Unravelling Zimbabwe's food insecurity paradox

Implications for grain market reform in Southern Africa

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Zimbabwe has a food insecurity paradox: the threefold expansion of marketed grain by smallholders since 1980 and overflowing state grain silos existing concomitantly with widespread chronic malnutrition. While malnutrition has many causes, inadequate access to food is clearly one of the most important in Zimbabwe. Inadequate purchasing power among the poor is often cited as the reason why food insecurity can persist amidst food abundance. This explanation masks the structural determinants of income distribution that give rise to poverty and hunger.

This article argues that the structure of grain markets in Zimbabwe has eroded real incomes and food security among grain-deficit, relatively poor rural households while simultaneously stimulating the well publicized growth in aggregate grain sales and incomes documented elsewhere. The state's one-way distribution system, while offering surplus producers a stable and remunerative price, effectively siphons grain supplies out of semi-arid rural areas early in the season. Controls on maize movement, resale and pricing restrict consumers in these same areas from obtaining maize through private trading channels, creating localized shortages later in the season. These controls provide the Grain Marketing Board (GMB)/urban milling system with a de facto monopoly on maize distribution into grain-deficit areas. Urban-manufactured maize meal is less preferred, less nutritious and considerably more expensive than maize procured and milled through private rural channels. The absence of viable intrarural marketing channels inflates consumer grain prices and has effectively reduced cash incomes among poor rural consumers by as much as 30%. Consequently the marketing system has contributed to the highly skewed distribution of income among the rural population observed by other researchers.

The case of Zimbabwe may be relevant to other countries in Southern Africa experiencing persistent food insecurity amidst food abundance.
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1 A graphic illustration of this paradox occurred on 14 June 1990, when separate accounts of huge food surpluses and localized starvation were reported on opposite pages of Zimbabwe's major newspaper, The Herald: "Zimbabwe expects surplus in total food requirements", p 4. "Reports of starvation shock Labor Minister", p 3. The Ministry of Health estimates that 36% of Zimbabwean children under 5 are chronically malnourished in the drier provinces of the country: Central Statistics Office, Demographic and Health Survey, Ministry of Finance, Economic Planning and Development, Harare, Zimbabwe, 1989, p 94.


4 Jones Govereh, 'Constraints on increased crop productivity in marginal rainfall areas of Zimbabwe', MPhil thesis, Department of Agricultural Economics and Extension, University of Zimbabwe, Mount Pleasant, forthcoming.

While governments' food security and budget minimization objectives present obvious trade-offs, we argue that selected market reforms may considerably reduce the magnitude of these trade-offs. Such reforms, based on the development of competitive intrarural trade that provides more direct channels between surplus and deficit areas, would reduce the circuitous and costly flow of grain from rural areas to centralized urban mills and back to rural areas for consumption.

These conclusions are based on results of surveys of 648 households, 124 grain and/or grain meal traders, 52 rural millers, nine GMB depot managers and two GMB inspectors operating in seven semi-arid African smallholder areas of Zimbabwe.

Government objectives and grain marketing policies

Rural income growth has been a prime objective of the Government of Zimbabwe since independence in 1980. The primary instruments of this rural income objective have been grain pricing and marketing policies, in particular (a) producer prices consistently above export parity; (b) an expansion of GMB buying points to stimulate marketed output in smallholder areas; and (c) a massive infusion of government credit recouped from crop sales to the GMB. These policies contributed greatly to the dramatic rise in GMB grain intake from the smallholder sector.

However, emphasis on policies designed to raise rural incomes by increasing the returns from smallholder grain sales implicitly assumes that farmers are surplus grain producers. This image is not supported by data from numerous household surveys in Zimbabwe's semi-arid smallholder areas. The data reveal five salient points (Table 1). First, most smallholders in the drier regions sell little or no grain. Income from grain sales is highly concentrated among a narrow segment of well-endowed farmers in the most productive regions. Of the country's 170 smallholder farming areas, 18 have accounted for 75% of GMB grain intake from this sector since 1983. Within a given area, 10% of the households typically account for over half of the marketed grain.

