Economic Reform in Tanzania: Impacts on Maize Production, Marketing, Prices and Food Security

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Abstract

For more than a decade Tanzania has undertaken a number of macroeconomic and sectoral reforms mainly aimed at improving the efficiency with which agricultural production and marketing are undertaken. But the impacts of such reforms vary greatly on different subsectors of the economy. This paper narrates the impact of these reforms in the maize subsector on production, marketing and prices and draws implication of these developments on food security. The analysis indicates that government policy has been successful in enhancing maize production at a rate of 5% per annum for the period 1962-1997. However, a significant shift is noted in the maize marketing system where there has been a constant decline of the share of marketed surplus handled by the government from 25% in 1962-1984 to about 10-20% at present. Real maize prices have also changed from negative to positive trends. Overall, these changes have led into the country being fully self-sufficient in maize. Nevertheless, farmers' efforts to increase maize production are constrained by poor technologies and uncertain access to markets. Solving these problems will enhance the contribution of the maize sub-sector to the economy.

Key Words: *Maize, economic reforms, food security, policy impacts.*

1 Importance of maize in Tanzania

In terms of quantity produced, maize is the most important of all cereal grains grown in Tanzania followed by paddy, sorghum, millet and wheat. In the period between 1961/62 and 1992/93, maize accounted for approximately 79% of estimated production of preferred staple grain (maize, paddy and wheat) and 60% of estimated total grain production (maize, paddy, wheat, sorghum and millet). Maize also accounted for about 28% of the total human energy supply between 1970 and 1987 (Mlay, 1988). Tanzania is almost self sufficient in maize with an average self-sufficiency ratio of about 96% between 1961/62 and 1992/93 (Ashimogo, 1995).

2 Economic policies prior to reforms

During 1966 to 1980, economic policy was mainly formulated along the guidelines of the 1967 Arusha Declaration. The policy was fostered to put in effect socialism and a centralised economy. Economic policies in this period relied mainly on administrative controls in labour, financial and commodity markets. There was full control of agricultural producer and consumer prices. Agricultural production was concentrated on communal farms.

The monetary sector and financial markets were fully centrally controlled. These economic policies had an effect to the economy, agriculture sector and the maize sub-sector. The following are most important policies pursued then.

2.1.2 Institutional and organisational policies

During the "command economy" period the majority of Tanzanians were engaged in agriculture. The principal target of Governments economic policies was to put small farmers together in villages where they would produce collectively. Collection of farmers in villages for purposes of communal production envisaged: efficiency in providing social services, use of improved agricultural inputs in collective farms, and increasing agricultural productivity. By 1976, 13 million people were living in "Ujamaa" villages. Contrary to intended expectations, the movement of people into "Ujamaa" villages had the following negative effects: disturbance of human settlements and distortions of the production incentive structure and resource allocation.

The government enforced an un-workable incentive system. It provided cheap credit and delivered inputs at subsidised rates to Ujamaa villages. Forceful resource allocation, based more on ideology rather than economic rationale led to resource mis-allocation.

2.2.3 The agricultural marketing policy

Interventions in agricultural marketing by the government started in 1962 with the enactment of the Agricultural Products Act. The major objective of the intervention was to remove the middlemen. A three-tier single channel marketing system was established. The National Agricultural Products Board (NAPB) and the National Milling Cooperation (NMC) were established in 1962 and 1973 respectively, the latter taking over from the former. These parastatals were vested with the monopoly power to buy and sell grain in bulk. Cooperatives and their affiliate primary societies were acting as agents to these parastatals. Cooperatives were abolished in 1976. The government hence restructured the marketing system and formed Crop Authorities which bought produce from farmers at set prices. The system is commonly referred to as a two-tier single marketing system. This new system required substantial investment in infrastructure, management and coordination, which resulted in substantial overhead costs. On top of the general responsibilities of other crop authorities, the NMC had additional tasks of managing grain reserves, importing, and exporting of grain. These activities imposed more financial difficulties to the NMC. Lack of financial and managerial capacity in the NMC led to: (i) failure to collect produce from farmers; and (ii) long delays to pay farmers for collected produce.

These were strong disincentives on the smallholder growers and it led to a decline in production growth rate. Based on these problems, the government restructured the marketing system once more in 1983, through a new Agricultural Policy. It re-established cooperatives and vested them with the responsibility of crop procurement. Cooperative societies were allowed to sell to adjacent societies or local retailers. The NMC was almost restricted to distribution of food to urban and deficit regions. The major problem during this era was that cooperatives lacked capacity, i.e. qualified manpower, transport and storage facilities. As a result the problems of delayed payment to farmers and inefficient collection of produce persisted.

