

## HOW TO MODERNIZE AND EXPAND STAPLE FOOD MARKETS IN AFRICA

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### Summary

Food security and smallholder income growth will require greater reliance on markets and trade. To facilitate this, markets must be modernized and the ability of traders and farmers to operate in them must be expanded. Table 1 summarizes FSG’s thinking on what are the necessary conditions for modernizing and expanding staple food markets, why those conditions are necessary, and who needs to do what to establish those conditions. The text following Table 1 expounds in more detail on these issues.

Table 1. Summary of necessary conditions for modernizing and expanding food staple markets in Africa and steps needed to establish them

Necessary Conditions	Why? Examples.	Key Actors and • Actions
1. Regional perspective	<ul style="list-style-type: none"> <li>• artificial political boundaries in Africa cut across natural market sheds</li> <li>• surplus production areas often lie on opposite side of international border from deficit markets they serve (ex. N. Moz to Malawi)</li> <li>• Example: Figure 1: major market sheds in ESA cut across national borders</li> <li>• small countries plus closed borders lead to price booms and busts</li> </ul>	<p><i>Regional economic associations:</i></p> <ul style="list-style-type: none"> <li>• regional transport corridors</li> <li>• open border policies</li> <li>• enforcement mechanisms                             <ul style="list-style-type: none"> <li>• Foreign exchange transactions across different monetary zones</li> <li>• Grades and standards</li> </ul> </li> </ul> <p><i>Regional traders’ organizations</i></p> <ul style="list-style-type: none"> <li>• lobbying activities</li> <li>• enforcement of regional trade agreements</li> <li>• enforcement of cross border contractual arrangements</li> </ul>
2. Competition	<ul style="list-style-type: none"> <li>• prevents collusion</li> <li>• imposes efficiency</li> <li>• engenders public confidence</li> </ul> <p>Example: Lusaka price trends</p>	<p><i>Public:</i></p> <ul style="list-style-type: none"> <li>• adopt transparent, predictable policies</li> <li>• permit open borders</li> <li>• Improve traders’ access to bank credit to reduce the concentration of import activities</li> <li>• Improve traders’ access to long-term investment financing</li> <li>• Improve all market participants access to timely market and trade information</li> <li>• Support producers’ group marketing activities</li> </ul>
3. Transparent, predictable policies	<ul style="list-style-type: none"> <li>• traders withdraw when policy uncertainty imposes high risks</li> </ul>	<p>Periodic consultative fora for improved coordination between the</p>

Necessary Conditions	Why? Examples.	Key Actors and • Actions
4. Trust, between government and private sector	<ul style="list-style-type: none"> <li>• governments mistrust traders</li> <li>• traders mistrust governments</li> </ul> <p>Therefore, governments intervene too much and private traders intervene too little.</p>	<p>public and private sectors</p> <ul style="list-style-type: none"> <li>• Role playing with public and private sectors combined with training</li> <li>• private trader audits to make information on private stocks available to policy makers</li> <li>• introduce modern instruments for risk management (options, futures)</li> </ul>
5. Reliable information on market prices and quantities	<ul style="list-style-type: none"> <li>• facilitates price discovery</li> <li>• farmers and traders can target markets and timing of transactions</li> </ul>	<ul style="list-style-type: none"> <li>• <i>private</i>: cell phones</li> <li>• <i>public</i>: strengthened national systems for crop forecasts, MIS (traditional and using SMS), transparent planning of food aid operations and other national food security operations</li> </ul>
6. Infrastructure	<ul style="list-style-type: none"> <li>• high costs after the farm gate dramatically undermine Africa's competitive advantage</li> </ul>	<p><i>Public</i>: • Re-orient budget priorities from unsustainable subsidies towards long-term investment in ports, roads, and communications; • encourage private competition in cell phone and high speed wireless internet connections.</p>
7. Modern instruments for risk management`	<ul style="list-style-type: none"> <li>• permit governments to protect themselves politically</li> <li>• permit private traders to hedge</li> <li>• new, underappreciated available since 1996 after the launching of SAFEX</li> </ul>	<ul style="list-style-type: none"> <li>• simulations and training</li> <li>• donors underwrite early premiums to introduce instruments</li> <li>• Improve the stabilization impact of both food aid and national food security stock operations</li> <li>• Inform private sector participants in advance of any policy shift so that they can prepare for the changes</li> <li>• Make information on emergency operations (timing, duration, location) available to traders</li> </ul>
8. Expanded share of farmers able to be substantial net sellers	<ul style="list-style-type: none"> <li>• Currently, only 2%-5% of farmers provide half or more of marketed surplus.</li> <li>• Doubling the size of this group would dramatically enhance food availability and help drive the agricultural transformation</li> </ul>	<p><i>Public</i>: • policies to promote private agro-dealer networks and enable extension delivery through them; • loan guarantees for animal traction; • loan guarantees to expand access to commercial credit</p>

