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MAIZE MARKETING IN EAST AND SOUTHERN AFRICA:
INCREASING THE EFFICIENCY OF PARASTATAL SYSTEMS

by

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Introduction

Sub-saharan Africa is characterized by widespread poverty and rapid population growth. Millions of Africans today are malnourished, and many more, perhaps 100 million or more, would eat better if they could (Rotberg, 1983). The 1960's mark the beginning of a striking decline in the region's ability to produce or purchase sufficient food for the needs of its population. The trend over the past two decades has been a continuing per capita fall and, in some countries, an absolute fall in food production.

The reasons underlying the African food crisis, as it has become known, have been the subject of widespread analysis and debate, ranging across the entire spectrum of political, institutional and technological alternatives. As African nations have moved into independence, they have adopted, in varying degrees, an increased emphasis on the importance of smallholder agriculture. Although large-scale private and state farms form a significant bloc in many African agricultural economic sectors, their number and influence are declining relative to the smallholder sub-sector. Even at present it is unlikely that more than five percent of sub-Saharan food production comes from large-scale farms. The area in large-scale production is relatively small and its expansion is both technically difficult and politically impossible (Mellor, Delgado and Blackie, 1986). Inefficient marketing and distorted prices have been identified as a major cause of the decline in per capita productivity of African agriculture. In many cases these problems are attributed to the state marketing systems which are designed to service large-scale producers and/or urban consumers, being expected to serve the small-scale sector.

The commodity focus of this paper is maize; an important food crop over much of Sub-Saharan Africa and which forms 40% or more of the national diet in East and Southern Africa. The analysis will concentrate on Kenya, Malawi, Tanzania, Zambia and Zimbabwe.

State Intervention in Maize Marketing

There is a long history in Africa of official and quasi-official 'single channel' (i.e. monopsonistic) food marketing agencies. Jones (1982) gives the following summary of arguments used to defend the continuing survival of official food marketing agencies despite the considerable evidence of their poor performance:

1. Marketing and storing agricultural produce is a technically complicated business, and requires a highly qualified and technically well-equipped agency so as to avoid waste.
2. There are important economies of scale in transport and storage which only a sole buyer and seller can realise.

3. Private sector food marketing involves many middlemen, leading to lower prices to farmers and higher prices to consumers.
4. Dealers will form a 'ring' to cheat farmers.
5. Official marketing channels are necessary to limit price fluctuations.
6. Official marketing channels are necessary to prevent smuggling.

Jones (1987) points out that there is considerable evidence that the involvement of the state in primary agricultural marketing has placed an enormous burden on the economies of African states. Ahmed and Rustagi (1985) explore the interrelations between agricultural prices and market systems. They note that the efficiency of marketing institutions, including infrastructural facilities, influences directly both producer and consumer prices. Their analysis shows that farmers in Africa receive a smaller proportion of the price paid by final consumers of foodgrains in Africa than do farmers in Asia. Based on data from selected African countries, they suggest that the average producer price in Africa is only 35 - 60% of the terminal market price; this contrasts markedly with the 75 - 90% received by farmers in selected Asian countries. Furthermore the high cost of marketing in Africa cannot be attributed either to increased utility of marketing or to more sophisticated marketing services. Two major cost centres affect the wider price spread in Africa as opposed to Asia:

1. Transport and associated marketing costs explain 39% of the differential in marketing margins between African and Asian countries.
2. A further 27% of the differences in marketing margin can be explained by the transaction costs associated with public marketing.

Despite these discouraging data, the bias towards state marketing systems persists (see Eicher and Baker, 1982, for a summary of the literature on food grain marketing in Africa). Ahmed and Rustagi observe that the mix of large-scale estates and peasant farms, typical of much of Southern and Eastern Africa, is, to some extent, responsible for the continuing reliance on state marketing in this part of the region. In West Africa, the driving force may be the concern of governments to increase market access but without using or relying on, the traditional market system. Their reluctance to utilise the existing network of markets may be, at least in part, a reaction against domination of the marketing system by foreign or politically opposed groups (Abbott, 1987). Smallholders face 'thin' markets,

which are unstable and difficult to develop. Government intervention becomes a natural choice to rectify the problem, although ironically, such intervention often serves only to 'thin' the market further. If the smallholder sector is to participate fully in national economies greater access to markets and better market integration is essential.

