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FOOD CRISES AND FOOD MARKETS: IMPLICATIONS FOR EMERGENCY RESPONSE IN SOUTHERN AFRICA

By David Tschirley and T.S. Jayne**

Food Security III Cooperative Agreement between US. Agency for International Development, Global Bureau, Economic Growth and Agricultural Development Center, Office of Agriculture and Food Security and Department of Agricultural Economics, Michigan State University

Policy Messages

- Southern Africa has become an increasing focus of humanitarian concern as the perceived frequency and severity of food crises has intensified over the past decade.
- Private trade could help reduce the severity of these crises, but governments and traders find themselves in a vicious circle, in which lack of trust leads to behavior that further undermines trust, producing outcomes unattractive to both.
- The boom in world commodity prices has accentuated concerns about food crises, and has already reinforced governments' tendencies to restrict trade during crises.
- Yet the price boom makes efficient regional trade especially important during food crises; continued *ad hoc* trade restrictions will constrain the development of market institutions that could otherwise reduce food price spikes and fill production shortfalls more quickly than the public sector.
- Empirical policy analysis is a crucial input for escaping from this trap, but to be effective it must be embedded in an ongoing consultative process involving government, traders, donors, and policy analysts; without such consultation, policy analysis will largely be ignored except by those that already agree with it.

INTRODUCTION: Southern Africa is an increasing focus of humanitarian concern. The rate of perceived food crises in the region has increased sharply during this decade, with identified crises in 2001/02, 2002/03, and 2005/06. The world commodity price boom that started 18 months ago has accentuated concerns about the potential severity of future crises. This Policy Synthesis summarizes the findings of detailed analysis (Tschirley and Jayne 2007) about the current staple food situation in the region and about how governments have behaved towards markets and regional trade during food crises over the past decade. We then ask whether these responses show evidence of learning from past mistakes. Lastly, we consider how the commodity price boom affects the role of regional trade during food crises and the likely stance of governments in the region towards trade. The analysis concludes that the breach between actual and needed government policy during food crises threatens to become wider than ever as a result of the price boom, and suggests ways in which empirical policy analysis might contribute to closing this gap.

BACKGROUND: Staple food sectors in the region show three important trends: (1) substantially less correlation of production across countries than in the

past; (2) surprising stability in regional production and prices; and (3) more diverse production, marketing, and consumption patterns.

Production across countries is less correlated than in the past, creating more opportunities for trade: Production in the region has become far less covariant during the last decade (Table 1). From 1990 to 1999, correlation coefficients on production between South Africa, Zimbabwe, and Zambia were large, positive, and highly statistically significant; during the second overlapping 10-year period they were much lower and none were significant. Correlations between those three countries and Mozambique and Malawi were small and insignificant during both periods, with one exception: a large, significant, and *negative* correlation between Mozambique and Zimbabwe during the second period.

Maize production has become less variable over time, not more: Maize production in southern Africa is considered highly and perhaps increasingly variable. Yet official data suggest production has become more stable over the past decade. From 1990 to 1999, the median year-on-year change in total regional production[1] was nearly 20%, with changes exceeding 50% during four of the 10 years. Median year-on-year change from 1996 to 2005 was only 10%, and no single change exceeded 30%. Coefficients of variation in production fell during the second overlapping ten-year period in all countries except Zimbabwe.

Per capita maize production has not fallen in the region: Per capita maize production in the region has shown no trend since 1990, despite clear declines in per capita area harvested. More surprisingly, aside from Zimbabwe, per capita maize production has unambiguously declined only in Zambia, and there the decline has been largely offset by increased cassava production (Chitundu, Droppelmann, and Haggblade 2007). Malawi's per capita maize production trended upwards from 1990 through 2007.[2]

Table 1. Correlation Coefficients of Reported Maize Production among Selected Southern African Countries, 1990-2005

