March 19, 2010 **flash** No. 54E

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# *ON THE ROLE OF GOVERNMENT IN FOOD STAPLES MARKETS: PERSPECTIVES FROM RECENT RESEARCH AND IMPLICATIONS FOR MOZAMBIQUE*

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This brief reviews results of applied research regarding the role of government in staple food markets in East and Southern Africa. The purpose of the brief is to draw lessons for Mozambique as it decides how to use the grain storage silos it has been building since 2009. The authors suggest that:

- Mozambique is in an unusually strong position to take advantage of private sector activity to stabilize prices over time and space;
- Additional investment in road and rail infrastructure, incentives, and institutions, would help bring down transaction costs and allow private action to further stabilize prices;
- Additional stabilization, for those times when Mozambique has to rely on imports from the world market beyond what they normally make, could be obtained in a cost efficient manner using a financial reserve; and
- If the government chooses also to maintain a public physical reserve, then several conditions (listed in the brief) are necessary for operating this in a manner that improves market performance.

**INTRODUCTION:** The worldwide food price crisis of 2007 and 2008 focused the world's attention on issues of staple food availability and the level and stability of staple food prices. Donors, who by 2006 had reduced support to agriculture to 4% of development aid from 20% in 1980, quickly began to reverse course, programming more funds for agriculture and food security. Many governments in East and Southern Africa (ESA), facing the specter of skyrocketing prices and their human and political costs, reacted by closing borders and, in some cases, heavily regulating internal trade: Zambia, Malawi, and Tanzania all applied export bans on maize at some point during this period, Malawi attempted to ban private maize trade, and Malawi and Zambia dramatically increased maize purchases by their state marketing boards.

Since the late 1980s, and unlike its neighbors, Mozambique's government has engaged in almost no direct intervention in its maize markets. AGRICOM was disbanded during the early 1990s, and Instituto de Cereais had only a short-lived presence in the market in the late 1990s. Borders have remained open to regular maize imports into the south and periodic large exports to Malawi out of the north. Yet Mozambique's leaders have not been unaffected by the general sense of unease unleashed by the international food price crisis. One response has been a government project to construct silos for storage of staple grains; this would mark the first time in over a decade that the Mozambican government has actively contemplated intervening in food staples markets.

The plan is to construct 143,000 mt of silo capacity by 2011 (Government of Mozambique, 2008. p. 91). As part of this plan, six new silos with 50,000 mt of capacity had been built by January 2009 in Tete Province (Portal do Governo de Moçambique, 2009). The specific objectives of constructing silos are not clear but are part of a broad commercialization plan that seeks to "…enable purchasing of grain surpluses…" to, among other things, "… smooth the effects of external shocks on domestic prices."[1] (PAPA, 2008, p. 80).

[1] Translation from Portuguese to English by the authors.

Decisions regarding the use of these silos are central to Mozambique's agricultural marketing and food security policy. As the country moves ahead on this front, it has the opportunity to learn from a great deal of applied research that has been done on this topic. In the remainder of this brief, we first highlight what this research has shown about the basic characteristics of southern African staple cereals markets. We then review what has been learned about the way in which governments have intervened in these markets and the effects that these approaches have had on price behavior and market performance; we speak directly to the issue of public sector stockholding but do not limit ourselves to that topic. We close with suggestions for the way forward in Mozambique.

**BASIC CHARACTERISTICS OF FOOD STAPLES MARKETS IN EAST AND SOUTHERN AFRICA:** Food staples markets across the region exhibit a number of common characteristics. First, because production is rainfed, year-to-year variability in production is high. Year-on-year production changes average about 20% across the region, with frequent changes of 50% or more (Tschirley et al, 2006). Second, these markets are "thin", meaning that a small share – well under half -- of production is marketed in any given year. A basic characteristic of thin markets is that year-to-year variation in marketed volumes tends to be substantially greater than variation in production. Third, demand for maize tends to be "inelastic", i.e., demand does not change greatly when the price changes. This is especially true in southern and interior areas of the region (Zimbabwe, southern Malawi, all but northern Zambia, and Mozambique south of the Zambezi River), where the share of maize in consumers' diets typically lies around 40% (Tschirley and Jayne 2010).

These markets are also poorly financed. The mostly small farmers that supply them have almost no access to seasonal finance, and because they have cash needs at the time of harvest, they tend to sell around that time, with very little storage into the hungry season. This tendency is exacerbated by the lack of modern storage infrastructure ensure quality maintenance. Functioning warehouse receipt systems would solve both the credit and the infrastructure problems but are severely underdeveloped (Coulter 2010).

