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**SUCSESSES AND CHALLENGES OF FOOD MARKET REFORM:
EXPERIENCES FROM KENYA, MOZAMBIQUE,
ZAMBIA, AND ZIMBABWE**

by

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1. INTRODUCTION

Governments in Eastern and Southern Africa have fundamentally transformed their food economies over the past decade. This restructuring has taken place amidst severe macroeconomic crises and periodic drought. Despite the accumulation of empirical analyses showing that the food market reforms have generated some impressive achievements, these conclusions remain controversial and contested by important policymakers in each country in the region. The reforms have created acute political dilemmas for governments amidst protests to protect important groups whose interests are perceived to have been threatened by the reforms. As a result, policymakers have faced difficult decisions in defining a consistent and effective role for the state in the newly emerging food marketing systems.

The major challenges facing policymakers in the region are:

1. How to design agricultural marketing systems to better serve as a catalyst for farm productivity growth, particularly for smallholders;
2. How to cost-effectively deal with price instability for both consumers and producers in the newly liberalized marketing system in a manner that limits governments' exposure to political risks;
3. How to develop the commitment to a consistent and stable policy environment to support long run private investment and insulate the new systems from disruptive policy lurches in response to short-term political crises;
4. How to design a process of collaboration between policymakers, donors, researchers, and the private sector to maximize the probability of achieving improved agricultural policy and performance.

Arching over each of these challenges is the need to better understand how to stimulate investment in the food system by the private sector. What kinds of incentives do the private sector positively respond to? And, conversely, what kinds of actions have been shown to impede private sector investment? The need for a better understanding of how government actions affect private incentives may be critical to avoid situations in which perceptions that “the private sector will not respond” become a self-fulfilling prophecy.

This paper describes the different food policy courses pursued in recent years by four countries in Eastern and Southern Africa, and documents their differential effects on farmer and consumer behavior. Results are based primarily on a survey and synthesis of recent analysis. The paper highlights lessons learned from the different policy paths pursued in each country, and thus provides insights into the costs and benefits of alternative strategies for promoting national food security and enhancing producer and consumer options. The paper also identifies key “second generation” constraints that continue to impede national food security objectives and discusses potential strategies for overcoming them.

Kenya, Zimbabwe, and Zambia were among the last in Africa to liberalize their staple food sectors, and perhaps face the most serious challenges in overcoming historically entrenched controls on food marketing in Africa. While initially implementing similar maize marketing

reforms at approximately the same time during the early 1990s, these countries have in recent years taken strikingly different policy paths, with Kenya's reform process moving beyond that of Zimbabwe or Zambia in its comprehensiveness. By late 1998, Kenya's food policy environment was more similar to Mozambique, which undertook food market reforms earlier and more extensively than the other countries. Zimbabwe and Zambia, on the other hand, represent cases where the state has retained a major role in various food marketing functions and where the commitment to a liberalized market-oriented system appears weakest.

2. EVOLUTION AND EFFECTS OF MAIZE MARKET REFORM

Current food policy dilemmas in Eastern and Southern Africa are rooted in an historical context. Understanding the political and economic pressures propelling food market policy in the region requires an understanding of (a) the role of food policy in the post-independence "social contract" between the state and the African majority; (b) policymakers' beliefs and positions toward reform; and (c) maize meal consumption patterns.¹

Maize is the strategic political crop in this region of Africa. Maize became the cornerstone of an implicit and sometimes explicit "social contract" that the post-independence governments made with the African majority to redress the neglect of smallholder agriculture during the former colonial period. The controlled marketing systems inherited by the new governments at independence were viewed as the ideal vehicle to implement these objectives. The benefits of controls for settler farmers during the colonial period generated the belief that the same system could also promote the welfare of millions of smallholders if it were simply expanded (Jenkins 1997).² The social contract also incorporated the understanding that governments were responsible for ensuring cheap food for the urban population. While this approach achieved varying levels of success in promoting smallholder incomes and consumer welfare, a common result in all cases was an unsustainable drain on the treasury.³ The cost of supporting smallholder production (through input subsidies, credit programs with low repayment rates, and commodity pricing policies that subsidized transport costs for smallholders in remote areas and often also subsidized consumers) could simply not be sustained. Under increasing budget pressure and associated macroeconomic instability, international lenders gained leverage over domestic agricultural policy starting in the 1980s, which culminated in structural adjustment programs in each country (Jayne and Jones 1997).

¹ A survey of the historical underpinnings of contemporary food policy issues in Eastern and Southern Africa is contained in Jayne and Jones (1997). More detailed country-level works include Keyter (1975); Mosley (1983); Bundy (1979); Jansen (1977); Miracle (1966); and Shopo (1985).

² For an analysis of how the agricultural controls in the colonial period were used to support colonial settler farmers, often at the expense of African farmers, see Mosley (1975) for the case of Kenya; Keyter (1975) for Southern Rhodesia/Zimbabwe, and Jansen (1977) for Northern Rhodesia/Zambia.

³ For example, in the early 1990s, the deficits of Zimbabwe's Grain Marketing Board's were 5% of GDP (Jenkins 1997). By the late 1980s, Zambia's subsidies to the maize sector reached 17% of the government budget (Howard and Mungoma 1997).

Fiscal crisis and pressure from international lenders have been the principal driving forces behind food market reform. Policy reversals, state interventions, and inconsistent policy directives have characterized the reform process in each of these countries and underscore the fact that many government decision makers have not accepted the premise of the reforms and still mistrust the workings of markets. This might be understandable given that until recently almost no one in the region has experienced a market-oriented food system in his/her lifetime.⁴ Dissatisfaction with market reform has also been exacerbated by its association with a retreat from the “social contract” marketing investments in support of smallholder welfare. Liberalization has been associated with a decline in *absolute* grain production in Zimbabwe, Zambia, and Kenya (Jayne and Jones 1997).⁵ Some local reform champions counter that blame should not be laid at the door of market liberalization, which only made it more difficult to hide the unsustainable subsidies of the controlled systems (Takavarasha 1994; Argwings-Kodhek 1998a). Rather than view the stagnation of smallholder grain production as a consequence of liberalization, it is suggested that both liberalization and the grain production decline have been the consequence of unsustainable government operations that temporarily and unsustainably encouraged smallholder maize production during the control period (in the form of subsidized credit, subsidized input distribution systems, and loss-making marketing board operations).⁶ When these deficits accumulated to such proportions as to cause macroeconomic instability, these countries became dependent on international lenders such as the IMF and World Bank, who insisted on measures to solve the causes of the problem before granting loans. One of the most important but least understood lessons of the temporary state-led agricultural “success stories” during the 1980s is the importance of developing sustainable agricultural strategies that can live within their means, i.e., containing their costs within the state’s fiscal resources.

However, the reformers have not necessarily gained the upper hand in local policy circles. The continued objective of overcoming the “dualism” of the agricultural sectors and persistent doubts over the private sector’s capacity to play the leading role in this objective have resulted in a second generation of controls and government (or NGO) distribution programs to subsidize inputs and output prices for smallholders. These public programs undermine private trading incentives and lead to a vicious cycle in which the private sector becomes reluctant to engage in activities in which government subsidies make it impossible to recover real costs. The lack of private sector response in turn creates a vacuum that rationalizes an even greater perceived role for government. Therefore, the prevailing situation is one where the reform process, having been initiated under external pressure, is being managed by policymakers with varying levels of commitment to, and understanding of, the process. This environment has clearly dampened the private sector’s response to market reform in the region.

⁴ This suspicion may appear reasonable in countries such as Zimbabwe, where for decades Africans’ experience with private grain traders were the licensed buying agents that were instructed by the state to offer prices substantially below those offered to European farmers.

⁵ The comparison periods were 1980-89 for the control period and 1993-96 for the period of liberalization. In Zambia, Zimbabwe, and Tanzania, the withdrawal of state marketing infrastructure and associated transport subsidies to smallholders under the reforms has reduced grain prices and production in important smallholder farming areas, and in some cases has improved the relative position of large-scale European farmers.

⁶ This view indicates the need for a re-examination of the so-called “smallholder success stories” hailed in Zimbabwe and (to a lesser extent) Zambia during the 1980s (Rukuni and Eicher 1994; Byerlee and Eicher 1997).

Yet one aspect of the system that has been fundamentally transformed by market reform in each country has been in maize milling and maize meal consumption. For decades prior to the reforms, maize meal consumption in urban and grain-deficit rural areas was predominantly in the form of a refined sifted meal processed by a few large-scale roller milling firms.⁷ These registered milling firms were integrated into the state food marketing channel. Milling and retailing margins were fixed by the government based on millers' stated cost structure. A second form of maize meal – whole or “posho” meal – was consumed in rural areas where grain supplies were available.⁸ Households would take their grain to small-scale informal hammer millers and pay a fee for milling it into whole meal. Some households would also purchase whole hammer-milled meal in local markets. Cross-country studies in Eastern and Southern Africa indicate that unit processing costs for hammer-milled maize meal are typically less than half those of the refined roller-milled meal, which is significant given that about 30-50% of the retail cost of maize meal during the control period was comprised of milling margins (Stewart 1977; Bagachwa 1992; Rubey 1995).

Other factors held constant, the lower processing margins of whole meal would have given hammer millers a major cost advantage over the refined industrial-milled meal. Yet government subsidies were applied to refined meal marketed through the official marketing channels (except in Mozambique), thereby reducing its price relative to whole meal. The dominance of the large-scale industrial millers was further ensured through controls on the private movement of grain into urban areas and across districts, which gave the registered millers a de facto monopoly on maize meal sales to urban and grain-deficit rural areas (once local supplies were depleted).

Despite these controls however, it was widely believed in the early 1990s that urban consumers would consume only the refined maize meal distributed through the official marketing channel and had no interest in potentially less expensive whole maize meal. Indeed, prior to the reforms, over 90% of the maize meal consumed in urban areas was in the form of refined meal. The perception of low demand for whole maize meal made many policymakers reluctant to eliminate the subsidies on refined maize meal or to jeopardize the controlled marketing system that ensured its availability.

In spite of these concerns and under pressure from international lenders, the Governments of Kenya, Zambia, and Zimbabwe in 1993 (Mozambique in 1987) each eliminated controls on private grain trading, deregulated maize meal prices, and eliminated subsidies on maize sold to registered millers. Prices of industrially-milled meal soared. However, due to the liberalization of private trading, maize grain became readily available in urban and rural grain-deficit areas, fueling the rapid expansion of whole meal processing, retailing, and consumption. In each country, the large-scale millers swiftly lost a major part of their market

⁷ This has been called “roller meal” (80-85% extraction rate) in Zambia and Zimbabwe, “sifted meal” in Kenya. An even more refined “breakfast meal” (60-70% extraction rate) has been popular in urban areas of Zambia and Zimbabwe.

⁸ Various called “mugayiwa” in Zimbabwe and Zambia, “posho meal” in Kenya, and “farinha con farelo” in Mozambique. Hammer-milled whole meal contains the entire maize seed (germ, endosperm and bran), 100% extraction rate, and hence has a somewhat lower shelf life, particularly in humid areas. More refined meal (of varying extraction rates) is also produced by hammer-millers with the use of a dehuller, which removes most of the bran and germ (70% to 85% extraction rate).

to small hammer mills, whose numbers rapidly expanded in urban areas.⁹ Widely viewed during the control period as a product having negligible demand, whole maize meal by 1994 accounted for 40%-60% of total urban meal consumption in Zimbabwe, Kenya, and Zambia (Jayne et al. 1995). The increased availability of whole meal at 60% to 75% the cost of roller meal has partially or fully offset the adverse effect of eliminating consumer subsidies on roller meal in these countries. Similar benefits have been achieved in rural grain-deficit areas that were formerly dependent on refined industrial-produced meal prior to the reforms. Household surveys carried out in the 1993-1995 period indicated that low-income consumers in particular shifted quickly to hammer-milled meal (see Jayne et al. 1995 for a synthesis of cross-country findings).