		South Africa	Zambia	Zimbabwe	Mozambique	Malawi
South Africa	1990-1999		0.66**	0.93***	0.18	0.12
	1996-2005		0.36	0.51	0.04	-0.18
Zambia	1990-1999	0.66**		0.77***	-0.04	0.36
	1996-2005	0.36		0.27	-0.08	0.06
Zimbab-we	1990-1999	0.93***	0.77***		0.30	0.22
	1996-2005	0.05	0.27		-0.88***	0.21
Mozam-bique	1990-1999	0.18	-0.04	-0.30		0.65**
	1996-2005	0.04	-0.08	-0.88***		-0.20
Malawi	1990-1999	0.12	0.36	0.22	0.65**	
	1996-2005	-0.18	0.06	0.21	-0.20	

Data sources: FAOSTAT

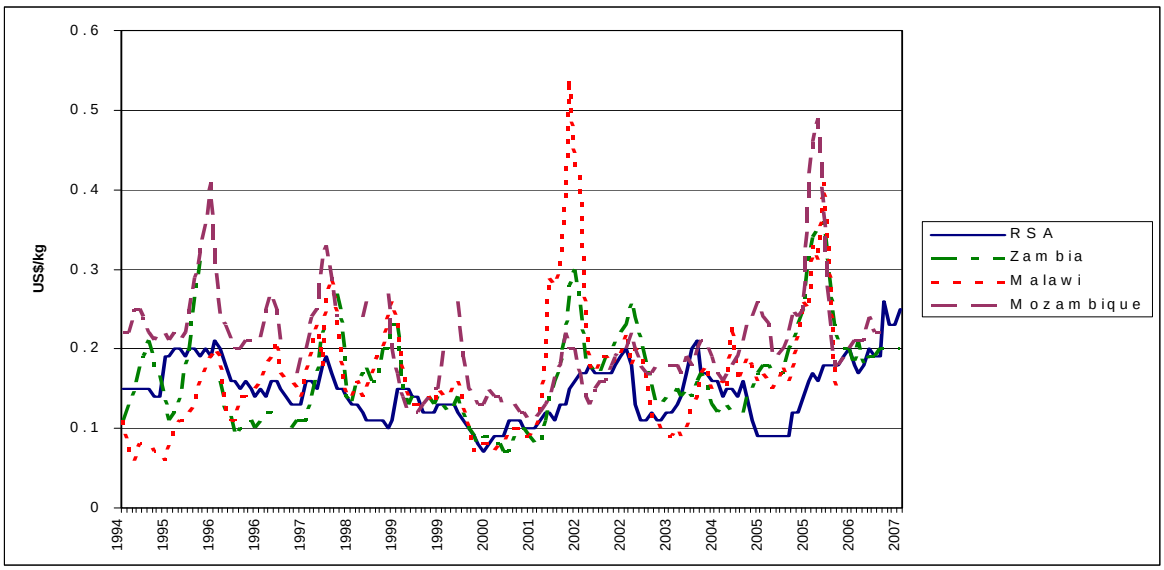
[1] Mozambique, South Africa, Malawi, Zambia, Zimbabwe, and Swaziland.

[2] Though widespread doubts about extremely high official production figures for 2006 and 2007 suggest only a modest trend and very high variability.

Real maize prices show no discernable trend since 1994: Maize price data are much less affected than production data by concerns about data quality, and price data reinforce the production story: nominal USD prices in the region show no appreciable trend since 1994, with the statistically significant positive trend since 2001 largely offset by a comparable negative trend before that time (Figure 1). Furthermore, emerging evidence (Jayne et al. forthcoming) shows that, in real local currency terms, maize prices have fallen sharply in Zambia between 1994 and May 2008, have shown no trend in Mozambique, and have risen slightly in Malawi. In all three cases, the large run-up in world prices denominated in USD is much less severe when food prices are expressed in real local currency terms. These price trends suggest that, if access to food is more difficult for more people in the late 2000s than it was in the early 1990s, it must be due to declining incomes among sub-populations in the region; on an aggregate level, production and prices both suggest steady or increasing per capita food supplies over the period.

Production, marketing, and consumption patterns have become more diverse, creating greater opportunity for markets to stabilize consumption: These changes are linked to the reduced subsidy to and control of maize systems that began in the early 1990s. Especially in the more isolated and agro-ecologically less advantaged areas, cultivated area has begun to diversify away from maize, with cassava especially filling the gap in Zambia and Malawi and continuing to be an important staple in the most heavily populated rural areas of Mozambique. Liberalization has also encouraged the development of decentralized private food systems that redistribute maize and other locally produced foods between surplus and deficit households, regions, and countries. Informal trade between northern Mozambique and Malawi is well known; less appreciated is the active trade between Tanzania, Malawi, Zambia, Zimbabwe, and Mozambique (FEWSNet 2008).

