiscal crisis was made worse by drought in the late 1960s and early 1970s, which made it difficult for the governments to maintain consumer subsidies for food as domestic cereal prices rose sharply.

11.2 Structural adjustment and the retreat from Agriculture

11.2.1 Main elements of the approach

By the mid-1980s, stagnant economic growth and mounting macroeconomic and fiscal imbalances combined with a growing urban population made continuation of the previous state-led model of development infeasible. Between the mid-1980s and the mid-1990s, under pressure from international financial institutions such as the IMF and the World Bank, almost all West African countries adopted structural adjustment programmes (SAPs). The programmes had three major components: (1) government budget austerity aimed at restoring fiscal balance; (2) liberalization of many sectors of the economy, the privatization of some state-run enterprises, and the withdrawal of the public sector from many areas of agricultural service provision, marketing and finance; and (3) closer alignment of domestic prices with international prices, largely through currency devaluations (in 1994 for the WAEMU countries and earlier for most of the non-WAEMU countries) and reductions of tariffs and export taxes. The impact of the devaluations and the tariff and tax reductions was to increase the price of tradable goods (including most agricultural products) relative to non-tradables (including the salaries of government employees) and a reduction in protection to industry, including agroprocessing.[124]

In some ways the imposition of structural adjustment was made easier by the prevalence of one-party states and limited stakeholder input into policy decisions – a situation that changed dramatically with the spreading democratization and growth of independent farmer organizations and other civil-society organizations in the region in the 1990s.

The structural adjustment programmes stressed the primacy of macroeconomic reforms over sectoral policies as a precondition for successful economic growth. The period of the 1980s and 1990s was thus characterized by a retreat of most major donor organizations from support of agricultural development activities in sub-Saharan Africa, a situation that was mirrored in the waning support of African governments to the sector (Kimenyi et al., 2012; World Bank, 2007). In part, this retreat reflected disappointment in the lacklustre performance of agricultural development efforts undertaken during the 1970s and early 1980s, when macroeconomic policies severely reduced farmers' incentives to expand production. These incentives were further reduced by agricultural producer support and export subsidies by OECD countries that made West African agricultural products less competitive in world and local markets; erosion of tariff preferences in the context of WTO negotiations; and increased competition from emerging countries, especially those from Latin America and Southeast Asia.[125] These latter factors contributed to falling world prices for major agricultural

124 By making foreign currency more expensive in terms of domestic currency, devaluations increase the price of goods and services that can be internationally traded ("tradables") relative to those that cannot be traded internationally ("non-tradables"). Since most agricultural products are tradable, while many services produced by urban dwellers (e.g., construction, government services) are not tradable, devaluations tend to turn the terms of trade in favour of farmers relative to urbanites. In West Africa, some agricultural products, such as starchy roots and tubers, are only traded internationally to a small degree and hence are referred to as "semi-tradables"; the impact of devaluations in increasing their prices relative to non-tradables is more muted than for fully tradable goods such as rice.

125 The OECD measures direct support to farmers in its countries by the Producer Support Equivalent (PSE), which indicates the percentage increase in these farmers' revenues as a result of direct support measures compared to what they would receive if their products were valued at world prices. Over the period 1986- 1990, the weighted average PSE for all OECD countries was 34.9%. By 2008-12, it had fallen to 19.7% (OECD, 2013a).

staples, made even cheaper in the CFA franc countries by an increasingly overvalued currency (until the devaluation of 1994). During the 1980s and early 1990s, West African governments may therefore have viewed reliance on imports as a cheaper way of addressing their countries' food needs than investing in efforts to increase productivity throughout the agrifood system.

11.2.2 Impacts of the SAPs and of the retreat from agriculture

The impacts of structural adjustment programmes on the West Africa agrifood system were mixed. On the positive side, as shown in Tables 11.1 and 11.2, the price incentives facing farmers in West African countries, particularly for export crops, improved sharply in most countries. For example, taxation of cotton farmers (as measured by NRAs) in Benin, Burkina Faso, Mali and Togo fell from an average of 56% in 1980-84 to 24% by 1990-94. Taxation of export crops also fell sharply in Ghana, Nigeria and Senegal over the same period, but remained stable at almost 50% in Côte d'Ivoire. Most import-competing crops were protected during the entire period, although protection levels began to decrease in the early 1990s in Senegal and Nigeria.

Figure 11.1 illustrates the varying performance of different value chains during the SAP period. The most dramatic change was for cocoa, the region's most important export, where the growth rate of production turned sharply positive (especially in Ghana) in the 1986-2000 period, after over 10 years of decline. Cotton growth rates increased for the region as a whole, reflecting mainly improved growth in Nigeria, although there was little change in the region outside of Nigeria, reflecting in part the continued overvaluation of the CFA franc until the devaluation of 1994. The exchange-rate reforms and liberalizations also set the groundwork for the re-ignition of other export-oriented growth in some countries, such as Ghana in the 1990s, and the expansion of production of non-traditional agricultural exports such as fresh horticultural products. In contrast, the declining protection for some of the import substitutes during the SAP period is illustrated in the sharply falling growth rates for both poultry (which faced increasing competition from the frozen chicken imports discussed in Chapter 10) and raw sugar. As for staples, the growth rate for cereal production also increased in the period 1986-2000 (a period also characterized by generally favourable rainfall), as did that of beef production in the areas outside of Nigeria.

Table 11.4 shows that the period 1986-2000 was also characterized by better performance in terms of overall economic growth as measured by GDP per capita, with the notable exceptions of Liberia and Sierra Leone, where civil wars wracked their economies. Whereas only 38% of the ECOWAS countries for which data are available had positive growth in per capita GDP over the period 1970-85, this figure had grown to 60% for the period 1986-2000. Furthermore, when Sierra Leone and Liberia are excluded, the unweighted average of growth rates in GDP per capita for the zone as a whole turned positive during this period.

The emphasis of structural adjustment programmes on growth based on comparative advantage also gave rise to a shift starting in the mid-1980s, particularly in the Francophone countries under the impetus of CILSS, from an emphasis on food self-sufficiency in official agricultural policy pronouncements towards more emphasis the notion of trade-based food security. This involved greater recognition of the role that regional trade could play as part of national food security strategies as well as a greater emphasis on the notion of income-based access to food as a critical component of food security rather than a single-minded focus on food production.

Despite some notable successes, however, the overall impact of the SAPs on Agriculture was often less than initially hoped (Johnson, et al., 2008). In the initial phases of these reforms, insufficient effort was made to address the structural problems that had partially motivated the creation of the parastatals in the first place. In addition, the budget austerity and currency devaluations that frequently accompanied the initial phases of the SAPs led to higher interest rates, increased transport and input costs (which have high import

components) and reduced investments in public goods such as agricultural research and extension, all of which dampened the supply response to higher output prices. The removal of administered pan-territorial pricing resulted in more variable prices, increased uncertainty for farmers and differentiated spatial outcomes for those farmers who previously had access to the official marketing systems.[126] The dismantling of parastatals such as marketing boards and public agricultural development banks sharply reduced the availability of inputs and credit, including medium-term credit for agricultural equipment. Due to poorly developed infrastructure, high transaction costs, risks and uncertainty (including uncertainty among private-sector actors about whether the economic reforms would be maintained), private actors were slow in taking over the provision of inputs, finance and other support services (Shepherd and Farolfi, 1999).

Trade liberalization and privatization led in some cases to the emergence of oligopolistic market structures. In many of the smaller countries, the limited size of the domestic markets in combination with scale economies in the cereal import business led to the domination of the import trade for key staples such as rice by a few firms that had substantial power to influence consumer prices. As discussed in Chapter 10, reduction of trade barriers for previously highly protected import substitutes also resulted in large influxes of low-priced imports of certain competing products, such as frozen chickens and milk powder, which undercut markets for local producers.

UNIDO (Yumkella, et al., 2011) argues that structural adjustment led to deindustrialization in many African countries, as protection fell for many import-substituting industries. While some manufacturing and food processing plants in West Africa undoubtedly did close during the SAP period, the overall picture, as indicated by World Bank data (Table 11.3), is ambiguous. For the 12 countries for which comparable data are available, the share of manufacturing in GDP fell in 5 countries over the period 1986-2000 but remained stable or increased in the remaining 7. A big missing part of the picture, however, is Nigeria, for which the World Bank reports no data. As discussed in Chapters 8, there is evidence that modern retailing shrank in Nigeria following structural adjustment, and this likely also extended to some food processing.

Because the reforms turned the terms of trade against previously protected industries and the urban population – including civil servants – which produces mainly non-tradables, there was often resistance to the new polices. This was exacerbated by the high social costs caused by the retrenchment of employees and the downsizing of public services and subsidies. Consequently, implementation of the reforms was uneven across countries and value chains and characterized by setbacks and policy inconsistencies, which further contributed to mixed results from structural adjustment.

In hindsight, while macro-economic and sectoral reforms were clearly needed, the adjustment programmes focusing almost exclusively on macro-economic reforms and a radical downsizing of the public sector led to high socio-economic costs, as discussed below. While SAPs established the basis for long term agricultural growth through improved producer incentives, they coincided with donors' and governments' retreat from agriculture. Hence, investments in building and reforming the critical institutions and infrastructures needed for the non-state sectors to take over many of the functions previously carried out by the government were grossly inadequate. Unfortunately, it took more than a decade after structural adjustment until the need for investments in agricultural and related institutions and stakeholders re-entered the policy agenda.

126 See the discussion in Chapter 10 of the experience of Nigeria's cocoa value chain following the abolition of the Cocoa Marketing Board. In many countries, however, financial constraints limited the coverage of official marketing systems, particularly for food products, and farmers and consumers who remained outside these systems had to rely on illegal parallel markets that were characterized by volatile prices and uneven product availability. For them, the removal of the state-dominated marketing system likely led to better market access and more stable prices.

11.3 The initial policy response to structural adjustment

11.3.1 Social protection, poverty alleviation and environmentalism

Concerns about the costs borne by the individuals and industries forced to adjust under the SAPs spurred several responses in West Africa and in the North. Many expressed the view that the poor were bearing an unfair burden of adjustment due to the loss of social services, higher food prices resulting from currency devaluations, and an increased focus on export-oriented production to help service external debt. These concerns led to calls for debt forgiveness, increased emphasis on social protection measures, ensuring "basic needs", and focusing development efforts on the poorest of the poor. This emphasis on "adjustment with a human face" also promoted the role of NGOs and civil-society organizations as an alternative to what many saw as dysfunctional government services.

By 1996, the concerns about debt-relief gave rise to the Highly Indebted Poor Countries (HIPC) initiative of the IMF and the World Bank, under which poor countries could qualify for debt relief under certain conditions, including the preparation of a Poverty Reduction Strategy Paper (PRSP). The PRSPs outlined how debt-relief savings would be used to reduce poverty, and the first generation of these papers had a heavy emphasis on strengthening social services. These same concerns also inspired the formulation of the Millennium Development Goals in 2000, which also had a strong poverty-alleviation focus.

The poverty alleviation focus was coupled with worries over the environmental costs of adjustment – e.g. deforestation resulting from expanded logging of tropical forests in order to generate foreign exchange. A growing environmental movement in the North pushed for an increased attention to the environmental costs of agricultural development efforts, which in turn focused more of these efforts on environmentally fragile areas. Regarding rural economic development, emphasis was increasingly placed on the rural non-farm economy, but frequently without sufficient attention to strengthening the economic base in rural areas via broad-based agricultural growth to fully exploit linkages with the non-farm economy.

These shifts in policy emphasis in the 1990s and early 2000s also reflected in part the emergence of more open policy processes in many West African countries, as one-party regimes gave way to more pluralistic political systems and the blossoming of independent civil-society and farmer organizations. A more diverse set of actors was now demanding a seat at the table during debates about development policy, which in turn resulted in policies having to try to address a more diverse set of objectives than in the past.

11.3.2 The rediscovery of Agriculture

By the early 2000s, the rhetoric regarding agricultural development in sub-Saharan Africa began to change, as advocates in both Africa and the North argued that robust agricultural growth was necessary to drive poverty alleviation and finance the expanded social investments called for in the Millennium Development Goals (see, for example, Partnership to Cut Hunger and Poverty in Africa, 2002). Such growth required explicit sectoral policies and investments focused on agriculture and agroprocessing as complements to the macro-level reforms. Nor could everything be done by NGOs – there was increased advocacy of rebuilding and expanding capacity of government agencies to design and implement policies as part of a broader programme to promote public-private partnerships in Agriculture.

In the late 1990s, when this "rediscovery of agriculture" began, West African countries varied widely with respect to the emphasis they gave to the agricultural sector in terms of budget allocation and policy attention. Policies frequently were reactive – focusing on crash programmes that set very ambitious production goals in response to episodic food crises – and changed frequently. Nigeria typified this approach, with frequent changes in both food and trade policies as exemplified by the periodic imposition of trade bans to protect domestic producers and processors, followed by their subsequent removal.

These policies were typically placed in the context of the World-Bank-supported Poverty Reduction Strategy Papers (PRSPs), which set overall economic development strategies. The agricultural policies were frequently guided by national agricultural or rural development strategy plans (such as the Food and Agriculture Sector Development Policy – FASDEP – in Ghana) and, in some countries, national food-security strategies. In some of the Francophone countries, national assemblies passed laws (typically called "agricultural orientation laws") that outlined a broad vision and strategy for the development of the agricultural sector. Among their main purposes was to give legal recognition to farming as a profession, with farms to be registered so that they could more easily undertake formal-sector activities, such as applying for bank loans and entering into contracts. The laws also provided broader legal recognition to farmers' organizations and interprofessional organizations that bring together actors from throughout a given value chain. In some cases, the laws proclaimed that these organizations would play a key role in agricultural development programme design and implementation. These laws, as well as economic development plans such as Nigeria's Seven Point Agenda, often addressed the need for fundamental structural changes in the rural economy, such as land reform. Some countries also developed agricultural investment plans, such as Sierra Leone's National Sustainable Agriculture Development Programme (NSADP), but these were often very broad, without clear prioritization, let alone funding, and lacking a clear policy implementation arrangement.[127]

These basic documents were complemented by numerous sector or subsector development plans (for irrigation, key cash crops, rural infrastructure, etc.), each with its own priorities. Some of these programmes, such as Ghana's FASDEP were fairly comprehensive and, with minor changes, became the core of the country's subsequent CAADP investment plan (discussed below). In many countries, however, agricultural strategies and priorities had been developed in piecemeal fashion over time, often in response to funding opportunities dictated by the preferences of external donors and the desire to respond to multiple interest groups. For example, in 2009, the Malian Ministry of Agriculture commissioned a review of all rural development strategies in the country, as part of its effort to move to a more coherent sector-wide approach. The study found that Mali had 22 separate officially validated strategies for various aspects of rural development, which in turn established a total 117 different priorities for rural development (Centre d'Etudes pour le Développement au Sahel, 2009). A country with 117 different priorities has in reality no priorities at all, but likely faces large problems of duplication of effort. The numerous official policies in the ECOWAS member states were complemented with ad hoc measures to deal with food crises, such as the reduction or elimination of import taxes on cereals during periods of high prices, the short-lived Presidential Initiatives on Agriculture in Nigeria and Ghana in the early 2000s, and Burkina Faso's and Mali's restrictions on grain exports during such periods in 2005 and 2008 in contravention of the ECOWAS treaty.[128]

11.3.3 New models of partnership and strengthened regionalism

Another reaction to structural adjustment was the move to stronger collective action by African governments to mediate their interactions with the world economy, international financial institutions and other development partners. At the continental level, this was manifested in the conversion of the Organization of African Unity into the more tightly structured African Union (AU) in 2001 and the AU's subsequent development of the New Partnership for Africa's Development (NEPAD). As its title implies, NEPAD sought to redefine collaboration between African governments, donor agencies and international financial institutions into one characterized by a more equal partnership organized around mutually agreed-upon goals.

127 A single component of the NSADP, focused on smallholder commercialization, later was refined and became the core of Sierra Leone's CAADP national agricultural development plan.

128 Article 26 of the ECOWAS treaty allows member states to restrict their trade with the Community for a maximum period of one year as a safeguard measure, but only if there is prior notification. The application of these measures is subject to review by the ECOWAS Council of Ministers. None of the countries in the Community that restricted exports during the 2008 crisis gave the required notification to the ECOWAS Commission.

In West Africa, this interest in stronger collective action led to attempts by regional organizations, such as the West African Economic and Monetary Union (WAEMU) and ECOWAS, to develop regional trade policy instruments such as a common external tariff and regional free trade zones to regulate trade within West Africa as well as with the rest of the world. In the area of agriculture, specialized agencies such as CILSS and CORAF/WECARD promoted more fluid regional trade, expanded regional collaboration on agricultural research and the development of common procedures for seed and pesticide registration. In the broader area of Agricultural policy, WAEMU took the lead in developing a regional policy for its eight member states, starting in 2001, many of whose features presaged those later incorporated in the ECOWAS agricultural policy, known as ECOWAP. We first turn to a brief analysis of the WAEMU regional policy before discussing ECOWAP as part of the broader NEPAD/CAADP effort in West Africa.

The Agricultural policy of the West African Economic and Monetary Union (PAU)

WAEMU comprises the eight West African countries sharing the CFA franc (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal and Togo), all of which are also members of ECOWAS. The agricultural policy of WAEMU, known as PAU (la Politique Agricole de l'UEMOA), was launched in December, 2001. It thus predates ECOWAP by four years and served as a model for many of the foci subsequently included in that programme.[129]

Major elements of the PAU. The PAU's overall aims are to contribute to satisfying the food needs of the population, the economic and social development of the member states and the reduction of rural poverty. The programme is built around three axes (UEMOA, 2009):

- ***Improving the competitiveness of key agricultural value chains*** (rice, maize, meat, poultry and cotton) through preparing regional development plans for each value chain, identifying key actions for national and regional investments, creating a regional investment fund to help finance such investments, promoting regional stakeholder consultations in these value chains, improving agricultural and market information, developing programmes to help member states deal with the threat of avian influenza, and undertaking specific actions to expand rice production in Senegal and Mali. In 2008, for example, WAEMU entered into an agreement with Mali to invest in the improvement of 11 000 ha in the Office du Niger irrigated rice area, with the intent of opening the area to farmers from any of the member states, as part of the effort to increase rice production within the Union.

- ***Deepening the common market of the Union within the agricultural sector and improving the management of shared resources*** through harmonization of standards for production, marketing, food safety, agricultural taxation and monitoring procedures; management of cross-border livestock transhumance; and the management of inland fisheries resources and shared water resources.

- ***Integrating agriculture in the WAEMU zone into the regional and international markets.*** The main emphasis under this axis has been on fostering consultation among member states as they prepare for international trade negotiations regarding agriculture and creating an information and decision-support system for the negotiations. Such consultation is especially needed for WTO negotiations because WAEMU itself is not authorised by the WTO to negotiate on behalf of its member states. Therefore, if an issue arises that is important for the Union as a whole, all the member states have to agree in advance to take the same position in the WTO negotiations.

How effective has the PAU been in meeting its stated goals? WAEMU was created in 1994, after the CFA franc devaluation, but is built upon a monetary union (previously known as UMOA) that has existed among most of the member states

129 Another element of WAEMU policies (but not part of PAU) that has been adopted by ECOWAS, with important implications for ECOWAP, is the common external tariff (CET). As explained in Chapter 12, ECOWAS adopted the WAEMU CET in 2005, but then expanded it to include a fifth, higher tariff band (of 35%, compared to the top WAEMU rate of 20%) to cover particularly sensitive products, which are almost exclusively agricultural.

since their independence in the 1960s. Hence, the history of collaboration among the member states of WAEMU is much longer than that of ECOWAS, which was created in 1975, and the PAU has been operational much longer than ECOWAP. Currently, the PAU is implemented in parallel with ECOWAP, with strong efforts at coordination between the two programmes. At the same time, the PAU has served as inspiration for some of the approaches and programmes adopted by ECOWAP, notably the focus on priority value chains, the use of guiding principles such as subsidiarity and solidarity to determine which activities are included in a regional as opposed to a national programme, and the need to promote common standards for agricultural inputs and products as a precondition for creating a regional common market.

Despite the long history of cooperation among the WAEMU member states and their common currency, which facilitates trade within the Union, the implementation of the PAU has taken much longer than originally planned. The PAU has been implemented thus far through two programmes, beginning in 2002, that were originally designed to cover 3 years each, but which in reality have extended over 11 years (UEMOA, 2011). The PAU has faced some notable constraints in its effort to create an effective regional common market for agricultural products.

- First, it has been very dependent on the funding of external development partners, particularly the European Union and France (UEMOA Commision, 2012). This has limited the autonomy of the Union in designing the programme and, according to WAEMU, affected the speed of implementation.[130]

- Second, while the PAU has focused heavily on developing regional processes for the harmonization of product and input standards, implementation of these standards at the national level has been slow. National agencies frequently lack the budget and facilities to monitor compliance, and the private sector sometimes complains that the proposed standards do not correspond to criteria that are valued in the local and regional markets. Furthermore, the maintenance of disparate national standards creates opportunities for rent seeking. If each country has its own standards, markets in most countries remain small by international standards and tend to be dominated by local oligopolists, who lobby against moving towards regional standards that would increase competition.

- Third, despite the creation of regional frameworks for stakeholder consultation on PAU implementation, ROPPA argues that many decisions regarding which programmes to implement were made without effective consultation with farmer organizations (ROPPA, 2012b).

- Fourth, there is some tension between the objectives of the PAU, in terms of promoting Agricultural growth in the region, and the adoption of the WAEMU common external tariff (CET), which has a maximum ad valorem rate of 20%. The adoption of the CET reduced tariff rates in several of the member countries led some producer groups to complain about decreased protection (Johnson, et al., 2008).

- Fifth, to date, the PAU has no formal monitoring and evaluation system, which limits the ability to measure the impacts of the programme and make adjustment as necessary.

These are all challenges that ECOWAP will likely face, in some degree, in its implementation as well.

11.4 The emergence of ECOWAP/CAADP

11.4.1 Characteristics of the ECOWAP/CAADP approach

NEPAD's Comprehensive African Agriculture Development Programme (CAADP) was launched in 2003 and was part of a larger "rediscovery of agriculture" by African governments and their development partners. CAADP attempts to address the piece-meal way that agricultural develop-

130 As the CFA franc has a fixed parity with the Euro, guaranteed by the French treasury, the autonomy of WAEMU is by its very nature more limited than that of ECOWAS.

ment frequently has been promoted in Africa via a plethora of separate projects and initiatives. The development of NEPAD and the Maputo Declaration of 2003, in which African Heads of State and Government set a target of allocating a minimum of 10% of national budgets to agricultural development, marked major steps to raise the priority given to agriculture by African governments. International donors also pledged increased attention to African agriculture, and by 2006 ODA levels to agriculture in Africa, which had fallen by over 50% in real terms between 1985 and 2005, had begun to increase (World Bank, 2007). The entry of the Bill and Melinda Gates foundation as a major donor focused on African agricultural development in 2007 and the world food crisis of 2008 accelerated the attention given to agriculture, putting it on the forefront of many countries' development agendas, and most of the new efforts pledged to work within the framework of CAADP.

The overall aim of CAADP is "to help African countries reach a higher path of economic growth through agriculture-led development" and in so doing "to eliminate hunger and reduce poverty through agriculture" (CAADP, 2013). Thus, the Programme sees broad-agricultural growth as central to both overall economic growth and poverty alleviation. The Programme is built around four pillars (ibid.):

1. Extending the area under sustainable land management and reliable water control systems.

2. Increasing market access through improved rural infrastructure and other trade-related interventions.

3. Increasing food supply and reducing hunger across the region by raising smallholder productivity and improving responses to food emergencies.

4. Improving agricultural research and extension systems in order to disseminate appropriate new technologies and boosting the support available to help farmers to adopt such new options.

Compared with previous efforts to increase agricultural production in Africa, CAADP is distinguished by the following characteristics:

- ***Advocacy of a country-led, sector-wide approach to agricultural development.*** This sector-wide approach involves stakeholders in each country (national and local governments, the private sector including farmer organizations, civil society and development partners) agreeing on a comprehensive sector-wide programme to which all stakeholders subsequently align their actions. This is in contrast to the previous project-led approach, where development priorities were often set in accordance with donor objectives and frequently there was little coordination across projects. CAADP thus represents an attempt to put in practice the principles laid out in the Paris Declaration on Aid Effectiveness (OECD, 2013b).

- ***Calls for national agricultural development strategies to be designed in a way that explicitly recognises regional complementarities and trade.*** Regional Economic Communities (ECOWAS in West Africa) not only support the development of the national programmes but also undertake similar participatory processes to design regional programmes that complement the national programmes by taking account of regional spillovers and economies of scale in investments and policies. Furthermore, national programmes are designed using common design principles in order to facilitate regional collaboration.

- ***A pledge by African governments to devote at least 10% of budgetary resources*** and increased policy attention to agricultural development in order to achieve annual agricultural sector growth rates of 6%, which were deemed necessary to achieve the Millennium Development Goal of reducing poverty rates by half by 2015.

In 2002, ECOWAS initiated the design of a common agricultural policy, known as ECOWAP (ECOWAS Agricultural Policy) for its 15 member states. With the launching of CAADP in 2003, ECOWAS decided to merge CAADP into

the ECOWAP process. The design of ECOWAP was developed through a consultative process with member states and stakeholder groups. The programme that was adopted by the ECOWAS Heads of State in January 2005 envisages a high level of internal market integration with external protection levels for individual products to be defined on a case-by-case basis, depending on the importance, potential for expanded production, and specific challenges facing the value chains (ECOWAS Commission, 2009a).

ECOWAP/CAADP aspires to become a common framework for agricultural policy and programmes in the region. Its implementation hinges upon policy reforms and investment plans. The policy reforms involve harmonization in areas such as internal and external trade, taxation, investment codes, regulatory frameworks, and industrial and monetary policies. The investment plans are implemented at two levels: (1) at the national level through the formulation and implementation of National Agricultural Investment Programmes (NAIPs) in each of the 15 member countries; and (2) at the regional level through the Regional Agricultural Investment Plan (RAIP) and the creation of new regional institutions and policies to implement and complement the plan.

11.4. Design of CAADP national programmes

Although CAADP was officially launched on a continental basis in 2003 and in West Africa merged with the development of ECOWAP in 2005, work on national-level CAADP plans only started in earnest in 2008. The process involved four steps: stock-taking, the holding of a stakeholder roundtable, the development of a national investment plan, and the holding of a "business meeting" of all stakeholders to validate the investment plan.

Developing the National Agricultural Investment Programmes (NAIPs)

The stock-taking was carried out by government-appointed national CAADP teams which included analysts from government and, in some countries, participants from the private sector and civil society. The country teams each prepared two reports: (1) A diagnostic study that inventoried and analysed current and past agricultural development strategies and experiences in their respective countries;[131] and (2) a computable general equilibrium modelling exercise to look at the impact of different agricultural investments on agricultural and overall economic growth rates and on poverty alleviation. The aim of the modelling was to identify the types and levels of agricultural investments (and subsequent agricultural growth rates) that would be necessary to achieve a sustained 6% annual GDP growth rate.

These reports served to identify a priority set of objectives and actions that were discussed with farmer organizations, other private-sector actors, government, development partners, and civil society in each country. The discussions culminated in a stakeholder roundtable meeting and the signing of a country-level CAADP Compact that spelled out the goals, strategies, and implementation principles that would guide the country's sector-wide approach to agricultural development. A key part of the stakeholder consultation was interaction with major donors, who were typically organised in a donor working group. At the regional level, ECOWAS launched a similar process to design its regional investment plan, policy instruments, and new implementing institutions, drawing on inputs from regional and international organizations such as CILSS and CORAF and from external consultants.

Fourteen of the fifteen ECOWAS countries signed their Compacts between July 2009 and July 2010, with the final agreement (Guinea-Bissau) being signed in January 2011. The regional Compact was signed in November, 2009.

Following the signing of the Compact, the country teams each developed a national agricultural investment plan (NAIP) that aimed to translate the objectives contained in the Compact into concrete programmes to be implemented over a period of five to ten years. These NAIPs

131 The diagnostic studies often drew on processes already under way in the individual countries, such as an agricultural sector review in Mali and the development of the Medium-Term Agricultural Investment Plan in Ghana.

thus represented the implementation plans for short- and medium-term priority elements of each country's broader agricultural development policy document (e.g. the agricultural orientation law). The draft NAIPs were reviewed by a joint ECOWAS/African Union team and then again vetted by stakeholders at national "business meetings." By the end of 2011, eleven of the fifteen ECOWAS countries had fully reviewed and validated investment plans (Taondyandé et al., 2013). West Africa has been far ahead of the other regions of Africa in the CAADP process and is the only region where all the countries have signed compacts and almost all have completed investment plans.

The CAADP national plans generally involved a fair amount of repackaging of existing projects and programmes, notably the special initiatives that national governments had launched in response to the 2008 food price crisis. To the extent that national priorities had been reflected in previous agricultural planning efforts, it is logical that previous projects and programmes would reappear in the new plans. However, some of the repackaged elements represent the crash-programme approach of the past. As is inherent in any multi-stakeholder process, there was strong pressure to include many different activities and priorities.

The ECOWAS Commission for Agriculture in collaboration with IFPRI very much drove and coordinated the whole procedure thanks to their holding of workshops with all the national teams, providing technical assistance on the modelling and facilitating reviews of draft plans. This led many on the national teams initially to see the process as top-down, more owned by ECOWAS than by the country teams themselves.[132] Nonetheless, although some international consultants were used to help prepare the programmes, the ECOWAP and the national CAADP process mobilized West African technical expertise to much a higher level than many previous agricultural planning efforts (for example, the national agricultural mid-term investment plans, which were prepared by FAO for all the African countries), and this use of local expertise eventually led to a greater sense of national ownership.

132 For more details on the CAADP process, see Kimenyi, et al., 2012 and van Seters et al., 2012.

The NAIPs and the food price crises

The objective of ECOWAP/CAADP is to address the fundamental structural and policy problems that impede Agricultural productivity growth and competitiveness in the region (ECOWAS Commission, 2009b). The timing of its design, however, coincided with the rapid increase in world food prices. The timing had both positive and negative effects on the proposed programmes that emerged. On the positive side, the surge in world food prices and the belief by many analysts that the world had entered a new era of higher and more volatile food prices gave increased political impetus to boosting Agricultural production in the region. The global food crisis also helped mobilize donor funds to support the CAADP process.

On the negative side, the crisis led to a shift in emphasis at the time of programme design from long-term structural issues to more immediate actions aimed at lowering consumer prices and boosting Agricultural production. Most governments undertook crash programmes to expand production rapidly, such as Senegal's Grande Offensive Agricole pour la Nourriture et l'Abondance (GOANA) and Mali's Initiative Riz. These initiatives were designed quickly and generally outside of the on-going CAADP process, so that, in practice, the national CAADP programmes that emerged had to be built around these initiatives which were absorbing significant amounts of the countries' rural development budgets. This inclusion, plus pressure to achieve very high rates of agricultural growth in the short run in order to meet the MDG 1 by 2015, put greater emphasis in some of the NAIPs on short-term measures such as untargeted input subsidies to boost agricultural growth quickly than on longer-term investment in the building blocks of agricultural productivity such as improved infrastructure, technology development and diffusion, institutional reform, and strengthened human capital.

The 2008 food crisis and subsequent price spikes in 2010 and 2012 also elicited strong responses from the international community, with pledges of

increased support for African Agricultural development from the G8 and G20, the creation of the Global Agriculture and Food Security Programme (GAFSP) trust fund, and the launching of numerous bilateral and multilateral initiatives such as Grow Africa, the New Alliance for Food Security and Nutrition, and the African Agribusiness and Agro-industries Development Initiative (3ADI). All these programmes purport to align with the objectives of CAADP, and they bring important resources to help support the implementation of the NAIPs and the regional investment plan, which all depend heavily on external funding to cover the their investments (see discussion below). Yet all these external initiatives have their own deadlines and constituencies, and the need to meet these funding deadlines drove the timing of completion of the NAIPs and in some countries limited the involvement of non-state actors in the development of the plans (ROPPA, 2012b). The combination of these factors led some participants to believe that the ownership of the CAADP agenda was shifting away from West Africans and towards bilateral and multilateral organizations.[133]

Content of CAADP national programmes

Table 11.5 shows the shares of NAIP budget allocations across different activities for 12 countries for which detailed information was available to the authors of this report.[134] Because the different NAIPs do not use a standard classification system for budget line items, the placement of a planned expenditure in a particular category was sometimes arbitrary. For example, expenditures to promote sustainable soil management take place largely on individual farms and thus could also be classified under the farm-level production category, which includes mainly direct support to farmers in the form of subsidies on variable inputs, farm equipment and loans. Despite this difficulty in classifying some of the line items, Table 11.5 highlights some broad similarities as well as some striking differences across the different NAIPs.[135]

- ***Agrifood-system orientation.*** The countries vary in the degree to which their NAIPs focus on the farm-level versus the entire food system. At one extreme, Senegal devoted over 59% of its budget to farm-level production investments, with an additional 11% going to sustainable resource management, mainly at the farm level, while less than 6% was devoted to marketing and processing. On the other hand, Nigeria, Ghana and The Gambia have between 15% and 40% of their budgets devoted to off-farm parts of the agrifood system. In addition, Benin, Burkina Faso and Mali planned many of their investments on a value-chain basis that bridges both farm- and off-farm value-chain activities.

- ***Environmental concerns.*** Many of the NAIPs show a strong concern about sustainable natural resource management, as one might expect given the increasing environmental stresses facing West African agriculture. In addition to the investments in sustainable soil management shown in the table, there were also investments in sustainable water management (included under the infrastructure heading) and, for some countries, other sustainable resource management investments included in the "other" category, including management of resources shared across countries, such as transhumance routes and grazing areas.

- ***Capacity strengthening*** is a cross-cutting element in CAADP, and all the NAIPs have explicit capacity-strengthening activities or such activities embedded in the actions targeted at the farm and market levels (as is true for Nigeria and Ghana). The bulk of these capacity-strengthening activities are directed towards farmer organizations and professional and interprofessional organizations within the various value chains. Most countries also include some funds for strengthening the capacity of the inistry of Agriculture structures that are involved in CAADP implementation,

133 See the quote from the letter of the President of ROPPA to the President of the African Union Commission in the focus section below on stakeholder involvement in ECOWAP/CAADP.

134 The versions of the NAIPs for Burkina Faso and Côte d'Ivoire included in Table 11.5 were not yet validated at the time of this analysis.

135 The NAIP for Nigeria summarized in Table 11.5 represents a plan developed in 2010. As discussed in Appendix 11.1, in 2011 the new Goodluck Jonathan administration developed an Agricultural Transformation Agenda for Nigeria, which the country now considers its new CAADP investment plan. The Transformation Agenda has many similar elements to the NAIP shown in Table 11.5, but also some important differences. Unfortunately, the Agricultural Transformation Agenda document (Nigeria Federal Ministry of Agriculture and Rural Development, 2011) does not provide a detailed breakdown of its budget, so the older NAIP budget is included in Table 11.5. See Appendix 11.1 for details.

monitoring and evaluation; for example, over half of Niger's funding under this rubric is to improve the general governance capacity of local units of government in rural areas. Very few of the NAIPs allocate capacity-strengthening resources to the agricultural higher education that will be needed to produce the next generation of agricultural scientists and policy makers, and only some of the NAIPs plan investments in vocational education to strengthen skills related to the agrifood system.

- ***Research and extension.*** The share of the NAIPs' budgets dedicated to research and extension vary widely, from a low of less than 1 percent in Senegal to nearly 23% in Benin. In the majority of the countries, the bulk of the resources are budgeted for improved extension rather than research.

- ***Crisis prevention and management and social safety nets.*** Seven of the twelve NAIPs have programmes aimed at improving the countries' capacity to prevent and manage food crises, improve nutrition, and provide social safety nets. The two countries with the largest shares of their NAIP budgets going to social safety nets are Sierra Leone and Liberia, while The Gambia's largest share is dedicated mainly to the development of a disaster crisis management system. The inclusion of crisis prevention and management investments and social safety nets in many of the NAIPs seems to reflect a recognition that the CAADP agendas need to deal with disaster risks and their consequences, as part of an agricultural growth strategy.

- ***Other expenses*** planned in the NAIPs vary by country, sometimes involving investments in improving the policy environment and sometimes dealing with investments more specific to a particular country. For example, over half of the "other" budgeted expenses in the Ivorian draft NAIP deals with investments in the forestry and fishing industries, while Niger has a substantial investment in environmental management and management of water and grazing resources it shares with neighbouring countries. A quarter of Nigeria's total NAIP budget is dedicated to cadastral survey as part of a long-term programme to improve land records and improve tenure security in the country. Some of Liberia's "other" line item is dedicated to a similar effort.

Funding gap

A striking feature of all the NAIPs is how dependent they are on additional funds that need to be raised beyond the amounts that West African governments already have in hand or project will be provided by the private sector, including farmers. The NAIPs all express the hope that bilateral and multilateral funding agencies will fill the gap, which ranges from a low of 31% of the total NAIP budget for Niger to 90% for The Gambia. Some of the lower figures are misleading, however, in terms of countries' dependence on outsiders for financing the NAIPs. For example, of the 69.8% of the NAIP budget that the Niger government reports it already has on hand, 90% comes from donor funds. Thus, if fully implemented, the NAIPs would be overwhelmingly dependent on donor funds, raising a question of who really owns the programmes.

While Table 11.5 gives a broad overview of the NAIPs, more detail can be seen by looking more closely at four of them, which illustrate some of the points raised above. Appendix 11.1 examines the NAIPs of Senegal, Mali, Ghana and Nigeria, countries which are diverse in terms of their size, income levels, Francophone/Anglophone heritage, and vision for their agrifood systems; all these differences are reflected in the structure of their NAIPs. For example, Senegal's Loi d'Orientation Agro-Sylvo-Pastorale (LOASP) has a very strong import-substitution orientation and stresses a version of food sovereignty that approaches national food self-sufficiency;[136] the NAIP thus calls for the country to move quickly from being one of the largest rice importers in the region to a net rice exporter. In contrast, Mali's Loi d'Orientation Agricole (LOA), Ghana's FASDEP and Nigeria's basic policy documents emphasize both import substitution and export commodities, and their

136 In a publication aimed at explaining the LOASP to stakeholders, the ministry of agriculture and Water Resources defines food sovereignty as "a situation in which the country depends to the least degree possible on the exterior for its food" (Ministère de l'Agriculture et de l'Hydraulique (Sénégal), 2005).

Table 11.5 *Percentage allocation of NAIP budgets by activity**

Country	Farm-level production (crop + livestock + aquaculture)	Output and input marketing and processing	Sustainable soil management	Infrastructure	Capacity strengthening	Research and extension	Crisis prevention and management; safety nets	Other	Funding gap (%)
Benin	29.7[a]			42.2		22.9		5.2	71.9
Burkina Faso	36.3[b]		6.8	31.0	5.3	10.3	3.9	10.3	56.7
Côte d'Ivoire	26.5	3.3		17.5	4.3	18.8		29.6	89.1
The Gambia		40.5	4.3	24.1	5.4	4.1	15.5	21.6	90.0
Ghana	21.1	14.7	1.8	48.1		3.4	1.8	10.9	66.3
Liberia	28.3	2.0	8.4	27.1	6.8	5.7	12.1	21.7	81.5
Mali	38.0[b]			45.0	12.0	3.9	2.0	0.0	65.0
Niger	23.5		1.3	31.9	11.7	1.3		30.3	31.2
Nigeria	31.5	22.6	2.7	14.9		1.8		26.5	61.0
Senegal	59.4	5.7	11.1[c]	19.9	1.1	0.6		2.2	48.0
Sierra Leone	7.0			39.0	16.0	2.0	35.0	36.0	N/A
Togo	36.3		3.6	33.7	6.7	9.3	2.3	10.4	84.1

Source: Authors' calculations based on NAIP documents.
[a] Includes 11.8% specific to farm-level production and 18.3% for mechanization of both farming and processing
[b] Combined investment in farm-level and rest of value chain
[c] Includes management of soil and other natural resources
* The versions of the NAIPs for Burkina Faso and Côte d'Ivoire included in Table 11.5 were not yet validated at the time of this analysis.

NAIPs have a balance between export-product production and import substitution. While all four countries' policy documents emphasize that a key goal of agricultural development is to reduce poverty and increase food security, both Nigeria's and Mali's document also emphasize farming as a business and make specific mention (missing in Senegal's LOASP) of the role of large-scale commercial agricultural enterprises, including those involving foreign investors. The Malian, Nigerian and Ghanaian policies also emphasize more the importance of post-harvest parts of the value chains than does the Senegalese LOASP. The Ghanaian NAIP also stresses, more than the other plans, the need for intersectoral and inter-ministerial coordination of investments to boost Agricultural growth.

11.4.3 ECOWAP regional plan[137]

The regional programme developed by ECOWAS aims to complement the NAIPs by incorporating regional dimensions, managing inter-dependent relationships between countries and organising their cooperation on common issues in cases where the regional level allows capturing significant economies of scale. The programme combines an investment plan with policy and regulatory reforms regarding trade, standards, and market interventions. The first generation of subprogrammes is designed to cover the period of 2011 through 2014, after which they will be followed by a second generation of programmes.

ECOWAP's vision is that of "a modern and sustainable agriculture based on effective and efficient family farms and the promotion of agricultural enterprises through the involvement of the private sector. Once productivity and competitiveness on the intra-community and international markets are achieved, the policy should be able to guarantee food security and secure decent incomes for agricultural workers" (ECOWAS Commission, 2009c). The three major themes of ECOWAP are the following:

1. Increasing the productivity and competitiveness of West African agriculture.

137 This section synthesizes material presented in ECOWAS Commission, 2009a; ECOWAS Commission, 2010b; ECOWAS Commission, 2010a, and République du Sénégal, ECOWAS and NPCA. 2010.

2. Implementing a free-trade area within West Africa, thereby creating a truly regional market for Agricultural goods and services within the 15-member-state zone, in line with the principles established in the ECOWAS treaty.

3. Adopting a common trade regime with countries outside the region. Taken together, themes 2 and 3 imply the creation of a West African customs union (see Chapter 12).

ECOWAP also establishes implementation guidelines that define the scope and limitations of regional versus national and local actions based on the principle of subsidiarity and calls for the use of participatory approaches and the adherence to principles of consultation and shared responsibility during its implementation.

ECOWAS's original intent was to develop the regional component of the ECOWAP/CAADP programme after the NAIPs were completed in order to identify more clearly the areas where regional action was needed to complement national actions and to capture regional economies of scale. In practice, delays in the development of the NAIPs, combined with funding deadlines from the development partners, led to the development of the regional agricultural investment plan (RAIP) simultaneously with the NAIPs.

The regional ECOWAP/CAADP programme is to be implemented under the guidance of ECOWAS's Department of Agriculture, the Environment and Water Resources, referred to by its French acronym, DAERE. The programme involves three components:

1. Three "mobilising and federating programmes" focused on investments to (a) promote strategic products/value chains for food sovereignty, (b) help create an overall environment conducive to regional agricultural development and (c) reduce vulnerability to food insecurity and promote sustainable access to food.

2. A complementary set of policy measures to spur adoption of the programmes; and

3. The institutional implementation framework, including creation of the ECOWAS Development Fund (ECOWADF) to finance the programme, a new Regional Agency for Food and Agriculture, a Consultative Committee of stakeholders, an interdepartmental Committee on Food and Agriculture within the ECOWAS commission, and a monitoring and evaluation system.

Unlike the NAIPs, the RAIP does not establish specific agricultural production targets since the RAIP is intended to complement the NAIPs, which focus on production at the national level. The regional programme is heavily dependent on outside funding; of the US$900 million budget for five years, ECOWAS has pledged to contribute at least US$150 million (17%), with the remaining 83% to come from outside sources.

The three mobilizing programmes

Promotion of strategic products for food sovereignty. This mobilizing programme aims at enhancing on-farm productivity and reducing food imports for certain key food products deemed "strategic" to the region.[138] It focuses on products that (1) demonstrate a significant production potential within the zone, (2) correspond to the changing dietary habits of ECOWAS consumers and (3) are subject to large imports from outside the region that can be substituted by taking advantage of the complementarities of the production basins within the zone and promoting regional trade. Based on these criteria and on a concern to keep the number of commodities limited so as not to overload ECOWAS's managerial capacity, the programme focuses on six value chains for the initial five-year programme: rice, cassava, maize, livestock, meat and related products, and fish.

The regional actions envisioned under this programme include measures to enhance access to inputs and small-scale equipment and develop input markets critical to the production of these crops, enhance animal health, upgrade livestock markets and strengthen management of shared pasture and transhumance routes across countries.

138 ECOWAP documents never explicitly define what is meant by "food sovereignty", but in practice this term implies some degree for regional production over imports. The policy debate among member states revolves over the degree of protection (e.g. under the CET) this preference implies.

