Marketing Maize and Tef in the Bako Area

Implications for Policies of Postmarket Liberalization

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SUMMARY

During the 1980s the Ethiopian government developed an elaborate system of purchasing and distributing a substantial proportion of the nation’s marketable grains. However, in 1990, Ethiopia eliminated fixed cereal prices, lifted restrictions on interregional trade, and decided to promote the role of the private sector in business and trade. Such actions that facilitate private sector must be based on an in-depth understanding of how markets function and the problems limiting their performance. The objectives of this study were (1) to describe the marketing of maize and tef by the private sector in the Bako area, and (2) to present the implications of the analysis for improving the performance of Ethiopia’s private sector in agricultural marketing. It is also hoped that the implications of the study will have relevance outside Ethiopia.

Several survey techniques were used for this study: price, marketing participant, and farmer survey. The price survey was conducted from 1985 to 1987 while market participant and farmer surveys were conducted during late 1987 and early 1988.

The study area, Bako, is a mixed farming area encompassing the western part of Western Shewa and Eastern Welega regions. The major crops grown in the area are maize, tef (Eragrostis tef), noug (Guizotia abyssinica), and pepper (Capsicum frutescens). Maize is the primary food crop while tef, noug, and pepper are the primary cash crops. Though primarily for draft power, livestock is kept also for manure, cash source, food, and security (i.e. to be sold when money is urgently needed).

There are three important participants in maize and tef marketing in the area: the Agricultural Marketing Corporation (AMC), service cooperatives, and private traders. Farmers also sell maize and tef to traders and consumers in local markets located in towns and villages and to service cooperatives.

The farmers’ decisions about what to sell, when, and how much depends on the amount of cash required to meet various cash obligations and the market value of the item to be sold. Most of the sales are made just after harvest for tax payment.

The marketing infrastructure is poorly developed. There are three all-weather roads and limited feeder roads, which are poorly maintained and favorable for trucks only in the dry season. Farmers use pack animals to transport agricultural produce. They use traditional storage systems, which are not efficient. Farmers reported that over a six-month period their storage losses to weevils were as high as 25% to 33% of the total maize stored.

Marketing in the Bako area is characterized by high risks and high variable transaction costs. Gross margins from storing grain for later sale can be high but predicting seasonal price movements is very risky. Moreover, storage costs for maize are high because of weevil damage and lack of control measures. Similarly, interspatial arbitrage is seriously flawed: correlations in price between markets range from weak to strong, and gross margins for transporting grain are highly variable.

The government can take several steps to ensure that markets operate more efficiently.

Development of a better marketing infrastructure, especially main and feeder roads in rural areas. Improved roads can reduce risk and marketing costs, attract more vehicles, and stimulate competition among traders.

Assistance of service cooperatives to purchase and store grain between harvest time and the hunger season preceding the next harvest. This activity could help reduce the high degree of price fluctuation in the area.

Provision of credit to traders and transporters. Increased credit will stimulate entry and promote competition in grain marketing. This may reduce marketing margins, benefiting both consumers and producers.

Improvement of farmers’ storage facilities. Most importantly, farmers need insecticides and training in using them to protect their stored maize against weevils.

Finally, market reform in Ethiopia must be regarded not as a particular event but as a process (Berg 1989). Policymakers must achieve the appropriate balance in promoting the activities of the private sector, defining the role of AMC and regulating the operation of all entities participating in grain marketing. Empirical information concerning private sector marketing can help policymakers decide the appropriate roles of private and public sectors and the regulation required (Morris and Newman 1989). Only then can agricultural marketing make its necessary contribution to Ethiopia’s agricultural development.
INTRODUCTION

In recent years, several African countries have liberalized their marketing systems, reducing the role of the state in purchasing grain from farmers and eliminating fixed grain prices. For example, the African Development Bank reports that between 1978 and 1987, the number of countries in which cereal prices were market-determined, as opposed to being set by the state, rose from 6 to 13 (ADB 1988). Market liberalization is not simply a process of getting the government out of the market but rather one of taking action to facilitate the functioning of the private sector with the objective of placing greater reliance on the market to allocate resources (Staatz et al. 1989). Such facilitating actions to promote the private sector in business and trade must be based on an in-depth understanding of how markets function and the problems limiting their performance (Weber et al. 1988).

