EGERTON UNIVERSITY TEGEMEO INSTITUTE
MICHIGAN STATE UNIVERSITY
ECAPAPA

WORKSHOP ON
AGRICULTURAL TRANSFORMATION IN AFRICA
JUNE 27- 30, 1999
NAIROBI, KENYA

AGRICULTURAL MARKETING POLICY REFORMS IN ZAMBIA

Anthony Mwanaumo
Lusaka, Zambia

Funded by United States Agency for International Development

AGRICULTURAL MARKETING POLICY REFORMS IN ZAMBIA

Anthony Mwanaumo

Paper Prepared for the Agricultural Transformation in Africa Workshop

June 27-30, 1999
Nairobi, Kenya

Tegemeo Institute/Egerton University, Njoro, Kenya

Eastern and Central Africa Programme for Agricultural Policy Analysis (ACAPAPA), Entebe, Uganda

Michigan State University, East Lansing, Michigan, USA

Anthony Mwanaumo is a Deputy Director in the Department of Economics and Market Development, Policy and Planning Branch, Ministry of Agriculture, Food and Fisheries, Lusaka, Zambia and Co-ordinator of the Agricultural Sector Investment Programme (ASIP) Consultative Forum (ACF) in Zambia.

Table of Contents

ABSTRACT

Zambia is currently pursuing agricultural market reforms necessitated by a deteriorating economic situation and donor demands. This paper is on how agricultural marketing reforms have evolved, the responses by the private sector and farmers, the winners and losers from reforms and constraints to reforms. This empirical information is then used as a basis for proposing measures for consolidating reforms for the future.

While pursuing the overall policy of liberalization, government has continued to participate in agricultural markets, especially the fertilizer market, due to the duality of the agricultural sector and the perceived imbalances in agricultural services delivery and the limited capacity of the private sector to serve smallholder farmers with a locational disadvantage.

The private sector has by and large responded favourably to market reforms by creating fora that enhance dialogue with the public sector, establishing commodity exchanges, establishing a network of marketing channels and by operating outgrower schemes. Farmers have responded mainly through diversifying their production base and formation of farmer organizations. However, these efforts have been constrained by the continued mutual mistrust between the public and private sectors, weak enforcement of legislation, limited storage facilities and infrastructure, financing limitations, indirect production and marketing subsidies, limited market information and the dependency syndrome.

The consolidation of agricultural reforms in Zambia should therefore focus on overcoming the constraints to the reforms, through a strong information programme to sensitize the beneficiaries to appreciate and take advantage of the reforms, reinforcing mechanisms for enforcing legislation and targeted support for locationally disadvantaged smallholders using the private sector as a delivery tool. In addition, the consolidation of reforms requires clear and consistent policy signals from government, collaborative mechanisms between public and private sectors, infrastructure investment on smallholder production, mechanisms for improving access to agricultural services, including market information, instituting contractual enforcement measures and strategies for optimizing the utilization of processing capacity. Furthermore, a strong data base to ascertain the impact of reforms is critical in providing the empirical evidence for consolidating reforms in Zambia.

I. INTRODUCTION

Agricultural reforms in Zambia are aimed at fully liberalizing markets to enhance private sector participation through free market development, reduce government role in commercial activity and improve and strengthen the sector's delivery system. As a greater role is given to the market, understanding the reforms and their impact are critical in determining the design and direction of future reforms. An in-depth understanding of the agricultural market reforms, how the private sector and farmers have responded and the constraints is critical in providing more insight into the design and improvement of such reforms for the future, to utilize Zambia's agricultural potential.