Among the inputs, improving access to fertilizer stands out both in terms of budget allocation and number of activities envisaged.

Promotion of an environment conducive to regional agricultural development. The main objective of this programme is to enhance the overall policy environment so that it is more conducive to the development of agricultural and agrifood commodity chains. It seeks to do this through four programme components: (1) improving the business environment of agrifood value chains through promoting regional trade in food products; (2) adapting to climate change through strengthened regional research networks to develop more drought-resilient varieties and through improved capacity to manage shared water resources; (3) operationalization of an information and decision support system (ECOAGRIS) on food and agriculture in the region, including improved capacity to monitor production systems, the food and nutrition situation, environmental and macroeconomic conditions, and agricultural policies across the region; and (4) strengthening institutional and human capacity through regional support to national capacity-building efforts, strengthening the coherence of regional policies, and improving the management of ECOWAP.

The reduction of food vulnerability and the promotion of sustainable access to food. This programme aims to develop and test improved approaches for social safety nets in urban as well as rural areas, improve the current regional crisis-prevention and management systems – for example by extending the system currently in use in the Sahelian countries to the entire ECOWAS zone and adapting it to deal more adequately with system-wide crises like the 2008 world food crisis – and promote regional food security instruments such as a regional food security reserve. The approach in many of these components is experimental, based on pilot testing of different approaches (e.g. to social safety nets) in different countries, drawing on previous national experiences, and creating platforms to share and learn from these experiences. The inclusion of this mobilizing programme in the RAIP implicitly recognises that an agricultural growth agenda, to be politically palatable, needs to address not only how to improve production incentives for Agriculture but also how to improve the access of vulnerable populations to food. It also recognises that food insecurity in West Africa is not just a rural problem but is becoming increasingly an urban problem as well.

The implementation of the plans is to be facilitated through a number of policy instruments, such as regional co-financing of certain national actions in exchange for harmonization of those actions across countries, and the creation of new institutions within ECOWAS to implement the programme, such as a Regional Technical Agency for Food and Agriculture. Boxes 11.1 and 11.2 discuss these policy instruments and new institutions.

11.5 Impacts of the "rediscovery of Agriculture" especially ECOWAP/CAADP

The ECOWAP/CAADP process aims to give greater priority to Agricultural growth as a central pillar of the region's economic growth strategy; develop a more coherent, sector-wide and inclusive process of strategy development and implementation; increase the proportion of national budgets devoted to agricultural development; and improve incentives to farmers – all with the intent of spurring Agricultural growth. While the NAIPs and the RAIP are only beginning to be implemented and it is thus too early to provide much assessment of their long-term impact on long-term Agricultural growth, this section provides some preliminary assessment of the programme's success in addressing these various objectives in the context of broader trends in the "rediscovery of Agriculture" era since 2000.

11.5.1 Raising the visibility, coherence and inclusiveness of agricultural policy

The ECOWAP/CAADP process has been successful in giving Agricultural development greater visibility on the political agenda of many West African countries and moved them toward more sector-wide and regionally consistent Agricultural policy and programme development. For example, the diagnostic reviews carried out as part of the

Box 11.1 New ECOWAS institutions for the implementation of ECOWAP

ECOWAS created the following institutions in 2012-13 for the implementation of the regional programme:

- ***The Advisory Committee on Food and Agriculture***, which involves a wide range of stakeholders, including representatives of producer organizations and external donors, to advise the ECOWAS Department of Agriculture, the Environment and Water Resources on the programme and review progress.

- ***The Inter-departmental Committee on Food and Agriculture***, which will include representatives from ECOWAS Departments outside of Agriculture (for example, External Trade, Industry, and Infrastructure) that supervise regional programmes that are critical to the development of Agriculture, including agroprocessing.

- ***The ECOWAS Agricultural Development Fund (ECOWADF)***, which is housed at the ECOWAS Bank for Investment and Development (EBID) in Lomé. The fund is to receive and manage the funds from ECOWAS and its development partners that finance the regional programme.

- ***The Regional Technical Agency for Agriculture and Food***, based in Lomé close to the Fund and which will act as the management entity for implementation of the programme. Given that the Agency is an entirely new entity, with limited personnel, it will focus primarily on contracting with regional technical cooperation organizations, private enterprises, and networks of private-sector actors for programme implementation rather than implementing programmes itself.

- ***The creation of a framework for monitoring and evaluation***, to be coordinated through ECOWAS's Monitoring-Evaluation Unit, with links to ReSAKSS, the new ECOWAS Agricultural Information System (ECOAGRIS), and national CAADP monitoring and evaluation units.

Box 11.2 ECOWAP policy instruments

To facilitate implementation of the investment programme, ECOWAP proposes five categories of policy instruments:

- ***Co-financing*** of actions taken at the national level to promote agricultural intensification, in exchange for some harmonization of approaches. An example is a proposal under discussion to co-finance fertilizer subsidies if these are redesigned to be more targeted to small farmers (e.g. based on a voucher system), if these are linked to an agro-dealer system that would be strengthened so that it could provide technical advice to farmers and if rates of subsidization are harmonized across countries.

- ***Community-wide measures that focus on fiscal and tariff policies.*** Fiscal measures involve measures such as VAT exemption for agricultural inputs and possible subsidies or tax exemptions on investments in processing industries and fertilizer plants. Tariff policies involve setting the CET at 0% for key Agricultural and veterinary inputs.

- ***Value-chain coordination measures.*** Examples include creating a joint public-private committee to run the regional programme for co-financing the measures for agricultural intensification, pushing for harmonization of investment codes to foster greater private-sector investment in irrigation, and supporting the creation of regional associations of interprofessional committees that would address ways of improving coordination within individual value chains.

- ***Regulatory instruments for agricultural markets within the Community***, including implementation of the CET and safeguard measures (discussed in Chapter 12) and storage instruments. The latter include such measures as creating incentives for greater private storage through creation of regionally certified warehouses, from which traders would be allowed to move product to any member state; promotion of private warehousing systems and tradable warehouse receipts (warrantage); encouragement of banks to lower interest rates for inventory credit; and harmonization of national standards for private storage. The storage initiative would also involve promotion of the mutualization of at least some portion of national security stocks to serve as a regional food security reserve, linked to safety-net programmes operated by the member states. The food security reserve initiative would also involve greater contracting with private-sector warehouse operators for the management of public stocks and the improvement of statistics on inventory levels throughout the zone (see the discussion of price volatility in Chapter 12).

- ***Improved information systems*** on food security to help inform the design and management of the programme focused on reducing food insecurity in both urban and rural areas.

CAADP stock-taking exercise helped to identify many policy incoherencies and duplications of effort. The ECOWAP regional programme and the PAU also represent important efforts to deal with issues that can be most effectively addressed at the regional rather than national level. In the process, they helped to mobilize and coordinate many donors' support around a common set of objectives as laid out in the NAIPs and RAIP.

ECOWAP also constitutes an important step towards harmonising the objectives of various intergovernmental organizations in the region, which have been characterized by a proliferation and duplication of policies and programmes. For example, in the mid-2000s, there were 45 different organizations, with overlapping mandates, working on regional economic integration in West Africa, leading to what Broadman et al. describe as a "spaghetti bowl of regional organizations" (Broadman, et al., 2007).

In many cases ECOWAP/CAADP processes involved a broader group of stakeholders than had previously participated in the formulation of agricultural policies and programmes. The degree of stakeholder engagement varied considerably by country, with farmer groups probably having had greater voice in the design of the regional programmes than many of the national programmes (van Seters, et al., 2012; see also focus section B). In addition, by frequently bringing together the national CAADP teams for joint workshops during the process of developing the NAIPs, the ECOWAS Commission helped to create a community of practice across the countries that shared experiences and learned from each other. This probably not only improved individual NAIP design but also has laid a foundation for on-going learning from each other as the national and regional programmes are implemented.

11.5.2 Impacts on the level of public expenditures on Agriculture

As part of the Maputo Declaration of 2003, African governments pledged to move towards allocating a minimum of 10% of government budgets to

agricultural development. These investments were to be part of an effort to achieve a sustained 6% annual growth rate in the agricultural sector on average across the continent in order to meet MDG poverty reduction goals. The individual growth rates needed per country vary depending on its extent and depth of poverty.

Data on the levels of public expenditures on Agriculture in recent years are available from ReSAKSS and from public expenditure reviews carried out for Ghana, Mali and Burkina Faso in 2013. The latter also provide information, discussed in the next section, on the quality of those expenditures. In assessing the level of spending on Agriculture, one first needs to define what qualifies as Agricultural spending. The CAADP reporting of budget expenditures on Agriculture uses the UN's Classification of the Functions of Government (COFOG), which covers expenditures through Ministries of Agriculture, Fisheries, Livestock, and Forestry, but not expenditure that contribute to broader rural development like rural education, health, and roads if those are financed through other ministries (Komorowska et al., 2012). Thus, the CAADP 10% target may not be an entirely reliable indicator of national governments' commitment to Agricultural development. In contrast, the FAO's Monitoring African Food and Agricultural Policies (MAFAP) project reports both on expenditures that are consistent with the COFOG method (which MAFAP terms "agriculture-specific" expenditures) and additional spending on rural education, rural health and rural infrastructure including roads, energy and potable water, which it terms "agriculture-supportive" expenditures. The combination of agriculture-specific and agriculture-supportive expenditures is sometimes referred to in the literature as COFOG+ expenditures. Under this broader definition, for example, Burkina Faso devoted 14% of its budgetary expenditures to rural development in 2010, in contrast to just under 10% to Agriculture as defined by COFOG (MAFAP, 2013). Although in theory CAADP has officially adopted the COFOG approach, in practice many ECOWAS countries include some agriculture-supportive expenditures in their CADAP reporting, and in 2013 the head of NEPAD publicly endorsed moving CAADP to using the COFOG+ approach in evaluating countries' performance relative to the Maputo target.

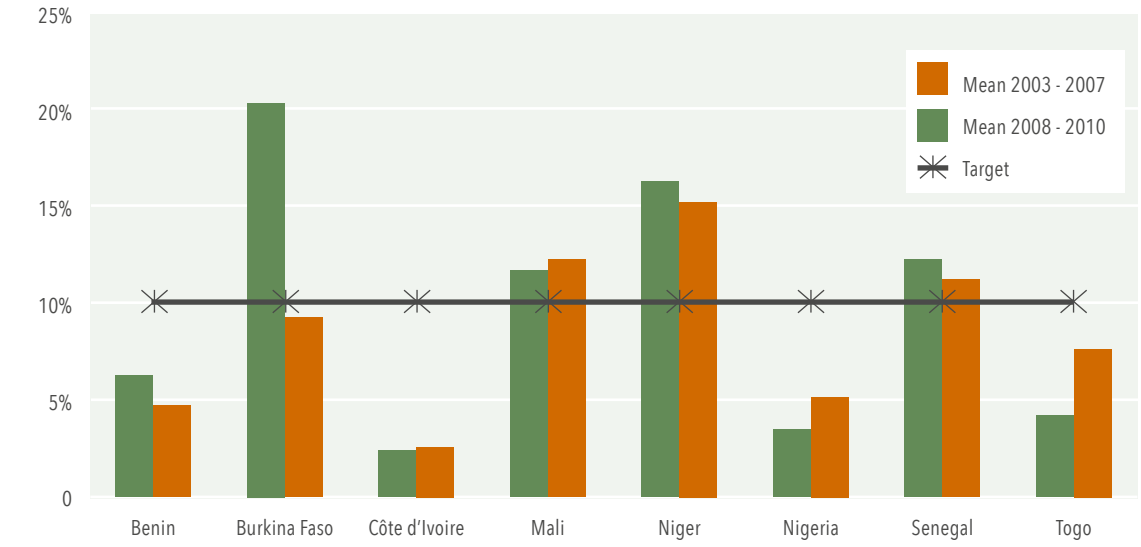
Using the COFOG definitions, by 2010, three of the eight ECOWAS countries for which complete data are available (Mali, Niger, and Senegal) allocated at least 10% of their government budgets to agriculture over the period 2008-10; Burkina Faso fell just under the 10% target after having met it in the period 2003-07 (Figure 11.2). Yet for Burkina Faso, Niger and Senegal (three of the four highest performers with respect to the Maputo target shown in Figure 11.2), the share of the budget going to agriculture actually fell between the two periods. Looking at a longer period from 2003 to 2009 for a larger set of countries (Appendix Table 11.4, p.309), one also notes an increasing share of the budget going to Agriculture for the powerhouses of Nigeria and Ghana, but an declining share in Côte d'Ivoire. Indeed, a 2013 public expenditure study for Ghana (World Bank, 2013a) reports that Ghana met the 10% guideline in 2010 and 2011, although this figure seems to include at least some COFOG+ expenditures.

Thus, the increased rhetorical attention to Agriculture in the post 2000 era, including the CAADP period, has translated into increased relative budget allocations to agriculture in some key countries. The pattern, however, has been very inconsistent, with only a few ECOWAS countries meeting the 10% Maputo target and several decreasing their budget shares to agriculture over the period 2003-09 (Benin et al., 2010; Appendix table A11.4, p.309).

11.5.3 The quality of public expenditures

At least equally important to the budget share that ECOWAS countries devote to Agriculture is the quality of those expenditures – i.e., the allocation of the agriculture budget and actual expenditures among different activities. FAO's global review of evidence regarding returns to different types of public investments in agriculture shows that investments with public-good characteristics such

Figure 11.2 *Share of government budget allocated to Agriculture (%)*



Source: Taondyandé, et al., 2013

as agricultural research and development and rural infrastructure have much higher impacts on agricultural growth and poverty reduction than do investments in private goods such as subsidies for inputs and productive assets (FAO, 2012a).

The analysis of NAIP planned expenditures (Table 11.5, p.284) indicates considerable variation across countries with respect to broad categories of planned expenditures, but with a strong emphasis in most countries on various types of infrastructure, particularly for water control. Some countries, however, appear to be tilting actual expenditures, particularly in the high-price environment since 2008, towards on-farm subsidies, perhaps to try to offset trade policies that have been tilted towards consumers to try to ensure their access to cheaper staples (MAFAP, 2013). For example, the MAFAP public expenditure studies for Mali and Burkina Faso indicate that while both countries have been close to or exceeded the 10% CAADP budget target throughout the 2000s, in 2009 (the last year for which comparable data are available), the countries only allocated between 4% (Mali) and 5% (Burkina Faso) of their agricultural expenditures to agricultural research and under 2% to extension. Payments to producers (largely subsidies on capital and variable inputs) absorbed the largest share of any item in the budget (33% in Mali and 27% in Burkina Faso) (Yameogo et al., 2012; Komorowska, et al., 2012). In Ghana, fertilizer subsidies constituted 16.8% of the total budget of the Ministry of Food and Agriculture (MOFA) in 2010, equivalent to over three-quarters of MOFA's investment budget for that year (World Bank, 2013a). While farm-level capital investments (as in Burkina Faso and Mali) certainly contribute to growth, one can pose the question of whether the relative allocation of resources to farm-level subsidies versus research and extension is likely to lead to the long-term sustained agricultural growth rates and structural transformation of the agrifood system called for in the NAIPs.

Planned expenditures in Senegal, as outlined in the budget of the NAIP, illustrate the same point, with less than 6% of its budget its allocated to strengthening marketing and processing compared to nearly 60% to boost farm-level production, largely through input subsidies (see Appendix Table A11.1, p.303). The NAIPs are generally silent about any strategy to phase out such subsidies over time to allow a shift to support more of the post-harvest elements of the food system that will need to evolve rapidly to meet the

changing food demand in the region. The RAIP advocates a movement to more targeted, voucher-based approaches to input subsidies, yet even such programmes often have faced problems in other parts of the world (see Focus Section C, p.315).

Almost all of the NAIPs and the RAIP identify the problems of access to financing as a serious constraint to farmers, traders, and input providers. While some of the plans propose expenditures on loan guarantees and other measures to reduce the risk of such lending, several of the plans (e.g. those of Côte d'Ivoire and Sierra Leone) put primary emphasis on interest-rate subsidies. Global and regional experience has shown limited effectiveness of interest-rate subsidies in terms of targeting, sustainability and efficiency. Subsidised credit tends to be captured mainly by better-off farmers (and non-farmers) and repayment rates are usually low. Politically motivated lending decisions and frequent debt forgiveness programmes have created a culture of non-repayment in rural areas that increases the reluctance of financial institutions to lend to agriculture. Subsidised credit may also undermine rural savings mobilization and encourage the substitution of capital for labour in farming and processing (Adams et al., 1984; FAO and GTZ, 1998; Nagarajan and Meyer, 2005).

Loan guarantees also have a chequered history, mainly due to poor design and implementation (Meyer, 2011). Nevertheless the RAIP proposes some improvements to such tools relative to how they have been used previously in the region (e.g. limiting the amount of loan guarantees to reduce incentives for default). Overcoming the finance challenge in agricultural value chains requires a co-ordinated and coherent approach with broader policies and programmes of financial sector development and the respective key stakeholders.

11.5.4 Impacts on farmer incentives

Table 11.1 shows that in the early period of the "rediscovery of Agriculture" (2000-2004), the price incentives facing farmers in Ghana, Nigeria, and Senegal overall remained close to the trade-neutral position to which they had moved in 1995-99, but farmers remained strongly taxed, especially for export crops, in Côte d'Ivoire. In the other three countries, export crops also were taxed, and import-competing agricultural products received net subsidies in all the countries except Nigeria, where they shifted from being subsidized in the previous period to being modestly taxed in 2000-04. For the four cotton-producing countries shown on Table 11.2, the changes were much more dramatic, with net taxation rates, as indicated by the NRAs, coming down dramatically (and in two cases becoming slight subsidies) during the 2000-05 period.

Data for 2005 through 2010 on farmers' price incentives are available from the FAO's MAFAP project for four West African countries – Nigeria, Ghana, Burkina Faso and Mali. At the time this AGWA report was being written, MAFAP had completed calculations of agricultural incentives using nominal rates of protection (NRPs), which measure the degree of implicit taxation or subsidy based on differences between domestic output prices and a reference price (typically the world price). The NRPs do not, however, take into account taxes and subsidies on inputs, as do the nominal rate of assistance measures (NRAs) cited in Tables 11.1 and 11.2.[139] The "observed NRPs at the farm level", presented in Table 11.6, also do not take into account effects of any overvaluation of exchange rates, which for the CFA franc countries may have been as high as 20% during the period under review (MAFAP, 2013). Thus, the figures in Table 11.6 are not strictly comparable to the NRA figures in Tables 11.1 and 11.2, but they do illustrate trends in policy-induced implicit and explicit taxation of producers, based on output prices, of selected commodities in the four countries.

Table 11.6 reveals an overall pattern of net taxation of farmers, based on policy-induced distortions of output prices, for most of the commodities in most of the countries. Furthermore, there is no broad trend across all countries towards lower taxation over time, as had been the case from the mid-1980s to the early 2000s. In Burkina Faso, for example, the net taxation fell for six commodities

139 MAFAP intends to calculate NRAs in these countries at a later stage in its analysis.

between 2005 and 2010, rose for three and was unchanged for one; while in Mali it increased for six and declined for only two. Similarly diverse patterns were seen for Ghana and Nigeria. Looking across commodities, cotton was highly protected in both Mali and Burkina Faso during this period, continuing the shift noted in the earlier tables from heavy taxation towards subsidization. In these two countries, state-dominated cotton companies pushed domestic prices above the equivalent world prices as world prices fell in the mid-2000s. In Burkina Faso, rice was also protected, as was palm oil (an import substitute). In contrast, most exports (gum Arabic, cattle and onions) in Burkina Faso were heavily taxed by existing policies. In Mali, all the cereal crops were implicitly taxed, a result, according to MAFAP, of export bans the country imposed at various times during this period to

Table 11.6 *Observed nominal rates of protection at the farm level, 2005–10*

Country	Commodity	2005	2006	2007	2008	2009	2010	Average 2005-10
Burkina Faso	Arabic gum	-35.7	-33.7	-29.2	-23.5	-25.7	-23.5	-28.5
	Cattle	-41.0	-49.0	-37.1	-31.2	-28.2	-30.1	-36.1
	Cotton (Seed cotton)	0.6	6.5	41.1	45.8	61.3	65.5	36.8
	Groundnuts (with shell)	19.5	13.2	-16.1	-47.5	33.4	-5.3	-0.5
	Maize all	-16.4	-34.6	-15.8	-15.8	-13.9	-23.0	-19.9
	Onions (incl. shallots)	-78.9	-41.0	-8.1	-47.3	-47.4	-65.2	-48.0
	Palm oil	19.1	20.6	32.1	57.0	22.5	34.9	31.0
	Rice (paddy)	30.6	14.9	38.3	34.0	15.5	29.0	27.1
	Sesame	31.6	25.9	-15.8	-32.1	-15.1	-9.1	-2.4
	Sorghum	0.1	39.6	36.2	3.0	-16.5	16.0	13.0
Ghana	Cassava (fresh)	-56.0	-38.9	-54.8	-46.3	-9.0	-39.9	-40.8
	Cocoa beans	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1
	Groundnuts (with shell)	-21.1	-12.4	-53.4	-50.3	-12.8	1.5	-24.8
	Maize	-10.5	-30.6	-54.6	-22.9	10.5	-57.0	-27.5
	Palm oil	-15.3	-10.2	-22.6	-15.5	-20.8	-18.3	-17.1
	Rice (paddy)	49.7	82.9	85.1	81.1	3.3	-10.2	48.6
	Sorghum	-21.0	-43.4	-32.7	-7.6	-3.4	-31.9	-23.3
	Yam	-53.1	-62.1	-56.4	-52.7	-48.7	-29.6	-50.4
Mali	Cattle	10.2	0.1	-21.9	-12.6	-19.1	-20.3	-10.6
	Cotton (Seed cotton)	68.5	23.3	63.8	54.1	212.9	31.7	75.7
	Cow milk	0.8	-6.6	-13.8	-23.0	11.5	-11.2	-7.1
	Groundnuts (with shell)	31.3	6.1	-0.5	-20.9	-17.2	-32.0	-5.5
	Maize all	-8.1	35.1	-24.9	8.3	-20.3	-27.8	-6.3
	Millet	23.9	-34.7	-53.8	-31.0	-61.6	-11.1	-28.1
	Rice (paddy)	3.0	-4.5	-3.8	-17.1	-12.3	-32.4	-11.2
	Sorghum	-37.9	-41.7	-2.2	-26.5	-57.8	-13.0	-29.9
Nigeria	Cassava (fresh)		-0.4	-0.2	1.0	0.7	1.8	0.6
	Cocoa beans	-28.3	-14.6	-15.8	-27.1	-63.5		-29.8
	Maize all			-6.8	-9.3	-8.9	-22.0	-11.7
	Palm oil	-68.7	-64.6	-60.9	-24.2	-31.9	-40.6	-48.5
	Rice (paddy)		30.1	-44.9	-74.4	-75.1	-68.1	-46.5
	Sorghum	-49.3	-58.8	-47.3	-45.2	-65.1	-66.1	-55.3

Source: MAFAP data base.

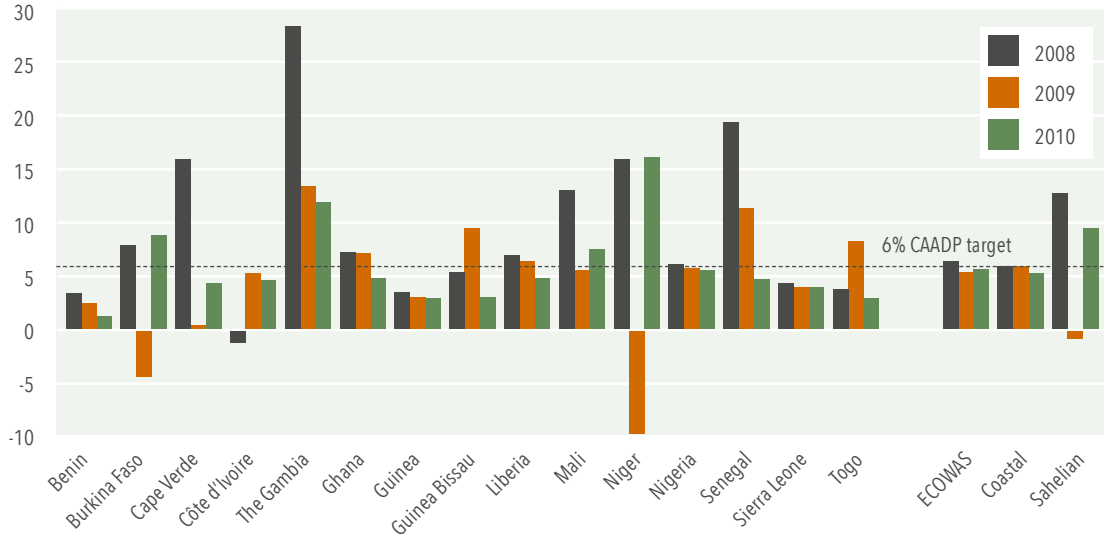
hold down domestic consumer prices. In Ghana, rice (an import substitute) was strongly subsidised, while cocoa (the largest export among the products listed) faced a trade-neutral policy. In Nigeria, among the commodities listed, only cassava faced trade-neutral policies. It appears that net taxation of palm oil declined over the period in Nigeria but that of cocoa, another important export, increased. Paddy rice faced increasing levels of taxation over the period, perhaps reflecting Nigeria's policy, discussed in Chapter 10, of fostering imports of rough and brown rice to allow domestic rice mills run closer to capacity.

If data were available to take into account the rise over the period of input subsidies (i.e. to allow for the calculation of NRAs rather than NRPs), the levels of taxation as shown in Table 11.6 would likely be less. Yet it is not evident from the data available that farmer incentives have strongly improved during the 2005-10 period. Nor is it clear that, in contrast to the earlier period, there is a uniform pattern of protecting import substitutes and taxing exports. The net taxation of producers of the commodities shown in Table 11.6 likely reflects in part the political need for governments to hold down food prices for the growing number of the urban poor, particularly during the post-2008 period when the prices of both food and other basic necessities such as energy rose rapidly on international markets. As noted earlier, it appears that governments may have tried to compensate farmers for this use of trade policy to favour consumers by instituting the programmes of input subsidies.

11.5.5 Impacts on production and per capita incomes

The ultimate objective of increased government expenditures and improved policies are to increase production and incomes, thereby contributing to improved food security and poverty reduction. Figure 11.1 (p.271) indicates that over the period 2000-11, when agriculture came back on the development agenda of most West African countries, growth rates (in physical terms) of several key commodities have been positive but under 6% per year. In more recent years, however, the value of agricultural production in the region has increased, due to both greater physical output and higher prices. For example, 7 of the 15 ECOWAS countries achieved the 6% growth rate in 2009; however only four were able to maintain that rate in 2010 (Taondyandé, et al., 2013). Yet to achieve the CAADP poverty reduction goals, the agricultural growth rate needs to exceed 6% every year, while a characteristic of most West African countries is strong year-to-year fluctuations in the growth

Figure 11.3 *Agricultural growth rates in 2008-10 in the ECOWAS countries (%)*



Source: Taondyandé, et al., 2013.

rate, linked in part to variable weather conditions (Figure 11.3).

Per capita income growth in the region has also improved markedly since 2000. Table 11.4 shows that the annual growth rate of GDP per capita in the period 2000-10 improved relative to the 1986-2000 period in 13 of the 15 ECOWAS countries, was unchanged in two and fell only in one (Guinea-Bissau). Particularly strong performance was registered in Nigeria, Ghana, Cape Verde and Sierra Leone, while the poorest performers were Liberia and Côte d'Ivoire, countries undergoing civil wars. Like agricultural growth, per capita growth has also increased sharply in recent years (Table 11.7). Yet only in Ghana is income growing fast enough to meet the MDG 1 goal by 2015 (ibid).

While performance with respect to agricultural output and average per capita GDP has clearly improved in recent years, the average growth rate targets for CAADP mark a very strong break with the historical pattern. The 6% sustained agricultural growth target is particularly ambitious. For example, the NAIPs of Senegal, Mali, and Nigeria (see Appendix to Chapter 11, p.303) call for the countries to achieve, almost instantaneously, rates of growth in selected commodities or value chains that the countries have never before attained, and then to sustain those rates over time in a region where year-to-year production variability is the norm. While some of these rates may be technically feasible, the past record gives little confidence that the institutional and incentive structures in place in these countries will lead to their achievement.

The setting of production targets in most cases appears to have involved working backwards from externally imposed constraints of meeting the MDG 1 poverty reduction goal. Analysts used computable general equilibrium (CGE) modelling first to calculate the overall economic growth rate needed to meet MDG 1 by 2015 or in some cases, when that seemed impossible, by 2020. Once that required economic growth rate was established, the analysts then calculated the agricultural growth rate needed to achieve the overall economic growth target. The CGE models were then used to determine the growth rates needed in the target value chains to achieve the desired overall agricultural growth rate. This "working backwards" approach is in contrast to starting with the current state of the existing value chains, then estimating, based on an inventory of available technologies and possible institutional innovations, what would be a feasible future growth rate and finally calculating the implications of that growth rate for growth of the agricultural sector and the whole economy as well as achievement of MDG 1.[140] As discussed below, setting these very ambitious production targets had major implications for the structure of public spending on agriculture. While setting ambitious targets can be part of a strategy to mobilize increased efforts to boost production, there is a danger that setting overly ambitious targets can create unrealistic expectations among African governments, donors, and the general public. The expectations, if unmet, can in turn lead to disillusionment with an agriculture-led development agenda, engendering yet another set of policy reversals.

Table 11.7 *Average annual growth rates of GDP/capita, 2008–11*

Country	Average growth rate (%)
Benin	0.5
Burkina Faso	2.1
Cape Verde	4.1
Côte d'Ivoire	-1.0
The Gambia	0.8
Ghana	6.2
Guinea	0.4
Guinea-Bissau	2.6
Liberia	6.5
Mali	1.4
Niger	0.9
Nigeria	4.4
Senegal	0.4
Sierra Leone	2.6
Togo	1.5

Source: World Bank, Africa Development Indicators, 2013

140 As noted in Appendix 11.1, the production increases called for in Ghana's NAIP are more modest than those in the NAIPs of Senegal, Mali and Nigeria. This may have resulted from Ghana already being on track to meet the MDG 1 goal by 2015 and thus not needing to set unrealistic goals in its NAIP to try to achieve that target.

11.6 Do the CAADP policies and investments address the key demand and structural challenges facing West African Agriculture?

This section analyses the degree to which the CAADP programme addresses the key challenges posed by the changing nature of consumer demand and the structural changes needed to elicit a stronger supply response to that changing demand.

11.6.1 Responding to shifting consumer demand

On the demand side, are the policies and programmes consistent with:

- The changing mix of commodities demanded in the region?
- The demand from consumers (both in the region and the export market) for higher quality and safer products?
- The demand from processors and exporters for reliable volumes at consistent quality?
- The need to address the growing number of low-income consumers whose food security is endangered by food price volatility?

Commodity mix. The commodity focus of the initial ECOWAP Mobilizing Programmes of the Regional Programme (rice, maize, cassava, and livestock, meat and related products, and fish) reflects well both the broad priorities of many of the national programmes and the changes in consumption and trade patterns discussed in Parts I and II of this report. One might argue that the regional programme ignores other commodities, such as fruits and vegetables, where demand is likely to rise rapidly and where regional trade opportunities exist, but keeping the focus on a small number of staples during the first phase of the programme makes sense from an implementation standpoint. The orientation at the regional level is clearly towards import substitution, consistent with regional concerns about reducing import dependence, but the focus solely on import-substituting products raises the question of whether the implicit taxation of export crops to subsidize import-substituting agricultural products seen in the past will continue or even accelerate. Some of the national investment programmes, however, such as those of Nigeria and Ghana, give some emphasis to export crops in cases where the countries have an apparent comparative advantage and where export demand remains strong.

Quality and food safety. While the commodity focus responds well to shifting consumer demand patterns, it is less clear that the programmes put sufficient emphasis on the shifting quality demands emerging in the subregion – particularly for higher levels of food safety and product quality. Ensuring food safety, for example, will be a growing challenge as urban consumers increasingly count on others to grow and prepare their foods and as they shift to eating more perishable products like vegetables and dairy products as their incomes increase. The focus-group interviews discussed in Chapter 7 revealed that urban consumers in Ghana and Nigeria are increasingly concerned about food safety and the lack of reliable labelling and other information about the healthfulness of the food they consume. Food safety and quality are important from a public health and from an agricultural market development perspective. However, although most of the NAIPs make passing reference to food safety, actions to address it receive few resources from the agriculture budgets. A few NAIPs, such as that of Ghana, set up mechanisms for interministerial coordination to address such issues, but many do not spell out how they will link with health departments to address food safety. Similarly, most NAIPs allocate only a small share of their investments to strengthening the ability of small- and medium-scale agroprocessors to meet public and private standards, e.g. through improved packaging, quality assurance and market development or discuss how the NAIPs will coordinate with other programmes that aim to do so.

Ensuring product quality and quantity – the role of wholesaling. An important element in improving consistent quality, both for consumers and processors, will be strengthening the agrifood wholesaling system, as aggregation of raw product and its

segregation into lots of homogeneous quality is a key role of wholesalers. Wholesale modernization has played a key role in transforming the food systems in Asia over the past ten years (Reardon, et al., 2012). In West Africa, rapid urbanization and rising incomes are putting tremendous pressures on food systems to deliver reliably the quantities and qualities of foods demanded by the growing cities. Agroprocessors, modern retailers, and food service firms increasingly are demanding consistent and reliable supplies of foods for their operations. While the overall CAADP programme has an element ("Pillar 2") devoted to market development, in practice, the regional CAADP plan and many of the national plans put most of their market development emphasis on farmer-first handler relationships and the role of cooperatives in marketing farmers' products. At the regional level, however, the proposed programme to develop regionally certified warehouses could contribute to strengthening the wholesaling function and quality control for selected staples. Greater attention to public-private partnerships to foster increased public and private investment in wholesaling infrastructure and in innovative business practices (e.g. as called for in Ghana's METASIP) are needed in many NAIPs to help to address what is likely to be increasingly congested urban food marketing systems in the coming ten years.

Safety nets. Several of the NAIPs and the RAIP include components to address food crisis prevention and management and/or the development of improved social safety nets. Their inclusion in the plans represent recognition that in an environment in which consumers spend 38% to 61% of their income on food, an Agricultural growth strategy cannot be designed independently of the need to develop sustainable safety nets. If such safety nets are not in place, governments will face strong presure from consumers during periods of hig prices to take actions that are inimical to agricultural growth (imposing export bans and price controls, subsidising imports, etc.). The RAIP, in particular, has a component aimed at learning from the many different approaches to national safety nets and crisis management that have been used or are planned in the region as well as in other parts of the world in order to develop more widely applicable approaches in West Africa.

11.6.2 Structural challenges of supply

Previous chapters have highlighted the need for policies to (1) capture regional economies of scale in order to drive down input costs to farmers and agroprocessors and develop more efficient research and outreach systems; (2) support collective action by actors throughout the value chains to foster more cost-effective raw-product assembly and improve vertical coordination; (3) pay adequate attention to off-farm constraints in the agrifood system as well as farm-level constraints; and (4) strike a balance between addressing short-run constraints to expanding production and resolving longer-term structural constraints. A key element in addressing the longer-term structural constraints is developing clearly articulated links with policies and programmes in other sectors that affect Agricultural development but that fall outside the mandates of agricultural ministries (e.g., those captured in the COFOG+ expenditures). This section briefly assesses how well the ECOWAP/CAADP processes address these needs.

Capturing regional economies. The regional programmes and some of the national programmes do identify some of the key issues needed to develop more reliable regional markets and better coordinated systems to supply agroprocessors and retailers. These include programmes aimed at promoting harmonization or mutual recognition of national grades and standards across countries for key products and inputs and harmonized product registration processes. The RAIP's use of co-financing to improve the incentives for member states to coordinate their national actions in certain areas (e.g. input supply-chain development and fertilizer subsidies) is an attempt to develop a more effective way of bringing about harmonization than the previous reliance on appeals to regional solidarity. As discussed below, the main constraint here is not programme design, but implementation of regional initiatives at the national level.

Supporting collective action. The PAU and the ECOWAP/CAADP programmes all provide support for the strengthening of both producer groups and interprofessional organizations. The producer organizations have the potential to improve aggre-

gation and quality control at the initial marketing levels, while interprofessional organizations offer the opportunity to improve vertical coordination through providing a platform for stakeholders throughout a value chain to come together to diagnose system-wide problems and develop technical and institutional solutions (Adekunle et al., 2012; Shepherd, et al., 2009; Staatz and Ricks, 2010). To date, Senegal has had the most extensive experience in the region with interprofessional organizations, and that experience has been mixed (Duteurtre and Dieye, 2008). Whether they succeed in improving vertical coordination depends on a host of characteristics, including how government relates to them, the vision and quality of their leadership and the incentives they face to improve overall system coordination versus defending the short-term syndicalist interests of their members.

Balancing specific investments versus broad objectives. In designing their agricultural investment strategies, West African governments face the challenge of striking a balance between broad-based investments in public goods (transport infrastructure, research and extension, market infrastructure, information systems, etc.) and trying to target specific value chains that are deemed strategic to the country or region. The analysis of the NAIPs (Table 11.5) shows that different countries have come to different decisions regarding this balance. A similar question of balance arises at the policy level between broad-based reforms to improve the business climate, enhance land-tenure security, improve access to and quality of financial services, etc., versus specific trade or fiscal policies aimed at specific industries or value chains. While many of the broad objectives lie outside the realm of RAIPS and the NAIPs, some (such as investment in improved agricultural extensions systems, vocational training in cross-cutting areas such as agricultural machinery repair, and improved market information systems) cut across value chains. MAFAP has noted in studies across Africa a tendency in recent years to redirect public investment away from such cross-cutting activities towards direct support to farmers in specific value chains (MAFAP, 2013). While focusing on select value chains is likely to produce faster and more visible results in those specific value chains, too much focus may raise equity issues and lead to underinvestment in the basic building blocks needed to address cross-cutting constraints that may unlock local and private initiatives in other (non-targeted) value chains.

Intersectoral coordination. The RAIP and some of the NAIPs recognise that agricultural development transcends the domain of ministries of agriculture and thus requires coordination on policies and investments across sectors. For example, the ECOWAS regional programme creates a structure within the ECOWAS Commission (the Inter-departmental Committee on Food and Agriculture) to address intersectoral issues. The programme also creates a platform, through the Advisory Committee on Food and Agriculture, for a broad range of stakeholder input into programme implementation and evaluation. Similarly, some of the national programmes (e.g. in Senegal and Ghana) create similar structures in the office of the Prime Minister or in specialized coordination units (such as agribusiness development units) within individual ministries. A recent mid-term review of Ghana's METASIP suggests that making such interministerial coordination units work smoothly is often a challenge (KPMG and University of Ghana-Legon, 2013). As discussed more in Chapter 13, such coordination will be critical to the future development of West African agrifood systems.

11.7 Missing or underemphasized policies and missing links with other policies

Several policy areas important to Agricultural development receive insufficient attention in the NAIPs and the RAIP. In some cases, other government initiatives (as spelled out in the Poverty Reduction Strategy Documents) may be addressing these issues, but the agricultural policy documents do not spell out clearly the articulation between the Agricultural Investment Plans (which are short- to medium-term in orientation) and some of these medium-to-longer term efforts. Among the most important of these underemphasized or missing policy areas are the following:

- ***Human capital development, both at the vocational and the scientific level.*** Modernization of West Africa's Agriculture will require very large investments in human capital at all levels – from rural literacy to vocational training in modern agricultural equipment operation and maintenance to high-level scientific capacity in national and regional research centres. While capacity building is highlighted as a cross-cutting issue in CAADP and most NAIPs have specific components on capacity building, they are mainly aimed at strengthening the skills of farmers, their organizations and interprofessional organizations. While such actions are undoubtedly important, the national programmes give relatively little attention to the need to expand systems to educate the large number of agricultural and food industry technicians that will be needed in the coming years. At the university level, African faculties of agriculture focus primarily on farm-level productivity issues, with relatively little attention to food science, nutrition, and packaging. Nor do the national CAADP plans give much attention to the need to replace the large number of senior agricultural scientists and policy makers who are nearing retirement. African governments' and donors' "retreat from agriculture" from the late 1980s to the early 2000s resulted in a missing generation of well-trained scientists and policy makers, so when those currently close to retirement leave their services, there are few highly experienced colleagues waiting in wings to fill their shoes. The RAIP does address this issue with respect to developing the scientific capacity to deal with climate change (calling for the graduate training of 300 agricultural scientists and policy analysts over five years to strengthen a coordinated regional programme of research on adapting to climate change) and also acknowledges the heavy needs of ECOWAS, DAERE and the new ECOWAP implementing agencies for capacity strengthening.

- ***Land tenure and water rights.*** Although almost all the NAIPs acknowledge the critical importance of secure land tenure and water rights to agricultural development (see Focus Section D), few have programmed activities to address these issues. In some cases (e.g. in the Nigerian NAIP), resources are allocated for cadastral surveys. Broader national policy statements, such as the agricultural orientation laws in the francophone countries, generally have sections addressing the need for land tenure reforms. Moving forward on such reforms is critical to the success of the NAIPs. Without secure tenure, the incentives of private individuals to make the investments in land improvements called for in the NAIPs will be severely reduced. Areas where NAIP investments improve water control may also face contentious debates over who has access to the improved resources. Furthermore, lack of clear land records deny local governments a source of potential funding (through land taxes) that could help finance many of the infrastructure improvements and support services needed to spur Agricultural growth.

- ***Links with industrialization policies.*** ECOWAS has a West African Common Industrial Policy (WACIP) that explicitly discusses challenges facing agroprocessing in the region and makes proposals to address issues of developing quality standards and improving energy infrastructure, which are critical to the agro-industry in the region (ECOWAS, 2010). While WACIP states that it has been designed to be coherent with ECOWAP, the ECOWAP regional investment plan makes no reference to WACIP, and the proposed ECOWAP/CAADP actions to promote agroprocessing do not appear to be linked in any way to WACIP (Lambert, 2012). This is an area for greater intersectoral coordination – e.g. at the regional level through the Inter-departmental Committee on Food and Agriculture. Similarly, the NAIPs generally make no reference to national industrial policies or other relevant policy frameworks such as private sector development and investment promotion.

- ***Reliable electrification.*** Many of the NAIPs emphasize infrastructure investment, but this is primarily focused on irrigation and rural roads. Reliable and reasonably priced electrical

power, however, is critical to the development of agroprocessing, competitive local production of agricultural equipment and repair services, and the success of local production of consumer goods that could create knock-on employment opportunities in response to higher agricultural incomes. Currently, unreliable and costly electricity is a major constraint to these activities in West Africa. For example, WACIP states that at current electrical rates, only Nigeria and Ghana would have a chance of being competitive in textile manufacture in the region (ECOWAS, 2010). While other national and regional initiatives are working to improve the reliability of the electrical grid in the region, agricultural policy documents need to stress the importance of pushing such efforts aggressively if Agriculture in the region is to prosper.

11.8 Policy implementation

While there are some policy gaps and incoherencies in the PAU and ECOWAP/CAADP programmes at both the national and regional levels, perhaps the biggest threat to their success are potential implementation problems. The challenges to successful implementation are of several types:

- ***Stakeholder participation and buy-in.*** Successful implementation of the new plans and policies will depend strongly on the degree to which stakeholders (e.g., farmers' organizations, other private-sector actors, and development partners) believe that their major concerns have been taken into account. As mentioned earlier, the degree of farmer organization involvement in developing the CAADP plans varied considerably by country. ROPPA (2012b) argues that producer organizations were, in general, more influential at the regional level than at the national level. This may reflect that national policy makers, acutely aware of the potential unrest caused by high food prices, implicitly gave greater weight to consumer concerns than was done at the regional level. In some countries, the participation of the private sector in plan elaboration was very limited. Regarding donors, they generally were active participants in most of the processes, but their buy-in to a truly sector-wide process remains an open question. In practice it appears that donors are picking those aspects of each plan they can support, consistent with the priorities of their own assistance programmes and frequently with their own reporting requirements, even though the aim of CAADP is to move towards a common reporting and monitoring and evaluation system.

- ***Buy-in by non-signatories to the Compacts.*** The signatories to the CAADP compacts are not the only actors in the rural development of these countries. Other donors that were not signatories (e.g. China, Brazil, and India), foreign firms and sovereign wealth funds are all becoming increasingly important actors, interacting with national governments and enlarging the governments' choices and policy spaces. It is not clear the extent to which actions taken in concert with these new actors will be consistent with the CAADP plans.