Figure 1. Maize Grain Prices in Southern Africa and Time Trends, 1990-2007



Note: Prices in RSA are SAFEX cash prices for white maize grain; all others are white maize grain prices at retail. Mozambique is a mean of Maputo, Xai-Xai, and Maxixe in the south; Zambia is a mean lf Lusaka, Choma in the south, and Chipata in the east; Malawi is a mean of Lilongwe, Karong, and Nkata. The trend is from a linear regression of the pooled data.
Source: Zambia: Central Statistical Office; Mozambique: SIMA; Malawi: FEWSNET

These informal systems, based on small-scale trading, milling, and consumption of a wider range of types of maize meal, have contributed to the real price trends noted above, despite fewer subsidies to the systems and booming USD prices in world markets.

Consumer expenditure patterns also appear to be diversifying away from maize. In rural areas of southern Mozambique, rice and wheat have a higher combined budget share than maize (15% vs. 11%; Tschirley and Abdula 2007). Wheat's share in Lusaka and Kitwe cities of Zambia – the two largest in the country – exceeds that of maize. Maize's budget share is certainly higher in rural areas, but the trend towards greater diversity in consumption is likely to be the same.

All three of these trends – more diversified production and consumption, and more decentralized food distribution systems (including regional trade) – should reduce the region's dependence on external food aid during droughts by broadening the consumption base and making it easier to move local surpluses to populations in need. Capitalizing on this opportunity requires increased productivity and a much more open policy regarding border trade; only Mozambique currently has such a policy.

GOVERNMENT RESPONSE TO FOOD CRISES: Table 2 provides summary information on the five major food crises to occur in the region since the early 1990s. Tschirley and Jayne (2007) discuss the handling of the crises in detail, making four key points. First, the crises show widely divergent characteristics, with regional supply balances ranging from a 10m mt deficit to a 2m mt surplus. For example, while the 1992/93 crisis was spurred by a massive, region-wide drought that left no prospect for meaningful regional trade, the 2005/06 crisis featured a regional surplus in South Africa able to cover the entire deficits of Malawi and Zambia.

Second, during all three crises of this decade, regional trade could have played a major role in meeting national deficits and stabilizing prices, either because the region was in surplus (2005/06), or because South Africa and Mozambique (in 2002/03) had surpluses and the regional deficit was small (2001/02) or moderate (2002/03). Third, during all three crises this decade Malawi and Zambia repeated behaviors that systematically hindered the ability of private traders to make a positive contribution to more stable food prices during the crises. They did this either by creating policy uncertainty that "froze" the private trading sector into inaction (Zambia), or by outright government control over all trade.[3] Finally, Mozambique resolutely keeps its borders open but fails to deal with tariffs on imported maize meal and VAT on imported maize grain that put the south of the country, which has the highest urban population, at risk during shortages (Tschirley and Abdula 2007); these were major contributors to Mozambique's unusual price spike in 2005/06. Overall, the review argued that governments in the region have shown great inertia in how they handle markets during food crises. To a large extent, Zambia and Malawi do now what they have done in the past, resorting to even greater control of markets during food crises than during normal supply years, restricting the scope for private trade and putting upward pressure on food prices. Even Mozambique is doing what it has done for nearly 20 years in allowing the private sector to import and export at will; and it has been difficult to generate any interest among policy makers there to examine the impact of the tariff and VAT policies on

[3] Despite these hindrances, commercial trade (though some as in Malawi was done by government) accounted for three times more of the et inflow to the region in 2002/03 than did food aid.