Notwithstanding these benefits, the newly liberalized food marketing systems created new challenges and risks for governments. In each country, major concerns arose over how to contain food price instability and source adequate supplies of maize grain during local production shortfalls. Until recently, implementation followed the same general pattern in Zimbabwe, Zambia, and Kenya. Since 1995 however, despite enduring similarities in the organization of their food economies, the implementation of maize marketing policies have differed markedly across these countries. As a result, so have outcomes. These divergent approaches provide a key opportunity for policymakers and analysts to learn from the experiences of each case.

3. ZAMBIA

Zambia has made major strides in its attempts to move from a state-led to a market-oriented food economy. The state's maize marketing board was abolished in the early 1990s. After being nationalized in 1986, the industrial milling industry was again privatized in 1995. Multinational firms are now active in maize and fertilizer marketing in smallholder areas. Controls on private maize importation have been relaxed, but exports are still officially banned.¹⁰

A key feature of Zambian maize policy is the need to import maize during most years. Marketed supplies from local production are generally exhausted 8-10 months after harvest. Political and economic stability are importantly tied to ensuring adequate supplies of maize meal at tolerable prices in urban and mining areas.

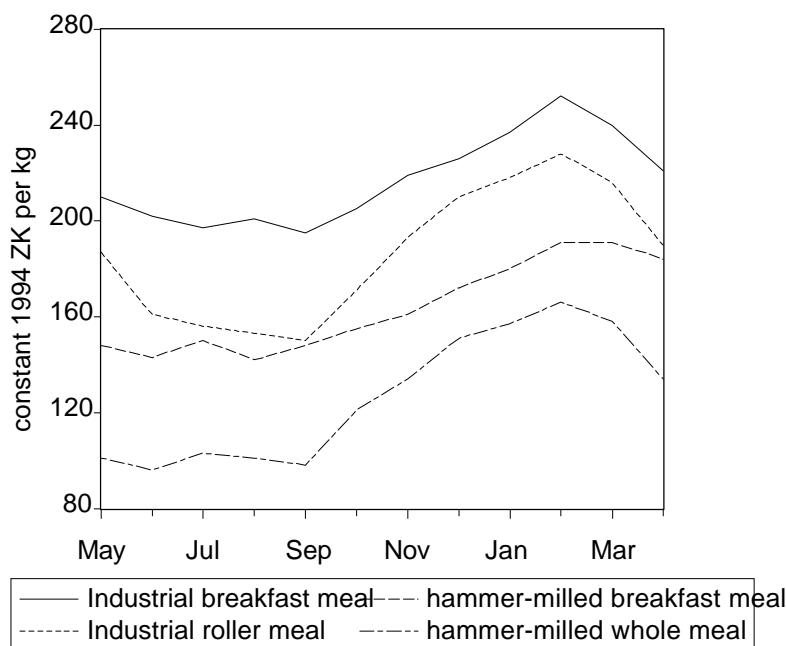
In response to market stabilization objectives, the government established in 1995 the Food Reserve Agency (FRA), officially charged with holding strategic grain reserves. However, the government through the FRA has not entirely refrained from subsidizing industrial-milled meal for the urban population. Between November 1997 and February 1998, the FRA sold maize grain to selected industrial millers amounting to 30% of the total maize meal demand for Lusaka. This subsidy enabled the selected industrial millers to acquire maize grain at

⁹ The number of hammer mills operating in the capital cities of Nairobi, Harare, and Lusaka has risen by 80%, 57%, and 40% in the past several years (Jayne et al. 1995; Republic of Zambia 1995).

¹⁰ There is a 5% import duty on maize imports from South Africa.

roughly 25% below prevailing market prices, which consequently gave them a major advantage in the maize meal market compared to other millers who did not have access to FRA grain (Johansson 1998). The situation in Eastern Province markets was even more pronounced: the FRA sold 140% of the marketed maize grain requirement for the region at roughly 30% below market price (Johansson 1998). This approach to stabilizing prices and supplies disrupts private trade, unintentionally depresses private importation, selectively benefits millers who gain access to subsidized FRA supplies, and aggravates fiscal deficits. Moreover, selling grain at below-market prices to selected millers disadvantages the main competitors in the system that the reform process has been trying to develop – the small-scale trading and milling sector. While stabilizing food prices for consumers is a policy objective of fundamental importance in Zambia, a key challenge is how to meet these objectives in a manner compatible with other important food policy objectives.

Figure 1. Seasonal Average Maize Meal Prices, 1993-1998, Lusaka, Zambia

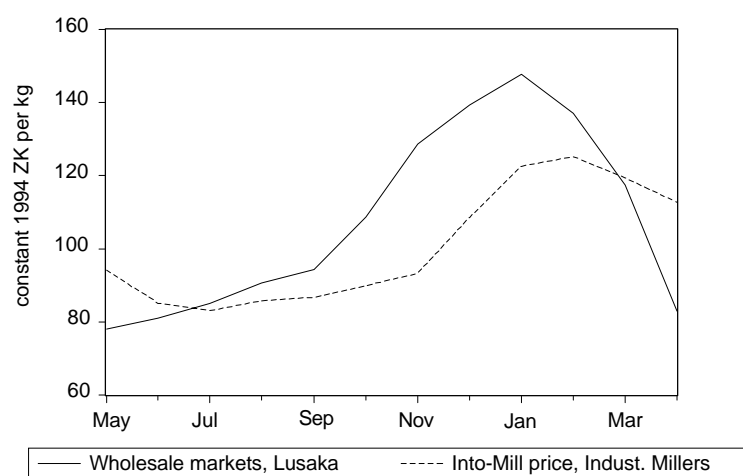


Recent developments in Zambia also illustrate how uncertainty over public sector policy can affect the private sector's ability to carry out basic marketing functions. Since the 1998 harvest, a vicious circle has developed in which the government, uncertain of the private sector's capacity to import maize, arranges for imports itself and releases supplies onto local markets (sometimes at below-market prices), which in turn affects the incentives of private firms to import. While government activities have affected private import decisions, interviews with private traders and millers in September 1998 indicate that there was widespread speculation over whether FRA had the financial resources to import the estimated

residual national requirement of 410,000 tons.¹¹ While FRA's mandate is to stabilize the market, private traders complain that FRA has in fact introduced greater uncertainty into the market for both importation and domestic operations. The uncertainty stems from (1) whether FRA actually can and will import announced quantities which in turn causes private traders to adopt a wait-and-see approach rather than pro-actively sourcing grain, and (2) the potential for FRA sales to depress market prices, thus causing potentially large losses for other traders holding stocks for release later in the season. But the political sensitivity of the maize sector and key policymakers' lack of confidence in the private sector have combined to make maize importation an enduring function of the state. The FRA's distribution of fertilizer in 1998 is likely to have also depressed the private sector's investment in fertilizer delivery. Hence, the current food policy environment is characterized by a lack of clarity over the role of the private sector and its incentives to invest in the marketing system, despite being liberalized in other important respects.

The problem extends well beyond uncertain government imports. Without a mechanism for acquiring information on the import decisions of other private actors, trade becomes extremely risky. Unexpected releases of imported supplies onto local markets by one trader may depress prices and generate losses for other traders. While it may be argued that such are the risks of engaging in markets, markets function more efficiently with information. The risks associated with poor information flows may result in an under-provision of imports by the private sector, contribute to tighter supplies and higher prices, and reinforce the government's continued perceived need to intervene. The problem of coordinating private and public sector maize importation might be addressed through a public information system through which all maize imports are reported. This would allow traders to make import decisions with reasonable knowledge of the aggregate import decisions being taken by others, including FRA. The process of determining national maize import requirements would also be greatly facilitated by

Figure 2. Seasonal Average Maize Grain Prices, Wholesale Markets vs. Into-Mill Prices for Industrial Millers, 1993-1998



¹¹ In more recent months, it has become evident that the 410,000 ton national requirement was an overestimate. The FRA has expressed slow sales of the 130,000 tons it has already imported.

better information and monitoring of informal trade flows between Zambia and its neighbors. Events in 1998 have shown that official estimates of national maize import requirements have been greatly overstated. This is creating problems for FRA to sell off the stocks it has imported in 1998 in anticipation of a national maize shortfall. The overestimated formal import requirement underscores the need for more accurate monitoring of domestic production (for a range of crops that are substitutable in consumption) as well as formal and informal trade flows (e.g., from Mozambique) in support of both private and state activities in the grain sector.

Foreign exchange shortages also limit the amount of grain local millers and traders can import. Purchases from South Africa and Zimbabwe must be in US dollars, but access to foreign exchange is severely limited, despite ostensible liberalization of the foreign currency market. As a result, most local firms cannot import desired quantities, and international firms with ready access to foreign exchange (e.g., Louis Dreyfuss, Cargill) have a major advantage in maize trading. By sidelining firms without access to foreign exchange, problems in the currency market constrain the performance of the grain marketing system.

3.1. Ensuring Access to Low-Cost Maize Meal

Recent analysis indicates that in the 1997/1998 marketing year, industrial-millers accounted for about 51% of total urban maize meal consumption, while hammer millers account for about 49%.¹² However, there is major seasonal variation in urban maize meal demand. The market share between industrial and hammer-milled meal changes as the season progresses, with hammer mills dominating in the months after harvest (May-August), and industrial mills accounting for the vast bulk of urban demand in the later months (September-April).¹³ Why does the market share of industrial and hammer-milled meal fluctuate inversely as the season progresses, and why is this important?

The seasonal urban consumption of hammer-milled meal corresponds to the availability of maize grain supplies in local public markets and seasonal differences between prices for maize grain in public markets and prices that industrial millers pay for their maize grain. During the immediate post-harvest months (May-July), maize grain supplies on public markets are relatively plentiful. These supplies are purchased by consumers and retailers, and then taken to hammer mills for processing into meal for a fee. During this post-harvest period, industrial millers, small traders, and consumers purchasing grain (for hammer-mill processing) are competing for supplies from local markets and hence face similar maize grain acquisition prices.¹⁴ During this period, hammer-milled whole meal is about 70% to 80% the price of industrial roller meal because hammer-milling margins are considerably lower than industrial-

¹² This estimated market share of hammer millers is slightly lower than that estimated by MAFF (1996) or by Seshemene (1998), which both estimate that hammer-milled meal accounts for roughly 65% of urban meal consumption.

¹³ This seasonal pattern is sensitive to the size of the harvest. If local supplies are depleted earlier in the season, consumers become reliant on industrial-milled meal relatively early in the season.

¹⁴ The larger buyers are still able to buy at slightly lower prices than small-volume buyers due to economies of scale in purchasing. Differences in wholesale and retail public market prices between April 1993 and September 1998 were roughly 8%.

milled meal (Table 1). Hammer-milled refined meal also costs about 80% the price of industrial milled breakfast meal during this period (Figure 1).¹⁵ These price differences largely explain the popularity of hammer-milled meal during the post-harvest months (accounting for an estimated 62% of total urban maize meal consumption during this period).

However, later in the season, the ability of consumers and small retailers to mill grain into meal at local hammer mills declines as maize grain supplies on public markets dwindle. Tight supply conditions also drive up public market prices. Large-scale millers, by contrast, have obtained access to imported supplies later in the season, including supplies from FRA that have frequently been subsidized. During the October - February period from 1993-1998, wholesale maize prices in public markets were 23% higher than into-mill prices for industrial mills (Figure 2). The combination of dwindling supplies in public markets and the channeling of imports to selected millers explain why industrial meal begins to dominate the market later in the season and consumers are compelled to switch to industrial meal.

