



Africa Can Help Feed Africa

Removing barriers to regional trade in food staples



THE WORLD BANK

Africa Can Help Feed Africa

Removing barriers to regional trade in food staples



October 2012

Poverty Reduction and Economic Management
Africa Region



THE WORLD BANK

Foreword

Prices for basic staple food are back in the headlines—they are rising again. This is bad news for those among Africa's poor who consume more food than what they can produce. Think especially of poor families living in cities: they spend the majority of their income on simple foodstuffs. Rising food prices are also having important macroeconomic impacts on many African countries since more and more food is being imported from the global market leading to worsening balances of trade. Just 5% of Africa's imports of cereals come from other African countries. This issue is not going to go away. Demand for food will continue to increase, it is projected to double by 2020, and consumers will be increasingly located in Africa's rapidly growing cities.

Fortunately, Africa does have the means and opportunities to deal with and deliver improved food security for its citizens. If African farmers were to achieve the yields that farmers are attaining in other developing countries then output of staples would easily double or even triple. On top of this barely a fraction of fertile agricultural land is being cultivated—just 10% of the 400 million hectares of agricultural land in the Guinea Savannah zone that covers a large part of Africa. Cultivating this land, while ensuring that existing user rights and the environment are protected, can play a key role in satisfying the rising demand for food in Africa's cities and ultimately elsewhere in the world.

But for this to happen current food trade policies need to change and farmers need to be better linked to both inputs and to consumers. Often the nearest sources of demand are across a border. Fragmented regional food markets and the lack of clear and predictable policies have dissuaded the private sector from making the investments that could allow Africa to achieve its potential in food—from investments by the poorest farmers in raising their productivity to large-scale investment by financial institutions to allow role out of insurance-based products to protect farmers from adverse weather outcomes.

Even though food staples are very basic products there is still a value-chain that links the farmer to the consumer and at each link in the chain trade barriers and constraints on competition increase the gap between producer and consumer prices—reducing returns to farmers and increasing the cost of consumers' food baskets. Farmers in Africa face more barriers in accessing the inputs they need and in getting their food to consumers in African cities, than do suppliers from the rest of the world. Outdated regulations limit access to the best seeds, raise the price of fertilizers and prevent agricultural specialists from crossing borders to share their knowledge where it is most needed; lack of competition often ensures high transport costs and poor services; export bans, unnecessary permits and licenses, costly documentary requirements hit poor small farmers and traders hard, and standards, rather than facilitating are often a barrier to trade for small producers.

The concept of food security has too often been twisted by narrow nationalistic visions and frequently hijacked by specific interests that benefit from the current situation. It is now an opportune time to breakout and pursue regionally integrated food markets that will deliver food security more efficiently and at the same time allow farmers to obtain more of the returns from their labors.



What is required? First of all governments in Africa need to engage in a more open and inclusive dialogue with their stakeholders on policies affecting food trade and food security and in particular to engage with neighbors through the regional communities on pursuing a collective approach to food security. Too often decisions are made without critical analysis and consideration of options and the interests and views of the broad group of stakeholders in food staples trade policies are seldom represented. The international community has to be ready to support this dialogue with better and more up to date information on trends in food production and regional food stocks and analysis of the impact that proposed policy reforms will have on regional food trade.

Second, there is a need to review and remove barriers to trade along the food value chain. Difficult decisions will have to be made and implemented—while many farmers and consumers will benefit a small number of influential politicians and their friends with interests in the food and related sectors will strongly resist. Again the international community can assist with studies that show the magnitude of the benefits from reform and in designing packages to offset losses that some may incur.

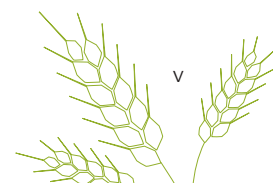
Obviously, political realities mean that moving to open regional food markets cannot all be done at once—so the challenge is to design a process—a series of steps—by which the government provides clear signals regarding the policy environment for food trade which gives the private sector sufficient confidence to make additional investments which in turn allows the government to take further steps to reduce interference in trade and agricultural production and so on. One example, too often farmers arrive at the border to find that the government has imposed an unannounced export ban, or sometimes a ban has been removed but customs officials have not been informed. Ideally governments should commit never to ban exports—export bans have not been successful and are typically counter-productive—but at the very least the government should indicate and stick to clearly defined circumstances under which they will intervene such as when local food stocks fall below a stated level such as 3 months supply.

Food trade has yet to be unlocked within Africa, together with its potential to raise income for farmers and enhance food security for all. For that, reforms need to happen. And to put reforms in motion, nothing would help more than evidence brought to the attention of the common citizen. This is the ultimate purpose of this report, and of the Africa Trade Practice at the World Bank.

Makhtar Diop
World Bank Vice President for Africa
Fall 2012

Abbreviations and Acronyms

ADMARC	Agricultural Development and Marketing Corporation (Malawi)
ACTESA	Alliance for Commodity Trade in Eastern and Southern Africa
AERR	ASEAN Emergency Rice Reserve
AFSIS	ASEAN Food Security Information System
AIFS	ASEAN Integrated Food Security
AMIS	Agricultural Market Information System
ASCE	Abuja Securities and Commodity Exchange
ASEAN	Association of Southeast Asian Nations
ASFSR	ASEAN Food Security Reserve
ASYCUDA	Automated System for Customs Data
AU	African Union
CEN-SAD	Communauté des Etats Sahélo-Sahariens (Economic Community of Sahelo-Saharan Countries)
CGP	COMESA Green Pass
COMESA	Common Market for Eastern and Southern Africa
COMRAP	COMESA Regional Agro-Inputs Program
DRC	Democratic Republic of Congo
EAC	East African Community
ECCAS	Economic Community of Central African States
EAERR	East Asian Emergency Rice Reserve
ECOWAS	Economic Community of West African States
ECX	Ethiopian Commodity Exchange
FAO	Food and Agricultural Organization
FCFA	Franc Communauté Financière Africaine
FRA	Food Reserve Agency (Zambia)
GDP	Gross Domestic Product
HACCP	Hazard analysis and critical control points
IFPRI	International Food Policy Research Institute
IGAD	Inter-Governmental Authority on Development
IRTG	Improved Road Transport Government (USAID)
KACE	Kenyan Agricultural Commodity Exchange
MAST	Multi-Agency Support Team
NCPB	National Cereals and Produce Board (Kenya)
NTB	Non-tariff Barrier
OECD	Organization for Economic Cooperation and Development
PHS	Plant Health Services (Tanzania)
RTA	Regional Trade Agreement



SADC	Southern African Development Community
SAFEX	South African Futures Exchange
SED	Single Entry Document
SOE	State Owned Enterprise
SPS	Sanitary and Phytosanitary Standards
SQMT	Standardization, Quality Assurance, Metrology and Testing
SSA	Sub-Saharan Africa
STR	Simplified Trade Regime
TAEC	Tanzania Atomic Energy Commission
TPRI	Tanzania Pesticide Research Institute
TFDA	Tanzania Food and Drugs Agency
TBS	Tanzania Bureau of Standards
UCE	Uganda Commodity Exchange
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
VAT	Value-added Tax
WAEMU	West African Economic and Monetary Union
WFP	World Food Program
ZABS	Zambian Bureau of Standards
ZAMACE	Zambia Agricultural Commodity

Acknowledgements

This report has been compiled by a team led by Paul Brenton (AFTPM) and comprising Nora Dihel (AFTP2), Richard Gicho (consultant), Ian Gillson (PRMTR), Matthew Harber (consultant), Gozde Isik (consultant), John Keyser (consultant), Ron Kopicki (consultant), Barbara Rippel (AFTPM), and Andrew Roberts (AFCRI). We are grateful for the comments and suggestions of the peer reviewers: Bernard Hoekman (PRMTR), Will Martin (DECAR) and Stephen Mink (AFTSN), and comments from Mombert Hoppe (PRMVP). This work has been financed in part by the Multi Donor Trust Fund for Trade and Development supported by the governments of Finland, Norway, Sweden, and the United Kingdom

Contents

Executive Summary	ix
Introduction and context	1
The food staple value chain	3
Regional production and trade patterns	5
Agriculture and food trade policy reform	6
Africa's enormous potential for regional trade in staples is not being exploited	11
Regulatory barriers to trade undermine Africa's potential in food trade	17
Trade barriers limit access to key inputs: seeds, fertilizers, and extension services	19
High transport costs, especially for smallholders, limit access to regional markets	27
Opaque and unpredictable trade policies undermine regional food trade	32
Crossing borders to deliver food staples to neighbors is costly and dangerous	46
Inefficient distribution services hamper regional trade in staples and contribute to food insecurity in Sub-Saharan Africa	50
Support institutions that foster efficient and stable regional food markets	53
Standards and the capacity to enforce them	54
Commodity exchanges and the development of formal trade	57
Market information	59
Institutions that facilitate risk management	61
<i>Futures and options markets for food staples</i>	63
<i>Warehouse receipt systems</i>	64
<i>Weather-indexed insurance</i>	66
Political economy issues that constrain open regional trade must be addressed	67
Recommendations	73
Indicative action matrix	75
<i>Action Area 1: Improve policies along the value chain to reduce the gap between producer and consumer prices</i>	75
<i>Action Area 2: Provide a more transparent and predictable food trade policy regime</i> ...	77
References	79
Annex 1: Basic rights and obligations for traders and border officials	83

List of Boxes

Box 1: Regional trade in rice in West Africa	7
Box 2: Government imports of maize during the 2001/02 Southern Africa food crisis	8
Box 3: Maize policy in Kenya	9
Box 4: Trade Ccsts and rural incomes in Malawi: Improving access to fertilizers	24
Box 5: Road blocks – more than a nuisance	29



Box 6: Competing transport services – key to lower food prices for consumers	30
Box 7: Mozambique and Uganda open border policy for trade in food staples	35
Box 8: The COMESA Green Pass	37
Box 9: Regional quality standards for food staples in Africa: Harmonization not always appropriate.	40
Box 10: Quantifying the effects of non-tariff barriers on African food staples	44
Box 11: The COMESA Simplified Trade Regime (STR) for Zambia, Zimbabwe and Malawi . . .	49
Box 12: The problem of post-harvest loss	52
Box 13: Improving information flows: Mobile phones and agricultural markets in Niger	60

List of Tables

Table 1: Farm gate build-up of 2007/08 fertilizer prices in Malawi (US\$/ton).	24
Table 2: Value chain indicators for Malawi hybrid maize (US\$/ton tradable grain, 2007/08 prices).	25
Table 3: Total available profits per hectare from Malawi hybrid maize, 2007/08 (US\$/ha)	26
Table 4: Trade policy impacts on maize prices in Zambia.	33
Table 5: Comparison of current and final draft East African standards for maize with Codex.	41
Table 6: Comparison of draft EAC standards and ZAMACE standards.	42
Table 7: Weaknesses of SPS standards management in Tanzania.	56
Table 8: Major global futures and options exchanges for food staples.	63

List of Figures

Figure 1: Key elements in a typical staples value chain	4
Figure 2: The maize food shed in Southern and Eastern Africa	6
Figure 3: The volume of net exports of food staples by region 1976–2008 (1,000 tons)	13
Figure 4: Aggregate food staple trade by world regions, 1990 and 2010 (millions, US\$)	14
Figure 5: Regional markets can drive trade in staples: Thai exports of cassava 2000 to 2010. . .	15
Figure 6: Nitrogen-based fertilizer prices in 2010 (US\$ per mt of nutrients).	21
Figure 7: Price raising effect of NTMs on rice in Kenya	45
Figure 8: Bringing staples across borders can be a risky business	47
Figure 9: Impact of mobile coverage on the dispersion of agricultural prices in Niger	60

Photograph by UN/Lucien Rajaonin

Executive Summary

Africa's growing demand for food has been met increasingly by imports from the global market. This, coupled with rising global food prices, brings ever-mounting food import bills. In addition, population growth and changing demand patterns will double demands over the next 10 years. Clearly, business as usual with food staples is not sustainable.

But there is a solution—and it comes from within Africa. Through regional trade, Africa's farmers have the potential to meet much of the rising demand, while providing substitutes for more expensive imports from the global market.

This potential, however, has yet to be exploited because African farmers face more trade barriers in accessing the inputs they need, and more trade constraints in getting their food to consumers in African cities, than do suppliers from the rest of the world. Thus, African farmers now provide *only five percent* of Africa's imports of cereals.

This report offers four main messages:

1. *Regional trade in staples, which offers the potential to advance food security and growth, is not being exploited.*

Open regional trade is vital, especially as demand for staples becomes more concentrated in cities, which must rely on food production from throughout the continent. And different seasons and rainfall patterns and variability in production, which will increase as climate change continues, are not confined to national borders. Thus, an Africa food security model based on *national* self-sufficiency cannot work.

Removing barriers to regional trade presents benefits to farmers, consumers, and governments. Farmers gain the incentives to meet the rising regional demand for food; and new jobs would be created along the activities of the staples value chain—for example, in producing and distributing seeds and fertilizers, in advisory services, in consolidating and storing grains, in transport and logistics, in distribution and retailing, and in processing. Meanwhile, a regional approach to food security allows African governments to better ensure access to food for their populations.

The regional value chains that deliver food from surplus production areas in one country to consumers in food deficit areas (such as cities) in another country comprise a number of stages. These include inputs of seeds, fertilizers, labor and knowledge, marketing and distribution, the requirements related to customs procedures, taxes, and regulatory requirements in the export market, and then the wholesale and retail stages.

At each of these elements, the extent of competition and the nature of government policies can influence the price the consumer pays (and its variability) as well as the price that the farmer receives for the product. This study furnishes evidence that constraints along the regional value chain inhibit Africa's cross-border trade in food staples. This leads to the second message:

2. Regulatory barriers to trade and competition along the whole value chain must be removed for Africa to reach its potential in regional food trade.

The report looks at barriers to trade and competition affecting five elements of the regional value chain:

a. Inputs of seeds and fertilizers and extension services

Trade barriers deny African farmers access to higher yielding seeds and better fertilizers available elsewhere in the world. For example, in some African countries it can take two to three years for new seed varieties to be released, even if they are used elsewhere on the continent. As new varieties are introduced at a faster rate, Africa falls farther and farther behind in the use of modern seeds making it difficult to compete with imports from the global market. In Ethiopia, for example, use of improved hybrid maize could help quadruple productivity; and even if just half the farmers achieved the productivity associated with hybrid seeds, the domestic production would replace commercial imports (Alemu 2010). But without clarity about regulations, seeds can be held up at borders for long periods, often rendering them useless.

Fertilizers offer a similar example, with application rates in Africa substantially lower than in other parts of the world. Farmers in Africa, especially those in landlocked countries, face higher prices for fertilizers than farmers in other developing countries. And markets in many African countries are too small to exploit scale economies linked with fertilizer production and even blending. Part of the reason that regional fertilizer markets have not emerged is that individual countries more often specify their own fertilizer blend specifications and specialty products. Hence, fertilizers cannot move freely from country to country.

As a result, many countries import directly from the global market but, being small buyers, cannot gain the same price as larger buyers. In addition, shipping companies usually charge more for smaller deliveries. Therefore, regional markets with common fertilizer specifications could generate substantially lower prices when quantities are ordered for the region. The lack of an effective system of standards is a major barrier to cross-border trade and regional fertilizer markets.

Two key issues must be addressed: (a) establishing a consistent and stable policy environment for regional trade in fertilizers; and (b) investing in institutions that reduce the transaction costs of coordination failures. Many countries have enacted new fertilizer laws in recent years, but few have provided the resources to define and enforce regulations through standards and testing capacity. This report shows that reducing regulatory burdens on fertilizers and the consequent increase in use of fertilizers would have substantial impacts on returns to farmers, with consequent impacts on poverty.



b. *High transport costs in Africa, especially for small farmers*

High transport costs and the lack of investment in modern trucking and shipping capacity remain a key factor limiting the movement of surplus staples to areas of strong demand. Although transport infrastructure needs improvement—especially on cross-border routes and in linking smallholders to regional networks—roads are not the major constraint. The critical issue is regulatory reform that delivers more modern and competitive transport services.

Transport cartels are still common across Africa, and the incentives to invest in modern trucks and logistics services are weak. Roadblocks, as well as being a nuisance, add considerably to the costs and time to transport, undermining the efficiency of transport operations. Estimates suggest that reform that delivers more competition could reduce the cost of transporting staples in West Africa by 50 percent within 10 years. A different study finds that a 50 percent reduction in transport costs in Mozambique would increase real agricultural GDP by seven percent and also increase agricultural GDP in Malawi by three percent.

c. *Opaque and unpredictable trade policies raise trade costs and curb private sector incentives to invest in raising productivity*

Among the factors affecting Africa's trade in staples are export and import bans, variable import tariffs and quotas, restrictive rules of origin, and price controls. These are often determined without transparency, and are poorly communicated to traders and officials at the border. This then creates uncertainty about market conditions, limits cross-border trade, and raises food price volatility. The way that standards are defined and implemented has a critical impact on the propensity to trade. For example, proposed standards in the EAC on discolored maize could exclude all smallholder-produced maize.

This calls for a more open discussion of trade policies before implementation, with a careful assessment of the costs and benefits as well as more inclusive processes for defining standards to ensure consistency with consumer needs and producer capacities.

d. *Crossing borders is costly and dangerous*

Hundreds of thousands of Africans cross borders daily to deliver food staples from surplus areas to higher priced markets. Most of these traders are women, and their activities provide an essential source of income to many households. But most border officials are men, and studies show that cross-border traders regularly suffer some sort of harassment. For example, in the Great Lakes region, poor women cross-border traders must routinely pay bribes, and a large number of them relate acts of violence, threats, and sexual harassment, most of which go unreported. The lack of economic and physical security undermines the livelihoods of these traders and compounds their lack of access to finance, information, and business knowledge. Reducing the number of agencies and officials at the border and increasing the transparency and predictability of the policy regime is crucial to providing an environment in which traders flourish and expand their business.

e. *Inefficient distribution services hamper regional trade in food*

Poor people in the slums of Nairobi pay more pro rata for food staples than wealthy people pay at supermarkets. This shows the importance of the distribution sector, and that in many countries the sector is not linking poor farmers and poor consumers.

Measures that support both farmers and small sellers to become more organized can help informal operators participate in evolving distribution sectors. Reforms are also needed to provide the regulatory frameworks for modern distribution services. The lack of licensing and operation rules for distribution companies, inadequate codes on investment, commerce, labor, and taxation—as well as the lack of bankruptcy procedures—create uncertainty and burden firms trying to conduct business operations in the formal distribution sectors.

Improvements to regulatory frameworks should eliminate disproportionate entry requirements, such as lengthy registration procedures, multiple licenses, or inadequate zoning regulations. In addition, price controls across the region and cartels in several African countries impede competition.

Removing constraints to trade in food staples along the value chain will reduce transaction costs but will not ensure good market outcomes. Market failures, such as those from asymmetric information (for example, a farmer knows less about the contents of a bag of fertilizer than the trader selling it), call for institutions that support market outcomes, including those that define and implement standards regimes, commodity market exchanges, and those charged with providing market information. Under previous regimes of heavy state intervention these institutions were less important. This leads to the third message:

3. *Build and reform institutions and invest in their capacity to make staples markets efficient and stable*

Market-based agricultural production and distribution, especially when based on integrated regional markets, require institutions that aid exchange. These market-supporting institutions can be diverse in character and organizational structure; but their goal should be to support the informational and distributional functions of markets.

But development of these institutions is compromised when the trade policy environment for staples is uncertain. Effective standards regimes depend upon private sector involvement, yet in many countries government agencies dominate the process of defining standards. Commodity exchanges have a great potential to reduce transaction costs for farmers by reducing the number of intermediaries and improving the conditions of exchange; however, they have not fared well in Africa. One reason is that these institutions cannot thrive without even-handed policies. In addition, operating over larger territories allows exchanges to build enough trading volume to exploit scale economies and be profitable, requiring exchanges to be able to operate across borders and requiring predictable regional trade policies. Investment in acquiring market information—essential



for allowing new opportunities for cross-border trade to be exploited—is less likely when there are risks associated with the policy environment.

Finally, many institutions can help address food security concerns and thus reduce the political risk of reform, allowing countries to pursue the integration of regional markets in staples and their inputs. For example, futures and options markets for food staples offer an alternative to holding physical stocks of food staples through food security reserves and to trade interventions that limit imports during periods of surplus and exports when production is low. These contracts guarantee the supply of food commodities.

Warehouse receipt systems may also negate the need to hold or maintain physical stocks of food staples. These allow farmers to deposit a certain quantity of a commodity into a private warehouse, where it can be pooled with other commodities of the same quality. A receipt is issued to the owner as evidence of location and ownership. The receipt is a negotiable instrument that can be sold or used as collateral for a loan.

Weather-indexed insurance can lessen the impacts of climatic shocks on farmers. Weather-indexed insurance is a type of financial derivative written against deviations in average rainfall or temperature indices constructed from data measured at weather stations. For example, if rainfall is below a set threshold, leading to low yields, an insured farmer would receive a paid compensation for reduced food staple production.

Although these institutions can play a key role in supporting greater regional trade, they will only flourish if there is a change in the way that food trade policies are defined and implemented. This in turn leads to the fourth message that:

4. *Political economy issues that constrain open regional trade must be addressed.*

Despite commitments to opening up regional trade in food, implementation has generally been weak; governments continue to restrict trade, maintaining the barriers and constraints outlined earlier. A program of regional trade reform can only be credible if governments commit to it, and take ownership of the process.

An indication of this vital commitment and ownership is the extent to which governments work to build a domestic constituency for reform—explaining the need for, and impacts of policy change, and generating a political consensus for integrated regional agricultural markets. Most African countries have failed in these efforts, and there has been little discussion about the impact of current policy stances and the benefits of a regional approach to food security.

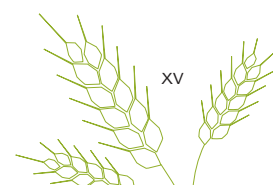
Opening up food staples to regional trade will create winners and losers. For example, where reform reduces the gap between producer and consumer prices, farmers and poor consumers will gain; intermediaries earning rents, both in public sector agencies and well-connected private sector interests will lose. Without a political and social consensus on agricultural reform, it is difficult to implement and sustain policy change. This is especially true if this lack of consensus prevents the creation of new institutional arrangements that moderate the impact of future shocks and instability in agricultural markets.

The absence of a stable and predictable policy environment at the national and regional level in many countries has provoked mistrust between government and the private sector. This, in turn, constrains private sector investment in food and thus limits the capacity of the private sector to expand production and trade, while encouraging governments to hedge against the failure of the private sector to supply food when shortages arise. A situation often exists in which private sector firms are motivated more by fear of loss than by opportunity for gain. The key challenge is how to create a competitive environment in which governments make credible commitments that allow the private sector to invest and respond in ways that moderate price fluctuations and deliver food security.

Two related factors could help governments build constituencies for reform and provide a predictable and stable policy environment:

- i. *An inclusive dialogue on food trade reform informed by timely and accurate data on global, regional, and national markets.* In many African countries decisions about food trade policies are made mainly at the highest levels of government, too often without critical analysis and consideration of options. Food trade policy is rarely subject to open discussion, and the interests and views of the broad group of stakeholders in food staples trade policies are seldom represented. And when there *is* open discussion about trade reform, decision makers rely most on the input of those with political influence—that is, those in government agencies, whose size and influence depends on the current institutional arrangements, and private sector interests, including those that earn rents as intermediaries.
- ii. *A reform strategy that provides a clear transitional path to integrated regional markets rather than a single but politically unfeasible jump to competitive markets.* The range of barriers to trade along the value chain, as well as the need to invest in market-supporting institutions, shows that delivering integrated regional food markets involves more than a one-off commitment, and that reforms cannot be implemented by the stroke of a pen. Thus, for many policymakers, attaining open and competitive regional markets will not happen during their electoral terms. The reform strategy will have to take place in incremental steps that encourage investment by reducing uncertainties about policies for the private sector and deliver real and visible benefits. At the same time it will allow policymakers to move at a pace consistent with their political risk calculations and their capacity to address the concerns of those who will lose from the reform process.

The first phase will set clear rules for public sector actions in the staples market to minimize the uncertainties that discretionary interventions might cause. The challenge is to provide discipline on short-term policy responses to short-term food insecurity that have negative long-term impacts on market development, productivity growth, and food security.



To promote transparency and private sector participation, governments could commit to precise notification procedures, both nationally and regionally, before restrictions on exports are implemented. Governments would agree to forego the use of export bans and apply an export quota announced early, which could be increased but not reduced during the marketing year. Countries would commit to limit public buffer stocks to a level that satisfied three months of emergency needs. Governments would retain the capacity to act in times of short-term food crises but would assure the private sector that governments will not arbitrarily buy in or distribute staples from the stocks, with subsequent impacts on prices and profitability.

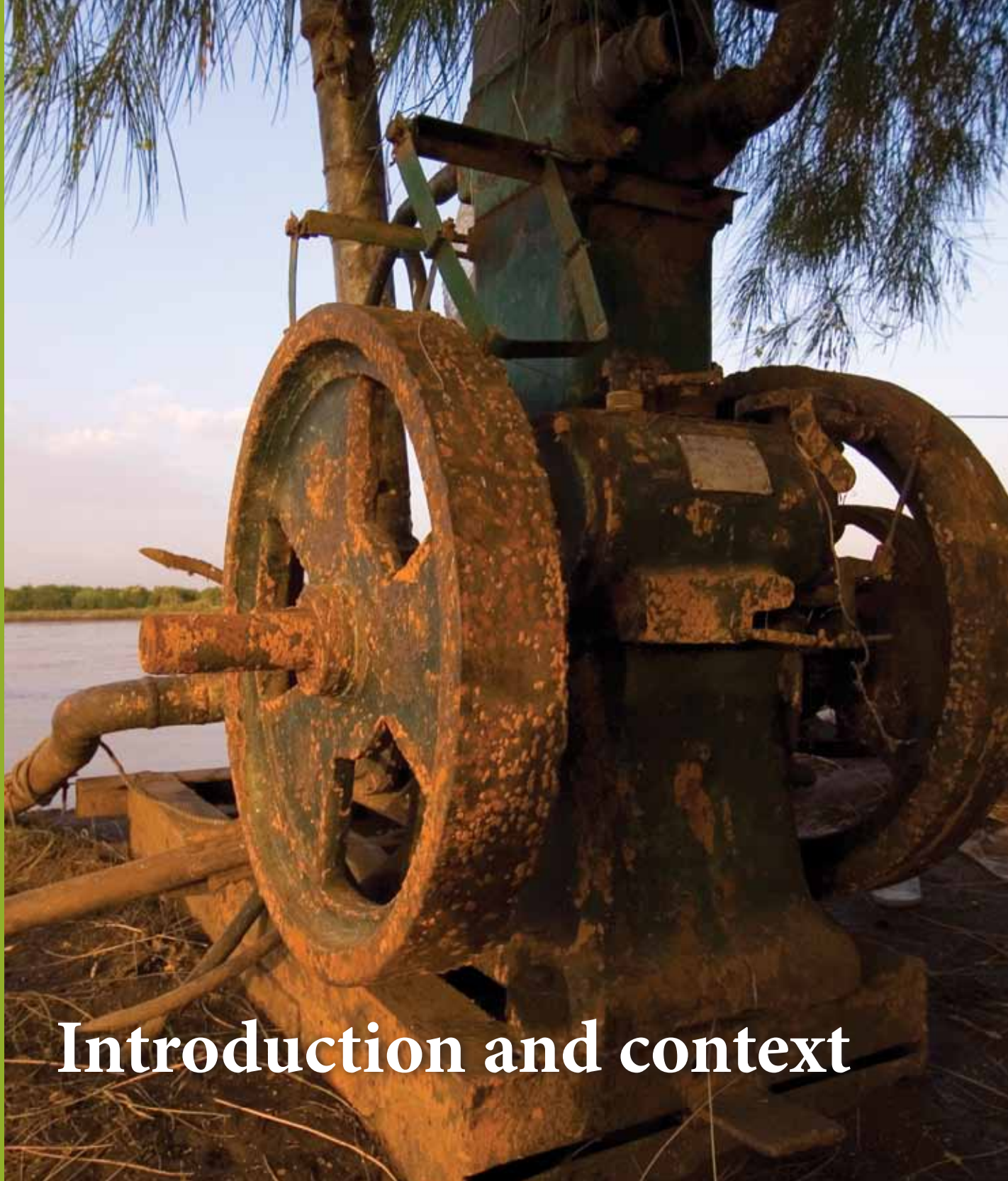
Better-informed and more open discussion of food trade policies would promote greater trust and understanding between the private sector and the government over food security. The following actions would support this process:

- Improving stakeholder access to timely and accurate information on food staples. Lack of reliable and up-to-date information on crop supply, demand, stocks and export availability has led to hasty, ill-defined, and uncoordinated policy responses to crises that, in turn, have sparked even greater volatility. Although regional communities in Africa have made some progress in developing information systems, the international community could help build capacity and strengthen these institutions, so that they deliver up-to-date information and sound forecasts of agricultural market developments within Africa and the global economy.
- Knowledge platforms anchored in the African Union (AU) that collect, analyze, and diffuse knowledge and best practices on agricultural trade policy reform across the value chain to support increased intra-regional trade in Africa. The platforms would bring together stakeholders, legislators, and regulators, and unite agriculture and trade specialists. The platforms would ensure that countries have access to (a) the best information on rules and regulations that affect trade in staples; (b) the appropriate design of trade and regulatory reforms and the capacity for effective implementation; (c) likely outcomes of specific reforms, including overall benefits as well as identification of those who may lose; and (d) policy options to address any adverse distributional consequences. The platforms would bring together all the players to discuss the creation of integrated regional markets for food staples. Platforms anchored at the AU would also disseminate experiences and best practices to and from regions within Africa. This would limit costly duplication of analysis, advice, and technical assistance across the different regional groupings in Africa. We propose separate platforms, one to support reform of regulations governing trade in food staples and trade in seeds and fertilizers and one to support trade facilitation and logistics regarding the movement of staples across borders.