The Debate on Marketing and Pricing of Foodgrains in Africa

An important focus of the debate on the underlying causes of Africa's economic decline over the past few decades has been on the role of agricultural prices and markets. Two seminal documents have been the Lagos Plan of Action adopted by an extraordinary session of Heads of State and Government of the Organisation of African Unity (OAU) in 1980, and the World Bank's Accelerated Development in Sub-Saharan Africa published in 1981.

While the concerns addressed by both these documents have much in common, and there is evidence of consensus on the necessary policy agenda, there are important strategic differences in the manner in which policy reform should be implemented (see Browne and Cummings (1984 for a full review of the differences between the two documents). The Lagos Plan calls for food self-sufficiency, together with an emphasis on integrated rural development as an overall strategy. Particular support is to be given to smallholder organisations and cooperatives. The World Bank report (commonly termed the Berg report) emphasizes the privatisation of economic activities in agriculture, a strategy of comparative advantage, the development of areas of highest potential, and land registration schemes aimed at converting communally owned land to private ownership. Agricultural pricing and marketing are dealt with at some length in the Berg report, and have been the subject of continuing debate. The thesis of the Berg report is that the government controlled pricing and marketing structures adopted by many African countries have acted as a serious drag on the development of agriculture. Given the predominance of the agriculture sector in the economies of most African nations, this has served to depress overall economic growth to an unacceptable degree. With particular reference to food policy, the Berg report points out:

"In most African countries, producer and consumer prices for basic foodstuffs are legally controlled. Governments have dual policy objectives in setting and regulating their prices. They want to provide adequate incentives for increasing food production, and they seek to protect the interests of consumers at the same time. In practice, the objective of ensuring a regular supply of staples at affordable prices for consumers has been the dominant

criterion in most countries. This is accomplished in various ways: producer prices are fixed at below market levels; subsidies are provided by selling imported foods at below landed costs; food imports are encouraged when domestic food price levels rise; and imported foods are given an implicit subsidy because of currency overvaluation."

Indeed, the Lagos Plan of Action does strongly recommend both adequate incentive prices for food production, particularly by smallholders, as well as pricing food at levels affordable by both the rural and the urban poor. There is much debate as to whether the privatisation of economic activities in agriculture (as recommended by the Berg report) and the emphasis on pricing policy will bring forth the necessary output from smallholders in Africa. Ghai and Lawrence (1986) from an analysis of ILO and FAO data conclude that, for many African countries, producer prices for major food crops kept pace with the rate of increase in the consumer price index over the 1970s. They recognize, however, that the data have considerable limitations and that it is not possible to tell to what extent these price series reflect official prices, or whether actual prices exceed official prices. Criticism of the approach advocated in the Berg report is reviewed fully in Browne and Cummings (1984) and does not require further elaboration here. What is of significance, is that the privatisation of marketing proposed by Berg has, indeed, started to happen, while the de-emphasis on food self-sufficiency has not. This 'privatisation' has, however, tended to retain most of the inefficiencies of a state system, whilst reducing the responsibility of the state to meet smallholder needs; see for example, recent developments in Malawi (Kandoole and Kaluwa, 1988).

The hypothesis of this paper is that it may be best to accept the emphasis on food self-sufficiency and the perceived need for state control and to concentrate on developing a state system which maximises economic efficiency within the given constraints. The inefficiencies in resource allocation created by the maintenance of pan-seasonal and pan-territorial prices or of Government determined producer prices are not essential to the preservation of state marketing systems. Price policies can be designed which more closely reflect opportunity costs without losing sight of other objectives including equity and food security. This paper, however will concentrate on effective and consistent market access and not on prices which are addressed in Muir and Blackie (1988), Muir and Takavarasha (1988) and Muir-Leresche (1984).

Maize Marketing in Eastern and Southern Africa

There is surprising complementarity in the institutional structure of maize marketing systems in Eastern and Southern Africa. However, Kenya, Malawi, Tanzania, Zambia and Zimbabwe offer rather different applications of this state managed marketing. These applications have had a significant effect on both the development of the maize sub-sector and the development of rural markets which are so important in allowing for the specialisation essential to increasing incomes.

Kenya, and to a lesser extent Tanzania, have a more diversified and decentralised system of marketing than Malawi. Co-operatives and parallel markets have played a more significant role in maize marketing in Kenya and Tanzania than in Malawi. Zambia provides the example of an African nation with a substantial and influential urban sector; the country has maintained a policy of low urban food prices for many years, a tradition that began with the pre-independence development of the Copperbelt mining sector. In Zimbabwe, the interests of the large-scale sector have been predominant until recently with smallholders historically discouraged from active participation in the market.