Second, households selling the most grain tended to have higher incomes and grain consumption. Household surveys in two semi-arid communal areas indicated that, at the 0.01 level of significance, household grain sales were positively correlated with per capita income, grain availability per household member and crop sales from oilseeds and cotton. The poorest households tended to have relatively few productive assets and were generally purchasers of grain.

Third, between 50% and 100% of farm households in the dry areas are typically net purchasers of grain. The exact proportion of grain-deficit farm households depends on the particular geographical area and the quality of harvest. The government's incomes policy has largely bypassed these households. These farmers appear unable to respond significantly to producer price incentives because of other binding constraints on production: limited land, draft animals and non-farm income to finance investments in improved technology, poor soil and erratic rainfall.

Fourth, private marketing channels linking surplus and deficit rural areas appear to be very thinly traded. In none of the surveyed smallholder areas did private traders account for more than 15% of the grain sold by farmers. In lieu of intrarural trade a circuitous flow of

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Table 1. Aspects of household grain marketing behaviour in selected smallholder farming areas.

<table>
<thead>
<tr>
<th>Communal area</th>
<th>% of households that are net grain purchasers</th>
<th>% of total grain sales by the 10% of farm households selling the most grain</th>
<th>Average household net grain sales (kg)</th>
<th>% of total grain sold to</th>
<th>% of total grain and meal purchased from</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of total grain sales</td>
<td>Surplus households</td>
<td>Deficit households</td>
<td>GMB or licensed agents</td>
<td>Neighbouring households</td>
</tr>
<tr>
<td>High rainfall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gokwe (South)</td>
<td>12</td>
<td>51</td>
<td>3,707</td>
<td>-183</td>
<td>86</td>
</tr>
<tr>
<td>Buhera (North)</td>
<td>26</td>
<td>50</td>
<td>1,023</td>
<td>-252</td>
<td>69</td>
</tr>
<tr>
<td>Low rainfall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gokwe (North)</td>
<td>59</td>
<td>59</td>
<td>1,118</td>
<td>-438</td>
<td>5</td>
</tr>
<tr>
<td>Buhera (South)</td>
<td>57</td>
<td>72</td>
<td>973</td>
<td>-382</td>
<td>68</td>
</tr>
<tr>
<td>Runde</td>
<td>61</td>
<td>74</td>
<td>1,465</td>
<td>-344</td>
<td>30</td>
</tr>
<tr>
<td>Mberengwa</td>
<td>85</td>
<td>60</td>
<td>834</td>
<td>-483</td>
<td>43</td>
</tr>
<tr>
<td>Nata</td>
<td>94</td>
<td>57</td>
<td>21</td>
<td>-301</td>
<td>0</td>
</tr>
<tr>
<td>Ramakwebana</td>
<td>96</td>
<td>68</td>
<td>340</td>
<td>-383</td>
<td>0</td>
</tr>
<tr>
<td>Semukwe</td>
<td>98</td>
<td>62</td>
<td>46</td>
<td>-959</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes: The results of these surveys pertain to the period April 1989–March 1990 and November 1988–October 1989. Rainfall was average to moderately below average during the relevant production years in all survey areas. The distinction between purchases from households and private traders was not made in this study.

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Grain has evolved in which marketed surpluses flow out of rural areas through the official marketing channel to be milled in relatively distant urban centres, and then flow back into the same or other rural areas in the form of expensive commercial maize meal (eg Mberengwa, Runde and South Buhleia in Table 1). Of the grain-deficit households in these areas 75% stated that they bought urban-milled meal simply because grain was not available locally. Ironically, straight-run maize meal from a rural hammer mill is preferred, contains more protein, oil and fibre, and is less costly than the more refined urban-manufactured meal. Even during the pre-harvest months of 1990, commercial maize meal was from 10% to 80% more expensive per kilogram than the maize obtained and milled through local private channels. While the reasons for this circuitous flow of grain are discussed below, an important conclusion is that the sale of grain ‘surplus’ to the GMB, while giving the illusion of self-sufficiency, has masked and even contributed to food insecurity in many smallholder areas.