- The report highlights the range of barriers to food trade in Africa along the entire value chain. The issues pertain to many ministries and agencies within government: trade, agricultural, health and safety, transport, and finance. This in turn requires a “whole of government” approach to freeing up food trade, which will require strong and effective leadership to articulate the rationale and sustain the momentum for reform. Leaders must also address the hard choices that will arise in dealing with the political economy constraints—constraints that have until now blocked the capacity of Africa to exploit its enormous potential to feed Africans.



Photograph by Ame Hoel, World Bank



Introduction and context

The rise in global food prices and the ever-growing food import bill have prompted sharp attention on agricultural policies in Africa. African policy makers are grappling with what unstable food prices mean for their countries; how these price movements will affect their food security situation; how the private sector is likely to respond; and what governments themselves can do. In addition, they fear that global warming may significantly change the location of food production within Africa.

This report discusses how opening up cross-border trade will boost the potential for greater food production in Africa and contribute to food security by improving poor people's access to food and by increasing returns to poor farmers for the food they produce.

Agricultural resources are not allocated equally across countries, or even within them, so borders often artificially demarcate food surplus areas from food deficit ones. For example, Southern Malawi is not well endowed with agricultural potential and is persistently food deficient. Nearby, Northern Mozambique is a productive area for growing maize, the main staple of the region, but it is far from the main area of national consumption in the south of the country. Kenya is maize deficit and depends on imports, especially from Tanzania. Given differences in weather patterns between countries, regional production is often less variable than production at the country level.

Regional trade integration can substantially impact food security by linking farmers to consumers across borders, ameliorating the effects of periodic national food shortages and of escalating global food prices. What matters for poor people is local price volatility, and changes in global prices are only one factor behind domestic price changes. Local crop conditions, supply costs, and policy measures, including those affecting trade in food, are often more important.

However, regional trade in food staples remains far from free despite the implementation of a host of regional trade agreements and efforts for policy and regulatory harmonization. The arbitrary and erratic imposition of barriers undermines private sector confidence to invest and distorts incentives towards cash crop production and away from food staples.

This report is organized around four main themes or messages:

- *The potential for regional trade in food in Africa is not being exploited;*
- *Barriers to trade along the value chain that prevent this potential from being realized;*
- *The need to invest in institutions that support efficient and safer market outcomes; and*
- *The importance of addressing the political economy realities that have prevented African countries from realizing the gains from opening up to regional trade.*

A final section offers recommendations to promote dialogue among stakeholders about integrating into regional food markets, and suggestions on ways the international community can help. The report first provides an overview of the typical value chain for a food staple as well as a brief outline of current approaches to regional trade in food staples in Africa. However, we must first define what the term *food staples* means.

The general definition of a staple is a food that is eaten regularly and constitutes the dominant part of the diet and supplies a major proportion of energy and nutrient needs. Thus, staple foods vary by location but typically include grains, tubers, legumes, or seeds. In the African context, the

emphasis has been on cereals, especially maize and rice, and to a lesser extent on starchy root vegetables such as potatoes, yams, and cassava as well as pulses (dried legumes) and fruits such as plantain. As will be subsequently discussed, the political economy issues that surround production and trade of the key cereals has led to problems when implementing reforms. This suggests an important role for trade in substitutes for the main grains, such as cassava and sorghum, which in the past have been less vulnerable to political capture.

The food staple value chain

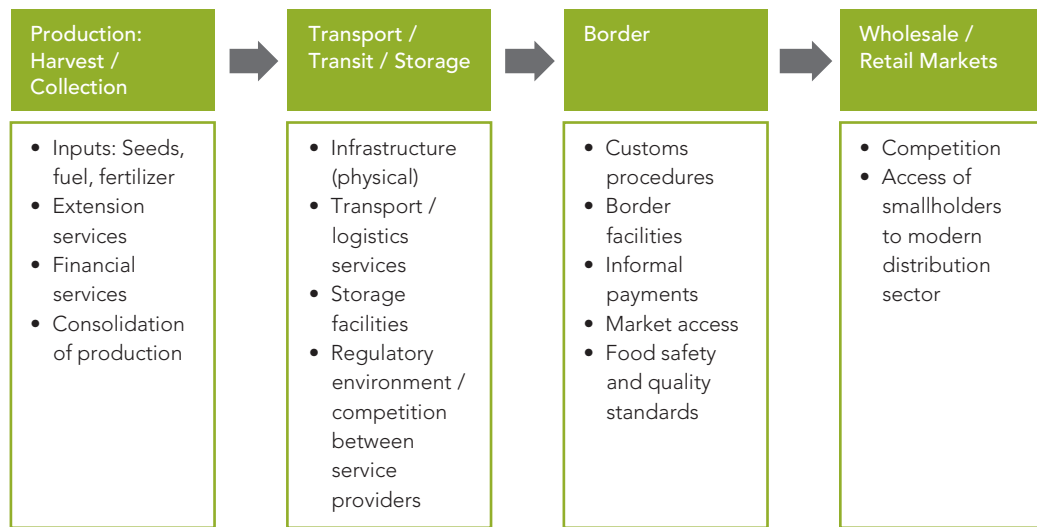
When consumers buy a staple food the price reflects that the product has passed through a number of stages of a value chain. This starts from a seed and continues through a number of inputs, including fertilizer, labor, and knowledge before proceeding through a marketing and distribution system that includes grading, bagging, transportation, and the wholesale and retail stages (Figure 1). When the product or its inputs cross a border there are additional elements linked to customs procedures, taxes, and regulatory requirements. The extent of competition and the nature of government policies can, therefore, influence the price that the consumer pays and the price that the farmer receives for the product at multiple points along the staples value chain at which factors the extent of competition and the nature of government policies can influence the price that the consumer pays for the product as well as the price that the farmer receives. If the consumer purchases the product in a processed form (for example, flour) the vertical chain linking the farmer and final consumer increases by an extra level.

The level of food staple production in Africa therefore has important implications for employment beyond that required on the farm. Substantial increases in output that would follow from bridging the gap in yields between Africa and other countries would generate a substantial amount of employment. While much of the employment would be in rural areas, rising agricultural productivity and greater regional trade would create jobs in processing and a wide range of services sectors, including transport, distribution, and retailing.

The number of stages in the value chain and the value added tend to be less for staples than for processed products. This means that the impact of specific costs along the chain for staples will likely have a greater proportional impact on price than in more sophisticated chains. The cost of transportation comprises a high share of the overall cost of staples given their low-value to weight ratio. For example, a 2007 value chain study in Cameroon (Keyser, with Nkama and Doya) found that domestic handling and transport costs accounted for 21–35 percent of total shipment value for fresh cassava over a delivery distance of 130km, compared with less than 12 percent for cotton lint delivered more than 1,200km from northern Cameroon to the port of Douala. When the value chain for staples extends across a border, costs such as those associated with border procedures, international transportation, and satisfying standards in the overseas market will likely have a disproportionate impact relative to higher value products that are less vulnerable to damage.

Economic analysis of the impact of policies affecting agricultural markets typically assumes competitive outcomes. However, lack of competition at any stage along the value chain can have



Figure 1: Key elements in a typical staples value chain

important implications for the outcome of policy change and external shocks on producers of food staples and consumers (McCorrison 2011).¹ For example, the decline in consumer prices from the removal of a trade barrier will be less if there is market power at some point along the value chain. Hence, a lack of competition in, say, the transportation and distribution of staples might allow this sector to capture the largest benefits of trade reform. Clearly, world prices still matter, but the structure of the value chain and policy interventions along that chain affect the way that changes in global commodity prices are translated into movements in consumer prices.

Porto et al. (2011) discuss a number of case studies of export crops in Africa to assess the impact of the structure of export value chains on poverty and welfare in rural areas. They conclude that greater competition among the processors and traders of crops—such as cotton in Zambia, Malawi, and Burkina Faso, coffee in Uganda, Rwanda, and Côte D’Ivoire, tobacco in Malawi and Zambia, and cocoa in Côte D’Ivoire and Ghana—is good for smallholders since farm gate prices tend to be higher. For example, with cotton in Zambia we found that if the largest processing firm were split then the income of the average cotton producer would increase by 2.4 percent.

Similarly, market power in the distribution sector can act as an effective import barrier. François and Wooton (2010) show that higher concentration in the distribution sector translates into significant trading costs. This means that by neglecting the structure of the domestic distribution sector, the market access benefits from tariff reductions may be seriously overestimated. Hence, with staples, a lack of competition in transportation, distribution, and processing will mean lower farm gate prices for producers and higher consumer prices.

¹ McCorrison highlights that, for the producer of food staples, the relevant demand is not that of the consumer but rather the successively related derived demand from the various actors in the value chain, the nature of which reflects the extent of competition throughout the value chain.

Regional production and trade patterns

Africa has traditional areas of food deficit and food surplus. The former include drought prone areas, such as the Horn of Africa and the Sahel, that often experience crop failure. Conflict and civil unrest compounds this problem in the Horn, the Congo Basin, and pockets of West Africa. The latter comprise Africa's highly productive agricultural zones, which occur in two types of areas. First are those with favorable and reliable rainfall that do not get too cold in the winter (cultivation of cassava and banana needs warm conditions) and watersheds, where there is economical irrigation. An example is Southern Mali, which exports surplus sorghum to Niger and coastal West Africa.

Second are the “staple food basket zones” (Jayne et al. 2007), where flexible climates support the cultivation of different food crops, particularly cereals, alongside year-round drought-resistant crops for domestic consumption. These zones produce a surplus of cereals for export to deficit regions in periods of food stress. Examples include (a) Northern Zambia, where cassava production ensures domestic food security, even in drought years, enabling the region to export maize to DR Congo, Malawi, and elsewhere in Zambia; (b) Eastern Uganda, where bananas and cassava ensure food security, thereby enhancing maize exports to chronically food deficit Kenya; (c) Northern Mozambique, where cassava and Irish potato cultivation provide local food, enabling regular maize exports north into Kenya and south into Malawi; (d) most of Tanzania, where a combination of rice, cassava, bananas, and maize enable regular cereal exports north into Kenya and south into Malawi; and (e) South Africa, where large-scale commercialization and mechanization combined with modern inputs and irrigation enable high yields for the export of cereals northward to Zimbabwe, Southern Mozambique, and Malawi (Haggblade 2008).

Maize is the most important food staple in Eastern and Southern Africa, and the most widely traded agricultural commodity; in most countries its availability is equated to food security. Rural food surplus production zones supply major deficit urban consumption centers as their natural markets. These spatially linked clusters of production and consumption zones are referred to as food sheds. Figure 2 shows the maize food shed in Southern and Eastern Africa and how national boundaries intersect natural flows of food. If these borders add significant costs to moving food from surplus to deficit regions then trade flow will be constrained.

In West Africa, there are three major agro-ecological zones—the Sahelian, Sudanese, and Coastal zones—where production and consumption of food staples can be easily classified. In the Sahelian zone, millet is the principal cereal cultivated and consumed. Exceptions include Cape Verde, where maize and rice are more important; Mauritania, where sorghum and maize are staples; and Senegal, with rice. The principle substitutes are sorghum, rice, and cassava flour. In the Sudanese zone,² maize and sorghum are the principal cereals consumed by most of the population, followed by rice, cassava, and yam. In the Coastal zone (with two rainy seasons), yam and maize are the most important food products, supplemented by cowpea (USAID 2010).

² Southern Chad, Central Nigeria, Benin, Ghana, Togo, Côte d'Ivoire, southern Burkina Faso, Mali, Senegal, Guinea Bissau, Sierra Leone, Liberia).



Nigeria is by far the largest producer of food staples in West Africa and exports to neighboring countries (millet, sorghum, and yams). Among West African countries, it is also the one that imports the most food (in particular grains) to satisfy urban consumption needs (accounting for 36 percent of Economic Community of West African States (ECOWAS) food imports). The most important crops for Nigeria are roots, tubers, and grains. Nigeria is the world's leading producer of cassava, yams and taro root, and the second largest producer of sweet potatoes. It accounts for 69 percent of the regional supply of these products. Nigeria also accounts for half of the grains produced in West Africa and is the world's largest producer of cowpeas.

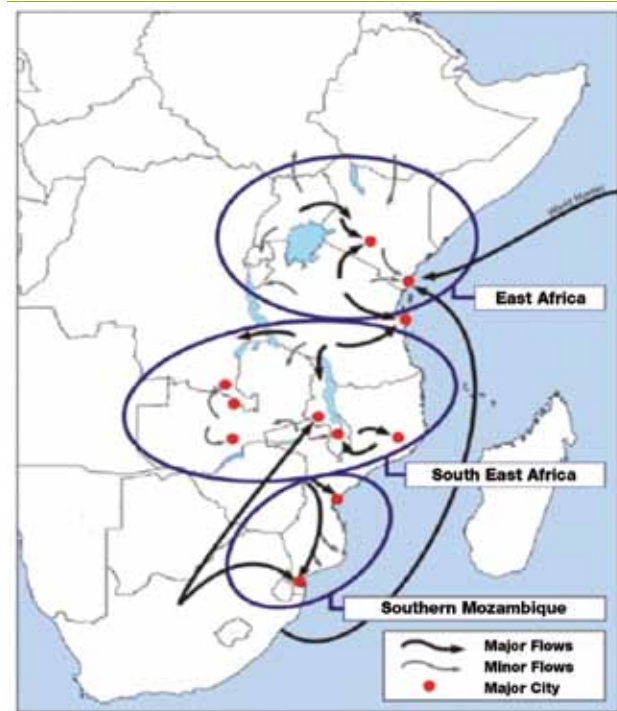
Still, while domestic production provides most of the food for Nigeria's urban areas, the country has a deficit in rice and wheat. Every year Nigeria imports more than one million tons of rice, making it among the largest rice importing countries in the world, and more than two million tons of wheat flour.

For trade flows, there are three trade basins in West Africa known as the West, Central, and East basins. In the West basin³ rice is most heavily traded (see Box 1). In the Central basin⁴ maize is mostly traded. And in the East basin⁵ millet is most frequently traded.

Agriculture and food trade policy reform

Many countries have reformed their traditional state controlled food marketing systems to dual systems in which both the private and public sectors are involved in food staple input and output markets. Following this partial liberalization of food markets, the private sector has started to emerge and invest in commodity trading and processing. Most government parastatals no longer

Figure 2: The maize food shed in Southern and Eastern Africa



Source: Haggblade (2008).

³ Mauritania, Senegal, western Mali, Sierra Leone, Guinea, Liberia, the Gambia

⁴ Côte d'Ivoire, central and eastern Mali, Burkina Faso, Ghana and Togo.

⁵ Niger, Nigeria, Chad and Benin.

Box 1: Regional trade in rice in West Africa

With demand outstripping domestic production, West Africa is a major and expanding rice import market. West Africa accounts for almost 20 percent of world rice imports, amounting to 6.3 million tons in 2008. The main importing countries are Senegal, Nigeria, and Côte d'Ivoire. The largest exporter to the region is Thailand, but China, India, and the US have also become important sources for some countries. At the regional level, almost all cross-border rice trade is imported through formal transit shipments from the main ports and through informal trade. The latter is significant. For example, Benin officially imports as much as 800,000 tons of rice in some years; but the bulk of these imports are parboiled rice, which is trans-shipped via Cotonou to Nigeria through informal channels. Almost all trade from surplus rural production areas to deficit urban markets remains within the country of production due to high transport costs and customs formalities. In 2007, official regional rice exports were less than 79,000 tons, principally from Senegal, Ghana, Côte d'Ivoire, and Togo. Other than Nigerian parboiled rice, informal exports of West African rice are mostly from surplus areas close to borders. For example, there are some exports of domestically cultivated rice from the Senegal River Valley Mauritania, where rice prices are higher. The largest rice deficit countries are Benin, Cameroon, Côte d'Ivoire, Ghana, Liberia, and Senegal. Most imported rice is consumed in the coastal regions in the larger cities. Dry rural areas also experience significant rice deficits.

Source: USAID (2009)

have the financial or operational clout to meet a country's entire annual marketing, storage, and processing requirements, and rely on the private sector for some of these functions. In many cases, delivery systems for fertilizer, seeds, and veterinary services have also been passed from the public to private service.

Yet government marketing institutions continue to operate in the market—often alongside the private sector—both through their direct procurement and sales operations, including input subsidy programs and through trade policy instruments. These institutions often try to influence market prices through their purchase and sale operations.

Over the last decade, the food marketing policy environment in SSA has remained sub-optimal in its support for agricultural productivity growth. Interventions have had an adverse impact on the regional market for food staples, especially when prices are artificially manipulated and inconsistent with world market prices. To benefit urban consumers, and to release unwanted stocks, government food agencies have sold public reserves of food staples at below-market prices. This triggers unpredictability for farms and firms alike, diminishing their productive and trading capacities, especially during periods of poor harvest,⁶ and raising fears of being undercut by subsidized government food.

⁶ For example, uncertain output prices in the face of government intervention in the market coupled with risk-averse smallholder farmers reduces the incentive to use productivity-enhancing inputs such as fertilizer.



It can even cause their withdrawal from the market altogether (Tschirley et al. 2006). A study of Zambian maize markets showed that several international grain trading companies left the market because of high risks imposed by unpredictable government participation in the maize market (Nijhoff et al. 2003a). Consequently, despite intervening in the market, governments have often been unable to prevent food prices from exceeding import parity levels, generating acute food shortages and disrupting regional trade in these products (Box 2).

Statistical analysis by Minot (2011) finds that the world price of maize has been less volatile than the price of maize in Africa, suggesting that strategies of national food self-sufficiency have not been effective in reducing food price volatility and may even have exacerbated the problem.

Box 2: Government imports of maize during the 2001/02 Southern Africa food crisis

In 2001/02, the Zambian government publicly announced that it would import 200,000 tons of maize from selected South African suppliers to cover the national food deficit, and then sell it below market price to a small number of large formal sector millers. A subsidy was intended to limit consumer price increases, paid directly to the South African suppliers in addition to the importers' payments. Because of liquidity problems, the subsidy payment was late, thereby delaying the maize imports. When the government instead imported just 130,000 tons very late in the season, there were maize and maize flour shortages, and local market prices exceeded import parity. Traders and millers not selected to benefit from the scheme, including informal traders from Mozambique, refrained from commercially importing maize for fear of not being able to sell once subsidized maize reached the market. Because grain was channeled just to the large millers, consumers had to pay the higher price for already-refined flour instead of being able to source grain and mill it themselves or through the informal network of hammer mills.

In the same year, Malawi also faced a modest maize production deficit—eight percent below the country's 10-year average. In September 2001, its grain trading parastatal (ADMARC) announced a fixed price for maize to be sold at its distribution centers and declared its intention to import maize from South Africa to maintain this price. The selling price was set considerably lower than the landed cost of imported maize, leaving private traders with no incentive to import commercially. As with Zambia, the government imports also arrived late and were insufficient to meet demand so prices soared to a peak of US\$450 per ton in early 2002. To make matters worse, the late-to-arrive ADMARC imports arrived during the good 2002 harvest. These were then released on to the market, resulting in 16 months of continuously falling maize prices to the detriment of farmers. At other times, the sourcing of grain from South Africa and subsequent release on to the domestic market through government contracts with South African suppliers has also depressed informal maize trade with Mozambique. Since Mozambique is the source of informal trade in maize to southern Malawi, these government imports also add greater risks and price instability for Mozambique's smallholder farmers.

Sources: Nijhoff et al. (2002); Jayne et al. (2007); Rubey (2004); Nijhoff et al. (2003).

Box 3: Maize policy in Kenya

Maize policy in Kenya tries to support and stabilize prices through the National Cereals and Produce Board (NCPB). In the 1980s the NCPB played a major role in the domestic maize market, purchasing 600,000–800,000 tons annually. Since then, maize markets have been liberalized and private sector trade plays a much larger role.

However, the NCPB continues to purchase maize to defend a floor price. Since 2000, NCPB purchases have been 30,000–190,000 tons per year. NCPB operations are estimated to have increased domestic maize prices by 20 percent during 1995–2004 because they account for 25–35 percent of all maize sold by the agricultural sector in Kenya. Most of the maize purchased has been directly from large-scale farmers in the Rift Valley.

To defend high maize prices, the government has limited maize imports. In mid-2001 a temporary ban was imposed on cross-border imports of maize because of low prices associated with a good harvest. Another temporary ban was introduced in 2004 in response to an outbreak of aflatoxin poisoning thought to be caused by imports from Uganda. And recently Kenya has prevented Tanzanian trucks carrying maize from entering Kenya, forcing them to off-load and reload onto Kenyan trucks. The main beneficiaries from high maize prices within the country have been the largest farms, and the main losers have been the net buyers—that is, urban consumers and maize-purchasing rural households.

Source: World Bank (2009).

There have been few cases where government attempts to stabilize food prices have been successful, and interventions to moderate food price volatility often impose substantial costs on consumers and farmers in neighboring countries (see Box 3).

Cross-border trade in food staples in Africa remains limited. Prices for staples, especially in land-locked countries, can vary substantially between years of domestic good harvest and those of poor harvest. This explains why governments still empower agencies to intervene in agricultural markets to supposedly (but ultimately fruitlessly) stabilize prices, and why these interventions only discourage intra-regional trade. The challenge is to allow regional trade to improve access to food and moderate price volatility while developing institutions that support price stabilization.

The following sections discuss the key constraints to regional trade in Africa.





Africa's enormous potential for regional trade in staples is not being exploited

Africa has considerable variation in its climatic conditions across countries and even within them. The distribution of food crop cultivation coupled with possibilities, where they exist, for staggered harvesting within the same commodity offer substantial opportunities for trade. Since production variability is not highly correlated among most countries in the region, integration through regional trade offers the prospect of canceling the effects of small country size on production volatility (Koester 1986). Size matters as larger countries, or groups of countries, typically have more diverse climatic conditions than smaller ones, which reduces systemic risks at the country level.

Increased regional trade has the potential to (a) expand the size of Africa's market for food staples, (b) boost agricultural growth in surplus zones, and (c) mitigate shortages in deficit ones. In addition, regional trade in food staples can also help moderate price volatility in African food staple markets (see Dorosh 2001).

Suppliers from outside the continent are meeting most of Africa's growing demand for food. The production of food staples for growing urban markets and food deficit rural areas presents the largest growth opportunity for African farmers. The market value of Africa's food staple production is at least US\$50 billion per year, equivalent to three-quarters of all agricultural output (World Bank 2008). Given population growth and increased urbanization, Africa's demand for food staples will grow dramatically in the coming decade. Indeed, demand is expected to double by 2020, primarily in cities. Import bills for food will rise substantially if Africa's farmers do not contribute more to meeting this demand.

Unfortunately, the experience of the past two decades shows that African farmers have not been able to do this. And the enormous potential to produce and trade food staples in Africa remains unexploited. Thus, despite being rich in agricultural potential, the continent increasingly imports from outside of the region to satisfy demand. Figure 3 shows that the trend in the volume of net exports of staples in all four regions of Africa is strongly negative.

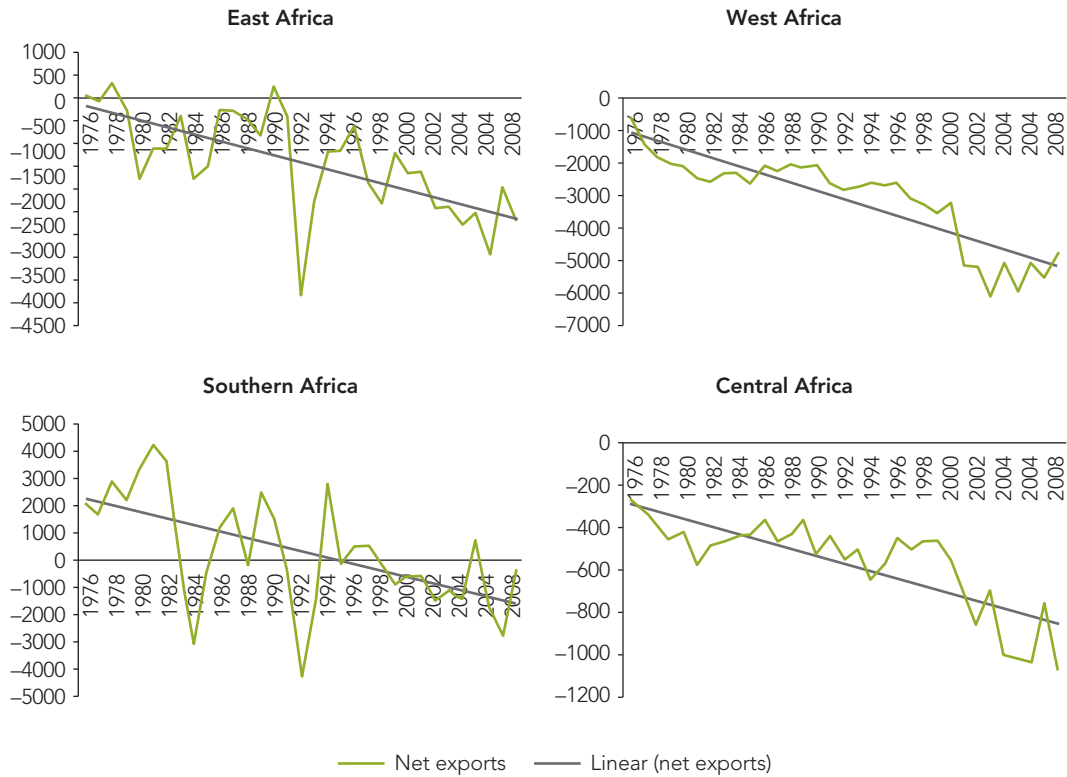
FAO estimates that African cereal imports in 2008 were US\$15.2 billion. However, just five percent of all grain imported by African countries originates from regional sources. The volume of extra-regional food staple imports shows how regional integration in the food staple market can achieve food security.