2.3 Agricultural products pricing policy

Interventions into setting agricultural products prices have also had significant effects in the development of the maize and other sub-sectors. In the case of grains, the government aimed at raising the producer price, at the same time creating a lucrative price ceiling for urban consumers. The faulty strategy led to a situation whereby before 1974/75 the government set an into-store price. This was a residual prices set for farmers after deducting estimated marketing costs of cooperatives and the NMC. Due to high overheads of the marketing organisations, this intervention led to a general decline of producer prices. In 1976, together with cooperatives being dissolved and a two-tier single marketing channel being established, prices were now set for producers rather than an into-store price. The prices were pan-territorial. Such a pricing system was targeted to effect an equitable income across the regions. The effects of pan-territorial pricing were: (i) escalating costs of transporting grain produced in remote areas; and (ii) a strong bias against high-value-low-weight crops in remote regions, for example tobacco being foregone for maize in the southern regions.

Pan-territorial pricing resulted into wrong economic signals and hence mis-allocation of resources. To reverse this trend a regional pricing approach was adopted in 1982. This gave a premium price to high potential production areas. There was also a deliberate effort to maintain low consumer prices. This in part, suppressed producer prices. Disincentives from low producer prices were expected to be mitigated by subsidies built in inputs, both seed and fertiliser. A 50% subsidy on fertiliser was introduced in 1976 and was maintained up to June 1984, the time economic liberalisation commenced.

2.4 The foreign exchange rate policy

As noted earlier prior to economic liberalisation, which commenced in 1984, Tanzania had an overvalued local currency. Because maize imports were a significant component of food security, overvaluation of the shilling meant that consumers were being subsidised and encouraged to consume imported maize. It was also financially lucrative for the NMC to import maize and distribute it rather than purchase it locally. When ex-store cost of maize is determined using the real exchange rate, imported maize becomes more expensive than locally purchased maize. If the difference in ex-store cost price of imported maize measured at official and real exchange rates is calculated, we observe subsidies amounting to 960.8 Tanzanian shillings (TShs) per tonne in 1981/82 growing to TShs.14,134 per tonne in 1985/86 (Mlay, 1988). This posed an implicit tax on producers and a subsidy on consumers.

2.5 The Tanzania adjustment programme

Many of the problems which faced agriculture in the early 1980's were a reflection of the sectoral and macroeconomic distortions, coupled with policies where Government controlled all the key prices in the economy and owned and operated all key enterprises. From the 1984/85 budget year period, reform measures which included a devaluation of the shilling by a third, cutting down of subsidies, import liberalisation and easing of agricultural marketing restrictions were instituted. To complement the changes in macro-economic management and generate a much needed supply response, a sectoral adjustment programme was formulated for agriculture. The objectives of the agriculture sector adjustment programme were to liberalise the marketing and pricing of food grains; to remove the monopoly export powers of crop marketing boards; to restructure several agriculture sector parastatals; and to close down or restructure non-viable projects in the agricultural public investment programme.

The policy measures started in 1984 were re-enforced by the adoption of the Economic Recovery Programme (ERP) in June 1986, and the signing of the agreement with the IMF in the same year. Under the programme the following policy measures were undertaken; further devaluation of the TSh; raising of producer prices by 5% in real terms annually or paying 60-70% of fob price whichever is higher; further liberalisation of trade and reduction of items under price control; an imposition of a ceiling on government expenditure; establishment of the open general license facility to improve foreign exchange allocation; and an expansion of the list of goods allowed to be imported.

ERP also gave a strong impetus to the rehabilitation of infrastructure; roads, equipment and ports. During the reform period there were also special projects and programmes to improve on food grain production. These included: The National Drought Resistant Cereals Strategy and The Smallholder Development Project for Marginal Areas. All these efforts jointly have had an impact on maize production and marketing.

3 Policy Inputs

3.1 Policy impacts on the economy

The Tanzanian economy performed relatively well from independence in 1961 up to the mid 1970's with an average annual Gross Domestic Product (GDP) growth rate well above 5 percent. Following the centralised economy policies, the GDP growth rate fell at an annual average rate of 2.6 percent during 1978-81. This implied a negative income per-capita growth, considering a population growth rate of 3.3 percent per annum, during the same period. The impacts of the centralised economy are apparent in the trend of balance of payments. In the five-year period that followed independence the ratio of external trade to monetary GDP averaged at 43 percent for exports and 42 percent for imports. Thereafter, the ratios fell continuously up to the level of about 28 percent in 1978-81. During the 1960s, the trade balance was mostly positive and the balance of payment also recorded surpluses. During socialism in the 1970s the trade balance turned into deficits. The deficit was particularly large in 1974/75 and 1978/80 representing about 40 to 50 percent of total imports (Kimei, 1987).

