

# Enhancing African Food Security through Improved Regional Marketing Systems for Food Staples

A Policy Research Agenda for  
COMESA and Michigan State University (MSU)

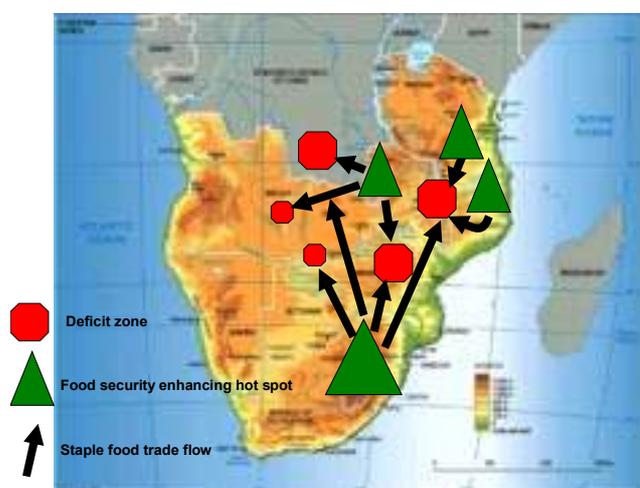
## *I. Africa's internal food surpluses*

Africa's hunger hot spots are well known. Drought-prone areas, such as the Horn of Africa and the Sahel, confront frequent crop failure and reliance on pastoral and migratory coping systems. Conflict and civil strife compound these problems in the Horn, the Congo Basin and in pockets across West Africa. The resulting hunger hot spots have earned Africa an unenviable world-wide reputation as a chronically food insecure continent, dependent on massive, regular inflows of food aid. Today, Africa spends about \$19 billion per year on food imports and attracts a majority of international emergency food aid.

Less well advertised are a series of highly productive, regularly surplus food production zones across Africa. In many instances, these food-security-enhancing hot spots (FSEHS)<sup>1</sup> emerge in areas of favorable rainfall and in watersheds where irrigation proves economical. In other cases, regular food surpluses emerge in flexible ecosystems that combine the production of multiple staples, particularly cereals in combination with perennial foodcrops such as bananas, cassava or root crops. Because farmers can harvest perennial foodcrops such as banana and cassava any time of year and over multiple years, they are able to respond very flexibly to crises as well as to chronic shortfalls in neighboring regions. In bad years, when nearby hunger hot spots face shortfalls, farmers from neighboring FSEHS are able to harvest more of their perennial reserve crops (cassava or bananas) and in turn free up more cereals (primarily maize) for export to deficit zones.

Examples of critical regional food-security-enhancing hotspots (FSEHS) in Eastern and Southern Africa include: • Northern Mozambique, where cassava and Irish potatoes provide local food security, enabling regular maize exports, • most of Tanzania, where a blend of rice, cassava, banana and maize enable regular cereal exports both north into Kenya and south into Malawi, • Northern Zambia, where cassava ensures local food security, even in drought years, enabling the region to export maize to DRC, Malawi and elsewhere in Zambia, • Uganda, where banana and cassava ensure food security, thereby enabling maize export to chronically deficit Kenya; and • South Africa, where mechanization, modern input use and increasing irrigation enable cereal export northward in most harvest seasons (Figure 1).

Figure 1. Food Security Enhancing Hot Spots in Southeastern Africa



<sup>1</sup> FSHES, pronounced "fishes".

Acting as built-in shock absorbers, these FSEHS serve a valuable role in moderating food shortages across zones and frequently across national borders. But a variety of natural and man-made constraints limit their potential responses. By breaking down these barriers, Africa's internal FSEHS will be able to respond more effectively to emergencies as well as chronic deficits elsewhere. This project aims to help identify and develop this potential.

## ***II. Improved marketing and cross-border trade as a means of enhancing food security***

Over the next generation, growing trade in food staples will dwarf that in all other African agricultural markets. Currently, the market value of Africa's food staples amounts to \$50 billion per year, or nearly three-fourths of the value of all agricultural production. Given growing urbanization and the highest rates of poverty in the world, Africa's marketed share of food staples will grow dramatically in coming decades. Thus, production of food staples, for growing urban markets and regional cross-border trade, represent probably the largest growth opportunity available for 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. Only by raising efficiency in food production and marketing – which together employ 70% of Africa's poor -- can Africa simultaneously achieve broad-based rural income growth and at the same time reduce urban poverty, by moderating staple food costs which consume over 60% of poor households' income.