Figure 4 compares the deterioration in the net trade position of sub-Saharan Africa as a whole with that of other regions. While Africa's imports of food staples have grown at a much faster rate than exports, other developing regions such as Eastern Europe and Central Asia, South Asia, and East Asia and the Pacific have seen a turnaround from a position of net imports in 1990 to net exports 20 years later in 2010. In Latin America the gap between imports and exports has narrowed substantially.

These differential trends in imports between Africa and other developing country regions of the world suggest that the role of heavily subsidized production and export in OECD countries, while important, has played a lesser role than domestic factors in explaining the underlying causes of the increase in net imports of staples in Africa.

The increasing imports of food staples are shocking, especially since Africa has the agricultural potential to satisfy a large part of this demand. Applying inputs, such as widely available high yield seeds and fertilizers would substantially increase output in Africa.

Figure 3: The volume of net exports of food staples by sub-region 1976–2008 (1,000 tons)



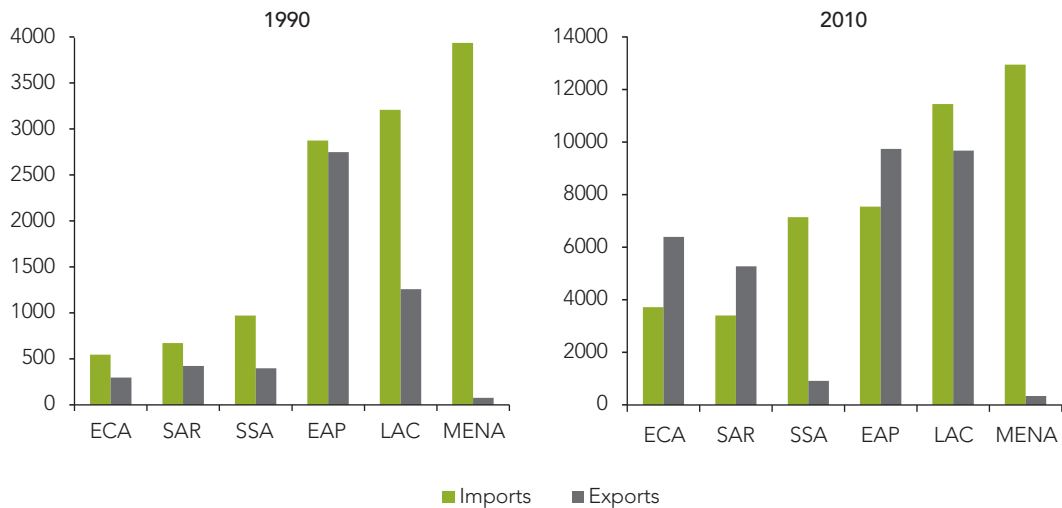
Source: FAOStat

A large body of literature has identified the gap in staples yields obtained in Africa relative to yields of staples elsewhere in the world. *‘The potential to experience a two- to threefold yield increase among some of the basic food staples is possible if more farmers can access and efficiently utilize the available stock of knowledge and technologies.’* (Nin-Pratt et al. 2009).

Calculations for Central and Western Africa suggest that the ratio of potential to actual output to be around 1.5 for cassava, 1.9 for rice, 2.7 for maize, 3.3 for millet and sorghum, and 5 for wheat. With regard to catching up to yield potential, Nin-Pratt et al. (2009) estimate that by 2015 imports into the Central and West Africa region would fall from a base case of \$12.4 billion to \$9 billion, and exports would rise from \$10.6 billion to \$16.4 billion, reversing the regions net import situation. This study indicates that if this was accompanied by better trade policies and measures to improve market conditions, then exports would increase to \$22.1 billion, and imports would increase slightly to \$10.1 billion. These are optimistic scenarios—but the estimates demonstrate the potential for increased trade. What *will* be important is to remove barriers to higher yielding seeds, fertilizers, and knowledge as well as link farmers to markets and provide the incentives for investment that delivers higher productivity.

It is also true that large swathes of fertile land in Africa remain idle. For example, the Guinea Savannah zone covers around 600 million hectares in West Africa—through Uganda and Tanzania



Figure 4: Aggregate food staple trade by world regions, 1990 and 2010 (millions, US\$)

Source: COMTRADE.

and encompassing Malawi, Zambia, Angola, and Mozambique—which is around one-third of the total area of sub-Saharan Africa. Of this, 400 million hectares can be used for agriculture. However, less than 10 percent of this area is being cultivated, suggesting huge unutilized agricultural potential (World Bank 2009b). The experience of Thailand shows how areas thought to be backward and with little prospect can prosper in the right conditions. Figure 5 shows the recent expansion of Thai cassava exports and how they have been driven primarily by exports to countries in the East Asia region.

Almost all of the increase in staple food imports in Africa is caused by the rising demand of urban populations, which are growing at over four percent annually compared to less than one percent per year for rural populations. The shift from rural to urban lifestyles is significant considering the high share of staple foods in their total consumption. Among the urban poor, who comprise the bottom 20 percent in terms of poverty, food makes up 60–70 percent of total expenditures. Across all urban consumers, food accounts for 45–55 percent of total annual household expenditure (Jayne et al., 2009).

This shift in demographics also brings new opportunities as more of the urban demand becomes commercialized. If Africa's farmers can capture a good share of the market created by this growth, intraregional trade in food staples could significantly advance growth and poverty reduction on the continent.

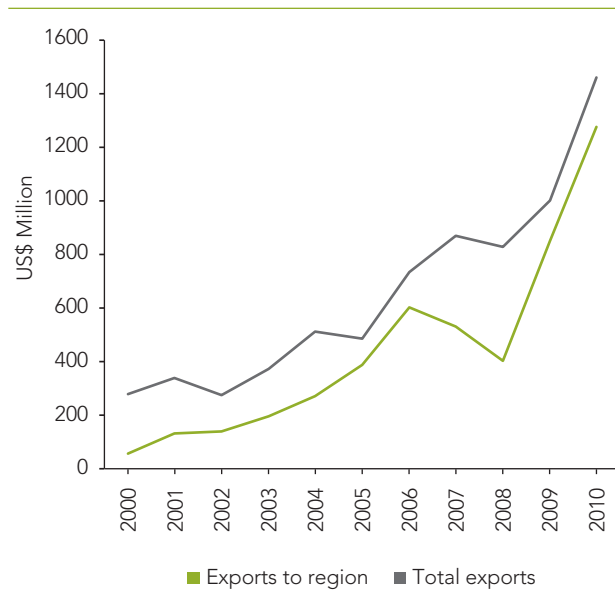
Global warming may also make food production and prices in Africa more volatile, increasing the food security risks and making moving food from areas of surplus production to food deficit regions even more urgent. The IPCC predicts that temperatures in Africa will rise more than the global median, and extreme weather events will become more prevalent, affecting agriculture in some regions, while dry areas will become drier, and wet areas will likely receive more rainfall.

Schlenker and Lobell (2009) estimate that average maize productivity in sub-Saharan Africa may decline 22 percent by mid-century. However, there is considerable heterogeneity in the impacts of climate change across countries, and so international agricultural markets may allow for pooling of the risk posed by local (or national) climate extremes. Farmers in countries severely affected by weather may be able to sell excess supplies to meet the excess demand from consumers in the more severely affected regions. In the medium to long run, declines in agricultural production from climate change in some countries could be offset by production increases in other regions. Again, this puts the emphasis on linking food production areas and

major consumption centers through open and predictable regional trade. A regional approach to food security will lower the costs of adapting to rising temperatures compared to the costs incurred if countries isolate production from regional demand.

Tanzania is an example of a country where grain production variability may increase because of climate volatility. Ahmed et al. (2010) analyze the archive of global climate model simulations and find that severe dry conditions in Tanzania will most often coincide with non-dry conditions among Tanzania's key African trading partners. This suggests that Tanzania could benefit from exporting grains to countries within and outside Africa as climate change increases the possibility of severe precipitation deficits in other countries while simultaneously decreasing the likelihood of severe precipitation deficits in Tanzania. However, if current policy stances to shocks are maintained, especially export restrictions, then Tanzanian farmers will not be able to capitalize on historical export expansion opportunities.

Figure 5: Regional markets can drive trade in staples: Thai exports of cassava 2000 to 2010



A photograph of a man operating a blue tractor in a field. The tractor is heavily muddy, particularly on the large rear wheel. The man is wearing a light blue shirt and a white cap. The background shows a green field under a cloudy sky. The tractor has 'SOS 1629 FM' and '6500' written on its side.

Regulatory barriers to trade undermine Africa's potential in regional food trade

Africa must increase outputs to moderate rising food import bills and satisfy growing demands. The degree of access to markets for final products is critical. Linking rural food surplus production zones in Africa to major deficit urban consumption centers requires a well-functioning regional market for these products.

But improved productivity and a decline in the enormous gap in yields between Africa and the rest of the world requires the using higher-yield seed varieties, more intensive fertilizer use, and better production techniques. Yet there are major constraints on access to these key inputs, often because of trade barriers and limitations on the movement of professionals across borders.

The debate about agricultural policy is often presented as a dilemma between pursuing higher producer prices for farmers (to encourage investment in higher yield seeds, use of fertilizers, and better techniques) and delivering lower final prices for consumers. But this dilemma does not appear when policy interventions have raised transaction costs between farmers and consumers, and the policy environment has permitted limited competition at key points along the value chain. Such policies lead to a large gap between producer and consumer prices and entail that the benefits of previous reforms and investments, such as tariff removal and better quality roads, may not have accrued to either farmers or consumers, but rather to those providing services along the chain, such as transport and distribution.

African smallholder farmers who sell surplus harvest typically receive less than 20 percent of the consumer price of their products, with the rest eaten away by transaction costs and post harvest losses (AGRA 2009). Clearly, this limits the incentive to produce for the market. Policies that reduce transaction costs and increase competition in the provision of services that affect the production and distribution of food staples could reduce the gap between consumer and producer prices by reducing consumer prices, increasing producer prices, or both. USAID (2011) estimates that in West Africa a reduction in transaction costs equivalent to 10 percent of the farm gate price of agricultural products would lead to a four percent increase in production and a similar increase in the real income of farmers, together with an eight percent fall in consumer food prices and a seven percent increase in real disposable incomes of consumers.

Many of the key barriers to trade in food staples relate to regulatory and competition issues at elements along the value chain. As tariffs have come down, so a tangled web of rules, fees, and expensive services is strangling Africa's regional trade in food.

But in many cases an effective market system in food inputs and final products requires well-designed regulations—for example, to ensure that consumers receive reliable information about the quality of the food or seeds they buy. This is important to protect countries from disease and pests that could devastate local production. In some cases, the policies restricting trade are deliberately protectionist; but in other instances the *lack* of regulations limits the development of regional markets, such as in the case of fertilizers. In many cases the issue is to define appropriate regulations and create better institutions to implement them.

The following section summarizes information on the key barriers to trade at different points along the value chain of food staples. Specifically examined are: (a) barriers to trade that limit access to seeds and fertilizers; (b) factors that lead to high transport costs in Africa; (c) dangers of crossing borders, especially for small informal traders many of whom are women; (d) costs of opaque

and unpredictable trade policies that limit trade in staples across borders, mainly non-tariff barriers (NTBs); (e) inefficient distribution services that fail to link poor producers to poor consumers.

Trade barriers limit access to key inputs: Seeds, fertilizers, and extension services

Seed security is closely linked with food security in Africa, but many Africa farmers lack access to modern high-yield seed varieties. In Ethiopia, for example, Alemu (2010) estimates that only about one-quarter of the demand for improved seed is being satisfied. Use of modern seed is fundamental to increasing productivity towards its potential; and use of improved hybrid maize in Ethiopia could quadruple productivity. Even if just half the farmers achieved the productivity associated with using hybrid seeds, the domestic production would replace commercial imports (Alemu 2010).

Trade barriers that create high transaction costs between countries prevent seeds from moving quickly across borders when a seed deficit occurs due to a disaster, such as flooding, drought, or pest infestation. Inappropriate regulations and burdensome requirements governing the release of new varieties create small and fragmented seed markets and ensure that varieties available elsewhere are not widely disseminated in Africa (Minde and Waithaka 2006). Even within Africa, farmers on one side of a border may not have access to higher yield seeds that have been approved by the neighboring country under similar agro-climatic conditions.

Seed trade is constrained by regulations and policies established when plant breeding and formal seed production were the responsibility of the public sector. 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.

Now, however, a key concern with seed regulation in Africa is the inordinate amount of time required for the approval process (Tripp 2005), which can take around two to three years or more. This puts African farmers at a serious disadvantage in competing with imports from the global market, which are derived from seeds that deliver much higher yields, and which may require less fertilizers and pesticides and be more pest and drought resistant. African farmers must therefore be allowed to acquire seeds widely available elsewhere. A first step would be to ensure that test data used in the approval process in other countries is included in African approval processes to avoid duplicative testing.

Certification plays a crucial role in a market system in providing confidence and bringing buyers and sellers together. In the past, each African country developed its own seed regulatory regime; however, these different regulatory arrangements have now created a situation where sourcing seeds between neighboring countries is complicated, lengthy, and expensive.

While many countries have implemented a degree of liberalization in seed markets, government and its agencies still heavily control the introduction of new varieties, trade, entry of seed companies, and in some cases seed prices and production. Central controls on seed production, including compulsory certification and licensing for seed farms, can create conflicts with pro-market and pro-reform processes. As a result, the private sector is often poorly integrated into the national



seed production and distribution system. In Ethiopia, for example, “tensions exist between the state and the emergent private sector,” and “the argument of the strategic importance of food and agriculture and the perceived weak presence of the private sector is deployed to argue for strong state control” (Alemu 2010 p15).

Restrictions on the cross-border movement of seed are primarily due to NTBs, resulting from sanitary, phytosanitary and plant quarantine measures, seed certification, and variety release regulations, which differ across regions and countries. Regional trade in seeds has been hindered by a lack of agreement among agencies in different countries about standards, and by inconsistent and heavy-handed application of control procedures for imports. These costs and delays are exacerbated by border customs officials who do not understand seed trade policy. One trader reported that a batch of seeds for the Ethiopian market has been stuck at the border for 12 months simply because of bureaucratic procedures—“a myriad of documents that have in the end been impossible to fill.”⁷ The seeds are now useless since germination and viability have passed. And there are usually no simple dispute procedures for a trader to contest an official decision (or lack of) that is causing delays and raising costs.

There have been attempts to free up the seed trade in Africa. For example, the Alliance for Commodity Trade in Eastern and Southern Africa (ACTESA) is a specialized agency of COMESA established to integrate small farmers in domestic, regional, and international markets. When in March 2008 the COMESA Council of Ministers declared that COMESA should rationalize and harmonize its seed regulations and policies within two years, ACTESA (from October 2010) began helping implement seed harmonization through the COMESA Regional Agro-inputs Programmes (COMRAP). COMRAP is harmonizing seed trade for 12 crops, namely, maize, rice, groundnuts, cotton, beans, cassava, wheat, potato, sunflower, soya beans, millet, and sorghum. Harmonization should ensure that seeds that have satisfied the release and certification requirements of one country should not have to “jump through all the same hoops again” (Tripp 2005).

SADC accomplished seed harmonization on February 5, 2010 at which time it signed a memorandum of understanding for the implementation of the SADC-harmonized seed regulatory system. This is now being piloted by four countries: Malawi, Zimbabwe, Swaziland, and Zambia.

A common theme throughout this report is that effective regulatory reform requires an inclusive process involving a wide range of stakeholders. This applies to seeds, where it is important to include farmers and seed distribution companies, as well as officials and representatives of the government agencies involved in regulating seed trade. Experience from the regional projects discussed previously (Tripp 2005) suggests that building capacity among all stakeholders is important if regional agreements that lead to modifications in national laws and regulations are to have a positive impact on seed trade. Reforming seed regulations will require changes in institutional responsibilities and appropriate resources for new regulatory procedures, for example, shifting from centralized control to allowing more decisions to be made at border crossings.

Fertilizers are a critical element for staples production, but fertilizer use in Africa averages only around eight kilograms per hectare, which is less than 10 percent of the world average (Bumb et

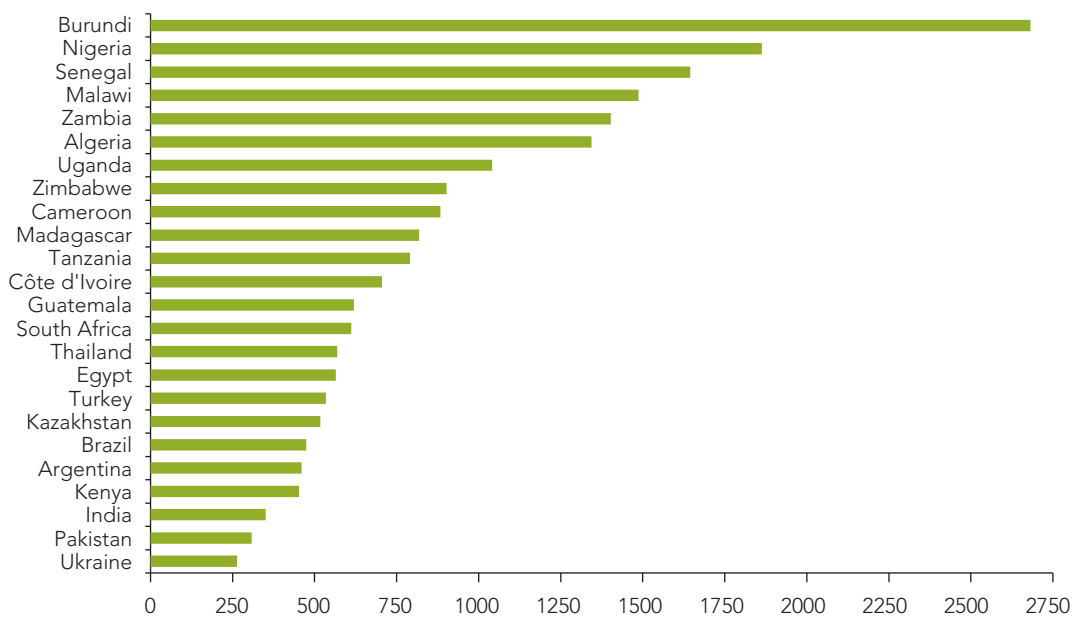
⁷ Author’s interviews with traders and farmers in East Africa

al. 2011). A large body of evidence has demonstrated the substantial impact on yields and output that increased fertilizer use would have in Africa. A key determinant of fertilizer use is the price of fertilizer relative to the price of the staple output. Barriers to trade in fertilizers increase their price and lead to a smaller variety of fertilizers available in Africa, especially for smallholders. Barriers to trade in staples reduce the price that producers receive for their produce and hence the returns to investments in greater fertilizer use.⁸

Farmers in African countries, especially in the landlocked countries, face higher prices for fertilizers than farmers in other developing countries. Figure 6 shows that landlocked countries, such as Burundi, Malawi, Zambia, and Uganda, contend with prices that are as much as ten times higher than other developing countries. Farmers in Burundi pay US\$2,700 for a ton of fertilizers, while farmers in Malawi, Zambia, and Uganda pay (respectively) US\$1,500, US\$1,400 and US\$1,100 per ton of nutrients. These prices far exceed those of farmers in countries like Pakistan, Argentina and Brazil, where the price of fertilizers is between US\$250 and US\$500.

Farmers in coastal countries in Africa generally enjoy better prices for fertilizer. For example, prices in South Africa are a little over US\$600 and in Kenya less than US\$500. But this is not always the case, since fertilizer prices in Nigeria are the second highest in the sample of countries in Figure 6. In addition, being landlocked does not necessarily mean high fertilizer prices since

Figure 6: Nitrogen-based fertilizer prices in 2010 (US\$ per mt of nutrients)



Source: FAOSTAT.

⁸ For example, Abdoulaye and Sanders (2005) show that the ration of fertilizer to millet price is a key factor affecting adoption of fertilizers in Niger.



farmers in Kazakhstan have access to fertilizers at relatively low prices. This suggests that the regulatory policies adopted by countries determine outcomes in fertilizer markets.

Markets in many African countries are too small to exploit scale economies associated with fertilizer production and even blending. Regional markets in fertilizers have not emerged partly because individual countries usually specify their own fertilizer blend and specialty products (Bumb et al. 2011). Hence, fertilizers cannot move freely from country to country. As a result many countries import directly from the global market but, since they are small buyers, cannot obtain the same price as larger buyers. In addition, shipping companies charge more for smaller deliveries. This means that regional markets with common specifications for fertilizers could obtain much lower prices if quantities are ordered for the whole region.

In some countries long and cumbersome tendering and procurement systems exacerbate the process. While many countries have liberalized importation of fertilizers, governments are often still heavily involved in procurement. For example, in Mali, the current SOE-managed tendering process adds 50 percent to the cost of fertilizers as compared to direct negotiations between producer organizations and suppliers.⁹

An open market system for fertilizers must have strongly enforced regulations that ensure quality, quantity, nutrient contents, and truth-in-labeling. Standards convey essential information to both consumers and producers.

However, in many African countries regulations and the institutions to implement them do not exist. Even when appropriate regulations have been defined, problems continue because traders are not aware of the rules. Worse, weak enforcement allows unscrupulous traders to repackage and/or adulterate genuine products, resulting in poor quality and outdated products. Farmers then are unsure about the make-up of the available fertilizers. This lack of standards becomes a major obstacle to cross-border trade and regional fertilizer markets.

In the past, when the government played a greater role in supplying inputs to farmers, there was little need for regulations. But now that governments have allowed the private sector a role in supplying inputs, they have to assume responsibility for designing and implementing standards that support the market. This issue of institutional capacity to support integrated markets will be discussed in more detail in subsequent sections, but here we note that Kenya, a country with low fertilizer prices in Figure 6 has implemented a successful reform program that has increased both access to fertilizers and maize yields (see Ariga and Jayne 2011).

Many governments intervene through subsidy schemes. For example, Senegal farmers receive half of their fertilizer requirements through a subsidy system. However, uncertainties about the scheme make farmers reluctant to purchase the remaining half of their needs in the expectation that government will pay for this as well. Uncertainty also undermines decisions by private sector traders about imports that would fill the gap. Similarly, in Nigeria, while fertilizer products are imported by the private sector, the government subsidy program impedes the development of a competitive and efficient fertilizer supply chain (Bumb et al. 2011). Delays in the payment of subsidy funds

⁹ Chemonics and IFDC 2007 referred to in Bumb et al. (2011).

create cash flow problems for importers and wholesalers; uncertainty arises because the quantity of fertilizer to be procured remains uncertain until the budget is approved. Finally, different subsidy schemes in different countries require checks at the border, which raises another barrier to the establishment of a regional market for fertilizers.

Removing barriers to regional trade in fertilizers is essential to reduce transaction costs and to allow farmers access to good quality fertilizer for increased productivity in food staple production. This was recognized in the Abuja Declaration of 2006 on Fertilizer for an African Green Revolution. African leaders declared fertilizer, “a strategic commodity without borders” and resolved that “the African Union Member States will accelerate the timely access of farmers to fertilizers.”

Leaders also committed to take measures by mid-2007 to reduce the cost of fertilizer procurement at national and regional levels, especially through the harmonization of policies and regulations to ensure duty-free and tax-free movement across regions, and to develop the capacity for quality control. They clearly stated that “as an immediate measure, we recommend the elimination of taxes and tariffs on fertilizer and on fertilizer raw materials.” However, some countries in West Africa still levy tariffs on fertilizer imports, including those from regional neighbors. For example, the Democratic Republic of Congo and Senegal levy tariffs of five percent on imports of fertilizers.¹⁰

Two key issues must be addressed to allow regional fertilizer markets to develop and deliver competitive fertilizer products to farmers: (a) installing a consistent and stable policy environment for regional trade in fertilizers; and (b) investing in institutions that reduce the transaction costs of coordination failures. Many countries have enacted new fertilizer laws in recent years, but few have provided the resources to strengthen the capacity to define and enforce appropriate regulations through standards and testing capacity.

Trade in inputs is often subject to costly requirements relating to product registration, trade permits, phytosanitary certificate (seed), non-GMO certificate (seed), quality assessment, certificate of origin, as well as normal customs documentation. Streamlining trade procedures for inputs of seeds and fertilizers could have a leveraged impact on farmers' incomes and trade competitiveness. Box 4 provides an illustrative example from Malawi where improvements in trade procedures for fertilizers, which lead to a 7.7 percent reduction in farm gate fertilizer prices and a subsequent 10 percent increase in fertilizer use and a 15 percent increase in yields, could increase profits per hectare of maize by 50 percent.

Subsequent analysis suggests that while use of fertilizers varies considerably within income groups in Malawi a 10 percent increase in the number of farmers applying fertilizer in Malawi would reduce the poverty rate by 1.5 percent. Hence simply reducing costly and wasteful trade procedures for food staple inputs alone could have substantial impacts on poor farmers.

The mobility of agricultural specialists to provide extension services in Africa

¹⁰ In Zambia, for example, fertilizers and fertilizer ingredients enter duty and VAT free except that the micronutrients needed for blending fertilizers locally are subject to duty and 16 percent VAT. Apparently, this is because the micronutrients can also be used in the mining industry for which different tax policies apply.



Box 4: Trade Costs and Rural Incomes in Malawi: Improving Access to Fertilizers

This example is based on indicative data from the 2007/08 agricultural season in Malawi. The point of this quick example is not to recommend specific policy alternatives for Malawi, but to illustrate how efforts aimed at reducing trade costs could have a leveraged impact on trade competitiveness and rural incomes. First, Table 1 shows the estimated price build-up of fertilizer under two price scenarios. The base scenario reflects the actual conditions that prevailed in Malawi in 2007/08 in which the economic (unsubsidized) price of imported fertilizer was estimated to be US\$50.25 per 50kg bag. The reduced cost scenario, on the other hand, reflects the type of savings that might result from efforts to introduce bulk procurement of fertilizer and otherwise streamline import requirements and certification procedures. Malawi does not charge import duty or VAT on fertilizer, yet this example shows how 10 percent to 30 percent savings on selected trade costs could result in a 7.7 percent overall reduction in the economic value of fertilizer at the farm gate.