Zambia has cultivable land of 42 million hectares of which only 14% is cropped. Water bodies such as lakes and rivers are unexploited. Only 6% of Zambia's irrigation potential is utilized. Zambia has a resource endowment for a wide range of crops, livestock and fish given its diversity in the agro-ecological regions. With this diversity Zambia has the potential to achieve an annual sustained agricultural growth of 5% in the medium to long term(WB, 1996). The sector is key to the development of the Zambian economy and is seen as the engine of growth for the next decade. Agriculture generates about 22% of Gross Domestic Product (GDP) and provides livelihood for more than 50% of the population(WB, 1995). The sector employs 67% of the labour force and is by far the main opportunity for income and employment for women who make up 65% of the rural population(WB, 1995). The potential increase in rural incomes can reduce poverty. Agriculture is therefore a key tool for poverty eradication. The sector is projected to be the major source of export diversification required to boost the country's job creation capacity and balance of payments especially given the declining contribution from traditional exports such as copper.

One of the key factors to realizing the agricultural potential in Zambia is an enabling and supportive policy environment. An enabling policy framework is integral to the transformation of Zambian agriculture into the main stay of the Zambian economy. Whilst weather and other exogenous factors may have limited the sector's ability to grow at above the population growth rate, by and large, agricultural policies of the period before 1991 were unfavorable for agricultural sector growth. This led to policy reforms in the agricultural markets.

This paper is on how agricultural marketing reforms have evolved, the responses by the private sector and farmers, the winners and losers from reforms and constraints to reforms. This empirical information is then used as a basis for proposing measures for consolidating reforms for the future. The paper is structured as follows: Agricultural policy reforms in Zambia are discussed in the first section. This section includes the policy objectives and strategies. Government role in agricultural markets is discussed in the second section. The third section is on private sector response to agricultural reforms. The farmers' coping strategies are presented in the fourth section. The fifth section presents an analysis of the winners and losers from reforms. The sixth section is on constraints to output market reforms and the conclusions and recommendations on how to consolidate reforms for the future in Zambia are presented in the last section.

II. AGRICULTURAL POLICY REFORMS IN ZAMBIA

Zambia's economic policies up to 1991 were restrictive and constraining (Mwanaumo, 1994). They entailed too much control and interference by government which suppressed private sector initiative. The strategies pursued were mainly unsustainable as they were dependent on subsidies. Consequently, the policies failed to tap the sector's potential. This coupled with limited provision of essential public services translated into unrealized potential for the sector. The system was characterized by official price controls and determination, centralized delivery of support services, concentration and public sector dominance of agribusiness industries, frequent policy and institutional changes, and extensive subsidies.

The situation was more serious in agriculture due to controls on crop and input prices, high level of parastatal activity in both marketing and input supply and high maize and fertilizer subsidies Katepa, 1984, Muntanga, 1984) . The development of small-scale farmers was highly dependent on subsidized credit for inputs and marketing (GRZ, 1997). Whilst the objectives of these policies and institutional arrangements were partially achieved through an increase in maize production of 60 % in the 1980s, the system was not sustainable and such policies led to a poorly developed agricultural sector dominated by a single crop maize: away from high potential cash crops and away from traditional, drought resistant food staples such as sorghum, millet and cassava; huge government expenditure and subsidies which contributed to inflationary budget deficits; insolvent public marketing and farm financing agents; very low farm productivity and incomes among small scale farmers; absence of private sector participation in the areas of farm input supply, agricultural marketing and food processing; and reduced household food security. Controls also had perverse effects on farmer behavior, including excessive dependence on government, a lax attitude toward credit repayment and a lack of understanding of the functioning of markets (WB, 1996).

The subsidies required to sustain government controls on prices and marketing became high. Maize subsidies as a percent of total government budget increased from 5.5% in 1984 as much as 16% in the late 1980s (GRZ, 1991, WB, 1996). In 1989 maize subsidies accounted for about 40% of the high deficit of total government expenditure(GRZ,1990). By 1990, maize subsidies were larger than the total budget deficit. The expenditure on subsidies was consumed and not invested thus attracted high opportunity cost. Since the fall in the real value of copper in 1970, the ability of government to subsidize maize diminished. In 1990 US Dollar, copper export earnings fell from US $ 3.4 billion in 1974 to US $ 1.8 billion in 1975 and declined more or less steadily after that to a low of US $ 725 million in 1994 (WB, 1996).