Within national borders, major reform efforts across East and Southern Africa have resulted in government withdrawal, to varying degrees, from agricultural input and output markets. Delivery systems for fertilizer, seeds and veterinary services have passed from public to varying shades of private service delivery. In the resulting often hybrid private-public systems, private investors must operate in an uncertain, sometimes volatile policy environment, where government resources have atrophied yet new policy regimes remain evolving works in progress. In this environment, past efforts suggest that even where more productive onfarm technology becomes available, farmers cannot sustain these higher productivity gains without well-functioning markets along the full value chain. Improvements in farm productivity, and therefore incomes, requires well coordinated transactions along the full value chain, from farm inputs, to credit to trade, processing, wholesaling and export.

Across national boundaries, political borders cut across natural market sheds, impeding the free flow of food staples and other goods. Long distances, wide rivers and poor roads combine with man-made impediments such as tariffs, export restrictions, cumbersome customs procedures, lack of harmonized grades and standards and unpredictable government marketing operations to restrain regional trade. Substantial smuggling – for example, from Northern Mozambique to Malawi, from Northern Zambia to DRC and from Uganda into Western Kenya – provides evidence of incentives to cross-border trade. Yet natural and man-made impediments raise costs and lower incentives to both farmers and traders while at the same time artificially raising consumer food prices in deficit zones.

To maintain and sustain producer incentives, farmers in the FSEHS need access to growing markets, both internal and across national borders. Successful expansion of regional trade in food staples will accelerate agricultural income growth while simultaneously diminishing hunger and poverty. It will dampen price spikes in deficit zones. And because poor people spend most of their income on staple foods, this directly reduces both hunger and poverty (Figure 2).

Failure to facilitate expansion of national and regional trade in food staples risks stalling production growth and private investment in agriculture. In thin national markets, without export outlets, production surges lead easily to price collapses, such as that witnessed in Ethiopia during the 2001/2 season. In turn, these disincentives dampen long-term agricultural income growth.

### ***III. Objectives***

This proposed program of activity aims to expand regional trade in key food staples and to improve national marketing systems in ways that will make this possible. Market expansion, in turn, will: • stimulate expansion of agricultural production, by providing incentives for the most efficient farmers to adopt new technology and supply deficit regions; and • moderate lean season hunger by reducing food prices and dampening seasonal price movements in food deficit zones.

### ***IV. Activities required to achieve those results***

#### **A. Define market sheds.**

First, the team will define market sheds (analogous to a water shed) for key food staples by mapping production, prices and known trade flows -- seasonally, in drought years and in normal years – in specific subregions in Africa. Within each market-shed, they will identify and map key food-security enhancing hot spots (FSEHS), flexible regions where staple food export is often possible, either because of good water management or because of substitution possibilities among multiple food staples in areas such as Northern Mozambique (maize, Irish potato and cassava), Tanzania (maize, cassava and rice) and Uganda (plantains, cassava and maize).

#### **B. Conduct applied market research.**

The team will select research sites in FSEHS and in paired principal consuming zones within their market-sheds. They will then assemble a coalition of stakeholders (regional trade organizations, farmers, governments, traders, researchers and poverty-oriented groups) to participate in commodity supply chain studies for each major staple within the market shed. Initially, the team will focus on maize and cassava, though depending on the market-shed, inclusion of other food staples may be required. As part of this effort, the team will identify and conduct empirical research on forward-looking policy issues affecting regional trade. Though topics will vary in each situation, possible topics might include grades and standards, phytosanitary controls, GMO regulations, roles for government marketing agencies that will encourage rather than substitute for private regional trade, and selected issues involving trade infrastructure.

*1. Cereals and related input markets.* In each selected market-shed, the team will examine the ongoing process of grain market liberalization, which in general has resulted in highly fluid marketing systems throughout much of East and Southern Africa. In most market sheds, this work will focus on maize. Variations in national research and extension systems as well as in fertilizer and other input pricing policies lead to variable productivity and cost of production which require investigation as part of the commodity supply chain studies in both surplus and deficit zones. While early government withdrawal from maize marketing and price control opened up significant opportunities for private traders in national and regional trade, volatile production – leading to surpluses in some seasons followed by deficits in others -- has resulted in highly politicized discussions involving various domestic constituencies, food aid donors and national governments. Thus, the regulatory environment affecting maize market remains a highly fluid work in most countries. Experience suggests that raising farm productivity and incomes requires well coordinated transactions along the full value chain, from farm inputs, to credit to trade, processing, wholesaling and export. Regional trade flows have likewise become increasingly important in enabling rapid, local response to cross-border shortages. Therefore, the team will link national value chain diagnostics with assessments of cross-border trade networks in order to identify opportunities for improving efficiency and coordination of regional trade flows.