Table 1: Farm gate build-up of 2007/08 fertilizer prices in Malawi (US\$/ton)

	Base Case	Hypothetical Reduction	Hypothetical Reduction
Price at origin	650	585	–10% (bulk procurement, change in licensing and permits)
Transport to frontier	163	163	
Clearing and inspection	41	28	–30% (savings on clearing and certification, fewer border delays).
Domestic transport	43	43	
Distribution costs and profit	90	90	
Transport to farm	20	20	
Total (USD per ton)	1,005	928	
USD/50kg bag	50.25	46.39	7.7% savings overall

Next, Table 2 summarizes a set of key value chain indicators for medium- and high-input hybrid maize using the base 2007/08 price of fertilizer and hypothetical 7.7 percent reduction modeled

(continued on next page)

Extension services are critical for boosting productivity, increasing food security, and easing linkages between farmers and input suppliers, and farmers and markets. New approaches to extension that are more responsive to farmers' needs—less top down and more integrated with research and technology development—are gradually replacing the non-participatory, supply-driven methods typical of agricultural extension services in Africa. But new approaches will require extension agents and agricultural specialists with skills that differ from those now available in most African countries.

Possible solutions might include the introduction of mid-career training courses (for example, as is being done in Uganda), the development of farmer field schools (for example, in Kenya),

Box 4: Trade Costs and Rural Incomes in Malawi: Improving Access to Fertilizers*(continued)*

above. In the analysis, total accumulated costs at the into mill or depot location exclude profits paid to farmers and domestic assemblers. This approach allows total costs to be subtracted from the import or export parity price to show how much total profit is available to flow upstream to farmers and other value chain participants. Unless indicated, all values are expressed in US\$ per ton of tradable grain.

Table 2: Value chain indicators for Malawi hybrid maize (US\$/ton tradable grain, 2007/08 prices)

Fertilizer use (bags basal x top dress per ha):	Medium input 2x2	High input 4x4
Base conditions (2007/08 season)		
Farmer yield (tons/ha)	1.40	2.60
Farm costs	227.90	216.84
Assembly costs	61.54	61.54
Total value chain costs into mill or depot	289.43	278.38
Total available profits per ton @ import parity	90.57	101.62
Total available profits per ton @ export parity	(19.43)	(8.38)
Scenario 1 – Streamlined trade procedures (7.7% savings on fertilizer)		
Farmer yield (tons/ha)	1.40	2.60
Farm costs	216.87	204.97
Assembly costs	61.54	61.54
Total value chain costs into mill or depot	278.41	266.50
Total available profits per ton @ import parity	101.59	113.50
Total available profits per ton @ export parity	(8.41)	3.50
Scenario 2 – 7.7% savings on fertilizer, 10% more use, 15% more yield		
Farmer yield (tons/ha)	1.61	2.99
Farm costs	196.21	186.30
Assembly costs	61.54	61.54
Total value chain costs into mill or depot	257.75	247.84
Total available profits per ton @ import parity	122.25	132.16
Total available profits per ton @ export parity	12.25	22.16
Import parity = USD 380/ton; export parity = USD 270/ton.		

Significant benefit could be derived from efforts to streamline trade procedures for fertilizer. Although there is no guarantee that incremental profits will flow all the way up the chain to farmers, Scenario 1 shows how a 7.7 percent reduction in fertilizer costs would result in 12.2 percent

(continued on next page)

Box 4: Trade Costs and Rural Incomes in Malawi: Improving Access to Fertilizers
(continued)

and 11.7 percent more total profit per ton of tradable grain at the medium- and high-input levels respectively when sold as an import substitute. In Scenario 2, it is assumed that the lower price of fertilizer results in 10 percent more use per hectare and 15 percent higher yields. Under these conditions, the total available profits from one ton of import substitute maize would be 35 percent to 30 percent higher at the medium- and high-input levels respectively compared with base conditions. In all cases, the analysis shows that export maize is a marginal activity for Malawi and even returned a net loss under 2007/08 base conditions.

Finally, Table 3 looks at total available profits in per hectare terms, which is the most relevant measure for farmers. As shown in Scenario 2 where yield increases as a result of more intensive fertilizer use, each hectare of maize would provide 55 percent to 50 percent more total profit at the medium and high input levels respectively. According to the estimates, export maize remains a marginal activity even with the improved yield, but is still more than US\$88 more profitable per hectare in Scenario 2 compared with base conditions.

Table 3: Total available profits per hectare from Malawi hybrid maize, 2007/08
(US\$/ha)

Fertilizer use (bags basal x top dress per ha):	Medium input 2x2	High input 4x4
Base conditions (2007/08 season)		
Total available profits per ha @ import parity	126.79	264.22
Total available profits per ha @ export parity	(27.21)	(21.78)
Scenario 1 – Streamlined trade procedures (7.7% savings on fertilizer)		
Total available profits per ha @ import parity	142.23	295.09
Total available profits per ha @ export parity	(11.77)	9.09
Scenario 2 – 7.7% savings on fertilizer, 10% more use, 15% more yield		
Total available profits per ha @ import parity	196.83	395.16
Total available profits per ha @ export parity	19.73	66.26

or participatory demonstration and extension systems (for example, in Ethiopia), coupled with a greater involvement of the private sector. Equally important is the temporary movement of agricultural specialists to address the shortages of workers skilled enough to deliver extension services across the continent and improve access to agriculture knowledge.

Case studies on the mobility of agricultural specialists in Africa have examined a variety of skill levels, ranging from horticultural farmers to grain trade advisers, agro-commodity supply chain specialists, and agricultural education experts. These studies reveal that the potential for providing extension services by agricultural specialists familiar with the African context is vast. Exported

services—technical advice on farm management and greenhouse production, advice on sourcing agricultural commodities, developing and delivering agricultural training programs, and agro-commodity supply chain management—were exported without modifications to the service provided in the domestic economy. These services seem to be portable across borders.

Most service providers are deterred from exporting by a lack of knowledge about exporting opportunities, markets, and processes, and little awareness about how to acquire knowledge. Agricultural specialists lack networks and find it difficult to obtain information on demand for extension services in neighboring countries.

The surveyed providers also noted the difficulty in obtaining work permits to provide the service. For example, for a Kenyan specialist to provide advisory services on horticulture production in Uganda, his employer had to write to the Uganda Flower Exporters Association, which assessed his qualifications and domestic needs before providing a recommendation to the Uganda Investment Authority and the Ministry of Foreign Affairs regarding the issuance of the work permit.

The mobility of extension service providers across Africa could be improved by creating a regional database that farmer associations could access, with links to opportunities and agricultural specialists, including their area of specialization. And removing labor market barriers, such as economic needs tests or lengthy administrative procedures to obtain a work permit, as well as introducing transparent procedures to recognize the qualifications of agricultural specialists (such as mutual recognition agreements of professional qualifications), would help de-fragment the regional market for agricultural specialists and improve the quality of extension services.

High transport costs, especially for smallholders, limit access to regional markets

Regional trade in food staples in Africa is generally carried out by bulk transportation on roads in trucks. The staples are often grown and harvested by small-scale producers and collected by traders who transport the bulk over greater distances to regional markets. Transportation costs, because of the low value-to-bulk ratio and the multiple steps involved, can significantly influence food staple prices. A recent study of agricultural supply chains in Central America shows that between 29 and 48 percent of the import prices of grains comes from logistics costs.¹¹ Regardless of the international prices of staples foods, a large proportion of food products are sensitive to transport, warehousing, and logistics costs.

The cost of moving goods in sub-Saharan Africa is high, transit times uncertain, and delays exceptionally long. Studies have estimated that the cost are between US\$0.04–0.10 per km-ton for long-distance road transport and US\$0.10–0.40 per km-ton for shorter-distance transport.¹² This is much higher than road transport in OECD countries, where the estimated costs are US\$0.03

¹¹ See Jordan Schwartz's blog on 'Food Prices: Eating the Cost of Logistics' at <http://blogs.worldbank.org/latinamerica/food-prices-eating-the-cost-of-logistics>



-0.04 for road transportation. But transport costs differ across the continent, with southern Africa having significantly lower costs than western and central African (Rashid and Minot 2010).

Road infrastructure along the major international trade corridors is in fair to good condition and no longer the primary reason for high transport costs. In West Africa a recent study concludes that:

“One historical constraint that is no longer as important as was once the case is the physical condition of the regional road network... the road surface does not generally constrain trucking speeds significantly... nor does it accelerate the depreciation of many of the trucks travelling along it.” (USAID 2011)

Nevertheless, trade connections in Africa were developed to link to overseas markets, and some of the key gaps in infrastructure and logistics services are between African countries. More energy should therefore be invested in plugging these gaps. Even within countries, some regions face special disadvantages because of their remoteness from national markets and export gateways as well as small traffic volumes over large areas.

But investments in transport infrastructure are not enough. Improvements in infrastructure can help reduce travel time and vehicle operating costs, while other measures are needed to reduce operational and bureaucratic delays and regulatory burdens, which in many cases are the prime reason for high transport costs compared to other regions in the world. The benefits of shorter travel times will be diminished if long waiting times at the border and multiple roadblocks continue along the transport network. This is also true if the lack of competition allows transporters to accrue the benefits of better infrastructure rather than passing them on to consumers and producers of food staples.

Africa needs approaches that tackle both hard infrastructure and the “soft” infrastructure (such as institutional and regulatory reforms) for transport and trade efficiency. However, the soft issues have not received as much attention as the hard infrastructure, even though they generally may have a lower cost. This could be because such reforms have to be addressed in challenging political environments and thus may have to confront vested interests. Also, the lack of well-defined monitoring systems for policy reforms means that the impacts of soft interventions are not as visible to donors as are, for example, new roads.

One of the more obvious but stubbornly persistent problems is that of roadblocks (Box 5). They cause delays and offer ripe opportunities for bribe seekers. While individual delays and unofficial payments made at each roadblock are relatively small, multiple roadblocks over short distances add up to significant expense and delay, raising transport costs and undermining the efficient use of transport equipment and drivers.

To reduce transport cost, the priority now is to ensure competitive, high-quality transport and logistics services (see Box 6). As infrastructure has improved across SSA, the constraints faced in logistics services have become more pronounced. Research shows that regional corridors with

¹² These rates can be significantly higher for farmers moving small quantities of goods. In Cameroon, for example, Keyser et al. found a family farmer with a small consignment paid the equivalent of US\$71.45 to move a ton of fresh cassava 130km using a shared bus, compared to US\$20.31 per ton for a large farmer with a hired truck.

Box 5: Roadblocks – more than a nuisance

Despite some short-term improvements roadblocks, bribes, and unnecessary delays are persistent problems, adding significantly to transport costs in sub-Saharan Africa. For example, the 15th Improved Road Transport Government Report (IRTG), a road governance initiative covering six major West-African trade corridors, shows an abundance of checkpoints, and that bribes are excessive: a roadworthy and legal truck pays about 43,000 FCFA (about US\$100) on average per trip.^a Therefore, even legal trucks, with all required documentations, have to pay a significant amount in bribes to proceed—undermining the argument that traders and transporters circumvention of laws and regulations justify these excessive amounts of checkpoints. The problem is spread across most regions. For example, in Cameroon, one can find 47 roadblocks between Douala and Bertoua, a distance of about 500 kilometers.^b In Kenya, the private sector reports 19 road blocks along a 90km stretch of road to Nairobi. Even though the time at each stop is around 10 minutes, more than three hours are added to the journey along this stretch of road.

Roadblocks raise prices for essential food staples (e.g., maize). Research on maize, an essential food staple for many families in the region, in Kenya, Tanzania, and Uganda in 2008 indicated that there are 4-10 roadblocks from farms to the secondary wholesale markets. This is the equivalent of a roadblock every 30-50 km, not only at major transport corridors but also for rural roads connecting remote rural producers to larger markets. The bribes paid at the roadblocks per truck ranged from US\$2.40 to US\$16.80.^c Adding bribes paid at weighbridges and costs of time delays to the costs of roadblocks, the prices of essential food staples increase unnecessarily for local consumers.

Too little has changed to give a break to the poor. Despite repeated government pledges to address these issues, too little has changed in recent years, either because measures are ineffective or the implementation takes too long. Importers are hit harder than exporters, resulting in domestic consumers, especially the poorest, being burdened with higher prices

^a USAID-UEMOA (2011)

^b United Nations Economic Commission for Africa. (2010), p. 221.

^c World Bank: Eastern Africa (2009): A Study of the Regional Maize Market and Marketing Costs.

limited competition in road transport services (e.g., West Africa) face higher prices than those with more competition (e.g., Southern Africa). It is therefore important to invest in regulatory reform in the logistics services sector, including trucking, warehousing, and customs clearing and freight forwarding. One priority area will be to improve the performance of logistics services. Rwanda has prioritized such reforms and has seen reductions in transport costs.

Coordinating and linking infrastructure investments with policy reform is essential. Policy constraints must be addressed as an integral part of programs for improving infrastructure that links food production areas to regional markets, with special attention given to linking rural areas. High



Box 6: Competing transport services – key to lower food prices for consumers

Two often-cited problems for food trade in sub-Saharan Africa are high transport costs and prices. Not surprisingly, sub-Saharan Africa as a region scored lower than any other region worldwide on the World Bank's Logistics Performance Index 2010. Large parts of the continent provide insufficient affordable and reliable transport and logistics services.

Lack of competition in trucking sector: The limited competition between transport services has several causes. Outdated trucking regulations foster the establishment of transport cartels, benefiting transporters but increasing prices for transport services and ultimately consumers. For example, the existing freight-sharing schemes, such as the trucking queuing scheme used in many parts of West Africa, leaves the trucking sector open to domination by cartels. In queuing systems, large and small firms "queue up" and loads are distributed according to the next turn. The goal of these systems has been to ensure the survival of small companies but instead has brought less competition, higher prices, and low-quality service. Teravaninthorn and Raballand cite Rwanda, which went ahead with trucking reforms in 1994: "After deregulation of international transport, prices declined by more than 30 percent in nominal terms and by almost 75 percent in real terms when taking into account the continued increase in input prices" (Teravaninthorn & Raballand 2009, p 23).

Little incentive to modernize: Without competition, providers of transport services have few incentives to modernize. Investments are not rewarded because transporters cannot freely expand loads and routes. Many transporters use outdated vehicles and overload trucks to obtain enough revenue from the restricted number of trips. Overloaded and aged trucks cause numerous problems as breakdowns and accidents cost lives, money, and delays, and increase transport costs. They also damage roads and provide an argument for installing numerous weighbridges, which themselves become a problem by creating queues and an opportunity for abuse by officials in terms of demands for extra payments. For example, the queuing systems in West Africa discourage investment in new trucks since modern trucks provide little benefit if they're stuck in long lines waiting for access to cargo.

Lifting cabotage, quotas and other cross-border restrictions: Measures to protect landlocked countries force consumers to pay for the benefit of the transport cartels. The ECOWAS quota systems, which reserve two-thirds of loads to landlocked countries to trucks from those countries, prevent more competitive fleets from expanding their market shares. Niger, for example, protects its transporters, with the result that trucks are often old; thus, inefficient trucks and the local trucking fleet lack the capacity to fill the quota. Foreign trucks have to pay an extra fee to the Nigerien shipping council to fill the quota. Benin truckers cannot gain market share above their one-third quota; and, without competition, Nigerien truckers have little incentive to upgrade their fleets and improve service. The enforcement of queuing and quotas plus additional fees for foreign trucks increases prices for food staples for consumers (Zerelli and Cook 2010, p.9). Meanwhile, Niger is a net-food importing country with serious food insecurity for significant parts of its population, according to the FAO.

(continued on next page)

Box 6: Competing transport services – key to lower food prices for consumers*(continued)*

Why things have not moved—political economy: Any reforms where the status quo benefits a small group and the costs are borne by many are difficult. The challenge of activating a critical mass for consensus and reforms is often huge. Groups in danger of losing their privileges will fight restructuring. Nevertheless, the potential gains to the economy and to food producers and consumers are substantial. An analysis of proposed transport reforms for parts of West Africa suggests that a 12.5 percent reduction in transport costs is achievable within five-years and a 50 percent reduction in transport costs within 10 years (Bromley et al. 2011, p.84).

transaction costs compromise the ability of small-scale food producers, most of whom are women, to benefit from regional trade. Their remoteness from regional and in some cases domestic markets is exacerbated by poor connecting logistics infrastructure and expensive and unreliable services. As a result, both scale and geographical alienation raise the risk that large numbers of people and significant chunks of territory in Africa will remain excluded from regional supply chains. Obviously, this diminishes the opportunities for poverty eradication through trade and regional integration.

Transport costs are especially high for producers in rural areas. World Bank (2009) concludes that “transport prices per ton-km from farm-gate to primary markets are three to five times larger than those from secondary to wholesale markets located in the countries capitals. As a result, about 45 percent of average transport charges occur during the first 28 percent of the transport distance.”

Current research suggests that the “first mile” is usually the biggest hurdle in helping small-scale producers in isolated communities gain market access (Kunaka 2011). For decades, trade initiatives hinged mostly on infrastructure investment to improve small producers’ access to markets. Some evidence points to a strong correlation between road infrastructure upgrading (ensuring all-season access) and reductions in poverty and growth in consumption in isolated areas (Warr 2005; Dercon and Hodinott 2005). Again though, infrastructure upgrading is not enough to significantly reduce trade costs and allow farmers and small-scale producers to secure key inputs (seeds, fertilizer, etc.) and higher prices for their products. This access depends on (a) the prices they receive compared to the prices they face; (b) the costs of moving produce and inputs between secondary and primary markets and farm gates; (c) the degree of market information asymmetries; and (d) the availability of market competition among buyers, sellers, and transporters (Raballand 2010a).

In turn, affordability of logistics services to attain market access it is also crucial: producers’ transport prices depend upon the fixed and variable costs of moving goods per unit, unit values of products, volumes carried, and how competitive these services are. Depending on the scale and productivity of farming and other activities, as well as the unit value of the goods and the location of production, different optimal combinations of intermediate means of transport and consolidation will emerge (Raballand 2010a). Unless strategies are developed to improve the quality of logistics



infrastructure and services at the sub-national level, then large numbers of people may not benefit from deeper regional integration.

Producers in one country need to link with consumers in another; and the benefits that accrue in the neighboring country must be considered when transport policy and infrastructure investments are defined. Actions to improve transport services within a country often have significant positive spillovers on neighbors. For example, Abdulai et al. (2006) estimate that a 50 percent decline in transportation costs in Mozambique, while increasing real agricultural GDP in Mozambique by seven percent, leads to a rise in agricultural GDP in Malawi of three percent. Hence, regional coordination on transport and other services reforms will deliver more reform than would otherwise occur and, if it leads to regional opening up of transport services, will deliver greater competition and lower prices for transport services. However, as discussed in the next section, factors related to political economy have limited transport reform in many regions, even where independent research shows that reforms have benefited the whole economy.

Opaque and unpredictable trade policies undermine regional food trade

Trade policy for food staples in Africa can be unpredictable and discretionary and not defined in clear objectives relating to agricultural policy. Common problems include: export and import bans; variable import tariffs and quotas; restrictive rules of origin; price controls; government tenders for the import of crops and flour that are then sold at subsidized prices. Countries ban imports during good harvest years to ensure domestic production is consumed first, and limit exports during periods of low yields.

Export restrictions, in particular, decrease food security. Farmers are unable to secure higher prices in neighboring markets and so may shift to producing other crops or reduce output, creating losses to the economy as a whole. Lower output prices then result in lower incentives for farmers to increase output, which hurts net buyers since food staple output is kept below potential. Thus, food trade restrictions may exacerbate the price spiral and instability in regional markets, especially when implemented in an ad hoc and uncoordinated manner by different countries at the same time. Increased volatility may in turn worsen food security in neighboring countries.

In addition, uncertainty over trade policy and the sudden imposition of export bans can hold back extension and advisory services. Farmers may hesitate to invest in new techniques, and professionals may refrain from providing their services where trade barriers might undermine the benefits from increased productivity.

There is often a lack of transparency in decisions governing food staples trade policy; and in most countries decisions to introduce or remove food trade restrictions are poorly communicated. Sometimes, small groups of officials decide on bans via unpublished decisions or internal documentation. This can result in bans by border officials each season merely as a seasonal “norm,” or to bans extending beyond their legal life because customs officials don’t know the bans have expired.

“Last year we had a contract to deliver corn to Niger but were stopped at the border because of an export ban. And who knows from where these bans were being ordered? Such export bans not only limit access to food—they discourage farmers. We look for the best markets. If we don’t have exterior markets, we don’t have an incentive to produce.”¹³

In Tanzania, the use of export bans has left crops rotting in the fields, with substantial income loss for farmers.¹³ The persistence of these barriers and uncertainty about their implementation can erase regional trade and often ensure that domestic food prices will exceed the cost of importing food. NTBs raise transactions costs for firms, farms, and consumers alike, and can result in a supply vacuum even during critical periods of low local food supplies and high prices. They lower the prices farmers receive for their produce in food surplus areas and increase consumer prices paid in food deficit ones.

NTBs also increase food price volatility (Govere 2007). Production booms and busts in food staples, when confined to small domestic markets, can quickly lead to collapses and surges in prices. Food prices are more unstable in countries that restrict trade than in countries with open borders. Empirical findings suggest that food price instability is high in countries like Malawi and Zambia (for maize); moderate in Mozambique and Mali (for maize); and low in Mali (for rice) and Kenya (Chapoto and Jayne 2007). In Zambia it was estimated in 2007 that a 30 percent boost in maize production would lead to a 50 percent fall in prices, if borders remain closed.

However, when policy makers allow maize exports to neighboring DR Congo, the export parity price becomes a price floor, limiting the decline in prices to about one-half (see Table 4). Opening regional borders to food staple trade can therefore contribute to both agricultural growth in food surplus zones and to food security in deficit ones by increasing farmer incentives to produce in the former and by dampening price spikes in the latter.

An underlying policy objective of self-sufficiency, while seen as a way of de-linking from global markets to avoid volatility, frequently results in more volatility than in world markets. This is because any individual market will have more variable supply than an integrated and more diversified

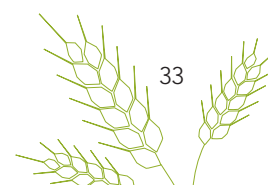
Table 4: Trade policy impacts on maize prices in Zambia

Maize harvest	Maize price under alternative trade regimes (Percentage change from normal)	
	Closed border	Open border
Bumper harvest (30% above normal)	-50%	-26%
Drought (30% below normal)	+150%	+36%

Source: Dorosh, Dradri, and Haggblade (2007).

¹³ Comments from a cross-border trader in West Africa, Source: USAID West Africa Trade Hub.

¹⁴ In2EastAfrica, December 12, 2011.



market—the same reason why investors spread risks by diversifying their assets portfolio rather than putting all their eggs in one basket. Hence, food price stability will be more likely if countries exploit their comparative advantages to export more comprehensively by linking to regional and global markets and avoiding ad hoc interventions that discourage local production.

Trade policy restrictions also drive cross-border trade from formal into informal channels. Because handling for small consignments—with transfers from truck to bicycle and back on to trucks—to avoid border controls is costly, NTBs raise trade costs and widen food prices margins within regional markets. For example, at the peak of the last food crisis maize retail prices in Lilongwe (Malawi) were in the range of US\$368/ton compared to US\$240–290 in Zambia (Jayne et al. 2009).

SSA countries that have resisted using NTBs to limit their food staple trade (South Africa, Uganda, Mali, and Mozambique) and adopted more open border policies for these products have seen benefits through higher production, exports, and trade. For example, Uganda's position as a net food exporter, particularly to Southern Sudan, Western Kenya, and organic markets in Europe, has become especially important with the government fighting domestic political pressure to limit food exports as a way of reducing the country's high food prices (Box 7).

Net food importing countries in other regions of the world have also benefited from liberalizing trade in food staples. In South Asia, trade liberalization in Bangladesh, Nepal, and Sri Lanka has raised competition and lowered domestic prices. It has also helped to smooth seasonal fluctuations with the narrowing of seasonal highs and lows in rice prices between the 1980s and 2000s. In Bangladesh, India has replaced Thailand as the main supplier of rice, with the real price of rice falling by 2.57 percent per year between 1981 and 2003. Similarly, in Nepal nearly 10 percent of the rice consumed now comes from India. Following trade liberalization in Sri Lanka, rice prices have fallen by 34 percent, resulting in a 45 percent increase in demand and a 33 percent increase in calorie intake (IFPRI 2010).

One NTB that afflicts trade in staples and the inputs to staples production relates to standards and their enforcement at the border. While an effective standards system is critical to a market based agricultural system open to trade, as will be subsequently discussed in more detail, the absence of standards and the lack of capacity to ensure compliance with regulations can be a major barrier to trade. Regional integration of food markets not only allows for the free movement of food across borders but also offers an opportunity for a common approach to food safety—including plant health, pests, and disease—at lower cost.

However, food safety and sanitary and phytosanitary standards (SPS) rules and regulations for food staples differ across SSA countries despite many having similar agro-ecological conditions for pests and diseases, and similar demands on food safety. This means that food staple imports must often meet different food safety and SPS declarations between importing countries. Food producing companies in Kenya can export to developed markets in Japan, Europe, and Singapore, which each have strict regulations, yet are unable to export to countries on the continent because of regulations.

Food *quality* standards also vary from one country to another and stifle the formalization and commercialization of regional trade in African food staples, especially where traders are unaware of the destination country's standards and only learn of them at the port of entry. For example, the

Box 7: Mozambique and Uganda open border policy for trade in food staples

Unlike many other countries in the region, Mozambique and Uganda have retained liberal border policies for food staples. Since the end of its civil war in 1992, Mozambique has allowed both imports and exports of maize. Because Northern Mozambique is a maize surplus area and because Malawi offers better prices than Southern Mozambique (because of longer distances and higher transport costs to Maputo), traders in Northern Mozambique routinely sell their grain to Malawi and Eastern Zambia. The open border policy enables the resulting deficits in Mozambique's southern cities to be met by large millers who import grain from South Africa and mill it for domestic sale. This has allowed trade to stabilize prices in Maputo compared to other capital cities in the region.

Although Mozambique does not impose quotas or bans on cross-border maize trade, it does apply VAT on imported maize at a rate of 17 percent, although not on consignments of rice or wheat. Maize flour is VAT exempt, meaning that grain imported for sale as grain must pay VAT, while grain imported to produce flour receives a refund. Therefore, in principle, the application of VAT favors rice and wheat relative to maize; favors maize flour over maize grain; and favors large industrial millers over smaller traders and millers.

Uganda's open trade policy for food staples has also enabled its traders to offer products and services competitively, reliably, and sustainably; and Uganda is now a food basket for East Africa. There is no export restriction on agricultural products, nor has the government instituted any recent ban on trade in food. Consequently, the flow of maize from Uganda to Kenya is one of the larger and more consistent cross-border flows in the region (of approximately 120,000 tons per year). There is also cross-border trade with Rwanda (50,000 tons), and southern Sudan is becoming a growth market for Ugandan products.

Nevertheless, the most distinct feature of the Ugandan market is the significant presence of the World Food Program (WFP) and its procurement program. Maize and beans are procured from there, and the former accounts for the largest proportion of maize procured by the WFP in Africa (21 percent in 2010), excluding South Africa (which accounted for 24 percent in 2010). The WFP buys Ugandan maize and beans for distribution to internally displaced people in the country but also sends shipments to Kenya, Burundi, Tanzania, Sudan, DR Congo, and Rwanda, which periodically face food shortages. The volumes purchased reached 109,000 tons in 2010. The maize policy of the Ugandan government allows and encourages cross-border trade and the WFP procurement program, which has encouraged a supply response from farmers to produce more maize and beans, at least the largest ones able to meet WFP's quality and quantity requirements.