Probably the most significant outcome has been that the approach followed by Kenya has led to the greater participation of smallholders in formal maize marketing, while Tanzania has encouraged (unwittingly) the development of a major parallel market in foodgrains. Zambia, with somewhat similar agricultural policies to those in Tanzania, has precluded the development of the unofficial maize market through massive investments in consumer maize subsidies. Malawi's centralised system has allowed the cross-subsidisation of commodity prices and encouraged resource transfers from the smallholder sub-sector to the estates (Lele and Meyers, 1987). Zimbabwe's concentration on the large-scale sector relegated smallholders to self-sufficiency, low levels of specialisation and exchange and poor access to markets.

Kenya Maize Marketing

The Agricultural Production Marketing Act was introduced in 1936 at the request of white settlers. The impetus for this initiative was the fall in world commodity prices during the depression years. By 1945, marketing boards had been established to handle a variety of crops, including maize (Livingstone and Ord, 1981). The Defence Regulations in 1944 were introduced to control further the movement and sales of maize nationally. In the early days of controlled maize marketing in Kenya, national prices were aligned with international prices. From the 1950s, however, national prices fell below export parity, and there was active price discrimination against smallholders (Hesselmart, 1977). In the mid 1950s, many of the administrative functions of the national marketing boards were decentralised to provincial

boards. Management problems associated with proliferation of marketing agencies led to the establishment of a single Maize and General Produce Board in 1966 (Muir, 1982a). The Board regulated the movement and price of maize nationally, with farmers having the option of selling direct to a Board depot or through a cooperative agent. Direct sales to the Board depot required the farmer to deliver a minimum quantity. In 1979, the Board was merged with the Wheat Board to form the National Cereals and Produce Board (NCPB). The most important functions of the Board were to ensure the equitable distribution of maize throughout the country, to find markets for surplus production or to arrange the timely importation of maize in periods of shortage. The failure of the Board to fulfill these responsibilities resulted in a growing parallel market in maize. In 1977 the Board failed to purchase large quantities of the maize produced and there was a noticeable withdrawal of smallholders from the market in subsequent years (Muir-Leresche 1984). In 1980, when there was a serious maize shortage, actual farm prices for maize were four times greater than the official price (Muir, 1982a). A major influence of the Board has been to restrict the movement of maize rather than to control private sales. Pinckney, 1988, notes that while some private movement of maize does take place, it is insufficient to arbitrage price differentials between areas of major surplus and deficit.

A major problem with the NCPB was its inaccessibility to smallholders. Thus a significant proportion of the maize trade was being missed by the NCPB, particularly as, with the growing uptake of hybrid maize by smallholders, national smallholder maize production grew. A Presidential Directive in 1980 instructed the NCPB to establish buying centres closer to areas of smallholder production to encourage smallholders to participate in the formal maize market. Previously, smallholders had either to take their produce to NCPB depots near the main cities, or to market at a discount through the cooperative buying agents (Jabara, 1985).

Heyer et al (1976) point out that in 1966 the NCPB handled only about 10% of the national maize crop. In spite of the Presidential Directive in 1980, the NCPB had only increased its market share to about 45 - 50% by the early 1980s, with an average growth in sales to the Board between 1970 and 1985 of 2.4%; a statistically insignificant growth rate (Lele and Meyers, 1987; Jabara, 1985). Until recently, the Kenya Farmers Association (a cooperative of large-scale producers) acted as the agent for the NCPB for grain purchases. This responsibility has now been transferred to the Kenya Grain Growers Association, which includes all producers. As Lele and Meyers observe, this approach is both more participatory and more inefficient.

The debate on maize marketing in Kenya continues. The matter is lent further urgency by the increasing costs of maize marketing. In the 1970s, the NCPB more or less covered its own costs of operation; between 1979 and 1984, the board absorbed from 10 to

20% of the Ministry of Agriculture and Livestock Development budget (Pinckney, 1988). This rise in operating deficit by the NCPB coincided with a general increase in the national budget deficit and thus the board has come under increasingly critical scrutiny in the past few years. Pinckney observes:

"[while] the board is not the most efficient of organisations, it has been assigned an impossible task. The board is supposed to buy whatever is offered at a price over which it has no control; sell whatever is demanded at a second price over which it has no control; export and import only when given approval by cabinet, not when it seems profitable to do so; and store whatever the end result of all these other decisions requires".