During the 1980s the Ethiopian government developed an elaborate system of purchasing and distributing a substantial proportion of the nation's marketable grain. However, in 1990, Ethiopia eliminated fixed cereal prices, lifted restrictions on interregional trade, and decided to promote the role of the private sector in business and trade. But as the government previously had little interest in working with or promoting the private sector, little information has been collected on its performance. The objectives of this report are to (1) describe the marketing of maize and tef, Ethiopia's two most important crops in terms of production (CSA 1989), by the private sector in the Bako area, and (2) present the implications of the analysis for improving the performance of Ethiopia's private sector in agricultural marketing. Moreover, since the marketing system of the survey area has many characteristics common throughout Africa—small, limited-resource farms, high seasonal price fluctuations, and weak infrastructure of market—the implications of this study are also relevant for other African countries.

METHODS

Several different survey techniques were used to examine the farming system of the Bako area, in particular markets and prices. In 1986, a multidisciplinary team of researchers conducted surveys to understand the farming system, mainly identifying farmers' problems for planning experiments (Legesse et al. 1987). Three additional surveys were conducted focusing on it (Legesse and Asfaw 1989).

Price Survey

Market price data were collected by hired enumerators in six local markets (Tibe, Sheboka, and Bako in Chalia Awraja; Ehud Gebeya and Sire in Wama Sire Awraja; and Arb Gebeya in Wayu Guto Awraja). All these are producer markets, i.e. most cereal transactions involve producers selling to traders. In addition, retail prices from Nekemte, the most important consumer market affecting the survey area, were obtained from the Relief and Rehabilitation Commission (1990 unpubl. data). Nekemte market is a consumer market because most transactions involve consumers purchasing from traders.

Market Participant Survey

The objective of the market participant survey was to understand the marketing organization, channels, and problems from the viewpoint of different market participants. Researchers conducted informal surveys in the selected markets during late 1987 and early 1988, interviewing participants and observing transactions (Holtzman 1986). The participants included about 30 farmers, 30 traders, and others including consumers, transporters, civil servants administering the markets, and other key informants, i.e. people knowledgeable about the markets. Market participants were interviewed using guidelines developed for each type of participant.

Farmer Survey

Conducted in 1987, the farmer survey examined the farmers' marketing decisions, channels, and problems they encountered in marketing their produce. A formal questionnaire survey was administered to a random sample of 55 farmers.
STATE INVOLVEMENT IN CEREAL MARKETING

Following the Ethiopian Revolution in 1974, the role of the public sector in the marketing of cereals rose dramatically. Policymakers believed that merchants and other intermediaries exploited the peasantry and consumers and that state intervention was required to curtail exploitation. AMC was established in 1976 with the mandate to purchase grain from farmers and sell it to urban dwellers and public organizations. Quotas for grain, to be delivered to AMC at fixed prices, were set for farmers throughout the grain-producing areas. During 1987/1988 AMC purchased 570,000 of grain, estimated at 30% to 40% of the nation’s marketable surplus (AMC 1989 unpubl. data). Concurrently, the activities of private traders were curtailed.

By the late 1980s, there was increasing evidence that state marketing policies were not performing well. For example, Franzel et al. (1989) reported that the system of fixed prices and quotas was inequitably allocated among areas and that it reduced farmers’ incomes, incentives to use fertilizer, and grain production. Regulation of interregional trade affected producers in surplus areas, consumers in deficit areas, and the national economy. Meanwhile, the chronic food shortage had emerged as the most important problem in the Ethiopian economy. Since 1980, per capita food production has declined, and in 1988 food aid to Ethiopia reached one million dollars (UNDP/World Bank 1989).

The poor performance of the cereal sector led policymakers to question Ethiopia’s cereal-marketing policies. In 1990, Ethiopia abolished the system of quotas and fixed prices, and lifted restrictions on interregional trade (Ethiopian Herald 1990). Although future marketing policy has not been specified, it is clear that much greater reliance will be placed on the private sector in marketing Ethiopia’s agricultural surplus. Nevertheless, the state still maintains a significant role in producing and marketing cereals.

