



## RELIEF THROUGH DEVELOPMENT: MAIZE MARKET LIBERALIZATION IN URBAN KENYA

By

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Maize meal accounts for up to 50% of low-income households' expenditures in Kenya. And about half of the cost of maize meal over the past decade has been accounted for by processing and distribution costs. Thus cost reduction in the milling and distribution of maize meal can greatly affect access to food by low income consumers, both in urban and rural grain-deficit areas. While the quest for productivity gains in the food system has typically focused on farm technology and related adoption factors, this paper emphasizes the importance of reducing per unit costs (increasing productivity) at critical stages in the marketing system to promote household food security and production incentives.

**OBJECTIVES:** This report analyzes the effects of maize market reform on processing and distribution margins for maize meal, and the resulting impact on household consumption patterns and maize meal expenditures in urban Kenya. The report decomposes changes in maize meal prices attributable to price changes in maize grain and maize milling margins. Results are based on two household surveys of food consumption and expenditure patterns in Nairobi, one before full liberalization of the maize meal market (October 1993), the other afterward (October 1995).

**RESULTS:** The report highlights six conclusions with broader implications for promoting food security in Kenya:

1. Since the full liberalization of the market for maize meal in December 1993, average maize meal prices paid by consumers have declined by 31%. Of this decline, 51% is attributable to a decline in milling margins, due to stiffer competition since liberalization, while the other 49% is due to lower maize grain prices in 1995 in response to a favorable harvest. The reduction in maize milling and distribution costs between 1993 and 1995 was equal to about 23% of the total value of maize meal in 1995.
2. The reduction in milling costs alone has transferred roughly Ksh 673 million (US\$12.25 million) to consumers in Nairobi *each year*, a direct result of maize market liberalization (Table 1). To put this figure in perspective, Ksh 673 million is greater than Kenya's annual public expenditures in agriculture over the 1990-1994 period, and is about one-tenth of the annual value of Kenya's smallholder coffee exports over the same period (both in constant 1995 Ksh).

The benefits of lower maize milling margins to Nairobi consumers as reported here do not count the other urban consumers in Kenya (roughly 3 million) who have likely enjoyed

**Table 1. Cost Savings to Nairobi Consumers From Change in Maize Milling Margins Due to Market Liberalization.**

Derivation of cost reduction to Nairobi consumers	Amount
<p>a. 1993 maize milling margins:</p> <p>sifted flour (10.53 Ksh/kg @ 67% market share) = 6.95 whole flour (1.28 Ksh/kg @ 33% market share) = 0.44</p> <p>total average cost = 7.48 Ksh/kg of maize milled</p>	7.48 Ksh/kg of maize milled
<p>b. 1995 maize milling margins:</p> <p>sifted flour (7.09 Ksh/kg @ 54% market share) = 3.82 whole flour (1.47 Ksh/kg @ 46% market share) = 0.68</p> <p>total average milling margin = 4.50 Ksh/kg of maize milled</p>	4.50 Ksh/kg of maize milled
c. difference in average milling margin per kg (row a - row b)	2.98 Ksh/kg of maize milled
d. kgs of maize consumed per month per adult equivalent (Nairobi)	6.90 kgs
<p>e. adult equivalent population in Nairobi (approximate)</p> <p>3.1 million estimated persons * .88 adult equivalents per person on average = 2.73 million adult equivalents</p>	2.73 million adult equivalents
f. total cost reduction in milling margins per month (row c * row d * row e)	56.13 million Ksh per month
g. total cost reduction to Nairobi consumers per year (row f * 12 months)	673.61 million Ksh per year  (i.e., US\$ 12.25 million per year at exchange rate of 55 Ksh/US\$)

- similar benefits from market liberalization, as well as the millions of rural households in maize deficit areas who have also benefitted from greater competition in maize milling. Therefore, the benefits of liberalization reported here represent a low-end estimate.
3. Much of the reduction in milling costs is attributable to a shift in consumption from relatively refined sifted maize meal to cheaper whole maize meal produced by small private enterprises. Milling margins for sifted meal -- the amount charged by sifted millers for processing and distributing meal -- are about five times greater than those charged by small-scale hammer millers for custom milling maize into whole meal. But prior to liberalization, urban consumers' access to whole meal was constrained by controls on private sector maize movement into urban areas. Maize moved into urban areas by the state marketing board was almost exclusively reserved for the registered large-scale sifted millers that were vertically linked into the official marketing system. This system ensured the registered millers of a protected urban market, free of competition from private small-scale millers (who were unable to procure or transport maize into urban areas). Due to these policy barriers, urban consumption of whole meal was negligible prior to the initiation of the reforms.