However, a major consequence of this shift in consumption patterns is that urban consumers (especially low income households) pay more than necessary for staple maize meal. If imported maize grain and buffer stocks were released onto public markets instead of channeled directly to selected millers, so that the monthly price in public markets were reduced from 23% higher to only 8% higher than industrial mill purchase prices (still reflecting the economies of scale advantage of large-scale buyers), estimated expenditures on maize meal by urban consumers would decline by roughly 11%, an average of US\$12 million annually.¹⁶ Maize meal expenditures by the poorest third of urban consumers would decline by an estimated 16%.

Several key challenges emerge from an examination of the food policy path pursued in Zambia: First, how to develop a more consistent and stable policy environment to encourage private sector investment? While grain markets have been “liberalized,” the current environment is characterized by great uncertainty over the type and extent of future government activities in these markets. This uncertainty has clearly dampened private sector response to liberalization. The less-than-anticipated response from the private sector has been highlighted by reform opponents as a justification for reversion to greater government intervention. Breaking this vicious cycle will be critical for the achievement of Zambia’s national food security goals.

¹⁵ These meals are not strictly comparable. Industrial breakfast meal is generally more refined than hammer-milled refined meal, same with industrial roller vs. hammer-milled whole meal.

¹⁶ These conclusions are based on simulation analysis in Jayne et al. The method used was first, to estimate total monthly maize meal consumption in urban areas, based on food balance sheet information and interviews of six major industrial millers. We conclude that there is seasonal variation in total urban maize meal, reflecting availability of substitutes such as sweet potato, and also reflecting seasonal price rises later in the season. Based on monthly maize meal consumption estimates, we held constant the relative market share of industrial vs. hammer-milled meal observed during the May-August post-harvest period (reflecting consumer choices when grain is relatively plentiful in the markets and consumers can choose between all types of maize meal options). Then, taking the average price of industrial and hammer-milled meal for each month over the 1993-1998 period, we derive the price savings that would accrue to consumers (the difference between the price of industrial-milled meal and the simulated price of maize grain in public markets plus hammer milling fee) for the remaining months if the market share of hammer-milled meal were maintained through the year. The simulations indicate that the annual cost savings are sensitive to the size of the harvest, with larger gains occurring in drought years and smaller gains occurring in bumper crop seasons.

Table 1. Prices for Maize Grain and Maize Meal, January 1996 - August 1998

	Ethiopia	Kenya	Zambia	Zimbabwe	South Africa	Mozambique
	----- US\$ per metric ton (average from Jan. 1996 - Aug. 1998) -----					
Producer price	97	190	133	109	113	101
Wholesale price, capital city	135	241	174	120	133	217
Industrial milled roller meal	--	390	285	172	443	424 / 490 ¹
Hammer-milled whole meal, derived price ²	--	272	204	124	--	254
Hammer-milled whole meal, market price	--	--	--	--	--	343
Milling margins						
Industrial milled roller meal	--	106	94	53	258	169
Hammer-milled whole meal	--	31	30	23	--	37
Hammer-milled refined	--	--	82	44	--	--
Fertilizer (DAP) price	374	466	286	181 ³	348	--

Sources: Producer price references: Ethiopia: average of Shashemene and Nekempt markets, Grain Market Research Project Information System, Ministry of Economic Development and Cooperation, Addis Ababa. Zimbabwe: Grain Marketing Board pan-territorial producer price; Zambia: Choma market (FEWS database); Kenya: average of Kitale and Eldoret markets (Market Information Bureau, Ministry of Agriculture); South Africa: producer price, Randfonteine (South Africa Futures Exchange). Mozambique: average of Manica and Mocuba markets. Wholesale prices: Ethiopia: Addis Ababa markets, Grain Market Research Project Information System, Ministry of Economic Development and Cooperation, Addis Ababa. Zimbabwe: Zimbabwe Agricultural Commodity Exchange price quotes (ZIMACE), Harare; Mozambique: Market Information System (SIMA), Ministry of Agriculture and Fisheries. Zambia: Wholesale Lusaka public markets (FEWS database); Kenya: Nairobi public markets (Market Information Bureau, Ministry of Agriculture); South Africa; (South Africa Futures Exchange). Retail prices for industrial milled roller meal: retail outlets in Harare, Lusaka, Maputo, and Nairobi. South Africa retail prices are national average. Retail costs for hammer-milled meal: computed as retail maize grain prices plus custom-milling fee at hammer mills in Harare, Lusaka, Maputo, and Nairobi.

Notes: ¹Mozambique imports roller meal from South Africa and produces it locally. The first price is for locally produced roller meal. ²“Derived price” refers to the retail price of grain in local market plus custom milling fee to grind the maize into meal. ³Compound D (for basil application; DAP not commonly used in Zimbabwe).

4. KENYA

As in Zambia, Kenya's maize marketing system has been largely transformed over the past decade. Prices of both maize grain and maize meal have been deregulated, and there are no controls on private domestic grain movement. The role of the state grain trading agency, National Cereals and Produce Board (NCPB), has been drastically reduced. Government has,

since 1994, restricted NCPB's access to financing, which has severely limited its role in domestic procurement. In October 1998, government announced that NCPB would not purchase any maize domestically.

Like Zambia, population growth and stagnant production has turned Kenya into a net importer of maize grain in most years. But a major difference between Kenya and Zambia is that Kenya's private sector now handles all maize grain imports. The state's withdrawal from importing and releasing buffer stocks has thus eliminated the problem experienced in Zambia of some marketing actors being disadvantaged by the sale of government stocks to other buyers at subsidized prices. However, legislative rules have not been changed, and scope exists for NCPB to resume importation in the future.

To examine how market reform (as it has been implemented thus far in Kenya) has affected rural household welfare in recent years, a survey of 1,525 households in 24 districts of the country was implemented in 1997 by Tegemeo Institute/Egerton University. The districts covered a range of high-, medium- and low-potential areas (see Argwings-Kodhek 1998b for details). Key findings were:

1. A majority of households in almost all districts covered were net buyers of maize, i.e., they either only purchased maize or purchased more than they sold. Across the entire sample, 61% of rural farm households were net buyers of maize in 1996/1997, but this ranged from 28% in the primary maize belt areas to over 80% in low-potential areas and areas where the crop mix has been diversified to higher-valued crops. In only 4 of 25 districts surveyed in 1996/1997 were the majority of farm households net sellers.
2. Most rural households stated a preference for low rather than high grain prices (compared to those prevailing in 1996, a relatively low-price year in most areas). As expected, the percentage of households stating a preference for low maize prices was highest in areas where the incidence of net maize purchasing households was the highest.
3. About 60% of the households surveyed felt that the availability of maize grain for purchase has improved since the transition to a liberalized marketing system vs. 31% who felt it had deteriorated (Table 2, columns a, b, and c). Ten percent of the households perceived no change. The regions where the greatest proportion of households perceived an improvement in the availability of maize grain were in the Eastern Lowlands, Coastal Lowlands, Western Lowlands, and Western Highlands. In most of these rural areas, the net maize-buying households were formerly dependent on purchasing refined industrial meal once local supplies were depleted due to controls on inter-district maize movement during the control period. After the controls were removed, inter-rural trade in maize grain allowed households to buy grain and mill it into whole meal at substantially lower cost than buying refined industrial meal. Similar benefits to rural households were found in Zimbabwe and Zambia (Jayne et al. 1995). Inflation-adjusted maize prices in local markets have generally declined by 15% to 25% in the 1994-1998 period compared to prices in the 1985-90 period (Karanja, Jayne, and Strasberg 1998). These factors contribute to the perception of better conditions for net-grain buyers. A major benefit of more reliable and less costly access to staple maize grain is that it promotes farm income growth through increased

incentives for households to diversify into higher-valued crops rather than pursue food self-sufficiency objectives (Omamo 1998; Jayne 1994).

4. Another finding highlighted in Table 2 (columns d, e, and f) is that, despite the closure of many NCPB grain collection points in rural areas, most farm households in each area stated that it has become more convenient and easy to sell grain in the current liberalized period. Of the farmers selling grain, 70% of them sold to private traders who collected the grain from the farm. Human portage accounted for 8% of sales, suggesting that most sales now take place very near the farm (Argwings-Kodhek 1998b). Also in contrast to the control system, most traders buying maize now pay cash immediately at the time of the transaction.
5. The sample of 1,525 rural households were also asked their overall opinion of the change in market performance since the reforms were initiated. The question was framed as follows: "On the whole, would you prefer to go back to the grain marketing situation as it was 5 years ago, or do you prefer the present grain marketing system?" Responses to this question are shown in the final 3 columns of Table 2. Overall, 61% of households stated a preference for the current system while 34% preferred the former system. As with the previous questions, the preference for the current liberalized system was strongest in the grain-deficit areas such as Central Highlands, Coastal Lowlands, Eastern Lowlands, and Marginal Rain Shadow. Only in the Western Transitional zone (Kanduyi division of Bungoma District and the Kabras and Mumias divisions of Kakamega District) did the majority of households prefer the former controlled marketing system.

4.1. Dealing with Price Instability

Kenya's approach to stabilizing maize prices has shifted dramatically since 1994. Direct maize procurement, sale, and buffer stockholding have shrunk to marginal proportions, and have been replaced by the use of variable trade bans and tariffs. Exports were banned in 1996 after a weak harvest, but this was later replaced by a 25% tariff on maize imports to support prices to maize producers. This tariff rate was increased to 33% in September 1998 in anticipation of a large harvest. On the positive side, the decline in state maize trading and importation has precluded the problem experienced in Zambia of some marketing actors receiving preferential access to subsidized grain (with negative implications for competition and future investment by other firms). Several years of increased reliance on the private sector to handle both domestic trade and importation has shown that the private sector can respond to the task within a conducive policy environment. Since reforms were effected, Kenya has never experienced significant food hoarding or food lines in major cities – characteristics that were common during droughts in the days of government controls.

On the other hand, it is important to carefully consider the effect of tariffs in a net importing country where most of Kenya's rural households are net buyers of maize and are directly hurt by higher maize prices. The domestic wholesale price of maize in the maize belt area of Western Kenya (Kitale and Eldoret markets) has been high relative to other countries, averaging roughly \$190 per ton (Table 1). This may warrant further consideration of the costs and benefits of policies designed to raise local maize prices, such as the current maize import tariff.

4.2. Ensuring Access to Low Cost Maize Meal

The benefits to low-income consumers in urban and rural grain-deficit areas from reliable access to grain for hammer-milling has been enormous, considering the large cost difference in maize meal prices between whole meal and refined meal produced by industrial mills. In 1998, the average retail prices of industrial-milled maize meal in Kenya were the highest in the region (Table 1). Recent research has indicated that the maize market reforms have reduced expenditures on maize meal by roughly US\$10 million per year by Nairobi consumers alone, by raising their access to grain for milling into less expensive and more nutritious hammer-milled whole meal (Argwings-Kodhek and Jayne 1997). As in Zambia, the poor have been the greatest beneficiaries because they have been shown to be the largest consumers of whole meal (Mukumbu 1994).

5. MOZAMBIQUE

Liberalization of Mozambique's economy began earlier than it did in Zambia, Zimbabwe and Kenya, and in many respects has been more complete. By 1991, the old system where maize grain was channeled to large millers and sold as refined meal at controlled prices had almost entirely collapsed. The new informal traders and small hammer millers which had displaced the old control system has grown and strengthened substantially since that time, and dominates the domestic, and much of the import, food trade. Though large millers producing refined meal have reemerged, they have done so through their own efforts in response to market demand, not as a result of government intervention. Indeed, policy reversals have been remarkably rare in Mozambique, with some important exceptions which will be discussed below. This profound transformation of the Mozambican food economy over the past decade illustrates both the promise of liberalization and the limits of what it, alone, can accomplish in a country with poor physical infrastructure, few supporting services, and a population which is overwhelmingly poor.