- ***Human and institutional capital limitations.*** The programmes proposed in the NAIPs and the RAIP are very ambitious relative to the managerial capacities of the agencies charged with implementing them. In some cases, such as Senegal, the new activities essentially double the agricultural budget. The problem is at least equally acute at the level of the regional programme, where the human resources are very limited at the ECOWAS Department of Agriculture, Environment and Water Resources (DAERE), charged with managing the programme, as they are at the ECOWAS Monitoring Unit, charged with supervising the monitoring and evaluation efforts (African Union et al., 2010b). In addition, several new institutions, including the Fund and the Regional Technical Agency, need to be staffed. While the RAIP stresses the need for capacity building within ECOWAS, especially DAERE, these needs must not be underestimated. Given the limited capacity, by necessity the regional programme will be largely implemented through contracting with outside agencies and individuals, but the in-house capacity of ECOWAS and

the new agencies to manage all these contracts will need to be built. Furthermore, the operational links and incentive structures between the DAERE and the various organizations through which the RAIP will be implemented need to be spelled out. The limits on the human resources, both at the regional and the national levels, make it imperative to resist the inevitable pressures to expand the programmes quickly in the coming years to cover more value chains and problem areas.

- *Policy constancy.* Successful cases of agricultural development, such as in Brazil and Thailand, show that agricultural transformation processes require long time horizons, often decades, and need to be backed by consistent policies and a conducive institutional environment (World Bank, 2009a). Moreover, these policies have generally focused on the basic public-good building blocks of agricultural development – infrastructure, human capital, technology generation and diffusion, and the rule of law. However, as noted above, past agricultural development efforts in West Africa have often been characterized by short-term planning with over-ambitious targets, often focused on subsidies to try to overcome the under-investment in the basic building blocks. Some of the current CAADP investment plans have similar elements and this short-term orientation has been reinforced by the need to appeal to voters in the next election and by donor disbursement deadlines and reporting procedures. The ambitious production targets of such crash programmes are seldom achieved, inevitably leading to disappointment and policy reversals. These reversals, in turn, undermine the confidence of the private sector that government policy pronouncements can be trusted, so the private sector is understandably reluctant to make the long-term investments needed to increase food system productivity. Government, in turn, often views such reluctance as proof of the incapacity or unwillingness of the private sector to respond, prompting another set of policy changes and generating a vicious cycle of policy instability (see Focus Section C). Providing a minimum of policy constancy, focused on the key building blocks, is a first step in converting these public-private deadlocks into public-private partnerships.

- *Aligning the incentives of different actors to foster coordinated efforts.* Successfully implementing both the NAIPs and the regional components of ECOWAP will require aligning incentives of participants at many different levels so that they have an interest in contributing to the success of the programmes. Examples of the different levels of actors with possibly diverse interests and incentives for policy implementation include: (i) different member states; (ii) national, state and local governments within a member state; (iii) government, private actors and producer organizations; and (iv) government institutions and their employees charged with implementing the programmes. There are many examples of the current misalignment of those incentives, as evidenced by the persistence of widespread harassment and non-tariff barriers faced by those engaged in regional agricultural trade despite nearly 30 years of effort by regional organizations like CILSS and WAEMU to make regional trade more fluid. Another potential misalignment of incentives is between Nigeria and the rest of the Community regarding the regional approach. As discussed in Appendix 11.1, Nigeria's new NAIP, the Agricultural Transformation Agenda, makes no explicit mention of CAADP or regional integration, raising the question of how committed Nigeria is to a regional approach to Agricultural development. The use of regional co-funding of national activities (such as targeted input subsidies) only if they conform to regional standards is a welcome move to go beyond moral suasion to try to ensure alignment of interests between individual member states and the Community. Similar co-funding between various levels of government (national, state, and local) at the country level also should be explored.

- *Financing and ownership.* Although CAADP is touted as an African-led, African-owned initiative, the proposed CAADP investment plans for West Africa all have very large funding

gaps that the countries and ECOWAS are asking external donors to cover. This raises a question of whether the proposed programmes have a realistic chance of being implemented at the scale they have been planned. Even if they are funded, if anywhere from 60% to 90% of a programme is paid for non-Africans, it is reasonable to ask who really owns the programme. ROPPA has complained that the CAADP agenda has been increasingly captured by outsiders (see Focus Section B, p.315, on stakeholder involvement in CAADP), but this may be an inevitable consequence of proposing overly ambitious programmes that are highly dependent on external funding.

- ***Improving governance and the general business climate.*** All the NAIPs and the RAIP acknowledge that good governance and reducing transaction costs are critical to success of the programmes. It will be important that this assertion be more than lip service. Even though several ECOWAS states have made important reforms to improve their business environments, all countries in the zone except Ghana and Cape Verde still rank among the bottom third of all countries in the world in terms of the ease of doing business (World Bank, 2012b). As long as this situation persists, it is hard to see how West African Agriculture can become competitive globally for anything other than a few tropical products where the region has a strong locational advantage.

11.9 Summary of key findings

After a long period of neglect of Agriculture during the 1980s and 1990s, policies in the region have become much more supportive of Agricultural growth since 2000. The efforts of PAU and ECOWAP/CAADP to move countries and the subregion away from project-driven approaches toward a more sector-wide approach to Agricultural development offers the hope for a more coherent, less duplicative and more locally driven process. In most countries and at the regional level, the degree of stakeholder involvement, especially of farmer groups, in the policy debate and policy design has been greater in recent years than in many previous planning exercises. This has led to a more open, democratic debate about development objectives and strategies than when previous development strategies were put together largely within government ministries.

The approach of linking national strategies in a coherent way to regional strategies, initially developed through WAEMU's PAU and then extended under ECOWAP/CAADP, was done in a thoughtful manner, with clear guidelines about which activities were most appropriately national or regional. In addition, the national and regional investment plans that emerged generally focus on commodities (such as rice, cassava and animal products) where demand is growing rapidly. Under CAADP, the development of National Agricultural Investment Plans (NAIPs) for all ECOWAS member states, using a similar set of methods and supported through common workshops for national design teams, created a process of mutual learning and peer review among the national teams, which probably improved national programme designs and, if the network is maintained, mutual learning as programme implementation takes place. The regional programmes also are seeking to create incentives for states to avoid policies like trade restrictions as a means of dealing with national price volatility, as such actions only reinforce volatility at the regional level.

In spite of the progress, there remain some important policy inconsistencies and gaps. The NAIPs that emerged from the CAADP process generally put substantial emphasis on infrastructure development (especially for water control), but vary considerably with respect to their balance between direct expenditures to support on-farm production (e.g. through input subsidies) and investments elsewhere in the agrifood system. Many set very ambitious production goals that are both questionable from a technical standpoint and highly reliant on external funding, which may undermine local ownership of the programmes. Although these plans mention the need to develop the entire value chain, investments in marketing (particularly the development of improved food

wholesaling systems) and processing, food safety, research, and human capital development, all of which will be increasingly critical for a successful structural transformation of the food system, receive relatively little emphasis in some of the plans. There is also relatively little explicit articulation, at both the national and regional levels, between agricultural investment programmes and industrial investment programmes, which generally include a focus on agroprocessing, nor with programmes aimed at improving rural electrification. While most national investment programmes also recognize the critical importance of providing more secure land tenure and water rights in stimulating sustained and equitable Agricultural growth, in most cases the links between the investment programmes and efforts to strengthen land and water rights are not well spelled out.

In the end, Agricultural policies are effective only if they can be implemented, and West Africa faces important challenges in strengthening the capacities and incentives of individuals and institutions charged with policy implementation. Policy consistency over time is also crucial, as frequent policy changes can lead to a vicious cycle wherein private actors become reluctant to invest because of fear that policy changes will negate the profitability of their investments. This reluctance, in turn, often leads to a new round of policy changes as the government perceives the reluctance as signifying the incapacity of the private sector to play a constructive role. Considerations of policy consistency and implementation both argue for keeping policy agendas and investment programmes straightforward and tightly focused, especially initially when human and institutional resources are relatively limited.

Appendix to Chapter 11

Analysis of selected National Agricultural Investment Plans (NAIPs) and of government budget allocations to agricultural development

Analysis of the NAIPs of Senegal, Mali, Nigeria and Ghana

Senegal

Senegal's NAIP (République du Sénégal, 2010) covers the period 2011-15. The plan foresees that it will launch Senegal on a trajectory for the coming ten years that will result in unprecedented agricultural growth in the country, consistent with Senegal's broader policy document, the *Loi d'Orientation Agro-Sylvo-Pastorale* (LOASP). Among its very ambitious targets, the programme aims to:

- *Increase the agricultural sector's share of GDP from 16% in 2010 to 21.5% in 2020,* thereby making the economy more agricultural over the coming decade – a reversal of the trend countries typically follow as their economies grow.
- *Raise the annual growth rate of agricultural GDP from 5% in 2010 to 7.4% in 2015*
- *Boost the country's rate of cereal self-sufficiency from 53% in 2010 to 186% in 2020* (i.e., Senegal would become a large net cereal exporter). This is to be achieved through a near doubling of yields for millet, sorghum and maize, a more-than-doubling of rice yields (from 3.2 mt/ha to 6.7 mt/ha), and a tripling of rice production over the period.
- *Reduce the country's poverty rate from 38% in 2010 to 18% in 2020* by increasing incomes from agriculture and lowering consumer prices for food.

The programme covers eight strategic objectives, but in order to achieve the large increases in farm-level production, over 59% of the budget goes to the component aimed at increasing production and improving productivity at the farm level. This compares with 5% allocated to improving market access, 1% to strengthening the capacity of various stakeholders such as farmer groups and interprofessional organizations and 0.6% each for improving processing and financing agricultural research (Appendix Table A11.1). Of the 59% of the budget devoted to the agricultural production and productivity component, nearly half (49%) goes to input subsidies and 69% to recurrent costs

Appendix Table A11.1 *Cost components of Senegal's 2011-15 CAADP investment plan*

	Component	Cost (million CFAF)	Cost (million US $[a])	% of total cost
1	Reduction of climatic risks through water control	267 935.9	535.9	19.9
2	Preservation and sustainable management of other natural resources	148 899.0	297.8	11.1
3	Increased production and improvement of productivity	799 446.1	1598.9	59.4
4	Development of agricultural processing	8 210.0	16.4	0.6
5	Improving access to agricultural product markets	68 087.2	136.2	5.1
6	Strengthening research to generate and transfer new technologies	7 501.1	15.0	0.6
7	Strengthening the capacity of stakeholders	14 672.3	29.3	1.1
8	Good coordination and secure sectoral management	31 326.4	62.7	2.3
Total		1 346 078.0	2 692.2	100.0

Source: République du Sénégal, 2010
[a] Exchange rate: 500 CFAF = 1 US$

rather than investments. The bulk of the investments are targeted at irrigation and water management.

The programme's budget thus focuses very heavily on increasing farm-level production in the short run through boosting input subsidies rather than on the longer-term issues of structural transformation of the food system, as evidenced by the relatively small amount of resources allocated to improving marketing, processing, and the actions needed to ensure consistent product quality and quantity to processors and retailers through improved grades and standards and strengthened wholesaling. The programme allocates no resources explicitly to address the sensitive issue of land tenure (see the Focus Section D, p.321), although it acknowledges that failure to deal with this issue poses a serious threat to programme success.

The programme document itself raises the question of whether the heavy reliance on subsidies is sustainable (p. 10):

> *In fact, the efficiency of the subsidy is the subject of many debates, which deal, notably, with whether much of the subsidy is captured by intermediaries and with the sustainability of the system for public finances.*

The proposed programme is costly, US$2.7 billion over five years, for which national and donor funds in hand in 2010 could cover approximately half the cost. Thus, the programme faced a funding gap of approximately US$1.3 billion. In terms of subsectors, the programme allocated 69% of its resources to crops, 11% to livestock, 11% to environmental programmes, 5% to fisheries, 3% to rural infrastructure and 1% to processing. In recognition that successful Agricultural development involves much more than just actions by the Ministry of Agriculture, the programme establishes a steering committee headed by the Prime Minister's office and involving representatives from the Ministries of Agriculture, Economy and Finance; ECOWAS Affairs; Infrastructure; Local Government; Research; and agricultural processing and trade, as well as representatives of farmer organizations, the private sector, civil society, and development partners. The programme document recognizes that the government's capacity to manage such a programme will be challenged given current human and institutional resources, but of the 2% of the budget allocated to programme management, there is no explicit line item to expand the number of trained analysts and programme managers.

Mali

In 2010, Mali developed a Priority National Investment Plan for its Agricultural sector (PNIP-SA) (République du Mali Cellule Nationale CEDEAO, 2010). The PNIP-SA represents only a portion of the country's proposed investment plan for Agricultural development over the period 2011-15. This portion was presented to ECOWAS and development partners while the country continued to develop its full ten year Agricultural Sector Investment Plan (PNISA).[141] The PNIP-SA is partial in the sense that even for the period 2011-15 it does not cover the major irrigated rice development efforts in the Office du Niger carried out under the country's Initiative Riz and which the government intended to continue regardless of the views of ECOWAS and development partners. In this sense, the PNIP-SA is a transitional document as the country gradually moves to a sector-wide planning approach, which is to be embodied by the PNISA and guided by the broader policy objectives laid out in Mali's Loi d'Orientation Agricole (LOA).

The PNIP-SA focuses on strengthening the development of value chains for maize, millet and sorghum, rice outside of Office du Niger zone, livestock/meat, and fisheries. The document stresses the need to increase productivity in all stages of the value chain, not just at the farm level, and notes that the plan's concern for gender equity justified focusing on certain marketing activities where women predominate. The PNIP-SA also has a component focused on cross-cutting food security activities, including nutrition education, a contribution to the national agricultural develop-

141 As of 2013, the PNISA had not been completed. Until September of that year, when elected government was restored to the country, discussions proceeded slowly due to Mali's severe political and security crisis of 2012-13.

ment fund that is primarily aimed at improving farmers' access to credit, and expansion of the national food security stock.

Like the Senegal investment plan, the Malian PNIP-SA projected very ambitious production increases, including a doubling of maize yields over five years (from 2 mt/ha to 4 mt/ha), a doubling of sorghum yields (from 1 mt/ha to 2 mt/ha), and a 30% increase in millet yields. In rice, however, all the projected increases were through bringing new areas into production in small irrigated village perimeters and lowland irrigated swamplands (bas fonds and mares). Projected growth in animal production was at least equally ambitious, with an anticipated increase in the rate of growth of the meat supply from 3.5% per year in 2010 to 9% by 2015 and a 348% increase in inland fisheries/aquaculture production over the five year period. While the plan did call for a continuation of fertilizer subsidies, the budget of the PNIP-SA has a heavier emphasis on structural elements such as investment (particularly land improvement) and on capacity building relative to recurrent expenses than does the Senegalese programme (Appendix Table A11.2). The rice component also called for a cadastral survey in the areas covered by that component and the sponsoring of discussion among stakeholders to address land-tenure issues, with the aim of trying to strengthen the security of tenure. The other components did not have explicit activities dealing with land tenure, noting that a new law on land tenure was being drafted at the same time, consistent with the land tenure reforms called for in the LOA.

In part because it did not include the large-scale irrigation projects undertaken by the government, the budget for the PNIP-SA was only about a quarter of that of Senegal's PNIA (US$717 million over five years compared to US$2 692 billion). Like Senegal's programme, however, Mali's programme is heavily dependent on outside funding. The plan projects that only 20% of the budget would be covered by the Malian government; beneficiaries (farmers and other value chain participants) would cover 15%, and the remaining 65% funding gap would have to be covered by development partners. This heavy dependence on external funding raises questions about who would actually "own" the programme.

The implementation strategy for the PNIP-SA calls for a decentralized approach, with strong involvement of local government and producer and interprofessional associations, consistent with Mali's overall decentralization policy and approach to agricultural policy laid out in the LOA. Nonetheless, the PNIP-SA document noted that threats to the success of the programme were the possibility that stakeholders would not take ownership of it, seeing it instead as yet another central government initiative; and that bureaucratic red tape would slow implementation. In reality, much larger macro-political factors intervened in 2012 to block implementation of the programme, including the March 2012 coup d'état and the loss of the northern two-thirds of the country to jihadist rebels. With the restoration of elected government in September 2013, it is likely that the PNIP-SA implementation process will again begin to move forward.

Appendix Table A11.2 *Distribution of costs of Mali's CAADP PNIP-SA, 2011–15*

Components	Cost (million CFAF)	Cost (million USD) [a]	% of total
Capacity strengthening	42 840	85.7	12%
Investments	198 204	396.4	55%
Production & Competitiveness	99 164	198.3	28%
Research & Training	11 139	22.3	3%
Food Security	7 500	15.0	2%
Total	358 846	717.7	100%

Source: République du Mali Cellule Nationale CEDEAO, 2010
[a] Exchange rate: 500 CFAF = 1 US$.

Nigeria

Nigeria's agricultural policies have historically been erratic, inconsistent, and characterized by uncertainty about their future evolution, which has discouraged investment and depressed production incentives. From the 1990s to 2005, however, the policies have moved towards less taxation of export agriculture and some reduction in the rates of assistance to import-substituting parts of the sector (as shown in Table 11.1, p.268). Since 2005, agricultural growth has accelerated, averaging over 7% over the period 2006-08 and becoming the main source of overall growth in the Nigerian economy (Walkenhorst, 2009; Federal Government of Nigeria, 2010).

In 2010 Nigeria developed its NAIP, which was designed to be consistent with and build upon the government's rolling three year strategic planning and budgeting for the sector (the Mid-Term Sector Strategy, or MTSS, and the Mid-Term Budget Framework, or MTBF). It was also seen as consistent with the government's prior five-point plan for agriculture and the Federal Government's seven-point agenda for economic revitalization. The latter targets sectors deemed critical to helping Nigeria become one of the 20 largest economies in the world by 2020, focusing on power and energy, food security and agriculture, wealth creation and employment, mass transportation, land reform, security, and qualitative and functional education.

The NAIP took a value-chain approach to developing Agriculture, with investments targeted not only to farm-level production, but also to marketing, improved grades and standards for inputs, and better labelling and packaging for processed products. The plan endorsed family farming, but also foresaw a role for large-scale commercial farming as part of the country's growth strategy. Like the Mali and Senegal NAIPs, the Nigerian investment plan projects very rapid increases in production, including a doubling of crop productivity between 2011 and 2015, a more than doubling of milk yields per cow (from 2 000 kg/year to 5 000 kg/year) and a more than quadrupling of fish production. This would be achieved through the adoption of improved varieties of seed and brood stock by 50% of all farmers by 2015 and 75% by 2020, a 30% increase in fertilizer use across the country, and a 50% increase in the use of animal traction and small farm machinery. As a consequence, the plan projects that the number of food-insecure households would be reduced by 50% in five years and that the value of food imports would fall by 50% by 2015 and 90% by 2020. Also like the Mali and Senegal plans, the Nigerian NAIP would require a large inflow of additional funds, as the funding gap for the five year plan was estimated at US$1.6 billion.

In September 2011, just one year after the completion of its NAIP, the Federal Ministry of Agriculture and Rural Development of the newly elected government published its Agricultural Transformation Agenda as a component of President Goodluck Jonathan's broader transformation agenda for the Nigerian economy (Federal Government of Nigeria, 2011; Nigeria Federal Ministry of Agriculture and Rural Development, 2011). The President's economic transformation agenda focuses on four thematic areas: governance, human capital development, infrastructure and the real sector[142]. Both agriculture and manufacturing (including agroprocessing) are included in the real sector, but of course their development will also depend strongly on progress in addressing the other three thematic areas as well.

The Agricultural Transformation Agenda lays out a vision and principles to guide Agricultural development policy in Nigeria as well as lessons learned from other (particularly Asian) countries' successful Agricultural development experiences. The agenda focuses on value chains for rice, cassava, sorghum, cocoa, cotton, maize, dairy, beef, leather, poultry, oil palm and fisheries, along with revitalization of agricultural extension to boost productivity growth at the farm level. Some of the approaches (e.g. the emphasis on public-private partnerships and the removal of direct government involvement in fertilizer distribution) are similar to those outlined in the previously developed NAIP. There are also new initiatives, however, such as the creation of marketing

142 The real sector refers to those parts of the economy that produce physical outputs as opposed to services.

corporations. These are to be owned by private-sector actors but with some government support to help carry out some of the coordination functions of the now defunct marketing boards.

Like the earlier NAIP, the Agricultural Transformation Agenda sets very ambitious production goals, such as increasing the average yield of cassava from 10 mt/ha to 25 mt/ha in five years. The relationship between the transformation agenda and the national CAADP process is not clear from the document, but by 2013 Nigeria had presented the Agenda as driving the CAADP process in the country. The Agricultural Transformation Agenda is consistent with the CAADP move to a sector-wide approach, declaring that "There shall be end to the era of treating agriculture as a development project." It is also consistent with the CAADP view of seeing agriculture as a major driver of broad economic growth. Yet not once in the 89-page Agricultural Transformation Agenda document or in the 208-page overall economic Transformation Agenda is CAADP or ECOWAP ever mentioned, and ECOWAS itself receives only slight mention, mainly in relation to the Common External Tariff.

The relatively small emphasis in the Agricultural Transformation Agenda on regional issues suggests that for the time being Nigeria's strategy is to focus on internal reform of its agricultural sector, with little attention to how that agenda fits into the broader ECOWAP approach. Indeed, given the size of the Nigerian economy in the region, it may be that ECOWAP will be forced to adjust to accommodate Nigeria's Agricultural Transformation Agenda rather than vice versa.

Ghana

Ghana's NAIP was built around a process the country had already launched in 2008 to plan the implementation of Ghana's revised Food and Agriculture Sector Development Policy (FASDEP II). The policy is driven by a vision of Ghanaian agriculture as "a modernised agriculture culminating in a structurally transformed economy and evident in food security, employment opportunities and reduced poverty" (Government of Ghana, 2010). The mechanism for the implementation of the first five years (2011-15) of FASDEP II is the Medium Term Agriculture Sector Investment Plan (METASIP), which Ghana incorporated into the CAADP process and which became the country's NAIP.

The METASIP is built around six programmes (Annex Table A11.3), which correspond to the six objectives of FASDEP II:

- Food security and emergency preparedness
- Increased growth in incomes
- Increased competitiveness and enhanced integration into domestic and international markets
- Sustainable management of land and environment
- Science and technology applied in food and agriculture development
- Improved institutional coordination

The NAIP, consistent with the vision statement for Ghanaian agriculture, is driven by a strong view of the role of agriculture growth can play in propelling structural transformation of the economy. Hence, the programme puts a large emphasis on technological change to drive productivity growth throughout the agrifood system (as evidenced in METASIP's planned investments in science and technology), the importance of strengthening agro-processing and value-added activities, and the view that not all the poor currently in agriculture will be able to farm their way out of poverty. To address the latter problem, the food security and emergency preparedness component contains a sub-component that aims at diversifying income sources of the rural poor, including expansion of non-farm rural activities.

Ghana's NAIP also puts stronger emphasis than those of Mali, Senegal and Nigeria, on intersectoral and interministerial coordination, recognizing that such coordination (e.g., between invest-

Appendix Table A11.3 *Budget of Ghana's NAIP (METASIP), 2011–15*

	Programme/Component	Total (million US$)	% of total
Programme 1: Food security and emergency preparedness			
1.1	Productivity improvement	94.3	8.9%
1.2	Improved nutrition	7.7	0.7%
1.3	Diversification of livelihood options for the poor	15.2	1.4%
1.4	Food storage and distribution	1.0	0.1%
1.5	Early warning systems and emergency preparedness	6.0	0.6%
1.6	Irrigation and water management	198.3	18.7%
1.7	Mechanization services	69.3	6.5%
Total Programme 1		391.8	36.9%
Programme 2: Increased growth in incomes			
2.1	Promotion of crop, livestock and fishery production for cash	128.2	12.1%
2.2	Development of new products	7.1	0.7%
2.3	Pilot value chain development	140.2	13.2%
2.4	Intensification of FBOs and out-grower concepts	3.0	0.3%
2.5	Development of rural infrastructure	311.9	29.4%
2.6	Urban and peri-urban agriculture	1.0	0.1%
Total Programme 2		591.4	55.7%
Programme 3: Increased competiveness and enhanced integration			
3.1	Marketing of Ghanaian produce domestically and internationally	16.3	1.5%
Total Programme 3		16.3	1.5%
Programme 4: Sustainable management of land and environment			
4.1	Awareness creation and use of SLM technologies by men and women farmers	19.3	1.8%
Total Programme 4		19.3	1.8%
Programme 5: Science and technology for food and agricultural development			
5.1	Uptake of technology along the value chain and application of biotechnology in agriculture	1.5	0.1%
5.2	Agricultural research funding and management of agricultural research information	34.6	3.3%
Total Programme 5		36.1	3.4%
Programme 6: Institutional Coordination			
6.1	Institutional strengthening for intra-ministerial coordination	2.5	0.2%
6.2	Inter-ministerial coordination	0.8	0.1%
6.3	Partnership with private sector and civil society organizations	2.1	0.2%
6.4	Coordination with development partners	1.2	0.1%
Total Programme 6		6.6	0.6%
Total METASIP		1061.5	100.0%

Source: Government of Ghana, 2010.
Figures converted from GHC to US$ by the authors using an average exchange rate for 2010 of GHC = 0.6927 US$

ments in agricultural production and those in road construction) has been insufficient in the past. The Ministry of Food and Agriculture will take the lead for METASIP implementation, in coordination with other ministries, departments, and agencies and with various stakeholder groups. The Policy Coordinating and Monitoring Unit of the Office of the President and the National Development Planning Commission will play key oversight roles. The METASIP also provides funds for coordination with stakeholder groups and with donors.

In terms of production increases (Sub-programme 1.1 and Programme 2), the METASIP focuses on both staples and selected export products, including tree crops and horticultural products. Actions to boost animal production are focused on fisheries, aquaculture and livestock that have quick reproductive cycles, such as poultry and small ruminants, in order to boost production quickly and to help ensure that low-income producers are not excluded from the programmes. The projected production increases over the five-year period are more modest than those of the NAIPs of Senegal, Mali, and Nigeria – generally on the order of 20% to 30% – driven primarily by productivity increases, including increased use of biotechnology in agriculture. There is also a strong value-chain orientation to many of the production programmes, focused on improving quality and value addition and reducing post-harvest losses.

While the plan calls for Ghana's universities to be involved in the research component under programme 5 (via competitive grants), there is no planned funding for agricultural higher education and only minimal funding for vocational training in the skills needed in the expanding agrifood industries. Perhaps these needs will be handled through coordination with other ministries and the private sector, through the mechanisms described earlier, but this is not apparent from the plan.

The promotion of many of the agroprocessing activities under METASIP are envisioned as being carried out through public-private partnerships (PPPs). The government foresees initially financing some of the infrastructure needed and then recovering the funds (which total about nine percent of the total METASIP budget) from user fees from

Appendix Table A11.4 *Shares of total public expenditures allocated to agriculture, 1990–2009 (%)*

Country	Annual average share (1990–1995)	Annual average % change (1990–1995)	Annual average share (1995-2003)	Annual average % change (1995-2003)	Share (2003)	Annual average (2003-2009)	Annual average % change (2003-2009)
Benin			7.0	–7.2	5.4	6.0	–0.6
Burkina Faso	28.1	1.0	27.4	–4.7	25.6	19.2	–12.3
Cape Verde							
Côte d'Ivoire	3.7	7.6	3.1	–4.9	2.6	2.4	–7.3
Ghana	8.5	1.8	8.6	–5.8	7.2	8.7	5.2
Guinea					21.4	13.7	–8.6
Guinea-Bissau					1.8	1.4	–9.5
Liberia						5.1	
Mali			16.0	–13.9	10.0	11.8	2.7
Niger					17.5	15.5	–6.0
Nigeria	2.6	11.4	3.3	–4.8	2.8	3.6	17.7
Senegal	5.4	–0.9	6.4	2.9	8.5	12.1	17.1
Sierra Leone					2.8	2.8	–4.4
The Gambia						5.0	
Togo	4.3	3.5	3.8	–6.2	2.5	4.7	29.7

Source: Benin, et al., 2010

the private sector. Thus, the financial viability of the programme will depend on how effectively these PPPs are designed and implemented.

As with other NAIPs, the METASIP requires a large increase in current government funding to food and agriculture. The total 5-year cost, which the plan admits does not include the salaries of government employees charged with its implementation, is slightly over US$1 billion, of which two-thirds represents an unfunded gap that would most likely have to come from outside funders. Thus, while Ghana's METASIP appears to be well designed to address many of the challenges facing the country's Agricultural sector, how well it actually addresses these challenges, like the rest of the NAIPs, will depend critically on its implementation, including its funding strategy.

Focus Section B

Stakeholder Involvement in Policy Development and Implementation

The experience of ROPPA and national producer organizations[143]

The Network of Peasant Organizations and Producers in West Africa (ROPPA) is the largest federation of farmer organizations in West Africa, formed in 2000 with membership of over 100 organizations from 12 of the countries within ECOWAS.[144] The network is open to all countries within ECOWAS. ROPPA and its member organizations were quick to recognise that they had vital interests at stake as national and regional Agricultural policies began to be reconfigured under PAU and ECOWAP in the early 2000s and later with negotiation of the Economic Partnership Agreements with the European Union. The experience of these organizations in influencing national and regional agricultural policies provides insights into the role and limits of different interest groups in helping shape policies in the region.

ROPPA sees itself as a defender of family farming in West Africa, with a special emphasis on smaller family operations, which constitute the large majority of farmers in the region. It believes that with expanded support, its constituent producer organizations can play a vital role in providing technical and financial support services to these family farms.

ROPPA's vision

The doctrine of ROPPA is inextricably linked to the international debates that arose in the second half of the 1990s following the introduction of agriculture into the WTO negotiations. This doctrine:

- defends the importance of family farming;
- opposes the liberalization of agricultural trade because of the multifunctionality of agriculture ("Agriculture is not a commodity"); and
- advocates the sovereignty of States and Regional Economic Communities in the area of agricultural and food policies.

ROPPA argues that family farming in West Africa is under threat due to:

- S*tructural under-investment in family farms,* on the part of both West African governments and their technical and financial partners. ROPPA argues that many African government decision-makers equate modern agriculture with large-scale mechanised operations and have little faith in the capacity of small- and medium-sized family farms to feed the region.
- ***Imports of low-cost agricultural products*** encouraged by trade and agricultural policies which, in ROPPA's view, have undermined the development of local food sectors.
- ***Strong competition for agricultural land,*** fed by the demand for biofuels and manifested in the large transfers of land to both domestic and foreign entities not previously engaged in farming in the region. ROPPA argues that West African family farmers have for years faced unfair competition from cheap agricultural imports and are now facing an even more severe battle to hold on to their own land.

143 This focus section draws heavily on ROPPA, 2012b.
144 Benin, Burkina Faso, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Mali, Niger, Senegal, Sierra Leone and Togo

- ***Climate change***, which further endangers the agricultural sector due to the degradation of natural resources, undermining productivity.

- ***The inconsistency between European and West African agricultural policies***, particularly as they affect the Economic Partnership Agreements (EPAs) being negotiated with the European Union, which call for duty-free trade for a range of goods and services between the EU and West Africa. ROPPA argues that such agreements risk flooding West Africa with subsidised European agricultural products, thereby undermining local production and weakening food security in the region. [145]

Given these concerns, ROPPA and its constituent organizations have strongly argued that agricultural policies in the region need to be based on five key principles:

1. The recognition of the ***family farm***, both as a legal entity and as the foundation for agricultural development strategies, as opposed to a strategy targeting what ROPPA terms "capitalist agriculture".

2. The recognition of the concept of ***food sovereignty*** as a key food policy goal. ROPPA defines food sovereignty as the "the right of every country or group of countries to define its agricultural policy in the interest of its populations and to develop and protect its production and markets so that they can satisfy the needs for a safe, sufficient, and culturally acceptable food supply and also serve as the basis for just remuneration for the labour of family farms." From a policy perspective, the notion of food sovereignty implies a strong preference for local over imported products and at least some degree of autonomy for policy makers to establish food policies independently of the strictures of international agreements such as the WTO.

3. ***Giving priority to the regional*** West African market (including creation of a common agricultural market within West Africa) and border protection of the regional market against extra-regional imports.

4. Providing for a ***secure system of land tenure*** and ***sustainable production systems***.

5. Ensuring adequate ***financing for family farms***.

145 ROPPA's argument is that even in the absence of explicit export subsidies in the EU, a variety of other support payments to EU farmers drive down those farmers' average cost of production, allowing them to sell at essentially subsidised prices.

ROPPA's experience with regional and national policy initiatives

ROPPA and its constituent organizations have been very active since the launching of the regional policy initiatives (PAU and ECOWAP) through consultations at both the national and regional levels. For example, ROPPA is a member of the steering committee for ECOWAP. National Producer Organizations (POs) were involved to varying degrees in the design of and debate about the national CAADP programmes. The degree of involvement generally went beyond the traditional discussion between government officials and producer organizations about proposed policies and programmes to a broader democratic debate about policy objectives and ways to achieve them. ROPPA and its affiliated POs were particularly successful in getting the notion of food sovereignty included as an explicit objective of both PAU and ECOWAP, as well as in national legislation setting out the broad vision and objectives of agricultural development policy in a number of countries, such as the *Loi d'Orientation Agricole* in Mali and the *Loi d'Orientation Agro-Sylvo-Pastorale* in Senegal. These laws, as well as the regional programmes, also explicitly recognize the importance of family farming, although they also left open the possibility of including other forms of agricultural enterprises as part of the structure of farming.

At the regional level, ROPPA was also successful in pushing for a fifth, higher tariff band (eventually set at 35%) of the ECOWAS Common External Tariff, aimed primarily at protecting "sensitive" agricultural products. It also succeeded in lobbying for inclusion of a specific objective in ECOWAP aimed at providing West African agriculture with financing mechanisms adapted

to the diversity of farms and value chains and the multiplicity of types of investments needed. The organization was also instrumental in successfully arguing for the inclusion of representatives from POs in three of the key structures established for the implementation of ECOWAP: the Regional Consultative Committee on Food and Agriculture; the Regional Fund for Food and Agriculture, and the proposed instruments for monitoring and evaluation. ROPPA attributes it considerable successes in influencing the regional policies not only to its own organizational skills, preparation, and grass-roots mobilization, but also its strong links with producer organizations and NGOs in Europe and the Americas that helped build support among ECOWAS's and WAEMU's development partners for the positions advocated by ROPPA.

ROPPA's experience, however, has been that it was more successful in influencing the design of regional agricultural policies (PAU and ECOWAP) than more general trade policies (such as the WAEMU CET and the EPA negotiations with the EU) that involve more than just the agricultural sector. These latter policies affect a broader array of interests and hence create a greater competition for influence within the policy process. ROPPA also believes that producer organizations were more influential in shaping agricultural policies at the regional level than at the national level (e.g. national CAADP plans). ROPPA attributes this lower success at the national level to the reluctance of many politicians and bureaucrats to see independent power bases emerge that could, by themselves or through alliances with other civil-society organizations, serve as a counterweight in domestic politics to those currently in power. A second complementary hypothesis is that political leaders at the national level confront more immediately the potential urban unrest caused by high food prices and hence are less receptive than their regional counterparts to ROPPA's calls for higher levels of agricultural protection.

ROPPA has also found that even if it is deeply implicated in the design of regional policies, implementation often poses problems. Examples include:

- For the PAU: (i) the decision of WAEMU to launch the programme without organizing the promised meeting of the PAU implementation committee in which POs were to be represented, (ii) the establishment of the regional fund for agriculture as well as the administrative procedures for its management without notification or consultation with the POs or ROPPA and (iii) the use of the fund in 2008 (with the agreement of the member states) to deal with the crisis brought about by soaring food prices and to aid displaced persons rather than for its original purposes of supporting specific programmes to benefit West African farmers.

- The slow implementation of many of the provisions of ECOWAP, which ROPPA believes would be beneficial to its members.

- Most recently, the perception that the agenda and the timing of the ECOWAP/CAADP and PAU processes have been hijacked by interests in the G8 and G20 who have been pushing for an approach to agricultural development in Africa that promotes public-private partnerships with large international agribusiness firms. This approach, epitomised by the "Grow Africa" initiative launched at the World Economic Forum in Davos in May 2012 and the complementary New Alliance for Food Security and Nutrition promoted by the United States, calls for greater international private-sector investment in African agriculture and sets ambitious targets for increasing such investment. In ROPPA's view, these initiatives promote a vision of capitalist agriculture at variance with ROPPA's vision of family farming. Furthermore, in the present context of ambiguous and insecure rules regarding land tenure and water rights in many West African countries, ROPPA feels that these initiatives open the door to the possibility of widespread "land grabs" by private entrepreneurs and multinational firms at the expense of small family farms. Equally important, ROPPA sees these new initiatives as shifting the ownership of the agricultural development agenda for West Africa back towards the high-income

countries, thus undermining ROPPA's efforts and that of its allies to build West-African-led programmes. In writing to the President of the African Union Commission on May 12, 2012, the President of ROPPA summarised ROPPA's concerns as follows[146]:

"We would like to simply remind everyone that food security and sovereignty will be the basis of our general development, as all African governments continue to stress. This is a strategic issue. That is why we must build our food policy on our own resources, as is the case for all regions of the world. The G8 and the G20 should not constitute the place where such decisions are made."

146 For the full text of the letter, see ROPPA, 2012b.

Focus Section C

Improving Access to Fertilizers, Improved Seeds, Pesticides and Veterinary Inputs in Policy Development and Implementation

Improving farmers' access to inputs such as chemical fertilizer, improved seeds, pesticides, and veterinary products is critical to boosting agricultural productivity in West Africa while reversing the trends of soil mining and resource degradation. Productivity growth, which reduces unit costs of production, is in turn essential if access to food is to be improved for the large proportion of consumers that spends a high share of its income on food (see Chapter 6). Access to these inputs, however, is hindered by structural problems in agricultural input markets in West Africa.

Structural problems in input markets and their consequences in West Africa

These inputs share several characteristics that make it unlikely that competitive markets will spontaneously develop to supply high-quality fertilizers, improved seeds and veterinary inputs to agricultural producers reliably in the absence of supporting public actions:

- The demand for these inputs depends on the expected price of the output, which is often uncertain, volatile, and may be low due to poor marketing infrastructure and the effects of government policies.

- The quality of these inputs is not apparent from simple visual inspection. It reveals itself only after use, and even then it is often difficult to judge their efficacy due to the effects of many other intervening factors (e.g. water availability, pests) that affect the inputs' performance. This uncertainty regarding quality creates incentives for unscrupulous vendors to adulterate products, e.g. by adding sand to fertilizer. In the absence of effective quality assurance mechanisms, such as enforced grades and standards and reliable guarantees by vendors, such behaviour may lead to a situation where bad quality inputs drive out good quality products due to the lower prices of the poor quality products and the weak ability of farmers to distinguish ex-ante between the two.

- These products require a complement of technical information to ensure their best use. This involves, for example, instructions on the best timing and application rates for fertilizers and pesticides and the choice of the appropriate nutrient mix of fertilizer for a given farmer's crop and soils. Failure to provide such technical advice can greatly reduce the efficiency of use of these inputs, and for pesticides and veterinary products pose important health risks for producers, their families, their animals and consumers. The low level of literacy in rural areas of many ECOWAS countries drives up the cost of providing such technical advice, as it has to rely more on oral communication than on written materials.

- The economic return to use of these inputs, particularly fertilizer and seed, is risky in rainfed conditions where rainfall is unpredictable. In the absence of risk management tools such as weather index-based insurance, risk-averse farmers will tend to under-use these inputs and may defer purchasing them until they are sure that the rains are firmly established for the season. This delay in their purchasing shifts all the risk of holding inventory to the input dealers, creating an incentive for them to reduce their stocks, which

can lead to shortages if production conditions turn out to be good.[147]

- Expenditures required for these inputs can be substantial relative to farmers' net incomes, and the return is typically obtained only after a period of months when the crop is harvested or the animal sold. Thus, even if the inputs are profitable to use, in the absence of a well-functioning credit market cash-flow constraints frequently prevent farmers from purchasing them. In the past, single-channel marketing systems for cash crops such as cotton provided access to the inputs, as they could be provided at planting by the monopsonistic crop marketing agency and the credit recovered at harvest by deducting the amount owed from the final payment for the crop. As a result of market reform programmes, many of these single-channel systems have been liberalized, making such credit-recovery arrangements less feasible and thus lessening farmers' access to these inputs. The development of well-functioning input markets therefore needs to go hand-in-hand with the strengthening of improved rural financial systems.

- Fertilizer is subject to large economies of scale in both manufacturing and procurement. For example, the minimum efficient volume for a urea plant is approximately 500 000 mt/year, and import procurement by sea in volumes less than 25 000 mt of product (approximately 10 000 mt of nutrients) can drive up costs by around 30% (Morris et al., 2007a; Gregory and Bumb, 2006). Yet only Nigeria has a level of urea consumption that would come close to capturing the scale economies in manufacture, and four of the ten ECOWAS countries for which FAOSTAT data are available have consumption levels under the minimum efficient import volume.[148] Given the scale economies and capital intensity of fertilizer manufacturing, there are significant barriers to entry in both manufacturing and the import trade. These, in the presence of small national market sizes, frequently lead to oligopoly or monopoly at the manufacturing and import levels, further driving up prices.

- Fertilizer is bulky, which adds a significant transport-cost component to the price farmers pay for fertilizer, particularly when road conditions are poor. In West Africa, these transport costs are further driven up by high port charges (almost all fertilizer used in the region is imported) and the lack of competition in setting trucking fees in many of the countries (Bumb et al., 2011). These high transport costs also result in lower farm-level output prices, further discouraging the use of fertilizer and other improved inputs.

- An overriding structural constraint is the fragmentation of the region into many small national markets, each with its own regulations and product specifications. For example, although cotton production conditions are similar across Benin, Burkina Faso, Côte d'Ivoire, Mali and Togo, the national cotton companies in each of these countries specifies its own distinct formula for NPK fertilizer. Reducing this artificial product differentiation would allow larger scale acquisition of the fertilizer for the countries, leading to potential savings of up to US$40/mt, equivalent to about 8% of the farm-price of fertilizer in Mali (Bumb, et al., 2011). Similarly, varying standards across countries for entering into the agro-dealer business discourages the development of efficient regional chains of agro-dealers.

- Lengthy regulatory procedures for certification (especially important for improved seeds, pesticides, and veterinary inputs) add further to costs, particularly when each country has its own standards. The diversity of national product standards discourages private-sector investment in provision of these inputs, as suppliers who enter the market have to try to amortize the costs of going through each national certification process over a very small market volume and may face legal restrictions on exporting product to neighbour-

147 One implication of this phenomenon is that risk management tools such as weather-based insurance need to be targeted towards input dealers as well as farmers.

148 It is likely that several of the five countries for which data are not available (Benin, Cape Verde, Guinea-Bissau, Liberia and Sierra Leone) also fall below the minimum efficient import level.

ing countries. This disincentive further limits competition, creating conditions of oligopoly or monopoly that can further drive up input prices to farmers.

- A particularly thorny problem regards genetically modified organisms (GMOs), which are permitted in a few countries (e.g. Burkina has approved BT cotton) but not in others. The varying national rules regarding GMOs will prevent a formal regional market in such seeds from emerging in the near future, but there is likely to develop an informal cross-border trade, which will make any consistent regulation of such seeds more difficult.

The impact of these structural problems in West African input markets has been very low levels of use of improved inputs. As detailed in Chapter 3, average fertilizer use in the ECOWAS zone is among the lowest in the world at less than 7 kg/ha of arable land, and substantially below levels found in East and Southern Africa (38 kg/ha). The private sector has been very slow to fill the void created by the withdrawal of the state from input provision, for many of the structural reasons outlined above.

Policy response: input subsidies

Since the 1990s, West African states and their development partners, including NGOs, have undertaken a number of actions to try to strengthen farmers' access to these to improved inputs. In June, 2006, African Union Ministers of Agriculture, meeting in Abuja for the African Fertilizer Summit, issued the Abuja Declaration on Fertilizer for an African Green Revolution (African Union, 2006). The Declaration set an extremely ambitious target of increasing fertilizer use in sub-Saharan Africa from an average of 8 kg/ha to 50 kg/ha by 2015. Among its provisions, the Declaration called on all African Union member states to:

- Take actions to help reduce the cost of fertilizer, such as harmonization of regulations to allow duty- and tax-free movement of fertilizer across all borders in Africa.
- Immediately develop voucher-based fertilizer subsidy programmes, especially focused on poor farmers.
- Facilitate the development of domestic fertilizer production capacity.
- Accelerate investment in market infrastructure, transport, and capacity-building programmes for farmer organizations to improve output marketing, which would increase the incentives to use fertilizer.