Pinckney concludes that the board is forced to bend the law by allowing stock levels to influence its buying and selling operations. It is slow to buy periods of surplus and may, in addition, offer less than the official price. Board sales are restricted in times and areas of deficit in order to maintain stocks. Thus board operations actually increase price variability for both rural consumers and producers of maize, as board staff try to ensure that operating costs are kept as low as possible.

Tanzania Maize Marketing

The literature on maize marketing in pre-independence Tanzania is sparse - particularly in comparison to the multiplicity of studies on post-independence Tanzania. There were sporadic limited attempts to encourage European settlement, but settlers were never a consistent major force in the territory. Of the 48.7 million hectares of arable land in Tanzania, only 1.3 million hectares were under settler occupation by 1959 (Kahama, Maliyamkono and Wells, 1986). The overriding concern during the colonial period was to ensure that the territory was not a burden on the British economy, and wherever possible, to extract a surplus.

At Independence, the estate sector accounted for 35% of exports by value and 40% of marketed output. Sisal was the main export crop, with estates being the predominant producers of coffee, tea, tobacco, sugar and wheat. Smallholders produced most of the cotton, cashewnuts and oilseeds, while also generating sufficient surplus of maize for their own needs and those of the urban areas (Amani et al 1987). As a means of improving the efficiency of smallholder production, the colonial authorities encouraged the formation of marketing cooperatives. From 1945 to 1952, the number of cooperatives rose from 79 to 474, and smallholder production rose accordingly. For example, cotton production rose

by an average of 10% annually between 1945 and 1960, while coffee production rose by 23% over the decade following 1945. In last years of colonial rule, the cooperatives were to become important foci for social and political development (Kahama, Maliyamkono and Wells, 1986).

Before independence, most trade in food crops was undertaken by private traders. These traders purchased directly from smallholders and sold the produce either directly to consumers or to wholesalers or brokers. Between 1946 and 1957, all commercial quantities of maize had to be sold to the Grain Storage Department. An attractive maize price quickly led to surplus production which had to be exported at a loss. In consequence, the monopoly of the Grain Storage Department was eliminated in 1957 and private trading in maize resumed (Amani et al 1987)

Drought in the 1960/61 year brought sharp rises in urban maize prices. The 1962 Agricultural Products Act abolished private trading in food grains and replaced them by cooperative unions. These unions sold their produce to the National Agricultural Products Board (NAPB) and the movement of significant quantities of grain required the approval of the board. The rapid expansion of the cooperative union movement was not without its problems. There were insufficient numbers of management and financial staff to operate them, and, for those areas of the country where cooperatives were an innovation, the cooperatives were as much imposed upon farmers as were the parastatals that succeeded them. The evidence on the overall record of this first cooperative system is conflicting. Some commentators maintain that, in spite of some inefficiency and petty corruption, the system was reasonably open to local scrutiny and control. Even in those cases where local participation was at a low level, there was only limited opportunity for abuse (Ellis et al, 1985). By contrast, Amani et al observe that many cooperatives were "inefficient, incurred financial losses and delayed or never fully paid peasants."

The National Milling Corporation (NMC) was formed in 1968 to manufacture and process the commodities purchased by the NAPB. In 1973, the NMC took over the internal cereal procurement and grain trading functions from the NAPB. With the dissolution of the cooperative unions in 1976, NMC also took over the village level grain procurement functions of the cooperative unions. Both Amani et al and Ellis et al point out that the cooperative unions were dissolved more for their incompatibility with the policy of compulsory villagisation rather than for any insoluble defects in their operations. Thus, by the end of the 1970s, NMC was responsible for village level procurement of food grains, as well as for their transportation, storage, processing and national distribution. It was also responsible for grain imports and exports, the operation of famine relief, managing the national strategic grain reserve, plus a variety of other assorted activities.

There were three critical flaws in the parastatal marketing system which succeeded the cooperative unions (Ellis et al). All impact on the development of the maize industry in Tanzania:

1. The parastatal authorities had the responsibility for crop development as well as for crop marketing. Thus, they were required to undertake research, extension and project implementation for the commodities within their mandate. The implied switch in the financing of such activities - from general revenue to a direct charge on crop marketing - was never explicitly dealt with in government policy, although the effects on parastatal costs were substantial.
2. The cooperatives had handled all crops within their location. The parastatals were, in contrast, responsible for a commodity on a national basis. Thus each parastatal had to develop the capacity to collect and move its own commodity across the country (irrespective of quantities available for purchase in the different areas). The outcome was an escalation of overhead costs as each parastatal built up its transport and procurement network independently. In areas where production of the commodity of concern to a parastatal was low, this resulted in high unit costs.
3. Parastatals handling export crops derived the farm price by first deducting their operating cost from export realizations. Thus the farm price had only a tenuous link with international markets, and farmers bore the full brunt of both parastatal cost levels and declines in the world market price. The fact that this did not happen in the case of domestic food grains was due primarily to concerns for national food security and low urban food prices.