Fifth, and consequently, incomes in these grain-purchasing areas are often more affected by the price of urban-manufactured maize meal than GMB producer prices. Urban-milled meal accounted for 79–92% of total grain purchases, and 24–37% of total grain consumption, in a survey of three semi-arid smallholder areas in 1988–89. Private grain flows into these areas from surplus-producing rural areas were zero.

The magnitude of this phenomenon – grain moved out of rural areas by the GMB and urban-milled maize meal moved in – has not been determined by previous research. To corroborate the microlevel evidence from household surveys, the following section presents a framework for estimating the volume of this grain movement on the national level.

**National magnitude of maize backflows**

The national magnitude of rural consumption of urban-milled meal may be tested econometrically under the assumption that demand for grain by urban millers is a derived demand for urban-milled meal by consumers. Interviews with managers of several urban milling firms indicate that (a) demand for maize by mills is based on perceived demand for meal rather than by-products, (b) there is a two- to three-week time lag between the purchase of maize from the GMB and the time at which it is milled and distributed to retail outlets, and (c) aside from working stocks, these millers do not store maize grain because the GMB’s pan-seasonal selling price effectively provides free storage services for the millers. Hence the demand for maize by commercial millers is essentially a derived demand for maize meal by consumers, with a two- to three-week time lag.

The next task is to distinguish between urban and rural demand for urban-milled meal. The latter measures the volume of maize grain flowing from rural areas to urban centres and back to rural areas as meal for consumption. Immediately after harvest, most farm households consume grain from their own production. At this time, demand for urban-milled meal is confined mainly to urban and non-farm rural households. Consumption among these groups, which produce no grain, is assumed to be roughly constant throughout the year. However, as a growing proportion of rural households deplete their grain stocks from own production as the year progresses and cannot procure grain locally,
demand for urban-milled meal rises, reaching a peak during the
pre-harvest months. At harvest, rural demand drops off considerably,
and is again limited mainly to urban and rural non-farm consumers.
Therefore any rise in demand for the urban-manufactured meal later in
the season may be attributed largely to rural households running out of
their own grain stocks.

The seasonality of rural demand for urban-milled meal may be
examined by contrasting the following monthly models:

\[ \text{DEMAND}_t = B_0 + B_1(P\text{MEAL})_t + B_2(P\text{BREAD})_t + B_3(\text{RETENTIONS}) + e_t \]  

(1)

and

\[ \text{DEMAND}_t = B_0 + B_1(P\text{MEAL})_t + B_2(P\text{BREAD})_t + B_3(\text{RETENTIONS})_t + B_4(\text{JAN}) + B_5(\text{FEB}) \\
+ \ldots + B_{14}(\text{NOV}) + e_t \]  

(2)

where DEMAND represents maize grain demanded by urban mills, a
derived demand for urban-milled meal by consumers, PMEAL and
PBREAD are the deflated retail prices of urban-milled roller meal and
wheat bread, and RETENTIONS are annual smallholder maize produc-
tion minus sales to the GMB.\(^{13}\) JAN, FEB, MAR, etc., are monthly
dummy variables. The hypothesis of no significant rise in rural demand
for urban-milled meal later in the season is represented by \(B_4 = B_5 = \ldots = B_{14} = 0\).