In 1991 the new elected government introduced liberalization and market reforms. In agriculture, this entailed the decontrol of agricultural prices and the liberalisation of maize marketing. The policy emphasized government withdrawal from direct involvement in agricultural marketing and input supply, freeing prices, removing subsidies, privatizing agro-parastatals, renting out and selling public storage facilities to the private sector and overall removal of constraints and distortions to international trade in farm products. Consequently, commodity and input markets, and markets for agricultural land and capital were to be allowed to develop. In this new policy framework, the new role of government was to be confined to policy formulation and legislation and development of sustainable market support services such as market information, extension, finance and infrastructure. In addition, government would maintain a food reserve to ensure national food security.

Policy Strategies Within the broad policy framework of liberalization and markets reform, the policy strategy emphasized: (a) diversification of crop production to allow for the production of more drought tolerant crops; (b) emphasis on service delivery to smallholders to ensure that smallholders take full opportunity to share in the economic growth and development arising from the policy of liberalization, and encourages private sector to play a leading role in the provision of support services to smallholders through out-grower schemes; (c)development of the livestock sector to allow for increased productivity of Zambia's livestock to improve the welfare of rural people through expanded food supplies and increased cash incomes; (d) expanded opportunities for outlying areas to capture the locational dualistic nature of the agricultural sector; (e) improving the economic status of women given the importance of women in agriculture; (f) improved use of available water resources to tap the vast resource endowment of rivers, lakes and ground water supplies; (g) full utilization of land suitable for agriculture; (h) helping farmers deal with natural disasters; and (I) emphasizing sustainable agriculture to prevent soil erosion and minimize any adverse effects of changing farming technology on the environment.

Policy Objectives The key objectives of the agricultural policy reforms are to: (a)assure national and household food security through dependable annual production of adequate supplies of basic foodstuffs (cereals and proteins) at competitive costs; (b)ensure that the existing agricultural resource base (land, water, and air) is maintained and improved upon; (c) generate income and employment to maximum feasible levels through full realization of both domestic and export market potential; (d)contribute to sustainable industrial development through the use of locally produced agro-based raw materials in line with international comparative advantage; (e) expand significantly the sector's contribution to the national balance of payments by expanding agricultural exports.

III. THE ROLE OF GOVERNMENT IN AGRICULTURAL MARKETS

Under the liberalization and market reforms, the role of Government is mainly to formulate policy, legislation, develop sustainable market support services and maintain a national food reserve as tools to contribute towards achieving the above-mentioned objectives. This section presents the evolution of government involvement in agricultural markets since the introduction of liberalization and market reforms.

Floor Prices and Buyer of Last Resort The drought of 1991-92 limited government's will to fully implement the reforms. Thus, government intervened in the market through limiting the number of traders in the provincial markets and by setting floor prices. While private traders were allowed to purchase and sell maize within regions, co-operatives became buyers of last resort. Co-operatives provided a producer floor price and an into-mill ceiling price and were responsible for transporting maize between regions. Co-operatives have since collapsed and the principle of buyer of last resort has been discontinued.

Agricultural Market Information An agricultural market information service was started by MAFF in 1993 as part of the policy of market liberalization. The Agricultural Marketing Information Centre (AMIC) was established under the Ministry of Agriculture, Food and Fisheries (MAFF) to collect, analyse and disseminate market information. The weekly Market Bulletin was launched and subsequently, the monthly Provincial Market Bulletin was also launched. Information collected is on wholesale and retail prices on a range of staple grain products, tuber and vegetable prices and agricultural inputs. A pilot expansion to livestock market information is being implemented in Western Province, and coverage may be expanded onto horticultural products in future.

The potential users of market information are traders, farmers, processors and importers and exporters, and researchers in the private sector, and government ministries of agriculture, finance, planning, commerce, quasi government agencies and researchers in the public sector. Adequate and accurate market information is critical for correct decision-making and planning.