By the late 1970s, the costs of the parastatal marketing system had become enormous, and, as importantly, the volumes of crops handled by them were declining sharply. Ellis et al document that by the early 1980s, the crop marketing authorities has a debt in excess of 8 billion Tanzania shillings. They were, in consequence, a major force in the expansion of domestic money supply, and thus, in domestic inflation.

In 1980, the Tanzania government decided to return to a system of cooperative marketing. Most of the marketing functions of the parastatals have been returned to the cooperative societies and regional unions. There has been some liberalisation of internal trade with, in 1983, the movement of maize on private account across administrative boundaries being increased to 450 kgs (Lele and Meyers, 1987). Despite these changes, there remains a major parallel market in food grains. Official maize purchases by NMC increased by 1.1% annually between 1970 and 1985. Sales increased by 1.9% annually, reflecting a growth rate in net sale

of 0.8% per year (Lele and Meyers, 1987). Amani *et al* record that between the late 1970s and 1984, only about 25% of maize went through the official channels. The picture has changed somewhat in the immediate past, with good cropping years in 1985/86 and 1986/87. In national terms, the official price rose from 50% of the open market price in 1984/85 to 78.8% in 1986/87. Official purchases for maize have risen in consequence by some 40% annually over the period 1984 to 1987. In the remote regions of Ruvuma and Rukwa, where over 30% of official purchases are made, official prices exceeded open market prices during the past few cropping seasons but the transport subsidy involved excessive losses to NMC (Amani *et al*).

Malawi Maize Marketing

Although, as in Tanzania, the area under large-scale agriculture is relatively small, large-scale commercial production in Mutare has had, and continues to have, a major influence on agricultural policy. Today, estates occupy some 0.5 million hectares of land, while smallholder farmers have access to some 6.7 million hectares (Manda, Dzowela and Johnson, 1985). The objective of the colonial administration from the imposition of colonial rule in 1891 was to encourage African employment on settler estates. However, the appearance of markets for food grains, in the form of urban areas, schools and estates, led to the rapid expansion of smallholder maize production. This situation, with not only the urban areas but also the large estates, being dependent upon maize surplus grown by smallholders has persisted to the present day (Howell, Antony and Hewitt, 1987). From 1953 to 1963, Malawi was part of the Central African Federation, and thus settler influence from both Zimbabwe and Zambia had an important impact on development policy in Malawi generally. With respect to smallholder maize markets, this meant that the state acted primarily as a residual buyer. After a severe famine in 1949, an attractive pricing regime for maize ensured a regular maize surplus. However, maize marketing remained, along with that of most other commodities, largely the province of Asian traders. Since independence, the Asian influence on marketing has virtually been eliminated by restricting Asians to the larger towns and by controlling the type and location of Asian-owned businesses.

The only marketing board in Malawi is the Agricultural Development and Marketing Corporation ADMARC (which was created from the Farmers' Marketing Board in 1971). Unlike the marketing boards in Kenya and Tanzania, ADMARC is responsible for the purchase of all smallholder crops. Because ADMARC is a trader in a number of commodities, it has been possible to cross-

subsidise the commodities in which it deals.¹ This has enabled ADMARC to avoid some of the severe financial problems that have beset other state marketing boards in the region. It was only when ADMARC was hit by a double blow of depressed international tobacco prices and a government decision to raise the maize price by 61% in 1981, that the agency ran into financial difficulties.

Until recently, ADMARC maintained 72 major markets for the various crops, as well as over 900 seasonal buying stations. Some of the latter were mobile and periodic, visiting particular markets on predetermined days (Muir, 1982b). Under a market liberalisation policy, many of the seasonal buying stations are to be closed starting in the 1988 cropping season. These include many of the most remote stations, on the unrealistic assumption that these will be serviced by private traders. The "liberalisation" was prompted by large losses in surplus years.