Equations (1) and (2) were estimated using monthly data from the
GMB and the Ministry of Trade and Industry from April 1985 to
September 1989. An F-test rejected the null hypothesis of no seasonality
at the 0.01 level of significance. Results for Equation (2) are as follows
(t-statistics in parentheses):\(^{14}\)

\[ \text{DEMAND}_t = 88,834 - 2,572.0(P\text{MEAL})_t + 39,778(P\text{BREAD})_t \\
- 0.03(\text{RETENTIONS})_t + 4.347.5(\text{JUL}) \\
- 6.55(\text{AUG}) + 13,922.0(\text{SEP}) \\
+ 14,725.6(\text{OCT}) + 17,919.6(\text{NOV}) \\
+ 21,295(\text{DEC}) + 28,414.2(\text{JAN}) \\
+ 25,526.1(\text{FEB}) + 18,260.4(\text{MAR}) \\
+ 1,657.9(\text{APR}) + 8,525.6(\text{MAY}) \\
- 8,414.5(\text{JUL}) + 4.347.5(\text{SEP}) \\
(1.58) (2.62) (2.63) (4.94) (2.63) (3.18) (3.84) (4.94) (3.84) (4.94) (3.84) (4.94) (3.84) (4.94) (3.84)
(2.90) (−2.98) (−6.55) (0.83) (2.62) (3.18) (3.23) (1.64) (3.23) (1.64) (3.23) (1.64) (3.23) (1.64) (3.23) (1.64)

\[ R^2 = 0.72; DW = 1.72; F = 7.25. \] Own-price elasticity of demand for
maize: \(-1.23\). Wheat cross-price elasticity of demand for maize: \(+0.44\).

The results indicate that June is the month of lowest demand. This is the
period just after harvest, when most rural households eat grain from
own production and demand for urban-milled meal is confined to the
year-round consumers mentioned above. This suggests that, given mean
levels for PMEAL, PBREAD and RETENTIONS over the estimation
period and adjusting for the extraction rate from maize grain to meal,
about 375,000 tonnes of urban-milled meal are consumed by the

\(^{13}\)Past research has noted the important
inverse relationship between demand for
commercial meal and the quality of the
harvest: M.J. Blackie, Restructuring
Marketing Systems for Smallholders:
Cases in Zimbabwe, Department of Agri-
cultural Economics and Extension Working
Paper 1/84, University of Zimbabwe, 1984.
During drought years, for example, annual
demand for commercial meal rises sub-
stantially. The less grain produced and
retained in communal areas, the greater
the need for commercial meal to be trans-
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Figure 1. Estimated seasonal variation in commercial maize meal consumption and the distribution of consumption between urban and rural areas, 1985–89.

Key
□ Estimated consumption from urban and year-round rural consumers (375 000 tonnes per year)\(^a\)
△ Estimated total consumption, normal rainfall year (505 000 tonnes per year)\(^b\)
* Estimated total consumption, drought year (650 000 tonnes per year)\(^b\)

Notes: \(^a\) Calculated at the price and retention means over the estimation period; \(^b\) calculated at the price mean over the estimation period and retention level from 1987/88 marketing year.

Source: Computed from Equation (2).


Grain marketing policy divides the country into 'Zone A' areas, which include all urban and European commercial farming areas, and 'Zone B', or African smallholder areas. The Zone B areas are geographically scattered and are essentially enclaves within Zone A. Even between contiguous smallholder areas the scope for trade is limited by poor or non-existent road infrastructure.

Organization of the grain marketing system

Zimbabwe's official grain marketing system, like many in East and Southern Africa, features a predominantly one-way flow of grain from rural to urban areas and is characterized by centralized urban milling and storage facilities.\(^15\) The system is based largely on the implicit assumption that rural farming communities are self-sufficient in grain. Private maize trading within smallholder enclaves was never banned, but is nevertheless circumscribed by numerous government policy regulations:

- Smallholder maize, unless destined for a GMB depot, is prohibited from moving across the boundaries of urban or commercial farming areas.\(^16\) Since these areas contain virtually all of the year-round consumers in a typical year over the estimation period (Figure 1).

The regression results indicate a steadily rising demand as the season progresses. This seasonal pattern corresponds very closely with the pattern of grain stock depletion among households surveyed in the drier smallholder areas. It must be assumed that the steady rise in demand later in the season, which peaks just before the availability of green maize from the next harvest, is attributable largely to rural households running out of their own grain stocks. The results, graphed in Figure 1, indicate that rural demand for urban-milled meal has averaged about 130 000 tonnes during a normal rainfall year. Sensitivity analysis on the RETENTIONS variable indicates that rural demand may rise to 275 000 tonnes or more during a drought year. These figures represent about 26% and 42% of total commercial maize meal sales during a normal year and a drought year, respectively. This rural consumption is probably concentrated in the low rainfall communal areas and among households working on commercial farms that were allocated plots of land too small to meet their annual grain needs.