## 0. Why invest in staple food markets?

Over the next generation, growing trade in food staples appears poised to dwarf that in all other African agricultural markets. Currently, the market value of intra-African trade in food staples amounts to \$50 billion per year, or nearly three-fourths of the value of all agricultural trade (Table 1). Given growing urbanization and the highest rates of poverty in the world, Africa's market demand for food staples will grow dramatically in coming decades, increasing trade even further. As a result, production of food staples -- for growing urban markets and food-deficit rural areas -- represents probably the largest growth opportunity available to African farmers. Facilitating expansion of these markets will, therefore, be critical for efforts at stimulating agricultural production growth, broad-based income expansion and poverty reduction.

Table 1. Size of Agricultural Markets in Sub-Saharan Africa, circa 2000

	Value (\$US billions)	Percent
Exports out of Africa		
traditional	8.6	13%
nontraditional	6.1	9%
other	1.9	3%
Intra-Africa trade		
domestic food staples	49.7	73%
other	1.9	3%
Total	68.2	100%

Source: Diao and Hazell (2004).

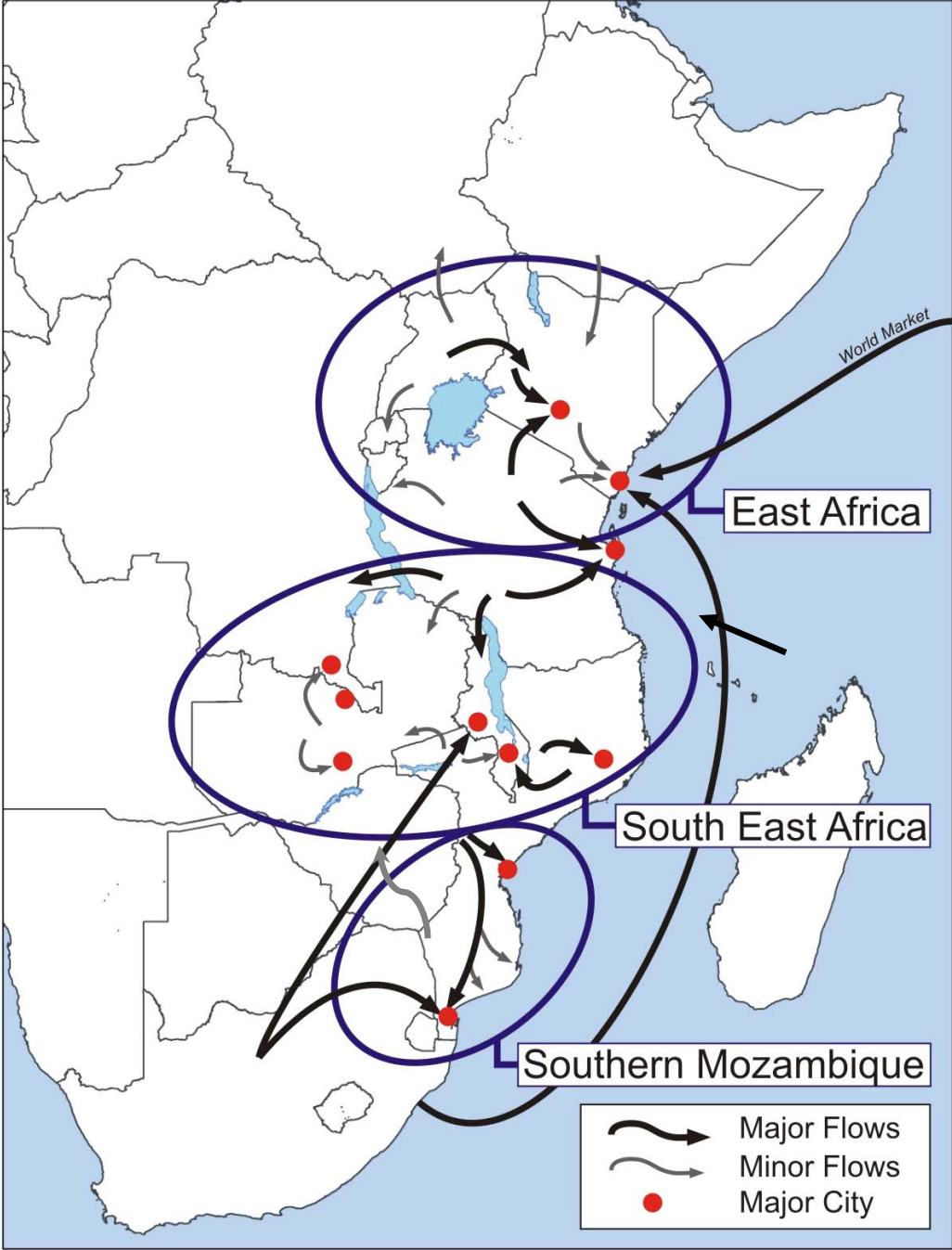
### 1. Regional perspective

Africa's surplus food production zones frequently lie across national borders from the markets they serve (Figure 1). The continent's political boundaries, drawn in Berlin in 1885, cut across natural market sheds, impeding the free flow of people and goods. As a result, political borders often separate surplus food production zones from the deficit markets they would normally supply. For example, they separate food surplus northern Mozambique and southern Tanzania from deficit markets in Malawi and eastern Zambia. They cut off surplus zones in eastern Uganda and northern Tanzania from deficit markets in Kenya. They delink the surplus zones of southern Mali, Northern Ivory Coast and Western Burkina from deficit markets in Mauritania, Senegal and Niger in West Africa. And they separate surplus cassava and maize producing areas of northern Zambia from the deficit mining towns of Katanga and Kasai provinces in the DRC.

Political borders translate into a welter of tariffs, export restrictions and other man-made impediments to cross-border trade in food staples. In turn, these impediments to trade raise costs and lower incentives to both farmers and traders while at the same time artificially raising consumer food prices in cross-border deficit zones. Without access to regional export markets, production surges in thinly traded national markets lead easily to price collapses, which in turn

risk stalling production growth and private investment in agriculture. Therefore, in order to maintain producer incentives, farmers in Africa’s many surplus food production zones require regular access to growing food markets, both internal and external.

Figure 1. Maize Market Sheds in Eastern and Southern Africa



Source: Govereh et al. (2008).