Table 2. Household Perceptions of the Performance of the Current Marketing System Compared to the Controlled Marketing System, Kenya

	Maize grain availability 1995-1997 compared with control period			Convenience of selling grain 1995-1997 compared with control period			Preference for current marketing system vs. system during control period		
	better now (a)	better during control period (b)	no change (c)	better now (e)	better during control period (f)	no change (g)	prefer current system (h)	prefer control system (i)	no change (j)
	----- % of households responding -----			----- % of households responding -----			----- % of households responding -----		
Coastal Lowlands	85	8	7	50	10	40	67	23	10
Western Lowlands	68	21	11	81	14	5	52	44	4
Eastern Lowlands	85	7	8	87	3	10	75	17	8
High-Potential maize zone	42	52	6	93	5	2	61	36	3
Western Highlands	69	21	10	84	11	5	53	44	3
Western Transitional	58	37	5	99	1	0	37	61	2
Marginal Rain Shadow	32	45	23	90	5	5	71	27	2
Central Highlands	56	28	16	82	8	10	76	16	8
National Average (weighted)	59	31	10	88	7	5	61	34	5

Note: District included in each Zone grouping were as follows: Coastal Lowlands (Kalifi, Kwale); Western Lowlands (Kisumu, Siaya); Eastern Lowlands (Mwingi, Makueni, Machakos, Kitui, Taita Taveta); High-Potential Maize Zone (Nakuru, Trans Nzoia, Uasin Gishu, Bungoma (Kimilili and Tongaren divisions); Kakamega (Lugari division)); Western Highlands (Vihiga, Kisii); Western Transitional (Bungoma (Kanduyi division); Kakamega (Kabras and Mumias divisions)); Marginal Rain Shadow (Laikipia); Central Highlands (Muranga, Nyeri, Meru).

Source: Tegemeo Institute/Egerton University/KARI/MSU Rural Household Survey, 1997.

5.1. Coordination of Imports

Mozambique has a strong north-south orientation, with its major consumption center, Maputo, in the extreme South and best production zones in the North. The South is deficit in maize and other grains during all years, the Center fluctuates between deficit and surplus depending on the rains, and the North is surplus even during regional drought years such as 1992 and 1995. Yet road links between the North and the rest of the country are very poor, at times impassable in the rainy season, and coastal shipping, while much improved over the past three years, remains prohibitively expensive except for high value crops. As a result, in Mozambique the South's cheapest source of imports is South Africa; the Center of the country can compete with these imports, but the North must look to regional and international export markets except in years of serious regional drought.

In an open trade regime, then, Mozambique will import and export maize during nearly all years. At the national level, policymakers have largely understood this fact, and have not generally imposed restrictions on trade, nor has the government played any direct role in imports of maize since the ending of maize food aid shipments in 1994. In Maputo in the South, active formal and informal imports of maize meal and some maize grain (both white and yellow) from South Africa complement grain from the Center of the country, and this supply has been sufficient to maintain prices around a stable mean in the capital in recent years. Aside from requiring traders to go through a somewhat time-consuming process to obtain an import license for every formal import (thus leading informal trade to dominate), the government has had no role in this trade.

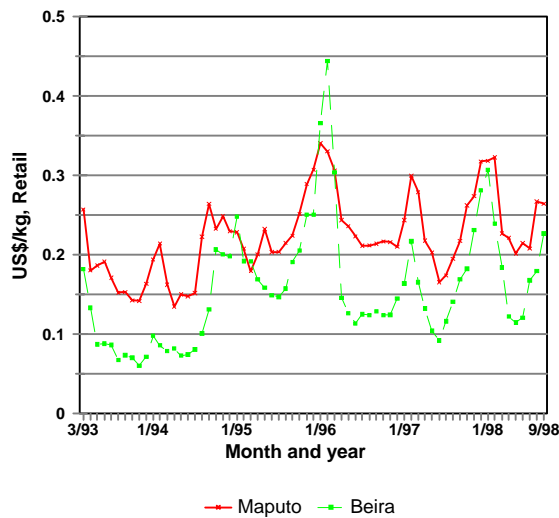
Government's position on maize exports has been less clear. Officially, there are no restrictions; on the other hand, the national government has made no clear policy statement indicating that maize exports are to be encouraged or even simply left alone to happen as opportunities arise. This omission is important because the concept of self-sufficiency continues to predominate in public debates about the issue, as reflected in the public consideration by the Council of Ministers of a 50% export duty on maize during late 1997, when concern was growing of an El Niño-induced regional drought. As there was no drought, the duty was not imposed; yet the incident highlighted the ambivalence in many circles regarding regional trade, especially exports, in foodstuffs.

This ambivalence at the national level has created an environment in which local officials can actively hinder trade. During the past two years, in the North of Mozambique when exports to Malawi grew from small volumes from very local production to as much as 100,000 metric tons, local officials frequently attempted to inhibit grain from leaving their districts; or to prevent Malawian traders from entering the country but allow Mozambican traders to export informally. The central government officially opposes this type of local intervention, but many feel that it has not taken a sufficiently active role in discouraging such local behavior.

5.2. Dealing with Price Instability

For at least six years, the government has had no direct role in stabilizing maize prices in Mozambique. Legally binding fixed producer prices were changed to "reference prices" in the early 1990s, with no legal requirement to pay them. Since 1996, not even these reference prices have been announced. By the early 1990s the marketing parastatal AGRICOM had

Figure 3. Monthly Retail Prices of Maize Grain in Maputo and Beira, 3/98-9/98



collapsed, and in 1995 was restructured into the *Instituto de Cereais de Moçambique (ICM)*. Since its creation, government's objectives for ICM have been unclear. It has a remarkably broad mandate, including providing inputs and extending storage technology to smallholders, market information, developing grades and standards, strategic stock holding and acting as a buyer of last resort. Yet the institute has never received public financing. With the private bank financing that it has obtained, ICM has developed a role as the largest maize exporter in the country. It does this essentially as a private trader, buying and selling at market prices. In a country with poor infrastructure, this role is greatly facilitated by the nearly 160,000 metric tons of usable storage space that it inherited from AGRICOM.

The relatively free trade regime which Mozambique practices has had varying effects on price stability. In the South, imports of grain and meal have clearly stabilized retail prices during the hungry seasons (roughly December through February) of several years. In the productive Center and North, unanticipated large exports to Malawi lead to extreme price rises in 1997/1998; this year there is evidence of greater price stability in the face of a similar volume of exports.

5.2.1. Imports to the South

Figure 3 shows monthly maize grain prices in Maputo and Beira. Maputo lies in the deficit South and is almost completely dependent on grain from the Center of the country and grain and roller meal from South Africa to feed itself. Beira, the second largest city, is located in the normally surplus Center of the country, at the end of the Beira corridor linking the city with Zimbabwe. Beira relies entirely on nearby surplus production of maize grain; imports of maize grain or roller meal from Zimbabwe have been rare. Figure 3 shows that seasonal price rises, especially price spikes during December-February, have been much lower in Maputo

than in Beira. During early 1995 and again in early 1996, prices in Beira actually exceeded those in Maputo, as maize grain and meal entered Maputo from South Africa, while Beira had to rely almost entirely on the production in the Center of the country. In early 1998, prices in Beira nearly exceeded those in Maputo and, as is typical, suffered a far greater seasonal price rise. Border trade in the South has clearly stabilized prices in Mozambique's main urban center.

5.2.2. Exports from the Center and North

In July of 1997, two months after the peak of the maize harvest, the export market to Malawi opened-up with little warning; large Malawian traders began purchasing substantial volumes of Mozambican maize, and local traders both formal and informal also exported. In total, as many as 100,000 metric tons of maize were exported to Malawi that year. Though there had been regular informal exports in previous years, their magnitude in 1997/1998 was almost entirely unanticipated. This resulted in exceptional price rises at the producer level; after falling to typical lows early in the harvest, producer prices rose nearly 300% in areas of the Center bordering Zimbabwe, over 400% in central areas bordering Malawi, and over 230% in more distant northern areas which also entered the trade.¹⁷

Following this watershed event, large private sector or "formal" traders in Mozambique began investigating export possibilities for 1998/1999 as early as November 1997. Large Malawian concerns made several visits to production areas of Mozambique prior to the harvest, and another good export year was widely anticipated.¹⁸ Table 3 shows that, despite an estimated 10% increase in maize production this year, producer prices did not fall for as long after the onset of the harvest, nor did they reach the low levels of the previous year. On average, seasonal low producer prices in the three principal markets of production zones were 48% higher in 1998 than in 1997. It is as yet too early to tell whether hungry season prices will reach or exceed the very high levels that they attained last year.

5.3. Ensuring Access to Low Cost Maize Meal

One of the great successes of market reform in Mozambique is that it ensured a regular supply of relatively low cost food staples even in the midst of the civil war and as the command system economy was collapsing. In the early 1990s this was made possible by reforms in the food aid program which channeled large portions of the yellow maize food aid into the informal marketing system. This spurred the growth of the small-scale trading and the small-scale hammer milling sectors, and ensured availability of white and yellow grain

¹⁷ These prices were taken, respectively, from Manica market in Manica province, Mocuba market in Zambêzia province, and Ribaué market in Nampula province.

¹⁸ Public discussion of a 50% export tariff in late 1997, in response to fears of El Nino, induced early uncertainty regarding the trade, but with normal rains through the new year and fears of drought receding, private traders largely discounted the possibility that the government would impose the tariff, and moved ahead with export plans.

Table 3. Timing and Level of Seasonal Low Producer Prices for Maize, Three Markets in Mozambique, 1997 and 1998

Market	Low Price, 1997		Low Price, 1998	
	Month	Price (US\$/ton)	Month	Price (US\$/ton)
Manica	June	55.8	April	71.41
Mocuba	May	37.38	April	65.67
Ribaué	August	48.23	June	71.73

Notes: Manica lies in Manica province, bordering Zimbabwe; Mocuba lies in Central Zambêzia province, bordering Malawi; and Ribaué lies in western Nampula province, which has no border with Malawi but has exported there during each of the past two years.

and whole meals at steep discounts to refined white meal.¹⁹ When the large shipments of food aid ended, these sectors made the transition to assembling, marketing and processing domestically produced white grain, in addition to continuing its informal imports from Swaziland and South Africa. Even today outside of Maputo, grain and whole meal from small traders and millers are the only maize staples regularly available to consumers, and they carry prices well below those of industrially refined meals (Table 4).

It is this constant availability of whole meal and, especially, maize grain at the retail level that is the strength of the Mozambican food system; its performance in terms of price levels, as reflected in Table 1, is mixed. Producer prices of maize grain were on the low end of the range in the region, similar to those in Ethiopia, Zimbabwe and South Africa, yet wholesale and retail maize grain prices in the capital were higher than anywhere except Kenya. These comparisons need to be interpreted with care, however, because producer prices in Table 1 come from the surplus Center and North of the country, while wholesale and retail prices are for Maputo in the far south, a perpetually deficit area. Transport distances and costs to Maputo are very high. As a point of comparison, retail grain prices in major markets in the Center (\$160/ton in Beira) and North (\$120/ton in Nampula) were lower than anywhere except Zimbabwe. As a result, consumers in Beira and Nampula who purchase grain and have it milled into whole meal are paying final prices (\$0.19 in Beira and \$0.15 in Nampula) that are among the lowest in the region, while consumers in Maputo face whole meal prices that are among the highest in the region (only Kenya is higher). Prices for refined meal are high throughout Mozambique: even in perpetually surplus Nampula province, these prices (\$0.33-\$0.38) are higher than in any country except Kenya and South Africa.