One of ADMARC's logistical problems and attractions has been its ability to pay the farmer in cash as soon as the crop is delivered. Also, although ADMARC is the sole legal maize trader and there are official restrictions on the movement of maize nationally, there have been continuing and significant private maize trading activities. Typically these are carried out by small traders operating a single vehicle². ADMARC, therefore, unlike counterparts in Kenya and Tanzania did not actively attempt to maximise its monopoly power with respect to maize; the liberal interpretation of its legal position allowed the supply of maize to non-maize growing areas to be supplied by small traders operating over long distances (Kandoole *et al*, 1987). The concern of ADMARC would appear to have been to act as a stabilising influence on the national maize market through the acquisition of strategic reserves. ADMARC maintains warehouses throughout the country with an aggregate capacity of 300,000 tonnes. A modern silo complex in Lilongwe can store a further 180,000 tonnes.

Although ADMARC has a well deserved reputation as an effective development and marketing agency, its apparent efficiency was largely a result of having ample operating surpluses from taxing peasant tobacco sales (Muir, 1982b). Of more concern has been the bias against the involvement of smallholders in high value export crop production. This has caused some rethinking of ADMARC's role. ADMARC between about 1964 and 1984 changed from a

¹ It is interesting to note that Zimbabwe adopted a rather different approach to cross-subsidisation through the creation of an overall Agricultural Marketing Authority with separate commodity Boards; for a description of these, see Blackie, 1986 and 1987).

²for a more detailed description of private trading in Malawi, see Malawi Government, 1983 and Kandoole *et al* 1987.

market stabilising agency to a revenue and development financing one. For example, during the period 1964-6, only 7% of potential producer income was retained by the board. In the period 1969-71, about 22% of potential producer income was held back. This proportion had risen to 35% during 1972 - 75 (Livingstone, 1985). The Malawi strategy is an interesting one since, like many similar agencies in the region, it has acted as a means of extracting taxes from the smallholder sector. The difference, as Livingstone points out, is that some of the resources withdrawn from smallholders have been retained within the agricultural sector. This general bias against smallholders, but not against agriculture *per se* has served to give Malawi a surprisingly resilient agricultural economy, but with a substantially narrower base than that of Kenya. Smallholder participation in the market is noticeably less than in Kenya, although with respect to maize, recent events have shown that smallholders are quick and eager to enter the market when maize producer prices rise.

In 1987, the maize market has been officially opened to private trade through the Agriculture (General Purpose) Act. However, the overall effect on the maize trade is likely to be slight, since the new marketing regulations are not conducive to large scale investment in marketing infrastructure. Marketing licenses are issued on an annual basis only, and participation in the market is restricted to Malawi nationals. The control on exports is maintained through the existing licensing system. Thus, it is likely that there will be more small trader activity in the market place, but no major challenge to ADMARC's dominance. As noted by Lele there is likely to be a negative impact on remote producers and consumers.

Zambia Maize Marketing

Zambia, like Kenya, was strongly influenced in its early agricultural policy by the need to attract and maintain a settler farming population.³ Consequently, much of the development of the maize marketing system in Zambia is similar to that in Kenya and does not warrant repeating in detail here. Government control over maize marketing started with the Great Depression in the 1930s and has continued, with only marginal changes, almost to the present day.

The important difference with respect to maize marketing in Zambia, as opposed to the other territories analysed here, is that the internal price of maize to consumers has been consistently kept below the cost of imported maize (Dodge, 1977).

³Dodge, 1977, gives a comprehensive account of the development of agricultural policy in pre- and post-independence Zambia.

Smallholders suffered a particular disadvantage under this arrangement pre-independence as their maize prices were, over several long periods, set below those of the settlers. The overall objective of this policy was to reduce the price of labour in the Copperbelt mining sector; the mines were major employers of labour, and copper, for many years, was the primary source of growth in the Zambian economy. During the period 1965 to 1973, nearly half the central government revenue came from mining (Ellis *et al* 1985). The situation in Zambia reflects the 'Dutch disease' problem later to emerge in Nigeria with the oil boom (see Aboyade, 1986).

The bias against smallholders continued after independence. Dodge, 1977, has shown that real urban incomes rise consistently in the first decade since independence, while those of farmers fell sharply. The result has been the highest level of urbanisation in the Southern and Eastern region of Africa, together with stagnating agricultural production (Ellis *et al*, 1985, estimated that 47% of the population of Zambia was in urban areas in 1985). An interesting effect of Zambia's agricultural policy has been the emergence of maize as the dominant national crop, both in physical and value terms. Over the period 1964 to 1968, maize represented an average of 61% of total marketed production. This increased to an average of 76% by the period 1973 to 1977. Zambia remained largely self-sufficient in maize until the mid 1970s, mainly as a result of this shift in aggregate maize production. The crisis came with the collapse of the international copper market; mineral revenues fell from 57% of all tax revenue in 1974 to virtually zero in 1977. The resulting shortages in government revenues and foreign exchange led to massive reduction in the availability in imported items. Maize production, which relies heavily on imported chemical fertilizers for reasonable yields on Zambian soils, fell sharply. While there was an average growth in marketed maize of 27.2% over the period 1970 to 1975, the following five year period saw a reduction in marketed yields of 6.1% (Ellis *et al*, 1985).