*Key actions and policy interventions:*

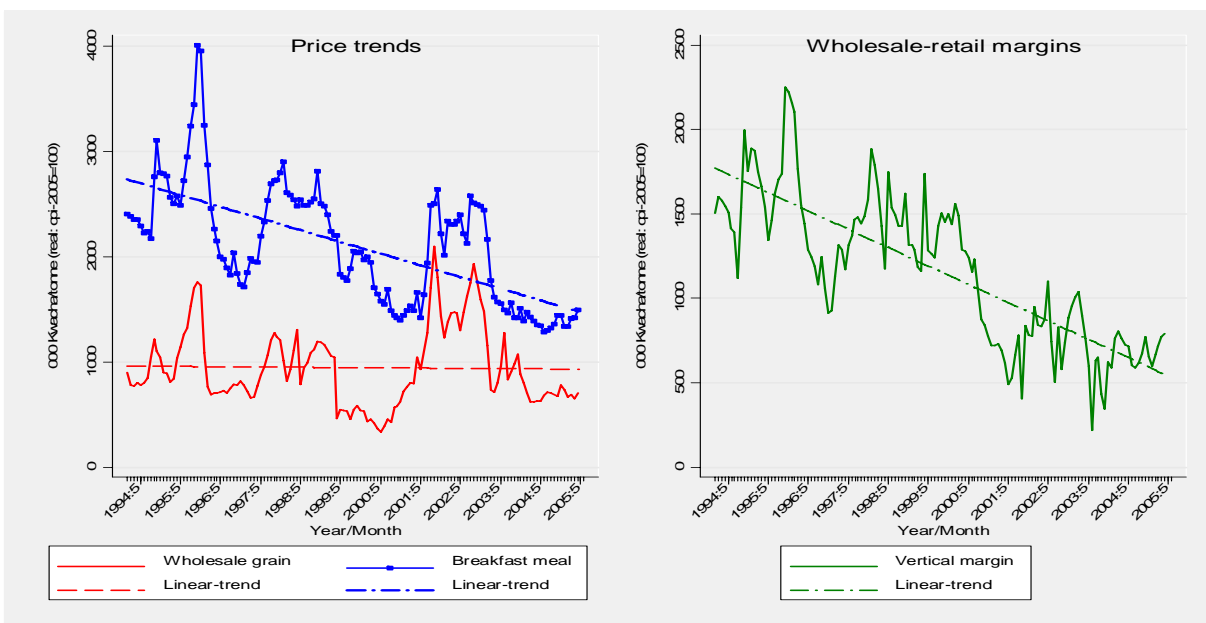
- Strengthen regional economic consortia
- Rehabilitate regional transport corridors
- Open border policies
- Strengthen commerce enforcement mechanisms
  - Foreign exchange transactions across different monetary zones
  - Grades and standards
- Strengthen regional trader organizations
  - lobbying activities
  - enforcement of regional trade agreements
- Enforce cross border contractual arrangements

## **2. Competition.**

Assuring competition is a critical element in driving down real costs of foods to consumers while maintaining profitable incentives for farmers and others to produce and in passing on increases in demand to farmers in the form of higher prices. If any stage of the value chain (for example, wholesaling) is dominated by a few actors, cost-savings (for example, due to improved roads) are likely to be captured by this small group rather than passed on to consumers or farmers. Assuring competition is particularly important when engaging the private sector to help deal with periodic food crises through increased commercial imports. In the current food crisis, many African countries have reduced or eliminated import tariffs and value-added taxes on imported staples to help hold down consumer prices. But if import licenses are granted to only a few or if only a few large actors have the financial capacity to import (due to restricted access to credit), then the importers are likely to capture the tax cuts for themselves rather than being forced, through competition, to pass them on to consumers. (Kelly, Dembélé and Staatz, 2008). Similarly, lack of competition in input markets because of restrictive licensing or lack of access of traders to credit result in farmers paying more for their fertilizer, seeds, and pesticides than they would in a more competitive environment. Thus, rules governing licensing and access to financing are crucial in helping stimulate market competition.

A concrete example of how increased competition has improved food security involves Zambia's experience with maize market liberalization starting in 1993. The marketing cost wedge between wholesale maize prices and retail maize meal prices have declined dramatically (Figure 2). Ten years into the reform process, real breakfast meal prices have declined by 35%, while milling/retailing marketing margins have been cut in half (Figure 1a and 1b). Based on estimates of 3.5 million urban "adult equivalent" consumers purchasing 120 kg of breakfast meal per year, the declining maize meal milling and retailing margins have saved Zambian consumers roughly US\$29.4 million (123 billion kwacha) each year.

**Figure 2.** Trends on prices and margins on maize grain and maize meal in Zambia



The main explanation for the declining marketing costs observed is increased competition in maize milling and retailing. Prior to market liberalization, a few officially registered maize-processing firms had a *de facto* oligopoly on milling maize and supplying the retail sector. Regulations made it difficult for non-registered millers and traders to transport grain into urban areas or acquire grain from the marketing board. Market reform opened this system to greater competition as small-scale millers and retailers who were previously excluded from entering the market were now allowed to procure and transport grain freely across district boundaries. Rapid investment in medium- and small-scale milling and retailing networks occurred almost immediately after the reforms were implemented. In response to greater competition, the registered large milling companies cut their prices in an attempt to regain lost market share (Govere, Jayne, and Chapoto, 2008).