OVERVIEW OF THE FARMING SYSTEM

Bako is a mixed farming area encompassing the western part of Western Shewa region and Eastern Welega. The survey zone is described in detail in Legesse et al. (1987). It has an altitude ranging from 1550 m to 2000 m, a mildly undulating topography, and clay-dominated soils. The mean annual rainfall, 1217 mm, is fairly stable from year to year. The rainy season lasts from March to October with about 80% falling from May to September.

The primary objective of farmers in the Bako area is to secure an adequate family food supply throughout the year. The second objective is to earn cash for household expenditures, farm inputs, school fees, and taxes. These objectives are met by pursuing various crop and livestock enterprises.

The major crops grown are maize (Eragrostis tef), noug (Guizotia abyssinica), and pepper (Capsicum frutescens). Maize, the primary food crop, is grown by all farmers and accounts for about half of the total cultivated area of 1.6 ha per farm. Noug and pepper, grown by about half to two-thirds of all farmers, together account for about 0.36 ha. The major crops are planted from April to August and harvested from October to January. The use of purchased inputs is rare.

Maize cultivation has been increasing in recent years at the expense of tef. For example, between 1977 and 1985, the proportion of maize in the total cultivated area increased from 43% to 51%, while tef decreased from 36% to 28%. The reasons for the decline of tef included less available of draft power, a seed shortage, and the fact that maize yields more than tef.

Livestock is kept primarily for draft power and also for manure, cash income, food, and security, that is, for sale when cash is urgently needed. About two-thirds of the farmers have at least one ox and one cow.

The major problems limiting crop production are weeds, shortage of draft power, labor shortage at peak periods, feed shortage in the dry seasons and low soil fertility. The area cultivated is limited by a shortage of draft power and weed infestation. About 35% to 45% of the farmers experience a food shortage from June to September every year, before the main maize harvest.
MARKETING ORGANIZATION AND CHANNELS

In the early 1970s the maize and tef trade in the Bako area was dominated by the private sector, with rural wholesalers purchasing about 70% of the maize sold in the market and consumers and retailers purchasing about 30% (Manig 1972). However, beginning in the late 1970s, the role of the public sector greatly increased. By 1987, AMC purchased about 40% of the marketed portion of the area’s four main crops: maize, tef, noug, and pepper.

There were three important participants in maize and tef marketing in the area: AMC, service cooperatives, and private traders. The service cooperatives were created to purchase produce and to sell inputs. They acted as grain-collecting agents for AMC; until 1990, when the grain quota system was abolished, service cooperatives were responsible for collecting and storing the grain quotas for AMC to collect. Quotas, ranging from 0 to 300 kg per farmer for maize, were allocated depending on the area cultivated, number of oxen owned, and the crops grown. The prices for grain quotas were considerably lower than those prevailing in the local markets. For example, in 10 markets over a 3-year period (1985–1987) local maize price on average was 2.7 times higher than the AMC price (Franzel et al. 1989).

Farmers also sell maize to traders and consumers in local markets. The markets are located in towns and villages and generally take place once or twice per week. About 70% of the vendors are women. On-farm sale of crops is not common.

Most traders purchase not more than 100 to 200 kg of grain in one market then transport it to another to sell to consumers. The traders, both men and women, do not specialize in trading any one crop but shift from one to another according to profitability. They use public transportation (buses) or private trucks to transport their grain to consumer markets such as Ambo or Nekemte. Traders store grain for only a few weeks at the most before sale. Traders reported that their principal problems were lack of cash of transportation, especially trucks.

Tef marketing channels are similar to those of maize. However, as compared to maize, a higher proportion of marketed tef is sold to private traders and consumers and a smaller proportion to AMC, mainly for two reasons: (1) tef quotas per farmer were small, about 50 kg per farmer, whereas maize quotas averaged 100 kg to 200 kg per farmer, and (2) farmers prefer to sell their tef to private traders and consumers, because these groups offer higher prices for tef than AMC does. Traders also claim that they prefer marketing tef to maize, because tef is a higher value crop, suffers less from storage loss, and is more profitable.