The Declaration also called upon the African Development Bank (AfDB) to develop an African Fertilizer Financing Development Mechanism to meet the financing requirements of the actions called for by the summit. The AfDB established the fund in 2007. In addition to the activities listed above, it is also aimed at funding technical support for helping member states improve their fertilizer policies, improving procurement and distribution facilities, and providing credit guarantees for fertilizer importers and distributors.[149]

In the ECOWAS region, ECOWAS, WAEMU, member states and their development partners have taken several actions in recent years to improve farmers' access to inputs, ranging from input subsidies to attempts to strengthen private-sector input production and marketing systems.[150] Frequently, however, interventions (particularly subsidy programmes prior to the implementation of voucher schemes) have occurred in an unpredictable and uncoordinated manner, creating uncertainty and often financial losses for private input dealers who invested in inventories of inputs only to see their market undercut by the subsidised distribution programmes. This has in turn led to reluctance by the private sector to invest further in input distribution. The reluctance was frequently interpreted by policy makers as evidence that the

149 See http://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/african-fertilizer-financingmechanism/abuja-declaration/

150 Examples include the Marketing Inputs Regionally (MIR) and MIR Plus projects jointly implemented by the International Fertilizer Development Center (IFDC) and ECOWAS that aim to build networks of private agro-input dealers (http://www.ifdc.org/Projects/Current/MIR_Plus) and the USAID-supported West Africa Seed Alliance (http://idea.usaid.gov/sites/default/files/West_Africa_Seed_Alliance.pdf), which strives to support the development of a commercial seed industry.

private sector was incapable of supplying these inputs efficiently, thus justifying further public intervention. In this way, a negative dynamic was created in which the burden of input provision, often at subsidized rates, was shifted increasingly to the public sector, imposing a growing fiscal burden on the state.

Wanzala-Mlobela, et al. (2011) and Druilhe and Barreiro-Hurlé (2012) provide detailed analyses of the experiences with fertilizer subsidy programmes across Africa, including five countries in West Africa (Burkina Faso, Ghana, Mali, Nigeria and Senegal). Although Nigeria had reintroduced a nation-wide fertilizer subsidy programme in 1999, the majority of West African countries launched their programmes in 2008 in response to the spike in world food prices, often in conjunction with subsidies on seeds as well. Overall, the outcomes have been mixed. Key weaknesses in the programmes included:

Lack of targeting. In contrast to programmes in several East and Southern African countries, the subsidy programmes in West Africa were generally untargeted (open to all farmers growing a particular crop) and often involved the state rather than the private sector in input procurement. In Nigeria, in discussing the government's decision in 2011 to move away from its untargeted, government-run fertilizer subsidy programme and move to a voucher-based programme in collaboration with private agro-dealers, the Federal Minister of Agriculture stated that the previous programme had become rife with corruption and that only 11% of the subsidized fertilizer reached what he called "genuine farmers", with the remainder ending up in the hands of what he termed "political farmers" (Sharpedgenews.com, 2011).

The lack of targeting meant that subsidised fertilizer sometimes displaced commercial sales. For example, an IFPRI study estimated that every tonne of subsidised fertilizer provided in Nigeria in the period 2003-2010 displaced between 0.19 and 0.35 tons of commercial fertilizer sales (Takeshima et al., 2012). This displacement had two effects. First, it discouraged the private sector from investing in the fertilizer distribution system. Second, it meant that less of the subsidised fertilizer went to small farmers who had been using very little of it previously and for whom the incremental increase in production would likely be higher than for larger farmers who were already using substantial amounts of the input. The lack of targeting thus had negative effects on both efficiency and equity. ROPPA has also expressed concern that the benefits from the untargeted input subsidies launched in many West African countries since 2008 have been predominantly captured by large farmers (ROPPA, 2012b).

Government involvement in procurement. Other major problems involved complex and non-transparent government tendering procedures, lack of financial sustainability, and frequent rent-seeking. Government tender systems for fertilizer imports were sometimes fraught with limited competition and corruption, leading to higher prices. Moreover, delays in payments to importers and distributers have led to late delivery of fertilizer to farmers, undermining its effectiveness (Wanzala-Mlobela, et al., 2011). In countries where private companies negotiate import prices directly with exporters, prices have generally been lower, especially if companies can negotiate volume discounts and if the fertilizer importing/wholesaling industry is competitive. Kenya stands out as a country that has successfully liberalized and expended fertilizer markets, resulting in a sharp reduction of fertilizer costs (World Bank, 2013b).

Lack of attention to fertilizer quality. The near-exclusive emphasis of these programmes on reducing the price of fertilizer to farmers has sometimes led to a lack of attention to fertilizer quality, with farmers complaining about the quality of the subsidised input.

Based on their review of fertilizer subsidy programmes across Africa, Wanzala-Mlobela et al. have developed a set of best practices that can help mitigate these problems (Box C.1). These best practices stress the need to move away from the type of untargeted subsidies that have been common in some of the ECOWAS member states towards more targeted voucher systems. In general, subsidies need to be "smart", i.e. targeted,

capped, and time-bound, in order to create rather than distort markets. Even with voucher systems, however, careful design and implementation are crucial to their success. A number of challenges have been encountered including late distribution of fertilizer, redemption of vouchers by distribution agents, counterfeiting vouchers, fertilizer vouchers redeemed by beneficiaries for cash, and price inflation (if demand exceeds fertilizer supply).

The best practices listed in Box C.1 refer to national input subsidy programmes. On a regional basis, it is also important that there be some harmonization of subsidy rates across countries in order to avoid flows of more heavily subsidised inputs from one country to neighbouring countries where subsidy rates are lower.

Policy response: building a regional market for agricultural inputs

While subsidies help address the short-run problem of high input costs, they do not address the underlying structural reasons for high input costs

Box C.1 Recommendations for improving the effectiveness of fertilizer subsidy programmes in Africa

1. Governments should withdraw from involvement in the importation and distribution of fertilizers and integrate the private sector into the subsidy programme so that there is a single importation and distribution system for fertilizer, rather than two separate and competing channels.

2. Replace the current tender system with performance-based multi-year contracts with private-sector firms in order to ensure timely importation and distribution.

3. Eliminate restrictions on participation in subsidy programmes by the private sector in order to spur competition and hold down costs of delivering the product to farmers.

4. Subsidy programmes should include a targeting mechanism (input vouchers) in order to minimise displacement of commercial sales and target limited public resources to farmers that have not used fertilizer so far.

5. Introduce measures to address the bottleneck created by slow government repayment of the subsidised portion of the fertilizer price.

6. Introduce an element of sustainability into the programmes by gradually phasing out the subsidy to current beneficiaries, encouraging savings schemes, removing barriers to access to loans, and supporting input dealers through training, accreditation and improved access to finance.

7. Incorporate complementary investments into the subsidy programme to ensure access to other yield enhancing inputs and advisory services to maximise the efficiency and profitability of fertilizer use.

8. Address the structural issues that drive up the cost of fertilizer and that drive down the profitability of its use (e.g., funding research to develop more fertilizer-responsive cultivars).

Source: Adapted from Wanzala-Mlobela et al., 2011.

in West Africa, including the fragmentation of the region into many small national markets.

Regional organizations such as CILSS, WAEMU and ECOWAS have all recognized the potential benefits of building an effective regional market in inputs and have taken actions to promote it. For example, since the 1990s CILSS has developed a system for common regional standards for pesticide registration in its member states. ECOWAS extended this system to all its member states in 2008. Similarly, the ECOWAS Commission for Agriculture, building on earlier work by WAEMU, issued rules in 2008 governing the registration, certification and marketing of seeds and plant materials within the Community. Following approval of these rules by the ECOWAS Council of Ministers and publication in the official ECOWAS journal in mid-2008, member states were supposed to modify their national legislation to be consistent with the Community-wide rules. By 2012, however, several member states had not done so, and even in those that did, the national agencies in charge of enforcing the rules lacked the resources to do so (CORAF/WECARD, 2012). Thus, the problem is not so much one of design of harmonized regulation at the regional level to create a regional market in inputs as it is one of implementation at the national level. Any effective effort to create a regional market in inputs will thus need to be accompanied by funding and a structure of incentives at the national and local levels to bring it to reality.[151]

Access to improved inputs will be critical to continuing West Africa's agricultural transformation. In fact, meeting the huge production increases contemplated by national CAADP plans and the MDGs (see Chapter 11) will be impossible without greater access to these inputs. Large structural problems, however, constrict the market for these inputs. The initial national government policy response of subsidies requires improvement and additional policy action from national governments is required to create the well-functioning regional markets that can increase access to these inputs.

151 Maintaining national markets that are not integrated creates rents caused by price differences across borders in excess of transport costs, so those in a position to appropriate those rents (e.g. agents controlling the border crossings) have an incentive to resist implementation of moves to create a more integrated market.

Focus Section D

Policies Regarding Land Tenure and Water Rights

The increase in world food prices since 2008, the growing demand for biofuels, and the increased interest among African governments in attracting additional private investment into agriculture have led to widespread interest in acquisition of land and water rights in the region by private nationals and foreign entities. Concerns about the resulting land acquisitions, dubbed "land grabs" by their critics, have become highly politicized and have spotlighted the critical importance of policies governing land tenure and water rights in West Africa. Insecurity of tenure, however, is a broader issue than just the current concerns about large-scale land acquisitions, as it creates fundamental impediments to development of Agriculture in the region. Indeed, ECOWAP identifies insecure land tenure as a factor contributing to low investment and productivity in West African agriculture and as a potential cause of violent conflict (e.g. between herders and agriculturalists). Since land and water are highly complementary inputs, particularly in irrigated systems, it is difficult to deal with them independently. There are also important gender dimensions to land and water tenure issues, as in many customary tenure systems in the region women's rights to own, use, inherit land or to hold onto it once investments have been made on it that increase its value in production (e.g. irrigation improvements) are often weaker than those of men.

Apart from helping to avoid or reduce conflicts among resource users, more secure and exchangeable rights to water and land create incentives for public and private investment in land improvements and make these investments more profitable. Secure land tenure can allow land to be used as collateral for loans, improving farmers' access to capital, while a reliable land registry allows national and/or local governments to use land taxes as a source for efficient financing of critical public services. Tradable rights to water and land also facilitate the access to these resources by those most able to use them efficiently and allows those who cannot fully exploit the land (e.g. because of lack of sufficient household labour or knowledge) to receive income for their land to enable them to engage in non-agricultural income-earning activities (Deininger and Jin, 2006; Mathieu et al., 2003). A large body of research from many parts of West Africa has documented the emergence of land rentals and sales within local tenure systems – practices that were previously considered to be incompatible with customary tenure (Delville et al., 2001). Research has also shown that local land tenure systems effectively enforcing land rights can provide adequate tenure security and strengthen incentives to invest in improving land productivity (Sjaastad and Bromley, 1997). In high-value land areas, monetised land transactions are mushrooming. This includes the monetization of customary forms of land transfers and the emergence of new types of land transactions such as sales. These changes in customary tenure systems seem to confirm the basic tenets of the so-called "evolutionary theory of land rights", whereby demographic growth and agricultural intensification tend to push towards greater individualization and commercialization of land rights (Cotula, 2007; Boserup, 1993).[153]

One of the key challenges in land tenure in West Africa is providing a system to meet the

152 Maintaining national markets that are not integrated creates rents caused by price differences across borders in excess of transport costs, so those in a position to appropriate those rents (e.g. agents controlling the border crossings) have an incentive to resist implementation of moves to create a more integrated market.

153 It should be noted, however, that empirical evidence from many parts ofAfrica shows that the picture is often more complex than the linear processdescribed by this theory. For instance, intra-family individualization processes mayco-exist with the continuation or reinterpretation of the collective dimensions ofcustomary land tenure, in order to reaffirm the primacy of the land rights of localsvis-à-vis groups outside the extended family (Cotula, 2007).

needs of pastoralist groups, which rely on common property resources and mobility. Pastoral livelihood systems have developed to cope with and adapt to climatic uncertainty in drylands. Such systems depend on flexibility in land use and management, with the need to negotiate the use of land on a seasonal basis with other users. Potential conflicts may arise, particularly where farmers encroach onto the arid rangelands or into northern wetlands (such as the Interior Niger Delta in Mali) that are vital to Sahelian pastoralism (Cotula, 2006). The past decades have seen a promising shift by several West African governments to recognise and protect pastoralists' rights of access to natural resources. 'Pastoral laws' have been passed in Guinea (1995), Mauritania (2000), Mali (2001) and Burkina Faso (2002), and Niger (Cotula et al., 2004). Management of shared resources across borders, including land and transhumance corridors, is a major focus of ECOWAP, with activities plan to establish transhumance corridors and grazing pastures in cross-border areas. ECOWAS has also adopted a programme for the sustainable management of pastoral resources and the management of transhumance in West Africa. Its action plan recommends monitoring pastoral resources and assessing their environmental and socio-economic impacts at the regional level.

The importance of clear and transparently enforced rules regarding land and water rights will become increasingly important in the coming years, as population pressure, high prices of agricultural products, and climate-induced population movements lead to increasing demand for agricultural land and potential conflicts between resident populations, new migrants, pastoralists and outside investors. In West Africa, this is a regional as well as a national issue, as these pressures will likely lead to substantial population movements across borders. Under Article 27 of the ECOWAS treaty, citizens of any member state are free to undertake industrial or commercial enterprises in any other member state, but lack of clarity about land tenure rules will likely discourage intra-community investment in agroprocessing enterprises that require access to some land as a complement to the processing plant.

West African land tenure systems are characterized by legal pluralism – the co-existence of systems of rules based on different principles – based on the overlay of rules based on European principles of ownership derived from the colonial experience with systems of customary tenure and in some cases rules based on Sharia. An example is Senegal, where customary systems held that land belongs to the community, lineage or family, but never to an individual. In some communities, Islamic inheritance rules were grafted onto these systems to govern how use rights were transferred across generations. Colonial administration introduced private property and land registration, but by independence only 3% of the land in Senegal had been officially registered. In 1964, the current land tenure law, the *Loi sur le Domaine National (LDN)*, vested ownership of all unregistered land to the nation, to be administered by the state. Subsequently, as part of Senegal's process of decentralization, administration of the LDN was delegated to rural councils, under the supervision of the state. The local councils have the right to attribute land to local residents and adjudicate land disputes among them, based in part on local custom. In principle, they are not to allocate land to those outside the local community (Faye et al., 2011).

It is important that a clear set of procedures and mechanisms exist by which land-related conflicts may be solved in order to avoid long and protracted disputes, which can lead to disinvestments in agriculture and may eventually develop into violence. Registration and titling have been promoted as a means by which to increase security of tenure for land users and thereby promote increased investment in agriculture (Winter and Quan, 1999). Yet such registration procedures often involve complicated administrative processes that are difficult for many rural people to meet, thereby increasing the likelihood that current occupants can be dispossessed by better informed and educated (often urban) people who understand how to work the system to get legal title to the land. Based on failure of early attempts to replace customary systems with modern systems of land tenure and acknowledging the dynamics of local tenure systems, it is now more widely recognized that land policies and laws must build

on local concepts and practice. This entails, among other things, legally recognizing local land rights.

Legal pluralism in land rights in itself is not necessarily a problem. More than the co-existence of different tenure systems, it is the lack of transparency in the administration of the rules, the splintering of the system of authority and the unregulated plurality of arbitration bodies that are the source of opportunistic behaviours, "forum shopping", and weak capacity to resolve conflicts.[154] For example, in Senegal, investors have obtained land through a combination of requests for land to local councils, direct negotiations with individual villages, appealing to central government (which subsequently put pressure on local councils) and rental from those holding title to land. Sixty-one percent of the large land acquisitions identified in 2010 by Faye et al. went to Senegalese nationals (mainly members of the political and religious elite), with the remaining acquisitions by foreign entities often also involving a Senegalese partner. These acquisitions were actively encouraged by central government through its programmes to expand agricultural production such as the Grande Offensive Agricole pour la Nourriture et l'Abondance (GOANA) and the biofuels programme (Faye, et al., 2011).

A number of countries in West Africa have undertaken reforms in their land laws, aimed at strengthening customary claims to land and simplifying procedures for land registration. Yet, as in so many areas, the gap between stated policy and implementation remains large, as the examples cited above for Senegal illustrates. Furthermore, even if land tenure rules are clarified and land transfers are legally permitted, problems will remain if the general atmosphere of overall contract enforcement remains weak. For example, if it becomes legal for farmer to transfer his land to an outside investor in exchange for certain considerations, such as promises of future employment, but those commitments subsequently are not met and the farmer has no way to enforce the agreement, the clarification of land tenure rules will have simply facilitated his or her loss of land.

A potential role for ECOWAS is to push for clarification of land rights by developing regional standards for the transferable rights of land rights, based in part on the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO, 2012c). Similar guidelines for securing water use rights are needed, which unfortunately the Voluntary Guidelines do not address.

154 Forum shopping is the practice of approaching more than one system to resolve a land dispute.

Chapter 12

Trade Policy

Regional economic integration is the core objective of ECOWAS, as set forth in the founding ECOWAS Treaty of 1975. Achieving this integration involves removing barriers to trade among member states and developing a common set of policies and instruments to manage trade among member states and between the Community and the rest of the world. ECOWAP aims for such integration in Agriculture, with the explicit aim of reducing the region's dependence on food imports and fostering food sovereignty. Although substantial progress has been made in improving regional integration since 1975, effective implementation of agricultural trade policies remains a major challenge. This chapter reviews the experience of West Africa, starting with WAEMU and then extending to ECOWAS, in developing and implementing regional trade policies and dealing with trade-related price volatility. In so doing, the chapter analyses the role of trade policy in helping the agrifood system respond to the challenges it faces as a result of the on-going structural transformation of West African economies described in Chapter 2.

In addressing these issues, the chapter first describes ECOWAS's goal of building a West-Africa-wide customs union, which involves two elements: creation of a free-trade area within the region and developing a common external tariff (CET) for trade with countries outside of the Community. It then examines in more detail ECOWAS's agricultural trade integration agenda as well as how that agenda is shaped by ECOWAS's relationships with the World Trade Organization (WTO) and the European Union. Next, the chapter describes progress to date in implementing the various elements of the agenda and analyses remaining constraints to its full implementation. It also examines the degree of coherence between, on the one hand, the regional trade policy and other regional policies such as ECOWAP, and on the other hand, between regional and national trade policies.

One of the key issues that any trade agenda needs to address is how to deal with the price volatility that characterises many regional and international markets. The chapter addresses the measures, beyond the safeguards designed to accompany the implementation of the CET, that ECOWAS could undertake to help reduce and manage the impacts of such volatility. The discussion also examines other measures that currently are not part of the formal ECOWAS trade agenda, but which need to be dealt with if regional integration is to be fully effective. Finally, the chapter closes with some overall conclusions and a series of broader inquiries regarding the future of Agricultural trade policy in West Africa.[155]

12.1 The policy goal: building a unified West African market

The ECOWAS Treaty and ECOWAP both reflect a broad consensus among policy makers about the importance of strengthening regional integration and trade in order to take advantage of the complementarities arising from the diverse agro-ecological conditions and consumption patterns in West Africa. Stronger regional integration also allows countries to overcome the disadvantages of small and fragmented markets in order to exploit comparative advantages and economies of scale. It facilitates the management of shared natural resources, such as rivers, aquifers and pastures, building on the historically important patterns of transhumance and trade. It also is critical to

155 See Maur and Shepherd (forthcoming) for a more detailed discussion of trade integration policies of ECOWAS.

management of cross-border livestock and human diseases and promotion of technology spillovers among countries. Finally, regional integration via organizations like WAEMU and ECOWAS confers to member states, the majority of which are amongst the poorest in the world, more bargaining power in international trade negotiations.

The aim of establishing a customs union was included in the ECOWAS founding treaty. Creating a customs union includes two components: abolishing customs duties and non-tariff barriers to trade among the countries of ECOWAS, thereby creating a free-trade area; and establishing a common external tariff (CET) for trade with countries outside of ECOWAS. Following the example of West African Economic and Monetary Union (WAEMU), ECOWAS plans that its customs union will evolve into a full economic and monetary union (FAO, 2008).

Because regional trade policy affects the price of imported and locally produced goods in the region, designing trade policy involves balancing diverse interests of different groups within West Africa. Among the key balancing acts that trade policies need to address are the following:

- ECOWAS member states have different interests depending on their net trade positions, comparative advantages in producing various goods and the relative importance of specific food staples in the diets of their populations. The countries also differ with respect to how important industrialized agroprocessing is in their economies and hence the countries' interest in ensuring access to key inputs, some of which are imported. Such interests have strongly influenced, for example, the trade policies of Nigeria.

- Policy makers in each country face the "food price dilemma" of food prices representing both an incentive to increase local production and a major determinant of the real income of the poor. Trade policy, through its impact on domestic food policy, thus involves balancing the interests of poor and vulnerable population groups (net food buyers) with those of net food sellers.

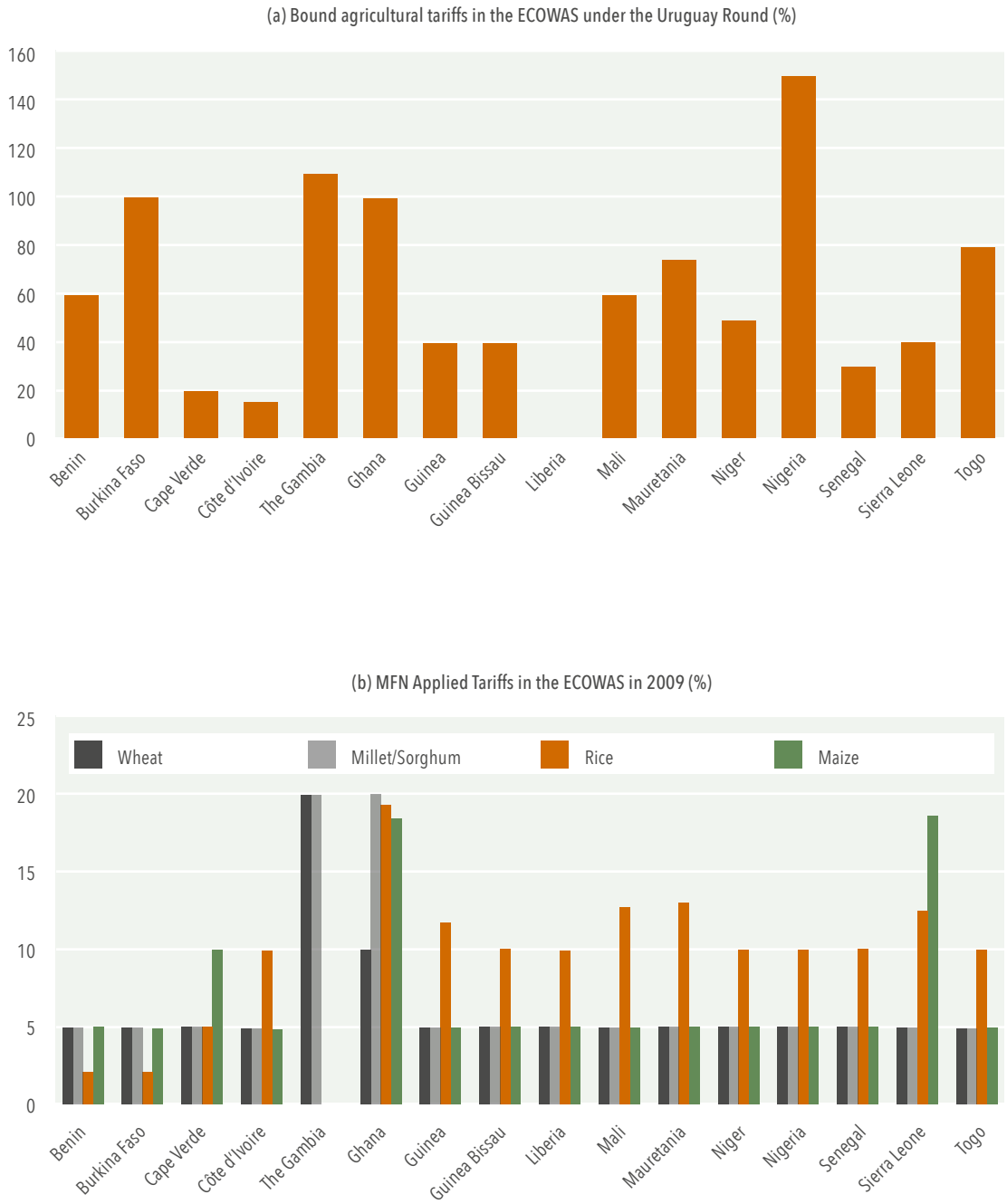
- Within a value chain, the products of each stage of the value chain are inputs and hence costs for the next stage. Decisions to protect one stage to boost domestic production increase costs for the next stage. For example, a decision to provide infant-industry protection for a domestic fertilizer industry may help that industry to grow domestically, but at the cost of denying farmers low-cost imported fertilizer, thereby slowing farm-level productivity growth. Similar arguments can be made for agro-industries that process both domestic and imported raw materials, such as sugar.

In part because of the need to balance these divergent interests, the implementation of the ECOWAS trade agenda has progressed more slowly than originally anticipated. Developing consensus on trade involves reconciling different historical positions and policies of the member states with respect to their degree of openness to international trade. The degree of openness is illustrated in the wide range of bound tariffs for cereals that the various West African states agreed to when they joined the WTO (Figure 12.1 (a)).[156] At one extreme there are countries with very low bound tariffs, such as Côte d'Ivoire (15%), Senegal (25%), Guinea, Guinea Bissau and Sierra Leone (at 40% each). At the other end of the spectrum are countries with high bound tariffs for cereals, such as Togo (80%), Ghana and Burkina Faso (100% each), The Gambia (110%) and Nigeria (150%, which extend to all commodities). These levels of bound tariffs do not correspond to the actual MFN tariffs applied by the countries of the region, the majority of which are in the 5-10% range and reach as high as 20% for a few countries and commodities (Figure 12.1(b)). However, this diversity in the initial bound tariff commitments is indicative of differences among the West African countries regarding their openness to trade and their perceptions about the capacity of their respective agricultural sectors to meet

156 All ECOWAS countries with the exception of Liberia and Cape Verde were members of the WTO from its inception in 1995. Cape Verde joined in 2008 and Liberia has been in the process of accession since December 2007. A bound tariff is the maximum tariff that a WTO member committed not to exceed on its imports from any other WTO member.Countries negotiate their bound tariff rates with other WTO members as part of the process of accession to the organization. In practice, WTO members typically apply lower tariff rates but retain the right to raise their applied rates up to their bound rates. Both bound and applied tariff rates should comply with the general WTO principle of "most-favoured-nation" (MFN), i.e. no discrimination among trading partners.

the food needs of their people. These differences were more explicitly expressed during the process of agreeing on the ECOWAS Common External Tariff (CET), discussed below.

Figure 12.1 *Bound and applied tariffs for cereals in West Africa*



Source: Konandreas, 2012a

12.2 The trade integration agenda: progress and remaining challenges

12.2.1 The ECOWAS Agricultural integration agenda[157]

Although economic integration is a central objective of ECOWAS, the Community does not have an officially endorsed trade policy document, analogous to ECOWAP for agriculture, that presents the vision, objective and tools for trade development of the region. Rather, ECOWAS's overall trade policies derive from several regulatory texts and plans that govern different aspects of trade within the Community and how the Community seeks to manage its trade with the rest of the world. The most important of these documents are the ECOWAS Trade Liberalization Scheme (ETLS), the Protocols of Free Movement of Persons and Goods, the rules governing value added tax (VAT) harmonization within the Community, the adoption of a Common External Tariff (CET) and safeguard measures for trade with the rest of the world, efforts to harmonise safety and quality standards for goods (Sanitary and Phytosanitary Standards – SPS; and Technical Barriers to Trade – TBT), and plans to create a common monetary zone for all of ECOWAS. Moreover, the relations between ECOWAS and the rest of the world are also governed by agreements its member states have with other nations via multilateral and bilateral accords. The most important of these are the WTO accords and relations with the European Union (EU) via the now-expired EU/ACP accords and their successor, the Economic Partnership Agreements (EPAs). For agriculture, these general trade protocols are supplemented with specific elements of the ECOWAP Regional Agricultural Investment Programme.

The ECOWAS Trade Liberalization Scheme. The ETLS establishes the framework for creating a free trade zone among ECOWAS member states. Adopted in 1979, it initially allowed free trade only for agricultural products and traditional handicrafts that originated in the ECOWAS countries, but between 1990 and 2000 it was broadened to include all industrial products of ECOWAS Community origin. Thus, under ETLS, all goods that originate within the ECOWAS Community are supposed to move duty-free within the region.

Protocols of Free Movement of Persons and Goods. Between 1979 and 1990, ECOWAS adopted a series of protocols that (1) allow citizens of any member state to enter the territory of any other member state for up to 90 days without a visa, (2) establish conditions under which citizens of a member state may establish residence and seek employment in any other member state, and (3) provide conditions under which any citizen of a member state can establish a business (and bring in goods and equipment for that business) in any other member state.[158] The protocols aim at providing mobility of labour and capital within the Community and provide protection for those undertaking such movements – for example, prohibiting any mass expulsions of workers from a member state, as happened to Ghanaians working in Nigeria in the early 1970s.

VAT harmonization. As part of the process of economic integration, the ECOWAS member states have agreed to harmonise their value-added tax (VAT) rates applicable to the same goods across countries. This is to avoid creating incentives to move goods from low-VAT to high-VAT countries within the free-trade zone area, thus generating trade unrelated to comparative advantage and problems of tax avoidance and tax enforcement.

SPS and TBT harmonization. In order to create a free trade zone, food safety and product quality standards need to be harmonized or at least mutually recognized across member states in order for goods to flow easily within the region. A major challenge facing West African countries is how to strike the balance between complying with international standards emanating from WTO agreements on the Application of Sanitary and Phytosanitary Measures (SPS) and Technical Barriers to Trade (TBT) needed to access international export markets and developing standards that

157 This section draws heavily on Alpha, 2012.

158 For details, see http://www.comm.ecowas.int/sec/index.php?id=publicat-1&lang=en

correspond to product characteristics valued in local and regional markets. To date, efforts in West Africa have focused mainly on harmonization aimed at meeting global standards for export markets. As part of its regional integration effort, WAEMU pioneered efforts to strengthen and harmonize SPS and TBT compliance through the West Africa Quality Programme (WAQP), initiated in 2001 and implemented by UNIDO with funding from the EU. In 2007, the programme was expanded to cover all ECOWAS countries plus Mauritania. Its objective is to "create an environment that facilitates compliance with international trade rules and technical regulations, in particular, compliance with WTO agreements on TBT and SPS, through the establishment and/or the strengthening of national and regional quality infrastructure that provides effective services in standardization, conformity assessment and accreditation that meet international standards".[159]

Adoption of the CET. In January 2006, the ECOWAS Heads of State approved the extension to all ECOWAS Member States of the WAEMU Common External Tariff (CET), with a few temporary exceptions. This CET had been in use by the WAEMU member countries since 2000. One of the motivations for adopting the CET for all of ECOWAS is that having a CET in place is a prerequisite to signing a Community-wide Economic Partnership Agreement with the EU (see below). The WAEMU CET classified all imports into one of four tariff bands, with tariffs rates ranging from 0% for the first band to 20% for the fourth band. The adoption of the WAEMU CET resulted in tariff rate reductions on many items in the non-WAEMU members of ECOWAS (for example, see the discussion of the Ghanaian poultry value chain in Chapter 10). This, in turn, led to arguments that the WAEMU CET did not provide sufficient protection to certain products. Several countries, including Nigeria, and stakeholder groups, such as ROPPA, called for the creation of a higher fifth tariff band, with Nigeria arguing that it be set at 50%. In June 2009, the ECOWAS Heads of State authorized the creation of the fifth band and set the rate at 35%. Negotiations to finalize the list of products to be included in the fifth band continued until late 2013. Pending the scheduled implementation of the restructured CET with the fifth band in 2015, the general WAEMU structure of the CET, with its four bands, remains in practice throughout ECOWAS, but individual countries sometimes impose rates on specific items that are different from those specified in the WAEMU CET. For example, Ghana taxed rice imports at the rate of 20%, while the CET rate is 10%.

Safeguard measures. At the time of the adoption of the CET, ECOWAS Heads of State also endorsed the creation of two safeguard measures. The first, the Degressive Protection Tax (DPT), aims at providing additional industry-specific protection (at a decreasing rate over time) to countries as they adapted to lower tariff rates under the CET. The second, the Safeguard Tax on Imports (STI), aims at dealing with import surges. Two additional measures were later added to the list of proposed safeguards. The ECOWAS Compensatory Levy (ECL) aims at counteracting the competitive advantages that imports gain due to agricultural subsidies in the exporting countries. The Inverse Safeguard Tax (ISF) is a proposal that would operate in the opposite direction as the STI in cases of soaring international prices or precipitous, undesirable drops of imports of critical goods. It would provide a uniform mechanism by which import duties would drop in such cases to help stabilize trade volumes (ECOWAS, 2012). These safeguard measures and their current implementation status are discussed in section 12.2.3 below.

Plans for a monetary union. The 15 ECOWAS countries have 8 different currencies, and this diversity of currencies constrains regional trade. Within ECOWAS, the eight WAEMU countries (Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo) share a common currency, the CFA franc, which has a fixed parity to the Euro, guaranteed by the French Treasury. Each of the remaining seven countries has its own currency. One of these (the Cape Verde escudo) is also pegged to the Euro and hence has a fixed exchange rate with the CFA franc. The value of the remaining six currencies relative to the Euro and the US dollar are determined through

159 *(http://qualitywestafrica.org/prototype/about-waqp/)*

auctions and administrative measures. Because of the limited convertibility of some of these currencies, trade between these countries and other countries within the region and outside of the region has been constrained, as importers and exporters have to obtain a convertible currency and pay currency conversion fees and insurance to cover exchange-rate risks. In order to address these problems and ease payments among West African countries, the six countries with currencies not linked to the Euro (The Gambia, Ghana, Guinea, Liberia, Nigeria, and Sierra Leone) created the West Africa Monetary Zone (WAMZ) in 2000. WAMZ set a target of creating a common currency, the Eco, among its member states by 2015. The aim is then to merge the WAMZ and WAEMU by 2020 and achieve a unified currency for the entire ECOWAS zone (Alpha, 2012). A unified West African currency, however, would likely not be linked directly to the Euro, and such delinking for the WAEMU countries would require substantial macroeconomic adjustments on their part.

Relationships with the World Trade Organization (WTO). Although all member states of ECOWAS except Liberia are members of the WTO, each joined and negotiated its terms of accession individually. ECOWAS as an organization is not a member, having only ad hoc observer status at meetings of the Trade and Development Committee and the SPS Committee. In order to become a member of the WTO and have authority to negotiate on behalf of its member states (as does the European Commission on behalf of the EU member states), ECOWAS would need to become a full customs union. To qualify as a customs union under WTO rules, ECOWAS would need to adopt the "Free Practice Principle" which involves import duties being collected on goods only at their first point of entry into the Union, after which point they circulate as if they had originated in the Union. Currently ECOWAS operates under the "transit regime", according to which imported goods are granted temporary suspension of duties, taxes, and commercial policies until they reach the border of the destination country, at which point they clear customs. Moving to the Free Practice Principle would require ECOWAS countries to develop a system whereby customs services at the ports of entry would collect and then transfer customs revenue to the importing country. Negotiations among member states on development of such a mechanism appear stalled (Alpha, 2012). Adoption of the Free Practice Principle would also likely reduce employment in the customs services of inland countries and would concentrate bribes at the ports of entry. The coastal countries might also be slow in remitting to the inland countries customs revenues that were levied on their behalf. All of these factors probably explain some of the resistance of member countries to the movement to the Free Practice Principle.

As discussed below, the fact that the West African countries carried out their negotiations individually with the WTO rather than as a bloc complicated subsequent intra-ECOWAS negotiations regarding the CET. WTO rules also dictated revision of the rules governing the West African countries' preferential access to EU markets under the ACP/EU accords, leading to the process of negotiating Economic Partnership Agreements (EPAs).

Trade agreements with the EU and the Negotiation of EPAs. Trade relations between ECOWAS member states and the EU are governed by several agreements: the EU's Everything but Arms (EBA) agreement, its General System of Preferences (GSP) and enhanced GSP (GSP+), and the Economic Partnership Agreements (EPAs). All of these are successors to previous agreements that granted these countries nonreciprocal preferential access to EU markets under earlier African, Caribbean and Pacific (ACP)/EU agreements, which have been phased out because they were not WTO compliant.[160] The ECOWAS Commission has received the mandate from its member states to negotiate jointly with the WAEMU Commission for a Community-wide EPA, but until a final

160 The ACP/EU accords under the Lomé Convention of 1976 granted ACP countries preferential non-reciprocal access to EU markets for a wide range of products. These accords trace their genealogy back to preferential trade agreements granted at independence that allowed the newly independent countries preferential access to the market of the former colonial power. With the formation of the EU, the preferential access was broadened to the entire EU market. But because these preferences were not open to all developing countries but only to former colonies, they were judged to be noncompliant with WTO rules and hence had to be phased out. They are being replaced by EPAs, which introduce reciprocity in the trade relations between ACP regions such as ECOWAS and the EU. The initial target date for completion of the EPAs was 2007, but agreement "in principle" on the terms of a West-Africa-wide EPA was only reached in March, 2014.

agreement is signed and ratified with the EU (see Section 12.2.4) the ECOWAS member states' trade relations with the EU are managed on a country-by-country basis.

12.2.2 Implementation progress: the free trade area

ELTS and free movement. In reality, ECOWAS is far from a free trade area. Traders frequently face a wide array of tariff, tax and non-tariff barriers to trade, and, as any West African who has travelled by public transport across borders in the region can attest, the Protocol on the Free Movement of Persons is frequently violated. It is useful to distinguish, however, among (1) official government actions that are inconsistent with regional commitments to create a free trade area, (2) rent-seeking by individuals acting outside of official government policy, and (3) structural factors that hinder regional integration.[161]

Government actions that impede the realization of a free trade area include the imposition of periodic export bans on cereals by certain member states (e.g. Mali, Burkina Faso and Nigeria) during periods of high domestic prices and the levying of taxes on products of ECOWAS origin as if they originated outside the community. The latter is related to numerous disputes between ECOWAS countries (and between WAEMU countries) regarding rules of origin, especially as they apply to processed products. For example, Côte d'Ivoire has filed a complaint with the WAEMU Commission against Senegal's decision to tax imports of refined palm oil from Côte d'Ivoire. Similarly, Malian cattle exporters frequently complain of Senegal imposing a VAT on live cattle imported from Mali, which under WAEMU and ECOWAS rules should enter VAT-free. Nigeria's frequent and unpredictable changes in its trade policies are also examples of national decisions inconsistent with ECOWAS provisions; tariff schedules and a list of import prohibitions, including from other ECOWAS countries, are periodically revised via legislation, and the Federal Ministry of Finance issues regulations and directives affecting regional and international trade. The Nigerian government offers several justifications for the import prohibition list, including the need to protect domestic industry, food safety and consumer health concerns, security issues, and limiting dumping practices. All the decisions, however, are made unilaterally, without either consultation with or prior notification to the ECOWAS Commission.

Rent seeking by individuals, such as police, customs, and gendarmerie officials who regulate transport of goods and persons within the region, as well as imports and exports, remains widespread, increasing the costs of trade and discouraging movement of goods and people within ECOWAS. Bribes are also sometimes required to obtain the certificates of origin required for goods to be traded duty-free within ECOWAS. The most common form of rent seeking is the extortion of bribes along the numerous roadblocks within the region. Figure 12.2 shows the extent of such barriers as of mid-2010, including the average time lost along each trade corridor and the average bribe paid per 100 km. Particularly noteworthy are: (1) the high number of barriers along the coastal corridor linking Abidjan and Lagos and in northern Côte d'Ivoire (which reflected the division of the country at that time), (2) the high level of bribes extorted along certain corridors in Burkina Faso, Ghana, Mali, and Senegal, and (3) the very low level of such barriers in Togo, which is the regional leader in reducing such hindrances to trade.

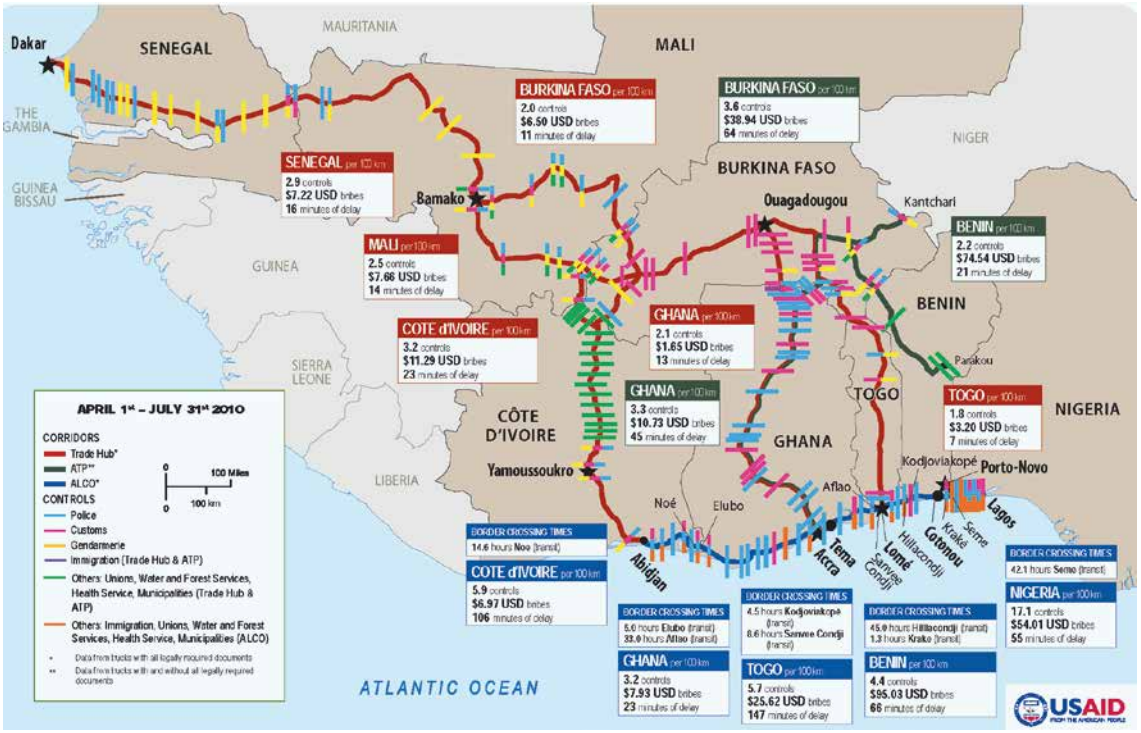
More recent reports show declines over time in the magnitude of these barriers, although the rate of decline appears to have levelled off in 2012 (Figure 12.3).[162] Mali appears consistently to be a leader in the number of road barriers per 100 km.[163] The decline over time in barriers across most countries may be due to increased efforts by organizations such as the West Africa Trade Hub to publicize the issue and provide traders and

161 Rent-seeking actions (e.g. police officers extorting bribes from truckers) are sometimes referred to in West Africa as "abnormal practices." Unfortunately, such practices are frequently the norm, and their widespread persistence suggests at least partial official approval.

162 Figure 12.2 shows the trends in the number of road stops per 100 km. The trends in average bribe paid per 100 km and time lost at such control points per 100 km show similar downward trends (USAID and UEMOA, 2012). Unfortunately, similar updated data are not available for changes along the Abidjan-Lagos corridor.

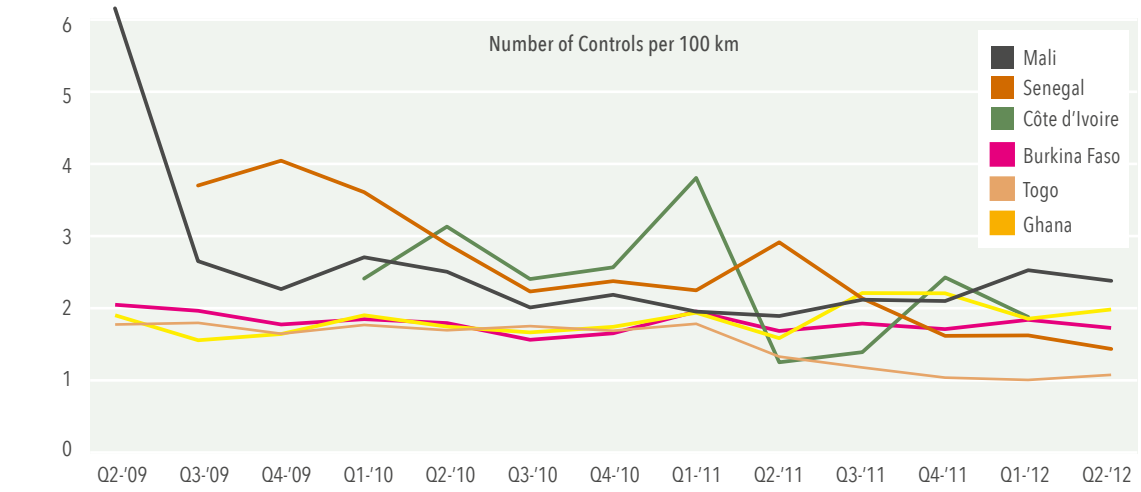
163 The high level of road barriers in Mali predates the country's security crisis that began in 2012. The number of barriers also does not appear to have increased following the March 2012 coup d'état, indicating that Mali faces a chronic rather than a transitory problem of such barriers to trade.