However, trade openness alone does not guarantee immunity from domestic food price hikes. Sound macroeconomic management more generally is equally important. Uganda, for example, suffers one of the highest rates of inflation in the region at 28.3 percent, much of this coming from food prices. Inflation has been a combination of drought conditions putting pressure

(continued on next page)



Box 7: Mozambique and Uganda open border policy for trade in food staples

(continued)

on normally bountiful harvests, currency depreciation in light of the Eurozone confidence crisis, and the surge in global food and fuel prices. With the economy already close to full capacity, and the monetary policy responses to the shock not robust, both food and non-food price increases have escalated dramatically in recent months.

Source: Adapted from Haggblade et al. (2008); World Bank (2009a); and IMF (2011).

allowable moisture content for imports of maize is set at 13 percent in Tanzania, 13.5 percent in Kenya, and 14 percent in Uganda. The tolerance for insect damage is one percent in Uganda, two percent in Kenya, and three percent in Tanzania.¹⁵ Malawi requires that maize should meet the following requirements: maximum of 14 percent moisture content, maximum of 2.6 percent of foreign matter, maximum of 11.5 percent of broken grains, and aflatoxin of 3ug per kilogram. Policy reforms to move these different national frameworks towards simplicity, transparency, harmonization, and equivalence in regulations would ease cross-border trade.

The consequences of the status quo are costly for traders who fail to meet food standards. The usual courses of action are either the return of the consignment to the country of origin, quarantine, or destruction of the consignment, all at the trader's expense. Rejections on the grounds of standards can be reduced if food staple standards are harmonized across the region, based on international standards where appropriate, and properly administered rather than having border authorities apply country-specific standards.

Most African regional trade arrangements (RTA) focus on harmonization and cooperation in the area of standards, with the others trying to develop frameworks in this area.¹⁶ For example, COMESA has defined a list of the most commonly traded commodities within the region. Of these, regionally harmonized standards have been developed for approximately 300 products, including maize and maize flour, rice, wheat, wheat flour, and cereals. It is also establishing a harmonized SPS regime with a regional certification scheme, the COMESA Green Pass, at the center of this for ensuring its implementation (Box 8). Efforts like the Green Pass, which encourage member states to recognize each other's conformity assessment procedures, could be developed to boost regional trade in food staples.

ECOWAS, SADC, and EAC also have regional standards harmonization processes. But application remains lacking. In SADC, for example, only Namibia and Swaziland, which recently created national standards bodies of their own, have adopted all 78 (to date) of the SADC-defined harmonized standards for the region.

¹⁵ These requirements are now being harmonized under the EAC.

¹⁶ COMESA, EAC, SADC, WAEMU, and ECOWAS have all developed SPS frameworks, while IGAD, CEN-SAD and ECCAS are planning to develop them (Magalhaes, 2010).

Differences in standards are often compounded by a lack of access to testing and inspection services, especially if these services are located in capitals far from the border and food producing areas.

Small and medium-size traders are particularly hard hit, since they may find it expensive to go for these services at the centralized locations. For example, among key trading corridors between Burkina Faso, Ghana and Benin, the cost of obtaining an SPS certificate for maize (or paying a bribe at the border) has been calculated at US\$40/ton, equivalent to nine percent of the farm gate price (USAID 2011). And in Malawi, maize traders have to pick inspectors, at their cost, to have their maize inspected before release. This can take up to three days, and testing facilities are only available in Blantyre (RATES 2003).

Whether viewed as a development opportunity or trade barrier, it is clear that proliferation of product standards represents a significant challenge to African countries. The ability to comply with formal standards has become an important factor in determining access to international markets and, more broadly, the capacity of countries to export and involve smallholder farmers in commercial supply chains. This is true both for mandatory regulations set by governments to meet their objectives regarding health, safety, and the environment, and for market-driven standards, set within the private sector.

Since entering into force in 1995, the SPS Agreement of the World Trade Organization (WTO) has been the starting point for regional SPS policy. The SPS Agreement reaffirms and elaborates the rights of WTO Members to adopt and enforce measures to safeguard human, animal, and plant health and life and establishes procedures for the use of SPS measures that minimize any undesired negative consequences for trade. To achieve these aims, the SPS Agreement offers alternative instruments to members that include harmonization, equivalence agreements, and mutual recognition agreements. Choosing the right instrument can make an important difference to how nations benefit from trade and opportunities to expand the markets for food staples.

Box 8: The COMESA Green Pass

The COMESA Agreement on the Application of SPS Measures, although currently in draft form, creates the COMESA Green Pass (CGP), which is a commodity-specific certification scheme for the movement of food and agricultural products within the region. A CGP issued by an accredited authority in one COMESA country is enough authority from an SPS point of view for the commodity's access to the market of any other member. The CPG encourages the development of Mutual Recognition Agreements between COMESA countries and third countries to recognize the CGP. The authority in charge of issuing CGPs would be national government agencies responsible for animal health, plant health, and food safety matters. They would certify, monitor and keep a database of certified companies. A SPS Certification Technical Panel (within the COMESA SPS Unit) would support and monitor the competent authorities accredited to issue CGPs. The successful implementation of the CGP could reduce the transaction costs of export procedures.

Source: Fulponi et al. (2011).



In the SPS Agreement, harmonization is merely an encouragement to base standards on international ones, not a mandatory requirement. The basic rule is that standards must be science-based, which may be proven either by applying international standards or through risk assessment. The emphasis on harmonization therefore arises from the role it plays in the legal defense against a potential challenge to SPS measures. A WTO member can avoid the burdensome requirement of having to provide a risk assessment by harmonizing their standards with international ones thereby making this approach a popular choice when in fact it may not be the most efficient instrument or even a feasible one.

Indeed, despite the perceived advantages of harmonization this approach has been the subject of much controversy. In the first place, there is considerable misunderstanding about the legal status of harmonization in the SPS Agreement whereby many capacity-building projects have assumed that the harmonization of domestic standards with international ones is compulsory. This misperception has often led governments and the donors that support them to *view standards harmonization as a goal in itself rather than a means to an end*. As a result, many standards in Africa have been copied almost verbatim from the Western ones with little or no consideration for the impact of the regulations or for the capacity of producers and inspection agencies to comply with the new requirements.

The use of harmonization to pursue trade facilitation in developing countries is also controversial because international standards primarily reflect developed country conditions. SPS problems in African countries differ from those in developed countries, with African countries having only limited capacity to tackle those problems. Many international standards, for example, assume the existence of a conformity assessment infrastructure that may not exist in developing countries and/or can only be established for a high cost. Moreover, in developed countries, domestic standards often approach, if not exceed, the international ones, meaning that harmonization is mainly a question of making minor adjustments to match international norms. In Africa, on the other hand, making domestic standards equal to the international ones can demand a revolutionary new approach to standards management with considerable upgrading of inspection and public outreach capabilities for the new standards to work. Without basic awareness and promotion of good practices for hygiene and safety, for example, higher-level investments in standards diplomacy or development of advanced laboratory capabilities can have little practical benefit and may even be counterproductive.

Standards harmonization therefore carries important risks. Harmonized standards are of little value if they cannot be implemented. Worse, advanced standards themselves can be used as a non-tariff barrier if full compliance cannot be verified. There is also a risk of excluding small farmers and traders from the market if they are unable to comply with the new standards and/or if the standards raise the price of delivering a compliant product beyond the level consumers can afford. Box 9 highlights these issues with the case of harmonized standards in the EAC for maize.

Equivalence agreements, whereby trade partners recognize that each country's respective standards, despite being different, achieve similar levels of protection, are an alternative to harmonization in the WTO SPS Agreement. Equivalence can be achieved in a variety of ways, including formal agreements to recognize the equivalence of SPS measures, agreements on equivalence for specific products, or ad hoc agreements on the equivalence of specific technical aspects of certain SPS measures. System-wide equivalence is naturally more complex to negotiate and achieve, but

product-specific equivalence is less burdensome and can be a good way for developing countries to achieve acceptable levels of SPS protection.

Mutual recognition agreements are a third trade facilitation instrument provided for in the WTO SPS Agreement whereby two countries may agree to accept certain aspects of each other's SPS measures. These aspects need not be the same (i.e. be harmonized) or equivalent (i.e. result in identical protection levels), yet both parties still agree to accept the trade of goods regulated by these different systems. Often such acceptance is used in situations where differences in national regulatory measures and objectives are considered to be less important than trade objectives. Consequently, mutual recognition is less demanding to negotiate and can be more expedient and effective than harmonization or equivalence in facilitating trade. In practice, mutual recognition agreements are most likely to be established between countries that are in some kind of political or legal association with each other and often occur between neighboring countries with a long tradition of trading food and other SPS-regulated products.

Hence while harmonization of standards can offer important benefits for facilitating trade, it is important that the standards process at the regional level is defined openly with the participation of all interested stakeholders and proposed solutions are assessed carefully relative to alternative options. When a small group of technocrats defines harmonized standards, with little analysis of impacts on markets and competitiveness, standards can be overly restrictive.

There are also issues about norms relating to the size of bags allowed for packaging grains. For example, in Kenya and Tanzania the convention is to use a 90kg bag for maize, while Malawi and Zambia use 50kg bags. This can bring about the costly situation of grains being discharged from one bag size and repacked into a different bag at the border.

Quantifying the impact of these non-tariff barriers to trade is important in identifying their impact, mobilizing support for their removal, and prioritizing from among the many barriers those which should be addressed first. Among the problems preventing open and inclusive discussions of food trade policies in Africa are the lack of comprehensive data on the range of policies being applied; and a careful analysis of the magnitude and impact of the barriers to trade they create. Box 10 summarizes work underway to remedy this, although much more needs to be done. The initial estimates suggest that the impacts of non-tariff barriers on food trade in Africa can be substantial, raising prices for basic products by more than 30 percent.

Crossing borders to deliver food staples to neighbors is costly and dangerous

*When you look at a country you start with its borders and if already things don't work at the border won't you ask yourself 'what will I find in the interior?'*¹⁶

¹⁶ Celestin Bashige, Professor and Regional Trade Expert, University of Bukavu. Taken from *Les Petites Barrières*, a video on cross-border conditions in the east of the DRC, available to watch at www.worldbank.org/afr/trade



Box 9: Regional quality standards for food staples in Africa: Harmonization not always appropriate

In the East Africa Community, a decision was made to harmonize the standards for food staples on a regional basis. Prior to harmonization each country in East Africa has different national quality standards for maize grain with different tolerances for moisture content, Aflatoxin, and damaged or discolored grains, among other factors. A regional policy paper produced for the COMESA and EAC Secretariats by the USAID-funded Regional Agriculture Trade Expansion Support Program (RATES), identified these differences as a “technical barrier to trade,” and recommended that the standards be harmonized across the entire EAC and COMESA region.

The EAC has developed standards covering at least 42 staple foods. In the case of maize, for example, a first set of East African Standards (EAS) were adopted in 2005 while revised Final Draft East African Standards (FDEAS) are now awaiting final approval. East African Standards come up for review every five to six years and the preparation of new FDEAS is an ongoing part of EAC standards management. Table 5 compares the current, 2005 harmonized EAC standards for maize grains with the international Codex standard. As shown, the “domesticated” EAC standards are in several cases more demanding than the Codex standard meaning the EAC has not harmonized strictly with international norms. This is particularly true with regard to maximum moisture content where the EAC standard is significantly more demanding than Codex. The EAC standards also include a specification for total defective grain that did not exist in Kenya and Uganda before harmonization and is not part of Codex.

The Table also compares the current EAC Standards (EAS) for maize grains with the revised Final Draft East African Standards (FDEAS). Since coming into force in 2005, formal sector traders have complained that the EAS are difficult to meet and impose high costs for sourcing acceptable grain and proving compliance. As long as the maize is fit for human consumption and does not pose any other animal or plant health risk, grain traders say they should be free to buy and sell whatever type of product there is a market for. As shown, the FDEAS go some way to relaxing the trade requirements by creating new specifications for Grade 3 maize, but even this level is still more demanding than Codex while the FDEAS also propose to tighten the tolerance for moisture content and introduce new testing requirements for Fumonisin.

On the one hand, the EAC’s approach of establishing different grades for maize is consistent with private sector systems used for determining a commodity’s value, yet at the same time, the EAS (and FDEAS) still create several problems for regional trade. In the first place, the East Africa SQMT (Standardization, Quality Assurance, Metrology and Testing) Act makes standards compliance mandatory and states that no product shall be allowed into the region that does not meet the minimum specifications. To the extent that problems with broken, discolored, and shriveled grains often arise for reasons completely unrelated to mycotoxin, maize with a high share of these characteristics can be kept out of the region on spurious grounds. Moreover, EAC-SQMT Act commits member states to ensure that domestic standards are fully harmonized with the East Africa ones, technically meaning that any grain that does not fully comply with EAC minimum standards requirements cannot be traded in domestic markets either.

(continued on next page)

Box 9: Regional quality standards for food staples in Africa: Harmonization not always appropriate *(continued)*

Unlike East Africa where standards for food staples are mandatory, traders in Zambia and other Southern Africa countries say they use standards more as reference point so that buyers and sellers know what they are dealing in and how to assess the commodity's value. Quality attributes and SPS concerns that do not impact directly on human or animal and plant health are not regulated by law as in the EAC.

Thus far, for example, the Zambia National Bureau of Standards (ZABS), Zambia Food Reserve Agency (FRA), and Zambia Agricultural Commodity Exchange (ZAMACE) each have their own different definitions and grading systems for the quality attributes of maize. None of these standards, including the ones set by ZABS, are mandatory. Contrary to the view that says lack of harmonization is a non-tariff barrier, grain traders in Lusaka and Johannesburg report that the current system works perfectly well, whereby buyers specify the quality attributes they require and leave it to the seller to match those requirements. Public health and other SPS concerns are still addressed through phytosanitary regulations, but other factors that are of commercial importance

Table 5: Comparison of current and final draft East African standards for maize with Codex

	Current 2005 EAS		FDEAS (now pending)			CODEX
	Grade 1	Grade 2	Grade 1	Grade 2	Grade 3	Standard
Moisture content (maximum)	13.5%	13.5%	13%	13%	13%	15%
Aflatoxin (max)	10 ppb	10 ppb	10 ppb	10 ppb	10 ppb	Set by CODEX
Aflatoxin B1	5 ppb	5 ppb	5 ppb	5 ppb	5 ppb	
Fumonisin	—	—	2 ppb	2 ppb	2 ppb	
Foreign matter	0.5%	1%	0.5%	1%	1.5%	1.5%
Inorganic matter	0.25%	0.5%	0.25%	0.5%	0.75%	0.5%
Broken grains	2%	4%	2%	4%	6%	6%
a. Insect damaged grains	1%	3%	1%	3%	5%	7%
b. Rotten, diseased grains	2%	4%	2%	4%	5%	7%
c. Discolored grains	0.5%	1%	0.5%	1%	1.5%	2%
d. Other colored grains	—	—	—	—	—	—
e. Live insect infestation	—	—	—	—	—	—
f. Immature/shriveled grains	1%	2%	1%	2%	3%	—
Total defective grain (Sum a to f)	4%	5%	4%	5%	7%	—
Filth	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

Source: RATES, 2003; EAC, 2005; EAC, 2011; CODEX, 1995.

(continued on next page)



Box 9: Regional quality standards for food staples in Africa: Harmonization not always appropriate *(continued)*

are left for buyers and sellers to decide. In practice, most transactions in Zambia are based on the ZAMACE grading system, which in turn is modeled on the SAFEX standards in South Africa. Table 6 provides a side-by-side comparison of the EAC Standards and ZAMACE standards.

In comparing the EAC and ZAMACE standards, several important differences stand out. First are the tight restrictions on the maximum share of discolored, immature, and shriveled grains in the EAC. In Zambia, the vast majority of marketed maize is now produced by smallholder farmers

Table 6: Comparison of draft EAC standards and ZAMACE standards

	FDEAS (now pending)			ZAMACE standards		
	Grade 1	Grade 2	Grade 3	A Grade	B Grade	C Grade
Moisture content (maximum)	13%	13%	13%	12.5%	12.5%	12.5%
Aflatoxin (max)	10 ppb	10 ppb	10 ppb	n/s	n/s	n/s
Aflatoxin B1	5 ppb	5 ppb	5 ppb	n/s	n/s	n/s
Fumonisin	2 ppb	2 ppb	2 ppb	0.5%	0.5%	0.5%
Foreign matter	0.5%	1%	1.5%	1%	1.5%	2%
Inorganic matter	0.25%	0.5%	0.75%			
Broken grains	2%	4%	6%	6%	7%	8%
a. Insect damaged grains	1%	3%	5%	3%	6%	9%
b. Rotten and diseased grains (EAC); Diseased grains (ZAMACE)	2%	4%	5%	2%	2%	2%
c. Discolored grains	0.5%	1%	1.5%	3%	6%	9%
d. Other colored grains	—	—	—	3%	4%	5%
e. Fungal damaged grains						
f. Immature/shriveled grains	1%	2%	3%	1%	1.5%	2%
Total defective grains (Sum a to f)	4%	5%	7%	11%	18.5%	26%
Germinated grains	n/s	n/s	n/s	Nil	Nil	Nil
Pass through 4.15mm sieve (max)	n/s	n/s	n/s	1.5%	2%	2.5%
Diplodia (ear rot)	n/s	n/s	0.1%	Nil	Nil	Nil
Filth	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

Source: EAC, 2005; EAC 2011; ZAMACE, 2008.

Notes: Current 2005 EAS identical to FDEAS except do not include specifications for Grade 3 maize or testing requirement for Fumonisin. ZAMACE standard for foreign/inorganic matter defined as "extraneous matters". n/s = not specified.

(continued on next page)

Box 9: Regional quality standards for food staples in Africa: Harmonization not always appropriate *(continued)*

and is therefore a sundried product with uneven color. Sun bleached maize is perfectly safe to consume and merely yields flour that is less than snow white so is only important to appearance and a miller's financial return. Similarly, immature and shriveled grains are common in smallholder maize for reasons completely unrelated to mycotoxin. These grains result in lower milling out-turn, but are otherwise very safe to consume.

Zambia currently has the world's largest surplus of non-genetically modified white maize equal to a stock of over 1.5 million tons available for export. In practice, however, large traders including the World Food Programme, say the EAC requirements make it difficult and expensive to export this grain to Kenya where there is strong demand for commercial and humanitarian purposes. The very tight restrictions on total defective grains (4–7 percent in the EAC compared with 11–26 percent according to ZAMACE) were identified as a particular constraint to trading Zambian smallholder maize for the reasons previously described. Moreover, because the maize marketing system in Zambia is not well geared to inspect for quality on reception, exporters say they typically have to visit several depots at a reported cost US\$2.50 per ton per place inspected to find maize that meets the EAC's requirements. After sourcing EAC compliant grain, pre-shipment certification and testing can add anywhere from US\$0.50 to more than US\$3.00 per ton to the cost of trade with similar or even higher inspection and testing costs arising on entry to the EAC. Rather than create a more favorable trading environment for small- and medium-scale business people, therefore, the EAC standards can actually prevent these operators from participating in the market.

As shown, there are also important differences in the EAC and ZAMACE standards for Aflatoxin. While Aflatoxin can indeed be a serious health risk, traders say this is extremely rare in Southern Africa because of there being only one rainy season unlike East Africa where there are two rainy seasons per year. In this regard, grain traders say that the EAC's mandatory testing requirement is not needed for maize in Southern Africa and that any attempt to extend mandatory Aflatoxin testing to this region as part of harmonized standards regime would only add unnecessarily to cost.

Differences in moisture content are another important factor. Because maize in Zambia is mainly stored in the open under tarpaulin covers, 12.5 percent moisture is considered the maximum acceptable level to avoid grain rot. In the EAC, on the other hand, where there is a generally a wetter climate and maize is usually stored in a shed, 13 percent to 14 percent moisture is considered realistic and acceptable. In South Africa, maize is typically stored in modern silos in which 14 percent moisture is acceptable and therefore this number is the quality benchmark used by the South African Futures Exchange (SAFEX).

Finally, it should be noted that any attempt to promote compliance with regional EAC standards needs to be supported with appropriate marketing policies and quality control systems in the exporting country. In Zambia, the Food Reserve Agency (FRA) has recently been buying maize

(continued on next page)



Box 9: Regional quality standards for food staples in Africa: Harmonization not always appropriate *(continued)*

from smallholder farmers at subsidized prices higher than import parity. As a social function, the FRA rarely rejects smallholder maize meaning that there is no penalty or reward for on-farm grading or other types of quality control that could help meet the EAC requirements. ZAMACE has been carrying out a project funded by USAID to train farmers in on-farm grading, but says this initiative has been undermined by the FRA's marketing policies. Moreover, the FRA does not buy grain from commercial farmers and sells to local mills for less than import parity. Consequently, commercial farmers that could fairly easily grow the type of maize required by the EAC are not able to earn an attractive price and have more or less switched away from maize as a cash crop in favor of other more profitable commodities.

Box 10: Quantifying the effects of non-tariff barriers on African food staples

Until recently, quantifying the price-raising effect of NTBs was constrained by the availability of comparable data across countries. Thanks to a collaborative effort between the World Bank and other agencies, including UNCTAD and the African Development Bank, a new wave of data collection was undertaken in 2009–10. So far, 30 countries have been covered, with NTBs coded according to the 2009 MAST nomenclature for each of the Harmonized System's 5,000 product lines. Combining this data with price data collected as part of the World Bank's International Comparison project (for a smaller set of products) made it possible, using econometric methods, to estimate directly the price-raising effect of NTBs on African food staples.

The approach used consisted of running regressions of country-level product prices on "dummy" (binary) variables marking the application of NTBs of various types, using a panel of 1,260 country-product pairs. The regressions control for systematic differences in cost-of-living (COL) across countries, as well as in market-structure diversity across products, with a full array of country and product fixed effects. Interaction terms between NTBs and either region or country dummies provide tentative estimates of their price-raising effect in Africa or in specific countries.

As normal with this type of exercise, results should be interpreted with caution, as many confounding influences can affect estimates. Although many controls are used in the regressions to limit these confounding influences, they put heavy demands on the data and result in many coefficients

(continued on next page)

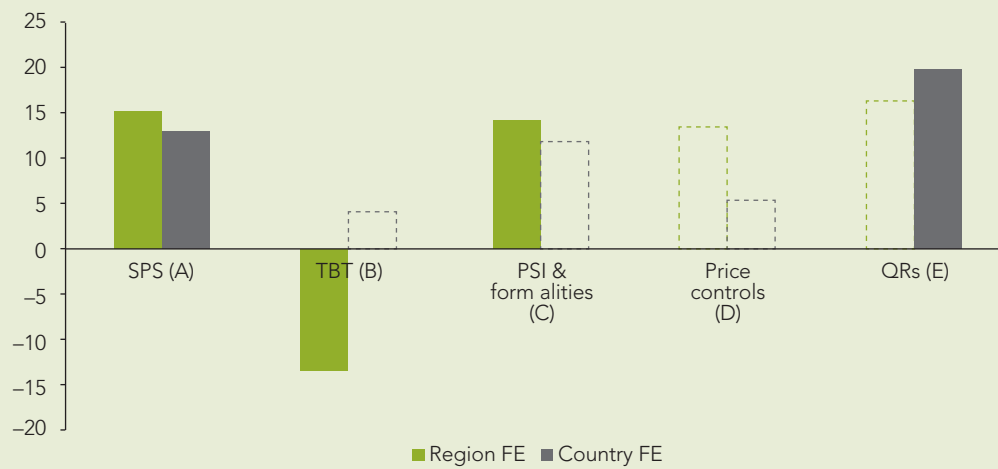
Box 10: Quantifying the effects of non-tariff barriers on African food staples
(continued)

being estimated with large confidence intervals. Be that as it may, results, shown graphically in the figure below, are telling. On average Africa's SPS measures, which often suffer from a lack of harmonization, poor design and haphazard enforcement, raise the price of food staples by 13–15 percent. Quantitative restrictions, where they are applied (the database so far covers only imperfectly temporary bans and does not cover export restrictions) add another 20 percent. Such price increases have the potential to affect significantly the real income of poor households.

Price-raising effect of NTMs, Africa average (all affected products)^a

Product-specific effects are even more difficult to quantify than averages. With all appropriate caveats, estimates suggest substantial effects of SPS regulations in Kenya on rice prices (+42 percent), meat (+34–37 percent), fish (+33 percent), and edible oils and fats (29 percent). Rice prices seem to be similarly affected in Uganda (+30 percent), as are meat and fish prices (+41 percent).

Figure 7: Price raising effect of NTMs on rice in Kenya



Source: Cadot et al, 2012

^aThe vertical axis measures the price-raising effect of NTMs in percentage points after correction for tariffs and systematical cost-of-living (COL) differences. Dark grey bars give coefficient estimates from a regression including an All-Africa dummy and vector of interaction terms; the light-grey bars are from a regression including a full set of country-specific dummies and interactions. This latter approach is less vulnerable to confounding influences, but is more demanding on the data and therefore returns more frequently insignificant estimates, marked here by transparent, dotted-line bars. All regressions include product-fixed effects and allow for an unrestricted covariance structure within products.



Hundreds of thousands of Africans are crossing borders daily to deliver food staples from areas of relative surplus to areas where prices are higher. This essential arbitrage activity, which brings benefits to both producers in surplus areas and consumers in deficit areas, is in many cases subject to financial and physical risks. For example, cross-border trade is the key means of supplying vital food products and other commodities to cities and towns on the borders of countries in the Great Lakes region, such as of Goma, Bukavu. Such trade directly and indirectly employs approximately 22,000 persons in the Goma/Gisenyi area, while an estimated 500 to 1,000 cross-border traders are established in Bukavu, probably generating ten times as many derived jobs in the border region of South Kivu province.¹⁸ The monthly value of cross-border trader imports in Goma coming from Rwanda is estimated in excess of US\$1 million. Between 1,800 and 2,000 crossings are estimated to take place at Petite Barrière in Goma and 900 per day at the Ruzizi border post in Bukavu.

Throughout Africa women dominate cross-border trade, which provides an essential source of income to many households. While the vast majority of small traders are women, most of the officials who regulate the border are men. A recent survey of cross-border traders in the Great Lakes region supports studies elsewhere in Africa that show that cross-border traders regularly have to pay bribes and suffer harassment.¹⁹ The responses from the detailed interviews and focus groups paint a dark picture of the conditions poor women cross-border traders experience in the Great Lakes region—that is, serious risks and losses each time they cross the border. Figure 7 summarizes the main findings. Payment of bribes is a regular occurrence for the majority of traders, and many also report having their goods confiscated and having to pay fines. A large number of traders report being subject to acts of violence, threats, and sexual harassment. They are exposed to beatings, verbal insults, stripping, sexual harassment, and even rape, much of which goes unreported. This lack of economic and physical security and safety undermines the livelihoods of these traders and compounds their lack of access to finance, information, and business knowledge.

Providing security at the border and implementing a transparent and predictable regime for those crossing the border would help trade, improve incomes, contribute to regional food security, and secure greater stability in the region. In many cases, the large number and range of officials at the border should be reduced.²⁰ And aggravating the situation, both traders and officials are either unfamiliar with the rules and regulations that govern cross-border movements of goods and people, or there is just a lack of transparency. Reducing the number of border agencies and officials and increasing the transparency and predictability of the policy regime will be crucial to creating an environment where traders flourish and expand.

There has been little support in Africa for institution building at internal borders. A common perception of informal trade would be border trade that seeks to avoid formal rules and institutions. At many of the border crossings the formal institutions are at best very weak, and the complexity

¹⁸ International Alert report “La Traversée,” June 2010.