FARMERS’ MARKETING DECISIONS

Farmers market much of their produce in bulk at harvest time (December to January) because of the large amount of cash required to pay taxes and to purchase consumer goods. Following the harvest period they market their produce in small quantities to meet periodic cash requirements. In general men are responsible for crop sales in bulk and women for those in small quantities.

Farmers retain more maize than any other crop, for it is the main staple food. Nevertheless, because a relatively high amount was produced in 1987, about 45% of the total maize produce was marketed—about 40% to AMC, mostly as quota sales, and about 60% in local markets.

In 1987, 92% of the farmers reported selling maize, about 67% claiming selling most immediate-ly after harvest, in December and January. Only 25% of the farmers were able to hold their maize and sell it during the period just before harvest, when prices are usually at their highest level.

Many of the farmers who sell maize after harvest time face food shortage later in the year and are forced to buy it on the market. Thus in 1987, 92% sold maize, and 45% ran out. About 68% of those who ran out reported buying maize on the market to alleviate their food shortage.

Farmers reported selling most of their tef immediately after harvest in order to pay taxes. Most of the remaining tef is sold later; only a small amount is retained for consumption, mostly during holidays and ceremonies.
GOVERNMENT REGULATIONS OF GRAIN MARKETS

Regulation of private grain marketing has varied considerably over the years. Moreover, at any given time and place, regulations have not been consistently enforced, greatly increasing the risks and costs associated with private cereal trading.

From the late 1970s through 1987, it was not permitted to move more than 100 kg of cereals at a time in the survey area. If persons moving grain were suspected of planning to sell it on the market, they would be forced to sell at AMC price or their grain would be confiscated. During the period following the harvest when AMC was collecting its grain quotas, enforcement of regulations was especially severe.

In January 1988, the government announced that private traders would be issued permits to move grain as long as they agreed to sell half of their produce to AMC at fixed prices. Moreover, AMC prices were increased by about 10%, their first increase since uniform prices were instituted in 1980/1981. By late 1988, private traders were reported to be transporting maize and tef out of the survey area. However, there would still be a disincentive to trade if AMC prices were lower than the local prices at which traders could purchase the grain. In March 1990, all restrictions on the movement of grain in Ethiopia were lifted.

Government regulations also affect individual markets. In 1987, markets meeting twice a week in the survey area were changed to once a week, and all markets were rescheduled to take place on Saturday or Sunday. The intention was to increase the time the farmers spent working on their farms and thereby increase agricultural production.

MARKET INFRASTRUCTURE

Transportation

Transportation facilities are poorly developed in the study area. The dominant way of transporting produce to local markets and bringing farm inputs to the farm is by pack animals (donkeys and mules) and human beings. The quantities delivered using these means are very small, probably not greater than 100 kg at a time. About 13% of the farmers own pack animals; others hire or borrow them.

One all-weather road linking Addis Ababa with Nekemte passes through the middle of the survey area, connecting it with big markets. Two other all-weather roads also pass through parts of the area. Feeder roads, few and poorly maintained, can be used by trucks only in the dry season. In fact, Ethiopia's road network, which has only 10 km of road per 1000 km², is the least developed in Africa (Louis Berger International 1985).

The demand for vehicles to transport produce is greater than the supply, many traders complaining that they were unable to find vehicles to transport their grain when required.

Storage Facilities

Farmers use traditional storage systems, storing unshelled maize outside their house in a gorbo, an unsealed store made of interwoven sticks with a grass roof. Tef and shelled maize are stored in the house either in a gumbie, a local store made of a mixture of soil and tef straw, or in a gotera, another local store made of bamboo reinforced with a mixture of mud, tef straw, and cow dung. The capacity of farmers' storage ranges from 100 kg to 1000 kg. Most of the small traders do not have big storage facilities; they simply store maize and tef in sacks in their houses.