These characteristics – variable production, even more variable marketed volumes, inelastic demand, and poor financing and storage infrastructure – all lead to very high seasonal and inter-annual price variability. In the maize producing area of Zambia, for example, average year-to-year changes in real maize prices range from 28% to nearly 50%, depending on the market; average seasonal price rises range from 60% to 100%. In northern and central Mozambique, average seasonal price rises are 70%-80%, but during at least two of the past 10 years, seasonal movements have been negative. Year-to-year changes have exceeded 20% more than half the time. These figures in all three countries reflect a great deal of risk for all participants in the market.

This price variability matters for at least three reasons. First, most urban consumers are poor and spend a large share of income on basic foods; seasonal price rises can have a major impact on their ability to maintain adequate consumption. Second, most farmers do not benefit from the high prices frequently seen in these systems, for a host of reasons: typically in the region 20%-30% sell maize, but most do so right after harvest when prices are low; another 20%-30% neither sell nor buy, and so are unaffected by these prices; and 40%-50% are net buyers, buying more than they sell (and most often not selling anything) and are therefore hurt by high prices.

Third, price variability matters for longer-term reasons. As Poulton et al. (2006) note, price instability discourages investment in staples production by surplus households that have the assets and "knowhow" produce much more; it encourages deficit households to devote scarce resources to staple food production to ensure their food security, limiting diversification and the increased incomes that typically come with it; and it limits off-farm investment in services such as input supply, provision of credit, and storage and processing. We thus see a vicious circle, in which price variability reinforces behaviors that lead to continued price instability.

These problems in domestic systems take on even greater importance when paired with potentially more unstable international food markets. It is thus understandable why governments in the region might want seriously to address instability in their own markets and perhaps insulate these

markets from international price movements. In the rest of this paper we ask what empirical research says about the results of past attempts to do this.

**KEY FINDINGS:** Our reading of applied research in the region highlights six key findings:

***Country context matters:*** The magnitude and consequences of food price risk and instability differ by country, and sometimes by region within the same country (Byerlee, Jayne, and Myers, 2006), and are influenced by (a) varying agro-ecological and socio-economic conditions (b) increasing maize deficits in the region, (c) more diversified food consumption patterns, (d) decreasing proportions of households with maize surpluses, (e) poor coordination between government and private traders (Jayne, Zulu, and Nijhoff, 2006), (f) low provision of public goods (Jayne, Chapoto, and Govereh, 2008), and (g) politics (Tschirley and Jayne, 2010; Jayne, Chapoto, and Govereh, 2008). But regardless of the source, price risk and instability entail significant human costs (Byerlee, Jayne, and Myers, 2006; Tschirley and Jayne, 2010). Governments need to understand the specific context of their own country to be able to design efficient agricultural policies.

***Since the start of liberalization in the early 1990s, governments have continued to involve themselves in markets.*** Most food markets in ESA have been significantly liberalized, but this has not meant the absence of direct government action in food markets. On the contrary, governments in ESA have repeatedly intervened in food markets even before the 2007/08 crisis. Government's actions during the recent price spikes in food markets are just an escalation of previous trends, not a sudden change in policy.

***This involvement has been primarily through parastatal marketing boards, discretionary control of trade policy, and subsidized fertilizer***. Malawi, Zambia, and Kenya have used all these instruments. Malawi has pursued these policies through its National Food Reserve Agency and ADMARC, its well known fertilizer "starter packs", and comprehensive control of maize imports and exports. Zambia has dramatically increased maize purchases through its Food Reserve Agency in recent years; its control of trade is less comprehensive than in Malawi but is nonetheless a major factor that private traders have to take into account in their decisions. Kenya has used its National Cereals and Produce Marketing Board to make purchases and export maize, and suffered a major "maize scandal" over political influence and profiteering in 2008/09. Alone among these countries, Malawi has tried to control retail maize trade through its system of retail shops (ADMARC) and attempted in 2008 to outlaw all private maize trade.

***Expenditure on these programs has led to inadequate expenditure on the public goods that drive long-term growth and poverty reduction:***. Over the four agricultural seasons from 2005/06 to 2008/2009, Malawi spent about $500 million to subsidize fertilizer and seeds for poor farmers (Dorward and Chirwa, 2009). Tembo et al (2009) show that fertilizer subsidies and parastatal maize operations in Zambia together ranged from 50% to 70% of the country's total agricultural budget between 2003 and 2009; between 2000 and 2008, agricultural investment and crops research averaged less than 7% of the budget (Govereh et al, 2009). Partly as a result of this budgetary allocation in favor of what might be called private goods, investment in public goods such as roads, extension services and agricultural research has been shortchanged. It is primarily these public goods that will drive long-term increases in productivity and rapid poverty reduction.