¹⁹ World Bank (2011a).

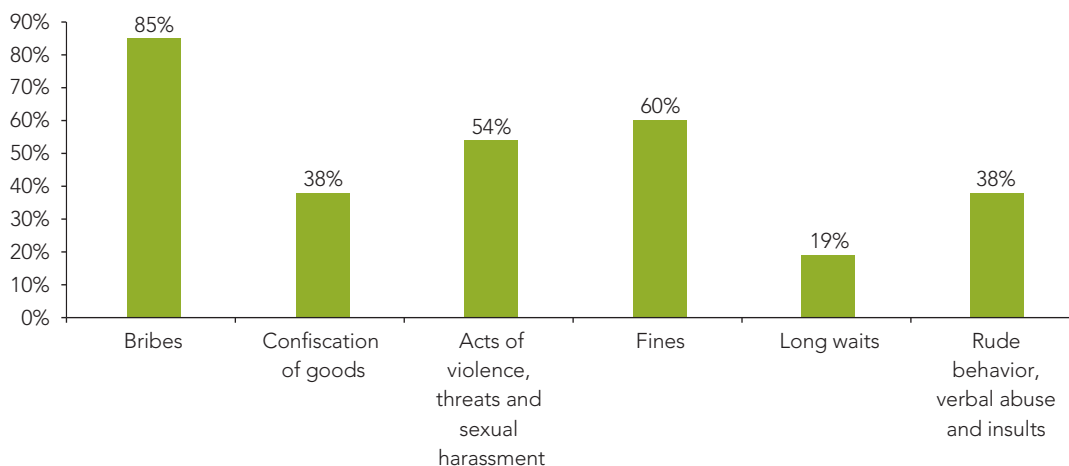
²⁰ For example, in the DRC four agencies are legally entitled to be present at the border: Customs, Immigration, Hygiene service, and Quality Control service. Nevertheless, officials from between 10 to 15 different agencies are often operating at the border. While extreme this is not untypical of borders elsewhere in Africa.

and lack of transparency of rules and regulations governing cross-border trade encourages harassment and bad behavior by officials as well as disobedience by traders. Informal traders—especially poor women food traders—usually lack representation, making them vulnerable and without recourse to contesting official decisions and actions. And without knowledge of the regulations and obligations, traders are more easily exploited. For example, Congolese women taking products from Congo to sell in Burundi are often required to pay a tax by officials when they exit the country, yet there are no official export taxes.

Communities are pulled apart economically by the costs of getting across borders. Analysis of market level price data suggests that crossing the border into the DRC is a major hurdle for traders of food products. In a study of the prices of key food products such as maize and cassava in different markets in the DRC, Burundi and Rwanda, Brenton and Portugal (2011) find that, after taking into account both product and market specific factors, as well as proxies for the costs of transporting goods between markets, there is an additional effect for markets on different sides of a border: The effect of crossing the Burundi-Rwanda border on relative prices is equivalent to pushing the two markets an additional 174 km or 4.6 hours further apart.

However, crossing the Burundi-DRC border is equivalent on average to pushing markets in each country 1824 km or 41 hours further apart, whereas crossing the DRC-Rwanda border is equivalent to adding an extra 1,549 km and an additional 35 hours. This suggests that there are major barriers to cross-border trade between the DRC and Burundi and Rwanda, and that there are substantial opportunities for trade to play a greater role in integrating food markets in the region. Hence, there would be very large economic pay-offs from interventions that reduce the size of the border and promote freer movement of goods and people across the border. Similar analysis using data from markets in West Africa on prices of maize, rice, and cowpea suggest that the effect on relative prices of crossing the Niger-Nigeria border is equivalent to pulling markets an additional 639 km apart, whereas the Nigeria-Chad border effect is equivalent to 594 km.

Figure 8: Bringing staples across borders can be a risky business



Reported frequency of risks from a survey of 181 traders at four border posts between the DRC and Burundi, Rwanda, and Uganda in 2010



When moving formal consignments of food staples across borders, traders also face a host of repetitive fees, permission requirements, redundant documentation/procedures, and uneven certificate of origin requirements. As a result, customs clearance in many SSA countries involves long delays, even for goods that should require minimum clearance times. Individually, most of these requirements may be a small delay or expense to traders, but collectively they represent a significant barrier to trade.

Even where single entry documents (SED) have been introduced, the information and accompanying documents required from traders (for example, import declaration forms, origin certificates, invoices, import permits, and standards compliance stamps) remain burdensome, and small cross-border traders may be unable to provide the required information for the entry document.

For example, if original invoices are a condition for customs clearance, then cross-border traders may be unable to obtain invoices from their suppliers if these happen to be small farmers or small traders in the source countries based near cross-border markets. Similarly, if certificates of origin are required to be eligible for tariff preferences or permits required to trade at all, then access to these is often limited since their issuance is usually from centralized capitals or regional towns, which can be far from the food staple trading zones. In Tanzania, all certificates and permits can only be obtained in person in Dar-es-Salaam. In Kenya, permits to legally import grain are only available in Nairobi (Nyameino et al. 2003). Traders wanting to export food staples from Northern Mozambique to Southern Malawi have to get an export permit from Quelimane (Tschirley et al. 2005).

Consequently, cross-border trade is either subject to tariffs, effectively prohibited or, more commonly, pushed into informal channels. These regulatory obstacles impose transactions costs on traders that bring about lower demand and lower prices for farmers while increasing prices for consumers.

There have been some attempts to simplify customs procedures for small traders. For example, for trade between Zambia, Zimbabwe, and Malawi, COMESA has devised a Simplified Trade Regime (STR) (see Box 11). In West Africa, under ECOWAS and UEMOA, agricultural goods do not require a certificate of origin: however, they do require SPS certification and, depending on the country of export, traders may require export permits. For example, Mali requires export authorization for livestock and an “Intent to Export” form.

But these efforts have had little success in helping trade. The pilot of the COMESA STR has been sparsely used and appears to have increased rather than reduced crossing times (since traders have to fill out two forms and wait for ASYCUDA data capture). In addition, under STR, traders are now being identified as commercial players, whereas they may not have been before, implying they must now pay additional taxes, (e.g., US\$10 customs processing fee (at each border), VAT, and excise for some commodities) all of which discourage informal traders from declaring their goods for customs processing. And, of course, the other requirements for trade (e.g., export/import permits; sanitary and phytosanitary certificates) are unaffected by the STR. These requirements are costly and centrally managed, leading many small traders to continue breaking bulk consignments into smaller ones to avoid border controls.

Box 11: The COMESA Simplified Trade Regime (STR) for Zambia, Zimbabwe and Malawi

The STR is a pilot scheme designed to overcome problems with small traders needing to prove that goods have originating status to be exempt from import duties under the COMESA customs union. It was developed for small consignments, currently defined as being below US\$500. For these, traders can fill out a Simplified Customs Document, which is accepted by customs in place of the full document that must be filled out by a customs clearance agent. In addition, for certain products the normal proof of origin required at a COMESA border post is relaxed and a Simplified Certificate of Origin can be used instead, although goods must still meet COMESA origin requirements.

Ordinary COMESA origin certificates are usually issued at capital cities and must be stamped by the customs authorities. At the border a trader must normally present the stamped certificate of origin together with an invoice and the customs document declaring the goods to the customs officer in the importing country. Under the STR, governments have agreed bilaterally on a list of products that do not require ordinary origin certificates for small consignments but can instead use the Simplified Certificate of Origin. The lists of eligible products are displayed at the border posts and the Simplified Certificates of Origin can also be obtained there; they are signed by the customs office.

Beyond the Simplified Customs Document and Simplified Certificate of Origin, the STR makes no other changes to the border requirements for trade in small consignments. These remain the same and include travel documentation for immigration as well as licenses and certificates for agricultural produce. The latter usually must be obtained from the offices of ministries of agriculture and often involve export permits and phytosanitary certificates stating that the products are free from disease.

STR requires an average of 1–4 hours to cross. In terms of transactions that use STR, the number has been dwindling over time although they have stabilized at Livingstone and Mwami. For all borders that use STR the average number of STR transactions is less than 100 per month. Chirundu and Mwami have the highest values of transactions that use STR, approaching an average of US\$250 per transaction. However, values generally remain low as most of the items on the STR list are low value products.

Sources: COMESA (2010) and COMESA (2011).

It would be useful to define a set of standards of basic rights and obligations for small traders, and then display the standards openly at all border posts in the local language. This would support small traders in developing their businesses as well as encourage a safe and predictable environment at the border. It would also help build trust between traders and border officials. The international community could then support governments to provide training to officials, encourage



trader associations, and improve the basic infrastructure at the border. Annex 1 provides examples of issues that could be included in the standards.

Inefficient distribution services hamper regional trade in staples and contribute to food insecurity in Sub-Saharan Africa

Distribution services, comprising retail distribution, wholesale distribution, commission agents' trade, franchising services, and electronic commerce, are a crucial link between farmers, food processors, manufacturers, and consumers. The performance of the sector affects consumer welfare, price levels, and trade because its transport costs and margins are a significant proportion of final prices.

In addition, the change in the nature of distribution systems, such as the emergence of modern distribution outlets and the increased internationalization of the sector across sub-Saharan Africa, is driving a rapid transformation of the region's retail food sector, with important implications for intra-regional trade in food staples. For example, the integration and centralization of supermarkets' procurement and warehouse systems could defragment the market for staples through regional distribution centers that allow coordinated procurement over a set of countries. This trend would mirror intra-firm trade across countries.

But at this stage distribution services are not linking poor producers to domestic and foreign consumers. Several factors can explain this outcome. *First*, informality prevails and lack of access to finance, uneven cash flows, absence of management knowledge, and highly fragmented and inefficient supply chains limit the operational capacities of informal operators. *Second*, the majority of small-scale farmers remain marginalized by the distribution sector and its new practices. *Third*, regulatory barriers, poor infrastructure, insecurity, and cumbersome import processes constrain trade activities of formal distribution operators. *Fourth*, very poor households at the bottom of the income pyramid pay higher prices for basic goods, including food staples, than do wealthier consumers.

Designing a comprehensive reform strategy linked to national development plans will first require raising awareness about the importance of distribution services in facilitating intra-regional trade in food staples and addressing food security issues. The priority should then be on including smallholders in food distribution channels and addressing the concerns of the poorest households.

Collective action remains an important strategy for increased smallholder participation in market exchanges. Organized associations and collective marketing strategies are effective in reducing transaction costs, while storage facilities are important to minimize post-harvest losses, mitigate price volatility, and address food security concerns.

Facilitating access to financial services in the informal sector is also important as is helping traditional and informal operators to acquire skills. For example, training courses focusing on basic hygiene standards, merchandising, sampling, or promotion techniques offered in the slums could improve the skills of retailers in wet markets, kiosk sellers, or hawkers.

Policy actions to improve access to and participation of smallholders in modern distribution chains include (a) encouraging horizontal coordination such as farmer associations and cooperatives

to increase the bargaining power of small farmers, allow for economies of scale, and lower marketing and negotiation costs; and (b) ensuring there are incentives for the development of private storage facilities to alleviate the large post-harvest losses facing small-scale farmers.

Steps should also be taken to eliminate the regulatory barriers that limit competition, and trade and investment in the distribution sector. Reforms should focus on developing the regulatory frameworks for modern distribution services, including rules and regulations affecting the business environment. The lack of licensing and operation rules for distribution companies, inadequate codes on investment, commerce, labor and taxation, as well as the lack of bankruptcy procedures, create significant uncertainty, and encumber firms trying to conduct business operations in the formal distribution sectors of African countries.

Finally, improvements to regulatory frameworks should eliminate disproportionate entry requirements, such as lengthy registration procedures, multiple licenses, or inadequate zoning regulations. Price controls imposed across the region and among the cartels in several African countries present a serious impediment to competition, and should be removed.

Many of the restrictions to trade discussed in this section raise transaction costs and increase the gap between producer and consumer prices. This gap often contributes to farmers preferring to consume their own production rather than exploit what would otherwise be profitable opportunities in nearby markets in neighboring countries. Measures that reduce this mark-up will benefit both producers and consumers, and decrease distributional issues that often surround food trade policies. In addition to their direct costs, these trade barriers add to other problems of food staples production (see Box 12 on post-harvest losses) and can constrain the development of institutions designed to address some of the key market failures afflicting agricultural markets, including those that ameliorate risk.



Box 12: The problem of post-harvest loss

The value chain analysis of food staples in SSA focuses on the costs and barriers of production and trade in the region. One cost component of agricultural products and a major contributor to food insecurity is the significant loss after harvest experienced in many parts of Africa. Those losses are for a multitude of reasons: physical deterioration, loss of nutritional value and contamination, and economic and monetary losses, such as a lack of access to markets. The need to improve food productivity in the Africa region to keep pace with urbanization and population growth underlines the importance of reducing post-harvest losses. The African Postharvest Losses Information System (APHLIS) has estimated that physical losses for grain (before processing) could be 10 to 20 percent, representing losses of US\$1.6 billion per year, or about 13.5 percent of the total value of grain production (US\$11 billion) for Eastern and Southern Africa alone. A decline of these losses could provide an additional contribution to better food security and lower consumer prices.

Improving post-harvest losses along the value chain of food staples can be achieved with the help of technical changes, such as bagging procedures and new technical solutions for harvesting and cleaning; but removing transport and border barriers and more enabling regulations are also important. Long delays at the border can cause loss of food products—for example, needless requirements for inspections that result in multiple up- and off-loading of commodities cause damage and loss that could have been avoided. Better access to agricultural extension workers can also contribute to better adoption of available low-cost technical solutions to avoid losses and improve food safety.

Source: World Bank (2011b).

Photograph by Martin Addison

A man in a white shirt is standing behind a counter in a food market stall. He is holding a white bag of rice and pouring it into a large green plastic tub. In front of him is a blue mechanical scale with two brass pans. The background is filled with shelves of various food products, including cans, jars, and packaged goods. The scene is brightly lit, and the overall atmosphere is that of a busy, well-stocked market.

Support institutions that foster efficient and stable regional food markets

Open markets represent the most important institutions to coordinate and organize trade across political and geographical borders. But markets do not exist in a vacuum and need an appropriate framework to function properly for the benefit of all participants, including producers and consumers. Market-based agricultural production and distribution, especially with integrated regional markets, requires institutions that facilitate exchange and moderate the risks inherent in agricultural markets.

Market-supporting institutions can be diverse in character and organizational structure, and should be designed for specific local conditions; their purpose is to support the informational and distributional functions of markets. There are two key institutional issues for regional trade in food staples: (a) when a lack of institutional capacity leads to poorly defined regulations and/or weak implementation that hinder trade; and (b) when trade barriers and uncertainty about trade policies limit the scope for institutions that deal with market failures to emerge and function. The development of market institutions will depend on the policy environment and on the environment for governance. And the development of these institutions has been most difficult in countries where reform has been resisted (Jayne et al. 2002).

The focus here is how institutions can support efficient market exchanges and address key market failures that undermine agricultural markets. The issues include standards and their implementation, commodity exchanges, market information, and managing risk. There is an important role for the regional economic communities (RECs), the African Union, and the donors to help governments invest in institutions that support integrated markets and productivity growth in agriculture, but which are not provided for by the private sector. Reform to deliver integrated regional markets is *not* a short-term process of the government retrenching from agricultural markets; it is an ongoing collaborative process of searching for and adapting institutional arrangements to local conditions. In many cases, it will be more efficient for these institutions to operate on a regional rather than national level.

Standards and the capacity to enforce them

All countries must enforce appropriate sanitary and phytosanitary standards (SPS) to protect human and animal health and prevent introduction of plant diseases and pests that destroy crops and vegetation. Food safety standards are required to protect human health. As discussed above, standards play an important role in addressing information failures in the markets for seeds and fertilizers, thus assuring farmers that the contents of a bag of seeds or fertilizers will be consistent with its label. Professional standards are required to ensure that agronomists providing extension and advisory services for farmers are qualified.

Many countries lack the capacity to define standards to achieve basic regulatory objectives for health and safety or to address information failures while facilitating trade, or enforce the rules. Private sector participants then do not have the confidence to invest and explore new market opportunities, and thus some in public office see more justification for government intervention into agricultural production and distribution.

Analysis of the standards system for food safety and plant health in Tanzania by Kweka (2011), summarized in Table 7, highlights issues common to many countries. The key issues are: improved coordination across multiple agencies, often with overlapping mandates; lack of enforcement capacity; and limited private sector involvement.

In many countries the relevant agencies face liquidity problems because of limited budget allocation from the government. Capacities have often been built with donor support, but securing financial viability is needed to sustain their operations. Partly because of budgetary constraints, regulatory agencies have been trying to raise revenues from their inspection and certification activities; and some agencies use their mandates to maximize revenues, rather than assist trade. Standards enforcement tends to focus on inspections for which fees can be levied. This may also have compromised the regional integration agenda since national institutions are reluctant to give up any of their mandates or any source of revenue to support regional trade.

In Tanzania, for example, in addition to paying for a quality inspection certificate by the TBS and for a TFDA health/sanitary certificate, all food imports and exports must be registered with the Tanzania Food and Drug Authority and be inspected for radiation by the Tanzania Atomic Energy Commission (TAEC). The costs of these inspections can be substantial, with TFDA charging 0.5 percent of each consignment's value to cover the cost of border inspection, and the TAEC charging a further 0.2 percent of the value of exports and 0.4 percent of the value of imports for mandatory radiation testing. The testing policy does not distinguish between goods coming from areas without risk of radiation exposure, and each individual consignment is subject to inspection without allowing for free shipment of goods that previously passed the test.

Typically, the number and level of professional capacity of staff tasked with standards enforcement responsibilities are limited. At border posts, particularly those regulating cross-border trade rather than the main ports, exporters and importers cannot be assured that the agency inspector will be available, even during normal business hours. Even if present, staffs usually lack basic testing instruments and materials. Hence, the product—whether seeds, fertilizers or staples themselves—may be held at the border for long periods while approval for release is obtained.

In Tanzania, the Plant Health Service (PHS) of the Ministry of Agriculture, Food Security and Co-operatives has around 150 inspectors posted at just 28 out of 56 total entry points. These include the international airports at Dar es Salaam and Kilimanjaro, major sea and lake ports, and selected border posts. Not one entry point is equipped with an illuminated table for pest inspection; there is little or no direct means of communication with headquarters; and only six entry points are equipped with a computer. At most field stations, staff do not have reference materials for pest identification or any sampling kits. Moreover, there are no pest identification manuals and very little money at the field level for transport to carry out essential work.

The PHS is tasked with such functions as surveillance, quarantine, inspection, and issuance of phytosanitary certificates. Weak communication between plant health services and various stakeholders, coupled with a lack of reporting procedures, has produced a system with no pest surveillance system and little capacity to prevent the spread of animal and plant diseases. As a result, Tanzania has experienced outbreaks of plant pests and diseases, including cassava green mite, large



Table 7: Weaknesses of SPS standards management in Tanzania

	Food safety	Plant health
Administrative structure and procedure	Highly fragmented administrative structure characterized by overlapping responsibilities and lack of coordination among TBS, TFDA, PHS, and TPRI*	Overlapping responsibilities for plant health regulatory functions, pesticide testing, inspection, registration, and issuance of permits among TFDA, PHS, and TPRI
Inspection/control (including physical infrastructure)	<p>Overlapping laboratory testing functions among TBS, TFDA, PHS, and TPRI</p> <p>Limited testing capacity within TBS, TFDA, PHS, and TPRI for pesticide and veterinary drug residue analyses in horticulture and animal products</p> <p>Lack of certification capability within TBS and TFDA due to absence of internationally accredited laboratories</p>	<p>Limited inspection and testing capacity within TFDA, PHS, and TPRI at entry points and border posts due to lack of onsite testing facilities</p> <p>Absence of adequate laboratory testing capability within TFDA, PHS, and TPRI for pesticide residue analysis</p> <p>Limited TPRI and TFDA plant quarantine services and facilities; low level of laboratory testing capacity within PHS for pest or disease identification</p> <p>Lack of computer facilities, field reference materials for pest sampling and identification, communication facilities between PHS headquarters and field stations</p> <p>Lack of established reporting procedures and poor communication with producers and exporters for pest surveillance</p>
Human capital	<p>Inadequate number of TFDA, TBS, and local government staff (for inspection of processing facilities and market places) or at entry points and border posts</p> <p>Limited number of TFDA auditors supervising local government field inspectors</p> <p>Need for adequate specialist training and skills upgrading in Hazard analysis and critical control points (HACCP) and other food safety principles, in food processing techniques and operations, and in agro-food testing and inspection for field inspectors</p>	<p>Inadequate number of PHS and TPRI staff for inspection at entry points and border posts, as well as in pack houses, and onsite horticulture production areas</p> <p>Many PHS staff are generalists without specific training in pest risk analysis and in phytosanitary matters</p> <p>Weak plant pest and disease research and surveillance capacity within TPRI and PHS</p>

* (TBS) Tanzania Bureau of Standards, (TFDA) Tanzania Food and Drugs Authority, (PHS) Plant Health Services, (TPRI) Pesticide Research Institute.

grain borer (in maize), woolly white fly (in citrus fruits), and banana wilt disease as well as an exotic variety of fruit fly that infests citrus and mango-growing areas.

In Zambia, traders report that the Zambia Bureau of Standards (ZABS) checks the quality of imported fertilizer, but the Zambia Agriculture Research Institute (ZARI), which is the SPS competent authority, also claims responsibility for quality. This has caused confusion about the role and responsibility of each institution for assuring quality inputs. There is institutional overlap, and both institutions charge a fee. While fertilizer is (over) regulated at the border, it is often then adulterated by local traders, evidence of the need for more emphasis on market surveillance.

To ensure the role of standards in enhancing trade and competitiveness, the role of private sector players in standards management is critical. This is not only for business sector representation, but also for providing critical feedback on the needs and response of markets. In many countries there was no clear legal framework for participation of the private sector in standards management.

In addition to the necessary institutions, broad awareness of standards among farmers, traders, border agents, and others is fundamental for the success of any standards regime. Thus, efforts at harmonization at the regional level without a strategy to raise awareness could be putting the cart before the horse and may end up creating rules, but not the capacity to meet them. Jaffee et al. (2005) stress that an effective system of standards management has to be built on awareness and recognition of the role of standards, followed by the capacity of farmers and processors to apply basic hygiene and food and plant safety procedures. After this come appropriate regulation and enforcement, and the definition of institutional structures and roles. In many cases, countries have focused on institutions and mandatory regulations without the supporting foundation of awareness and private sector capacity to participate in setting standards and meeting requirements.

Commodity exchanges and the development of formal trade

Commodity exchanges can enhance the supply response of private agents to government procurement opportunities and lower the risks of food trade across borders, making it more transparent. Commodity exchanges can play an important role in reducing transaction costs by reducing the number of intermediaries involved in completing transactions, assuring product delivery consistent with quality standards and reducing working capital requirements per unit of sale. They can reduce risks associated with the transfer of ownership rights and with payment for goods delivered. Exchanges generally improve price discovery and the dissemination of market information. In doing so, exchanges can reduce margins between farmers and consumers based in other countries and improve the operation of cross-border trading networks. When future contracts (discussed subsequently) are traded on exchanges they also assist principals in hedging against price and performance risk.

Still, actual efforts to start up commodity exchanges in Africa have so far been disappointing. Since the early 1990s a number of African countries have launched agricultural commodity exchanges. So far, however, only South Africa has succeeded in making its exchange economically viable.



Following agricultural market liberalization in the mid 1990s, private investors in both Zambia and Zimbabwe started up “first generation” exchanges. Despite their apparent initial success, the Zambian and Zimbabwean exchanges subsequently floundered. Their failure can be ascribed directly to government interventions in underlying national maize markets. Both exchanges rapidly lost trading volume and ultimately suspended operations when government interventions in underlying markets brought about increased price volatility and made trading and hedging on the two exchanges too risky for principals. Counterparties to traders, who enjoyed the advantage of access to superior information about government intentions, simply retired from the exchange. The lesson learned from this experience is that exchanges that attempt to price and sell risk cannot succeed without a level playing field and without even-handed and predictable government policies. Exchanges simply cannot compensate for food trade policies that are not prudent and rule-based.

Other exchanges established in the 1990s include the Kenyan Agricultural Commodity Exchange (KACE), which has unwound and no longer supports actual trades on its trading floor. With donor support KACE now operates as a market information service. A second attempt to launch a commodity exchange in Nairobi, under the auspices of the stock exchange, also failed for the same reasons as the exchanges in Zambia and Zimbabwe: too much government intervention.

Among first generation exchange start-ups only the Uganda Commodity Exchange (UCE) still hopes to sustain itself through trades completed under its auspices. The UCE offers a number of contracts, including ones for delivery outside Uganda. It has also adopted a low-cost, internet-based trading format to increase its volume and reduce its transaction costs. In the meantime, the UCE continues to operate as a pilot. With ongoing donor support UCE has become active in promoting a complementary warehouse receipt system. So far, however, UCE has not been able to attract enough trade volume in warehouse receipts to become self-sustaining.

Since 2004 several other exchanges have started up in SSA. These include one in Malawi started in 2004, whose role has been limited to date, namely, providing price information. Nigeria’s Abuja Securities and Commodity Exchange (ASCE) opened in 2006 and started trading in maize and soybeans contracts. So far, it has achieved only limited trading volume, and the Exchanges management has not been able to achieve significant growth beyond its limited initial volume. The Ethiopian Commodity Exchange (ECX) started operations in 2008. The ECX is a government owned and managed exchange that initially focused on maize, wheat, and beans. However, when it was unable to attract enough break-even volume in these commodities, it turned its focus to export crops, with the government forcing companies to move private stocks through the exchange. A second Zambian exchange, ZAMACE, opened for business in 2007.

Exchanges need to be linked to real market networks and to production and milling operations. The value of exchanges is determined ultimately in these real sector activities, and trading volume created in these sectors allows exchanges to achieve break-even volumes. Only by building enough trading volume are exchanges able to cover their overhead costs and realize a profit. For this reason, the geographic domain over which an exchange is chartered to operate materially effects its economic viability—in general, the larger the territory the larger the potential transaction

volume. For this reason, mergers and consolidations of exchanges, within national borders and also across borders, can enhance their economic sustainability. This process can begin with the cross listing of contracts sold on two or more exchanges contemplating merger. Except for South Africa, food markets in other parts of Africa seem too small individually to support multiple national commodity exchanges.

Market information

Markets can provide traders and producers with essential information about the demand and availability of goods in quantity and quality through pricing and other indicators. Of course, in reality not everyone has easy access to this market information; small-scale producers and traders especially, often located far from bigger and regional markets, lack essential information. The information gap can affect a variety of areas, such as up-to-date prices, changes in consumer taste and demand, as well as new rules and regulation covering product safety and quality.

Without accurate market information, farmers and traders are reluctant to take on additional risks, such as expanding production and exporting to new markets across Africa. The entrepreneurial risk is increased, especially deterring small-scale producer/traders who, without safety nets if the enterprise fails, run existential risks.

What are the causes of these information disparities? Lack of transport and telecommunication infrastructure used to be the main barriers to collecting market information. For example, producers in remote areas might have to depend on traders and facilitators to convey essential market information since long distance and prohibitive transportation costs require the use of middlemen to reach regional markets.