Maize faces serious problem from storage pests, especially from weevils and rodents. Farmers reported that over a 6-month period, their storage losses to weevils were as high as 25% to 33% of the total maize stored. The market price for moderately attacked maize was 25% less than that of unattacked maize. Thus weevils cause large monetary losses. Stored tef is damaged by rodents but not by weevils.

Processing

Nearly all maize and tef are sold in the market as dried grain. The grinding of maize into flour is carried out by (1) wooden pestle and mortar, (2) two flat stones especially cut for grinding, or (3) mechanized flour mills. The latter two methods are used for tef. Women are responsible for grinding grain; the work is tedious and limits their participation in other agricultural activities. Flour mills are few and concentrated in the towns of the area.
Information Services

Farmers have no up-to-date information on prevailing market prices or the supply-and-demand situation for maize and tef. The majority of the farmers become aware of the prices only upon arrival in the marketplace, by observing and asking the other market participants. Others get information about previous market days and other market places by asking their neighbors who have been there. On the other hand, traders have good marketing information, because they visit both consumer and producer markets.

SEASONAL PRICE CHANGES

Figure 1 shows the movement of maize prices at three producer markets in the area and at Nekemte market, the most important consumer market near the area. Following the drought of the previous year, 1985, grain supply was low and prices were high. Maize prices were relatively low during the months after harvest, December 1985 through February 1986, and rose to their highest levels in June and July, just before the green maize harvest began. In 1986 the climate was favorable and the harvest good. As a result the grain supply increased and prices declined from late 1986 through 1987, which was also a good harvest year. Prices rose through 1988 and the first half of 1989 as the nationwide cereal supply tightened, partly as a result of the drought in the northern part of the country during 1987.

Figure 2 shows price movements of tef at Bako and Nekemte markets. Like maize, tef prices declined over 1986–1987 and rose during 1988–1989. Price fluctuations of tef were much less than those of maize. The seasonal price spread (the ratio between the lowest and the highest average monthly price in a year) for maize in Bako ranged from ETB 0.42 to 0.51 over 1986–1988 and for tef from ETB 0.60 to 0.79. Tef prices fluctuate less than maize prices for three reasons. First, the supply of tef on the market is more stable than that of maize;

![Figure 1. Average monthly price for maize in the three markets in the survey area and in Nekemte market.](image-url)
Tef is primarily a cash crop, so the quantity marketed per family per year does not vary as much as for a food crop like maize. Second, tef demand is more stable than maize. Urban dwellers purchase tef in every season. Maize, on the other hand, is purchased by many farmers only during the season before the harvest. Third, tef is affected less by weevils than maize, hence it can easily be stored and sold at any time of the year. On the other hand, maize is sold in large quantity at harvest time, partly because farmers fear storage loss.

The prices of maize and tef are highly correlated, indicating that the two crops substitute for each other in consumption. In Nekemte market in 1986–1987, the correlation was $r = 0.7$, significant at the 1% probability level. Tef is the preferred food staple of the urban population. But as tef prices rise, consumers substitute maize, which is lower in price, driving up its price. Thus an increase in the price of one of these crops is generally accompanied by an increase in the price of the other.

In a perfectly competitive market, economic theory suggests that an increase in grain price from harvest time to the period before the next harvest is adequate to cover the costs of storing grain to that time (Hays and McCoy, 1977). However, the price movements in the Bako market show the high risk and variation in profitability associated with storing maize for later sale. Table 1 shows that a trader buying maize in Bako in January 1986, the harvest period, and selling it in July, just before the harvest of the green maize begins, would have earned a gross margin (i.e. the difference between the buying and the selling prices) of ETB 20 per 100 kg, or 83% of the buying price. Although we do not have data on storage losses or storage costs, it seems likely that storing maize would have been profitable in 1986. However, in 1987 the situation was different. A trader buying maize in January and holding it for 6 months would have sold it at a

<table>
<thead>
<tr>
<th>Year</th>
<th>January</th>
<th>July</th>
<th>Gross margin as % of January price*</th>
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<tr>
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<td>24</td>
<td>44</td>
<td>20</td>
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<tr>
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<td>23</td>
<td>21</td>
<td>-2</td>
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<tr>
<td>1988</td>
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<td>3.5</td>
</tr>
<tr>
<td>1989</td>
<td>29</td>
<td>58</td>
<td>29</td>
</tr>
</tbody>
</table>