¹⁹ See Tschirley, Donovan, and Weber (1996) for more detail on these issues.

Table 4. Percent of Weeks Available and Mean Prices of Maize Grain and Meals in Three Urban Markets of Mozambique, 1/93-9/98

Staple	Maputo		Beira		Nampula	
	% of weeks available	Mean price (US\$/kg)	% of weeks available	Mean price (US\$/kg)	% of weeks available	Mean price (US\$/kg)
Maize grain	100	0.23	99	0.16	99	0.12
Refined meal, imported	89	0.47	5	0.65	1	0.38
Refined meal, domestic	49	0.42	8	0.42	1	0.33
Whole meal, market price	89	0.32	95	0.35	100	0.28
Whole meal, derived price ¹	100	0.25	99	0.19	99	0.15

¹ Price of maize grain plus milling charges. "Percent of weeks available" is same as maize grain.

Thus, the general pattern in Mozambique is of a reformed marketing system which offers regular availability of a range of food staples accompanied by relatively high prices for them in the major consumption center of Maputo. This pattern encapsulates both the success of market reform in Mozambique, and the limits of what it, alone, can accomplish. The informal private sector (and increasingly on the export side, the formal private sector) has responded aggressively to the liberalization and has succeeded in linking surplus and deficit regions within and outside the country. The system is generally competitive and returns to labor are often low. Yet poor yields and the small scale of maize production and marketing in the country, and the very poor transport, storage, and sales infrastructure, impose very high marketing costs. As a result, consumers in Maputo, the poorest in the region, pay more for their maize grain and meal than do consumers in neighboring countries.²⁰

6. ZIMBABWE

Zimbabwe represents a stark contrast to Mozambique, Kenya, and Zambia in its approach to addressing food security and consumer price instability in recent years. First, the Grain Marketing Board (GMB) remains a major player in domestic maize procurement and sale, remains the sole legal importer and exporter of maize in the country, and has expanded the range of its marketing activities during the liberalization period. GMB pan-territorial and pan-seasonal prices are still fixed by government. While private trade has been allowed anywhere within the country since 1994, prices of maize meal have again come under formal and/or informal government control.

²⁰ See Tschirley and Santos (1998) for more detail on the informal food marketing system in Mozambique.

6.1. Approach to Stabilizing Maize Meal Prices to Consumers

Zimbabwe's approach to stabilizing maize prices has diverged most significantly from the other three countries since the beginning of 1998. Fears of production shortfalls during the 1997/1998 El Nino occurrence led to increases in maize grain prices in late 1997 and early 1998. Whereas the general response in the other countries was to encourage importation by the government or private sector to stabilize domestic market prices, the Zimbabwean Government resorted to price controls on maize grain and maize meal. Because the GMB remains a major actor in the maize market, there are major political and economic reverberations whenever it is compelled to make major adjustments in its pricing structure after getting out of sync with prevailing market conditions. Such conditions developed throughout 1997 and into early 1998. As can be seen in Figure 4, the market price of maize grain, as approximated by monthly Zimbabwe Commodity Exchange (ZIMACE) quotes, started moving far above the GMB's producer price, and even exceeded the GMB's selling price through most of 1997. When the GMB raised its selling price to adjust to market conditions in January 1998, this set off a domino effect. Millers responded to the increased price of maize grain by immediately raising roller meal prices by 21%. This price increase, combined with general public discontent, culminated in food riots in Harare.²¹ In May 1998, the Grain Marketing Board doubled its maize producer price (from Z\$1200 to Z\$2400) to reduce the substantial gap that had developed between it and prices received by producers in the market. This compelled the GMB to again raise the price at which it sells maize to industrial millers. The Government negotiated with the large millers to limit the extent to which they would raise the price of roller meal to consumers. However, these discussions failed to satisfy the government and in May 1998 it reimposed price controls on roller meal for the first time since widespread grain marketing policy reforms were undertaken in 1993.²²

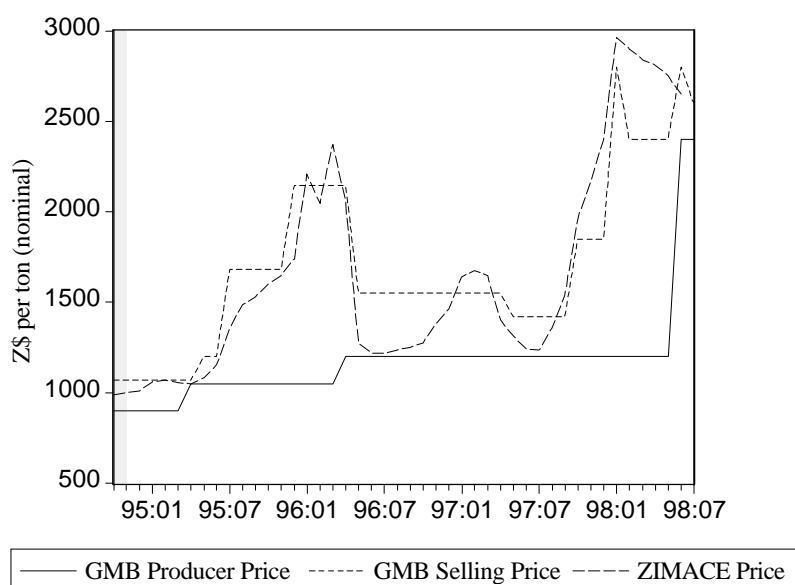
The Government has accused the industrial millers of colluding to raise consumer maize meal prices to unreasonable levels. The state newspapers now refer to the industrial milling sector as the "milling cartel." In fact, there are three major large-scale millers nationwide, and the largest one, National Foods, produces over half of the industrial meal consumed in the country. However, a comparison of milling margins being charged by the industrial milling/retailing sector in various countries in the region show that margins in Zimbabwe are the lowest of the five countries for which data is available (Table 1). The surge in maize meal prices clearly resulted from the failure of the GMB pricing system to adjust earlier to market conditions, forcing a sudden adjustment in prices at all levels in the official marketing system.

In response to the widespread perception of an oligopolistic milling sector, the GMB has vertically integrated into milling to compete with industrial millers. The GMB has already started selling meal from its maize milling plant at Aspindale depot, and has plans for even bigger plants in five cities. The technology used is hammer mills in conjunction with

²¹ The food price dilemma has been exacerbated by severe exchange rate depreciation in 1998, (and associated macroeconomic crises) which has raised the cost of imported inputs, contributed to general price inflation, and thus an erosion of real incomes.

²² Government states that price increases of designated basic commodities must again be approved by Government (Herald 1998).

Figure 4. Maize Grain Prices in Zimbabwe



dehullers to produce a semi-refined meal similar to roller meal. So far, the GMB can produce about 1,100 tons per month (about 3% of total urban maize meal demand). As supplies of maize grain are drying up on the domestic market following low production in 1998, and as exchange rate depreciation is raising the local currency cost of imports, market prices are soaring. The GMB's current selling price, Z\$2,800.00 per tonne ex-depot, is again becoming out of sync with market prices. Market prices in most larger towns are estimated as being 20% to 35% higher than the GMB's selling price in January 1999. The inability of the GMB's pricing structure to flexibly adjust to prevailing market conditions is creating two serious problems: First, it is setting up the need for periodic large adjustments in the official marketing system, which have led to civil disruptions in the past. Second, the government has implicitly re-introduced subsidies on industrial roller meal. As the gap between official and market prices widen, those who have access to the GMB's supplies are reaping a huge benefit compared to buyers dependent on the market for their maize grain supplies.²³ Winners in the market are being determined more by who can gain access to relatively cheap GMB stocks rather than who are the most efficient marketing actors in the system. For example, wholesale market prices of maize grain in Harare, indicated by ZIMACE prices, have averaged Z\$3,140 over the May-September 1998 period (i.e., over 30% higher than the GMB selling price). This has created a situation similar to that of the former controlled marketing period in which industrial millers can obtain maize grain supplies from the GMB at substantially lower cost than other marketing actors who lack access to GMB stocks and must rely primarily on markets for their supplies, including consumers and most small-scale millers. As illustrated also by the case of Zambia mentioned above, the channeling of state-held grain supplies to selected buyers at below-market prices disadvantages those market actors lacking access to such supplies. Ironically, while the Government's return to price controls in 1998 was in

²³ This remains true even though the large millers are being forced to source GMB grain from remote depots.

response to perceptions of an oligopolistic industrial milling firm, the controls have actually weakened the position of their primary competitors – the small-scale milling sector – who must source grain at substantially higher market prices.²⁴

The GMB has also announced the decision to start extending agricultural credit to small and large scale farmers with effect from the 1998/1999 agricultural season. Estimates are that Z\$200 million or so will be loaned out this season alone. This is likely to increase the share of marketed maize in the country handled by the GMB, and increase private millers' reliance on the GMB for maize supplies.

What will be the effect in Zimbabwe from the reintroduction of controls on the price of roller meal? The effects are likely to be threefold. First, because the subsidy is applied only on roller meal produced by the large-scale mills (and not on grain or whole meal through the informal marketing system), we anticipate an increase in the quantity of roller meal demanded and a corresponding decline in demand for grain through the informal trading and milling channels. In the long run this will impede rather than increase competition in the maize processing industry. The second main effect of the subsidy on roller meal is that it will disproportionately benefit high-income consumers, since roller meal consumption has been shown to be positively associated with income (Rubey 1995). Third, the subsidies on industrial meal will increase the Government's budget deficit. The major winners from the roller meal price control/subsidy will be large-scale millers and high-income consumers. The major losers will be small-scale millers, private traders, and the treasury. While the Zimbabwe food riots in January 1998 primarily involved the urban poor who have felt most squeezed by the general rise in prices, they will feel little benefit from the roller meal subsidy because most of them have been consuming less-expensive whole meal, which is still likely to remain less expensive than roller meal

The effectiveness and cost of Zimbabwe's food security policy will depend greatly on how it addresses two key issues:

1. How will imports be handled when local supplies run out later in the year? Like Zambia, Zimbabwe is facing a maize production deficit for the 1998/1999 year, and net import requirements are projected at 350,000 tons. GMB is the sole legal importer of maize due to a ban on private external trade. A major question is whether the GMB will channel imported supplies through its own mills and that of the registered industrial millers as it did in previous drought years, or whether it will release supplies onto local public markets, thereby providing consumer access to grain for processing into lower-cost hammer-milled meal.
2. How will the GMB's maize pricing, purchase, and sales behavior change now that it has become a commercial miller? Will it sell its meal at full cost or subsidize it to undercut the prices of the industrial millers? As shown in Table 1, the milling margins of industrial millers are relatively low in Zimbabwe compared to other countries in the region. Will GMB cost grain for its mills at the same price as it charges other customers, including its private milling competitors? And will it sell its meal at full

²⁴ The Small-Scale Millers' Association has complained publicly about price controls on industrial-milled meal (Financial Gazette, "Small-scale miller threatened with closure," July 9, 1998, Harare).

cost or subsidize it to undercut the prices of the industrial millers? Subsidization of GMB-produced maize meal would not only hurt the industrial millers but would also erode the viability and future investment in the small-scale trading and milling system.

7. HOW HAS MARKET REFORM AFFECTED CONSUMER MAIZE MEAL PRICES?

One of the major causes of continued government action in grain markets has been the need to keep prices at tolerable levels for consumers. And a relatively neglected aspect of research on food market reform has been its effects on the distribution of prices faced by consumers. The issue is complicated by the major changes in the composition of maize meal consumption that resulted from the reforms.