### 3. Transparent, predictable policies.

In much of Africa, governments mistrust traders. Policy makers fear a loss of government control over grain supplies and the politically sensitive grain prices. They fear that collusion by traders may lead to market manipulation and profiteering that could, in turn, lead to politically damaging food shortages and price spikes. As a result, in recent years, Zambia's default policy has been to restrict private sector cross-border maize flows. Following the deficit harvest of 2005, the Zambian government restricted maize imports. And following successive good harvests, in 2006 and 2007, the government has tightly limited exports. Mali has followed similar policies during the food crises of 2004/05 and 2007/08.

The mistrust is mutual. In part, traders have difficulty anticipating what government will actually do. During the first half of 2007, the Zambian government position on maize exports changed three times (Zinyama, 2007; Chalu, 2007; Times, 2007; Malan, 2007; ZNFU, 2007). In deficit years, given strong political pressure to subsidize government-sponsored maize imports,

private traders are reluctant to bring in commercial grain, which they would then be able to sell only at a loss. Zambian traders remember the risks they incurred under these conditions in both 2000/1 and 2005/6 (Nijhoff et al, 2003; Mwanaumo et al., 2005). Uncertainty about government intentions, coupled with the fear of being undercut by subsidized public sales, induces private grain traders to remain on the sidelines or to limit their exposure by bringing in only small lots. In response, governments complain that they cannot rely on the private sector to import adequate quantities of food in times of need.

*Recommended actions:*

- Periodic consultative fora for improved coordination between the public and private sectors

#### **4. Trust.**

*Importance of transparency and predictable signals from government*

Predictability, transparency and policy consistency are crucial for maintaining incentives for private sector trade. Due to the unpredictability of government policy in Zambia, four out of six international grain trading firms exited the market between the early 1990's and the early 2000's. Zambia's frequent policy shifts have made cross-border maize trade a risky proposition and have clearly dampened trader incentives to import and export maize. Under these conditions, empirical simulations (Dorosh, Dradri and Haggblade, 2007) suggest that no matter how well-intentioned, government interventions, when accompanied by execution failures or unclear policy signals, can potentially lower domestic food availability compared to what would have occurred under an open trade regime.

*Political feasibility of opening borders*

Despite the low cost and significant benefits -- of food supply stabilization and reduced price volatility -- afforded by open borders, the availability and price of maize remains a sensitive commodity, particularly in urban areas. A similar situation pertains to rice in many West African countries. Fears of market manipulation and profiteering by traders lead consumers and governments to mistrust the private sector. Further complicating policy formulation, the short-run interests of farmers, consumers, trader and millers often diverge. During deficit years, farmers lobby for import controls to keep prices high (e.g., in Nigeria), over the objections of traders, consumers and millers. During surplus years, millers and consumers advocate export controls to keep domestic prices low, to the detriment of farmers. Despite the medium-term gains to both farmers and consumers from the reduced volatility in grain availability and price resulting from regional trade, government policy makers face conflicting pressures to control borders in both good harvest years and in bad.

Highlighting the difficult position African policy makers face, Richard Mkandawire, Agricultural Advisor to the New Partnership for Africa's Development (NEPAD) Secretariat has observed,

“Most analysts agree that policy failure has played an important role in the emergence and depth of the African development crisis. ... Yet this does not imply that most

governments are ignorant of good policies. Why then do most governments find it difficult to embrace programmes of economic reform and why do they leave it so late before introducing reform measures? Which stakeholders at the national level can be expected to be reliable allies in the quest for market led reforms? How might technocrats be insulated from undesirable interest group pressures that might compromise the integrity of policy reforms?" (Mkandawire, 2008, p.6).

Answers to these questions have begun to emerge from a variety of settings where experience in opening cross-border trade in food staples suggests several practical steps that can improve understanding and, over time, build trust between government policy makers and private sector groups. First, where governments mistrust traders and fear collusion, increased competition offers one potential antidote. The intense price competition among several hundred Bangladeshi rice importers proved key to their effective response to the 1998 floods in Bangladesh, when traders staved off supply shortages and capped domestic prices at import parity by importing several million tons of rice from neighboring India (Dorosh, 2001). Intense competition among rice semi-wholesalers and rural assemblers in Mali, the result of the sector liberalization program of the late 1980s, was critical in assuring that the higher rice prices that resulted from the CFA franc devaluation in 1995 were quickly passed back to farmers, increasing production incentives, rather than being captured by a small oligopoly of rice wholesalers who controlled the market prior to the liberalization (Dembélé and Staatz, 2002). Similarly, an ex-post assessment of the 2004 rice crisis in Madagascar concluded that improved competitiveness of grain import markets required development of clear and transparent policies along with a level playing field for all actors (Magnay and Jenn-Treyer, 2006).