But new technology has brought huge changes and opportunities to African small- and medium-size traders. The new telecommunication infrastructure is a valuable component for African countries to improve the competitiveness of many sectors, including small- and medium-sized enterprises, since it allows the almost instant and affordable exchange of market prices and other information. Box 13 shows how reducing the costs of obtaining information can have positive impacts on both consumers and producers, reducing prices for consumers and increasing returns to traders and producers.

What measures can be taken to support the functioning of local as well as regional markets in Africa? One option is encouraging and developing market-supporting institutions that provide the appropriate knowledge. For example, instead of attempting to furnish everyone directly with market information, which would be costly and difficult, using intermediary institutions that collect and disburse the information can cut transaction costs.

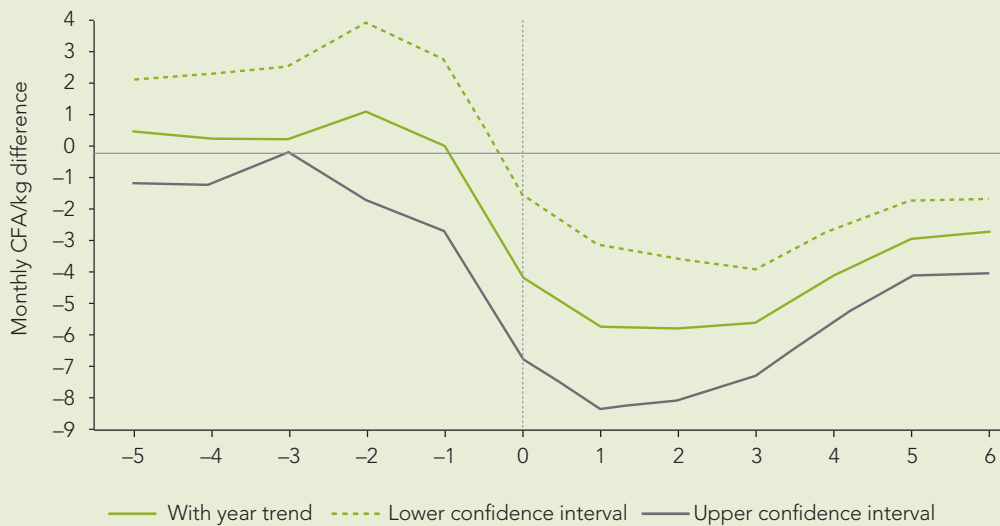
These institutions might come in different shapes. Some are run or supported by governments; others have evolved from the organizational needs of the private sectors and/civil societies. They have different mandates, resources and ways of operation, but all can be an important link between producers and markets.



Box 13: Improving information flows: Mobile phones and agricultural markets in Niger

The increasing coverage of mobile phones in Niger between 2001 and 2006 led to a reduction in the dispersion of agricultural prices across markets by 10 percent. Figure 8 summarizes the estimated impact on price dispersion of the introduction of mobile coverage for pairs of markets. The effect was larger in more remote markets and those without paved roads. Mobile phones brought about a significant reduction in search costs for traders, who previously had to travel to markets to obtain information on prices.

Figure 9: Impact of mobile coverage on the dispersion of agricultural prices in Niger



Detailed analysis suggests that mobile phone use led to both lower consumer prices and higher prices for traders because of lower search costs and the more efficient distribution of gains. In the grain price crisis that hit Niger in 2004/2005, over 80 percent of markets in non-crisis regions had cell-phone towers compared to 20 percent of crisis regions.

Source: Aker (2008) and (2010).

Governmental and government supported institutions

Government ministries and associated agencies generally have several major tasks, including providing the policy and regulatory framework, enforcements, and export and investment promotion services. Although the results of government and independent agencies providing market-support services have been mixed, many countries (not only in Africa) have established such

agencies. Government ministries and agencies can provide valuable services by being transparent about regulatory procedures and by furnishing up-to-date trade and economic data. Ideally, this includes data not only at the national level but also from regional and local branches that collect and supply accurate statistics.

A major hurdle is that governmental agencies have to picture themselves as “service providers to the private sector,” willing to offer data, statistics, and analysis. This often requires changes in the mandate and qualifications for government employees in these institutions. In addition, export promotion agencies have to support potential exporting companies through access to overseas market information, such as standards, consumer preferences, and import restrictions. This requires genuine knowledge of regional and overseas markets, as well as a good understanding of private sector processes and needs.

What are the key characteristics for market-supporting information systems to be successful? Among the main points are cost effectiveness for its users, ability to provide up-to-date market data and information, and sustainability beyond initial financing (sometimes provided by international donors). In addition, if government agencies are tasked with providing the information, they must gain the trust of the private sector and be accepted as honest brokers.

To assist institutions, private or governmental, to provide market support, several issues should be considered:

- Information is often considered a source of power, and to create free exchange of information might require convincing public and private partners that both sides benefit in the long term from an open and transparent arrangement.
- Web-based systems will reach only certain users, generally the more sophisticated businesses that require less support.
- Consider using existing distribution systems instead of creating new parallel structures that might not be sustainable (if depending on donor funding) or accepted by local private sector actors.
- Create widely trusted sources of information; government entities might lack trust by the private sector.

Institutions that facilitate risk management

There are a number of institutions that can help address the inherent risks in agricultural markets. Institutions that function well can provide governments with greater confidence as they open up their food markets to regional trade. A key challenge is to help countries design positive instruments and mechanisms that draw limited costs from trade and public resources *and* ensure populations access to food under any situation. Here, the development of regional solutions can be critical, as they have already helped improve food security in other parts of the world, such as Southeast Asia (Box 14).



Box 14: Regional food security and trade policy in Southeast Asia

As in many other parts of the world, soaring prices during the last global food spike in 2007/08 led to diverse policy responses among Southeast Asian countries, which depended on whether they were net exporters or net importers of food. While the former tended to increase taxes and restrictions on exports, the latter generally adopted policies to reduce import restrictions. Regional efforts took a backseat, despite the existence of a regional food security mechanism that pre-dated the crisis. Indeed, the Association of Southeast Asian Nations (ASEAN) Food Security Reserve (ASFSR) dates back to 1979, with the objective of ensuring the long-term food security of the region. The initiative involved the establishment of an Emergency Rice Reserve (AERR) that could be used during a food crisis, although ASEAN had never effectively used it. When the 2007/08 food crisis hit the region, the amount of rice in the AERR was just 87,000 tons—sufficient to feed the 550 million people of ASEAN for just half a day.

It was not until the 41st Ministerial Meeting in Singapore in July 2008 that ASEAN began to look for regional alternatives to address their food security concerns. At the time, a joint communiqué was issued that emphasized the importance of regional and international efforts to ensure the efficient functioning of market forces. In relation to rice trade, ASEAN encouraged all countries to avoid the use of price distorting export subsidies and other forms of protection as well as provide market access to competitive food exports. More recently, at the 14th ASEAN Summit, held in Thailand on February 28 to March 1, 2009, the group adopted the ASEAN Integrated Food Security (AIFS) framework and the Strategic Plan of Action on Food Security (SPA-FS) to address the long-term food security concerns and improve the livelihoods of farmers in the region. The AIFS and SPA-FS were designed to increase food production, reduce post-harvest losses, promote a market and trading system for agricultural commodities and inputs, and put into operation the existing regional food emergency relief arrangements. Priority commodities were identified by the AIFS as rice, maize, soybeans, sugar and cassava, with the option to include other relevant commodities at a later date, especially those considered alternative crops for staple food consumption.

ASEAN is also involved in wider East Asian regional efforts (with China, Japan, and South Korea) to address food security concerns, including the ASEAN Food Security Information System (AFSIS) and the East Asia Emergency Rice Reserve (EAERR). The former is designed to facilitate food security planning, implementation, monitoring, and evaluation through the systematic collection, organization, management, analysis, and dissemination of food security information. The latter grew out of a realization of the weakness of the AERR.

Source: Chandra and Lontoh (2010).

To date, regional trade organizations have focused primarily on traditional means for using trade to enhance food security. For the most part, these have been limited to treaties among member countries, which entail the stepwise lowering of internal trade barriers in an effort to create larger and more stable regional markets. This approach is more enabling than it is proactive. Some

new thinking and new testing may be needed to motivate national leaders concerned about forfeiting control over local supplies during crisis periods, and who may worry about relying on the limited enforcement abilities of RTAs or the good will of trading partners, who may have food security problems of their own.

There is a range of options that governments can explore to support a strategy of open and predictable regional trade policies. The relevance of these will vary according to the country and the specific food security challenges.

Futures and options markets for food staples

One alternative to holding physical stocks of food staples through food security reserves or trade interventions is the acquisition of contracts that guarantee the supply of food commodities in the event that supplies are needed. The key requirements are that (a) these contracts must be credible; (b) they can be executed as and when needed while locking in a maximum price for a guaranteed supply on a fixed date; and (c) they must provide the option of not executing the contract if extra food supplies are not needed. However, one of the major difficulties in using futures and options to manage food staples in SSA is that there are few relevant markets. Table 6 lists the world's major food commodity futures and options exchanges. As seen, almost all the high-volume markets are located in developed countries, where their contract specifications are designed to meet the needs of developed country producers, traders, and processors.

The important exception is the South African Futures Exchange (SAFEX), which provides regional contracts for white maize, yellow maize, wheat, and sorghum in the form of call options on futures contracts—purchased by paying a premium, executed when needed, or foregone and

Table 8: Major global futures and options exchanges for food staples

Location	Market	Main food crop contracts
Chicago	Chicago Board of Trade	Yellow maize, wheat, rice
Kansas City	Kansas City Board of Trade	Wheat
Minneapolis	Minneapolis Grain Exchange	Yellow maize, wheat
Winnipeg	Winnipeg Commodity Exchange	Wheat
Pan-European	Euronext	White and yellow maize, wheat, potatoes
Argentina	Rosario Futures Exchange	Maize, wheat
Brazil	Bolsa de Mercadorias and Futuros	Maize
Tokyo	Tokyo Grain Exchange	Maize, rice
Dalian	Dalian Commodity Exchange	Maize, rice, beans
Zhengzhou	Zhengzhou Commodity Exchange	Wheat
India	National Commodity and Derivatives Exchange	Maize, rice
Pretoria	South Africa Futures Exchange	White and yellow maize, wheat

Source: World Bank (2005).



closed when not required—all without requiring governments to take ownership of the physical commodity unless they need it. Hedging against agricultural price risks using SAFEX has already been done in Malawi in recent years, saving the government an estimated US\$60/ton compared to imports at spot prices (COMESA 2009).

While the potential to use futures and options exists in SSA, a key question remains about who should do the hedging. To use call options requires a fund that allows for the purchase of the commodity if required as well as to cover any premiums. Such a fund could operate regionally. But the use of futures and options markets by the public and the private sector are unlikely to coexist easily, so governments would need to choose between centralized control over procurement and hedging and a decentralized approach that encourages more private sector participation (Box 15).

Warehouse receipt systems

Innovative risk management strategies such as warehouse receipt systems can also negate the need to hold or maintain physical stocks of food staples. These allow farmers to deposit a stated quantity

Box 15: Futures and options for food staples: Who should hedge the risk?

Small-scale farmers and traders would find the cost of individual participation in futures and options markets prohibitive. And the volume specifications on most global futures and options contracts would be too high. Larger traders and processors might have the potential to use these instruments. However, the most commonly suggested strategy is for SSA countries to use global food staple futures and options contracts via a public agency (typically the same one that regulates imports). But if a public agency does the hedging, it is not always clear how the benefits will be passed to producers, traders, processors, and consumers. If the public agency is involved in procurement then the gains or losses can be passed back by altering domestic prices bid or offered by the agency.

One means of providing coordination without direct procurement is for a public agency to act as an intermediary. One example is the Agricultural Product Options Program of ASERCA in Mexico. Grain producers purchase a subsidized option premium from the program in return for a guaranteed minimum price at harvest. ASERCA then pools hedges for all of the participating producers, using Chicago Board of Trade options contracts. A similar program operates in Brazil.

Intermediation can also occur without any direct government involvement. For example, large-scale traders, processing firms, supermarket chains, cooperatives, and farmers organizations can offer fixed or floor price contracts to small-scale farmers. The intermediaries pool the risk and hedge them using global futures and options markets to lock in future supplies.

Source: World Bank (2005).

of a specified quality of a commodity into a private warehouse, where it can be pooled with other commodities of similar quality. A receipt is issued to the owner as evidence of location and ownership. The receipt is a negotiable instrument that can be sold or used as collateral for a loan, backed by the claim to the commodity held in the warehouse (World Bank 2005).

Warehouse receipts systems facilitate risk management in three ways. First, they provide farmers with improved access to formal credit since the receipts can be conveyed to a financial institution as verifiable collateral for loans to mitigate the consequences of a shock. Second, the warehouse receipt system protects farmers against low sale prices for their commodities by providing them with safe storage of commodities until market prices become attractive, at which time the stock can be sold and any credit is reimbursed. This allows for diversification of sales across time, which helps reduce seasonal price volatility. Third, the system helps large-scale accumulation because the warehouse physically groups a set of consignments of known quality so that a large-scale buyer (e.g., government, miller, aid agency) can target these collectively. In addition, governments do not have to incur maintenance activities themselves for the stored commodities; private warehouse operators do this to ensure that quality products are available whenever needed.

However, private storage capacity remains limited in the SSA region, and the development of these market-based systems requires predictable and consistent government policies to allow companies to make investments in buildings and management capacity (UNCTAD 2009). Early attempts to develop warehouse receipt systems and other sources of trader finance in staple food production and wholesale markets (e.g., Kenya, Ghana, and Zambia) have faltered because of competition with direct government operations in markets (Jayne et al. 2007). Specifically, for such systems to work governments must restrict activities that undermine their success. For example, if cereal prices drop significantly after warehouse receipt system deposits, the value of the collateral may fall to a level less than that of the receipts, making the cereals risky assets. Though the free market could also bring about this situation, it would be aggravated by NTBs, such as export bans, which tend to reduce prices. Thus, for warehouse receipts systems to work, the use of NTBs should be better disciplined or abolished.

NTBs also increase the risk of storage by making it difficult to predict future prices—thus the decision to store versus sell at certain points in time. In the same way, the strategic reserve activities of governments must also be limited (e.g., selling at times of high prices) to prevent state interference with these private sector attempts at promoting food security.

Kenya provides a useful example of how public sector intervention can create problems. In 2008 the Eastern Africa Grain Council, in partnership with Lesiolo Grain Handlers, set up a pilot warehouse receipt system for maize in Nakuru. The project failed to perform not only because of a prolonged drought but because price controls meant that the government offer for maize was above the price offered at Lesiolo (Minney 2010). The impact of better price predictability on storage investments is evidenced by Uganda, where private storage capacity has grown in response to its open trade policy for food staples and increased demand from the WFP (World Bank, 2009a).



Weather-indexed insurance

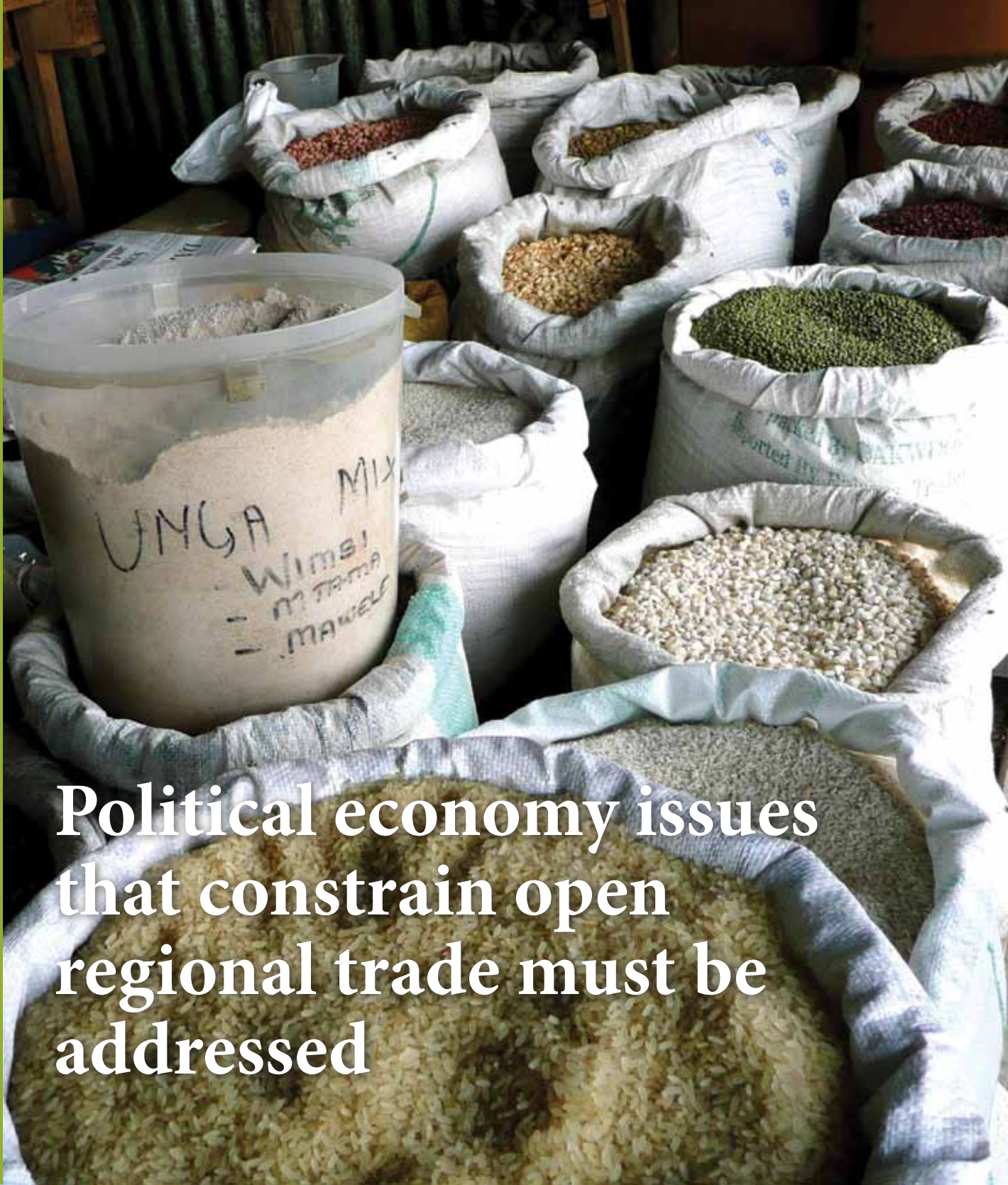
While not designed specifically for food price risk management,²¹ weather-indexed insurance can mitigate the impacts of climatic shocks on farmers. This in turn can allow farmers to invest in more productive seeds and fertilizers that would otherwise be too risky in the face of crop failures. Without insurance, households adopt strategies that reduce risks but also limit income potential. Hence, effective insurance against such weather-related risks can allow households to move into farm activities that yield higher incomes.

Weather-indexed insurance is a financial derivative written against deviations in average rainfall or temperature indices constructed from data measured at weather stations. For example, if observed rainfall is below a set threshold, leading to low yields, an insured farmer would receive payment to compensate for reduced food staple production. Weather-indexed insurance is common in developed countries (and used by firms dependent on the weather, e.g. power companies) but is less common in developing ones, although India is developing a private market for rainfall insurance, and several other schemes have been piloted or investigated (e.g., in Malawi for its maize-producing regions).

While the potential for weather-indexed insurance is substantial, progress needs to be made with regard to data and information on weather and the impacts of severe weather conditions in order to allow insurance providers to develop new products (Skees and Collier, 2008). Improvements in legal and regulatory environments may also be necessary for creating enforceable contracts that both buyer and seller can trust. In many African countries, appropriate laws and regulations for the development and use of weather insurance products are not in place. Policy predictability is also crucial. Insurers will be reluctant to sell policies if there is a possibility that the government could alter the terms of the insurance contract after the insurance is sold.

The key issue with the various institutions discussed in this section that have developed to address risks in agricultural markets is that these institutions cannot address, and indeed will be constrained by, policy-related risks. In addition, efficient institutions are more likely to develop at the larger scale that would be enabled by open regional trade. Weather-indexed insurance, for example, becomes more viable if the financial institution is able to offer cover to farmers over a wide region such that weather related shocks will affect only particular area.

²¹ Weather-indexed insurance is not focused directly on managing price risks since, when farmers receive payments on their insurance, yields would be low and prices higher.



**Political economy issues
that constrain open
regional trade must be
addressed**

Despite commitments to opening up regional trade in food, implementation has been weak, and governments continue to intervene to restrict trade and maintain the barriers and constraints outlined earlier. A program of regional trade reform can only be credible if governments are fully committed to it and take ownership of the process (Jayne et al. 2002). An indication of this is the extent to which governments will seek to build a domestic constituency for reform, explaining the need for and impacts of policy change to generate a political consensus for integrated regional agricultural markets. Most African countries lack such efforts, and there has been no open discussion on the impact of current policy stances and the benefits of a regional approach to food security.

Opening up food staples to regional trade will lead to both winners and losers. Where reform reduces the mark-up between producer and consumer prices, farmers and poor consumers will gain; intermediaries earning rents, both in public sector agencies, and well-connected private sector interests will likely lose. When there is a lack of political and social consensus on the need for and nature of agricultural reform, it is often difficult to implement and sustain policy change (Aksoy and Onal 2011). This is especially true if this lack of consensus prevents the putting in place of new institutional arrangements that moderate the impact of future shocks and instability in agricultural markets. In the face of a shock, such as increased price volatility in international markets or an unusual (good or bad) domestic harvest, those affected adversely by the reforms push quickly for a retrenchment of the policy changes. This in turn creates more policy uncertainty and stifles private sector responses to the initial reforms.

In many countries the absence of a stable and predictable policy environment at the national and regional level has created mistrust between government and the private sector. This mistrust constrains private sector investment in food, and limits the capacity of the private sector to expand production and trade. It also encourages governments to continue to hedge against the failure of the private sector to supply food when shortages do arise. When policies that affect a state's fair purchase or sale of food stocks or its raising or lowering of food trade barriers are implemented in ways consistent with previously announced principles, they will more likely induce positive responses from the private sector and mobilize private resources.

A failure to create a business environment in which government announcements of intent can serve as a credible basis for private sector action has been termed the "credible commitment problem" (Tschirley and Jayne 2009). In most SSA environments in which food security agencies operate, private parties cannot be certain that plans or programs announced by the government will actually be carried out. This precludes cooperation and coordination and adds uncertainty to government trade policy formulation, which is self-defeating and which breeds an unwillingness to surrender control over emergency food supply to private traders and millers.

Indeed, the recent history of food trade policy in SSA suggests that any number of unforeseen contingencies, such as budget limitations, donor refusal to provide financing, and under or over estimations of food supply, may make governments change direction and act in ways other than those initially announced. The sudden imposition of, say, export restrictions can drastically affect a trader's bottom line. Similarly, traders who refuse to act on signals that government sends, both through its announced policies and its actions, can frustrate government efforts to achieve its goals.

So, if traders refuse to import enough grain when governments lower tariffs or remove quantitative restrictions, or when traders refuse to sell their standing inventories to food security agencies because they are uncertain about the ability of government authorities to pay—or in fact, about the price and channels through which those authorities will ultimately sell purchased grain—government efforts to respond to food shortages will be frustrated. This creates a situation in which private sector firms are motivated more by fear of loss than by the opportunity for gains. Without trust, the government and the private sector undermine the interests of each other, and trading inaction, inventory liquidation, and a retreat from the market quickly replace risk taking and active involvement to increase food supply.

Third-party guarantees have succeeded in overcoming “credible commitment problems” outside Africa. Strong, independent institutions can provide these guarantees and thus enforce credible commitments on the parties directly involved. The two most relevant of these commitment-enforcing institutions are competitive markets and independent judiciaries. Competitive markets can assure that private sector responses to government offers will be forthcoming from some part of a grain trading sector in which firms develop and implement their trading strategies autonomously. In competitive markets, individual firms respond independently to changes in price, openings of new profitable opportunities, or discoveries of new market information. By contrast, in non-competitive markets collusion and anti-competitive coordination of responses preclude first-mover advantages and first-mover incentives. In non-competitive market contexts, government policies designed to provoke supply responses can be frustrated by a systematic refusal to deal.

Contracts can also help compensate for a lack of trust between trading parties, particularly ones that anticipate and assign responsibility for various contingencies. One form of contract, which could be useful in mitigating credible commitment risk, would assign price risk to government buyers and performance risk to private traders against specific collaterals. However, to provide mutual risk reduction benefits, contracts require legal institutions that will interpret and enforce them independently of government interests. Unfortunately, in SSA few successful precedents exist wherein contracts have been enforced through independent judiciaries against governments or government agencies. Neither institutional response—competitive markets or contract protected sales—have developed within SSA food staple markets to overcome the “credible commitment problem.”

The development of formal market institutions such as commodity exchanges, discussed in the previous section, can work to counteract non-competitive behavior between trading partners by substituting formality and autonomous interaction among traders for one-off negotiated trades developed face to face. They can also assist with price discovery and with the high visibility of delivery time and delivery place utility.

The culture in which food trade policy is developed and implemented in many African countries is one where speculative behavior is suspect and private sector intentions distrusted. The values and the perspectives of government officials and traders/millers are different; and unfortunately opportunities for mutual learning have been punctuated by periods of emergency food shortage, during which trust building has been subordinated to tactical, emergency food relief agendas. Jayne and Tschirley refer to these emergency periods that set back trust building as “the wicked problem.”



During these stressful periods, when a significant portion of a nation's population is at risk, sides are joined, distrust prevails, and suspicion and distrust replace mutual understanding and communication between traders/millers and government decision.

The end result is that governments assume an active, directive, and intrusive posture in the market to maximize their direct control to assure adequate food supplies. Because governments cannot manage all aspects of emergency food relief on their own, they try to control the behavior of traders, millers, and commercial farmers. In this environment, implementation will likely be highly directed, tactical and targeted, and more controlling than the kind of open, contestable, and even-handed approach around which mutual trust can best be built. In emergency circumstances, those private sector agents best known and most closely affiliated with government officials are most likely to be favored with contacts. Market oriented mechanisms are less likely to be trusted than other direct allocation, assignment, and delivery mechanisms. Public sector distribution of food is likely, for example, to replace indirect distribution through private sector millers and retailers.

Therefore, the contexts in which food trade policies are designed and implemented, as well as their modes of implementation, are important. Two related factors are essential for governments to create constituencies for reform and deal with the credible commitment problem, as well as provide a predictable, stable policy environment in which trade and the private sector can help moderate fluctuations in prices and deliver food security. They are the following:

(i) *An open and inclusive dialogue on food trade reform informed by timely and accurate data on the situation in global, regional, and national markets.* In many African countries decisions about food trade policies emerge primarily from the highest levels within governments, too often without real critical analysis or consideration of options. Special offices reporting directly to the president or prime minister are often charged with food security issues, including the opening and closing of borders to trade in food. In few countries does full responsibility for assessing and monitoring food trade policy reside with the minister of trade or the minister of agriculture. Agencies created within government to implement food policies, often through discretionary intervention into food markets, overly influence the policy dialogue, preempt private sector participation, and resist changes to the status quo.

The challenge for policy makers is to ensure the coordination of food trade policies across the numerous ministries and agencies that have a mandate over elements of food policy. At the same time, they must ensure that those charged with implementing food policy decisions do not advocate for particular policy stances. Reducing the range of trade barriers discussed will require action across many ministries and thus high-level oversight within the government.