Figures 5a - d show the price distributions of industrial roller meal (before and after the reforms) and hammer-milled whole meal (after the reforms) in Kenya, Mozambique (post-reform only) Zimbabwe, and Zambia. The control periods were from January 1985 to April 1993 (for Zimbabwe and Zambia) and from January 1985 to December 1993 (for Kenya). The reform periods were from May 1993 to September 1998 (for Zimbabwe and Zambia) and from January 1994 to August 1998 for Kenya. Data for Mozambique are presented from March 1993, roughly coinciding with the post-reform periods in the other countries²⁵. To assist in interpreting the figures, one may see from Figure 5b that about 50% of the monthly roller meal price levels during the control period in Zimbabwe fell between 2.5 and 3.0 Z\$ per kg (in constant 1997 Z\$). Another 42% of the monthly price observations for roller meal were in the range of 3.0 to 3.5 Z\$ per kg. The purpose of the figures is to compare the actual price dispersions between roller meal in the control period and roller meal and whole meal during the reform period. Whole meal prices are not examined for the control period because its availability was restricted due to controls on grain movement during the control period.

²⁵ Earlier onset of reform in Mozambique, and the lack of data for the pre-reform period, prevent a pre- and post-reform comparison in this country.

Figure 5a. Price Distributions for Maize Meal, Pre-Reform vs. Post-Reform, Lusaka, Zambia

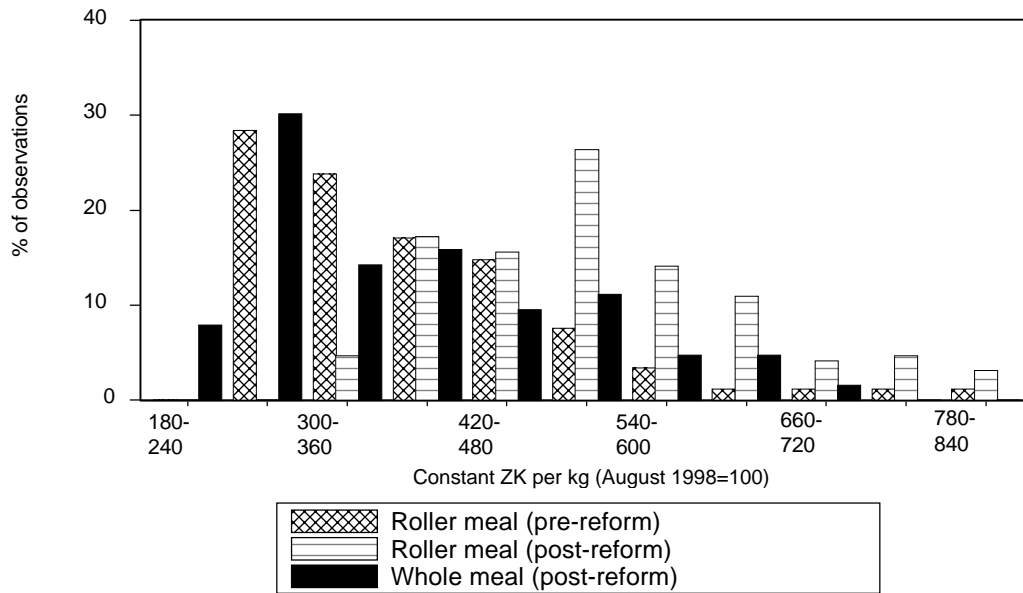


Figure 5b. Price Distributions for Maize Meal, Pre-Reform vs. Post-Reform, Harare, Zimbabwe

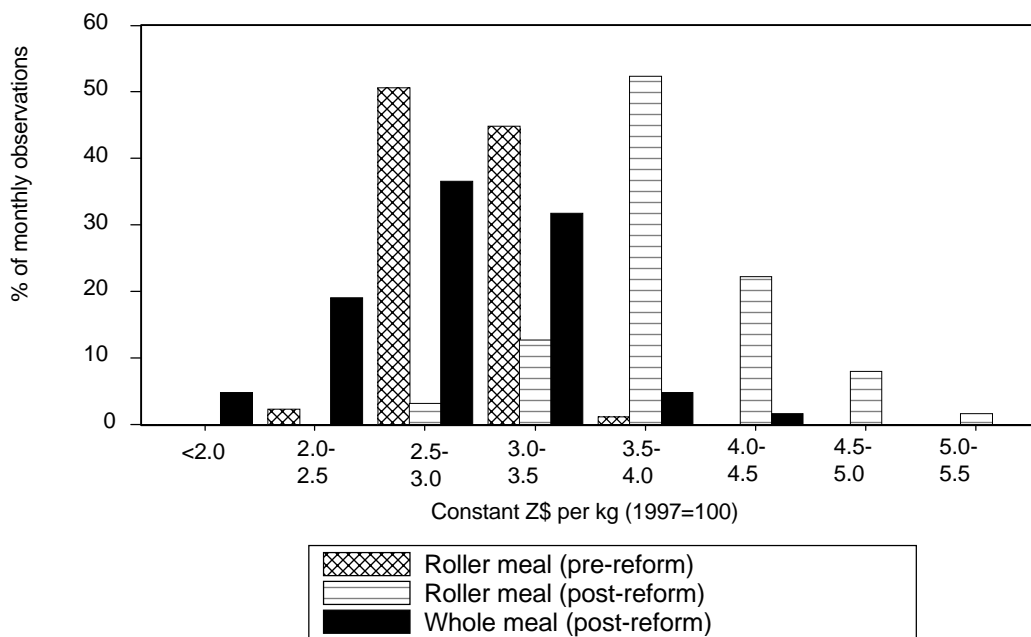


Figure 5c. Price Distributions for Maize Meal, Pre-Reform vs. Post-Reform, Nairobi, Kenya

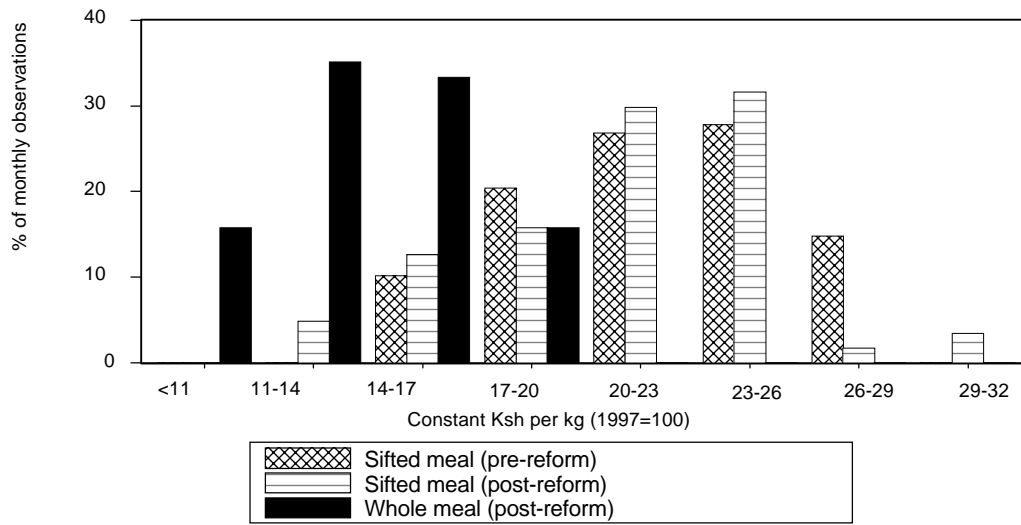
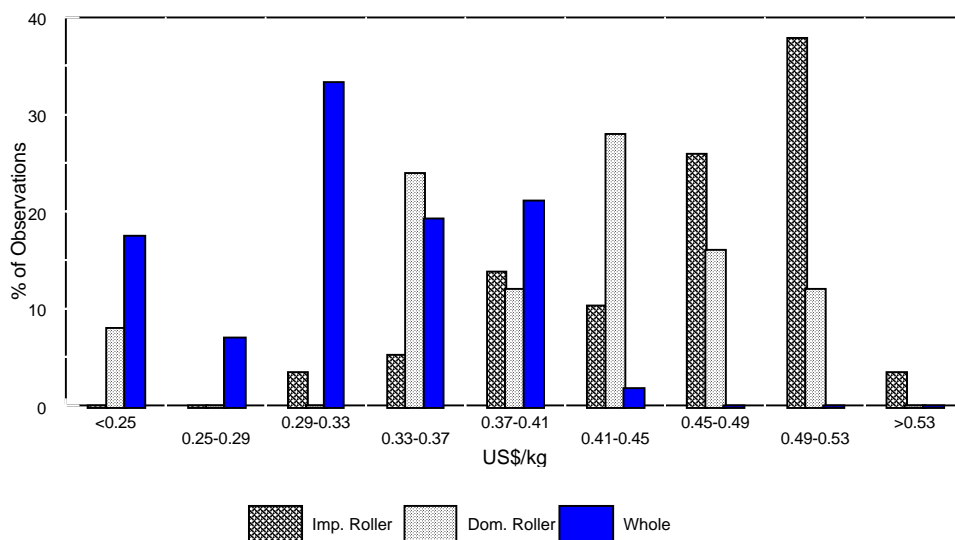


Figure 5d. Price Distributions for Maize Meal During the Post-Reform Period, Maputo, Mozambique



Figures 5a - d show that, for both Zambia and Zimbabwe, the mean and dispersion of real roller meal prices increased after the reforms, mainly resulting from the removal of consumer subsidies on this product after liberalization. By contrast, roller meal prices in Kenya were not

heavily subsidized prior to reform and have actually declined since liberalization, although price variability has increased. Thus, consumers of industrial roller meal have experienced higher prices (in two of three cases) and more volatile prices (in all three cases) after the reforms.

However, for those consumers who switched to hammer-milled meal after the reforms, the story is quite different. In Zimbabwe, average whole meal prices in the reform period were Z\$2.59 per kg compared with Z\$2.96 per kg for roller meal during the 1985-1993 control period. In Zambia, average whole meal prices in the reform period were KW375 per kg compared with KW364 per kg for roller meal during the control period. Moreover, the post-liberalization distribution of whole meal prices in both countries shows very little increase in upside price risk for consumers compared to the pre-liberalization distribution of heavily subsidized roller meal prices. For example, prior to liberalization in Zambia, there was a 10% probability of roller meal prices rising above ZK 540 per kg (in August 1998 kwacha) in Lusaka. After liberalization, the probability of roller meal prices exceeding ZK 540 per kg rose to 44%. However, the probability that hammer-milled whole meal would exceed this price level during the reform period was only 11%, virtually the same as roller meal during the control period. In Zimbabwe, the 10% upper price threshold for roller meal prior to the reforms was Z\$3.36 per kg (in 1997 Z\$), i.e., there was a 10% probability of roller meal prices exceeding this level during the control period. After the initiation of reforms and the availability of hammer-milled meal, the price of whole meal in Harare has exceeded this price in only 4 of 63 months, i.e., a 7% probability. The main conclusion is that while whole meal prices do exhibit relatively high price variability (compared to roller meal during the control period), this greater price variability has occurred around a lower mean level. The upside price risk to consumers has actually declined during the liberalization period for consumers of whole meal.

In Kenya, during the control period, the price above which only 10% of monthly observations occurred was 279 Ksh per kg (in constant 1997 Ksh). Perhaps surprisingly, only 4% of the monthly roller meal prices have risen above this level since December 1993 when prices were decontrolled. And hammer-milled whole meal, owing to substantially lower milling margins, had no prices greater than 20,000 Ksh during this period (again in 1997 terms). In short, the data in Figure 2c shows that the up-side price risk to urban consumers has declined since liberalization, both for whole meal as well as for industrial roller meal. These main reason why these findings are somewhat different than for Zambia is because pre-reform roller meal prices were much more heavily subsidized in Zambia.²⁶

Lack of data precludes a pre- and post-reform comparison in Mozambique, but examination of the post-reform distributions in the four countries suggests that Mozambique's price variability during this period has been dramatically less than in Zambia, slightly less than in Kenya, and similar to that in Zimbabwe. Interpreted in the context of all four countries, results from Mozambique strengthen the idea that market liberalization has not resulted in dramatic increases in price variability for maize meal.