Second, where traders mistrust governments, active dialogue between the public and private sector serves to improve transparency and trust, as both the Madagascar and Bangladesh experiences emphasize (Dorosh, 2008). In Zambia, the recent launching of a joint maize monitoring and stocks review committee involving farmers, traders, millers and government represents an important step in this direction (ZNFU, 2007). More generally, ongoing discussions with traders about trade impediments and possible measures to reduce transaction costs and facilitate commercial flows serve to maintain open lines of communication on ways of improving market efficiency and reliability.

Finally, governments and traders need to monitor staple food markets over time and make this information widely available (Minten and Dorosh, 2006). ). They need to track price movements, of both domestic and regional prices, in order to monitor domestic and import parity prices. Information on stock levels at any given time period is also crucial for policy makers, as they want to know if there exists enough supplies to cover domestic needs. Government monitoring of letters of credit can likewise prove helpful in maintaining a clear indication of private sector trading intentions. These market monitoring efforts require regional cooperation and data sharing. In Southern Africa, the South African Commodity Exchange (SAFEX) and Famine and Early Warning System Network (FEWSNET) provide an existing backbone on which to build active market information systems throughout the region. In West Africa, the West Africa Market Information Network (RESIMAO) and the West African Agricultural Traders Organization (ROESAO) help play a similar role. Ongoing market monitoring, broad

diffusion of market information, and active market analysis, can help to improve understanding, trust and market performance, gradually over time.

## **5. Reliable information on prices and quantities**

Frustration with the frequently moribund status of publicly funded Market Information Systems (MIS) has led to substantial experimentation with private systems, sometimes organized around Agricultural Commodity Exchanges (ACE) and featuring heavy use of cell phone SMS technology. These initiatives are important and will undoubtedly generate valuable lessons for improving market information. Yet Weber et al (2006) and Tollens (2006b) both make two points. First, public MIS and private systems such as ACE are not substitutes: the purpose of an ACE is more narrow than the broad market development objectives of an MIS. Second, much market information is of a public good nature, especially in the underdeveloped market systems that prevail in Africa and Asia. This type of information will therefore be under-produced by private systems. Those private systems that are able to turn a profit will tend to produce a narrow range of time-sensitive information that they can sell. As a result, public investment is required if the broad array of information needed by smallholder farmers and policy makers is to be produced. A hybrid approach to market information is needed. The objective of the hybrid approach is to provide increasingly relevant and timely information to small farmers and the private trade, while at the same time providing policy makers with analysis and perspective that strengthens and refines government commitment to making markets work. Key elements of this hybrid approach are:

- Government needs to maintain and strengthen its commitment to collecting and disseminating a broad set of basic market information – local, regional and international prices, supply information, and outlook, food aid plans, and changing policies and practices that affect trade. .
- At the same time, these information services need to have the financial and managerial autonomy to generate revenue, seek additional outside funds (e.g., from donors), and manage these funds.
- To ensure support for government budgetary allocations, these services need to cultivate private sector support. They need to see their role as promoters of trade, not just reporters of trade. Mainstreaming these types of attitudes requires training and mentoring over time;
- Where ACEs exist, MIS should establish formal links with them. In any case, public MIS needs to take advantage of the low cost and wider accessibility of SMS by integrating it into their dissemination strategies in collaboration with private sector;
- Finally, national MISs need to be linked together with their neighbors through efficient means of communication so that information available in one country is immediately available in all countries of the region.

No hybrid MIS combining all these characteristics exists in Africa that we know of; this is a major funding opportunity for donors wishing to promote improved market performance in agriculture.