* price difference between January and July
Table 2. Gross margins earned in Bako by purchasing tef in January and reselling in July (ETB/100 kg), 1986–1987

<table>
<thead>
<tr>
<th>Year</th>
<th>January</th>
<th>July</th>
<th>Gross margin as % of January price *</th>
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<tr>
<td>1986</td>
<td>61</td>
<td>78</td>
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<td>1987</td>
<td>51</td>
<td>57</td>
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</tr>
<tr>
<td>1988</td>
<td>54</td>
<td>72</td>
<td>18</td>
</tr>
<tr>
<td>1989</td>
<td>59</td>
<td>86</td>
<td>27</td>
</tr>
</tbody>
</table>

* price difference between January and June

lower price than the purchase price, incurring significant losses. In 1988 and 1989, the gross margins were favorable again.

The pattern for tef also varies from year to year (table 2). In 1987, storing tef from January, just after harvest, to June (the month with the highest price for tef) probably would not have been profitable, since the price increased by only 12%. In the other three years, prices increased by 28%-46% between January and June.

In general, storing cereals at harvest time for later sale is risky, because prices in the survey area do not always rise during this period. This explains why traders in the survey area do not normally store grains for long periods after harvest. In 1987, three factors accounted for maize prices rising from January to July. First, maize production was high in both 1986 and 1987 because of favorable weather. Second, the regulations inhibiting private traders from moving grain both within and outside the area contributed to a decrease in prices. Transporting maize to areas of low supply and high price was not permitted. Third, in late 1987, following the maize harvest, AMC stopped buying maize. There was no outlet for the local surplus, so prices fell. By March 1988 maize prices in Bako had fallen to ETB 12.6/100 kg, or only 38% of the average level of 1986.

**SPATIAL PRICE VARIATION**

A further important dimension of market efficiency is that of ‘arbitrage over space’, i.e. whether prices of the same product in two markets of a region exhibit similar patterns (Goetz and Weber 1986). Thus if maize prices in one market increase from one week to the next, one would expect also a similar price increase in a nearby market.

Table 3 shows price correlations for maize and tef between a number of paired markets in and around the survey area. All the markets are located along the road connecting Addis Ababa with Nekemte. A high and significant degree of correlation indicates that there is a strong degree of association between prices in the two markets. For example, the high and significant correlation in maize price ($r = 0.91$) between Ethud Gebeya and Arb Gebeya indicated that 82% ($0.91^2$) of the variation in price in one market is associated with the variation of price in the other market. The correlation results show that according to the rating system proposed by Goetz and Weber (1986), maize prices in three pairs of markets were strongly connected, five moderately, and three weakly. Surprisingly, the degree of connection was not necessarily associated with the distance between the markets. For example, the five pairs of markets with the greatest distance between them were all moderately connected, while three of the six pairs closest together were weakly connected.

For tef, the results were similar to those of maize; whereas only one pair of markets was highly connected, two other pairs lay between high and medium. Three market pairs were weakly connected. For both maize and tef there was not a strong relationship between degree of prices and the distance between the paired markets. For example, tef prices for the two closest markets were weakly correlated. As stated above, market regulations restricting the movement of grain were applied to different degrees and at different times within the survey area. It is likely that differential application of these regulations was responsible for the variation in the correlation results. Variation in the availability of transportation facilities at various times and places may have also contributed.

The data also support the findings of Hays and McCoy (1977) in northern Nigeria, that there was competition along certain routes and in certain areas, but the overall marketing network lacked integration. Hays and McCoy (1977) claimed that there was weak integration because traders developed contacts between certain markets, having little knowledge of market conditions in other markets in the area. In the Bako area, government restrictions on movement of grain was the main cause of weak integration of market.