These points should not be construed as minimizing the importance of price spikes for roller meal. The product is still extremely important in urban areas. Efforts to stabilize and reduce its cost to consumers through efficiency improvements in the marketing system will have high

²⁶ During the late 1980s, subsidies to the maize sector grew as high as 17% of government budget.

payoffs, both politically and economically. However, the market reforms have already produced major benefits for urban consumers by increasing the scope of maize meal products available for purchase. The price distributions presented above show that the availability of hammer-milled meal since the reforms began have protected consumers against much of the upside price risk that were formerly accomplished by price controls and subsidies during the control period.

8. POLICY IMPLICATIONS

The foregoing highlights the remarkably similar food security policy challenges faced by the four countries examined in this paper. From this assessment, we identify four major issues likely to influence the evolution and performance of the grain marketing systems in the region: (1) how to cost-effectively manage price instability within a market-oriented grain economy; (2) how to address the “second-generation” constraints on private investment that have arisen or still remain in the new systems; (3) approaching the concept of market reform as a continuous process; and (4) how to design innovative new forms of collaboration between policymakers, donors, researchers, and the private sector.

8.1. Managing Price Instability Within a Market-Oriented System

One of the common themes uniting these case studies is the major concern over the ability of the liberalizing grain marketing systems to contain price instability within politically acceptable limits. Production instability is an inherent feature in the region. The costs of marketing grain to and from the ports are high, with some exceptions (notably Southern Mozambique). Poor road and rail networks also constrain the price-stabilizing potential of regional trade.

However, price instability at its existing high level should not be accepted as “given” or an inherent problem of markets. As shown in several of the country cases, government actions can unintentionally depress the participation of private traders in the market, thus creating the potential for even greater instability or requiring even more extensive government response to counteract the withdrawal of the private sector. The cases of Kenya and Mozambique show that, with a conducive policy environment and even in the face of several droughts, the private sector has been able to stabilize domestic prices through imports and domestic operations. In Kenya, this success has actually put pressure on the government to ban maize imports in order to prevent prices from going too low.

Furthermore, a considerable part of the food price instability problem in the region is due to the high cost of transportation, which raises the price wedge between import and export prices throughout the region, and limited efforts to integrate regional markets through encouraging private cross-border trade. While we are now learning that the magnitude of private cross-border trade is much higher than previously thought, this has occurred in spite of considerable efforts to suppress it, and very little effort to invest in the physical market and communication infrastructure to nurture such cross-border trade. Southern Mozambique is a notable exception to this pattern. Though officials have not promoted trade with South Africa, they

have permitted it to occur unhindered; this policy stance, plus good road links, have allowed trade to stabilize prices in Maputo compared to other areas of the country.

Both the productivity and stability of the food systems in the region could be substantially improved by public investments and policy change that reduce the costs of distribution – internally, between countries in the region, and with the wider world market. Examples of investments with high payoffs include (1) the strengthening of regional market information systems, reporting local currency prices, exchange rate information, and the direction of trade flows for a number of market towns across countries; (2) development of better telecommunications and internet infrastructure between market information reporting services (e.g., FEWS reports); (3) rehabilitating regional road, rail and port infrastructure; and (4) providing the means for smallholders to benefit from market-oriented mechanisms of absorbing price risk, such as commodity exchanges.

Another strategy for reducing price instability is to further nurture the development of market-oriented mechanisms for dealing with price instability. Agricultural commodity exchanges now exist in South Africa, Zimbabwe, Zambia, and Kenya. These exchanges provide a potentially important means for farmers, traders, and millers to manage their price risks. In South Africa, open interest on all contracts was around 300,000 tons in November 1997, or about 5% of national production. A market in maize options started trading in January 1998. Zimbabwe's Agricultural Commodity Exchange (ZIMACE) has traded roughly 50,000 tons of maize in the 1995/1996 and 1996/1997 year, or roughly 4-6% of the national marketed maize supply from domestic production. Documents are written up for buy and sell forward agreements and can also include pre-planting contracts. This means a producer can plant a crop with a firm price and also allows the buyer to lock-in its buying prices ahead of production.

At the moment, ZIMACE is utilized primarily by large-scale commercial farmers and industrial buyers. Only registered ZIMACE members or their employees are allowed to trade through the Exchange. At present, membership consists of large conglomerates like Delta, Olivine Industries, large scale commercial farmers, large millers and around 17 brokers, one of which is the Commercial Farmers Union. Membership requires a joining fee set at US\$10,000. In addition to the joining fee, members pay an annual subscription which is reviewed annually according to the recurrent budget required to keep the Exchange running. In 1996, the annual subscription fee was Z\$20,000. This was doubled in 1997. These requirements represent a major barrier to direct participation by small traders and farmers. The representatives of the commodity exchanges realize that this is a problem for the viability of the exchange too as the marketing of all smallholder grain outside of ZIMACE considerably limits volumes traded.

However, in other parts of the world where commodity exchanges have been successfully developed, the benefits to small farmers have not occurred primarily through their direct participation. Rather, small farmers selling relatively small quantities have benefitted from the engagement of traders and cooperatives on the exchange. By locking in positions on the exchange, traders are able to pass along more secure price arrangements to farmers (e.g., forward contracting). By bulking up production from small farmers, traders and farmer cooperatives have been able to overcome the entry barriers of participation that are prohibitively expensive for individual farmers. But effective use of the exchanges will require traders, farmer organizations, and cooperatives serving smallholder farmers to become more conversant with the operations of these exchanges. So far, farmer organizations have mainly

focused on acquiring and repaying credit through group schemes. However, farmer organizations may be potentially expanded into a broader range of input and output marketing activities. For example, in Mali, such organizations handle most of the bulking and initial grading of cotton and the management of local savings and loan associations (Staatz and Dembele 1992). In Northern Mozambique, associations have become very active in the marketing of both cotton and maize, receiving price premiums on both products for assembling larger quantities and helping to assure product quality. Most recently, some associations have entered into agreements with the public extension service and with private input dealers in an attempt to ensure timely delivery of fertilizer and extension assistance to intensify maize production. These activities point to important future roles on a broader scale for farmer organizations: greater involvement in the gathering and dissemination of market information, the diffusion of technical advice on both production and improved on-farm storage, and the bulking of farmer surpluses for participation in commodity exchange trading, thereby opening up a number of market-oriented mechanisms for reducing the risks of price and supply instability.

Despite fundamental similarities across the four countries regarding the reforms' effect on access to lower-cost maize meal, governments in the region have perceived the evolving role of the informal trade in different ways. Kenya's drought of 1997, for example, put upward pressure on food prices, but the effect on consumers was mitigated by the now-thriving small-scale trading and processing sector. Since Kenya's maize market was decontrolled in late 1993, whole meal prices have been 33% lower than the mean price of industrial-milled roller meal during the control period. Whole meal prices since decontrol have never exceeded the average price of industrial roller meal during the control period. The key features of Kenya's success in ensuring consumers' access to maize meal at tolerable levels (compared to pre-reform standards) are (1) the continuous availability of maize grain supplies through public markets; and (2) the government's avoidance of subsidizing industrial millers (e.g., through state agency sales to selected buyers at below-market prices). It is possible that Kenya and Mozambique's impressive market-oriented strategy of ensuring maize meal to consumers at relatively low additional cost over wholesale market price levels may be replicated elsewhere if similar approaches were adopted.

In both Zimbabwe and Kenya, the price dispersion of whole meal, while subject to larger price swings than industrial roller meal during the control period, occurs around a lower meal level. As a result, consumers vulnerability to upward price risk in maize meal prices is lower now than during the control period in these countries. These findings emphasize that the design of programs to protect households against price surges caused by drought and other crises should take care not to disrupt the functioning of the informal marketing channel, which now serves as the dominant means by which low-income households purchase their staple maize meal.

A major challenge facing Zambia and Zimbabwe (during drought years) is how to increase supplies of grain to public markets later in the season when local supplies dwindle. One strategy is apparently being adopted by Zambia's Food Reserve Authority, which has announced that it is changing its selling practices to allow anyone to buy grain from its selling points, in quantities as small as one bag. If this were to be implemented, it would provide small traders and millers access to grain supplies later in the season, thereby overcoming the problems currently experienced in Zambia in which some marketing actors receive preferential access to subsidized grain (sidelining others from the market and potentially creating major

losses and risks for other traders). Another strategy would involve facilitating informal imports from countries such as Mozambique, as such supplies are likely to be destined for public markets in small and large towns.

Mozambique has been successful throughout its post-reform period in ensuring consumer access to maize grain and meals, even during droughts. During the devastating regional drought of 1992, availability was ensured by channeling large quantities of yellow maize through the informal marketing system; while white grain prices skyrocketed, yellow maize grain was regularly available at affordable prices and was widely consumed by low income consumers. During the less severe drought of 1995, white maize grain and refined white maize meal were present in Maputo markets every week; white whole maize meal disappeared during the height of the hungry season during this period, but consumers still had the option of purchasing maize grain and having it milled (or hand-pounding it themselves). This regular availability of grain and meals has had nothing to do with direct government action -- the government has simply allowed the informal sector (and interested formal sector traders) to operate domestically and in the import trade with no restrictions.

8.2. Second-Generation Policy Constraints

Widely-publicized policy changes constituting "liberalization" in Africa have often masked the persistence of myriad, less obvious "second-generation" policy and institutional barriers which impede the performance of the newly-liberalized agricultural marketing systems. Recent developments in Zimbabwe, a country that has ostensibly "liberalized" its grain marketing system, show that less publicized restrictions on private investment and entry into the system may still exist, and that policy reversals may be frequently reintroduced with little public attention. These problems underscore the need for continued monitoring of the agricultural policy environment and on-going local research capacity to identify emerging or re-emerging bottlenecks in the system that require public attention for long-run productivity growth of the food system.

Some of the more important remaining policy constraints include:

1. pan-territorial and pan-seasonal pricing by the marketing boards or strategic grain reserves (e.g., in Zimbabwe);
2. restrictions on private import and/or export of grain, which persist to varying degrees in all four countries;
3. continued policy emphasis on "food self-sufficiency" rather than encouraging regional trade and comparative advantage – and making the infrastructural and developmental investments necessary to take advantage of this approach.
4. use of state resources to subsidize maize prices for selected buyers, thereby creating an un-level playing field in the maize marketing system. Notably, reconstituted grain reserve agencies are in some cases starting to fulfill some of the roles carried out by the abolished marketing boards (as in Zambia), with potentially detrimental effects on private investment in the marketing system.