Figure 12.2 *Road Barriers to Trade in West Africa, April-June, 2010*



Source: USAID and ALCO, 2010.

Figure 12.3 *Change in number of Road Controls per 100 km by country, 2009–2012*



Source: USAID and UEMOA, 2012

truckers information about their legal rights and obligations under regional trade accords.[164] Togo's success reducing the number of such barriers indicates that governments can do something about this problem. The persistence of such barriers in several countries suggests that some governments are reluctant to address the problem aggressively, perhaps because such illegal payments represent an off-budget subsidy to the security forces. The

164 The decline in barriers in Senegal starting in mid-2011 also followed a border conference between Senegal and Mali, co-presided by the countries' two Prime Ministers, that focused on reducing such barriers to trade.

problem also undoubtedly persists because many customs agents and traders are not fully aware of ECOWAS and WAEMU rules regarding regional trade and traders are either unaware of complaint mechanisms available to them (e.g. via chambers of commerce) or find them ineffective (Alpha, 2012).

Structural factors. There are two key policy-related structural factors that have been particularly important in hindering regional integration: the structure of the market for trucking services and the lack of harmonization of SPS and TBT compliance measures.

The structure of the market for trucking services in West Africa results in high transport prices that hinder regional integration. While road infrastructure in certain parts of West Africa remains weak, particularly in rural areas, a 2009 World Bank analysis found that while prices per km charged by truckers in Africa are the highest in the world, the costs those truckers incurred for obtaining and operating their vehicles were not higher than those in other developing countries, such as China. Rather, the major determinants of the high prices charged were policies that resulted in a lack of competition in the trucking industry. This lack of competition was worst in Central and West Africa (Teravaninthorn and Raballand, 2009).

Among the major causes of high truck freight rates in West Africa are the following (ibid.):

- Bilateral treaties among countries that set quotas for allocation of shipments between countries and restrict shipment in third-country trucks. Typical examples are the treaties that Burkina Faso has negotiated with the major countries through which it imports most of its goods (Ghana, Côte d'Ivoire, Senegal, Togo, and Benin). These treaties allocate two-thirds of the tonnage of imports that are trucked to Burkina Faso to Burkinabé-registered truckers and one-third to truckers registered in the port country. Such quota systems obviously limit competition (excluding, for example, truckers from third countries, even if they are ECOWAS members) and create little incentive to update trucking fleets.
- Arrangements at the national level whereby allocation of freight among individual trucking firms is done via freight bureaus, usually on a first-come, first-served basis (queuing system). This system requires the trucker to be a member of a trucking association affiliated with the freight bureau. Designed in part to protect the access of small trucking firms to business, the system increases costs by creating an extra intermediary in the system (the freight bureau), thereby preventing direct contracting between truckers and those seeking to transport goods. In practice, the freight bureau sets the trucking rates, restricting price competition. The system also creates incentives for truckers to bribe bureau officials to get priority access to freight.
- In the absence of strict enforcement of axle load limits and the prevalence of small fines for violations, truckers face strong incentives to overload their trucks, which while privately profitable is socially costly, leading to premature breakdown of roads.

Differences in food safety (SPS) and product quality (TBT) standards have historically hindered integration in the region. The West Africa Quality Programme, initially implemented in WAEMU and subsequently extended to all of ECOWAS, has focused on strengthening national and regional capacities to set and enforce both health and quality standards. At the WAEMU level, over 42 regional standards (covering both agricultural and industrial products) have been adopted by the Council of Regional Organizations for Standardization, Certification and Quality Promotion for promulgation back to the national level. The WAEMU experience showed that interest of the National Standards Bodies were much more strongly oriented to developing improved standards for export markets, particularly for the EU, than for locally and regionally traded products such as gari (Alpha, 2012). Furthermore, despite significant progress by WAEMU to harmonize quality and health standards, the WTO reports that sanitary and phytosanitary (SPS) certifications are not recognized across countries in WAEMU, thus requiring re-inspection of goods crossing borders (World Trade Organization, 2012). The lack of uniform quality

standards for many agricultural products acceptable by traders throughout the region means that trade is based not so much on objective product description as on personal relationships among traders and on informal inspection of individual product lots, both of which narrow the scope for trade and competition.

One particularly thorny issue on which the region has reached no consensus is standards on genetically modified organisms (GMOs). National policies vary widely on whether GMOs are or will be allowed, but given the porous nature of borders in West Africa, it is clear that once GMOs become widely produced in one country, they will soon be present in its neighbours. Given that Nigeria and Burkina Faso have endorsed the notion of incorporating GMOs as part of their national agricultural development strategies, trade in GMO products in the region is not far off (see Focus Section C., p. 315)

VAT harmonization. In theory, developing a free-trade area requires harmonization of all forms of indirect taxation, including VATs as well as border tariffs, so that trade within the region is driven by comparative advantage and not simply differences between countries in taxation rates on goods. VAT harmonization is well advanced in the WAEMU countries, but has much farther to go in the non-WAEMU members of ECOWAS. In 1996, ECOWAS Heads of State and Government approved the ECOWAS Value Added Tax Protocol, but it was not until June 2012 – 16 years later – that The Gambia, one of two remaining member states at that time that still did not have a VAT, approved the protocol and moved to implement the tax effective at the beginning of 2013. Guinea Bissau (a WAEMU member), the other country without a VAT, was in the process of aligning its general sales tax to the structure of the VAT in the other countries (The Voice, 2012; World Trade Organization, 2012).

12.2.3 Implementation progress: the common external tariff and safeguard measures

The CET. Negotiations among ECOWAS member states about what items should be included in the fifth band of the CET, which was designated to cover "specific goods for economic development", lasted four years, from 2009 until September 2013, when the ECOWAS Council of Ministers adopted the final regulatory texts governing the tariff.[165] The revision of the CET to include a fifth band has been led by a joint ECOWAS-WAEMU technical committee. The committee established five criteria for a good to be included in the fifth band: (1) the good has a high potential for local production; (2) it is particularly vulnerable to international competition; (3) it is important for the economic diversification of West Africa; (4) its production would promote regional economic integration; and (5) a higher level of protection would be particularly helpful in promoting the private sector (ECOWAS and UEMOA, 2012b). The economic rationale for these criteria raises some questions, and the rationale depends in part on whether they are considered individually or simultaneously. For example, criteria (1) and (2) together constitute an infant-industry argument for protection. Taken alone, criterion (2) could be used to justify protection of any internationally uncompetitive industry.

There were particularly strong debates about the tariff rates for rice, sugar, and palm oil, reflecting differing views among member states and among other stakeholders regarding how to balance farmer, agroprocessor and consumer interests. Part of the political compromise was the proviso that only products previously in the fourth band could be considered for the fifth band. This proviso prevented rice, which had been in the third band of the WAEMU CET, from entering the fifth band as Ghana and Nigeria had originally sought. In December 2012, the joint ECOWAS-WAEMU technical committee recommended that raw sugar continue to fall into the third band (at 10%) and refined sugar remain in the fourth band (at 20%), but in a nod to sugar-producing countries, it also recommended that ECOWAS include sugar as one of its priority value chains in ECOWAP and that a special monitoring committee be established to evaluate the impact of the CET on the sugar industry.

165 The ECOWAS Heads of State and Government officially authorized the CET on 25 October 2013, with a scheduled implementation date of 1 January 2015 (ECOWAS, 2013a).

Table 12.1 *ECOWAS CET Tariff Bands*

Tariff Band	Definition of Goods	Level of tariff	Number of tariff lines	% of total tariff lines
1	Essential social goods	0%	85	1.4%
2	Goods of primary necessity, raw materials and specific inputs	5%	2 146	36.4%
3	Intermediate goods	10%	1 373	23.3%
4	Final consumption goods	20%	2 165	36.7%
5	Specific goods for economic development	35%	130	2.2%
Total			**5 899**	**100.0%**

Source: ECOWAS and UEMOA, 2012a

For palm oil, the committee recommended placing it along with other vegetable oils produced heavily in the region (coconut, cotton-seed, and groundnut oils) in the fifth band, while other imported vegetable oils remained in the fourth band (ECOWAS and UEMOA, 2012a).

Major features of the CET that emerged from the near-final recommendations of the joint ECOWAS-WAEMU committee in December 2012 are summarised in Tables 12.1 through 12.3. As detailed in Table 12.1, the fifth band (35% tariff) covers only a little over 2% of the total tariff lines included in the CET, with 60% of tariff lines covered in the third (10% tariff) and fourth bands (20% tariff), and 36% in the second band (5% tariff). Like most tariff schedules, the CET generally gives higher protection to semi-processed and processed products than raw materials, with the exception of a few sensitive products like meats. For example, the CET rates for unrefined vegetable oils, rice paddy, raw sugar, and milk powder are lower than those for processed products derived from them, thereby offering protection to West African agroprocessors of those imported inputs.

In creating the revised CET, ECOWAS was constrained by a condition of international trade agreements (Article XXIV of the GATT) that stipulates that the creation of a free trade zone such as ECOWAS cannot result in an increase in overall tariff protection of the zone relative to the rest of the world. Thus, even though there was strong lobbying from stakeholders to increase the number of products included in higher tariff bands during the process of negotiation, the number of proposed items in the fifth band gradually fell as did the general level of protection. In the final structure of the CET that was adopted in 2013 the trade-weighted average of all tariffs for the region as a whole is practically unchanged from the situation that prevailed prior to the adoption of this CET. For some individual countries, such as Liberia and Benin, however, the CET will result in major changes in trade-weighted levels of protection (Table 12.2). In 9 of the 15 ECOWAS countries (including Nigeria), the trade-weighted level of protection is projected to fall under the CET, while in the remaining 6 (including Ghana) it would rise.[166]

The fifth band is heavily concentrated on animal products (mainly meats), a few fresh and processed horticultural products in which ECOWAS judges West Africa to have strong development potential, processed cocoa products, key vegetable oils and products derived from them (mainly soaps), and fabrics (Table 12.3). The strong protection given to meat products, including poultry, does not extend to dairy products. While consumer-ready yoghurts fall within the fifth band, milk powder imported in bulk is taxed at 5%, suggesting that ECOWAS sees limited growth potential for milk production in the region but seeks to protect its dairy processing industry, which is based mainly on imported milk powder.

166 Note that the "pre-CET level" in Table 12.2 refers to currently applied tariffs (similar to the WAEMU CET), not the bound tariffs of the individual countries. As noted below, for some of the countries, the proposed ECOWAS CET with the fifth band exceeds their WTO bound tariff rates, which poses a potential problem for the implementation of the ECOWAS CET.

Table 12.2 *Projected trade protection changes with the adoption of the ECOWAS CET*

	Trade-weighted Protection Rate		
Country	Pre-CET (%)	Post-CET (%)	Change
Benin	15.7	18.05	2.35
Burkina Faso	11.55	10.62	-0.93
Cape Verde	13.75	13.9	0.15
Cote d'Ivoire	7.3	7.44	0.14
The Gambia	14.91	14.59	-0.32
Ghana	9.89	10.96	1.07
Guinea	12.59	10.63	-1.95
Guinea-Bissau	13.94	13.81	-0.13
Liberia	4.8	12.97	8.17
Mali	11.11	10.64	-0.47
Niger	13.01	11.25	-1.76
Nigeria	11.2	10.21	-0.99
Senegal	9.38	9.12	-0.26
Sierra Leone	12.66	10.57	-2.09
Togo	14.27	15.91	1.64
ECOWAS	**11.74**	**12.05**	**0.31**

Source: ECOWAS, 2013b

Table 12.3 *Structure of the fifth band of the ECOWAS CET*

Products	No. of Tariff lines in 5th band	% of total tariff lines in 5th band
Animal Products		53.1%
Fresh meats and meat products	50	38.5%
Processed meat products	12	9.2%
Yogurts	4	3.1%
Eggs for human consumption	3	2.3%
Vegetable Products		6.9%
Potatoes, onions, and shallots	3	2.3%
Processed potatoes	2	1.5%
Processed tomatoes and tomato products	4	3.1%
Cocoa powders and chocolate products	9	6.9%
Oils and Soaps		13.1%
Refined palm, cottonseed, coconut and groundnut oils	6	4.6%
Soaps and cleaning products	11	8.5%
Fabrics	17	13.1%
Other[a]	9	6.9%
Total	**130**	**100.0%**

Source: ECOWAS CET schedule
[a] Bottled waters, non-chocolate confections, and bakery products

Milled and parboiled rice remained in the third band, taxed at 10%, even though processed rice is not an intermediate good like other products in this band. Its placement in the third band represents a compromise between countries like Senegal and Sierra Leone, on the one hand, that are heavily dependent on rice imports and hence favoured a low tariff rate, and countries such as Ghana and Nigeria that sought a high rate in order to protect domestic production. Other unprocessed grains, such as maize, fall into the first band (5% tariff). Rice paddy, which might be considered an intermediate input into the milling industry and hence logically falling into the third band at 10%, actually stayed in the second band at 5%, perhaps as a concession to countries such as Nigeria that sought to substitute rough rice and brown rice imports for milled rice imports in order to capture the value added from milling domestically.

Shifting from its current tariff regime to the CET will affect a country's overall level of tariff protection, and hence its volume of trade, the amount of government tariff revenue, and consumer and producer welfare (due to changes in prices). The magnitude of these changes will depend on the difference in the tariff rates between the CET and each country's currently applied tariffs, the country's composition of imports, and how sensitive imports are to changes in tariff rates (as measured by the import elasticity of demand). Analysis by ECOWAS and WAEMU experts (ECOWAS, 2013b) estimated that adoption of the CET will not drastically affect government revenues are expected to in the region. Estimated tariff revenues fall slightly in Nigeria and Guinea Bissau, and increase very modestly in the other countries. Consumers benefit in countries where the trade-weighted rates of protection fall and lose where they rise, but the overall change in consumer surplus is small, given the overall small change in region-wide tariff rates.

Safeguard measures to accompany the CET.[167] The ECOWAS CET aims to establish a baseline level of protection for the Community. Given the volatility of market conditions, particularly for agricultural products, ECOWAS also proposed a complementary set of safeguard measures aimed at dealing with: (1) transitional problems that particular industries in individual countries might face as a result of adopting the CET, (2) import surges, and (3) the aim of ECOWAP to provide differentiated protection to various value chains.[168] The four measures include:

- ***The Degressive Protection Tax (DPT).*** The objective of the DPT is to offer countries that face a reduction in the level of protection for specific industries or sectors additional time to adjust their economies to the new tariff regime. The DPT provides additional protection to those industries or sectors (at a decreasing rate over time) during which time they can restructure and improve their competitiveness. Each member state is requested to develop its list of products for which it requests DPT protection; the requests will be reviewed by the ECOWAS CET management committee and recommendations made to the appropriate decision-making body of ECOWAS. The DPT is to be set as the smaller of either: (1) the difference between the former tariff rate for the good and the rate under the CET or (2) 50% ad valorem. The DPT will be progressively reduced over a period of 10 years. This DPT will likely provide higher protection than the WAEMU DPT, whose maximum rate was 20% ad valorem and which was phased out over 6 years.

- ***The Safeguard Tax on Imports (STI).*** This is a temporary surtax aimed at protecting local production from large declines in world market prices and import surges. Although authorised by ECOWAS, it is to be applied on an individual country basis. The tax would be triggered on selected items (the list of which would be published annually by ECOWAS) if either (1) the CIF price of the import fell by more than 10% relative to the previous three-year average price or (2) imports exceed 20% more than the previous three-year average. Once triggered, the

167 This section draws heavily on Konandreas, 2012a; Alpha, 2012; and ECOWAS and UEMOA, 2012b; and ECOWAS, 2012.

168 Three of these measures are similar to safeguards adopted in conjunction with the WAEMU CET, and they also mirror safeguards being discussed under the Doha round of the WTO negotiations.

surtax would equal either 100% of the decrease in the unit price or 50% of the rate of growth of imports, whichever is greater. The tax would apply to all imports of the product from outside the Community, no matter the source, for no more than one year unless the triggering conditions were again met in the subsequent year. The STI is thus seen as a short-term measure to deal with temporary import surges. It is similar in design to the Special Safeguard (SSG) of the WTO Agriculture Agreement (Article 5), but the ECOWAS STI appears, as written, to apply to all products, not just agricultural products. Another difference is that the right to use the WTO SSG was linked to the 'tariffication' process and had to be designated as such in members' schedule of commitments. Thus, as currently designed, it appears that the ECOWAS STI is not WTO-compliant (ECOWAS and UEMOA, 2012b).[169]

- ***The Inverse Safeguard Tax (ISF).*** While the STI would raise tariff levels when world prices drop precipitously or import volumes surge, the ISF is designed to address the opposite problem – a disruptive drop in imports of key goods if world prices increase rapidly or import volumes fall sharply – by spelling out the conditions under which import tariffs can be cut (and by how much) to maintain imports of key goods at a desirable level. The ISF is intended to avoid ad hoc and uncoordinated cuts in import tariffs across different member states during periods of high prices, as occurred in 2007-08. No such safeguard mechanism exists in WAEMU. Its legality at the WTO is not in question as in effect its objective is to reduce protection and boost trade and not the opposite. The ISF was just proposed in 2012, and at this stage no specific triggers have be specified (ECOWAS, 2012).

- ***The ECOWAS Compensatory Levy (ECL)*** is similar to the WTO countervailing duty and is meant to offset "unfair" competition. The ECL will be imposed on proof that subsidies of third countries are causing injuries or threats of injuries to ECOWAS producers involved in agriculture, livestock and fishing or forestry processing industries. The triggering mechanism is to be the Producer Support Estimates (PSE) published annually by the OECD.[170] An OECD-wide average PSE greater than 10% would trigger the ECL, which would vary between 10% and 30% depending on the magnitude of the PSE, and apply to all imports from non-ECOWAS countries (ECOWAS and UEMOA, 2012b). This proposed 10% trigger is very low, as average OECD-wide PSE's are currently in the range of 20%, meaning that in practice the ECL would be triggered from the start for almost all non-ECOWAS agricultural products.

The exact modalities of these safeguards, especially the trigger mechanisms, were still under discussion in late 2013. During the negotiations, different stakeholders have raised concerns about how effective such safeguards will be in protecting West African producers given the volatility in world market prices of basic foodstuffs and the perceived low level of the CET. For example, ROPPA proposed an adjustment period of more than 10 years for the DPT. For the STI, it argued to extend the application duration from the initially proposed six months to one year, reduce trigger thresholds from the originally proposed 50% to 10% for volume and from 20% to 15% for price, take account of currency appreciation in the price safeguard, and for the trigger thresholds to be set at a regional rather than country level. Finally, for the ECL, it recommended that ECOWAS conduct its own studies to identify levels of subsidies granted by exporters with a view to determining the level of the ECL (Konandreas, 2012a). As can be seen from the current status of the proposals, ROPPA, although not achieving all of its objectives, was successful in making these measures more protective of West African agriculture (see Focus Section B for further discussion of ROPPA and agricultural policy, p.311).

169 If restricted to agricultural products, the ECOWAS STI could be compatible with the Special Safeguard Mechanism (SSM) proposed for agriculture under the Doha Round of the WTO. However, this would depend on the specific trigger mechanisms adopted and its product coverage in relation to those of the SSM. Since the SSM has not yet been settled and adopted, however, the ECOWAS STI is not currently WTO-compliant.

170 The PSE measures the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures. It is expressed as a measure of the percentage of total farm income. A PSE of 10% denotes that 10% of total farm income comes from such transfers (http://stats.oecd.org/glossary/detail.asp?ID=2150).

12.2.4 The EPAs[171]

Between 2003 and 2014, the ECOWAS Commission and the WAEMU Commission jointly negotiated with the EU for a regional EPA for West Africa (ECOWAS countries plus Mauritania). A final agreement was reached in October, 2014. The EU remains the largest trading partner of West Africa. In contrast to the previous ACP/EU agreements that allowed West African countries non-reciprocal duty-free access to the EU market, the draft EPA involves West African countries gradually opening their markets over a period of 20 years to duty-free imports of a range of European products and services in exchange for continued duty-free access to the EU. The negotiations were originally scheduled to be completed by December 2007, but this process evolved slowly for several reasons.

First, nations that the UN classifies as "least developed countries" (LDCs) already have non-reciprocal duty-free access to the EU market for almost all their goods under the EU's Everything But Arms (EBA) trade preference programme. All ECOWAS member states except Nigeria, Ghana, Côte d'Ivoire and Cape Verde are LDCs, and hence there was little urgent political pressure from stakeholder groups in the LDCs to conclude the regional EPA.

Second, in order to conclude an EPA, ECOWAS needed to have in place a CET and an agreement with the EU regarding a list of "sensitive products" that would not be subject to duty-free trade with the EU but rather be subject to the CET. Because the ECOWAS Commission was in the process of negotiating with its member states the modified structure of the CET, including the fifth band throughout much of 2013, it was not in a position until late 2013 to make a definitive offer to the EU regarding its CET.

Most fundamentally, the major sticking point was the degree to which West Africa would open its market to duty-free imports of EU goods in exchange for the EU's offer of 100% duty-free access of West African goods to the EU market. In practice, this debate involved reaching agreement on the products that ECOWAS would classify as sensitive goods, subject to the CET. In contrast to the political process used to identify products to include in the fifth band of the CET, ECOWAS used a combination of statistical analysis and wide consultation with stakeholders to come up with a list of proposed sensitive products based on a consolidation of lists developed by the member states (for details, see Alpha, 2012). The initial list implied that 65% of EU goods would enter West Africa duty free.[172] In contrast, the EU argued that an opening of no less than 80% would be required to produce a total trade-weighted level of market liberalisation of 90%, consistent with the notions of a free-trade area incorporated in the Article XXIV of the GATT, which is the international legal foundation for the free-trade areas such as the EPAs.[173]

In subsequent negotiations, the West African countries gradually expanded the degree of market opening they were willing to accept. In early 2014, the EU accepted the ECOWAS offer of a 75% opening over a period of 20 years in exchange for immediate duty-free access of 100% of West African goods and services to EU market as long as they met EU quality standards. The EU pledged to provide 6.5 billion Euros between 2015 and 2019, as part of the EPA Development Programme (EPPAED), to help West African enterprises increase their capacity to meet these standards.[174] In a concession to the EU, the West African countries agreed to extend Most Favoured Nation (MFN) status to the EU, which ECOWAS had previously resisted, as it felt that doing

171 This section draws heavily on Alpha, 2012; Bovier, 2014; ECOWAS, 2014a; ECOWAS, 2014b; and Financial Afrik, 2014

172 The percentages in this sentence refer to the number of tariff lines (individual goods), not the trade-weighted volume of imports from the EU.

173 Article XXIV states that free trade areas must, with few exceptions, eliminate "duties and other restrictive regulations of commerce… on substantially all the trade between the constituent territories in products originating in such territories." It does not, however, explicitly define the term "substantially all", so the disagreement between the EU and ECOWAS over the openness of West Africa to duty-free EU imports in part involves a disagreement over the interpretation of this term.

174 Besides its specific measures aimed at helping countries adjust to the EPA (e.g. tax reforms and compensation of fiscal losses), the EPADP (PAPED in French) programme is basically an aid for trade program. Its five strategic foci are: (1) diversification and growth of production capacities; (2) developing intra-regional trade and facilitating access to international markets; (3) improving and strengthening trade-related infrastructures; (4) implementing necessary adjustments and integrating other trade-related needs; and (5) EPA implementation and monitoring-assessment. The PAPED emphasizes three main value chains: food supply; cotton and textiles/clothing; and tourism. It also covers fields such as sanitary and phytosanitary measures, standards, trade facilitation, competitive production, and EU-West Africa value chains (Agritrade, 2010, 2011).

so would reduce the region's capacity to diversify its trading partners.[175]

ECOWAS and the EU signed the final version of the EPA in October, 2014. How this agreement will affect West African Agriculture will depend, among other things, on: (i) how well West African products will be able to meet EU quality standards; (ii) whether EU Agricultural products that benefit from production subsidies will be allowed duty-free access to the West African market; and (iii) the cost structure of West African agroprocessors compared to their EU counterparts.

In addition, concerns among the West African countries about the impact of adopting the EPA revolve around two issues: how the tax exoneration for EU goods will affect government revenues (as most West African governments rely substantially on tariff revenues) and whether key sectors and industries in West Africa will be able to compete with European imports. Estimates of these impacts vary substantially (Box 12.1).

While the EU-ECOWAS negotiations dragged on for a West-Africa-wide EPA between 2003 and 2014, the non-reciprocal duty-free access to EU markets granted to these countries individually under the EU/ACP Cotonou agreement came to an end in December 2007. As mentioned earlier, this posed a problem only for the four non-LDC ECOWAS countries – Cape Verde, Côte d'Ivoire, Ghana and Nigeria – as the LDCs continued to have non-reciprocal access under the Everything But Arms programme. Ghana and Côte d'Ivoire therefore negotiated interim EPAs individually with the EU, which actually started to open their markets more broadly to EU imports than under the ECOWAS proposal to the EU. Both of the interim EPAs include clauses stating that the agreements will become void if and when a West-Africa-wide EPA comes into effect. Nigeria resisted the pressure to open its market more widely to EU imports, and hence its unrestricted duty-free access to the EU market lapsed at the end of 2007. The country still had duty-free access for many of its products into the EU market under the EU's GSP, but it now faced tariffs on some of its processed products, such as semi-finished cocoa products, which are now taxed at rates of between 2.8% and 6.1% depending on the product (Traoré, 2009). Cape Verde benefitted from a three-year transition period of continued duty-free access due to its characteristics as a small and vulnerable island economy. In December 2011, Cape Verde was granted enhanced GSP access to the EU market under its GSP+ programme, which provides duty-free access to 66% of all tariff lines in the EU.[176]

175 MFN status for the EU obliges ECOWAS to extend to the EU the same trade preferences that ECOWAS extends to any other trading partner.

12.2.5 Potential implementation constraints

Implementing the ECOWAS trade agenda for Agriculture faces a number of potential hurdles.

The CET and WTO. As mentioned earlier, the member states of ECOWAS vary widely in the level of the bound tariffs they negotiated during their processes of accession to the WTO. Adopting the CET, eight member states that negotiated relatively low bound tariffs (Burkina Faso, Cape Verde, Côte d'Ivoire, Guinea, Mali, Niger and Senegal) are in violation of the WTO accords, as the CET (particularly the fifth band) exceeds their bound tariffs by a significant amount. In contrast, countries such as Ghana and Nigeria, which negotiated high bound tariffs, face no problem. Because ECOWAS is not a member of the WTO, it cannot carry out a blanket negotiation of the bound tariff rates with the WTO on behalf of its members. Each member state in potential violation of its WTO agreement will need to do so individually, although the ECOWAS and WAEMU commissions have recognised that they need to create a platform to provide support to their members in preparing and renegotiating their agreements (ECOWAS and UEMOA, 2012a).[177]

Implementation of safeguard measures. The proposed ECOWAS safeguard measures with seemingly automatic triggering mechanisms, in some cases (as with the ECL) based on indicators calculated by

176 The GSP+ status is granted to developing countries that implement core human rights, labour rights, and sustainable development conventions. As of February 2012, 16 countries qualified for this status. (http://www.mkma.org/Notice%20Board/2012/NewGSPHighlights.pdf)

177 Such renegotiation has precedent. In 2008 Gabon had to renegotiate its bound tariff for industrial products when the common external tariff of the Central African Economic and Monetary Union went into effect (Diouf, 2012).

Box 12.1 Studies of the impact of an EU-ECOWAS EPA on West African agriculture and agro-industry

Many EPA impact studies have been carried out since the beginning of the EU-ECOWAS EPA negotiations. Most of them focus on fiscal impact, while few analyse potential economic impacts, especially on the agricultural sector. Most of the studies agree that it is very likely that imports into West Africa from the EU would increase and that some African producers would be harmed as a result of the removal of tariffs on EU imports (Busse and Grossman, 2004; PwC, 2005). Recommendations about sensitive products to be excluded from the trade liberalization are also often similar: livestock, meat, wheat flour, milk products, onions, potatoes and rice are some of the most frequently mentioned products (Faivre-Dupaigre et al., 2004; Blein et al., 2004; PwC, 2005).

One study funded by the EU (PwC, 2005) focuses specifically on West African agro-industry. Completed in 2004/05 before ECOWAS submitted its proposed list of sensitive products, the study shows that lower tariffs on potatoes, onions, poultry, prepared tomatoes, and used clothing could cause serious injury to domestic production and the well-being of producers, depress local industry and discourage the development of processing capacity. The study thus recommended putting these products on the list of sensitive products and considering taking other protection measures (e.g., increasing the CET or imposing quantitative restrictions) for prepared tomatoes and poultry.

A recent study using a Computable General Equilibrium (CGE) model (CRES, 2011) found that no more than 65% of trade liberalization (the initial ECOWAS market access offer) should be applied to ensure overall positive impacts for the region. Even if the region as a whole would benefit, there were strong distributional issues: the study estimated that Côte d'Ivoire, Ghana, Benin and Niger would gain from the EPA whereas as Nigeria and Senegal would lose. However, the issue of EPA impacts is controversial. Prior to the completion of the ECOWAS market access offer, other studies using the same kind of CGE model (Fontagné et al., 2008) were very optimistic about impacts of 80% openness of the ECOWAS market to EU imports. The final impact strongly depends on the importance of tariffs in government revenue, on potential compensatory effects, and fiscal reforms.

Various safeguards measures are envisaged in the negotiation for a regional EPA and are included in the interim EPAs that Ghana and Côte d'Ivoire have negotiated with the EU (Alpha et al., 2011). Among them is a "food security clause". It stipulates that if the agreement leads to problems of availability or access to food and then causes or risks to cause serious difficulties, Ghana and Côte d'Ivoire could take appropriate (but unspecified) measures.

Source: Alpha, 2012

international organizations, could reduce the scope for arbitrary national-level decisions to invoke the safeguards in an ad hoc fashion. This transparency could provide the private sector clearer expectations about when government actions to intervene in trade will take place. Yet implementing the safeguard mechanisms will be demanding in terms of import prices and volumes that need to be monitored and institutional decision-making that needs to be rapid if the safeguards are to be effective. Experience with the WAEMU safeguards showed that they were often slow to respond (ECOWAS Commission, 2012a). Furthermore, while the CET is to be applied regionally, the safeguard measures are to be triggered by conditions facing individual countries (e.g. fluctuations in their exchange rates), which could create different levels of protection among member states and thereby induce smuggling.

Implementing the Free Practice Principle. As mentioned earlier, creating a full customs union will require a system whereby customs duties are collected only at the first point of entry into the union. Achieving this goal will require addressing the thorny issues of creating a structure to share customs revenues among the countries and aligning the incentives of the members of the national customs staffs to go along with such a departure from current practice.

12.3 Improving policy coherence

12.3.1 Coherence between ECOWAS trade policy and ECOWAP

The objectives of ECOWAP and the ECOWAS trade agenda are broadly coherent, and the process of realigning the CET with the creation of the fifth band has made them more so. The WAEMU CET classified goods into four broad tariff bands, while ECOWAP called for differential protection of specific value chains based on their specific needs. The creation of the fifth band and the Degressive Protection Tax were both moves in the direction of more differential protection. The tariff escalation in the CET is also consistent with ECOWAP's goal of promoting greater processing of agricultural products within the region.

The fact that the ECOWAP Mobilizing Programmes were developed before the CET negotiations were completed offered greater scope to ensure policy coherence. Nonetheless, while some of the priority value chains identified in Mobilizing Programme no. 2 (mainly meat products) were included in the fifth band, many of the others (such as rice, cassava, and maize) were not. In part, this exclusion might reflect the limited involvement of the ECOWAS Department of Agriculture, the Environment and Water Resources in the CET negotiations due to staff constraints, but it more likely reflected concerns about the humanitarian and political dangers of rising staple food prices in many of these countries. The definition of the CET may also have future implications for the designation of priority products for ECOWAP – as indicated by the recommendation of the joint ECOWAS-WAEMU CET committee that sugar (debate about which was very contentious during the fifth band discussions) be included as a priority commodity for ECOWAP.

12.3.2 Coherence between regional and national trade policies

A larger challenge is to promote coherence between national and regional trade orientations within ECOWAS given the diverse economies and policy orientations that the member states have historically followed. A brief overview of these orientations for a few countries in the region illustrates some of the challenges.[178]

Nigeria. Nigeria is the giant economy of the region with an agro-industrial sector more developed than most of the other countries of the region. Given the size of Nigeria's market, how well the country aligns its trade policies with those of ECOWAS will play a decisive role in determining the success of the regional trade policies. Prior to the mid-1980s Nigeria's trade policy was highly protectionist. Agricultural products, in particular grains and oils, were subject to high customs duties, between 50% and 100%, and Nigeria imposed quantitative import restrictions on hundreds of agricultural products and banned exports of nearly all foodstuffs. Frequent changes in trade policies by Nigeria posed major challenges for those seeking to trade with the country.

Nigeria's trade regime has dramatically changed over the last three decades. The government amended its trade regime to lower tariffs for a wide range of goods and to replace a number of import bans by tariffs. Nigeria began to liberalize its trade regime when it implemented its structural adjustment programme in 1986, and the present trade policy seeks to achieve more systematic application of the official tariffs. Today, the move to regional integration is gradually modifying Nigeria's trade policy regarding Agricultural products. The number of prohibited imports has substantially declined.

178 For more details, see Alpha, 2012.

Nonetheless, Nigeria still maintains a list of Agricultural products for which imports and/or exports are banned. The WAEMU Commission has complained about how the import ban disrupts regional trade, and Nigerian trade negotiators have said that the problem will be addressed once the ECOWAS CET is implemented (ECOWAS and UEMOA, 2012a). Nonetheless, a total ban on maize imports is included as a "favourable support policy" in Nigeria's 2011 Agricultural Transformation Agenda (Nigeria Federal Ministry of Agriculture and Rural Development, 2011). In addition, as the country with the most industrial-scale agroprocessing in West Africa, Nigeria has lobbied for low tariff rates on imports of raw agricultural products such as rice paddy and raw sugar, which Nigerian processing plants need to increase their low levels of capacity utilization. Such low levels of protection of extra-African imports create increased competition with other countries in the region that could produce such goods.

Ghana. Ghana has had a fairly liberal trade orientation policy since the early 1990s. However, the issue of the role and level of tariff protection in maintaining or raising the level of food self-sufficiency is a frequent debate in Ghana. The debate is especially intense regarding products such as rice, poultry, sugar and tomato paste, where the country has significant investments in production and processing but faces strong international competition. For example, Ghana imposes an import tariff of 20% on rice, as opposed to the 10% rate included in both the WAEMU and ECOWAS CET. Nonetheless, in comparison to many of the countries in ECOWAS that put a strong emphasis on import-substitution of food crops in the name of food sovereignty, Ghana has a fairly balanced policy regarding promotion of food crops and export crops. As a major agroprocessor, it has also pushed for tariff escalation to promote more in-country processing, particularly of cocoa products. For domestic food products, Ghana, consistent with ECOWAP, has pushed selective protection of strategic products and safeguards against import surges.

Mali. Mali began liberalizing its trade regime in 1986, with reforms including the removal of trade quotas and the lowering of import tariffs, while at the same time liberalising domestic trade in cereals and simplifying export procedures for livestock. Regional integration is critical to Mali as a land-locked nation requiring secure and dependable access to ports and to quality port services in neighbouring countries. Mali has comparative advantages in cotton, livestock and meat products, animal and vegetable oils, and hides and leather products. Due to the irrigation potential of the Niger River, other commodities such as cereals (particularly rice), sugar, and an array of fruit and vegetables are promising, particularly for export to the West Africa regional market. The country's ambition, as stated in its NAIP, is to become an agricultural powerhouse in West Africa, exporting staples and livestock products throughout the region. Yet as a poor country bordered by some richer neighbours, Mali feels the food price dilemma acutely. Many policy makers appear to fear that unfettered regional trade will result in Mali's richer neighbours outbidding Mali's low-income population for key commodities, leading to food shortages and soaring domestic food crises. Since 2005, the country has therefore imposed periodic export bans on cereals during periods of high regional and world prices, in contravention of the ECOWAS Trade Liberalization Scheme. Given the inclusion of most meat products in the fifth band of the ECOWAS CET, which will serve to raise their prices in the region, a similar food price dilemma with respect to livestock exports from Mali may also arise. Part of the motivation for including a Mobilizing Programme in ECOWAP aimed at developing alternative approaches to social safety nets was to address this type of food price dilemma in poorer countries like Mali and Burkina Faso (which faces some of the same pressures as Mali) in order to create alternatives to such trade bans that work against regional integration.

Senegal. The French colonial trade policy for Senegal focused on promoting groundnut exports to France while helping meet staple food needs through imports of inexpensive broken rice from French Indochina. Some of that heritage still remains, as the country is still highly dependent on imports of broken rice from Asia, although groundnut exports have fallen in importance. As discussed in Chapter 11, Senegal's Loi

d'Orientation Agro-Sylvo-Pastorale establishes food sovereignty as key goal along with promotion of export crops. The Grand Agricultural Offensive for Food and Abundance (GOANA), launched in 2008, had a strong import-substitution orientation and set extremely ambitious goals for increasing national self-sufficiency in a wide range of products, including rice, horticultural products, and livestock. As the state pulled back from direct involvement in marketing of agricultural products during the 1990s and early 2000s, it promoted the creation of interprofessional organizations to help regulate markets, including the imposition of import bans during certain periods of the year (e.g. for onions) to protect domestic production (Duteurtre and Dieye, 2008). In addition, Senegal, as one of the more industrialized countries in ECOWAS, has sought to protect local agroprocessing by imposing higher levels of protection on certain products (e.g. wheat flour, tomato concentrate, condensed milk, fruit juices, sugar and cigarettes) than called for in the WAEMU CET. It has also protected its poultry sector by banning all imports based on SPS considerations.[179]

Despite its increasing orientation toward protection of its agricultural sector, given the continued heavy reliance of the country on rice imports, Senegal was opposed to moving rice into the fifth band of the ECOWAS CET and argued in favour of the ISF that allows suspension of import duties during periods of high international prices.

This brief overview of a few countries' trade orientations illustrates that although all national agricultural trade policy documents in ECOWAS recognise the critical role of regional trade and call for an effective implementation of free trade within the region, trade practices and national interests differ based on the structures of the different national economies, the political power of national stakeholder groups and the history of trade and agricultural policies. While ECOWAP calls for food sovereignty at a regional level, many of the national policies seem to frame the goal at a national level and therefore sometimes erect barriers to regional trade. This was seen clearly during the 2008 food crisis when several countries in the region imposed export restrictions. Thus, the ECOWAS trade policies will likely be implemented by the member states when it fits their individual interests. The challenge for regional policy makers will be to try to increase the correspondence between the regional and national interests, including developing compensatory measures for those countries adversely affected by regional decisions.

179 The ban, putatively in place to protect Senegal from avian influenza, extends even to imports from countries that have never had an avian influenza outbreak.

12.4 Dealing with price volatility

A key part of trade policy is developing tools to deal with price volatility – the unexpected, large upward or downward movements of prices (see Focus Section A, p.118). Inherently, broadening the scope for trade helps reduce the volatility experienced at the local level, as supply fluctuations at the local level can be offset by imports and exports. The safeguard measures discussed above are designed to help deal with price volatility emanating from international markets. Similar measures have also been proposed under the Doha round of the WTO. The measures aimed at creating the ECOWAS free-trade zone, such as harmonization of quality standards and related processes, and the prohibition of trade bans within the zone, all aim at reducing price volatility by broadening the scope of the market, which allows supply-demand imbalances in one area to be counterbalanced through regional trade flows.

In addition to these measures, the ECOWAS RAIP proposes several elements aimed at mitigating price volatility in the region and dealing with its consequences. These include the following (ECOWAS Commission, 2012a; ECOWAS Commission et al., 2012):

Promotion of expansion of private storage. The team that designed ECOWAP's Mobilizing Programme that focuses on market regulation rejected the idea of creating a regional buffer stock to reduce price volatility, judging that the volumes of product needed for such a reserve to influence prices was beyond the financial and managerial capacity of the programme. Rather, the focus is on promoting regional storage and promoting trade

credit and warehouse receipt systems to reduce the pressure on farmers to sell immediately after harvest, which accentuates seasonal price variation. Specific proposals include facilitating funding for storage facilities; support for storage, marketing credit and collective marketing by farmer organizations; and promotion of warrantage (warehouse receipt systems) through contracting with private sector warehouse operators in cross-border production areas in order to provide expanded storage services for traders interested in engaging in regional trade.

Actions aimed at making regional trade more fluid.

These include:

- Working with the ECOWAS Inter-Departmental Committee for Agriculture and Food to put pressure on national governments to promote free trade of agricultural products within the region by, inter alia, reducing illegal barriers to trade.

- The strengthening of agricultural market information systems by reinforcing national systems and linking them with the proposed ECOWAS information system ECOAGRIS. This action needs to include an effective trade surveillance system at the regional level in order to provide not only market information but also give an early warning of impending problems that could require special actions such as the triggering of safeguard mechanisms.

- The promotion of interprofessional organizations for sub-regional value chains that would help ensure orderly regional trade flows by promoting uniformity of quality standards, pressuring governments to suppress illegal activities hindering trade flows, and addressing value-chain wide barriers to improved market performance.

By making regional trade more reliable, such measures would also open up opportunities for investors to exploit regional economies of scale in agricultural production, storage, processing and distribution, as well as risk-management possibilities, thereby creating incentives for increased investment. This would not only increase aggregate regional food output but also result in a broadened and diversified food commodity basket, which is also an effective defence against price volatility.[180]

Promoting the establishment of a regional commodity exchange for food products in partnership with WAEMU. The idea behind this proposal is that the creation of a regional agricultural exchange, similar to SAFEX in South Africa, would create a transparent venue for price formation. The exchange price could then serve as an important piece of information that actors throughout West Africa could use in negotiating prices for their local transactions. The hope is that eventually the exchange could trade not only on a cash basis but also offer futures contracts, giving agroprocessors and eventually producer organizations an additional tool to manage price risk. The development of such an exchange is by its nature a medium- to long-term initiative. For prices on the exchange to be useful for actors throughout the region in setting their own prices, transport costs between the location of the exchange and other points in the region need to be fairly stable and predictable, which implies that trade flows need to be fluid (e.g. no unexpected roadblocks). A condition for a futures market to function well is that there also be well-functioning cash markets for the commodity in question, so moving forward with the free-trade-area agenda of ECOWAS appears to be a precondition for the regional exchange to succeed.

Creating a regional food security reserve aimed at providing targeted food aid to vulnerable segments of the population under direct distribution schemes or, occasionally, augmenting domestic food supplies during periods of domestic food shortages due to production shortfalls or import difficulties. The primary aim of such a reserve is not to try to reduce price volatility through buffer-stock operations but rather help mitigate the consequences of such volatility on particularly vulnerable populations. The constitution of such regional reserves typically

180 When food consumption patterns become more diversified, markets become more interlinked and stable than in cases where one commodity dominates food consumption patterns (Jayne, et al., 2009).

entails the earmarking of a certain percentage of each member country's[181] national reserve into the regional food reserve (see Focus Section A).

The ECOWAP plan calls for holding one third of the reserve as a physical stock and two-thirds as a financial reserve, mutualization of at least 5% of the national food reserve stocks through the RESOGEST[182] network of agencies managing national food reserves in several Sahelian and West African countries, as well as support to member states to establish or strengthen policies on national food security stocks. The system would also incorporate a G20 initiative for testing a pilot programme of small targeted humanitarian food reserves in the region. The food security reserve would help provide supplies to targeted safety net programmes in the region (ECOWAS Commission, et al., 2011).

Efficient and accountable distribution and management systems are an essential prerequisite for well-functioning food reserve systems. In this regard, it will be paramount to capitalize on lessons learned from existing national and regional food reserve systems in Africa and Asia. Sound principles from such well-functioning reserves include: limited size; clearly defined objectives; strong national or regional ownership; and a streamlined, accountable governance structure, including outside parties. Badly managed, reserve stocks can be highly disruptive of the market and crowd out private stockholding, leading to little or no net gain in inventories in the marketing system.