The following two sections examine the structural causes of this circuitous flow of maize and their effects on household cash incomes and food security.
country’s main roads, this regulation effectively blocks private grain trade between non-contiguous smallholder areas.

- Maize may not be removed privately from commercial farming areas to smallholder areas.
- Once grain is sold to GMB collection points or licensed agents in smallholder areas, direct resale to consumers is prohibited. Instead, the grain must be forwarded to GMB depots, often a considerable distance from rural deficit areas. This effectively siphons supplies out of rural areas, tightens local supply–demand conditions and exerts upward pressure on local market prices.
- The margin between the GMB purchase price and selling price to urban millers since 1986/87 has been roughly half of the GMB’s actual operating costs. In addition to this direct subsidy, the GMB’s pan-seasonal and pan-territorial prices provide free storage and transport services for the urban millers. By contrast, rural traders able to buy grain at GMB depots must incur all transportation costs back to rural areas. The direct and indirect subsidies on urban-milled meal marketed through official channels narrow the margin within which private grain traders can operate profitably.
- Finally, and perhaps most importantly, the rules governing resale of GMB grain to rural traders are subject to a variety of interpretations. In theory any individual may purchase grain from GMB depots within smallholder areas. Yet seven of nine GMB depot managers interviewed stated that they do not permit sales to rural traders suspected of reselling the grain, due to perceptions that they would exploit poor households needing grain. However, it is likely that the de facto GMB resale controls have actually hurt those that the controls were designed to protect, since the restriction of private grain movement from depots to deficit rural areas has contributed to rural consumers’ dependence on more expensive and less preferred urban-milled meal.

It is not surprising, therefore, that less than 2% of the GMB’s total maize intake since 1980 has been resold to private traders in rural areas. The organization of the market has forced the GMB to serve as de facto procurement agent for the large urban millers, stockfeeders and brewers, which have accounted for 77%, 8% and 6% of GMB sales since 1980. Thus massive stocks at GMB depots in town centres bear little relationship to grain accessibility in distant rural areas.

These trading restrictions appear to be enforced by GMB inspectors and largely adhered to in all smallholder areas surveyed. Although some illicit trade was detected, it is undoubtedly of lower volume and higher cost than if the government were to remove such restrictions and actively encourage intrarural trade.

Consequently private grain markets, in the sense of many buyers and sellers interacting in open fora, are conspicuously absent in Zimbabwe. Most private grain trade is between surplus and deficit households in close proximity exchanging small quantities (Table 1). This system has not achieved economies of scale in bulking and distribution, and has restricted long-distance movement of supplies into smallholder zones suffering from food shortages. The restrictions on private grain marketing have impeded the development of trade between smallholder zones.

If rural grain prices and milling costs are lower than commercial meal prices, one may ask why private traders do not buy more from surplus households, by offering a higher price than the GMB, and then sell
locally milled meal to deficit households within the same smallholder area. The scope for this is clearly limited in arid smallholder areas which produce little marketable surplus. However, other areas feature large outflows of grain through the GMB system and substantial inflows in the form of urban-milled meal (e.g., South Buhera, Runde and Mberengwa in Table 1). Households in these areas selling grain to the GMB instead of private traders indicated that GMB depots, collection points and licensed buying agents were the only buyers conveniently located, private traders did not buy grain at all times during the year, the GMB is better equipped to buy in bulk, as when smallholders aggregate their surpluses to utilize scarce transport, and repayment of government-disbursed credit is tied to crop sales to the GMB. This suggests that transaction costs may play an important role in smallholder marketing preferences, especially for bulk sellers, despite higher producer prices in private channels. Traders, on the other hand, stated that they were prevented from more actively buying grain due to the unavailability of credit that would facilitate economies of scale in distribution, perceptions that private resale of grain is illegal even within smallholder areas, and perceptions that, in the absence of open markets, local demand was limited and dispersed and other commodities were more profitable. The last point suggests that prohibitions on long-distance trade, which seriously constrain the development of open public markets, indirectly suppress grain trade within smallholder areas by escalating the search costs associated with linking buyers and sellers even in fairly close proximity.