Information on prices, quantities and qualities help reduce risk of losses in market transactions. High risk of losses translate into high marketing costs. Thus, market transparency and adequate information combine to reduce costs of marketing food. However, the asymmetric market information necessitates that market players' decisions are based on different degrees of imperfect information. In an ideal competitive market, differences between markets only reflect costs, plus a small margin , for transaction costs, spatial and temporal. Arbitrage, the process of exchange of commodities in order to make profit from the price differences that are more than marketing costs (spatial and temporal) is an integral part of a functioning market. But excessive arbitrage, buying too low and selling too high, with price differences abnormally higher than the marketing costs, is a market failure. Thus, market information plays an important role for correcting for excessive arbitrage and promoting efficiency in the operations of a market.

The use of AMIC information is currently limited, mainly due to poor funding. MAFF and Zambia National Farmers Union (ZNFU) use the AMIC bulletins but the production is sporadic. Information flow to the provinces and districts is constrained by logistical complexities and the districts staff are not well trained to analyse and utilize market information correctly. There is therefore room for improvement in the collection, analysis and dissemination of market information as an integral part of market reforms.

The Agricultural Sector Investment Programme (ASIP) In 1994 ASIP was formulated and launched in 1995 as a tool for implementing the government policy of liberalization and market reforms. ASIP became a tool for providing the complementarity between policy and institutional reforms and public expenditure to implement the above-stated policy strategies and actions. The programme was designed to harmonize agricultural sector activities to optimize resource use. It focuses on reduced proliferation of projects and minimizes duplication of activities and non - complementary donor preferences. More than 180 donor-funded projects have been integrated into ASIP to increase efficiency of public investment and expenditure and minimize duplication of effort and associated costs. ASIP is designed to bring about sustained improvements in the delivery of services to the sector. Demand-driven interventions and effective participatory approach in programme formulation and service delivery are critical factors of this transition from project to programme approach to sectoral development.

The ASIP approach is unique in that it covers the whole country and involves public and private sectors in implementation. It is also demand-driven, has a built-in flexibility based on annual reviews and adjustments, it is imbedded in public sector reforms that emphasize greater decentralization and beneficiary participation and its objectives are consistent with macro-economic stabilization and growth (WB, 1995). The programme is therefore a key tool for government to implement reforms.

There are 13 sub-programmes of ASIP used as service delivery tools under four priority areas of policy and institutional improvements, public investment, private sector development and pilot investment schemes. Each one of the sub-programmes has clearly specified objectives that are mutually complementary as tools for implementing policy reforms in Zambia. . The ASIP priority areas, sub-programmes and main objectives are summarized in Table 1.

TABLE 1 ASIP COMPONENTS, SUB-PROGRAMMES AND OBJECTIVES

Priority areas	Sub-programmes	Main objectives
Policy & Institutional Improvements	Policy & Planning	-Policy reforms - Decentralization & Restructuring of MAFF -Operation of Food Reserve Agency (FRA).
Public Investment	Agricultural research	-Develop appropriate high yielding technologies for increased productivity.
	Extension & Information	- Disseminate technologies to increase productivity of smallholder farmers.
	Animal Production & health	-Improve disease control and increase livestock productivity.
	Irrigation	- Develop small scale irrigation facilities for smallholders.
	Fisheries	-Develop fisheries and agriculture for smallholders and resource poor households
	Farm power mechanization	-Assist smallholders to adopt labour- saving technologies to increase production.
	Agriculture training	-Strengthen agriculture training to meet needs of small farmers.
	Land administration and use	- Improve access to land and land use conservation.
Private sector development	Seed multiplication & distribution including standards .	Diversify and promote community-based and private sector led seed multiplication and distribution.
	New products development	-Promote diversification through high value non-traditional crops.
	Marketing and Trade	- Develop private sector-led marketing system for agricultural inputs and products.
Pilot investment	Agricultural and rural finance (including Rural Investment Fund)	-Establish sustainable rural finance system to improve smallholders access to credit and other financial services.