*2. Commercialization of cassava and other noncereal food staples.* Cassava production has grown rapidly across the cassava belt of East and Southern Africa over the past two decades. A stream of new varietal releases from the International Institute of Tropical Agriculture has triggered a surge in cassava productivity, while the dismantling of widespread maize subsidies, in the early 1990's, has reinforced farmer incentives to diversify out of maize production. As a result, cassava commercialization and processing have grown rapidly, though from an initially small base, as private firms experiment with substitution of cassava for maize in baked goods, livestock feeds as well as possible commercial uses in the production of ethanol and industrial starches. Within each market-shed, the analytical team will assess the structure, scale, performance and market dynamics under way in these rapidly growing cassava value chains. Because cassava can be harvested over a 2-3 year period, because the cassava growing zones are also highly productive maize producers, and because local consumers prefer cassava, farmers in the cassava zones can adjust cassava production very rapidly (upwards or downwards), moderate internal maize consumption, and release large quantities of both maize and cassava to other regions. Thus, they serve as built-in food security shock absorbers for the region –or FSEHS. The magnitude of food released regionally by the cassava-belt during years of poor maize harvest, the directions of these flows, and the production and processing activities they stimulate have not yet been systematically analyzed. To do so, it will be necessary to monitor both maize and cassava markets over multiple years and to map out these regional FSHES geographically in relation to the intermittently deficit zones within their natural regional market sheds. Thus, the analytical teams will need to examine interactions between cassava and maize markets at both household level (consumer substitution) and market level (substitution in livestock feed, composite flours and industrial processing).

*3. Spatial analysis of food markets.* Within each market shed, the team will partition areas by agro-ecological zone and other relevant criteria in order to define roughly homogenous zones. Then the team will develop a model that will enable projection of the likely impact of various shocks – such as drought, major plant disease attacks, bountiful harvests in normally deficit zones, civil strife, and government policy instruments affecting production and trade in food staples. The model will evaluate the likely impact of these shocks on key outcomes, including staple food prices, production, trade and consumption by various household groups. Drawing on recent techniques for poverty mapping, the analytical partners will link the model projections with micro-economic data from farm households and consumer surveys to estimate spatial price gradients, production, trade, consumption and the prevalence of food poverty across the market-shed. The researchers will then map the results using geographical information system (GIS) tools for visual representation to policy makers. The analytical team will subject the model's spatial predictions to verification using historical counterfactual experiments and private sector focus group discussions. In doing so, the team will build on ongoing for a for coordinating interactions between the private sector and government.

*4. Livestock systems.* In drought-prone, food insecure regions, pastoral agricultural systems assume special significance in household livelihood and coping strategies. During periods of crop production shortfall, the import of staple foods into these zones relies on either food relief shipments or market transfers, typically mediated by the sale of livestock and livestock products. In these regions, improvements in the efficiency of livestock production and marketing systems, thus, become necessary in the short run for enabling trade with surplus FSEHS and in the medium run for preventing asset depletion and enabling households to restock the herds that ensure their food security over time. Given the important buffering role played by these pastoral systems, the analytical team will conduct diagnostic studies of major livestock production and marketing systems in market sheds that include food-deficit pastoral zones. This work will focus on technical and policy options for enhancing the sustainability and responsiveness of livestock production in ensuring household food security.

### C. Inject results into ongoing policy fora.

As a key part of this effort, COMESA, MSU and partners will promote regional policy dialogue among farm groups, agribusiness and government in an effort to effect change in policies, public investments and private sector institutions required to lubricate national and regional trade in food staples. In doing so, they will collaborate with existing for a developed within the context of regional trade organizations such as COMESA and SADC, regional policy groups such as FANRPAN and ECAPAPA, and various private sector organizations and fora.

### V. *Contributions to CAADP*

Very much in the spirit of NEPAD, this initiative seeks to build on Africa's strengths to develop sustainable solutions to Africa's key problems. In a cohesive structural way, it directly contributes to the expansion of domestic and sub-regional markets (CAADP Pillar #2). It likewise promotes improved food security and food production (Pillar #3), indirectly through improved incentives afforded through regional trade and directly through productivity-enhancing improvements in crop and livestock input supply, production and marketing systems. Together, improved productivity and incentives will contribute to realization of the CAADP goal of 6% annual production growth in agriculture.

Figure 2. Poor Consumers Gain from Regional Trade