Prior to 1985, as elsewhere in the Southern and Eastern Africa region, the government marketing board, (latterly known as the National Agricultural Marketing Board or (NAMBOARD), had a legal monopoly on interdistrict sales of maize. Private trading in maize between districts, was inhibited, not so much by NAMBOARD's legal powers but by the heavy subsidy on maize meal which made private trading unattractive (Ellis *et al*, 1985). Thus Zambia provides yet another example of how the same basic structure of a central state marketing board can result in a highly specific outcome, depending on the other agricultural policies in place. In the case on Zambia, private trading and the parallel market in maize is of minor importance. Ellis *et al*, 1985, estimated conservatively that removal of the maize consumer subsidy would cause the maize meal price to rise by 50 to 60%; subsequent events showed the Zambia government raising meal prices by 100% but then being forced to retract the measure due to urban

consumer pressure. The budget constraints faced by the Zambian government mean that it is unable to continue to meet the national maize subsidy. For example, the Zambian Prime Minister in 1985 reported that, in spite of overdrafts of ZK60 million from the parastatal Agricultural Finance Company, NAMBOARD was still ZK141 million short of the funds necessary to purchase the 1985 maize harvest (Ellis et al, 1985).

As in Tanzania, dissatisfaction with the performance of the parastatal maize marketing system has led to a series of experiments with marketing structures in an attempt to improve marketing efficiency. These are well documented in Ellis et al, 1985, Dodge, 1977, and Dodge, 1979. The problem of how to eliminate the maize consumer subsidy in a period of serious national stringency, and when urban employment and income are contracting, remains intractable. Yet it is this very subsidy that threatens the viability of an agriculture led strategy to replace the lost revenues from copper.

Zimbabwe Maize Marketing

A single channel marketing system under statutory organisations operates for most commodities and producer prices are administered for all the more important crops with the exception of tobacco, sugar and horticultural products. The market structure is not normally characterized by competition with either co-operatives or parallel markets and the private sector is restricted to specified products and functions.

Government intervention was initiated by white farmers during the Depression and their maize sales were subsidised by consumers and peasant farmers (Muir-Leresche, 1984). The Grain Marketing Board (GMB) controls the purchase (at government-fixed prices) of all food commodities including maize which it then sells (at a controlled price) to private sector millers and oil expressors from designated Zone Centres. The GMB is the sole legal trader in Area A (most of the commercial farming areas) but free local trade is permitted within the boundaries designated Area B (the marginal commercial cropping areas and all communally-owned lands). This has effectively limited legal exchanges between surplus and deficit communal areas unless they have contiguous boundaries.

Large-scale farmers deliver direct to the GMB depots, whereas peasant farmers normally have to rely on third parties to purchase and transport their grain. The poor infrastructure in the communal farming areas is the result of both political and economic factors. The previous government made little attempt to encourage surplus production from these areas and concentrated investment in the large-scale sector. At the same time the widely dispersed, small producers concentrated mainly in marginal cropping areas makes it uneconomic to invest in large fixed

purchasing depots in most of these areas. Of the ten-fold increase in marketed output from the communal areas since Independence, the greatest proportion is from a small minority of farmers located in Region II. (Stanning, 1987; Muir and Takavarasha, 1988).

The Government is under considerable political pressure to increase access to official market channels in the communal areas where the most common practice for peasant farmers has been to rely on appointed agents of the GMB. These agents are supposed to pay the official price less prescribed handling and transport fees. Problems have arisen with grade determination and the deduction of unreasonably high handling fees. Some of the problems associated with agents would be alleviated if, instead of licencing agents, access was opened in order to increase competition - minimum deliveries could be required to reduce GMB costs. Prior to 1979 there was a levy on all sales through official channels from the communal areas. This tax was strongly resented as discriminatory since it did not apply to large-scale farmers and was a form of forced saving by people who had no control over its disposal.