From mid 1970's Tanzania's economy started feeling the pinch of its ambitious and increasingly unrealistic development policies. Public sector revenue could not keep pace with the growth in public expenditure. Over all the years from mid 1970s expenditure exceeded revenue. For example by 1981/82, the budget deficit stood at Tsh.6,898 million. Major means to cover annual budget deficits were medium and long term domestic borrowing which were in turn inflationary to the tune of 28.9 percent in 1982/83 (BoT, 1983).

The economic policies followed after 1967 also had direct control on the setting of the foreign exchange rates. As a result the Tanzanian shilling was constantly overvalued starting from mid 1970s. A rapid rise of overvaluation is clearly noted from 1978 to 1984. For example, an analysis of data from the Bank of Tanzania (BoT) show divergence of real (in brackets) from nominal exchange rates in the respective years: 1978 10.5% (13.8%), 1982 16% (19.6%), and 1984 21.6% (32%). Distorted exchange rates result into implicit taxes and subsidies to producers and consumers respectively.

3.2 Policy impacts on the maize subsector

3.2.1 Production trends

The trends of maize production growth in Tanzania clearly illustrate that the sector performed badly during the era of the controlled economy. According to Mlay (1988) maize production growth declined in the period after independence prior to economic liberalisation. Maize production grew at a rate of 6.1% between 1961/62-1973/74, 23.0% between 1974/75 and 1983/84; and 0.9% between 1984/85 and 996/97 (Table 1). Deficits of grain were covered by imports reaching a tune of 118.2 thousand tons per year icluding food aid by 1982. This situation can be attributed to the economic policies enforced during that period.

Over the entire period public policy has clearly been successful in promoting maize production. Maize production in Tanzania is overwhelmingly concentrated in the hands of small holders owning an average farm sizes of about 2.0 ha. The introduction of HYVs into the smallholder subsector can be attributed to government policies and support activities, including provision of inputs and extension services. Coupled with expansion of area under maize cultivation the government support resulted, on average, in an annual national production increase of 4.9% for the entire (1961/62-1996/97) period (Table 1).

Table 1 Average annual maize production and production growth rate, 1961/62-1996/97

	1961/62–1973/74	1974/75–1983/84	1984/85–1996/97	Entire period
Production (000 t)	632	1648	2487	1584
Production growth rate[a] (% per annum)	6.1	2.3	0.9	4.9

a Growth rates were calculated using the standard formula for annual percentage compound as $X_t = X_o\ [1t\ (g/100)]^t$ where xt= 3 year moving average of data for ending period; X_o = 3 year moving average of data for base year, t = number of years from the mid point of base period to that of ending period; g = three year moving average;

r = annual percentage growth rate.

Source: Calculated from Ashimogo (1995) and BoT publications.

3.2.2 Marketing trends

Data of actual volumes of maize grain handled by the private markets are hard to obtain. Rough estimates, however, show that the official markets handle between 25 and 36% of the marketed surplus of maize or between 5-10% of estimated maize production for the 1970/71 – 96/97 period (Table 2). The remaining proportion has been handled by the open market. The official sources of purchased maize were concentrated in Arusha, Dodoma, Iringa, Mbeya, Rukwa and Ruvuma regions. On the other hand official sales of maize have been concentrated in Dar es Salaam, e.g. the NMC made about 68% of its total maize flour sales in 1983/84 and 64% of its maize and flour sales for the year 1989/90 in Dar es Salaam alone (MDB, 1992).

Table 2 Share of marketed surplus of maize going through the official and open markets, 1970/71-1996/97

Marketing year	Marketed surplus (% of total production)	Share of marketed surplus (% of marketed surplus)	
		Official market	Private market
1970/71-1983/84	20	25	75
1984/85	25	25	75
1985/86	25	36	64
1986/87	25	36	64
1987/88-1996/97[a]	n.a	10-20	80-90

a Estimated

Source: Amani et al. (1988); MDB (1992)

Absolute quantities of maize bought by official channels increased throughout and reached an average peak of 126,000 t in the 1984/85 - 1991/92 period. Private sector response to trading has also been generally positive. A survey of 196 grain traders in five regional towns in 1988 revealed that 60% of the traders had entered the business since liberalisation started in 1984 (Bryceson, 1993).

3.2.3 Evolution of producer prices

Prior to 1974/75 period, pricing was never used as a policy instrument to influence agricultural production. Government concern was in maintaining price stability and producer price was determined as a residual after deduction of estimated marketing costs of cooperatives. As a result of neglecting agricultural pricing as an instrument of policy, prices of maize declined sharply in real terms (Table 3).