Effects on household incomes and food security

An estimate of the effect on rural household income of filling residual grain needs by purchasing urban-milled meal rather than grain procured and milled through private marketing channels is presented in Table 2. Dietary patterns among food-secure households show that daily grain consumption is about 0.6 kg per adult equivalent. Surveys in the drier smallholder areas indicate that average family size is about 6.5 in terms of adult equivalents. Thus, about 1425 kg of grain are required by an average household per year.

Survey data also indicate that in 1989 (a moderate but not unusual drought year) 25% of the households surveyed in two smallholder areas ran out of their own grain supplies by September 1989 (about 165 days before green maize is available from the next harvest); 50% ran out by January 1990 (about 45 days before the green maize). Under these two scenarios, Table 2 illustrates the reduction in real household income from purchasing urban-milled roller meal at prescribed prices instead of maize procured and milled through private channels. Reference incomes are the mean cash incomes recorded in Buhera and Mutoko smallholder areas for households in the lowest income quartile (Row 7) and for those in the second-lowest income quartile (Row 8).

This simulation suggests that households in the lowest income quartile that ran out of grain in September and had to buy urban milled meal would have spent 32% of annual cash income more than if they were able to purchase and mill locally bought maize. Since this is a non-marginal change in income, it is more likely that such households would reduce their intake of grain with potentially adverse effects on food security. Even for households in the second income quartile, an
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Notes: "The official roller meal price of Z$0.48 per kg was chosen as a low-end estimate. Actual roller meal prices were often higher than this in many remote rural areas during 1990. The local maize market price of Z$32 per 96 kg bag was chosen as a high-end estimate; local maize prices observed in the UZ/MSU/SADCC/Icrisat study never exceeded this price in 25 of 27 wards surveyed during the pre-harvest months of 1990. These wards are all in semi-arid smallholder areas, some of which were affected by moderate drought during the harvest. The $5.00 per bag milling charge used in this simulation is 20% higher than the average charge observed in a related survey of informal millers during 1990. Extraction rates of 98% for rural hammer mills were obtained by actual weight measurements in a subset of millers surveyed.

Source: Data from UZ/MSU/Icrisat Grain Marketing Surveys, 1990.

Table 2. Estimates of loss in household cash income resulting from acquisition of residual grain requirements from commercial roller meal as opposed to grain procured and milled through private trading channels.

<table>
<thead>
<tr>
<th>(1) Annual household grain requirements (kg)</th>
<th>Household runs out of own grain stocks in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Number of days between household stock out and green maize availability</td>
<td></td>
</tr>
<tr>
<td>(3) Residual grain requirement to be met from purchases (kg)</td>
<td></td>
</tr>
<tr>
<td>(4) Cost of residual grain requirement from roller meal (Z$ per household)</td>
<td></td>
</tr>
<tr>
<td>(5) Cost of residual grain requirement from grain purchase on informal market and milling charge (Z$ per household)</td>
<td></td>
</tr>
<tr>
<td>(6) Difference in residual procurement costs between roller meal and grain from informal market (Z$ per household)</td>
<td></td>
</tr>
<tr>
<td>(7) Mean household cash income, lowest income quartile, Mutoko and Chiriba (1988-89 marketing year) (Z$ per household)</td>
<td></td>
</tr>
<tr>
<td>(8) Mean household cash income, 2nd lowest income quartile, Mutoko and Bubura (1988-89 marketing year) (Z$ per household)</td>
<td></td>
</tr>
<tr>
<td>(9) (6) as proportion of (7)</td>
<td></td>
</tr>
<tr>
<td>(10) (6) as proportion of (8)</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>January</td>
</tr>
<tr>
<td>1 425</td>
<td>1 425</td>
</tr>
<tr>
<td>165/451*1 425 = 644</td>
<td>45/365*1 425 = 176</td>
</tr>
<tr>
<td>644 kg*$0.48/kg = $309</td>
<td>176 kg*$0.48/kg = $85</td>
</tr>
<tr>
<td>644 kg*$0.39/kg = $251</td>
<td>176 kg*$0.39/kg = $69</td>
</tr>
<tr>
<td>$58</td>
<td>$16</td>
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<td>$184</td>
<td>$184</td>
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<tr>
<td>$184</td>
<td></td>
</tr>
<tr>
<td>$452</td>
<td>$459</td>
</tr>
<tr>
<td>32%</td>
<td>9%</td>
</tr>
<tr>
<td>13%</td>
<td>2%</td>
</tr>
</tbody>
</table>