Strengthening social safety net systems. One of the three Mobilizing Programmes of the RAIP focuses on helping ECOWAS member states develop social safety nets that help mitigate the adverse effects of price volatility and other exogenous shocks on vulnerable populations. The programme also aims at helping ECOWAS develop, based on experience from around the world, standards for the design of such programmes (ECOWAS Commission, 2012b). If such efforts are successful, not only would they help protect the most vulnerable populations from the effects of extreme price volatility, they would also give member states another tool to help address, at least partially, the food price dilemma. Given the large number of net food buyers in most countries, however, it is probably not financially feasible to protect all of the politically vocal urban consumer groups from higher prices. Thus, while the safety nets may partially reduce political pressures on food-exporting countries in the region to impose export bans during periods of high food prices, they will not eliminate such pressures. Nonetheless, it is clear that the social safety net agenda cannot be divorced from the regional trade agenda.

Raising the profile of ECOWAS at the WTO negotiations. Because ECOWAS is not a member of the WTO, it cannot directly participate (other than as an observer) in WTO negotiations. ECOWAS could, however, consult more systematically with its member states to work out a common position on key issues of interest to the entire Community, which the countries would then use to defend their common interests in the negotiations. The ECOWAP Mobilizing Programme on market regulation proposes such an approach, with focus on issues particularly important to the region such as the designation of Special Products that would be exempted from tariff-reduction commitments and the design of the Special Safeguard Mechanism proposed under the Doha round negotiations on the Agreement on Agriculture. The broad criteria for designating the Special Products are food security, livelihood security and rural development. For a customs union with a CET, this list of Special Products would need to be uniform, and presumably ECOWAS would want a close correspondence between this list and the set of products that the ECOWAP Mobilizing Programmes have identified as "strategic products for food sovereignty and food security." Similarly, ECOWAS has an interest in ensuring that its safeguard mechanisms are compatible with the SSM to be adopted under the WTO.

It would be very much in ECOWAS's favour to become a full member of the WTO, which would require, as mentioned earlier, implementing the Free Practice Principle and receiving the mandate

181 The following countries are included: Benin, Burkina Faso, Cape Verde, Chad, the Gambia, Guinea-Bissau, Mali, Mauritania, Niger and Senegal.

182 *Réseau des Structures Publiques en charge de la Gestion des Stocks nationaux de sécurité alimentaire au Sahel et en Afrique de l'Ouest*

from its member states. Once a full member, ECOWAS could negotiate on behalf of all of its member states. Being a full member would be particularly helpful in renegotiation of bound tariff rates for the entire Community in the context of the CET. In so doing, ECOWAS will need to ensure some degree of flexibility in border protection by ensuring a certain margin between its negotiated bound rates and the CET rates to cushion against possible extended periods of depressed international prices.

12.5 Additional areas to address

Two additional issues need more attention in order to promote greater regional Agricultural integration, although both are thorny politically. The first is liberalization of the market for trucking services in the region, including allowing truckers from any ECOWAS member state to compete for freight throughout the region. Such action would introduce greater competition in the system and incentives for upgrading trucking fleets. This is particularly important in West Africa where most areas have no access to alternative transport systems, such as barges or railroad.

The second issue is the need for West African Monetary Zone (WAMZ) to make significant progress towards becoming a monetary union or at least linking currency variations among its members within a certain band. Movement to create an ECOWAS-wide monetary zone requires that the WAMZ, comprised of the non-WAEMU states, first harmonize their exchange-rate policies and move to create a common currency. WAMZ, however, has made little practical progress in implanting its plans to create a common currency by 2015 because its member states have not passed enabling legislation required to implement WAMZ decisions or to meet the convergence criteria established as a prerequisite for the monetary union. Consequently, the credibility of WAMZ is being drawn into question. In addition, a major constraint for WAMZ countries is the lack of a functioning official cross-border payments system and no direct link to the WAEMU payments system. Both traditional and parallel systems continue to operate; for small payments in cross-border trade and between individuals, cash is still extensively used. Traders often have to resort to carrying huge sums of cash in US dollars or Euros, at great risk, in order to effect payment for goods and services in countries where they do business (Alpha, 2012). It is hard to see how a common market in West Africa can be effective without at least some degree of coordination of exchange rates in the region. Part of the effectiveness of WAEMU to date has been due to its common currency, although by having that currency tied to the Euro, it has had to face the danger of periodic currency overvaluation. WAEMU, because of the common colonial heritage of most of its members, had the unusual experience of first being a monetary union before it became a free trade area. It appears much more difficult politically to go the other way – from free trade area to monetary union.

On the international front, there are a number of other issues that would need to be addressed in different fora where ECOWAS has an interest in coordinating among its member states to promote a common position. Among these are the following (for details, see Konandreas, 2012b):

- ***Strengthening WTO disciplines on export prohibitions and restrictions.*** Export prohibitions and restrictions at the global level render world markets thinner and less reliable (as evidenced by the 2008 food crisis). Unlike the specific WTO rules and binding commitments applicable to importing countries, disciplines on exports are weak and have proven generally ineffective. A measure that deserves immediate attention is to restrain the use of export prohibitions and restrictions on food purchases by the WFP for non-commercial humanitarian purposes (FAO, 2009).

- ***Combatting price troughs*** through pushing for continued reduction in distorting domestic support of agriculture in industrialized countries (as was called for in the Doha Round of the WTO negotiations), eliminating export subsidies and disciplining related instruments (such as export credits).

- ***Rationalizing food assistance instruments***. Despite recent reforms, international food aid still remains highly variable and an uncertain resource, with commodity prices, stock levels and shipping costs playing a key role in determining its availability. Given that in years of very low international prices food aid might function as a hidden export subsidy and that it becomes much less available during periods of high prices, it would make good sense to earmark the use of this resource to emergency operations and for nutritional support to vulnerable populations.

- ***Implementing the Marrakesh Decision[183] to provide more effective international financing facilities*** that could help developing countries ensure their ability to import food during periods of high world prices. Some ideas for developing a more effective instrument to assist countries facing difficulties in financing basic foodstuffs were elaborated by FAO and UNCTAD, leading to a proposal for the creation of a Food Import Financing Facility, or FIFF (FAO, 2003). The FIFF was supposed to be a market-based instrument to provide credit guarantees to importing agents/traders of LDCs and net food-importing developing countries to meet the cost of excess food import bills. The rationale for this proposal remains valid, and this is an issue that ECOWAS countries could support.

- ***Rationalizing biofuel policy*** by abandoning inflexible mandates on biofuel use, which have contributed to global price volatility by making international demand for foodstocks such as maize increasingly inelastic.

12.6 Conclusions and remaining questions about the future of regional trade policies

West Africa, through the efforts of WAEMU and ECOWAS, has made considerable progress over the past 30 years towards developing a more integrated regional market for Agricultural products and a more common trade interface with the rest of the world. Yet progress has been slower than planned, and a full West African customs union is still not a reality. ECOWAS members signed the agreement to create a CET in 1996, with plans for it to be fully implemented by 2004. It is now scheduled to go into force in 2015. The slow implementation reflects the reality that the member states and stakeholders within them have divergent interests, so reaching a consensus on issues like the structure of the CET is difficult, and implementation of agreements such as those aimed at creating a free-trade zone are frequently resisted. This implies that design of the trade policy needs to pay particular attention to the structure of incentives and disincentives facing member states and various stakeholders to implement common approaches.

Two broad questions arise with respect to the ECOWAS/ECOWAP trade policies. First, what are the limits of the strategy of differentiated protection of West African Agriculture embodied in this set of trade policies? Second, how implementable are these policies?

Regarding the limits of the approach, one can pose a number of specific questions:

- ***In an environment of high international prices for many agricultural products, how much protection does West African agriculture need?*** What should be the balance between general protection offered by the CET and safeguard measures to protect against occasional import surges?

- ***What weight should concerns about dumping play in shaping the CET?*** One implicit justification for the fifth band was a concern about dumping by OECD countries, which could sell at low prices due to subsidies they provide to their producers. Yet for some commodities, such as poultry, international markets are increasingly dominated by exports from emerging economies, such as Brazil, whose ability to undersell West African producers derives not from subsidies but from their efficient,

183 Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least- Developed and Net Food-Importing Developing Countries <http://www.wto.org/english/docs_e/legal_e/35- dag_e.htm>

large-scale production systems and their ability to segment their sales between high-income markets in the North and lower-income markets in Africa. In addition, would the inclusion of the ECOWAS Compensatory Levy as a safeguard measure address the dumping issue effectively and how does that relates to the "dumping justification" for the CET fifth band?

- ***How sustainable politically will a policy of agricultural protection be in the future?*** Already, tensions over this issue were evident in the differing positions of ECOWAS member states about which products to include in the fifth band. In a situation in which a large part of the population spends a high proportion of its income on food, an agricultural development strategy based on raising agricultural prices (rather than lowering unit costs of production throughout the food system) is likely to be difficult to maintain politically. The fifth band provides particular protection to meat products for which demand is likely to grow very rapidly in the future (see Part II). While the fifth band is designed to help ensure that West African producers capture a large portion of that growing demand, if West African supply does not respond strongly to the increased prices, frustrated consumers will likely voice their displeasure over restricted supplies and higher prices.

- ***How can West African production compete with imports for agroprocessors business?*** As the analysis in Part III showed, one of the major factors driving agroprocessors in the region to turn to foreign suppliers is not necessarily their lower prices but rather their ability to ensure consistent supplies of reliable quality. A common external tariff does nothing to address this problem. Thus, tariff protection needs to be seen as a targeted measure while West African value chains reduce their costs and improve their quality control and reliability.

A central question, then, regarding the efficacy of the trade policy is whether the CET's protection will induce adoption, throughout the targeted value chains, of cost-reducing technologies and institutional innovations. Or will protection reduce incentives to innovate, leading to increased production but at increasing unit costs? A strong supply response requires access to improved technologies and measures to reduce the costs of transport and trade. Thus to be effective in promoting efficient Agricultural growth, tariff policy needs to be combined with policies to stimulate improved technology development and adoption in the region and improved institutional arrangements to reduce the costs of regional trade.

Regarding policy implementation, three key questions emerge:

- ***Is it feasible to define evidence-based protection levels for a highly diverse region?*** In other words, does one protection scheme fit all the countries? Inevitably, there will be political trade-offs based on differing country interests. This was seen in the debate over tariff levels for sugar in the CET. Nigeria, a country with a huge market for refined sugar and which has large sugar refineries that often operate under capacity, lobbied for lower rates for raw sugar than for refined sugar, arguing that the former was simply an input into agroprocessing. Other low-income inland countries that produce sugar for a much smaller market, such as Mali, argued that since raw sugar and refined sugar are substitutes, allowing raw sugar to enter at low rates would undermine the previously protected market for its refined product.

- ***Given these sorts of diverse interests, what can be done to create incentives among countries to implement common policies?*** The approach of ECOWAP of making co-financing of NAIP activities contingent upon countries respecting their commitments regarding free trade within the region is one important step forward, as are the planned efforts to work through regional interprofessional and trade organizations to educate their members and border officials about their rights and obligations under the regional trade agreements and to empower private-sector actors to fight back against illegal barriers to trade.

- ***What are options to deal with some of the political-economy factors that continue to hinder regional integration?*** These include things such as the low wages paid to public officials that may induce them to supplement their incomes by extracting rents from traders and the diversity of purchasing power among countries that may induce low-income countries to block exports in times of shortage to protect their own consumers. In order to capture the gains from regional integration, a challenge will be to design mechanisms to tap some of those gains to compensate countries and individuals who stand to lose from such integration.

Chapter 13

Main Findings, Policy Implications and the Way Forward

This chapter summarizes the key findings of the AGWA study, discusses their implications for national and regional policies, and highlights policy priorities along with guiding principles to enhance policy effectiveness.

13.1 Main findings and policy implications

13.1.1 Opportunities for Agricultural growth are unprecedented

An increasingly dynamic West African food market. The combination of population growth, urbanization, dietary diversification and higher output prices provides unprecedented growth opportunities for West African Agriculture. Over the past two decades, urbanization and demographic growth have been paralleled by sustained economic growth in most West African countries, resulting in poverty reduction, income growth and the emergence of a growing middle class. Moreover, due to urbanization and the growth of the non-farm economy, an increasing share of the population, urban and rural, relies on markets to meet their food consumption needs. The combination of these trends has resulted in a rapid expansion of domestic and regional food markets that is likely to continue and accelerate in the foreseeable future in view of high income elasticities for most food products. Analysis of marginal food budget shares indicates that the strongest market growth potential exists for animal products, followed by rice, fish, and fruits and vegetables. Producing and marketing such products are labour-intensive and thus offer potential for substantial job creation if the demand can be met through local production rather than imports.

An increasingly diverse food demand. Domestic and regional food markets are not only growing fast but are also becoming increasingly diverse. On the one hand, population growth rates of 2 to 3% in most countries continue to fuel demand for basic calories, especially for the 75% of the population still living on less than US$2 per day. On the other hand, income differentiation and a growing middle class population translate into increased demand for higher value and value-added food products. Food demand is transforming from undifferentiated bulk commodities towards food products with differentiated quality attributes. While price remains a key determinant of demand, other product attributes such as nutritional and health characteristics, presentation and packaging, shelf-life, and ease of preparation are increasingly important in shaping consumer preferences and purchasing decisions. Demand for convenience – food products that are quick and easy to prepare – is a broad trend cutting across all countries and income groups, driven by urbanization, increased female employment outside the home and long commuting times. Demand for health attributes and food safety increases with income but also with better education and access to information. Finally, lifestyle features associated with certain food products are also increasingly influential for consumer purchasing decisions. A predominantly young population will accelerate new lifestyle trends and changing consumption patterns, spreading these from metropolitan areas into the hinterland. These trends are propelled by globalization and fuelled by broader access to media, food imports and the advent of international fast food and supermarket chains.

While these changes are occurring most rapidly in the metropolitan areas, accounting for approximately 40% of the urban population, similar trends are gradually following in intermediate cities and

towns, with closer ties to the rural economy and higher levels of natural protection from imports due to high transport costs, and in rural areas. The analysis of budget-consumption surveys has revealed that income elasticities for many food products are even higher in rural areas. This suggests a further food demand boost as rural incomes increase. Given the limited purchasing power of the majority of rural consumers, rural food markets in most areas are currently not able to generate sufficient demand to lift farmers' income levels on a broader scale (with the exception of zones where mining activities or highly remunerative cash crops dominate). Hence, the main demand pull is coming from burgeoning urban and regional markets. Targeting these markets presents great opportunities for increased rural producer incomes, which in turn would stimulate demand for locally produced products and services.

Global demand for Agricultural products is also expanding, especially in fast-growing emerging economies, providing increased opportunities for West Africa's traditional and non-traditional agricultural exports. Prices for agricultural exports have also been strong, and West Africa has potential to expand the volume and diversify the composition of such exports, including to Eastern Europe, India and China. While market entry barriers might be higher than on domestic markets, the advantage of exports is that higher prices for export crops do not necessarily imply higher costs for domestic consumers. Rather, the income generated from agricultural exports translates into increased demand for local farm and non-farm products and services, generating growth linkages.[184]

The bulk of West Africa's agricultural production is sold in domestic and regional markets, and their continued growth will have pull effects if producers manage to respond to evolving consumption trends. From a dynamic perspective, domestic and regional markets can be stepping stones for producers diversifying into value-added products to build their capacity to meet volume and quality requirements consistently, before venturing into overseas export markets.

The Agricultural policy and incentive environment has improved over the past two decades. The level of taxation on agricultural outputs has declined and price transmission from consumers to producers has improved. Moreover, the "rediscovery of Agriculture" in the early 2000s and the CAADP process have strengthened policy processes and frameworks and raised Agriculture's profile at the national, regional and global levels.

The emergence of more independent, dynamic stakeholder organizations enhances growth prospects. The growing democratization that began in the 1990s led to the emergence of more independent, grass-roots Agricultural professional organizations, such as producer and trader organizations. These organizations contribute to more rapid Agricultural growth in at least three ways. First, they offer expanded scope for collective action – providing critical goods and services to their members such as primary product assembly, pooling orders for input purchases, and providing advisory services, in the process capturing scale economies for the smaller-scale members. Second, they are increasingly involved in policy debates and design, adding valuable insights about the nature of the constraints and opportunities facing actors in West African Agriculture. Third, through their national organizations and regional federations, they serve as a counterweight to government in defending their members' interests and as a force to pressure for the faithful implementation of announced policies aimed at boosting Agricultural growth.

13.1.2 But these opportunities are combined with new challenges for West Africa's agrifood systems, rendering policy making more complex

The international market environment has become increasingly volatile, and making long-term projections is increasingly difficult. Factors such as climate change and increased links between financial, energy and agricultural markets add to uncertainties about market trends. While most analysts expect higher world prices for agricultural products to prevail over the medium term, the

184 While diversification into export markets might have some short-term effects on domestic food prices if productive resources are shifted from domestic food production into export sub-sectors, there are also frequently positive impacts of export-crop production on domestic food production. These include improved access by farmers to key inputs, such as fertilizer and farm equipment, which can be used for production of both domestic food crops and export crops.

longer term outlook remains uncertain. Amongst other factors, the future direction will depend on whether the generation and dissemination of productivity-enhancing technologies and sustainable natural resource management practices will prevail over the negative effects of climate change and a deteriorating natural resource base. Hence, the old Malthusian debate remains open.

West African Agriculture is facing increased competition, both on the market side and for its natural resources. A number of large emerging economies such as Brazil, Thailand and Vietnam have developed highly competitive agricultural sectors that play increasing roles on agricultural markets worldwide and in West Africa. Higher agricultural commodity prices combined with expectations of future scarcities of food and natural resources have contributed to the mobilization of large sums of financial capital by traditional and non-traditional actors and to a surge of investments at all levels of the agrifood system worldwide. In the medium term, these investments will lead to production and productivity growth, furthering competition on agrifood markets and in accessing natural resources. Hence, West Africa needs to seize this historic opportunity of high prices and strong demand growth more vigorously by making the necessary investments to address productivity gaps and other structural constraints that currently weaken its competitiveness. Current yield gaps and limited use of improved inputs and technologies are signs of the weak competitive position of West African Agriculture but also of huge potential for improving this position.

In line with the global trends, interest of new private-sector actors, including domestic investors, members of the diaspora and foreign firms, in investing in West African Agriculture is growing quickly. There are also a growing number of investment funds, both fully commercial and so-called impact investors, seeking opportunities in agricultural value chains. More generally, the heightened private-sector interest in investing in West African Agriculture has the potential to bring new capital, technologies and human skills to the region's agrifood system. It also, however, raises sensitive political issues about ownership and control in the sector and access to natural resources, especially land. Hence, Agricultural policy needs to be closely integrated with legislation dealing with investment codes and land-tenure and be coordinated with internationally agreed-upon guidelines such as the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security endorsed by the Committee on Food Security (FAO, 2012c), and the Principles for Responsible Agricultural Investment that Respect Rights, Livelihoods and Resources (PRAI), approved during the CFS Meeting on 15 October 2014 in Rome.

Increased complexity of agricultural policy development and implementation. As West African Agriculture has become more commercial and as the structure of its demand and customer base has changed, the performance of the agrifood system has become increasingly dependent on factors and actors outside the traditional policy domain of ministries of agriculture. The challenges discussed below illustrate this increasing complexity and the need to coordinate agricultural policies with policies in other areas.

- *The majority of West Africans spend a large share of their incomes on food, which has two important policy implications*. On the positive side, given high income elasticities for most food products, income growth will translate into strong increases of food demand. On the negative side, consumers spending large shares of their income on food remain very vulnerable to food price increases. Hence, domestic agrifood systems and related policies face a dual challenge of harnessing the opportunities of urban food market growth for the benefit of broad-based growth while keeping food prices low, especially for basic staples. Therefore, Agricultural policies need to address simultaneously the objectives of expanding food production and improving economic access to food.

- *Restricting food imports in order to stimulate regional production will likely become politically more difficult* in view of the increasing numbers and political weight of poor consumers in urban areas, who are very sensitive to increases

in food prices. The economic and demographic transformations are gradually altering the political-economy equation towards consumers, especially those in urban areas. Consumers may not be as well organised as farmers in all countries and less visible during multi-stakeholder processes, but their voices are heard by politicians during periods of high prices, and hence there is acute pressure to develop policy tools to deal with periods of high food prices. This was apparent in the recent responses of many West African governments to the food price crisis as well as in the results of the long negotiation on the structure of the ECOWAS Common External Tariff. Since West African countries do not have the financial means for large-scale subsidies to consumers and producers at the same time, trade policy measures need to focus on reducing price volatility through safeguards rather than protecting or taxing producers permanently using fixed rates. Hence, the main impetus for higher farmgate prices has to come through higher agricultural productivity, increased efficiency of marketing systems and value chains, which allow production and marketing at lower unit costs and improved ability to meet consumer demand in terms of quality and consistency of supply.

- ***Rapid population growth is fuelling a surge in the number of young people entering the labour market each year.*** In an era of globalization, with increasing exposure to digital media, rural youth are becoming more aspirational and mobile, with important implications for job creation and the agricultural labour supply. Given the widespread perception that farming is arduous and offers few pathways out of poverty, a growing share of rural youth prefers to migrate into towns and cities and seek employment in the informal services sector. Although broader agrifood system development offers substantial scope for creating many productive jobs for this youth, capturing that potential will only occur if the educational systems are reformed to provide young people with the skills needed to operate in a dynamic, modernizing, private sector-driven Agricultural economy. Hence, agricultural policies need to be coordinated closely with policies affecting education and skills development as well as broader economic policies including industrialization and SME development.

- ***The spatial patterns of demographic and economic growth have led to an agglomeration of population and purchasing power along the coast***, and migration patterns are shifting consumers farther away from traditional staple-food and livestock production basins in the hinterland. While this demand pull has led to intensification of farming and growing numbers of SMEs engaged in processing, storage, trade and logistics in peri-urban and urban areas, farmers in rural areas and inland countries are less able to respond given market access constraints, especially for bulky and perishable products, due to poor infrastructure and transport systems and inadequate information. Likewise, proximity to ports and major international transport hubs gives imports competitive advantages over domestic production from the hinterland. Hence, the state of the connecting infrastructures – roads, transport systems and marketing facilities, coupled with improved road governance and removal of nontariff barriers to intraregional trade – become crucial for the competitiveness of domestic production vis-à-vis imports. This especially applies to landlocked countries and the rural hinterland. Here, the development of intermediate cities and rural towns is an important interface between local rural and urban economies. Consequently, the nexus between agricultural policies, infrastructure and transport sector policies, spatial development policies, and trade policies – especially concerning regional integration – is becoming increasingly important.

- ***While the dietary transition has increased market opportunities for domestic producers and agroprocessors, it also shifts the region towards a "double burden of malnutrition".*** On the one hand, important progress over the last decades notwithstanding, food insecurity and undernutrition remain constant challenges in rural and urban areas, especially in light of high and volatile food prices since 2008. At the same

time, sedentary urban lifestyles and growing consumption of low quality fats, simple carbohydrates and processed foods with low nutrition density, lead to growing obesity, diabetes and cardiovascular diseases. While undernutrition is still by far the dominant problem, experiences from other developing regions show that over-nutrition related problems can increase rapidly. Hence, Agricultural policies need to be linked with policies aimed at improving health and nutrition.

13.1.3 West Africa's growth remains highly vulnerable to shocks

West Africa's strong economic growth has been driven to a significant extent by natural resources and extractive industries and has been favoured by a period of high international commodity prices. The huge growth in recent years in the region's capacity to rely on imports to help address the burgeoning regional food demand is to a large extent based on exploitation of non-renewable resources and hence may not be sustainable if world prices for these commodities fall. Thus, policies need to focus on how to productively invest earnings from these non-renewable resources in order to increase productivity throughout the economy, including the agrifood system, rather than simply use them to finance growing food imports.

West Africa's structural transformation has been incomplete. Labour-intensive manufacturing in the formal sector, which has the potential to be a main driver for employment, productivity and income growth, has shown little dynamism since structural adjustment. There have been some promising trends in the services sector, such as finance, telecommunications and tourism. However, much of the growth in services and manufacturing has been in the informal sector. Hence, West African economic prosperity still depends heavily on primary commodities with little value addition and for which markets have historically been volatile. In order to sustain and increase economic growth rates, growth in agricultural productivity needs to be complemented by growth in the manufacturing sector. Agro-industries play a key role here, as many have relatively low entry barriers, high domestic market potential, and good access to raw material and labour. Agribusiness SMEs have a strong potential for employment generation, whereas large-scale agribusinesses are strong potential market outlets for domestic raw material. Thus, there is a need for better coordination between agricultural and industrial strategies and programmes in order to foster agro-industrial development.

Despite overall socio-economic and political progress, the region remains vulnerable to natural and man-made disasters. For example, the civil war in Côte d'Ivoire destroyed much of the country's livestock production infrastructure and greatly disrupted the economies of Burkina Faso and Mali, which were highly dependent on the Ivorian market for regional exports and port services in Abidjan for their external trade. More recently, terrorist attacks in Mali and northern Nigeria and Ebola outbreaks in several countries have similarly disrupted agricultural production and regional trade. These risks and uncertainties are exacerbated by climate change, price and policy volatility. Moreover, there is growing competition among different actors (farmers, herders, SMEs, large-scale companies, and domestic and foreign investors) for an increasingly stressed natural resource base. In the context of insecure land tenure and water rights this competition is leading to more frequent, often violent, conflicts and discourages productivity-enhancing agricultural investments. Hence, the Agricultural growth agenda needs to be closely linked to the resilience agenda. Moreover, ECOWAS and the African Union have the potential to play important roles in creating a more stable environment for Agricultural growth in the region not only through their support of CAADP but also through their peace-making, peace-keeping and emergency relief roles.

13.1.4 West Africa's response thus far to these opportunities and challenges has been mixed

While there has been strong output growth over the past 30 years, especially in many food staples, supply response in some of the more dynamic markets has not kept up with demand growth (e.g. for rice, livestock products, and processed products). Furthermore, there has been an inconsistent record

in increasing productivity and hence lowering per-unit production costs. As a result, West Africa's competitiveness has been declining for many tradable agricultural products, and an increasing share of the growing demand has been captured by food imports. Likewise, West Africa's market shares in several of its traditional export markets have been eroding. The most striking example is palm oil, for which the region was a major exporter during the 1960s and which now has become a major part of the region's import basket.

Population growth has not yet induced widespread intensification through adoption of improved technologies but rather propelled extensive growth based on area expansion. Intensification has been largely confined to horticultural and livestock production around some major cities and to some export crops. Moreover, where it has happened, it has been frequently associated with unsustainable practices such as over-use of agrochemicals, reduction of fallow periods, soil mining, and poor waste disposal. On the other hand, the extensive agricultural growth pattern through area expansion has resulted in increased pressure on natural resources, including soil mining. Moreover, in high-potential areas, land fragmentation is undermining smallholder commercialization and income growth.

While there are a number of localized Agricultural success stories (local fast foods, cocoa, shea nuts, growth in maize production), most Agricultural value chains are trapped by problems of poor coordination and limited trust among actors, associated with high costs and limited transmission of information and incentives. Given these weaknesses of domestic supply chains, many of the most dynamic domestic market segments for processed food products – e.g. pasta, bread, bakery products, dairy products and fruit juices – are based on imported raw materials. While for some of these raw materials the region lacks comparative advantages for large-scale import substitution (e.g. wheat and milk), others could be substituted by domestic raw material. Examples such as sorghum or cassava beer or bread illustrate this potential. Moreover, a number of domestic commodities such as cassava and maize have several potential industrial uses that are far from being exploited.

The localized success stories show the potential of what could be achieved. Although these successes cannot be simply "copied and pasted" from one location or value-chain to another, there are frequently important lessons from them that can help inform paths to success in other settings. For example, the achievements of the Francophone countries in expanding cotton production from the 1950s through the early 2000s (see Chapter 10) illustrates the potential payoffs to a focussed regional research programme that develops varieties that can be shared widely across the region and the critical importance of designing medium-term financing tools (e.g. to facilitate purchase of farm equipment) in stimulating increases in productivity and farm-level capital accumulation. Hence, crucial challenges include learning from past successes, adapting key lessons from them to other settings, and scaling up.

13.1.5 Policy implementation is a bigger challenge than policy design

Important progress has been made in recent years towards more coherent agricultural frameworks at the national and regional levels. For many of the major policy issues discussed in this study, West African policy makers and analysts have identified at a technical level what needs to be done and have often designed procedures and regulations to try to address the issues. Despite some shortcomings, the ECOWAP/CAADP plans do correctly identify many of the key constraints to Agricultural growth in the region and design approaches to relax them. Yet slow and inconsistent implementation remains a recurrent problem. Announced in 2003, implementation of the CAADP agenda only gained momentum after the 2008 food price crisis in most countries. There is also a tendency towards designing crash programmes with overambitious production targets which are then only partially implemented and subsequently dropped.

At the regional level, for example, ECOWAS has developed region-wide procedures to govern the approval and registration of critical agricultural

inputs, such as improved seeds and pesticides, and drafted model legislation for adoption at the national level. It is working to establish region-wide standards for fertilizer. Yet implementation at the national level lags, as several countries have not modified their national legislation to conform to the regional procedures. Similarly, under the ECOWAS Trade Liberalization Scheme, all member states have officially committed themselves to the free trade of agricultural products within the region; yet in practice, respect of those commitments is variable as policy reversals at the national level with respect to open borders are frequent. Similar issues arise at the national level, where declarations of policy are frequently made, for example, with respect to improving food safety systems, but which remain only partially implemented if at all.

The problem of implementation is often related to three major factors:

- A tendency to propose solutions that are well beyond the financial and human-resources at the disposal of the implementing entities. For example, all CILSS countries have adopted a uniform certification process for pesticides, yet the national committees charged with enforcing the standards frequently lack the personnel and the laboratory testing facilities to do so. Similar considerations apply to implementing national rules governing food safety inspection systems in most ECOWAS countries. At the regional level, this lack of implementing resources is a particular concern with respect to the limited human resources available to the ECOWAS Department of Agriculture, Environment and Water Resources that is charged with managing the implementation of ECOWAP, while at the national level, many agencies having regulatory authority in the agrifood system lack the personnel and operating budgets to fulfil their mandates.

- Frequent policy reversals and ad hoc government interventions creating mistrust between private actors and the government, undermining policy effectiveness and investment incentives.

- Diverging interests and the poor alignment of incentives, either at the national or at the individual level, to implement the proposed policies. Divergent national interests explain some of the difficulty in reaching agreement on regional trade regulations and the lacklustre enforcement of them once they are officially adopted. The lack of alignment of individual incentives with regional and national interests is at the heart of much of the rent-seeking behaviour that still hinders regional trade.

This difficulty in implementation implies a need for (1) greater realism in the goals established in national and regional investment plans and policies, (2) greater investment in the development of human resources to implement these policies and plans, and (3) paying special attention in policy design to aligning incentives of member-states and individual actors to be consistent with the broader policy goals. Each of these issues is discussed in the recommendations below.

13.2 The way forward: major design principles for more effective Agricultural policies

Six broad principles should to guide Agricultural policies in the region:

- The diversity of West African agrifood systems requires a differentiated set of policies. A one-size-fits-all approach to policy is likely to fail. Levelling the playing field between food system actors of different sizes, and special support to women and youth are cross-cutting policy priorities, while linkage opportunities with larger food systems stakeholders with transformational potential should not be dismissed.

- Agrifood system interventions need to be based on a firm understanding of the rapidly evolving nature of consumer demand to identify investment opportunities for different food system stakeholders and guide priorities for supporting public policies and investments.

- Improving productivity throughout the agrifood system is the only sustainable way to meet both consumer and producer needs simultaneously. Rather than a simple replication of a "Green Revolution", a combination of sustainable intensification, climate-smart agriculture and inclusive-value chain development is needed.

- Enhancing value addition, in its various forms, is key to capturing more lucrative markets and raising incomes in the agrifood system. This requires an enabling investment environment, improved market and transport infrastructure, and strengthened stakeholder organizations, from farmers to consumers.

- West African Agriculture can only be globally competitive in a wide range of products if there is greater regional integration.

- Agricultural productivity growth needs to be complemented by measures to enhance resilience given West Africa's high-risk environment.

13.2.1 Develop differentiated policies for a diverse sector

At almost every level, the West African agrifood system is diverse. At the consumer end, three-quarters of the population earns less than US$2/day and is concerned primarily with expanding its access to inexpensive calories and protein, while the remaining quarter of the population represents a growing middle class that is upgrading and diversifying the quality of its diet.

A similar differentiation occurs in agroprocessing and, to a lesser extent retailing, with a mix of large-scale and small-scale operations, frequently with few mid-sized formal-sector firms (dubbed "the missing middle" by some analysts). Even farming is becoming increasingly diverse. Policies and investments need to acknowledge and respond to this diversity within each segment of the agrifood system and interventions be tailored accordingly. In general, levelling the playing field by supporting micro-, small and medium operators along the value chain should be the main policy priority, but the potential for positive linkages and spillovers with large operators should not be dismissed. Special support to women and youth is a cross-cutting priority.

In the case of agroprocessing, a differentiated policy approach should start from the following considerations:

- Despite their great potential to contribute to value addition and employment creation, small and medium formal-sector enterprises in agroprocessing face tougher challenges in accessing finance, technology, marketing, distribution networks, acquiring technical and managerial skills, and maintaining a skilled workforce than do their larger counterparts. SMEs are also more vulnerable to a poor business enabling environment and are challenged to improve product quality, safety and presentation in a consistent way in order to gain consumer confidence, especially in middle- and upper market segments. On the other hand, due to their tax and other obligations as part of the formal sector, they have higher costs than their competitors in the informal sector. Policies and programmes for this segment should focus on business and technical skills development, improving food safety and hygiene, upgrading product quality and marketing, and improving access to finance, electricity and raw material.

- The artisanal sector has great importance as a generator of income and employment, especially for women, and as a provider of diverse and affordable foods for the urban and rural low-income population. Even though only a minority might be able to upgrade and transition into formal enterprises, there is room to improve productivity as well as product quality and safety. They further constitute a pool of micro-enterprises, some of which might be upgraded to target higher-value market segments, including export markets for fair-trade products. Support for this segment should include similar measures to those for the SME segment but be tailored to the specific conditions and capacity of small informal operators. The more growth-oriented of these enterprises also need assistance in transitioning to the formal sector.

- Large-scale processors contribute to food system transformation by introducing new products, skills and technologies, opening new consumer market segments, and forming potential new market outlets for domestic farmers and primary processors. These direct and indirect benefits from large-scale agribusiness investments should be harnessed, e.g. by supporting wholesale modernization or contracting to deal with the raw-product aggregation problems that plague larger processors and modern retailers.

At the primary production level, small family farms have an overarching economic and social importance in the region and are therefore naturally the prime target group of agricultural policies. The efficiency of family farms and their ability to respond to market demand and adopt technical change are amply documented in the region and elsewhere. While for most crops there are no clear economies of scale in production, small farms face major disadvantages in accessing markets, inputs and support services due to high transaction costs. Moreover, commercial agriculture is becoming increasingly knowledge-driven as are the more environmentally sustainable techniques for intensification, whereas the majority of smallholder farmers have low levels of functional and technical literacy. Capacity building, collective action, strengthening of farmer organizations and institutional innovations in service provision are necessary to help overcome these diseconomies of scale to some extent and should be a major policy focus.

Although the evolution of farming structures was not the main focus of the AGWA study, many other studies have shown that even among the smallholders, who dominate farming in West Africa, there is tremendous diversity, with roughly a third producing the bulk of the marketed surplus. Another third is made up of households that are net buyers of basic staples and which generally lack the resources to farm their way out of poverty, while the remaining third could go either way, depending on their access to markets, support services, and the agricultural policy environment (Staatz and Dembélé, 2007). On top of this overlay of smallholder agriculture is a small but potentially growing group of larger-scale farm operations, often linked to agroprocessors.

Enabling the largest possible number of family farmers to increase and stabilize their yields and incomes should be a policy priority due to the various multiplier effects of smallholder-based growth. At the same time, because not everyone currently engaged in farming will be able to farm their way out of poverty, one can envisage policies to promote different pathways to prosperity for the three subgroups described above:

- ***A commercial smallholder path***, built upon competitive, market-oriented family business enterprises in agriculture and related value chains. This path, open mainly to better-endowed smallholders in high potential areas with good market access, focuses on improving farming as a business through increasing total factor productivity in farming, strengthening access to higher value product markets and to factor markets, and improving natural resource management (NRM). Commercial smallholders are also most likely to enter contracting relationships with agroprocessors and food retailers successfully.

- ***A strengthened transition path***, which focuses on (1) stabilizing more marginal farm households' production for home consumption through yield-stabilizing technologies, improved productivity (particularly of its small livestock resources), diversification to enhance the availability of nutritious food and improved natural resource management; (2) helping the better-off among them to increase marketable surpluses and transition into more commercial production; and (3) facilitating access to labour markets and non-agricultural opportunities for those who need to supplement their farm incomes and, over time, transition out of farming. This path also focuses on enhancing access to education (to ease the next generation's transition out of farming) and providing social safety nets to avoid loss of assets due to various shocks such as drought, disease, or the death of a family member. For landless households, the focus is on improving access to labour markets, including migration.

- ***A widely shared indirect benefits path***, which affects all groups, but is particularly important for marginal farmers, the landless and urban consumers. This path exploits opportunities from two sources. First, demand for products from the non-agricultural sectors (and hence jobs in those sectors) increase because: (i) smallholders' incomes rise from growing production and (ii) consumers experience higher real incomes that result from lower food prices. Second, the rising demand for processed and more convenient foods among the growing urban population and for value-added exports expands employment opportunities in the non-farm segments of the agrifood system.

None of the paths can be pursued independently of the others. For example, actions that are critical to the strengthened transition agriculture path, such as financing the investments in education and improvements in labour markets, depend on capturing and reinvesting some of the agricultural surplus generated by the commercial smallholder path. A productive and growing commercial agriculture is critical to expanding the tax base for local governments, which are increasingly called upon to provide the education and health services needed to promote a generational shift out of poverty agriculture.

13.2.2 In increasingly buyer-driven value chains, food-system interventions should start from the consumer end

Better understanding of the forces driving consumer demand is a prerequisite for the food system to respond and compete successfully with imports. Consumers are the ultimate financiers of the system; hence a better understanding of their preferences and the determinants of their purchasing decisions is paramount for agrifood system stakeholders, from retailers through processors to farmers. As highlighted before, food demand is evolving from undifferentiated bulk commodities towards specific product attributes. Any producer who can market a product with a set of attributes that responds to consumers' changing circumstances (income levels, time availability, changing knowledge of health and nutrition, etc.) will gain a competitive advantage. The trend towards an increasingly diverse food demand with a growing emphasis on quality, convenience, and nutrition is a global phenomenon that affects West Africa's current and potential export markets as well as its domestic markets. This trend is especially important since food imports and products from multinationals producing in the region are increasingly becoming benchmarks concerning price, consistency of supply, and various product quality attributes.

This need to be attuned to consumer demands applies particularly in the more dynamic upper-income market segments, where consumers are more quality-conscious, but is also true in the lower-income market segments for attributes such as convenience. This is evidenced by the strong increase of rice and wheat-based products across all income segments in urban and rural areas but also the penetration of lower-income markets by dried and processed food products in small package sizes that are affordable even to poor consumers. The rapid spread of mobile phones throughout all population groups testifies to the willingness even among poor households to allocate money for goods and services deemed highly valuable.

Dependable data on domestic food consumption trends are very limited and usually only available at the bulk commodity level. Conducting market research is expensive and usually beyond the reach of SMEs in farming and processing. Making better information and analysis of food consumption and marketing trends available to agrifood system stakeholders would be a useful support function of the public sector. It would better inform the design of subsector and value chain strategies and help farmers and processors in their investment decisions. In addition, the public sector could assist associations of small farmers or SMEs engaged in agroprocessing, value chain councils and interprofessional bodies to conduct market research, product testing and develop branding strategies, on a cost-sharing basis.

13.2.3 Enhancing productivity and market efficiency is paramount

Responding to market opportunities and increased competition requires productivity growth throughout the agrifood system, increased market efficiency and value-chain coordination. Increasing productivity to drive down unit costs throughout the agrifood system is the only economically sustainable way to enhance producer incomes and competitiveness while at the same time promoting lower-priced food for consumers. More productive use of land, water and other natural resources also reduces pressure of further expansion of production into environmentally fragile areas. Labour productivity growth increases returns to labour, making agriculture more attractive to the young and helps prevent labour shortages at critical stages of the cropping cycle. Increased market efficiency and value chain coordination lead to lower marketing costs benefiting farmers and consumers alike.

Productivity growth requires a combination of new technologies, inputs and support services; improved infrastructure and market access; more competitive marketing systems; and institutional innovations that reduce risks and transaction costs of specialization and trade.

At the farm level, sustainable intensification should be the main avenue towards productivity growth. As discussed in Chapter 2, addressing the problems of agricultural resource degradation and declining land productivity in West Africa will require a more sophisticated approach than simply trying to duplicate the Asian Green Revolution model based on improved seeds, expanded irrigation and greatly increased use of mineral fertilizers. It will require tailoring solutions to local farming systems: shifting from a focus on increasing use of mineral fertilizers to a focus on soil health (built on combining use of mineral fertilizers, organic material and cultivation techniques aimed at enhanced water retention and soil biota); an increased focus on soil and water management rather than just expansion of irrigation; development of improved, locally adapted varieties through a range of breeding techniques; and integrated methods of pest control. These methods are much more management- and knowledge-intensive than conventional farming techniques, implying a need for their gradual introduction combined with a substantial investment in improving the skill levels of farmers, input dealers, extension personnel and research staff.

In the downstream parts of the value chain, increasing productivity of post-harvest, processing and marketing operations requires (1) investments in improved infrastructure and equipment (transport, storage, electricity and communications), (2) reforms in rules that restrict competition (e.g. in the trucking industry), and (3) better management and improved efficiency of marketing systems and value chains. These measures are needed to enable West African producers to respond more effectively to increasing requirements for quality, costs and consistency of supply in order to avoid being squeezed out of growing markets and, within these, from the most lucrative market segments. Enhanced efficiency of marketing systems and value chains also requires better coordination among value chain actors, e.g. through (1) improved grades and standards as incentives for value addition, (2) more effective horizontal and vertical organization of the chain actors (e.g. through producer and interprofessional organizations), and (3) better contracting methods. Improved value chain coordination provides the basis for increased flows of finance and information up the chain and flows of product with larger volumes and more consistent quality down the chain.

Upstream, an enabling legal, regulatory and policy environment is crucial for the development of private-sector-based input supply chains. Such an enabling environment should encourage innovation and cost reduction through competition and economies of scale in procurement and distribution (e.g., though the creation of effective regional markets for inputs), while ensuring quality and consumer protection.

Across the board, capacity development through education, vocational training, research and institutional strengthening is essential.

13.2.4 Enhancing value addition

The analysis of production and trade data has shown that domestic producers are losing market shares in the rapidly growing markets for higher value and value added food products. Hence, opportunities to capture a larger share of these growing market segments should be pursued more vigorously. Despite the growing popularity of value chain concepts, in practice, Agricultural policies and resource allocation within investment plans often remain focused on the primary production level.

Value addition can take various forms, including processing, sorting, grading, cleaning, storage, packaging and presentation. The appropriate strategy depends on resource endowments, productive capacity and other location-specific factors in relation to identified market opportunities and market access conditions. Possibilities include:

- ***Expanding production and marketing of higher-value food categories with strong demand prospects***, such as animal products, fruits and vegetables, and fats and oils for domestic markets. In export markets, demand is growing briskly for products like cashews, cocoa powder and shea butter if they meet standards for quality, traceability and compliance with good environmental and labour practices.

- ***Creating greater convenience in the products offered to consumers, in terms of time, space, and form utility.*** For example, production of products like instant noodles or gari that can be quickly prepared by those with no access to cooking facilities. Other forms of convenience include making products available in more convenient locations (e.g. along commuting routes), in a range of different serving sizes with clear preparation instructions and in already-prepared forms.

- ***Greater product differentiation within a given food category.*** For example, a more differentiated set of grades for rice and meats and broader selection of fruits and vegetables, fruit juices with different degrees of natural fruit content and (in the export market) cocoa products produced and marketed with a broader range of attributes than just bulk cocoa powder (organic, free-trade, etc.). Packaging, preservation, freshness, and shelf-life are further paths for value addition through quality differentiation.

However, before investments in any value-addition strategy are made, it is crucial to ensure that real market demand is being met and that consumers or buyers are willing to pay a premium that is sufficiently high to compensate producers for increased costs. Otherwise, adding value for consumers can result in income losses for producers.

There are important roles for the public sector to play in supporting this move to greater value addition while balancing producer and consumer interests

These include:

- ***Nutrition education.*** Enhancing awareness of nutritional characteristics, health implications and safety concerns of different fresh and processed food products in order to enable consumers of all income brackets to make better informed purchasing and consumption decisions.

- ***Strengthening national food safety systems*** to enhance their effectiveness and consumers' trust in these systems instead of relying on private standards or perceived higher food safety levels of international brands.