5. continued unequal access to the supplies of grain boards or strategic reserves. In Zambia, for example, after local maize supplies are depleted, imports by the Strategic Grain Reserve are channeled almost exclusively to the large-scale millers, thereby marginalizing the small-scale milling sector. This in itself causes a major increase in maize meal prices for the urban poor, as they are forced to shift to more expensive roller meal.
6. constrained access to foreign exchange. Easy access to foreign currency is important for allowing the private sector to fulfill market stabilization roles through regional trade. Overcoming constraints on access to forex (e.g., in Zambia) will be an important component of stabilizing maize prices in a market economy.
7. While all four countries have undertaken important steps toward market-oriented food systems, the legal and regulatory frameworks of the controlled systems are still largely intact, thus providing scope for the reimposition of price controls and trade restrictions. This is especially true in Zimbabwe, Zambia, and Kenya, less so in Mozambique.
8. Lack of clarity or perceived commitment to a market-oriented system. Even though the current policy environment may be conducive to private investment in particular activities, conflicting policy statements by government officials in the press raise the specter of policy reversals and may thus adversely affect private investment incentives. Both public statements as well as the official policy affect the private sectors' response to liberalization. The private sector's response to liberalization is likely to be strengthened by modifying relevant Parliamentary Acts and legal statutes to provide more certainty of the policy environment in the future and minimize the potential for policy reversals. Actions to provide greater policy stability may become increasingly necessary in countries such as Zimbabwe, Zambia, and to a lesser extent, Kenya, where the private sector has in a number of cases been hurt by responding to positive policy incentives, only to see these policies reversed at a later stage.

It is difficult to envisage a wholesale reintroduction of marketing controls, but pressures for subsidies and price supports have emerged, and will continue to do so if the new systems fail to adequately buffer producers and low-income consumers against severe production and price shocks. Without key public sector investments that reduce the costs and volatility of private trade, the sustainability of the reforms may be jeopardized by calls for the reimposition of state food purchasing and price controls. And the private sector's commitment to invest in the new systems is naturally sensitive to the risk of policy reversals and the reimposition of controls. The current situation in the region is therefore one in which marketing policy has moved only recently to a fundamentally new stance, whose longer-run implications remain to be tested. At the heart of the problem is the level of price variability that may be expected under the new system, how the problems that this poses (especially for smallholders and poor consumers) can be accommodated, and what will happen to the marketing boards which now are envisaged as playing a limited price supporting role, but where the old processes of government food price setting have remained largely intact.

8.3. Approaching Market Reform as a Continuous Process

Market reform is not a short-run process of handing over activities to the private sector, but rather a continuous process of institutional innovation to promote productivity growth within a market-oriented system. The tendency to regard market reform as a short-run process (completed when the state hands over activities to the private trade) reflects an over-emphasis in policy discussions on who will carry out particular marketing functions and an under-emphasis on how to cost-effectively promote investment to promote productivity growth. While a specific goal of policy is to reduce marketing costs, the evolution of more productive economies over the past two-hundred years has featured the development of more complex and costly marketing and contracting arrangements. These more complex and costly marketing arrangements have successfully reduced risks and transaction costs of investment in more technically efficient production processes and have hence proven valuable because they have encouraged productivity growth at other stages of the system (North 1994). A complex contracting mechanism between a farmer out-grower company and an international marketing firm may involve high costs in terms of negotiation, legal services, monitoring, and related public resources to resolve contract disputes if necessary, but such mechanisms may provide the stability of returns to justify major investments in new technology that lead to productivity gains at other stages of the food system. The evolution of more productive economic systems may involve higher marketing costs, not less. In this regard, market reform policy should be regarded as a continuous process of searching for alternative institutional arrangements, adapted to local conditions, capable of promoting new investment and productivity growth throughout the food system.

8.4. Alternative Approaches for Supporting the Policy Process

In some circles, there is a growing sense of frustration over the achievements of policy analysis and its utilization in the policy process. The most frequently articulated limitations expressed by government policymakers are that (a) the research process is not based on government priority areas but rather follows the interests of researchers; (b) the research findings can be overly academic, geared for publication in scholarly journals rather than containing practical and concrete options for consideration by government; and (c) the research process may not be unbiased. Mistrust of the research process might create special problems if it is supported by donors perceived as having an established position or stake in the policy reform process.

From a different perspective, the payoffs to policy research have been limited in cases where top policymakers believe they already “know the answers” and have charted a policy course that takes no heed of empirical research findings from the field. In some cases, the problem reflects an inability of researchers to be persuasive in their efforts; in other cases, it reflects the existence of unstated government objectives that are not revealed or taken into account in the research process. Governments throughout the world pursue a variety of objectives, including self-preservation, and the means of achieving these objectives do not always correspond to notions of maximizing social welfare. This sometimes creates frictions between the research process and policymakers.

In many countries in the region, there is an apparent paradox of a high demand for applied policy analysis by senior policymakers coexisting with minimal usage of the analysis produced

by government ministries (Babu 1996). The research process can be marginalized when its institutional home is placed in low-level units within government ministries or in academic organizations far removed from the circles where policy making really occurs. Research projects can be designed to jointly develop analytical capacity within key ministries while carrying out research activities through on-the-job training. But even though mid-level technocrats assigned to the research projects may develop their skills, support the research findings, and become positive advocates for change, their access to higher-level politicians is not assured, and even when it is, they may face difficulties in advocating a perspective known to be at odds with the views of their superiors. Until recently, few policymakers in the region have ever experienced a market-oriented food system, the history of controls dating back to the 1930s in all four countries. Many government officials explicitly embraced Marxist principles after independence and received their educations in formerly communist countries. The experiences of colonialism in many cases reinforced the Marxist perspective. As stated by Jenkins (1997), “The Marxist doctrine that profits were the result of the exploitation of labour generated the perception that poverty was the result of exploitation of the poor by elites, and, more generally, of poorer nations by richer ones. This increased the appeal of ‘African socialism’.” For all these reasons, it may not be surprising that many key African policymakers may not fully accept the logic or assumptions of a market economy, despite being compelled to reluctantly move in this direction under pressure from international lenders and donors.

At the same time, however, a cadre of policymakers and local analysts supportive of change can be identified in most countries. These groups, along with the private sector and in some cases public interest groups, represent increasingly powerful forces for change and may play a useful role in supporting the research process. Moreover, the market reform process has produced notable and widely acknowledged achievements (e.g., the benefits to consumers, especially the poor, from the rapid development of the small-scale maize milling sector; the reduction of marketing margins at key stages of the system; the ability of the private sector to handle all maize imports in Kenya and Mozambique). Since reforms were effected, Kenya and Mozambique have never experienced significant food rationing in major cities – characteristics that were common during droughts in the days of government controls. These experiences have undoubtedly gained some converts to the market-oriented systems.

What does all this mean for how to design a collaborative process of policy analysis and interaction between policymakers, researchers, donors, and the private sector to maximize the chances of improved agricultural policy formation? We highlight five key points:

1. Externally funded analytical units are undoubtedly more relevant and useful to the policy process if they are situated close to where policy is actually made. But this also increases the probability of intimidation and manipulation of the research process. Realistic assessment must be made of politicians’ receptiveness to policy analysis (especially if it contradicts their own views) and donors’ willingness to promote broad discussion of the research findings (even if politically sensitive). Unanimity of opinion is almost never achieved on policy matters, and there are likely to be groups standing to lose from the findings of the research process and its implications. On the one hand, government officials require accurate information for sound policy, but researchers sometimes face pressure to alter their results to be politically acceptable. Since inaccurate information is never helpful to the process, researchers need to be supported in the face of controversial findings, in order to maintain integrity of the information-generation process

2. Research leading to successful policy reform has generally involved a concerted and longstanding effort to strengthen domestic capacity for ongoing policy analysis. Local analytical units are often seen as bringing more local knowledge to the analysis, being less ideologically driven, and having greater sensitivity to domestic policy concerns than analysis conceived and driven by donor interests using expatriate analysts. At the same time, cooperative analyses involving both local units and external researchers is often valued, as the involvement of an internationally known research organization often gives local decision makers greater confidence in the scientific soundness of the analysis.
3. The demand for, and credibility of, food policy analysis to guide market development is enhanced by a collaborative research process driven by local researchers and government analysts who take “ownership” of the research agenda and findings. Aspects likely to increase government ownership are (a) a process whereby the research agenda is determined by government, e.g., through a technical committee comprised of officials from various government agencies having a stake in the research findings; (b) involvement of key policymakers who are able to invest themselves in the research process as liaisons or counterparts, first, to ensure meaningful government engagement, and second, to help steer the findings around potential political difficulties; (c) the appearance of the research process being receptive to short-term needs of government, e.g., the preparation of short position papers or fact sheets as the need arises; and (d) measures to ensure credibility by those involved in the research process. There has been longstanding debate in academia over whether the role of the researcher should be simply to provide objective information or to also serve as an advocate in the policy process. Some donors have set up policy analysis projects with the goal of researchers playing both roles, but the latter puts the analyst in a more precarious position that sometimes requires additional support from donors when the research process generates controversial findings.
4. There may be high payoffs to a “joint products” approach in which the generation of policy-relevant information, local capacity building, and policy dialogue are jointly achieved through a process of collaborative research involving local and international analysts, committed government officials, private sector representatives, and donors. The strengthening of local analysts through on-the-job collaborative analysis allows a mechanism for on-going monitoring of food system performance in response to the reforms and provides a mechanism for mid-course corrections as researchers uncover new empirical information.
5. Lastly, the analysis itself must be solid and high-quality. To a large extent, the credibility of the research process and its usefulness in the policy process depends on its quality.

These issues highlight the importance for donors, governments, researchers, and the private sector to have an organized forum for discussion on food security issues, so that viewpoints can be shared, perspectives understood, trust developed, and progress made in moving toward coordinated and mutually agreed-upon roles in the emergent liberalized food marketing systems.

9. CONCLUDING COMMENTS

This report has examined salient issues arising in the grain market liberalization process in Kenya, Mozambique, Zambia and Zimbabwe. While each of these countries have faced fundamentally similar food policy challenges, their responses to these challenges in recent years have differed, as have outcomes. These divergent approaches provide a key opportunity for policymakers and analysts to learn from the experiences of each case. The main findings of the paper are as follows:

First, food market liberalization has generated more successes than generally recognized. Examples of these are in grain retailing and milling, where consumers in all countries now have expanded options and have benefitted from the lower milling margins of small-scale hammer mills; greater availability of maize grain in rural grain deficit areas due to strengthened inter-rural private grain trade; and the rise of regional trade patterns, which is playing a critical role in promoting cost effective food systems in cases where this is allowed. As shown earlier, even most households in the rural Kenya survey have stated a decisive preference for the reformed marketing system, both as sellers and buyers in the market.

Second, it is increasingly clear that the private sector's response to liberalization is sensitive to a broader range of government actions than commonly understood. For example, statements of key politicians in local newspapers critical of a market-oriented system are likely to be incorporated into the private sector's expectations of the payoffs and risks to future investment in the system. There is a need for a better understanding of the kinds of incentives that the private sector responds to in order to avoid actions that make "lack of private sector response" a self-fulfilling prophecy. Types of activities likely to impede overall private sector response to liberalization include (a) state importation and sale of maize at below-market prices to selected buyers; (b) subsidized commodity distribution schemes; (c) restrictions on private import or export; and (d) policy vacillation.

Third, consumer vulnerability to price instability under liberalization has not been as severe as often portrayed. Private investment in grain distribution, processing, and cross-border trade as a result of the reforms have expanded consumers' options and ability to stabilize expenditures on maize meal. These market-oriented means of stabilizing consumer food expenditures weakens the rationale for expensive government price stabilization schemes. But this does not imply that there is no meaningful role for the state to play in stabilizing prices in a market economy.

Fourth, positive government actions to reduce market instability is needed and is beginning to work in selected cases. There is a wide array of government actions to reduce price instability. These investments include: (a) improving the transport infrastructure; (b) promotion of regional trade; (c) market information systems that are expanded to include information on prices across borders, exchange rates, and trade flows; (d) improved communication infrastructure; (e) nurture the development of market-oriented mechanisms (e.g., commodity exchanges) for handling price risk; and (f) alleviating the constraints on private access to foreign exchange. In short, there is no need to accept prevailing levels of food price instability as "given." Importantly, these types of investments may reduce political risks associated with liberalized food markets, and thereby promote policy stability and consistency – key factors in promoting desirable private investment in the system.

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