Source: Government Republic of Zambia (GRZ) and United Nations Development Programme (UNDP), 1997

The performance of ASIP has been mixed (MAFF, 1998). In 1998, a mid-term Review of the programme was undertaken. This review revealed serious imbalances in the role of the public vis-à-vis that of the private sector. ASIP had become a government programme focussed on policy and institutional improvements, public investment and pilot investment schemes components. The private sector development component had not taken off. A refocusing of the programme to optimally utilize the resources, has since been recommended to involve the private sector more actively in the delivery of agricultural services. The ASIP Consultative Forum has been created to foster the public/private sector partnerships in implementing the agricultural policy.

The Food Reserve Act and the Agricultural Credit Act were passed in 1995 as a means to reaffirm government commitment to market liberalization. The Acts emphasized the building of the capacity of the private sector through institutionalized assistance and the promotion of joint ventures between public and private sectors to tap the potential complementarity between the two sectors in service delivery. The Food Reserve Act provided for the establishment of the Food Reserve Agency.

The Food Reserve Agency (FRA). The FRA was established as a statutory body to manage the national food reserve. The FRA was set up to: (I) purchase maize in the domestic market for the National Food Reserve; (ii) manage and administer Government-owned storage facilities; (iii) collect market information on grain trading, processing, stocks and prices and disseminate such information; (iv) introduce weighing and grading standards; (v) establish and conduct a programme for annual registration of traders and processors of designated commodities; and (vi) maintain proper accounts of all transactions and submit them to government.

The collection and dissemination of national and local market information is the responsibility of AMIC. FRA collects information on prices, status of crops and stocks in the neighbouring countries and world market data to help identify potential import/export possibilities. However, in recent years FRA has been collecting information on domestic prices.

Fertilizer Marketing as a Tool for Redressing the Imbalances in Services Delivery In 1997, and 1998, Government got involved in fertilizer marketing through the FRA. Indications are that Government will be involved in the supply of fertilizer through the FRA in 1999/2000 season. A tender of 80,000 metric tonnes has already been floated by government for the 1999/2000 season programme. The public sector involvement in the fertilizer market is based on the duality of the agricultural sector and the imbalances in agricultural services delivery and the perceived limited capacity of the private sector to serve smallholder farmers with a locational disadvantage.

There are some limitations in some of the targeted programmes of the past under the government fertilizer for maize programme implemented by FRA through Omnia Small Scale Limited, a private sector firm. Figure1 shows that more of the government fertilizer was allocated to some provinces than was required for the area under maize under the 1998/99 FRA fertilizer programme(ACF,1999). In contrast, some provinces received less fertilizer than was required for the area under maize. The Central Province, with less than 15% of the total area under maize in Zambia, received the highest fertilizer, 25% of the total fertilizer allocated under the FRA programme.

Figure 1. Fertilizer Allocation vis-à-vis Maize Area Per Province under the 1998/99 Fertilizer Allocation Programme
Source: Omnia Small Scale Limited

Similarly, Copperbelt, Lusaka and Northern provinces were allocated a higher proportion of the government fertilizer than the proportion of the area under maize. In contrast, the Eastern Province was allocated 17% of the government fertilizer against a proportion of total area under maize of 31% and Southern Province received only about 10% of the fertilizer under the government programme when it accounted for 25% of the total hectarage under maize in Zambia. A similar pattern is observed for Western and Northwestern Provinces. These disparities between the proportion of the fertilizer allocated to a province and the proportion of the area under maize may be partly due to that the Central, Copperbelt, Lusaka and Northern Provinces act as off loading centres for other provinces. However, there is room for improving the targeted programmes in order to facilitate the ability of the economically viable smallholder farmers, especially in the outlying areas to realize their potential.

Privatization of Agricultural Parastatals As part of the market reforms government has facilitated the privatization of agricultural parastatals. Agricultural parastatals have been privatized under the Privatization Act No. 21 of 1992 by the Zambia Privatization Agency (ZPA). The modes of privatization were; (a) public floatation of shares by offering the shares to a wide spectrum of investors; (b) management buy outs, where serving workers of a company to be privatized are given the first right of refusal to purchase shares; (c) private sales through negotiated or competitive bids; (d) offer of additional shares through state owned enterprise to reduce government share holding; (e) sale of assets and business of the state owned enterprise; (f) reorganization prior to sale; (g) lease and management contract and any other method the agency considered appropriate. Based on these modes, agricultural parastatals have been privatized as shown in Table 2.