Figure 3 presents the difference in maize and tef prices between Bako and Nekemte markets during
Table 3. Correlation coefficients of monthly average prices for maize and tef between pairs of markets, 1987

<table>
<thead>
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<td>Ehud Gebeya and Arb Gebeya</td>
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<td>0.32</td>
<td>0.10</td>
<td>0.76**</td>
<td>0.58</td>
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<td>0.34</td>
<td>0.12</td>
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<tr>
<td>Nekemte and Ehud Gabeya</td>
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<td>0.39</td>
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<tr>
<td>Sire and Arb Gebeya</td>
<td>30</td>
<td>0.59*</td>
<td>0.35</td>
<td>0.77**</td>
<td>0.59</td>
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<tr>
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<td>0.71**</td>
<td>0.50</td>
<td>0.66**</td>
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<tr>
<td>Nekemte and Sire</td>
<td>51</td>
<td>0.59*</td>
<td>0.35</td>
<td>0.55*</td>
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<tr>
<td>Bako and Nekemte</td>
<td>81</td>
<td>0.70**</td>
<td>0.49</td>
<td>0.29</td>
<td>0.08</td>
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</tbody>
</table>

* the squared correlation coefficient shows the proportion of variation in price in one market associated with variation in price in the other market
* * significant at 0.05 probability
* ** significant at 0.01 probability

Figure 3. Price margins of maize and tef between Bako and Nekemte Markets
Marketing maize and tef in Bako and selling it to consumers in Nekemte, 80 km away. Three points are evident from the figure. First, the margin between prices in the two markets followed the price trend, declining in 1986 and 1987 and increasing in 1988. Second, the margin at the government checkpoint. The high margins were variable, reflecting the high risk involved in transport from the two markets followed the price trend, declining in 1986 and 1987 and increasing in 1988. Second, the margin at the government checkpoint. The high margins were variable, reflecting the high risk involved in transport from the two markets. Third, on average, the price difference was ETB 22 per 100 kg. This highlights the variability in traders' profits from transporting grain from Bako to Nekemte.

MARKETING PROBLEMS AND POLICY IMPLICATIONS

The above analysis shows that marketing in the Bako area is characterized by high risks and high transaction costs. Gross margins from storing grain for later sale can be high, but predictability of lower costs than state organizations. According to FAO (1986), state state storage costs for maize are high because of weevil damage and lack of control measures. Similarly, farmers and their lack of efficiency have impeded intermarket arbitrage and increased transaction costs. Gross margins for transporting grain are highly variable. The variation in part is because of restrictions against grain movements within and outside the area.

The 1990 market liberalization policies may have a positive impact on market performance. The lifting of restrictions on grain movements may improve the equilibrium of demand and supply and reduce marketing costs. Gross margins for storing grain can be high, but predictability of lower costs than state organizations. According to FAO (1986), state storage costs for maize are high because of weevil damage and lack of control measures. Similarly, farmers and their lack of efficiency have impeded intermarket arbitrage and increased transaction costs. Gross margins for transporting grain are highly variable. The variation in part is because of restrictions against grain movements within and outside the area.

The Ethiopian government can take several steps to improve market performance. The removal of market restrictions will also remove many of the risks of marketing, thus reducing costs. The government can take several steps to improve market performance. The removal of market restrictions will also remove many of the risks of marketing, thus reducing costs. The government can take several steps to improve market performance. The removal of market restrictions will also remove many of the risks of marketing, thus reducing costs. The government can take several steps to improve market performance. The removal of market restrictions will also remove many of the risks of marketing, thus reducing costs.
hood, such as retailers and brewers, are hurt.

- Farmers are expected to spend more time working on their farms as a result of the rescheduling of markets. However, Shimekit (AAU 1990, unpubl. data) found that only a few farmers in his survey area agreed positively with this hypothesis.

Shimekit (AAU 1990, unpubl. data) found that 88% of the farmers and consumers and 90% of the traders preferred the previous periodic-market system to the system of holding all markets on Saturdays and Sundays. All three groups wanted the flexibility to attend more than one market per week in order to buy and sell items.