## **6. Infrastructure**

No matter how transparent policies are or how competitive traders are, markets cannot offer farmers' remunerative prices for their outputs or attractive prices for their inputs if road, port, and communication infrastructure is lacking. Contrasts between Asia and Sub-Saharan Africa (SSA) in road infrastructure investment are striking. The road density in SSA (km/1000 km<sup>2</sup>) are less than one-third that of India in 1950 (before the dawn of its Green revolution), and even Rwanda, the most road-dense country in SSA, has a lower road density than India in 1950. Currently India's road density is 32 times that of Ethiopia and 255 times that of Sudan. (World Bank 2006). Forthcoming research by the World Bank's Competitive Commercial Agriculture in Africa project<sup>1</sup> shows that several African countries have unit costs of production at the farm level that are similar or lower than those of agricultural powerhouses Brazil and Thailand, but they become uncompetitive in international markets due to high transport costs due to poor infrastructure (as well as other transaction costs). Even if USAID does not invest heavily in such infrastructure, it needs to be aware of the importance of such infrastructure constraints so that its own complementary investments in policies, institutions, and technologies are made in a way that are synergistic with infrastructure investments funded by others such as the World Bank.

## **7. Risk management**

Long distances to port, poor infrastructure, trade barriers, and wide swings in annual rainfall mean that governments and private sector in much of Africa are both subject to very substantial risk when they operate in food staple markets. Governments routinely lose large amounts of re-selling imported or locally purchased foods when prices fall. Private sector fully perceives the risk (stemming from both from market and policy drivers) and sometimes stays on the sidelines when food is needed in a country. Much of this risk can be reduced through policy change and more intensive information sharing (see items 2, 3, 4, and 5 above), and these steps need to receive high priority. Beyond these necessary steps, modern instruments for risk management have become more available at least within Southern Africa with the continual development of SAFEX in South Africa. These instruments – futures, options, and innovative use of each -- may also have an important role to play in further stabilizing staple food markets in the region. Requirements for their adoption by both private- and public sector include training built around real world simulations, and donor underwriting of early premiums to introduce the instruments.

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<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/0,,contentMDK:21730621~menuPK:4900969~pagePK:146736~piPK:146830~theSitePK:258644,00.html>

## **7. Investments to expand the share of farmers able to be substantial net sellers<sup>2</sup>**

More than half of food staple sales are typically concentrated among 2% to 5% of rural smallholder households. Though still poor by most standards, these households have more land, more productive assets, and more capital than other rural households and so are able to generate regular food staple surpluses. Doubling or tripling the size of the group able to do this would have dramatic effects on food availability and prices and would help drive the agricultural transformation. Doing so requires “targeted resource bundles” that enable a higher proportion of smallholders to become net sellers of food staples.

What is needed to complete the bundle of market development public goods with expanded private assets that will allow a doubling or tripling of the proportion of smallholders able to generate routine food staple surpluses? The answer depends in part on whether land or complementary land cultivation resources are constraining. Where land is constraining the bundle must be completed by ensuring access to land productivity enhancing inputs or services. These include seed of improved varieties, chemical and/or organic fertilizers, and extension training in conservation agriculture techniques. For this target group of (relatively) well-endowed farmers the emphasis should be on facilitating access to these inputs through the private sector rather than direct provision. This implies building up agro-dealer networks with the capacity to provide extension advice, as well as expanded access to credit on a commercial basis (but with the risk component of the cost of credit reduced through loan guarantees to the commercial banking sector). The bundle should be completed with improved access to better crop storage technology and marketing extension to enable smallholders to maximize returns to their production investments. Support to farmers associations can reduce the costs of bundle delivery.

Where land is not constraining an additional option of expanded availability of energy for land preparation and weed control is needed. One of the most effective ways to accomplish this is through animal traction programs, as draft animals. Again the emphasis should be on private sector provision where possible, with public resources being used to leverage their provision through loan guarantees. Where animal traction is not an option in the short run (because of disease or cultural constraints) consideration can be given to no-till cultivation methods. In sum, the goal is to ensure that smallholder farmers close to the threshold of being able to respond to market investments receive the complete “bundle” of assets they need, including private assets (such as animal traction or seasonal inputs) provided by the private sector but leveraged through public investments.

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<sup>2</sup> This section is drawn from a paper under preparation for USAID’s Africa Bureau entitled “Determinants of Food Staple Market Participation and Implications for Broad-Based Agricultural Growth and Poverty Reduction”, Boughton et al., (forthcoming).

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