additional 13% of annual cash income would be absorbed in the higher acquisition price of urban-milled meal. If households in the lowest and second-lowest income quartile depleted their grain reserves by January and had to buy urban-milled meal, 9% and 2%, respectively, of their annual cash income would be lost.

These results probably underestimate the gains that would result from policy changes that facilitate intrarural grain trade. The local market price of Z$32 per bag is a high-end observation. Actual recorded prices during the pre-harvest months of 1990 never exceeded this price in 25 of 27 semi-arid locations surveyed. Moreover, these observed prices are a function of current marketing restrictions. Policy changes that relaxed controls on private grain movement into deficit areas would exert downward pressure on consumer prices, ceteris paribus, and thus further increase the benefits of decontrol in these areas.

In addition to the direct effect on real incomes, food consumption and nutrition of grain-deficit rural households, the current marketing system also (a) ties up large amounts of the country’s transport capacity in superfluous grain movement, contributing unnecessarily to GMB storage and transport costs; (b) shifts the employment and multiplier effects of grain processing, stockfeed manufacturing and other agroindustries from rural to urban areas; and (c) exacerbates the country’s chronic maize oversupply problem through the effect of artificially high rural grain prices on national demand. The econometric results indicate that national demand for grain by millers, a derived demand for maize meal, is quite elastic. Thus reducing maize meal prices in rural areas through more direct transport routes and lower rural processing costs could increase consumption and reduce the government’s oversupply problem and the costs associated with it. The shortage of maize grain to buy in many smallholder areas later in the season is particularly ironic considering the mountains of maize typically held by the GMB. This irony is at least partially due to the current organization of the market.
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**Policy implications**

This analysis supports the argument that restructuring of the grain marketing system to facilitate intrarural trade can concurrently raise real incomes among the poorest rural households, reduce government transport and stockholding costs, and contribute to other government objectives. While the painful trade-offs between food subsidy reductions and food security among vulnerable groups have been highlighted by the recent experiences of structural adjustment throughout Africa, this analysis indicates that selected market reforms may reduce the magnitude of these trade-offs. The single-channel, unidirectional GMB system, while providing clear benefits to surplus producers, cannot cost-effectively distribute grain to geographically dispersed and remote areas. The development of more direct trade between surplus and deficit rural areas would substantially reduce superfluous grain movements of up to 270,000 tonnes annually through the official channels, shift the demand for maize milling to small-scale rural millers where margins are about one-half those of urban mills, and reduce the volume of maize handled at a loss by the GMB in semi-arid areas.

However, these rural markets will not arise spontaneously. Policy reforms that provide greater incentives for private entrepreneurs must be accompanied by active government support for new entry and investment in private grain trading. Surveyed traders indicated that lack of credit for working capital (73%), vehicles and spare parts to buy (38%) were also important constraints to expansion of operations.