For many years the GMB served the interest of large-scale farmers although in recent years it has increasingly served the interests of urban consumers. It is designed to handle large surpluses from large-scale farms for processing and distribution in the major urban centres. It is not designed to distribute food to deficit rural areas and nor is it geared to collect small surpluses from a large number of widely dispersed farmers. It has, however, been called upon explicitly to service these farmers since Independence which has added significantly to trading losses. Initially primary rural depots were established in maize surplus communal areas, - small bag collection depots with very limited storage capacity. By 1986, 17 primary depots were operational (Kupfuma, 1987).

The depots are too expensive to establish throughout the communal areas and a collection-point system has been implemented which involves receiving and transporting the maize but no grading or payment. Collection points are established annually on a daily, weekly or monthly basis, depending on throughput. The bags are receipted, marked and then forwarded to the nearest depot for grading and payment arrangements. The farmers pay \$1 per bag transport from collection point to depot with the GMB subsidising additional transport and handling costs. The system has the advantage of being season-specific and of obtaining economies of scale in transport. Kupfuma estimated that the collection points reduced total transport costs by between \$20 and \$50 per tonne in 1985 depending on distance, with savings to farmers much higher as partial transport subsidies were also involved. Despite these advantages, the collection points remain unattractive to peasant farmers because of the limited grading facilities and added delays in payment.

Policy Implications

The evidence above suggests that despite the desire to involve smallholders more closely with official maize markets, current maize marketing policies are inherently unfriendly to smallholders and are, in fact, inimical to both growth and equity. The market imperfections arising from a situation with widely scattered, small producers and a poor transport network; the extreme weather induced yield fluctuations and the political need for control of food marketing; make it extremely unlikely that an effective private marketing system can be implemented. Child, Muir and Blackie, 1985, have shown that a partially decontrolled system could reduce state costs without losing effective control of national food supplies and at the same time help protect producers and consumers from extreme price fluctuations. Even this partial decontrol, however, may not be politically feasible.

Although existing public food marketing agencies are subject to the inefficiencies of any bureaucratic system, these can be reduced without affecting state control of sensitive commodities. These agencies were originally designed to serve the needs of estate farmers and/or urban consumers. It is the simple expansion of such agencies to serve smallholders that underlies their poor performance in the region. The efficiency of such agencies can be significantly improved if their design is altered in accordance with their expanded functions. If smallholders are to form an increasingly important component of national agricultural economies, access to markets and a consistent policy for marketing institutions is essential.

Marketing and pricing policies must not be changed in response to short-term supply positions. A consequence of government-set prices responding to the previous year's supply is a mirror of the classical cobweb model, with the trend explosive (Muir and Blackie (1988)). Evidence from Kenya and Malawi indicates that if marketing services are erratic there is a reluctance to rely on a market where purchases are limited in surplus years and in deficit years only the urban areas are serviced. Zimbabwe shows the reluctance of farmers to market through channels which delay payment. The dangers of the current movement to "privatisation" is that full free competition will not be implemented; the state will retain control of the most lucrative markets and the periphery will be left unserved.

Smallholders have come to expect market access as a right and emphasis is placed on building large, permanent maize depots. There are very few areas where returns would warrant the investment, especially as often the depots are not full markets but rather confined to the purchasing alone of selected commodities. Malawi has been the most successful of the countries in ensuring reasonable access and most farmers are within ten kilometers of the ADMARC supported sales and

purchasing points. The "collection points" system in Zimbabwe is the most economic of existing systems (Kupfuma, 1987) being operated in Zimbabwe but the failure to attract farmers appears to be related to the lack of grading facilities and delays in payment.

Governments need to establish institutions which will increase market access, ensure stability and at the same time improve market efficiency. Mobile collection agencies operated on a periodic basis in association with other government services and the private sector would not only help to increase local specialisation and exchange (Reynolds 1981) but would reduce national transport costs. The opportunity costs of the transport would be zero or very low. The state agencies would also be in a stronger position to lobby for road improvement and maintenance.

There is a reluctance on the part of the agencies to implement systems which are radically different from those provided for the estate sector and at the same time the smallholders are demanding access to the same level of services provided to that sector. There are no simple solutions which will both help to reduce state expenditure and at the same time encourage smallholders to participate more actively in a market economy. The development of local markets which will encourage specialisation is so important to economic development, however, that more resources should be invested in developing and implementing appropriate marketing strategies. The large deficits of the parastatal marketing institutions can be reduced whilst increasing market access to smallholders by designing institutions which directly address the constraints without subsidising producers, consumers or the state bureaucracy. It is important to identify the major constraints to market access and address these directly.

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