***The effect of these government actions on domestic market performance may have increased instability rather than decreased it***. In Zambia and Malawi, government management of imports has helped drive prices above import parity several times during the past decade (Tschirley and Jayne, 2010). Mismanagement of Malawi's grain reserve in 2001 led to massive price rises during the 2001/02 marketing season (Devereaux, 2002). One key reason for this outcome is government's inability to commit to a rule-based, less-discretionary policy, even if such a commitment allowed direct government involvement during periods of scarcity and high prices. As a result, *unpredictable* government behavior creates a great deal of risk for private traders, reducing their incentives to perform the trade and storage that could otherwise satisfy many of government's food security objectives (NEPAD, 2004; see also below). In the end, producers and consumers both lose. Small farmers are penalized for producing a surplus by falling

prices and lack of market, which reduces their incentives to produce. Consumers have also faced greater instability in grain markets, with respect to both physical quantities available and price. In most cases, therefore, experience with strategic grain reserves – and the *ad hoc* trade policy that often goes with them -- in this part of Africa up to now has been less than satisfactory (NEPAD, 2004).

***Yet governments cannot credibly leave themselves completely out of these markets, for two reasons:*** First, the well known weaknesses of food markets in ESA mean that, at least for the medium-term future, the level of seasonal and inter-annual price variability that would prevail under purely private sector activity is likely to periodically exceed what will be politically acceptable. Second, the political importance of these markets means that governments, especially democratically elected governments, must be seen to be "doing something" (Poulton et al., 2006) to make these markets work better.

So the relevant question is not how to end government involvement in food markets, but rather how to structure this involvement so that it has positive effects on long-term market development. We turn to this in the next section, focusing on Mozambique, and on the positive lessons that emerge from recent research.

**IMPLICATIONS FOR MOZAMBIQUE:** ***Mozambique is in an unusually strong position to take advantage of private sector activity to stabilize prices over time and space*****:** The country has major ports and transport corridors in northern, southern, and central provinces. Recent construction of a new bridge linking the grain surplus region of north and the center of the country will reduce transport costs and reinvigorate the active private sector already linking north surplus regions with central Mozambique, Malawi, and Zambia, and the grain deficit south with central Mozambique and South Africa.

***Additional investment in road and rail infrastructure, incentives, and institutions, would help bring down transaction costs and allow private action to further stabilize prices:*** Long-run market development that creates a more stable environment for producers, traders, and society at large should be at the top of government agenda rather than short run "remedial" measures to respond to price risk and instability. Byerlee, Jayne, and Myers (2006) suggest that market-based, privately-run risk management mechanisms such as warehouse receipt systems can improve competitiveness by (a) providing better access to formal credit markets through reliable, verifiable collateral for loans, (b) facilitating private storage and management of seasonal price risks, and (c) making food marketing more efficient by acting as a clearinghouse that enforces ownership claims and guarantees performance on contracts.

However, emergence of such market-based mechanisms with high potential for reducing price risk and instability requires an investment in "enabling environment" in the form of basic infrastructure and institutions.

***Additional stabilization, for those times when Mozambique has to rely on imports from the world market beyond what they normally make, could be obtained in a cost efficient manner using a financial reserve***: Experience in Malawi shows clearly that operating a food reserve is an expensive business that can exacerbate food crises rather than stabilizing prices (Byerlee, Jayne, and Myers, 2006; NEPAD 2004). For countries like Mozambique, with major ports and transport corridors, the best option for price stabilization during food crises may be a financial reserve (Poulton et al., 2006). A financial reserve is a fund drawn upon only to enable food imports food in case of emergencies. This fund can take the form of a commitment to call for funds when a set of well specified criteria for using such funds have been met, or take the form of an account in foreign currency with an accredited financial institution (NEPAD, 2004).

***If the government chooses also to maintain a public physical reserve, then the conditions for operating this in a manner that improves market performance are*** (Byerlee, Jayne, and Myers, 2006; NEPAD 2004): (a) Central Bank type autonomy, with independence from political process and clear and well defined objectives, (b) highly professional management with a good information system and strong analytical capacity, (c) flexibility to hold the combination of grain and financial reserves that minimizes costs with acceptable risk, and (d) clear and open rules for market intervention to ensure transparency in its interventions.

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Financial and substantive support for this study was provided by the Ministry of Agriculture (MINAG) of Mozambique, the United States Agency for International Development (USAID) in Maputo, and the Bureau of Economic Growth, Agriculture and Trade of USAID/Washington. Opinions expressed in this document are the authors' responsibility and do not reflect the official position of MINAG nor of USAID.



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