The analysis leads to five policy recommendations:

- Abolish restrictions on the private movement of grain produced in smallholder areas.
- Expand the function of GMB collection points and licensed agents to include the sale of grain to rural consumers and traders. These changes would greatly expand the scope for intrarural trade by opening up GMB-owned stocks to rural consumers and traders instead of funnelling supplies directly to urban centres.
- Publish and widely disseminate information pertaining to the rules governing grain trade. Explicitly state the conditions under which a trader may buy grain from GMB depots. This information should be directed at local GMB staff as well as the public.
- Provide active government support to induce new entry and investment in rural grain trade. The Zimbabwe Development Bank or similar institution could play a role by targeting credit for specific investments such as vehicles, hammer mills, spare parts, storage and marketplace facilities in rural areas. This could be complemented by government investment in rural road infrastructure, the elimination of import restrictions on vehicles and spare parts, and greater allocation of foreign currency to rural small-scale businesses.
- Seriously reconsider the effects of GMB pan-seasonal and pan-territorial pricing on government objectives to subsidize poor grain consumers. The storage and transport subsidies associated with pan-pricing impose major costs on government even though the subsidized product – urban-milled meal – is still more expensive than locally milled meal. If the objective of the government is to reduce the cost of basic staple food, then this objective could be achieved at lower cost by relaxing controls on grain movement.

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20The Government of Zimbabwe has consistently voiced its concern with keeping staple food prices low to protect vulnerable groups. This concern was recently reiterated by the Finance Minister in B. Chidzero, *Economic Policy Statement*, Government Printers, Republic of Zimbabwe, Harare, 1990.
and resale and supporting intrarural trade rather than by subsidizing a less nutritious, less preferred and more expensive product. These changes would not preclude the GMB from maintaining its current role as primary buyer in commercial and surplus smallholder areas to meet urban demand, providing a floor price to moderate adverse price fluctuations and maintaining strategic stocks.

The development of intrarural grain trade in semi-arid areas would also promote the development of rural hammer mills, breweries and other agro-based industries that require adequate and reliable volumes of grain for purchase. Currently such agro-based industries are concentrated in the major urban areas. The stimulation of local trade and processing may create rural employment and multiplier effects that are currently confined to urban areas. Policies that rely more on decentralized storage and delivery of grain from the nearest surplus areas rather than delivery of maize meal from distant urban mills would also release scarce transport for productive use in other sectors.

Changes in the grain marketing system may be an important precondition for success in the government’s efforts to promote diversification into higher-valued crops well suited to semi-arid environments, such as cotton and sunflower. These crops may be ‘higher-valued’ when their net returns are compared with those from growing maize for sale. However, in grain-deficit areas the true opportunity cost of forgoing maize production is related to the acquisition price of commercial maize meal – some 110% higher than the GMB maize producer price. Thus cheaper and more reliable access to grain may reduce households’ overriding concern with grain self-sufficiency and promote dynamic changes in crop mix more consistent with comparative advantage and income growth in the less-favoured rural areas.21

**Concluding remarks**

It is not a paradox that rural food insecurity persists in Zimbabwe despite a 300% increase in smallholder grain sales to the GMB since independence. On the surface the situation is due to substantial variation among households’ productive resources, the ability to produce a marketable grain surplus, and other income-earning opportunities. Yet the historical and current orientation of agricultural policy towards surplus producers and the neglect of market development for rural consumers has certainly contributed to these income inequalities and the current level of food insecurity in the country. While great strides have been made since independence to expand market outlets for smallholders’ surplus production, the income gains have been highly concentrated among relatively well endowed households, especially those in high-potential areas. By contrast, the structure of the market in many Southern African countries has effectively taxed rural consumers by restricting the development of intrarural grain trade, thus inflating the acquisition price of grain meal in deficit areas. These grain-deficit households tend to belong to the lowest income strata in the rural areas. In the long run improved technology and rural employment must be the catalysts for sustained rural development. However, these gains are not on the immediate horizon in most dryland areas. In the medium run governments’ objective of rural income growth, especially among the poor, will be facilitated by market development that reduces consumer prices in rural areas as well as raises producer returns.

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**FOOD POLICY** August 1991