Once subsidies on sifted flour were removed and controls on maize movement were abolished in late 1993, the competitiveness of the small-scale milling sector became clear. The market share of sifted maize meal swiftly declined as consumers switched to cheaper whole meal. Whole meal now makes up about 46% of urban maize meal consumption, and is as high as 67% among the poorest 20% of urban consumers. The decline in sales of sifted flour has put pressure on the previously protected sifted millers to reduce their milling margins. Sifted meal margins -- the amount charged by millers for processing and distributing sifted maize meal -- have declined 33% between 1993 and the latter half of 1995.

4. There is an inverse relationship between whole meal consumption and household income, and a positive relationship between sifted meal consumption and household income. These results support earlier findings indicating that whole maize meal may be used as a "self-targeted" commodity (i.e., it is consumed primarily by the poor and therefore, if subsidized, would involve relatively small leakage of benefits to non-needy households if used in safety-net food assistance programs).
5. New investment in small-scale milling has increased rapidly since market reform. Consumers report that the number of small-scale hammer mills has doubled since 1992 and tripled since 1990. Investment in hammer mills has risen especially fast in areas inhabited by the poor. The average amount of time spent by households in grain procurement and waiting in the milling queue for whole meal has declined from 56.5 minutes to 26.4 minutes since the movement controls on maize trade were abolished.

**CONCLUSIONS AND POLICY IMPLICATIONS:** The main findings of the study are that maize market liberalization has conferred substantial benefits to urban consumers and taxpayers. The negative effects of eliminating subsidies on refined maize meal have been largely compensated by relaxing controls on private grain trade, which has raised consumers' access to less expensive whole maize meal distributed through the emerging informal markets.

This story may have been very different if the informal maize market had not had the several years to develop between the initiation of maize market liberalization in 1989 and complete liberalization in 1993. The registered sifted millers showed their inclination to dramatically raise prices, a tendency that was curbed only as the informal market developed to supply maize in sufficient volumes in urban areas to allow small-scale unregistered mills to effectively compete with the large registered sifted millers. Liberalization also had allowed time for an expanded network of hammer mills to develop in residential areas of the city.

When the next drought brings a return to high food prices, pressures are likely to mount once again to subsidize maize meal prices. It is unclear how this would affect the flow of investment into the informal grain trading and milling sector, which has conferred significant and widespread benefits to consumers since the liberalization process began.

It is important that future price stabilization and safety net programs avoid disrupting the functioning of the market system now responsible for ensuring access to food for the bulk of the urban poor. Well-functioning food markets are the first safety net against food insecurity. If they function effectively, fewer households fall through the net and require other forms of assistance. On the other hand, if markets are unreliable or excessive in cost, then a larger portion of the population becomes vulnerable to food insecurity, which increases the scale and cost of food assistance programs. The findings of this study indicate that strategies to improve the functioning of the food marketing system may be a more cost-effective way to ensure affordable access to food for most consumers than untargeted price controls on goods consumed disproportionately by non-needy households.

The reduction of food marketing costs does more than reduce food prices for consumers. More importantly, lower marketing costs are partially passed along to producers, stimulating production incentives that generate dynamic changes in farm investment, technology adoption, and cropping patterns. Lower food costs in rural grain-deficit areas release resources for reallocation to other crops or nonfarm activities with higher expected payoffs. The Ricardian argument that food costs may be an important determinant of the supply and price of labor, and hence the cost of production in industrial and exportable cash-crop sectors, has been empirically supported elsewhere (Delgado 1992). The relationships between food costs and the development of viable cash-cropping and off-farm opportunities have also been highlighted extensively (e.g., Dioné 1989; Goetz 1993; Jayne 1994; Barrett and Carter 1994; Fafchamps 1994). A conclusion of this study is that policies designed to promote particular kinds of investments in the

marketing system may help reduce food costs and stimulate these broader growth processes.

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