- ***Supporting domestic producers along the food value chain in adopting better hygiene and safety standards*** through awareness campaigns, capacity development and better access to improved processing technologies. Such support must balance the equally valid policy objectives of ensuring healthy food to consumers with the socio-economic importance of the large informal and SME sector engaged in food production and value chains.

- ***Improving the marketing system for fresh produce***, especially fruits and vegetables, meat and fish, through market infrastructure, transport

and cold chains in order to reduce spoilage and losses and enhance the availability, safety and quality of these products into urban areas, thereby contributing to a more balanced diet.

- ***Encouraging the development and modernization of the food wholesaling industry***, which in Asia has played a major role in connecting small producers with processors and retailers through quality differentiation and volume transformation.

13.2.5 More effective regional integration is critical to achieving many of the needed productivity gains

If West African Agriculture is to be competitive with large global actors such as Brazil, China and India, it needs to capture some of the scale economies those countries enjoy. To do so, West Africa requires more harmonized grades and standards for agricultural inputs and outputs, common procedures for approval and release of improved seed varieties, regionally coordinated systems of agricultural research and higher education, reform of rules limiting competition in transport services across the region, and removal of restrictions that limit agroprocessors from sourcing agricultural products across national borders. Such measures are also critical in attracting increased private investment, as the allure of selling to a regional market of over 300 million customers is infinitely more attractive than trying to set up operations in 15 different countries, most of which have a small customer base.

The future of regional integration, however, depends critically on the behaviour of the big players, especially Nigeria. In terms of production, exports, imports, and effective demand, West Africa's Agricultural market is dominated by four big players – Nigeria, Ghana, Côte d'Ivoire and Senegal. These countries account for two-thirds of the population, 80% of the GDP, three-fourths of agricultural imports and over 80% of agricultural exports. These countries also serve as major sources of demand for their neighbours and recipients of large intra-regional labour flows. Policy decisions by these four countries – and especially Nigeria – will condition the future of ECOWAP. However Nigeria, like most countries in the region, has set its Agricultural policies largely independently of its neighbours, for example, by imposing trade bans for selected products even from fellow ECOWAS countries. Its involvement in the design of ECOWAP has been surprisingly small given Nigeria's importance in the regional market, and the country's Agricultural Transformation Agenda appears to have been designed with little reference to ECOWAP. Similarly, the decisions of Ghana and Côte d'Ivoire to sign interim EPAs with the European Union, while necessary to preserve their preferential access as non LDCs to the EU market, complicated the negotiation of a West Africa-wide EPA. A critical challenge for the future of ECOWAP will be to emphasize areas of strong mutual interest among, on the one hand, the "big four" – and particularly Nigeria – and, on the other hand, the other members of the Community. Without this type of alignment, the regional policy may end up being mainly a tool to help smaller countries adapt to the policies developed independently by Nigeria, Ghana, Côte d'Ivoire and Senegal.

13.2.6 Agricultural productivity growth needs to be complemented by measures to enhance resilience in a high-risk environment

The willingness of actors to adopt productivity-enhancing innovations throughout the agrifood system depends on their ability to manage risks in an environment subject to recurrent shocks. Without improved tools to manage these risks, productivity-enhancing investments will either not be made or be tilted towards the better-off actors, with higher capacity to bear risks, with the result that the benefits of growth will go primarily to the rich. Key elements of a resilience agenda that needs to complement an Agricultural growth agenda include:

- Introducing or up-scaling climate-smart agriculture practices that increase the efficiency of resource use while enhancing resilience to climate variability. These include the sustainable intensification approaches discussed in Chapter 2, such as tailoring improved management practices and crop and livestock breeding

to local farming systems in order to increase the efficiency of input use, build soil health and strengthen risk-management. They also focus on promoting techniques that reduce greenhouse gas emissions. These techniques are much more knowledge- and management-intensive than conventional agricultural techniques, implying a need to strengthen skills throughout the agrifood system (FAO, 2013a).

- Strengthening agricultural research systems to develop plant varieties and animal breeds more tolerant to drought, pests and disease.

- Improving water and soil management, including improved access to irrigation. Irrigation efforts should include experimentation with a range of scales and institutional arrangements to find the most-cost effective models. In rain-fed areas, the agenda includes improved techniques to manage and conserve water and soil moisture, in part through better soil management. More secure access to a reliable source of water not only reduces production risks but, because of that risk reduction, also increases the willingness of banks and other organizations to extend credit to farmers, further strengthening their resilience.

- Supporting measures to mitigate and cope with price volatility, such as improved storage, expanded regional integration, and warehouse receipt systems (see Focus Section A for details).

- Strengthening the security of land and water rights in order to reduce the risks of loss of productive assets, induce productivity-enhancing investments and facilitate labour mobility and hence diversification of income sources (See Focus Section D).

- Introducing weather-based crop insurance. When this insurance is linked with cell-phone-based payment and automated weather-monitoring systems, costs decrease. In East Africa such insurance is showing increasing promise of becoming commercially viable.[185]

185 See the description of the system known as Kilimo Salama ("safe farming" in Swahili), developed with the support of the Syngenta Foundation for Sustainable Agriculture (http://www.syngentafoundation.org/index.cfm?pageID=562).

- Supporting income diversification through both farm and non-farm activities linked to growing market demands.

13.3 The way forward: guiding principles to enhance policy effectiveness

Achieving more rapid, broad-based and sustainable Agricultural growth in West Africa and putting in place the policy priorities outlined in the previous section requires three things:

- ***An improved policy environment*** that induces greater Agricultural investment in productivity-enhancing technologies and institutional innovations by private-sector actors (including farmers); enhances quality and improves risk management throughout the agrifood system; and provides a more predictable and effective set of tools for improving the poor's access to food.

- ***Critical public-sector investments*** that complement and "crowd-in" additional private investment and address critical food policy objectives, such as improved risk management.

- ***Strengthened policy implementation***.

13.3.1 Improved enabling environment and investment climate

Addressing the productivity challenges facing West African agriculture in order to achieve sustainable and broad-based growth requires investments. Given that agriculture is a private-sector activity, the bulk of these investments must come from the private actors at various levels of the agrifood system: farmers, input suppliers, processors, transporters, and providers of support services. Nevertheless, the ability of and incentives for the private sector to make sustainable, productivity-enhancing investments depends to a large extent on the existence of a conducive investment climate. Shaping the incentive framework is a core function of public policies. Governments thus have a key role to play in shaping the enabling environment in consultation with non-state actors.

Key elements of an effective policy environment are its ***predictability, focus, participation and inclusiveness, coherence, and ability to evolve over time*** as the economy and broader society evolves. Predictability is critical to give private-sector actors more reliable expectations upon which to plan their production and investments. Focus deals with the need for policy to address a manageable set of priorities and to balance short-term and long-term needs as well as national versus regional perspectives. Participation and inclusiveness helps ensure that policies build upon the knowledge of diverse stakeholders (including the less vocal ones) regarding challenges and opportunities facing Agriculture and that policy design and implementation lead to broad-based growth. It also fosters buy-in for policy implementation. Coherence across different sectoral policies and countries is essential so that incentives emanating from different policies reinforce each other rather than work at cross-purposes. The capacity of policy to evolve as the economic and social environment changes is critical so that policies do not impede actors from seizing new economic opportunities and responding to new challenges as they arise.

Policy stability and predictability

A stable and predictable policy environment is paramount in order to instil confidence of agrifood system operators of all scales to make substantial long-term investments. A key element of a stable and predictable policy environment is that government interventions in input and output markets (e.g. through trade policy measures, subsidies and efforts to stabilize domestic prices) are rule-based rather than ad hoc. Earlier chapters of this report have revealed that the region is replete with ad hoc and short-lived agricultural policy initiatives, often weakly coordinated with other policy frameworks, inconsistently implemented and frequently reversed (e.g. the Presidential Initiatives in Ghana and Nigeria on several crops in the early 2000s). Such policy volatility instils mistrust in the private sector and is often associated with rent seeking of specific actors to shape policies and programmes in favour of their particular interests (e.g. the use and lifting of import bans in Nigeria).

Important measures to enhance policy predictability include, for example, clearly spelling out the rules under which the state will restrict exports or imports to protect domestic producers or consumers and the conditions under which inventories from national food security stocks will be released. Specific actions needed to improve the predictability of policy include the development of transparent codes for management of national and regional food reserves and clear rules about when governments will undertake trade interventions. ECOWAS could play a key role by highlighting exemplary practices by member states and developing model legislation and management codes in these areas. Another important measure would be to improve data and information about levels and trends of critical indicators of agrifood system performance. Areas where data problems are particularly acute include the levels of intraregional trade flows of Agricultural products and inventory levels for key staples, particularly cereals, at the farm and trader levels. Lack of reliable data about these core parameters often induces governments – fearing shortages – to impose export bans or release stocks.

A predictable policy environment requires a broadly shared consensus about the public sector's roles and priorities in Agriculture. Policy volatility is in part a function of an unclear definition of the respective roles of the public and private sectors. Despite recent rhetoric about the need for public-private partnerships, there is still a deeply rooted mistrust between the public and the private sector. Historically the public sector played a strong role in agricultural input and output markets and the provision of support services in West Africa, albeit frequently with low efficiency and high budgetary cost. Structural adjustment led to a marked reduction in government provision of these services and left farmers in a void after the abrupt withdrawal of the state from many of these marketing and support functions. The private sector's entry into marketing, input supply and finance was frequently slow and uneven due to a number of structural problems related to underdeveloped infrastructure, poorly functioning institutions, weak regulatory frameworks, and high risks and transaction costs in dealing with a dispersed and fragmented

farming sector. The slow response of the private sector then led to a new round of government interventions, often erratic, which, in turn, created further perverse incentives and uncertainties, further undermining the private sector's willingness to invest.

These vicious circles can be observed in various input and output markets as well as in rural and agricultural finance. Examples include:

- Buffer stocks with unclear rules regarding stocking levels and trigger prices for purchases, sales, and trade, which discourage investments in private storage and the development of warehouse receipt systems and financing.
- Input and credit subsidies, which undermine the development of sustainable, private-sector supply chains and service providers.
- Debt forgiveness programmes prior to elections, which undermine repayment culture, leading to higher interest rates and increased reluctance of banks to finance Agriculture.

Breaking these vicious circles requires developing a broadly shared consensus about the role and priorities of public policies and investments in Agriculture among key stakeholders and disciplined governments sticking to their defined roles despite lobby pressures and short-term political priorities. Promoting broad-based stakeholder consultations and involvement in the very early stages of policy development can help develop a shared understanding of public- and private-sector roles. Challenges in making such discussions productive include (1) ensuring a broad enough representation of stakeholders that the process does not become hijacked by the narrow interests of a single group and (2) identifying stakeholder representatives who are acknowledged industry leaders and "broad thinkers" and are open to exploring possibilities for working with other value-chain participants to promote system-wide improvements. It is also important that a representative of the Ministry of Finance participate in such discussions to inject words of caution about what measures the state can realistically finance on a sustainable basis.

Policy focus

Focus on the main building blocks rather than just on quick wins. Relaxing the key constraints to broad-based Agricultural growth takes time. Agricultural research, a key public good with high returns, requires a long time horizon to generate improved technologies adapted to the variety of local conditions. The same applies to developing input and rural financial markets, addressing infrastructure constraints, and strengthening human and institutional capital, such as building more effective interprofessional organizations. Countries that managed to develop competitive agricultural sectors and agro-industries such as Brazil, Thailand and Chile strengthened their infrastructures, invested in a constant stream of technologies and built strong institutions over several decades, rooted in a long-term vision. Successful agricultural subsectors in West Africa, such as cotton in Francophone countries (until the early 2000s) and cocoa in Ghana and Côte d'Ivoire (see Chapter 10) share similar characteristics. Even though the role of the public sector and the structure of the private sector differ in these examples, a common denominator is a gradual evolution of policies backed by consistent investments in public goods over long time horizons. On the other hand, crash programmes with overambitious short-term targets and based heavily on subsidies have little chance of leading towards long-term, self-sustained growth. Most strategy and policy documents clearly identify the key long-term structural constraints and related regulatory reform and investment priorities; however, in practice, West African countries have placed too much emphasis on short-term measures and subsidies. This was exacerbated during the 2008 food price crisis and is reflected in some of the CAADP National Agricultural Investment Plans. However, it is now time to refocus on longer-term priorities.

Balancing national and regional focus. Enhancing the use of inputs, especially fertilizer, has been a priority across the region and many governments have spent considerable resources on fertilizer subsidies. Maintaining these subsidy levels in the longer term will be challenging in view of other competing priorities. As discussed in Focus

Section C (p.315), a critical step in reducing the cost to producers of inputs such as fertilizer and veterinary medicines is the harmonization of national regulations including grades and standards for these products to create a regional market capable of capturing substantial economies of scale. While regional organizations such as ECOWAS, WAEMU and CILSS have made considerable progress in proposing regional reforms to create the regional market, implementation at national level is lagging. Thus, the national focus on these regional initiatives needs to be strengthened, in part through addressing constraints to policy implementation discussed later in this chapter.

Participation

Broad stakeholder participation and empowerment are essential to improving the quality of policies and policy processes. The CAADP process calls for strengthening broad multi-stakeholder engagement in policy formulation, implementation, and monitoring and evaluation to enhance policy effectiveness and accountability and increase pressure on governments to continue successful policies beyond electoral periods. Success to date in translating this inclusiveness into practice has been mixed (see Focus Section B, p.311). Key challenges include organising and promoting collaboration among the very diverse agrifood system stakeholders, especially in the private sector beyond the farm (agribusinesses ranging from artisanal processors and small traders to multinationals). The level of organization and organizational capacity among many of the actors remains uneven within countries and even more so at the regional level. Key actions needed include capacity building of different professional and interprofessional organizations and strengthening the platforms for them to participate in policy formulation, implementation, monitoring and evaluation. Central to success is involving these actors in the initial stages of policy formulation, giving them specific responsibilities throughout these processes and requiring them to account for their performance.

Inclusiveness

As mentioned before, while broad stakeholder participation is important to ensure coherence and accountability, specific efforts are needed to level the playing field and empower small and less-organised actors' participation in the economic and political arenas (e.g. small farmers, traders, artisanal processors and food services providers, and among these, especially women and youth). Economic empowerment includes specific measures aimed at (1) enhancing access to productive assets, inputs, support services, training and skills development; (2) supporting collective action to engage more effectively with markets and other food system stakeholders; and (3) strengthening resilience and the capacity to manage risks. Political empowerment includes the legal (civil) recognition as citizens and economic actors, along with capacity development and organisational strengthening for more effective participation in policy processes.

Policy coherence

Intersectoral coherence: agricultural policies alone cannot do the trick. As discussed above, many of the key components in creating an enabling environment for rapid, inclusive Agricultural growth involve elements beyond the traditional mandates of ministries of agriculture. Policies regarding trade, the transport sector, industrial development, the financial sector, education and health are all critical. Improved policy coordination and coherence across ministries is therefore paramount. For example, to what extent do investments in roads and rural electrification target the same areas that agricultural research and extension are targeting for increased production of key commodities? Strengthening arrangements to improve inter-ministerial coordination, such as the intersectoral coordination committees in Ghana discussed Chapter 11 and, at the regional level, the ECOWAS Inter-departmental Committee on Food and Agriculture, will be important in improving intersectoral policy coherence. Critical to the success of these efforts is having a high-level champion for such coordination (for example, the Prime Minister or President) and vesting the coordinating structures with enough authority to induce cooperation across ministries and line agencies. Providing specific budget lines that can only be used in such interministerial efforts may be another way of helping induce better coordination.

Geographic coherence: avoiding conflicts between national and regional approaches. Incoherence between regional and national policies undermines efforts to build a regional West African market capable of capturing major scale economies. For example, in 2005, West African countries adopted the regional agricultural policy ECOWAP, which has a stated aim of increasing food sovereignty at regional level. In the aftermath of the 2008 food price crisis, however, several countries pursued self-sufficiency at the national level and responded with export bans for cereals and waivers of import duties. While these measures are understandable from a political economy perspective, they clearly undermine trust in regional integration and solidarity as a main avenue towards growth, food security and greater market stability. Efforts by ECOWAS, as part of the ECOWAP/regional CAADP plan, to monitor member states' compliance with their commitments to the regional Community and to make funding for regional ECOWAP efforts conditional in part upon meeting those commitments are examples of actions that can help improve the coherence between national and regional policies.

Ability of policies to evolve

The need for stability does not imply that policies should remain static. Indeed, in an environment of constantly changing consumer demand, market conditions, technologies and agro-ecologic conditions, stagnation is a recipe for failure (as illustrated by the difficulties of the cotton value chain in the Francophone countries in recent years, as discussed in Chapter 10). Policies need to be consistently adapted to changing environments but large, abrupt changes, typified by some of the policy shifts in Nigeria in the past, may create more harm than good. Developing an on-going approach to policy evolution requires more consistent monitoring of policy implementation, strong market information systems and capable policy analysis units so that important changes in the agrifood system can be detected when they first occur and their policy implications be identified. This process should be enhanced by developing close links between policy-making agencies and broad stakeholder groups (e.g. through the platforms discussed above). It is also important that key policy measures not be ensconced in laws or administrative decrees that are difficult to change in a timely way if circumstances warrant.

13.3.2 Critical public investments

Increasing the level of public investments in and for Agriculture is important, but a better investment mix is even more important. The legacy of underinvestment in Agriculture and rural development and its consequences for overall economic growth and poverty reduction are now widely recognised. Nevertheless, the consensus about the need to increase investments in Agriculture, embedded in the CAADP 10% target, has been slow to materialize in the region. Only a few countries have reached the target and several Sahelian countries that already had high spending levels on agriculture prior to CAADP now show declining shares of the government budget going to the sector. Moreover, much of the recent increase in agricultural spending has been used for subsidies for private goods, mainly fertilizer and other inputs, as well as farm equipment. Concerning infrastructure, the bulk of the resources are dedicated to irrigation, which, while understandable in light of the challenges of climate change, raises questions about cost and long-term management of such facilities. In contrast, rural roads or market infrastructure receive comparatively little funding. Although the bias towards farm-level investments and unsustainable subsidies was accentuated by the 2008 food price crisis, it started much earlier in most countries and is also reflected in many of the NAIPs. The danger is that heavy spending on subsidies may crowd out other public investments in key public goods, which are critical to long-term growth, while at the same time discouraging private investments in the provision of the goods being subsidised.

In view of the limited public funds, the public sector should focus its investments in areas with the highest returns for long-term, broad-based growth, and in which the private sector has limited ability or incentives to invest. While all governments need some short-term measures with quick wins and visible benefits, not least of all for political-economy reasons, a better balance is needed between such measures and long-term investments

and reforms that address crosscutting constraints and establish the key building blocks for sustained growth. The analysis in the AGWA study, in line with an ample body of literature, suggests the following key areas in this regard:

- ***Agricultural research, extension and development and related human capital development.*** Agricultural research and extension, particularly efforts aimed at production of open pollinated crop varieties and improved natural resource management, have important public-good characteristics and are critical to boosting agricultural production, environmental sustainability and food security in the region. As noted in Chapter 4, research and extension in the region has been generally underfunded and is faced with aging personnel, many of whom will soon move on to retirement. Given the small size of most national research systems in the region and the fact that major production basins for key commodities frequently transcend national boundaries, there are also major scale economies that could be captured through more effective regional coordination of national research and extension efforts.

- ***Infrastructure, especially, rural roads, market infrastructure, irrigation and a reliable supply of electricity.*** Rural feeder roads are a weak link in the region's transportation system, and improved market infrastructure is critical for improving product aggregation, grading, and public health conditions for the marketing of Agricultural products. Irrigation of various types, as discussed above, is a critical element in both boosting production and boosting resilience. Chapter 9 has highlighted the central importance of reliable electricity supplies in determining the competitiveness of the region's agroprocessors. Rural electrification is also a critical element in stimulating rural manufacturing of agricultural implements and consumer products, which can result in expanded employment opportunities as a result of growing Agricultural incomes.

- ***Building the skill base for Agriculture in the twenty-first century.*** Transforming West African Agriculture into a modern driver of economic growth will require a profoundly different set of skills at all levels in the agrifood system than currently exists in most ECOWAS countries. Needed actions include strengthening basic literacy, particularly at the farm level; linking curricula (e.g. in mathematics and biology) in primary and secondary schools to applications in farming and agro-industry; expanding vocational education programmes in the large range of technical skills needed by workers in a modern agrifood system; attracting more girls into the sciences, given the important role that women play in West African Agriculture; and broadening undergraduate university education in faculties of agriculture to include fields critical in downstream areas of the agrifood system, such as food science, packaging and logistics.

- ***Supporting collective action and institutional innovations for managing risks and reducing transaction costs.*** Chapter 10 highlighted the recurrent problems in many West African value chains in vertical coordination, including high costs of product aggregation at the farm level and ensuring reliable supplies of products of consistent quality to processors and retailers. Strengthened collective action, both at the farm level (through producer organizations) and among different actors within the value chains (through value chain councils or inter-professional organizations) is needed if Agricultural growth in the region is to be broad based. An alternative to such collective action is for individual large firms to vertically integrate, handling all these tasks internally, but such a model excludes many of the smaller actors from participating in the system in any role other than that of hired labourers.

- ***Efforts to improve food safety and quality.*** Improving food safety has a clear public health justification. Food safety and quality improvements, however, are also traits increasingly important to West African consumers, particularly among the growing urban middle class, and firms that fail to deliver these are at a competitive disadvantage with imports. Supporting industry-wide efforts to strengthen

safety and quality therefore need to be a central part of public and private investments and policies in the food system. In strengthening food safety standards over time, a balance needs to be struck between the desire to impose very high standards immediately to protect public health and the equally valid concern of giving the informal food marketing and processing systems time to adjust, given their important role in employment generation and ensuring accessibility of low-income urbanites to convenient food.

Investment in hardware need to be complemented by policy and regulatory reforms

In most cases, investments in "hardware" such as infrastructure alone are not sufficient and need to be complemented by policy and regulatory reforms and investments in "software", such as institutional and human resource capacity to ensure their effective implementation. For example:

- Important investments have been made in recent years to improve road quality on major transport corridors. Nevertheless, the region faces the highest transport costs in the world. The main reasons for this are problems related to road governance and the structure of the trucking industry. Unless reforms in these critical areas are implemented, the potential benefits of large road infrastructure investments will not materialize.

- To complement and induce greater private-sector investments in storage and equipment throughout the agrifood system, legal and regulatory frameworks for enhancing agricultural finance are needed, such as for leasing, warehouse receipt financing, collateral registries, and credit bureaus.

- To reap the full benefits of public investments in infrastructure, capacity development and collective action in terms of stimulating private investments, further improvements are needed to increase the ease of doing business. ECOWAS countries generally rank in the bottom third of all countries in the world in terms of the World Bank's indicators of ease of doing business (licensing requirements, time to register a business, corruption, etc.); without improvement in these conditions, it is unlikely that West African Agriculture can become competitive globally for anything other than a few tropical products where the region has a strong geographic advantage.

- A critical element in improving the regulatory environment is strengthening contract enforcement systems – e.g. through the establishment and strengthening of commercial courts and arbitration systems. Without reliable contract enforcement and commercial dispute resolution processes, transaction costs and risks of undertaking any sort of specialization and trade increase sharply and make it very difficult for the agroprocessors and modern retailers to ensure reliable supplies of agricultural products at consistent quality levels. Contract enforcement, however, needs to be coupled with improved arrangements for risk sharing and resilience within the agrifood system. In a risky environment, such as that which characterises West African Agriculture, a single-minded focus on contract enforcement without a concern for risk sharing among value-chain actors is a recipe for concentration of resources, as only the better-off will be able to absorb the risks inherent in contracting. Thus, the contract-enforcement agenda needs to go hand-in-hand with an agenda to help build resilience throughout the agrifood system through measures discussed earlier.

- Enhancing access to finance is another policy area that requires a combination of investments in infrastructure and an enabling business and regulatory environment. Investments in roads, electricity, marketing infrastructure, and irrigation reduce risks and transaction costs for both financial institutions and their clients. Telecommunication infrastructure enables the use of point-of-sale devices and mobile phone banking in order to expand access to financial services into remote rural areas. Political and economic stability is not only critical to expand lending but also savings mobilization, which tends to be even more important than

loan services for the majority of rural households. Well-functioning value chains reduce some of the risks and transaction costs in agricultural finance and may partially substitute for conventional loan collateral. An enabling legal, regulatory and institutional framework for leasing and warehouse receipt finance and the establishment of collateral registries and credit bureaus can further unlock agricultural finance. Finally, risk management instruments are critical to enable financial institutions to invest a larger share of their loan portfolio in the sector.

13.3.3 Strengthening policy implementation

Improving policy implementation requires (1) strengthening the implementation, analytic, and monitoring and evaluation capacities of key agencies and organizations charged with implementation; (2) improving the data base upon which policy decisions are made, and (3) working to strengthen the alignment between the interests of the different countries, individual actors, and the region as a whole.

Strengthening implementation, analytic and M&E capacity

Given the ambitious scope of the national and regional CAADP programmes, there is need to upgrade sharply the implementation, analytic and M&E capacity within ministries of agriculture and trade and among private stakeholders that will be counted on to implement the programmes. Such upgrading has several dimensions:

- At the level of national and local governments, many of those charged with implementing policies (e.g. customs officers at the border) frequently lack information about the content of regional and national policies, such as the ETLS. Moreover, even if they know about the policies, they often lack the operating budget and physical facilities to translate the rules into reality, as is the case with the food safety regulations discussed above.

- Local governments, particularly at the district and sub-district levels, are increasingly called upon to implement policies to manage natural resources and local agricultural support services, but have a very weak knowledge of many of these policies, managerial capacity and operating budgets to implement them, and lack training in M&E to evaluate their impact.

- CAADP programmes call for joint implementation of programmes by governments and stakeholders, such as producer organizations. Improving the managerial and organizational capacity of farmer and interprofessional organizations and of agro-input dealers is an important component of the regional and most national ECOWAP/CAADP plans. Such efforts need to be broadened to include consumer organizations and local governments, which are also key stakeholders in Agricultural development, and to strengthen analytic (e.g. M&E) as well as managerial and organizational skills.

- Improved analytic capacity among a broader range of stakeholders will also contribute to improved and more democratic policy design and implementation, allowing these stakeholders to go beyond just demanding "a seat at the table" when Agricultural policies are formulated and bring their own analysis to bear in policy formulation, implementation, and monitoring and evaluation.

- It is unrealistic for all these organizations to develop their own in-house M&E and analytic capacity. ECOWAS and national governments, however, through co-funding programmes, could help them develop arrangements to mobilize West African technical expertise (for example, from universities in the region, local consulting firms, and NGOs) to help raise their level of understanding of key issues and their skills in helping implement, monitor, and evaluate them.

- In terms of strengthening policy analytic capacity within national ministries, it would be very helpful if ECOWAS could continue to sponsor the types of training programmes and networking among the national CAADP

design teams begun under ECOWAP to help build a stronger community of practice among such analysts. This would provide very useful opportunities for cross-country learning during the process of ECOWAP implementation.

- Within the ECOWAS Commission, strong capacity upgrading is needed in the Department of Agriculture, Water Resources and Environment (DAERE) charged with overall management of ECOWAP, the new Regional Agency for Food and Agriculture, the ECOWAS Agricultural Development Fund, and the ECOWAS Monitoring and Evaluation (M&E) Unit, which is charged with not only coordinating the M&E of the regional programme but also helping to frame a common approach to M&E for the national programmes. The regional ECOWAS investment plan recognises the capacity-building needs of the DAERE, but given the scope of the proposed programmes, these efforts need to stress not only building in-house capacity but also increased capacity to strengthen and mobilize regional expertise in West Africa's specialized agencies (e.g. within CILSS), universities, and independent think tanks.

In addition to strengthening capacity within national and regional agencies charged with policy design, implementation, and M&E, there is a need to build regional centres of excellence that can engage in broader, more long-term policy analysis than can national ministries of agriculture or ECOWAS. Such centres would capture scale economies unavailable to the smaller countries in data compilation and analysis, such as carrying out analysis of intraregional trade flows and comparing the effectiveness of input distribution systems across countries. Such centres could also synthesize information to share with national stakeholders on the evolution of the world food system and its implications for West Africa. Currently within ECOWAS, this analytic role is carried out largely by ReSAKSS, but under the ECOWAP regional investment plan, it appears that eventually ECO-AGRIS will increasingly play this role.[186] There is, however, a need to foster, e.g. through co-funding from ECOWAS, the creation of additional centres of excellence in, for example, key universities in the region, linked to the growing number of independent think tanks and other specialized agencies in West Africa. Linking such centres to lead West African universities would also help ensure that current concerns about agrifood system development are incorporated in the curricula used to educate the next generation of West African policy makers and implementers.

Data needs

In carrying out the AGWA study, the authors confronted major data problems concerning almost every level of the agrifood system in West Africa. Lack of comprehensive and reliable data was particularly daunting on the downstream segments of the agrifood system, such as agroprocessing, wholesaling, logistics and retail (numbers of firms, levels of investments, production, turnover, etc.). Such data and information gaps are a huge impediment to building more empirically based Agricultural policies in the region and the monitoring and evaluating of their impact, as well as the creation of a more conducive environment for private investment. It also raises the probability of misallocation of public investments in the agricultural sector.

Efforts are currently underway with the support of the Bill and Melinda Gates foundation and the World Bank to improve the quality of household-level data on production, income, and expenditure levels through expansion of the Living Standards Measurement Surveys in a number of West African countries. A comparable level of data upgrading is strongly needed for the off-farm parts of the agrifood system.

Incentive alignment

In the final analysis, the main challenge in policy implementation is the alignment of individual and group incentives. In ECOWAS, this involves two levels: (1) alignment of the incentives facing individual member states versus the region as a

186 The regional plan is unclear about the eventual sharing of analytic responsibilities between ECO-AGRIS and ReSAKSS.

whole and (2) incentives facing individual agents for enforcement of regional or national policies.

In terms of aligning national and regional incentives, the decision in the regional CAADP programme to make some of the regional programme funding conditional upon national governments harmonising their policies and respecting their commitments to open trade is an important step forward. It should be recognised, however, that on some matters, the economic interests of the ECOWAS member states will differ so much that reaching a regional consensus will be very difficult. Regional policy thus needs to be modest, focusing first on the "low-hanging fruit" where national interests largely converge, as there is already plenty of policy work to do in these areas.

The alignment of individual and group interests in policy implementation is particularly linked to the problems of bureaucratic red tape and rent-seeking by those charged with policy implementation. In this regard, increasing salaries of government agents, such as customs and police officials, may help reduce their incentives for such behaviour, as would linking the funding of their agencies to performance on independently monitored indicators of ease of doing business. Perhaps the strongest incentives for transparent and effective policy implementation will result from encouraging strong national and regional private-sector and civil-society stakeholder groups and a free press that can act as counterweights to inefficient and/or corrupt policy implementation.

Bibliography

Abubakari, A.R., Lauder, W., Agyemang, C., Jones, M., Kirk, A. & Bhopal, R.S. 2008. *Prevalence and time trends in obesity among adult West African populations: a meta-analysis.* Obesity Reviews, 9: 297–311.

ActionAid. 2011. *No More Food Crises: The Indispensable Role of Food Reserves.* Policy Briefing.

Adams, D.W., Graham, D.H. & Von Pischke, J.D., eds. 1984. *Undermining rural development with cheap credit.* Boulder, USA, Westview Press.

Adekunle, A.A., Ellis-Jones, J., Ajibefun, I., Nyikal, R.A., Bangali, S., Fatunbi, O. & Ange, A. 2012. *Agricultural innovation in sub-Saharan Africa: experiences from multiple-stakeholder approaches.* Accra, Forum for Agricultural Research in Africa.

Adeyemi, A. 2012. *Nigeria brewery giants: the beer war.* Tell: Nigeria's Independent Weekly. 12 October 2012.

Adjao, R.T. 2011. *Analysis of the competitiveness of the rice sub-sector in Mali: the case of gravitational irrigation and bas-fonds production systems.* Michigan State University, East Lansing, USA. (M.Sc. thesis)

AfDB. 2011a. *Africa in 50 years' time: The road to inclusive growth.* Tunis.

AfDB. 2011b. *The middle of the pyramid: dynamics of the middle class in Africa.* Market Brief. African Development Bank (AfDB).

AfDB. 2011c. *Regional Integration Strategy Paper for West Africa 2011-2015.* AfDB and African Development Fund.

African Union. 2006. *Abuja declaration on fertilizer for an African green revolution.* Abuja.

African Union, AfDB, UNIDO, FAO & IFAD. 2010a. *3ADI African agrigusiness and agro-industries development initiative: a programme framework.* Rome, FAO and UNIDO.

African Union, ECOWAS & NEPAD. 2010b. *CAADP post compact review: ECOWAS review report.* Dakar, ECOWAS.

Agricultural and Extension Services Worldwide. 2013. *Western Africa.* Posted November 10, 2013, Washington, DC, IFPRI. (available at http://www.worldwide-extension.org/africa/western-africa)

Agritrade. 2010. *EPA negotiation issues between West Africa and the EU.* Executive brief, February 2010. Wageningen, The Netherlands, Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA).
(Available at http://agritrade.cta.int/en/content/view/full/2410)

Agritrade. 2011. *West Africa: agricultural trade policy debates and developments.* Executive brief, August 20111. Wageningen, The Netherlands, Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA).
(Available at http://agritrade.cta.int/Agriculture/Topics/EPAs/West-Africa-Agricultural-trade-policy-debates-and-developments).

Agritrade. 2012. *Côte d'Ivoire's cocoa sector reforms 2011–2012.* Special Report, 16 December 2012. Wageningen, The Netherlands, Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA). (Available at http://agritrade.cta.int/en/layout/set/print/Agriculture/Commodities/Cocoa/Special-report-Cote-d-Ivoire-s-cocoa-sector-reforms-2011-2012).

Aker, J. 2010. *Information from markets near and far: mobile phones and agricultural markets in Niger.* American Economic Journal: Applied Economics, 2: 46-59.

Aker, J. & Mbiti, I.M. 2010. *Mobile phones and economic development in Africa.* Journal of Economic Perspectives 24(3): 207-32.

Aker, J., Ramachandran, V. & Timmer, P. 2011. *West African experience with the world rice crisis.* Working Paper no. 242. Washington, DC, Center for Global Development.

Allen, T., Hitimana, L., Heinrigs, P. & Trémolières, M. 2009. *Economic concentration and settlement.* West African Futures Note, no. 3. OECD Sahel and West Africa Club (SWAC).

Alpha, A. 2012. *Trade policy issues and options for strengthening regional integration and agricultural development: regional background paper.* AGWA Background Paper. Rome, FAO. (mimeo).

Alpha, A., Rolland, J.-P. & Lagandré, D. 2011. *Les accords de libre-échange impliquant des pays en développement ou des pays moins avancés - Etude comparative.* Collection ASavoir, no. 8. Agence Française de Développement.

Anang, B.T. 2011. *Market structure and competition in the Ghanaian cocoa sector after partial liberalization.* Current Research Journal of Social Sciences, 3(6): 465-70.

Anang, B.T., Adusei, K. & Mintah, E. 2011. *Farmers' assessment of benefits and constraints of Ghana's cocoa sector reform.* Current Research Journal of Social Sciences, 3(4): 358-63.

Anderson, K. & Masters, W.A., eds. 2009. *Distortions to Agricultural Incentives in Africa.* Washington, DC, World Bank.

Angelucci F., Balié J., Gourichon H., Mas Aparisi A. & Witwer M. 2013. *Monitoring and analysing food and agricultural policies in Africa.* MAFAP Synthesis Report 2013. Rome, FAO.

Argenti, O. 2000. *Feeding the cities: food supply and distribution.* IFPRI 20/20 Series, Focus 3, Brief 5. Washington, DC, International Food Policy Research Institute (IFPRI).

ASTI. 2013. *Agricultural science and technology indicators: internationally comparable data on agricultural R&D investments and capacity for developing countries.* Posted 1 November 2013, Washington, DC, IFPRI. (available at http://www.asti.cgiar.org/data/)

Aw, D. & Diemer, G. 2005. *Making a large irrigation scheme work: a case study from Mali.* Washington, DC, World Bank.

Badiane, O. 2012. *Beyond economic poverty: the agenda for economic transformation in Africa.* . In: Patterns of Growth and Structural Transformation in Africa: Trends and Lessons for Future Development Strategies. WCAO Thematic Research Note no. 2. Washington, DC, International Food Policy Research Institute (IFPRI).

Baffes, J. 2009. *Benin, Burkina Faso, Chad, Mali, and Togo.* In Kym Anderson & W.A. Masters, eds. Distortions to agricultural incentives in Africa, pp. 485-505. Washington, DC, World Bank.

Barker, R., Herdt, R.W. & Rose, B. 1985. *The rice economy of Asia.* Los Baños, Philippines, International Rice Research Institute (IRRI).

Bavier, J. 2014. *West African leaders fail to agree on EU trade deal.* Reuters, 29 March. http://uk.reuters.com/article/2014/03/29/uk-africa-eu-trade-idUKBREA2S0DJ20140329.

Beintema, w.M. & Stads, G.-J. 2006. A*gricultural R&D in sub-Saharan Africa: an era of stagnation.* Agricultural Science and Technology Indicators (ASTI) Initiative Background Paper. Washington, DC, International Food Policy Research Institute.

Benin, S., Kennedy, A., Lambert, M. & McBride, L. 2010. *Monitoring African agricultural development processes and performance: a comparative analysis.* ReSAKSS Annual Trends and Outlook Report 2010. Washington, DC, International Food Policy Research Institute (IFPRI).

Benin, S., Nin Pratt, A., Wood, S. & Guo, Z. 2011. *Trends and spatial patterns in agricultural productivity in Africa, 1961–2010.* ReSAKSS Annual Trends and Outlook Report 2011. Washington, DC, International Food Policy Research Institute (IFPRI).

Blein, R., Hamid, A. & Baille, G. 2004. *Etude d'impact des accords de partenariat economique (APE) sur l'économie du Niger.* IRAM.

Blein, R., Soulé, B.G., Dupaiegre, B.F. & Yérima, B. 2008. *Foundation pour l'agriculture et la ruralité dans le mmonde.* ECOWAS.

Borlaug Institute for International Agriculture. 2012. L*ivestock assessment for feed the future initiative: Mali and four coastal markets of West Africa.* Report prepared for USAID/Mali and USAID/West Africa. College Station, USA, Texas A & M University.

Boserup, E. 1993. *The conditions of agricultural growth : the economics of agrarian change under population pressure.* London, Earthscan.

Botoni, E. & Reij, C. 2009. *La transformation silencieuse de l'environnement et des systèmes de production au Sahel : Impacts des investissements publics et privés dans la gestion des ressources naturelles.* Unpublished Centre for International Cooperation, Vrije Universiteit Amsterdam and CILSS.

Bra, C. 2012. *Retailers' strategies in sub-Saharan Africa.* Posted 30 March 2012, London, Euromonitor International. (available at http://blog.euromonitor.com/2012/03/retailers-strategies-in-sub-saharan-africa.html).

Broadman, H.G., Isik, G., Plaza, S., Ye, X. & Yoshino, Y. 2007. *Africa's silk road: China and India's new economic frontier.* Washington, DC, World Bank.

Broutin, C. & Bricas, N. 2006. *Agroalimentaire et lutte contre la pauvreté en Afrique subsaharienne; le rôle des micro et petites entreprises.* Paris, GRET Publishing.

Brown, O. & Crawford, A. 2008. C*limate change: a new threat to stability in West Africa? Evidence from Ghana and Burkina Faso.* African Security Review, 17(3): 39-57.

Bumb, B.L., Johnson, M.E. & Fuentes, P.A. 2011. *Policy Options for Improving Regional Fertilizer Markets in West Africa.* IFPRI Discussion Paper 01084. Washington, International Food Policy Research Institute.

Busse, M. & Grossman, H. 2004. *Assessing the impact of ACP/EU economic partnership agreement on West African countries.* HWWA Discussion Paper, no. 294. Hamburg, Hamburg Institute of International Economics.

CAADP. 2013. *About CAADP: comprehensive Africa agriculture development programme.* Posted 26 October 2013, African Union. (available at http://www.nepad-caadp.net/about-caadp.php).

Camara, O. 2004. *The impact of seasonal changes in real incomes and relative prices on households' consumption patterns in Bamako, Mali.* Michigan State University, East Lansing, USA. (Ph.D. dissertation).

Camara, Y. 2000. *Profitability of cassava production systems in West Africa: a comparative analysis (Cote d'Ivoire, Ghana and Nigeria).* Michigan State University, East Lansing, USA. (Ph.D. dissertation).

Ceesay, M., Njie, M. & Jagne, M. 2005. *The effects of importation of poultry meat and eggs on smallscale poultry producers in the Gambia.* Commissioned study. Action Aid and OXFAM International.

Centre d'Etudes pour le Développement au Sahel. 2009. *Lecture croisée des documents de politques et de stratégies dans le domaine du développement agricole. Programme d'Appui au Secteur Agricole au Mali.* Bamako, Minstère de l'Agriculture du Mali, Direction Nationale de l'Agriculture.

Chitundu, M., Droppelmann, K. & Haggblade, S. 2009. *Intervening in value chains: lessons from Zambia's task force on acceleration of cassava utilization.* Journal of Development Studies, 45(4): 593-620.

Christiaensen, L., De Weerdt, J. & Todo, Y. 2013. *Urbanization and poverty reduction: the role of rural diversification and secondary towns.* Agricultural Economics, 44: 447-59.

Christiaensen, L. & Demery, L. 2006. *The role of agriculture in poverty reduction in Sub Saharan Africa revisited.* Washington, DC.

CILSS, SWAC & FAO. 2008. *Climate and climate change.* In Atlas on regional integration in West Africa, ECOWAS & OECD Sahel and West Africa Club (SWAC).

Collinson, C., Gallat, S. & Johnson, P. 2003. *Potential size of the Ghanaian domestic market for instant fufu.* NRI Report, no. 2707. Chatham, UK, Natural Resources Institute.

CORAF/WECARD. 2012. *La mauvaise qualité des semences et des intrants agricoles responsable de la mauvaise productivité* (chercheur).

Cotula, L. 2006. *Innovation in securing land rights in Africa: lessons from experience.* Briefing Paper. London, International Institute for Environment and Development (IIED).

Cotula, L. 2007. Changes in "Customary" Land Tenure Systems in Africa. London, International Institute for Environment and Development (IIED).

Cotula, L., Toulmin, C. & Hesse, C. 2004. *Land tenure and administration in Africa: lessons of experience and emerging issues. Land Tenure and Resource Access in Africa.* London, International Institute for Environment and Development (IIED).

CRES. 2011. *Etude d'Impact de l'offre d'accès aux marchés sur les pays de l'Afrique de l'Ouest dans le Cadre de l'Accord de Partenariat Economique.* Friedrich-Ebert-Stiftung and Enda Tiers Monde/ Syspro.

David-Benz, H., Egg, J., Galtier, F., Rakotoson, J., Shen, Y. & Kizito, A. 2012. *Les systèmes d'information sur les marchés agricoles en Afrique subsaharienne: De la première à la deuxième génération.* Focales, no. 14. Paris, Agence Française de Développement.

Deininger, K. & Jin, S. 2006. *Tenure Security and Land-related Investment: Evidence from Ethiopia.* European Economic Review 50, 50: 1245–77.

del Villar, P.M., Bauer, J.M., Maiga, A. & Ibrahim, L. 2011. *Crise rizicole, évolution des marchés et sécurité alimentaire en Afrique de l'Ouest.* WFP, CILSS, FAO, CIRAD & FEWSNET.

Deloitte & Planet Retail. 2011. *Hidden heroes: the next generation of retail markets.* Consumer, Business and Transportation Industry Report. London, Deloitte.

Delville, P.L., Toulmin, C., Colin, P.-J. & Chaveau, J.-P. 2001. *Securing Secondary Rights to Land in West Africa.* London, International Institute for Environment and Development (IIED) /GRET.

Demeke, M., Pangrazio, G. & Maetz, M. 2011. *Country responses to turmoil in global food markets: the nature and preliminary implications of the policies pursued in the 2006-08 episode.* In A. Prakash, ed. Extreme volatility in agricultural markets: causes, consequences and policy options. Rome, FAO.

Denis, E. & Moriconi-Ebrard, F. 2008. *Africapolis: urbanization trends 1950-2020: a geo statistical approach West Africa.* laboratoire SEDET (Developing Societies in Space and Time), CNRS/ Université Paris Diderot. Paris, Agence Francaise de developpement (AFD).

Diagana, B., Akindes, F., Savadogo, K., Reardon, T. & Staatz, J. 1999. *Effects of the CFA franc devaluation on urban food consumption in West Africa: overview and cross-country comparisons.* Food Policy, 24(5): 465-78.

Diagne, B.M. 2004. *Study on the economic impact of whole and pre-cut poultry imports on the development of the poultry sector in Senegal.* Background report. Oxfam International.