Following the 1973/74-1974/75 crop failures there was a change in priority to food self sufficiency and a large increase in producer prices was instituted for food crops. As a result the maize crop experienced a positive increase in producer prices in real terms. The upward adjustment of real producer prices ended in 1978/79 period. The period between 1978/79 and 1983/84 saw a decline in real producer prices for maize despite a large price increase in nominal terms. However real prices increased significantly during the 1984/85- 1986/87 market reform period (Table 3) Thereafter real prices declined as a result of private traders shifting to regions which are more accessible to consumption centres. This caused a decline in prices for producers in surplus remote areas where markets are less competitive.

Table 3 Evolution of official producer prices for maize, Tanzania, 1969/70-1991/92

Producer prices		Increase/Decrease (%)	
		Current terms	Real terms[a]
1969/70	1973/74		
0.29	0.33	17.9	-16.7
1973/74	1978/79		
0.33	0.85	157.6	32.4
1978/79	1983/84		
0.85	2.20	158.0	-22.5
1983/84	1986/87		
2.20	6.30	186.4	49.0
1986/87	1991/92		
6.30	15.40	144.4	-5.4

a Deflated by the National Consumer Price Indices (NCPI)

Source: Mlay (1988); BoT publications

3.2.4 Linking policy impacts on food security

It is now generally accepted that Economic Reforms have had an impact on the Tanzanian economy in general and for agriculture and the maize subsector in particular. Real GDP, which stagnated and declined during the "command economy" grew by 3.6% in 1986, two years after launching the ERP.This rate exceeded the population growth rate of 3.2 percent. GDP grew further in 1988 and 1989 by 3.9% and 4.1% respectively. The overall agricultural production grew by 4 and 5% respectively in the early years after reforms, that is in 1987 and 1988 (World Bank, 1994)). According the Ministry of Agriculture (MDB 1992) the increase in agricultural production led also to an increase in food production over time. Table 4 shows that domestic production and imports moved in opposite directions over time. Increase in real producer prices significantly reduced imports and increased production to make the nation self-sufficient in maize requirements.

Table 4 Tanzania: Average annual maize production, imports and sufficiency level, 19961/62-1996/97

Period	Production (000t)	Imports (000t)	Total supply (000t)	Sufficiency ratio (%)
1961/62-1973/74	632	37	669	96
1974/75-1983/84	1,648	119	1,767	94
194/85-1992/93	2,487	4	2,491	100
Entire period	1,584	55	1,639	96

Conclusion and recommendations

Reforms undertaken since 1984 under ESAP and special sub-sector programmes have had an effect of reversing the past dismal trend in the economy. More acreage has been put under maize, the growth in production of maize has increased and private firms though small in nature have managed to serve the sector. The government has managed to make its stand clear in terms of refraining from being involved directly in production and marketing activities. Its current role is facilitating the process rather than owning and managing production and marketing activities.

However, one can argue that the government has taken reforms with much simplicity. Reforms ought to be considered as a very demanding strategy to rejuvenate agricultural growth. There are several weaknesses in the current reforms, which need to be addressed quickly. They include: (i) infrastructural constraints whereby roads are still in bad condition and raise transportation costs significantly; (ii) lack of financial support to private marketeers; and (iii) lack of formal credit to private grain marketers. These problems make it very difficult for the new and emerging firms to prosper and be effective in marketing grain.

Closely related to the above point, is a need to develop regional wholesale marketing centres. These centres would ease the task of monitoring grain marketing, facilitate the collection of statistics, and monitor volumes and standards of the commodity.

Although the case study established that inappropriate policy measures led to misallocation of resources and a decline of the welfare of producers, consumers and traders, it also showed that reforms could easily reverse this trend. However, the way in which the reforms have incorporated risk-reducing strategies is not yet clear. There exist important regional differences in the structure of production and in the ability of different market participants to engage fully in maize production, marketing and consumption. There is a need to include these dynamics in the reform packages.

Further insight into the functioning and integration of maize markets is important in order to understanding how liberalisation policies have influenced different markets in the country. The extent to which prices under liberalised market reflect efficiency in information flow and the transfer of incentives to different market participants need to be explored before planning and

major policy reforms are undertaken.

The lack of micro-level time series data on production, prices and marketed surplus precludes a quantitative analysis of how different categories of farmers respond to liberalisation. In addition the role and activities of traders needs to be analysed further in order to understand their exact role in grain marketing under liberalisation. This will facilitate an identification of possible areas of assistance so as to make them perform their functions more effectively.

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