Table 2. Summary of Production and Stock Outcomes for Southern African Crises, and Scope for Trade

Marketing year	Regional Situation			Scope for Regional Trade	Outcome
	Production Outcome	Beginning Stocks	Overall Supply		
1992/93	-65%	Very low	Massive deficit, > 10 mmt	Very little. Need for massive international imports	------
1995/96	-37%	Very high, > 4mmt	Deficit 2 mmt	More than 1992, but modest	------
2001/02	-9%	About average, > 2mmt	Small deficit, ~ 1mmt	Great scope; high stocks meant supplies in RSA and N. Moz sufficient to cover regional needs	***Malawi***: Huge price spike above IPP; ***Zambia***: lesser but also large spike above IPP; ***Moz***: Prices well below IPP
2002/03	-1%	Historically low, <500,00 mt	Deficit up to 3mmt	Great scope, due especially to surplus in RSA. Exports from RSA, N. Moz, and Tanzania	***Malawi***: Very large imports, depressed prices throughout 2003/04; ***Zambia***: similar to previous year, spike above IPP; ***Moz***: Prices well below IPP
2005/06	+15%	Above average, ~ 3 mmt	Surplus up to 2 mmt	Great scope due to large surplus in RSA>	Large price spikes in each country, but went above IPP only in Mozambique.

Note: Production outcomes are relative to the 1990-2005 mean. Source: FAOSTAT for production data; FEWSNET for stocks; INTERFAIS for food aid.

consumers' access to food, despite their dramatic effect on maize prices in 2005/06.

IMPLICATIONS OF HIGHER WORLD COMMODITY PRICES: Higher world commodity prices are likely to increase the importance of regional trade in staple foods in southern Africa. South Africa's market is much more strongly linked to world markets than are the markets in Zambia, Malawi, Zimbabwe, and even Mozambique; the latter are more insulated from world markets by transport costs, and also are unable to export into international markets due to deficient quality and contracting standards. A logical implication of this observation is that prices in South Africa should be more affected than those in other countries of the region by the world price boom. In fact, this pattern can already be seen. Shortly after prices denominated in nominal USD boomed in South Africa, those in Zambia, Malawi, and Mozambique all dropped below import parity (IPP) from South Africa, and with one exception (Lilongwe during a single month), have remained well below that level ever since. This is the second longest and by far the most pronounced gap between local prices and IPP since at least 1999. This gap between interior country prices and South African prices reflects the fact that world prices have been more fully passed through to South African markets, and that transport costs from South Africa to interior countries have risen dramatically. Consequently, IPP is very much higher, implying more room for these countries to meet their own food needs and mitigate the upward pressure on food prices if they can increase farm productivity and improve trade among themselves.

Instead of this increased trade among neighbors, however, these countries show signs of moving in the opposite direction. Zambia, Malawi, and Tanzania have all imposed export bans or trade restrictions in maize over the past 24 months to protect domestic supplies. Ironically in the case of southern Africa, these policies will likely lead to more unstable supplies and more unstable and higher prices for all concerned.

ESCAPING THE TRAP: THE POTENTIAL AND LIMITS OF EMPIRICAL POLICY ANALYSIS: It is not difficult to generate a list of actions that governments should take to improve market performance during food crises – and thus reduce the magnitude of the crisis and the cost of responding to it. The most basic is to focus their own actions on being transparent, detailed, and timely in sharing information about emergency response plans with private traders as well as millers and other processors, and giving them full latitude to decide, in light of this information, what volume of commercial imports to procure.

It is important that policy analysts continue to make the case, in as many ways as possible, for this type of behavior on the part of governments. Learning does have a role to play in policy change. Yet policy surrounding emergency response in Zambia and Malawi reflects a deep mistrust between government and the trading sector. The situation in both countries shows characteristics of a "wicked problem", in which beliefs are grounded in competing cultural norms and resolution resists factual analysis (McBeth et al. 2007). The turn towards political democracy may make the problem more intractable, since governments need to be seen to be "doing something" about the fundamental conditions of their populace's lives, and emergency response provides a compelling stage on which to do so. There is no simple solution to this problem. One certainty is that for empirical policy analysis to have an effect on policy, it must be embedded in an ongoing consultative process involving government, traders, donors, NGOs, and policy analysts. Within such a process, good policy analysis can slowly make the case for more effective approaches to these problems; outside of such a process, even the best analysis will largely be ignored except by those who already agree with it.

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**The authors are both professor, International Development, Department of Agricultural Economics, Michigan State University, East Lansing MI 48824-1039, USA.

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