Identifying improved roles for different sectors and AMC. Market reform in Ethiopia must be regarded not as a particular event but as a process (Berg 1989). Policymakers must achieve the appropriate balance in promoting the activities of the private sector, defining the role of AMC, and regulating the operation of all entities participating in grain marketing. Empirical information concerning private-sector marketing can help policymakers decide the appropriate roles the private and public sectors should play and the regulation required (Morris and Newman 1989). Only then can agricultural marketing make its necessary contribution to Ethiopia's agricultural development.

REFERENCES


Food and Agricultural Organization of the United Nations (FAO).


Promoting the role of service cooperatives. The government should assist service cooperatives to purchase and store grain between harvest time and the hunger season preceding the next harvest. Traders do not perform this function because of the uncertainty in seasonal price movements, caused partly by government intervention in the market in the past years. But service cooperatives may be able to perform it successfully, since they can use the storage facilities they have previously developed in many areas for storing AMC quotas. Now that the quotas have been abolished these stores are being used less. The service cooperatives could purchase grain from their members at harvest time, store it, and sell it back to members when prices are high. This activity could help reduce the high degree of price fluctuation in the area. Moreover, it could help increase producer prices at harvest time and reduce grain prices during the hunger season, benefiting consumers and farmers who have run out of food. Such projects have worked successfully in other countries (Staatz et al. 1989).

The project should be initiated by trial to learn from experience. Some service cooperatives have sufficient capital to buy and sell grain; others will require credit from the Agricultural and Industrial Development Bank, which already supplies them with credit for other purposes. Transportation facilities will not be required, as farmers can transport grain to and from the service cooperatives using existing facilities. The service cooperatives will be able store and handle the grain as they used to for AMC, without any problem. Profits from grain sales could be used to repay credit and maintain existing facilities, and a portion should be redistributed among members.

Credit provision to traders. The government should provide credit to traders and transporters. AMC purchased approximately 40% of the maize marketed in the Bako area before 1990; its proportion will decline drastically following the reforms of March 1990. Traders will need access to credit to expand their operations to make up for AMC’s reduced purchases. Increased credit will also stimulate entry and promote competition in grain marketing. This may reduce marketing margins, benefiting both consumers and producers. Recently, the Agricultural and Industrial Development Bank has extended credit to small businesses. The program should also be extended to grain traders and transporters to provide them with credit for purchasing vehicles and storage facilities and with working capital.

Improved storage facilities. Farmers need improved farm storage facilities; most importantly they need access to insecticides and training in using them to protect their stored maize against weevils. The Ministry of Agriculture focuses on assisting farmers with production technologies; but it should also give emphasis to post-harvest technologies such as grain storage. Improved access to insecticides will help farmers store grain for later sale and consumption and should contribute to reducing seasonal price fluctuation.

Abolishing the market-day policy. Markets should be permitted on the days they were held before the market-day policy was instituted. There is no evidence that reducing the number of market days per week or changing all market days to Saturday or Sunday increases the time farmers spend working on their farms or their productivity. In fact, research and informal discussions with farmers, market participants, and local administrators conducted in Western Shewa (Shimekit Lemma, Addis Abeba University 1990, unpubl. data) suggest that the deleterious effects of the policy outweigh the benefits. Research is needed to explore the effects of the rescheduling of markets. The following hypotheses should be tested for the effects of rescheduling markets:

- The availability of consumer goods may decline and marketing costs may increase (since vehicles and traders who serviced up to seven markets per week, each on a different day, are now able to service only a single market). Shimekit (AAU 1990, unpubl. data) reported a decline in the market size and the supply of items for sale in most markets in Western Shewa as a result of rescheduling them.
- The prices of goods may decline since fewer buyers are present at each market, and the farmers, only alternative is to wait a full week and try once again at the same market or another.
- Price coordination may be hampered, since price information cannot pass from one market to another during the same week. The curtailing of information may contribute to more drastic price fluctuations and more surpluses and deficits of individual products at any given market because there is no market signal prompting products to move from surplus areas to deficit areas. Shimekit (AAU 1990, unpubl. data) reported that the areas markets served declined after the policy was adopted. This, in turn, has restricted the flow of commodities from one area to another.
- Persons dependent on marketing for their liveli-