Diallo, B., Dembélé, N. & Staatz, J. 2012. *Compétitivité du riz local en Afrique de l'Ouest depuis la hausse des prix alimentaires mondiaux.* PRESAO Résultats de recherche, no. 1-2012 - 5. Bamako, Programme de Renforcement et Recherche sur la Sécurité Alimentaire en Afrique l'Ouest.

Diarra, S.B., Diallo, A., Soulé, B.G. & Staatz, J.M. 2011. *Schéma de commercialization des céréales au Mali.* Bamako, Report prepared for the Malian Ministry of Agriculture.

Diarra, S.B., Staatz, J.M. & Dembélé, N.N. 2000. *The reform of rice milling and marketing in the Office du Niger: catalysts for an agricultural success story in Mali.* In R.J. Bingen, D. Robinson & J. Staatz, eds. Democracy and development in Mali, pp. 167-88. East Lansing, USA, Michigan State University Press.

Dihel, N. 2011. *Beyond the nakumatt generation: distribution services in East Africa.* Policy Note, no. 26. Washington, DC, World Bank.

Dinh, H.T., Palmade, V., Chandra, V. & Cossar, F. 2012. *Light manufacturing in Africa: targeted policies to enhance private investment and create jobs.* Vol. 1. Washington, DC, World Bank.

Dioné, J. 2000. *Food security policy reform in Mali and the sahel.* In R.J. Bingen, D. Robinson & J.M. Staatz, eds. Democracy and development in Mali, pp. 119-44. East Lansing, USA, Michigan State Univeristy Press.

Diouf, E.H.A. 2012. *West Africa's new common external tariff and the individual WTO commitments of ECOWAS member states: no insurmountable incompatibilities.* Bridges Africa Review, no. 5. Geneva, International Centre for Trade and Sustainable Development (ICTSD).

Drechsler, D. 2011. *Agricultural value chains in West Africa: focus, coverage and outlook.* AGWA background paper. Rome, FAO. (mimeo).

Druilhe, Z. & Barreiro-Hurlé, J. 2012. *Fertilizer subsidies in sub-Saharan Africa.* ESA Working paper no. 12-04. Rome, FAO.

Dunn, E. 2005. *AMAP BDS knowledge and practice task order lexicon.* microNOTE, no. 6. Washington, DC, USAID.

Duteurtre, G. & Dieye, P.N., eds. 2008. *Les organizations interprofessionnelles agricoles au Sénégal : de nouveaux outils de régulation des marchés?* Dakar, Bureau d'Analyses Macro-Economiques de l'Institut Sénégalais de Recherches Agricoles (ISRA-BAME).

ECOWAS. 2010. *West African common industrial policy (WACIP).* Lagos.

ECOWAS. 2012. *Programme régional d'appui à la régulation des marchés en Afrique de l'Ouest.* Abuja, ECOWAS Département de l'Agriculture, de l'Environnement et des Ressources en Eau.

ECOWAS. 2013a. *Extraordinary session of the ECOWAS authority of heads of state and government, Dakar, Republic of Senegal, 25 october 2013: final communique.* Abuja.

ECOWAS. 2013b. *Rapport sur l'analyse de l'impact du TEC de CEDEAO sur les économies des états membres de la CEDEAO.* Abuja, Unpublished.

ECOWAS. 2014a. *ECOWAS commission assures that measures are in place to protect member states interest under EPA with EU.*

ECOWAS Press Release No. 047/2014, http://news.ecowas.int/presseshow.php?nb=047&lang=en&annee=2014.

ECOWAS. 2014b. *West African leaders endorse conclusion of EPA negotiations with EU*/ ECOWAS Press Release No. 061/2014, http://news.ecowas.int/presseshow.php?nb=061&lang=en&annee=2014.

ECOWAS, (SWAC), O.S.a.W.A.C. & FAO. 2007. *Land Series.* Atlas on Regional Integration, Rural Areas and Agricultural Changes.

ECOWAS & UEMOA. 2012a. *12ème réunion du comité conjoint CEDEAO-UEMOA de gestion tarif du extérieur commun de la CEDEAO Abidjan en Abidjan du 11 au 14 décembre 2012: rapport final.*

ECOWAS & UEMOA. 2012b. *Etude sur les mesures d'accompangement et de sauvegarde du TEC/CEDEAO (draft).* Abjua.

ECOWAS, UEMOA, UNCCD & CILSS. 2012. *Sub-Regional action programme to combat desertification in West Africa.* Unpublished (April).

ECOWAS Commission. 2009a. *Institutional framework and financial mechanism for the implementation of ECOWAP/CAADP.* Paper presented at the International Conference on Financing Regional Agricultural Policy in West Africa (ECOWAP/CAADP) in Abuja, 11-12 November, 2009a.

ECOWAS Commission. 2009b. *Regional Agricultural Policy for West Africa:ECOWAP/CAADP.* Paper presented at the International Conference on Financing Regional Agricultural Policy in West Africa (ECOWAP/CAADP) in Abuja, 11-12 November, 2009b.

ECOWAS Commission. 2009c. *Draft Regional Partnership Compactfor the Implementation of ECOWAP/CAADP.* Paper presented at the International Conference on Financing Regional Agricultural Policy in West Africa (ECOWAP/CAADP) in Abuja, 11-12 November, 2009c.

ECOWAS Commission. 2010a. The monitoring and evaluation framework for ECOWAP/CAADP. Abuja.

ECOWAS Commission. 2010b. *Summary note on the policy instruments for the implementation of ECOWAP/CAADP.* Abuja.

ECOWAS Commission. 2012a. *Regional programme to support the regulation of west african markets.* Abuja, ECOWAS Department of Agriculture, Environment and Water Resources.

ECOWAS Commission. 2012b. *Regional social safety net support program in West Africa.* ECOWAS Agriculture, Environment and Water Resources Department.

ECOWAS Commission, UEMOA, RESOGEST & CILSS. 2012. *Réserve régionale de sécurité alimentaire.* Feasibilty study. Dakar, Le Hub Rural.

Elbehri, A., ed. 2013. *Rebuilding West Africa's food potential: Policies and market incentives for smallholder-inclusive food value chains.* Rome, FAO and IFAD.

ERS. 2012. *International food consumption patterns, online database. USDA, Economic Research Service (ERS).* (available at http://www.ers.usda.gov/data-products/international-food-consumption-patterns.aspx).

Euromonitor. 2011. *Income and expenditure: Nigeria.* Euromonitor International.

Euromonitor International. 2010. *Packaged food in Nigeria.*

Euromonitor International. 2012. *Passport,* online database. (available at http://go.euromonitor.com/Passport-Home.html).

Fairhurst, T., ed. 2012. *Handbook for integrated soil fertility management.* Nairobi, Africa Soil Health Consortium.

Faivre-Dupaigre, B., Coulibaly, M. & Diarra, A. 2004. *Mali - Etude d'impact des APE sur l'économie : Renforcement des capacités en appui à la préparation des APE.* IRAM.

Financial Afrik. 2014. *APE: L'UEMOA et la CEDEAO signent à "minima" avec l'UE.* http://www.financialafrik.com/2014/02/10/ape-luemoa-et-la-cedeao-signent-a-minima-avec-lue/.

FAO. 2003. *Financing Normal Levels of Commercial Imports of Basic Foodstuffs in the context of the Marrakesh Decision.* Rome, Commodities and Trade Division, FAO.

FAO. 2006a. *Import surges in developing countries: the case of dairy products.* Briefs on Import Surges Commodities no. 3. Rome.

FAO. 2006b. *Import surges in developing countries: the case of poultry.* Briefs on Import Surges Commodities no. 1. Rome.

FAO. 2006c. *Import surges in developing countries: the case of rice.* Briefs on Import Surges Commodities no. 2. Rome.

FAO. 2008. *Proceedings of Enabling environments for agribusiness and agro-industry development in Africa: a FAO workshop in Accra.* 8-10 October 2008.

FAO. 2009. *FAO Newsroom: number of hungry people rises to 963 million.* Posted January 22 2009, Rome. (available at http://www.fao.org/news/story/en/item/8836/icode/)

FAO. 2011a. *Description of the Agricultural Market Information System (AMIS).* CFS 37th Session. Rome.

FAO. 2011b. *Save and grow: A policymaker's guide to the sustainable intensification of smallholder crop production.* Rome.

FAO. 2012a. *Investing in agriculture for a better future.* The State of Food and Agriculture. Rome.

FAO. 2012b. *The state of food insecurity in the world 2012.* Rome, FAO, IFAD & WFP.

FAO. 2012c. *Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security.* Rome.

FAO. 2013a. *Climate-Smart Agriculture Sourcebook.* Rome.

FAO. 2013b. *Food systems for better nutrition. The State of Food and Agriculture.* Rome.

FAO & GTZ. 1998. *Rural Finance Revisited: Why?*, no. 1.

FAOSTAT. FAOSTAT, online database. FAO. (available at http://faostat3.fao.org/home/index.html#HOME)

Farnsworth, H.C. 1961. *Defects, uses, and abuses of natinal consumption data.* Food Research Institute Studies, 2(3): 179-201.

Farrelly, L.J. 1996. *Transforming poultry production and marketing in developing countries: lessons learned with implications for sub-Saharan Africa.* MSU International Development Working Papers, no. 63. East Lansing, USA, Michigan State University.

Faye, I.M., Benkahla, A., Touré, O., Seck, S.M. & Ba, C.O. 2011. *Les acquisitions de terres à grande échelle au Sénégal : description d'un nouveau phénomène.* Dakar, Initiative Prospective Agricole et Rurale.

Federal Government of Nigeria. 2006. *Nigerian cassava master plan: a strategic action plan for the development of the Nigerian cassava industry.* Federal Government of Nigeria / UNIDO.

Federal Government of Nigeria. 2010. *ECOWAP/CAADP process: national agricultural investment plan (NAIP), 2011-2014.* Abuja, Federal Ministry of Agriculture and Rural Development.

Federal Government of Nigeria. 2011. The transformation agenda: key priority policies, programmes and projects of te federal government of Nigeria (2011-2015). Abuja.

Fontagné, L., Mitaritonna, C. & Laborde, D. 2008. *An impact study of the EU-ACP Economic Partnership Agreements (EPAS) in the six ACP regions.* Final report January 2008. CEPII.

Foster, V. 2008. *Overhauling the engine of growth: infrastructure in Africa.* Africa Infrastructure Country Diagnostic. Washington, DC, World Bank.

Fowler, P. 2002. *Milking the CAP - how Europe's dairy regime is devastating livelihoods in the developing world.* OXFAM Briefing Paper, no. 34. Oxford, United Kingdom, OXFAM.

Garnett, T. & Godfray, C. 2012. *Sustainable intensification in agriculture. Navigating a course through competing food system priorities.* Oxford, UK, Food Climate Research Network and the Oxford Martin Programme on the Future of Food.

Gergely, N. & Poulton, C. 2009. *Historical background and recent institutional evolution of African cotton sectors.* In D. Tschirley, C. Poulton & P. Labaste, eds. Organization and performance of cotton sectors in Africa: learning from reform experience, pp. 31-44. Washington, DC, World Bank.

Gherzi Textil Organization. 2011. *Feasibility study for a cotton spinning mill in 11 sub-Saharan African countries.* no. V.11-83186. Vienna, UNIDO.

Government of Ghana. 2010. *Medium Term Agricultural Sector Investment Plan (METASIP): 2010-2015.* Accra, Ministry of Agriculture.

Gregory, D.I. & Bumb, B.L. 2006. *Factors Affecting Supply of Fertilizer in sub-Saharan Africa.* Agriculture and Rural Development Discussion Paper 24. Washington, World Bank.

GSS. 2008. *Ghana Living Standard Survey.* Report of the Fifth Round (GLS5). Accra, Ghana Statistical Service (GSS).

Haantuba, H. & de Graaf, J. 2008. *Linkages between smallholder farmers in supermarkets: lessons from Zambia.* In E. McCullough, P. Pingali & K. Stamoulis, eds. The transformation of agrifood systems: globalization, supply chains and smallholder farmers. Rome, FAO.

Haggblade, S., Hazell, P.B. & Reardon, T. 2007. *Transforming the rural nonfarm economy: opportunities and threats in the developing world.* IFPRI Issue Brief, no. 58. Washington, DC, International Food Policy Research Institute (IFPRI), World Bank.

Haggblade, S., Longabaugh, S., Boughton, D., Dembelé, N., Diallo, B., Staatz, J. & Tschirley, D. 2012. *Staple Food Market Sheds in West Africa.* MSU International Development Working Paper no. 121. East Lansing, Michigan State University Dept. of Agricultural, Food and Resource Economics.

Hitimana, L., Allen, T. & Heinrigs, P. 2009a. *Agricultural and non-agricultural population.* no. 4. OECD Sahel and West Africa Club (SWAC).

Hitimana, L., Allen, T., Heinrigs, P. & Trémolières, M. 2009b. *Harmonization of West African settlement data.* West African Futures Note, no. 2. OECD Sahel and West Africa Club (SWAC).

Hitimana, L., Allen, T. & Henrigs, P. 2011. *Informal economy and food security.* West African Futures, no. 6. OECD Sahel and West Africa Club (SWAC).

Hitimana, L., Heinrigs, P. & Trémolières, M. 2009c. *West African urbanization trends.* West African Futures Note, no. 1. OECD Sahel and West Africa Club (SWAC).

HLPE. 2011. *Price volatility and food security: a report by the high level panel of experts on food security and nutrition of the committee on world food security.* Rome, UN Committee on World Food Security.

Hsu, T. 2012. *Hershey sued over African cocoa farm child labor accusations.* Los Angeles Times. November 2, 2012, Los Angeles.

Humphreys, C.P. 1986. *Cereal policy reform in Mali (draft report).* Washington, DC, Unpublished World Bank.

Ilboudou, S. & Kambou, D. 2009. *Elaboration d'une stratégie opérationnelle de dévloppement de l'agro-industrie au Sahel et en Afrique de l'Ouest: rapport provisoire.* Ouagadougou, CILSS Sécretariat Exécutif Programme Régional d'Appui/Accès au Marchés.

ILO. 2013. *LABORSTA*, online database accessed 25 February 2013. International Labor Organization (ILO). (available at http://laborsta.ilo.org/)

Jacobs, S. 2012. *The supermarket boom.* African Business. 6 September 2012.

Jalloh, A., Nelson, G.C., Thomas, T.S., Zougmoré, R. & Roy-Macauley, H., eds. 2013. *West African agriculture and climate change: a comprehensive analysis.* Washington, DC, International Food Policy Research Institute (IFPRI).

Jayne, T., Mason, N., Myers, R., Ferris, J., Mather, D., Lenski, N., Chapoto, A. & Boughton, D. 2009. *Patterns and trends in food staples markets in eastern and southern Africa: toward the identification of priority investments and strategies for developing markets and promoting smallholder productivity growth.* International Development Working Paper, no. 104. East Lansing, USA, Michigan State University.

Jayne, T.S., Mather, D. & Mghenyi, E. 2006. *Smallholder farming under increasingly difficult circumstances: policy and public investment priorities for Africa.* MSU International Development Working Papers no. 86. East Lansing, USA, Michigan State University.

Johnson, M.E., Birner, R., Chamberlin, J., Diao, X., Fan, S., Nin Pratt, A., Resnick, D., You, L. & Yu, B. 2008. *Regional strategic alternatives for agriculture-led growth and poverty reduction in West Africa.* ReSAKSS Working Paper no. 22. ReSAKSS West Africa.

Josserand, H.P. 2011. *A retrospective and comparative analysis of food security.* West Africa Futures: Population Settlement, Markets and Food Security. Paris, OECD Sahel and West Africa Club (SWAC).

Josserand, H.P. 2013. *Volumes and Value of Regionally Traded Staple Commodities: Current and Prospective Analysis.* Paper presented at the Food Across Borders Conference in Accra, Ghana, 2013. USAID/ West Africa Agribusiness and Trade Promotion Project.

Kabore, D. & Reij, C. 2004. *The emergence and spreading of an improved traditional soil and water conservation practice in Burkina Faso.* EPTD Discussion Paper, no. 114. Washington, DC, IFPRI, Environment and Production Technology Division.

Kamuanga, M. 1982. *Farm level study of the rice production system at the Office Du Niger in Mali : an economic analysis.* Michigan State University (Ph.D.).

Kanu, B. S., A. O. Salami & K. Numasawa Kanu, B. S., A. O. Salami & K. Numasawa. 2014. I*nclusive growth: An imperative for African agriculture.* Tunis, African Development Bank.

Kelly, V., Dembele, N.N. & Staatz, J. *2008. Potential Food Security Impacts of Rising Commodity Prices in the Sahel: 2008-2009.* A special report by the Famine Early Warning Systems Network (FEWS NET) Washington,DC, FEWSNet.

Killebrew, K., Gugerty, M.K. & Plotnick, R. 2010a. *Poultry market in West Africa: Ghana.* EPAR Brief, no. 83. Seattle, University of Washington, Evans School of Pulbic Affairs.

Killebrew, K., Gugerty, M.K. & Plotnick, R. 2010b. *Poultry market in West Africa: Nigeria.* EPAR Brief, no. 87. Seattle, University of Washington, Evans School of Pulbic Affairs.

Kimenyi, M.S., Routman, B., Westbury, A., Omiti, J. & Akande, T. 2012. *Background paper.* Paper presented at the CAADP at 10: Progress towards agricultural prosperity in Washington, DC, December, 2012. Brookings Institute.

Kizito, A. 2011. *The structure, conduct, and performance of agricultural market information systems in sub-Saharan Africa.* Michigan State University, East Lansing, USA. (Ph.D.).

Kolavelli, S., Robinson, E., Diao, X., Alpuerto, V., Folledo, R., Slavova, M., Ngeleza, G. & Asante, F. 2012. *Economic transformation in Ghana.* IFPRI Discussion Paper, no. 01161. Washington, DC, International Food Policy Research Institute (IFPRI).

Komorowska, J.I., Aparisi, A.M. & Naman, K. 2012. *Draft analysis of public expenditure in support of food and agriculture development in Mali.* Technical notes series, MAFA. FAO.

Konandreas, P. 2012a. *Food price volatility in West Africa: effects on consumers and producers and policy options at national, regional and international levels.* AGWA Background Paper. Rome, FAO. (mimeo).

Konandreas, P. 2012b. *Trade in agricultural and food products in West Africa.* AGWA Background Paper. Rome, FAO. (mimeo).

KPMG & University of Ghana-Legon. 2013. *Mid-term review of the medium term agriculture sector investment plan (METASIP) - draft report for the Ministry of Food and Agriculture.* Accra.

Kwa, A.R. 2011. *Fertilizer supply and distribution in Nigeria: a case for public-private partnership.* 27 May 2011 Fertilizer Suppliers Association of Nigeria. (Available at http://www.fepsannigeria.com/index.php?option=com_content&view=article&id=179&Itemid=228)

Lambert, A. 2012. *Regional background paper on agro-industries development.* AGWA Background Paper. Rome, FAO. (mimeo).

Langyintuoa, A.S., Lowenberg-DeBoer, J., Faye, M., Lambert, D., Ibro, G., Moussa, B., Kergna, A., Kushwaha, S., Musa, S. & Ntoukam, G. 2003. Cowpea supply and demand in West and Central Africa. *Field Crops Research*, 82: 215-31.

Lanjouw, P. & Murgai, R. 2009. *Poverty decline, agricultural wages and non-farm employment in rural India: 1983-2004.* Policy Research Working Paper no. 4858. Washington, DC, World Bank.

Longabaugh, S. 2012. *Population growth patterns in West Africa.* Food Security Group (FSG), Michigan State University

Losch, B. 2002. *Global restructuring and liberalization: Côte d'Ivoire and the end of the international cocoa market?* Journal of Agrarian Change, 2(2): 206-27.

Lucas, L. 2012. *Food producers: a shift from subsistence.* Financial Times. 17 August 2012.

MAFAP. 2013. *Monitoring and analyzing food and agricultural policies in 10 African countries.* MAFAP Synthesis Report, no. 2005/10. Rome, FAO.

Makadji, M., Diarra, S., Diarra, D. & Staatz, J. 2013. *Effets des récents chocs sur l'évolution des exportations du bétail malien : synthèse des études nationales.* Paper presented at the Atelier sur les effets des chocs récents sur les exportations du bétail malien in Bamako, 27 November 2013. Michigan State University PROMISAM II Project.

Mathieu, P., Delville, P.L., Ouédraogo, H., Zongo, M. & Paré, L. 2003. *Making land transactions more secure in the West of Burkina Faso.* London, International Institute for Environment and Development (IIED)/GRET.

Maur, J.-C. & B. Shepherd. forthcoming. *Connecting food staples market in West Africa: A regional trade agenda for ECOWAS.* Washington, DC, World Bank.

Maxwell, D., Levin, C., Armar-Klemesu, M., Ruel, M., Morris, S. & Ahiadeke, C. 2000. *Urban livelihoods, food and nutrition security in greater Accra.* Research Report, no. 112. Washington, DC, International Food Policy Research Institute.

Me-Nsope, N.M. & Staatz, J.M. 2013. *Trends in per capita food availability in West Africa, 1980-2009* MSU International Development Working Paper no. 130. East Lansing, USA, Michigan State University.

Meyer, R.L. 2011. *Subsidies as an instrument in agriculture finance: a review.* Joint discussion paper – The World Bank, BMZ, FAO, GIZ, IFAD, and UNCDF, no. 70730. Washington, DC, World Bank.

Michigan State University Food Security Team. 2011. *Mali agricultural sector assessment 2011*. East Lansing, USA, Michigan State Univeristy.

Minal, J. & Bahari, M.M. 2011. *Africa: oil and fats scenario and Africa: opportunities and challenges*. Palm Oil Developments, no. 55. Kuala Lumpur, Malaysian Palm Oil Board (MPOB).

Ministère de l'Agriculture et de l'Hydraulique (Sénégal). 2005. *Loi d'orientation agro-sylvo-pastorale adapté.* Dakar.

Minot, N. 2011. *Transmission of world food price changes to markets in sub-Saharan Africa.* IFPRI Discussion Paper, no. 01059. Washington, DC, International Food Policy Research Institute (IFPRI).

Minot, N. 2012. *Price volatility in Africa: has it really increased?* IFPRI Discussion Paper, no. 01239. Washington, DC, International Food Policy Research Institute (IFPRI).

Morris, M., Kelly, V.A., Kopicki, R.J. & Byerlee, D. 2007a. *Fertilizer use in African agriculture: lessons learned and good practice guidelines.* Washington, World Bank.

Morris, M., Kelly, V.A., Kopicki, R.J. & Byerlee, D. 2007b. *Fertilizer use in African agriculture: lessons learned and good practice guidelines.* Directions in Development. Washington, DC, World Bank.

Nagai, T. 2008. *Competitiveness of cowpea-based processed products: a case study in Ghana.* Michigan State University, East Lansing, USA. (M.Sc. thesis)

Nagai, T., J.M. Staatz, Bernsten, R.H., Sakyi-Dawson, E.O. & Annor, G.A. 2009. *Locally processed roasted-maize-based weaning foods fortified with legumes: factors affecting their availability and competitiveness in Accra, Ghana.* African Journal of Food, Agriculture, Nutrition and Development, 9(9): 1945-65.

Nagarajan, G. & Meyer, R.L. 2005. *Rural finance: recent advances and emerging lessons, debates, and opportunities.* Reformatted version of Working Paper, no. AEDE-WP-0041-05. Columbus, USA, Department of Agricultural, Environmental, and Development Economics,The Ohio State University.

NBS. 2007. *Consumption pattern in Nigeria.* Abuja, National Bureau of Statistics (NBS).

NBS. 2012a. *Consumption pattern in Nigeria 2009/10: preliminary report.* Abuja, National Bureau of Statistics (NBS).

NBS. 2012b. *Nigeria poverty profile 2010.* Abuja, Nigeria Bureau of Statistics.

Neven, D., Odera, M.M., Reardon, T. & Wang, H. 2009. *Kenyan supermarkets, emerging middle-class horticultural farmers, and employment impact on the rural poor.* World Development, 37(11): 1802-11.

Neven, D. & Reardon, T. 2004. *The rise of Kenyan supermarkets and evolution of their horticulture product procurement systems.* Development Policy Review, 22(6): 669-99.

Niangado, O. 2010. *Varietal development and seed system in West Africa: challenges and opportunities.* Paper presented at the Second Africa Rice Congress: Innovation and Partnerships to Realize Africa's Rice Potential in Bamako, 22-26 March, 2010.

Nigeria Federal Ministry of Agriculture and Rural Development. 2011. *Agricultural transformation agenda: we will grow Nigeria's agricultural sector.* Abuja.

Nweke, F. & Haggblade, S. 2010. *The cassava transformation in West and Southern Africa.* In S. Haggblade & P.B. Hazell, eds. Successes in African agriculture: lessons for the future, pp. 29-70. Baltimore, USA, The Johns Hopkins University Press for the International Food Policy Research Institute (IFPRI).

Nweke, F.I., Spencer, D.S.C. & Lynam, J.K. 2002. *The cassava transformation: Africa's best-kept secret.* East Lansing, USA, Michigan State University Press.

OECD. 2013a. *OECD.StatExtracts*, online database. 2013 monitoring and evaluation: reference tables metadata: producer support estimate by country (available at http://stats.oecd.org/).

OECD. 2013b. *Paris declaration and Accra agenda for action.* Posted 30 September 2013, Paris.
(available at http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm#Paris).

OECD/FAO. 2012. *OECD-FAO agricultural outlook 2012-2021*, OECD Publishing & FAO.

Olowa, P., Momoh, S., Sule, T. & Obodo, E. 2012. *Demand for beer to intensify, as competition deepens*. Business Day.

Pachauri, R.K. & Reisinger, A., eds. 2007. *Contribution of working groups I, II and III to the fourth assessment report of the intergovernmental panel on climate change (AR4 Synthesis Report).* Geneva, Intergovernmental Panel on Climate Change (IPCC).

Partnership to Cut Hunger and Poverty in Africa. 2002. *Now is the time: a plan to cut hunger and poverty in Africa.* Washington, DC.

Perakis, S.M. 2009. *Improving the quality of women's gold in Mali, West Africa: the case of shea.* Michigan State University, East Lansing, USA. (M.Sc. thesis).

PwC. 2005. *Sustainability impact assessment (SIA) of the EU-ACP EAPs: phase 2*, 27 July 2005.

Rakotoarisoa, M.A., Sharma, R.P. & Hallam, D., eds. 2011. *Agricultural import surges in developing countries: analytical framework and insights from case studies.* Rome, FAO.

Rao, E. & Qaim, M. 2010. *Supermarkets, farm household income, and poverty: insights from Kenya.* World Development, 39(5): 784-96.

Reardon, T., Chen, K.Z., Minten, B. & Adriano, L. 2012. *The quiet revolution in staple food value chains in Asia: enter the dragon, the elephant, and the tiger.* Mandaluyong City, Philippines, Asian Development Bank.

Reardon, T. & Timmer, P. 2007. *Transformation of markets for agricultural output in developing countries since 1950: how has thinking changed?* In R. Evensons & P. Pingali, eds. Handbook of agricultural economics, vol. 3. New York, Elsevier B.V.

Reardon, T. & Timmer, P. 2012. *The eonomics of the food system revolution.* Annual Review of Resource Economics, 4: 225-64.

Reardon, T., Timmer, P. & Berdegué, J. 2008. *The rapid rise of supermarkets and developing countries: induced organizational, institutional and technological change in agrifood systems.* In E. McCullough, P. Pingali & K. Stamoulis, eds. The transformation of agrifood systems: globalization, supply chains and smallholder farmers. Rome, FAO.

Renaissance Capital. 2011. *A survey of the Nigerian middle class.* Thematic Research.

République du Mali Cellule Nationale CEDEAO. 2010. *Plan national d'investissement prioritaire dans le secteur agricole au Mali 2011-2015.* Bamako, République du Mali.

République du Sénégal. 2010. *Programme national d'investissement agricole (PNIA): plan d'investissement 2011-2015. Dakar.*

Research and Markets. 2010. *Fast food in Nigeria.* Posted June 2010. (available at http://www.researchandmarkets.com/reports/1524719/fast_food_in_nigeria_2010).

ROPPA. 2012a. *L'aviculture familiale et semi-industrielle au Burkina Faso.* AGWA background paper. Réseau des Organizations Paysannes et de Producteurs de l'Afrique de l'Ouest (ROPPA). (mimeo).

ROPPA. 2012b. *Vision du ROPPA : sécurité alimentaire, approvisionnent en Afrique de l'Ouest et cohérence des politiques agricoles et commerciales mises en œuvre.* AGWA Background Paper. Réseau des Organizations Paysannes et de Producteurs de l'Afrique de l'Ouest (ROPPA). (mimeo).

Ruf, F. 2009. *Libéralization, cycles politiques et cycles du cacao : le décalage historique Côte d'Ivoire-Ghana.* Cahiers agriculture, 18(4): 343-49.

Sanon, A., Dabiré-Binso, L.C. & Ba, N.M. 2011. *Triple-bagging of cowpeas within high density polyethylene bags to control the cowpea beetle Callosobruchus maculatus F. (Coleoptera: Bruchidae).* Journal of Stored Products Research, 47: 210-15.

Schneider, K., Gugerty, M.K., Plotnick, R. & Anderson, C.L. 2010. *Poultry market in West Africa: overview & comparative analysis.* EPAR Brief, no. 82. Seattle, University of Washington, Evans School of Pulbic Affairs.

Schneider, K. & Plotnick, R. 2010. *Poultry market in West Africa: Burkina Faso.* EPAR Brief, no. 84. Seattle, University of Washington, Evans School of Pulbic Affairs.

Sebastian, K. 2007. *GIS/spatial analysis contribution to 2008 WDR: technical notes on data and methodologies.* Background paper for World Development Report 2008: Agriculture for Development. Washington, DC, World Bank.

Seidler, E. 2001. *Wholesale market development: FAO's experience.* Paper presented at the 22nd Congress of the World Union of Wholesale Markets in Durban, South Africa, September, 2001. FAO.

Sharma, R.P. 2011. *Ghana: articulating trade-related support policies for agriculture.* In R.P. Sharma & J. Morrison, eds. Articulating and mainstreaming agricultural trade policy and support measures. Rome, FAO.

Sharpedgenews.com. 2011. *Agriculture minister, Dr. Adewunmi Adesina, trashes 'fertilizer subsidy'* Sharpedgenews.com, 6 December 2011. (Available at http://www.sharpedgenews.com/index.php/news/recent-news/544-agriculture-minister-adewunmi-adesina-trashes-fertilizer-subsidy).

Shepherd, A.W., Cadilhon, J.-J. & Cadilhon. 2009. *Commodity associations: a tool for supply chain development?* Agricultural Management, Marketing and Finance, Occasional Paper, no. 24. Rome, FAO.

Shepherd, A.W. & Farolfi, S. 1999. *Export crop liberalization in Africa: a reveiw.* FAO Agricultural Services Bulletin, no. 135. Rome, FAO.

Simpson, B. 2006. *The transfer and dissemination of agricultural technologies: issues, lessons and opportunities.* ATDF Journal, 3(1): 10-16.

Sirte. 2008. *Background document.* Paper presented at the Ministerial Conference on Water for Agriculture and Energy in Africa: Regional Views for Investment in Water for Agriculture and Energy in Africa in Sirte, Libya, 2008.

Sjaastad, E. & Bromley, D.W. 1997. *Indigenous land rights in sub-Saharan Africa: appropriation, security and investment demand.* World Development, 25(4): 549-62.

Soulé, B.G. & Gansari, S. 2010. *La dynamique des échanges régionaux des céréales en Afrique de l'Ouest.* Michigan State University-Syngenta Foundation for Sustainable Agriculture SRAI project. Bamako, Michigan State University-Syngenta Foundation for Sustainable Agriculture SRAI project.

Soulé, B.G., Gansari, S. & Tassou, M. 2013. *Analyse documentaire chain de valeur du manioc au Bénin.* Cotonou, LARES.

Staatz, J. & Dembélé, N. 2007. *Agriculture for development in sub-Saharan Africa.* Background Paper for the World Development Report 2008. Washington, DC, World Bank.

Staatz, J.M. & Ricks, D. 2010. *Value chain participant councils: a tool for improved market coordination and broad-based growth.* In H. van Trijp & P. Ingenbleek, eds. Markets, marketing and developing countries: where we stand and where we are heading, pp. 97-102. Wageningen, The Netherlands, Wageningen Academic Publishers.

Stads, G.-J. 2011. *Benchmarking agricultural research investment and capacity indicators in West and Central Africa.* ASTI Research Note. Washington, DC, International Food Policy Research Institute.

SWAC. 2009. *Climate change in West Africa: sahelian adaptation strategies.* SWAC Briefing Note, no. 3. Paris, OECD Sahel and West Africa Club (SWAC).

Takeshima, H., Nkonya, E. & Deb, S. 2012. *Impact of fertilizer subsidies on the commercial fertilizer sector in Nigeria: evidence from previous fertilizer subsidy schemes.* Nigeria Strategy Support Progrram II Policy Note 34. Washington, IFPRI.

Taondyandé, M. & Yade, M. 2012a. *Etude sur la consommation alimentaire en Afrique de l'Ouest: Draft.* AGWA Background Paper. Ibadan, Nigeria, ReSAKSS West Africa.

Taondyandé, M. & Yade, M. 2012b. *Etude sur la consommation alimentaire en Afrique de l'Ouest DRAFT.* AGWA Background Paper. Ibadan, ReSAKSS West Africa. (mimeo).

Taondyandé, M., Yade, M. & Nwafor, M. 2013. *2011 Agriculture and Livelihoods in West Africa.* Annual Trens and Outlook Report (ATOR). Abuja, ReSAKSS.

Tefft, J. 2010. *Mali's white revolution: smallholder cotton, 1960-2006.* In S. Haggblade & P.B. Hazell, eds. Successes in African agriculture: lessons for the future, pp. 113-62. Baltimore, USA, The Johns Hopkins University Press for the International Food Policy Research Institute.

Teravaninthorn, S. & Raballand, G. 2009. *Transport prices and costs in Africa : a review of the main international corridors.* Washington, DC, World Bank.

The Montpellier Panel. 2013. *Sustainable intensification: a new paradigm for African agriculture.* London, Agriculture for Impact.

The Voice. 2012. *Lawmakers approve ECOWAS VAT protocol, others.* The North Bank Evening Standard, The Gambia, 5 July 2012.

Timmer, C.P. 2012. *The mathematics of structural transformation. In Patterns of growth and structural transformation in Africa: trends and lessons for future development strategies.* WCAO Thematic Research Note no. 2. Washington, DC, International Food Policy Research Institute (IFPRI).

Timmer, C.P., Falcon, W.P. & Pearson, S.R. 1983. *Food policy analysis.* Baltimore, Published for the World Bank [by] The Johns Hopkins University Press.

Tollens, E. 1997. *Wholesale markets in African cities: diagnosis, role, advantages, and elements for further study and development.* FAO Food into Cities Collection, no. AC/05-97E. Rome, FAO.

Traoré, D. 2009. *Cocoa and coffee value chains in West and Central Africa: constraints and options for revenue-raising diversification.* AAACP Paper Series, no. 3. Rome, FAO.

Tschirley, D., Ayieko, M.W., Hichaambwa, M., Goeb, J. & Loescher, W. 2010. *Modernizing Africa's Fresh Produce Supply Chains without Rapid Supermarket Takeover: Towards a Definition of Research and Investment Priorities.* International Development Working Paper, no. 106. East Lansing, USA, Michigan State University.

Tschirley, D., Poulton, C. & Labaste, P., eds. 2009. *Organization and performance of cotton sectors in Africa: learning from reform experience.* Washington, DC, World Bank.

UEMOA. 2009. *Deuxième plan triennal (2009-2011) pour la mise en oeuvre de la politique agricole de l'UEMOA.* Union Economique et Monétaire Ouest Africaine (UEMOA).

UEMOA. 2011. *Initiatives de la commission de l'UEMOA en matière de sécurité alimentaire, de peuplement et de marché. Paper presented at the Réunion du Groupe de Travail du Secrétariat du Club du Sahel et de l'Afrique de l'Ouest (CSAO/OCDE) sur le programme de travail 2011-2012*, March, 2011. Union Economique et Monétaire Ouest Africaine (UEMOA).

UEMOA Commision. 2012. *La politique agricole de l'UEMOA (PAU): contenu, état de mise en oeuvre & perspectives.* Paper presented at the Atelier de Formation de ROPPA in Lomé, 4 au 7 avril, 2012.

UN Habitat. 2010. *The state of African cities. Governance, inequality and urban land markets.* Nairobi, UNEP.

UNDESA. 2011. *World population prospects, 2011 revision.* United Nations Department of Economic and Social Affairs (UNDESA).

UNECA. 2012. *Economic report on Africa 2012.* Addis Ababa, UNECA and African Union.

UNFPA. 2010. *Data for development, online database.* United Nations Population Fund (UNFPA). (available at http://www.unfpa.org/public/home/datafordevelopment/statistics)

UNIDO & UNCATD. 2011. *Fostering industrial development in Africa in the new global environment.* Economic Development in Africa.

USAID. 2009a. *Global food security response: Mali rice study.* microREPORT, no. 158. USAID.

USAID. 2009b. *Global food security response: West Africa rice value chain analysis.* microReport, no. 161. Washington, DC, USAID.

USAID & ALCO. 2010. *Promoting the free movement of transport, goods & persons: the 2nd joint report on road harrassment.* USAID/ West Africa Trade Hub, USAID/Agribusiness and Trade Promotion & Abidjan/Lagos Corridor Organization.

USAID & UEMOA. 2012. *20th road governance report.* USAID/West Africa Trade Hub & UEMOA.

USDA. 2007. *Ghana's food retail sector.* Global Agricultural Information Network (GAIN) Report, no. GH 7006. USDA Foreign Agricultural Service.

USDA. 2010. *Senegal retail food sector 2010.* Global Agricultural Information Network (GAIN) Report. Dakar. USDA Foreign Agricultural Service.

USDA. 2011. *Republic of South Africa, 2010 annual retail food sector report.* Global Agricultural Information Network (GAIN) Report. Pretoria, USDA Foreign Agricultural Service.

USDA. 2012a. *Ghana exporter guide.* Global Agricultural Information Network (GAIN) Report. Accra, USDA Foreign Agricultural Service.

USDA. 2012b. *Kenya's retail food sector report.* Global Agricultural Information Network (GAIN). USDA Foreign Agricultural Service.

van Seters, J., Afun-Ogidan, D. & Rampa, F. 2012. *Regional approaches to food security in Africa: the CAADP and other relevant policies and programmes in ECOWAS.* ECDPM Discussion Paper, no. 128d. Maastrich, European Centre for Development Policy Management.

Walkenhorst, P. 2009. *Nigeria.* In K. Anderson & W.A. Masters, eds. Distortions to agricultural incentives in Africa, pp. 441-61. Washington, DC, World Bank.

Wanzala-Mlobela, M., Fuentes, P. & Mkumbwa, S. 2011. *Best practices and policy options for implementing fertilizer subsidy programs successfully in sub-Saharan Africa.* NEPAD Policy Paper (Draft). Johannesburg, NEPAD Planning and Coordinating Agency (NPCA), Policy Alignment and Program Development Directorate.

Weatherspoon, D.D. & Reardon, T. 2003. *The rise of supermarkets in Africa: implications for agrifood systems and the rural poor.* Development Policy Review, 21(3): 333-55.

Weber, M.T., Staatz, J.M., Holtzman, J.S., Crawford, E.W. & Bernsten, R.H. 1988. *Informing food security decisions in Africa: empirical analysis and policy dialogue.* American Journal of Agricultural Economics, 70(5): 1044-52.

West African Sub-regional Office UNECA. 2012. *Harnessing agricultural potential for growth and development in West Africa. Niamey, UNECA Subregional Office for W*est Africa.

West African Sub-regional Office UNECA. 2013. *Economic and social situation in West Africa in 2011-2012 and outlook for 2013.* The sixteenth sessions of the Intergovernmental Committee of Experts (16th ICE) of West Africa: Inclusive green growth to accelerate socio-economic development in West Africa, Abidjan.

WFP. 2011. *Emergency humanitarian food reserves: feasibility study, cost-benefit analysis and proposal for pilot programme.* Rome.

WHO. 2008-2013. *Action plan for the global strategy for the prevention and control of non-communicable disease.* Geneva.

Winter, M. & Quan, J. 1999. *Land tenure and resource access in West Africa: issues and opportunities for the next tweny-five years.* Working paper prepared for the department for International Development (DFID). London, International Institute of Environment and Development (IIED).

World Bank. 1981. *Accelerated Development in sub-Saharan Africa:* An Agenda for Action. Washingont, DC.

World Bank. 2007. *World development report 2008: agriculture for development.* Washington, DC, World Bank.

World Bank. 2008. *Africa Infrastructure Country Diagnostic. Overhauling the Engine of Growth: Infrastructure in Africa.* Unpublished Draft.

World Bank. 2009a. *Awakening Africa's sleeping giant: prospects for commercial agriculture in the Guinea savannah zone and beyond.* Directions in Development, no. 49046. Washington, DC, FAO & World Bank.

World Bank. 2009b. *World development report 2009: reshaping economic geography.* Washington, DC, World Bank.

World Bank. 2010. *Africa's infrastructure: a time for transformation.*

World Bank. 2011a. *Africa development indicators, online database accessed July 1, 2012.* (available at http://data.worldbank.org/data-catalog/africa-development-indicators).

World Bank. 2011b. *The little data book on Africa: 2011.* Washington, DC, World Bank, Africa Division.

World Bank. 2012a. *Africa can help feed Africa: removing barriers to regional trade in food staples.* Washington, DC, Poverty Reduction and Economic Management, Africa Region, World Bank.

World Bank. 2012b. *Doing business 2012: doing business in a more transparent world.* Washington, DC, World Bank.

World Bank. 2013a. F*inal Report: Basic Agricultural Public Expenditure Diagnostic Review--Ghana's Ministry of Food and Agriculture.* Strengthening National Comprehensive Agricultural Public Expenditure in Sub-Saharan Africa. Washington, DC.

World Bank. 2013b. *Growing Africa: unlocking the potential of agribusiness*

World Bank & FAO. 2009. *Awakening Africa's Sleeping Giant: Prospects for Commercial Agriculture in the Guinea Savannah Zone and Beyond.* Directions in Development. Washington, DC, FAO and the World Bank.

World Trade Organization. 2012. *Trade policy review: report by the secretariat-Côte d'Ivoire, Guinea-Bissau and Togo*. no. WT/TPR/S/266. Geneva, WTO, Trade Policy Review Body.

Wright, B. 2009. *International grain reserves and other instruments to address volatility in grain markets*. World Bank.

Yameogo, S., Kieno, A., Dramane, B., Komorowska, J.I., Guissou, R. & Aparisi, A.M. 2012. *Draft analysis of public expenditure in support of food and agriculture development in Burkina Faso*. Technical notes series, MAFA. Rome, FAO.

Yumkella, K.K., Kormawa, P.M., Roepstorff, T.M. & Hawkins, A.M., eds. 2011. *Agribusiness for Africa's prosperity*. Vienna, UNIDO.

Zezza, A., Carletto, G., Davis, B., Karfakis, P., Stamoulis, K., Tasciotti, L. & Winters, P. 2006. *Heterogeneous access to assets, markets and agrarian institution: evidence from household survey data*. Background paper to the World Development Report 2008. Rome, FAO.

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West African Agriculture is at a turning point. The combination of strong demand growth, sustained economic growth, higher global agricultural prices, and an improved policy environment has generated the most conducive conditions for Agricultural growth in over 30 years. West African countries and their Development Partners now clearly recognize the sector's vital importance for broad-based growth, food security, improved nutrition and poverty reduction. At the same time, a combination of old and new challenges ranging from climate change to increased price volatility threaten the ability of West Africans to seize these opportunities.

In view of the challenges and opportunities facing West African Agriculture, the African Development Bank (AfDB), with support from the Government of France, partnered with the Food and Agriculture Organization of the United Nations (FAO) and the Economic Community of West African States (ECOWAS) to conduct a joint analytical study entitled Agricultural Growth in West Africa (AGWA): Market and Policy Drivers. The study contributes to a better understanding of the evolving context for growth in West Africa's agrifood sector by: (1) examining the drivers and trends affecting the demand for and supply of agrifood products, (2) evaluating the performance of the Agricultural sector and related policies in the light of those trends and (3) distilling the main implications for future policy priorities.

ISBN 978-92-5-108700-8

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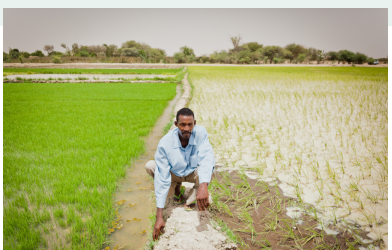
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