Food trade policy is rarely subject to open discussion, and the interests and views of most interested stakeholders are seldom represented. When there is open discussion, the attitudes of key decision makers about the political, administrative, and economic viability of trade reform will be affected by those with political influence—both in government agencies whose size and influence depends on current institutional arrangements, and private sector interests, such as those that earn rents as intermediaries.

(ii) *A reform strategy that provides a clear transitional path to integrated regional markets rather than a single but politically unfeasible jump to competitive markets.* The nature and range of the

barriers to trade along the value chain—and the need to invest in market-supporting institutions—show that delivering integrated regional food markets involves more than a one-off commitment, and that reforms cannot be implemented by the stroke of a pen. Thus, for many policy makers the goal of open and competitive regional markets will not occur during their electoral terms. The reform strategy thus needs to define incremental steps that encourage investment by offering certainty to the private sector about policies. It should also deliver real and visible benefits, while allowing policy makers to move at a pace consistent with their capacities and political risks.

The first steps will set clear rules for public sector action and intervention in staples markets to minimize whatever uncertainties arise from discretionary interventions. The challenge is to provide discipline on short-term policy responses to short-term food insecurity that have negative long-term impacts on market development, productivity growth, and food security (Delgado 2011).

A clear and stable policy environment will have consistent policies on exports. To promote transparency and private sector participation, governments could commit to precise notification procedures, both nationally and regionally, before restrictions on exports could be implemented. Governments could agree to forego the use of export bans and apply an export quota announced early, which could be increased but not reduced during the marketing year (see Nkonde et al. 2011). This step would reduce uncertainty over exports to a degree but still provide governments with some control over supplies leaving the country. Specific metrics/objectives could then be defined on investment, productivity, and output to trigger increases in the export quota. This policy could be complemented by other measures to reduce the costs of export along the value chain, such as reducing the costs of obtaining an export permit.

Regarding interventions through public stocks and strategic reserves, Minot (2011) has proposed that countries commit to limiting public buffer stocks to a level that would satisfy three months of emergency needs. Governments would then retain the capacity to act in times of short-term food crises but would provide the private sector with greater certainty that governments will not act on an ad hoc basis to buy in or distribute staples from the stocks, with subsequent impacts on prices and profitability.

Decisions to buy into and sell from the public stocks are often improvised and determined by opaque political processes. Nkonde et al. (2011) propose that governments carefully identify and announce a price band for the staple food. This should be the outcome of an open discussion with all stakeholders. Purchases (sales) from a strategic reserve would be triggered when prices in a key location fall below (or rise above) the identified floor (ceiling) price. This approach would protect farmers from abnormally low prices and consumers from exceptional price increases. It would enable the government to use the strategic reserve to address short-run supply shortfalls and food emergencies while the private sector organizes greater imports or exports and food aid is mobilized.

Backed by open dialogue and information on stock levels and on decisions to sell and buy from the strategic reserve, these measures could promote greater understanding between private officials and the government, and encourage investment in private sector storage capacities. And with greater predictability over trade policies and measures to reduce barriers—as well as more competition along the value chain—the frequency of government buying or selling from the strategic reserve could over time be reduced, which would then spark more investment by the private sector.



Open and informed discussion of food trade policies and trust between the private sector and the government over food security would be reinforced by increasing access of all stakeholders to timely and accurate information on food staples. The international community recognizes that a lack of reliable and up-to-date information on crops supply, demand, stocks, and export availability caused hasty, ill-defined, and uncoordinated policy responses to recent price rises for staples, which then contribute to even greater volatility.

AMIS (Agricultural Market Information System), an initiative of the G20, was created to improve agricultural market information, analyses, and forecasts at both national and international levels. It also reports on abnormal international market conditions, including structural weaknesses, and tries to strengthen global early warning capacity on these movements. Other functions include collecting and analyzing policy information, promoting dialogue and responses and international policy coordination, and building data collection capacity in participating countries. The participants are the G20 countries, Spain, and non-G20 countries who hold a significant share in global production and trade of commodities covered by AMIS (wheat, rice, maize, and soybeans). From Africa, only Nigeria has been asked to participate as a non-G20 country.

The need for effective agricultural information systems at the regional level in Africa is equally strong. Trade policies are designed in a framework that considers the availability of food within the country and not the situation in the region. The lack of credible information on regional food stocks precludes this. Information on regional food availability is therefore essential to allow countries to take a regional perspective on food security. Regional communities in Africa have made some progress; for example, EAC and COMESA are working to build regional food balance sheets. But the international community can help build greater capacity and strengthen these institutions so that they play a stronger role in delivering up-to-date information and sound forecasts of agricultural market developments within Africa.

Knowledge platforms anchored in the AU that collect, analyze, and diffuse knowledge and best practices on agricultural trade policy reform along the whole of the value chain would support increased intra-regional trade in Africa. The platforms will bring together stakeholders, legislators and regulators, and unite sector and trade specialists. The platforms objective would be to ensure that countries wishing to explore reform options have access to (a) accurate information on rules and regulations that affect trade in staples; (b) the appropriate design of trade and regulatory reforms and the capacity required for effective implementation; (c) likely outcomes of specific reforms, including overall benefits as well as identification of those who may lose; and (d) policy options to address any adverse distributional consequences. The platform would be a way to bring together the various players to address the key issues of creating integrated regional markets for food staples. Platforms anchored at the Africa-wide level would also disseminate experiences and best practices to and from regions within Africa. This would also limit costly duplication of analysis, advice, and technical assistance across the different regional groupings in Africa.

Photograph by Aime Hoel, World Bank

Recommendations

The key recommendation from this paper is to proceed with policy reforms in two related areas. First, implement a set of measures that will remove barriers to regional food trade along the value chain. The nature of these barriers is often to cause economic waste (such as from unnecessary delays in crossing the border due to inefficient customs, burdensome documentary requirements) or to transfer rents to particular interests by constraining competition (for example, in transport and logistics and distribution). In these cases, the barriers to trade increase the gap between producer and final consumer prices and their removal will therefore tend to benefit both producers and consumers

Second, define a program of enhanced dialogue on regional food trade that leads to a set of rules and disciplines on government interventions into regional agricultural trade. This will provide greater certainty for private sector actors to make investment decisions that increase productivity and trade of staple foods. It will also give policy makers a degree of confidence that they have access to instruments they feel they need in times of crisis during the period when investments are made in response to greater policy certainty.

At this time we include an indicative action matrix to provide a base for discussion and dialogue between stakeholders at the national level and in regional communities. The table provides an illustrative, but far from exhaustive set of action areas. These are accompanied by examples of a menu of policies that could be considered. The menu will tend to vary according the countries/regions and product and different countries may wish to proceed at different rates and with different options from the menu.

Ideally, each country will define a set of actions to achieve these goals in coordination with regional partners around which the international community can then organize appropriate support. We propose two new knowledge platforms, one to support reform of regulations governing trade in food staples and trade in seeds and fertilizers and one to support trade facilitation and logistics reform.

A critical part of the process moving forward will be to define clear and monitorable outcomes/indicators for each action item. These will be essential to hold officials and leaders accountable to commitments they make to deliver open regional markets for food staples. They could be made available as part of an implementation scorecard and be a central element in an annual review by each of the RECs on progress in achieving regional integration of food markets.

Indicative Action Matrix

Action Area 1: Improve policies along the value chain to reduce the gap between producer and consumer prices

Action areas	Policy menu	Monitorable outcomes	Support from WB and international community
Improve conditions facing small cross-border traders	Traders charter, Simplified trade regime, simplified taxation (specific tax per crossing), Training for officials, Support to traders associations	Number of officials trained; amount of support to traders associations and number of traders being trained; regular monitoring of borders shows decline in harassment and costs of crossing border for small traders.	Financial and technical support for publication of charter, training of officials and support to traders organizations Regulation Knowledge Platform anchored in the RECs disseminates information and knowledge on improving cross-border conditions for small traders
Reduce documentary requirements and costs of crossing borders	Disseminate market information via mobile phones Review number and rationale for import and export licenses and permits Reduce costs of obtaining necessary import and export permits Expedited/fast track processing of food staples	Number of permits and licenses, ability to obtain licenses and permits at border, cost and speed of issuance.	Support for peer review mechanism anchored in each REC of documentary requirements for food staples and their application based around best practices. Financial support for Food Staples Regulation Knowledge Platform anchored in the RECs disseminates information and knowledge on good practices and reform regarding permits and licensing.

(continued on next page)



Action Area 1: Improve policies along the value chain to reduce the gap between producer and consumer prices (continued)

Action areas	Policy menu	Monitorable outcomes	Support from WB and international community
Reducing transport and Logistics Costs	<p>Remove road blocks</p> <p>Harmonize vehicle weight and axle load requirements</p> <p>Allow reciprocal back haul on regional trucking routes</p>	<p>Reduction in costs of transporting staples along routes connecting regional markets</p>	<p>Include as policy actions in regional development policy operations being developed by the WVB.</p> <p>Support for data collection on transport costs and access to transport for food staples.</p> <p>Trade Facilitation and Logistics Knowledge Platform disseminates information and knowledge on transport regulation and trade facilitation</p>
Standards	<p>Improve coordination between customs and phytosanitary services</p> <p>Pursue equivalence, mutual recognition and harmonization of standards for staples where relevant</p>	<p>Time to obtain clearance from SPS authorities, number of consignments rejected at the border</p>	<p>Finance for Food Staples Regulation Knowledge Platform. Include as policy actions in regional development policy operations being developed by the WB. Put as focus of regulatory reform programs.</p>
Facilitate cross-border movement of agricultural specialists	<p>Reduce time and cost to obtain work permit</p> <p>Create regional database of specialists</p>	<p>Regional database created, monitor usage, time and cost for agronomists to get work permit</p>	<p>Expand scope of current COMESA-World Bank knowledge platform on professional services to agricultural specialists</p>
Facilitate the inclusion of smallholders in food distribution networks	<p>Support farmer associations and coops – to increase bargaining power</p> <p>Creating incentives for the development of private storage facilities.</p>	<p>Ratio of producer to consumer price, number of smallholders selling to established distribution networks.</p>	<p>Technical assistance to farmers associations</p>

Action Area 2: Provide a more transparent and predictable food trade policy regime

Action area	Policy menu	Monitorable outcomes	Support from WB and international community
<p>Improve access of all stakeholders to timely and accurate data of food staples</p>	<p>Provide information on regional food stocks</p> <p>Improve data on market prices for key staples</p>	<p>Real-time information on prices for top three staples in 10 main markets in each county is available to all stakeholders.</p>	<p>Increased technical support and capacity building for market information systems with a focus on food staples.</p>
<p>Support open dialogue on food trade policies and options for reform</p>	<p>Engage all stakeholders in open discussion of new policy measure prior to implementation</p> <p>Use light regulatory impact analysis to review all new trade measures and explore policy alternatives</p> <p>Establish regular meetings with private sector for exchange of information on production and trade conditions</p>	<p>Public consultation of new measures affecting food trade.</p> <p>Representatives of farmers, traders and consumers comment on measures.</p>	<p>Financial support for knowledge platforms</p> <p>Provide experts with relevant knowledge via platforms</p> <p>Technical assistance for application of RIA.</p>
<p>Ensure access to information on food trade and related policies</p>	<p>All existing trade measures are notified to RECs and AU</p> <p>All new trade measures are notified to RECs and AU (? Months) before being implemented</p>	<p>Regional databases of all trade measures applying to staples on internet.</p> <p>Farmers and traders have at least two months to adjust to any new trade measures.</p>	<p>Support for information dissemination through database development</p>
<p>Move towards rules and greater discipline on food trade policies</p>	<p>Provide clear criteria under which export bans and taxes will be implemented, e.g., only if strategic food reserves fall to less than three months supply</p> <p>Remove staples from sensitive product list in regional trade agreements</p>	<p>All countries provide clear commitments on export bans and taxes on staples.</p> <p>Staples are removed from sensitive lists by end 2012.</p>	



References

- Abdoulaye, T. and J.H. Sanders (2005). "Stages and Determinants of Fertiliser Use in Semiarid African Agriculture: The Niger Experience." *Agricultural Economics*, 32: 167–79.
- Abdulai, Awudu, Michael Johnson, and Xinshen Diao (2006). "Leveraging Regional Growth Dynamics in African Agriculture." *African Journal of Agricultural and Resource Economics* Vol 1: pp 49–66.
- Ahmed, Syud Amer, Noah S. Diffenbaugh, Thomas W. Hertel, and William J. Martin (2011). "Agriculture and Trade Opportunities for Tanzania: Past Volatility and Future Climate Change." Mimeo, World Bank.
- AGRA (2009).
- Alemu, Dawit (2010). "The Political Economy of Ethiopian Cereal Seed Systems: State Control, Market Liberalisation and Decentralisation." Future Agricultures Working Paper 17.
- Aker, Jenny (2008). "Does Digital Divide or Provide? The Impact of Cell Phones on Grain Markets in Niger." Working Paper 177. Bureau for Research and Economic Analysis of Development.
- Aker, Jenny (2010). "Information from Markets Near and Far: Mobile Phones and Agricultural Markets in Niger." *American Economic Journal: Applied Economics* 2: 46–59.
- Aksoy, Ataman and Anil Onal (2011). "Consensus, Institutions, and Supply Response: The Political Economy of Agricultural Reforms in Sub Saharan Africa." Policy Research Working Paper 5782, World Bank.
- Ariga, Joshua and T.S. Jayne (2011) 'Fertilizer in Kenya: Factors Driving the Increase in Usage by Smallholder Farmers', in Punam Chuhan-Pole and Manka Angwafo (eds) *Yes Africa Can: Success Stories from a Dynamic Continent*, World Bank, Washington, 269–88
- Bromley et al. (2011). "Regional Agricultural Transport and Trade Policy Study, USAID West Africa Trade Hub." Technical Report No. 42, March 2011: p.84.
- Bumb, Balu, Michael Johnson and Porfirio Fuentes (2011). "Policy Options for Improving Regional Fertiliser Markets in West Africa." IFPRI Discussion Paper 01084.
- Chandra, A. and L. Lontoh (2010). 'Regional Food Security and Trade Policy in Southeast Asia: The Role of ASEAN.' Series on Trade and Food Security – Policy Report 3, International Institute for Sustainable Development, Winnipeg.
- COMESA (2009). 'Staple Food Trade in the COMESA Region: The Need for a Regional Approach to Stimulate Agricultural Growth and Enhance Food Security.' Twenty-Fourth Meeting of the Trade and Customs Committee, Nairobi.
- Delgado, Christopher (2011). "The Increased Need for Transparency in Global Cereal Policies and Data." Presentation at OECD conference Paris, November 2011. <http://www.oecd.org/dataoecd/18/54/49097442.pdf>
- Dercon, Stefan and John Hoddinott (2005). "Livelihoods, growth, and links to market towns in 15 Ethiopian villages." FCND discussion papers 194, International Food Policy Research Institute.



- Dorosh, P. (2001). "Trade Liberalization and National Food Security: Rice Trade between Bangladesh and India." *World Development* 29(4): pp. 673–689.
- Francois, J. and I. Wooton (2010). "Market Structure and Market Access." *The World Economy*, 33: 873–893.
- Fulponi, L., M. Shearer, and J. Almeida (2011). "Regional Trade Agreements—Treatment of Agriculture." OECD Food, Agriculture and Fisheries Working Paper, No. 44, OECD.
- Gourdon, J. and O. Cadot (forthcoming). "Quantifying the Effects of Non-Tariff Measures in Africa." World Bank, Washington, D.C.
- Haggblade, S., J. Govereh, H. Nielson, D. Tschirley, and P. Dorosh (2008). "Regional Trade in Food Staples: Prospects for Stimulating Agricultural Growth and Moderating Short-Term Food Security Crises in Eastern and Southern Africa." Paper prepared for World Bank.
- IFPRI (2010). "Liberalizing Foodgrains Markets: Experiences, Impact and Lessons from South Asia." IFRPI Issue Brief 64, International Food Policy Research Institute.
- IMF (2011). "Regional Economic Outlook Sub-Saharan Africa: Sustaining the Expansion." World Economic and Financial Surveys, International Monetary Fund, Washington, D.C.
- Jaffee, Steven, Spencer Henson, Mirvat Sewadeh, Patricia Pentney, and Flora Musonda (2005). Tanzania's Agro-Food Trade and Emerging Sanitary and Phytosanitary (SPS) Standards: Toward a Strategic Approach and Action Plan." World Bank, Washington, D.C.
- Jayne, T., J. Govereh, A. Mwanaumo, J.K. Nyoro, and A. Chapoto (2002). "False Promise or False Premise? The Experience of Food and Input Market Reform in Eastern and Southern Africa." *World Development* 30, 1967–85.
- Jayne, T., A. Chapoto, and J. Govereh (2007). "Grain Marketing Policy at the Crossroads: Challenges for Eastern and Southern Africa." Paper prepared for the FAO Workshop on 'Staple Food Trade and Market Policy Options for Promoting Development in Eastern and Southern Africa,' March 1–2, 2007, Rome.
- Jayne, T., A. Chapoto, I. Minde, and C. Donovan (2009). "The 2008/09 Food Price and Food Security Situation in Eastern and Southern Africa: Implications for Immediate and Longer Run Responses." International Development Working Paper No. 96, Michigan State University.
- Koester, U. (1986). "Regional Cooperation to Improve Food Security in Southern and Eastern African Countries." Research Report 53, International Food Policy Research Institute, Washington, D.C.
- Kunaka, Charles (2011). *Logistics in Lagging Regions: Overcoming Local Barriers to Global Connectivity*. World Bank, Washington.
- Kweka, Josaphat (2011). "Addressing Tanzania's Standards Management Challenges from a Strategic Trade Perspective." Policy Note, Africa Region, World Bank.
- Magalhaes, J. (2010). "Regional Sanitary and Phytosanitary Frameworks and Strategies in Africa." Report for the Standards and Trade Development Facility.
- McCorriston, Steve (2011). "Commodity Prices, Government Policies and Competition." Paper presented at Symposium on Trade in Primary Product Markets and Competition Policy, Geneva, September.

- Michalopoulos, S. and E. Papaioannou (2010). "Divide and Rule or the Rule of the Divided? Evidence from Africa." CEPR Discussion Paper 6414.
- Minde, Isaac and Michael Waithaka (2006). "Rationalization and Harmonization of Seed Policies and Regulations in Eastern and Central Africa: Effecting Policy Change through Private Public Partnerships." Paper presented at the International Association of Agricultural Economists Annual Meeting, August 12–18, Queensland, Australia.
- Minney, T. (2010). "NSE to Launch Commodity Exchange 'by June.'" African Capital Markets News, March 13.
- Minot, Nicholas (2011). "Transmission of World Food Price Changes to Markets in Sub-Saharan Africa." Discussion Paper 01059, IFPRI.
- Nin-Pratt, Alejandro, Michael Johnson, Eduardo Magalhaes, Xinshen Diao, Liang You, and Jordan Chamberlin (2009). "Priorities for Realizing the Potential to Increase Agricultural Productivity and Growth in Western and Central Africa." Discussion Paper 0876, IFPRI.
- Nijhoff, J., T. Jayne, B. Mwiinga, and J. Shaffer (2002). "Markets Need Predictable Government Actions to Function Effectively: The Case of Importing Maize in Times of Deficit." Policy Synthesis 6, Food Security Research Project, Lusaka.
- Nijhoff, J., D. Tschirley, T. Jayne, G. Tembo, P. Arlindo, B. Mwiinga, J. Shaffer, M. Weber, C. Donovan, and D. Boughton (2003). "Coordination for Long-Term Food Security by Government, Private Sector, and Donors: Issues and Challenges." Policy Synthesis 65, Michigan State University.
- Nkonde, Chewie, Nicole Mason, Nicholas Sitko and T. Jayne (2011). "Who Gained and Who Lost from Zambia's 2010 Maize Marketing Policies?" Working Paper 49, Food Security Research Project.
- Nyoro, James K., Milton Ayieko, and Milu Muyanga (2007). "The Compatibility of Trade Policy with Domestic Interventions Affecting the Grains Sector in Kenya." Paper presented at FAO workshop on Trade and Policy for Food Products Conducive to Development in East Africa, 1–2 March 2007, Rome Italy.
- Porto, Guido, Nicholas Depetris Chauvin, and Marcelo Olarreaga (2011). *Supply Chains in Export Agriculture, Competition, and Poverty in Sub-Saharan Africa*. World Bank, Washington.
- Rashid, S., & Minot, N. (2010). "Are staple food markets efficient in Africa? Spatial price analysis and beyond." Prepared for the COMESA policy seminar on 'Variation in staple food prices: Causes, consequence, and policy options,' Maputo, Mozambique 25–26 January 2010.
- RATES (2003). "Regional maize trade policy paper." Regional Agricultural Trade Expansion Support Program, Nairobi.
- Rubey, L. (2005). 'Malawi's Food Crisis: Causes and Solutions.' Report for USAID, Lilongwe.
- Schlenker, W. and D.B. Lobell (2010). "Robust negative impacts of climate change on African agriculture." *Environmental Research Letters* 5: 1–8.
- Skees, J and B. Collier (2008). "The Potential of Weather Index Insurance for Spurring a Green Revolution in Africa", GlobalAgRisk, Lexington, KY
- Tchale, H. and J. Keyser (2010). 'Quantitative Value Chain Analysis: An Application to Malawi', World Bank Policy Research Working Paper, WPS 5242



- Teravaninthorn, S., and G.Raballand, (2009). *Transport Prices and Costs in Africa*. World Bank, Washington, DC.
- Tripp, Robert (2005). "Evaluation of the ASARECA-ECAPAPA Project on 'Rationalization and Harmonization of Seeds Policies and Regulations in Eastern Africa.'" ODI, London.
- Tschirley, David and T.S. Jayne (2009). "Exploring the Logic Behind Southern Africa's Food Crises." *World Development* 38: 76–87.
- UNCTAD (2009). "Review of Warehouse Receipt System and Inventory Credit Initiatives in Eastern and Southern Africa." http://www.ruralfinance.org/fileadmin/templates/rflc/documents/Review__of__Warehouse_.pdf
- United Nations Economic Commission for Africa. (2010). *Assessing Regional Integration in Africa IV: Enhancing Intra-African Trade*. Addis Ababa, Ethiopia: Economic Commission for Africa
- USAID (2009). "Global Food Security Response: West Africa Rice Value Chain Analysis." Report No. 161, United States Agency for International Development.
- USAID (2010), "West Africa Monthly Price Bulletin." Famine Early Warning Systems Network, West Africa, United States Agency for International Development.
- USAID (2011) "Regional Agricultural Transport and Trade Policy Study." West Africa Trade Hub Technical Report #41, United States Agency for International Development.
- Peter Warr (2005). "Roads and Poverty in Rural Laos," Departmental Working Papers 2005–04, Australian National University, Arndt-Corden Department of Economics.
- World Bank (2005). "Managing Food Price Risks and Instability in an Environment of Market Liberalization." Agriculture and Rural Development, World Bank, Washington, D.C.
- World Bank (2008). "Regional Trade in Food Staples: Prospects for Stimulating Agricultural Growth and Moderating Short-Term Food Security Crises in Eastern and Southern Africa." Report no. 46929-AFR.
- World Bank (2009a) "Eastern Africa: A Study of the Regional Maize Market and Marketing Costs." Agriculture and Rural Development Unit, Africa Region.
- World Bank (2009b). *Awakening Africa's Sleeping Giant: Prospects for Commercial Agriculture in the Guinea Savannah Zone and Beyond*. World Bank, Washington.
- World Bank (2011a). "Facilitating Cross-Border Trade between the DRC and Neighbors in the Great Lakes Region of Africa: Improving Conditions for Poor Traders." Report No: 62992-AFR, World Bank, Washington.
- World Bank (2011b). "Missing Food: The Case of Postharvest Grain Losses in Sub-Saharan Africa." World Bank, FAO, and Natural Resource Institute, Washington.
- Zerelli, S. and A. Cook (2010). "Trucking to West Africa's Landlocked Countries: Market Structure and Conduct, USAID West Africa Trade Hub." Technical Report No. 32, March 2010: p.9.



Annex: Basic rights and obligations for traders and border officials

1. All individuals shall be able to cross the border without verbal or physical abuse or harassment, including but not limited to sexual and gender-based violence.
2. Traders shall be processed at the border in an efficient and timely manner without discrimination. A receipt must be provided to the trader for any payment made and the payment properly recorded.
3. Only officials of the approved agencies are present at the border, and all border officials wear uniforms or ID badges that identify their respective agency.
4. Physical checks of traders must be recorded with the reason and outcome provided. Female traders have the right to receive a physical check by female officials in a private but regulated environment.
5. All duties, fees and taxes, and the basis for their calculation, are publicly available at the border. Any change to duties, fees, and taxes must be publicly announced at the border, with reasonable time for traders to prepare before their application. No unpublished fees or charges should be demanded at the border.
6. Documentary requirements should be clearly stated and publicly available at the border. Any change in documents required must be publicly announced at the border with reasonable time for traders to prepare before implementation. Simplified procedures should be applied to small traders.
7. Traders should be aware of their rights and obligations when crossing the border. Traders must present required documentation and pay appropriate duties at the border and obtain a receipt for any payments made to an official. Traders shall not attempt to bribe any official to avoid payment of duties or obtain preferential treatment in any way, including avoiding queues.

With the support of the international community, governments commit to do the following:

1. By mid-2012 these basic rights and obligations governing cross-border movement of goods and people are clearly stated in the local language and visibly apparent at all border crossings.
2. By end 2012 at every border post there is at least one agent that has received gender awareness training. All senior officials at the border will have received gender awareness training by the end of 2013. Ensure that 50 percent of officials at any border post will have received gender awareness training by the end of 2014.
3. At all border posts traders have recourse to an independent and confidential mechanism to register violation of any of these basic rights. Female traders must be able to register the violation of any basic rights with a female staff.
4. Apply strict disciplinary measures against officials found to have violated the rights of a trader.
5. Support organizations of informal cross-border traders in disseminating information on these rights and obligations and in delivering advice and information to enhance the capacities of the traders.
6. Continue to improve the quality of infrastructure at all border crossings to provide an open and safe environment for traders, with attention to the specific needs of women traders, and appropriate facilities for officials to undertake their work.
7. Improve the quality of data collected at all border posts on small traders, including the number passing through the border each day and the nature of the goods carried.





THE WORLD BANK

1818 H Street, NW
Washington, DC 20433

www.worldbank.org/afr/trade
www.worldbank.org/afr

The rise in global food prices and an ever-growing food import bill have brought sharp attention to agricultural trade policies in Africa. Africa's demand for staple foods has been on the rise and will double by 2020. However, African farmers currently provide only five percent of Africa's imports of cereals while huge swathes of fertile land—slightly larger than the size of India—remain uncultivated and yields are a fraction of those obtained by farmers elsewhere. Through regional trade, Africa's farmers have the potential to meet much of the rising demand and to increasingly provide substitutes for more expensive imports from the global market. This potential, however, has yet to be exploited because African farmers face more barriers in accessing the inputs they need and in getting their food across borders to consumers in African cities, than suppliers from the rest of the world. These barriers along the whole value-chain reduce returns to farmers while increasing prices paid by consumers. Removing these barriers to regional trade is essential if Africa is to attain its potential in food trade. But to achieve this, governments will need to overcome the political economy realities that have prevented African countries embracing open regional trade in food. They will need to provide a clear and predictable policy framework for regional trade so that institutions that facilitate exchange and mitigate the inherent risks associated with food production can flourish and support efficient and safer market outcomes and a more effective approach to food security in Africa.