Most parastatals have been privatized through competitive bidding or through pre-emptive rights approach of selling to minority share holders (Mwape, etal, 1998). There is continuity in supply of services when parastatals were sold through these methods. On the other hand, liquidation or failure to dispose off the parastatal creates a vacuum in service delivery. For instance, the liquidation of Lima Bank, whose mandate was to provide credit to small scale farmers left a major gap in the credit services delivery. Non operational parastatals also became a major problem to privatise because of their being less attractive, and also characterized by legal complications i.e. Mwinilunga Cannery, and Zambia Agricultural Development Limited farms.

An in-depth analysis of the impact of the parastatal reform is however constrained by inadequate data. Follow-up monitoring mechanisms instituted to ascertain the impact of these reforms are limited. What is clear however is that privatization of parastatals left a gap in agricultural services delivery that needed filling up.

TABLE 2 PRIVATIZATION OF AGRICULTURAL PARASTATALS IN ZAMBIA

Parastatal Name	Key Activities	Mode of Reform
Dairy Produce Board (DPB)	**Milk processing**	**Broken into units and sold through competitive bidding**
Lint Company (LINTCO)	**Cotton production extension, marketing and processing**	**Broken into two units, one with ginnery in Chipata sold to Clark cotton and the other sold to Lonrho through competitive bidding**
National Tobacco Company (NATCO)	**Tobacco marketing and processing**	**Broken into two units , one sold to tobacco farmers association and the other through competitive bidding**
Zamseed	**Production and marketing of seed**	**Earmarked for restructuring**
Lima Bank	**Agricultural credit**	**Liquidated**
Cold Storage Board	**Beef processing and marketing**	**Broken into 22 units and sold through competitive bidding**
Zambia Pork Products	**Marketing and processing of pork products**	**Competitive bidding**
Kawambwa Tea Company	**Production and marketing of tea**	**Competitive bidding**
Zambia Coffee Company	**Production and marketing of coffee**	**Competitive bidding**
ZAMHORT	**Marketing and processing of horticultural products**	**Competitive bidding**
Zambia Sugar Company	**Production, processing and marketing of sugar**	**Pre-emptive rights , 30% of shares sold through public floatation**
Parastatal Farms, Lukanga Investment and Development , ZADL, Nchanga Farms, Memaco Farms, Zambia Cashew Co .	**Production of crops and livestock**	**Competitive bidding and pre-emptive right and a few still unsold**
Oil Processing Companies	**Processing and distribution of edible oil and related products**	**One sold by competitive bidding and the other liquidated**
Mwinilunga Canneries	**Marketing and processing of pineapples**	**Offered for competitive bidding but not sold**
Nitrogen Chemicals of Zambia	**Fertilizer Production and importation**	**Not Privatized**

Source : Zambia Privatization Agency, Progress Report Nos. 2-9.

IV. PRIVATE SECTOR RESPONSE TO MARKET REFORMS

Government policies of the past suppressed private sector initiatives and growth. Thus, in Zambia, the private agricultural sector is relatively young. The sector is made up of specialised peri-urban capital and labour intensive producers of vegetable and flowers mainly for export, and agribusiness that took over parastatals.

Agribusinesses are mainly commodity-based. There is underutilised capacities due to high risk of operations from large investments to transform parastatals and to enter the export markets. A coping strategy to this high risk is through wider coverage. For instance, Lonrho, that took over LINTCO, the cotton development parastatal, has had a massive expansion programme and thus a huge captive area. The number of small-scale farmers involved in outgrowing/contract farming has increased to 180,000 in cotton production. There are 1500 small holder growers in paprika production and 6000 in tobacco production.

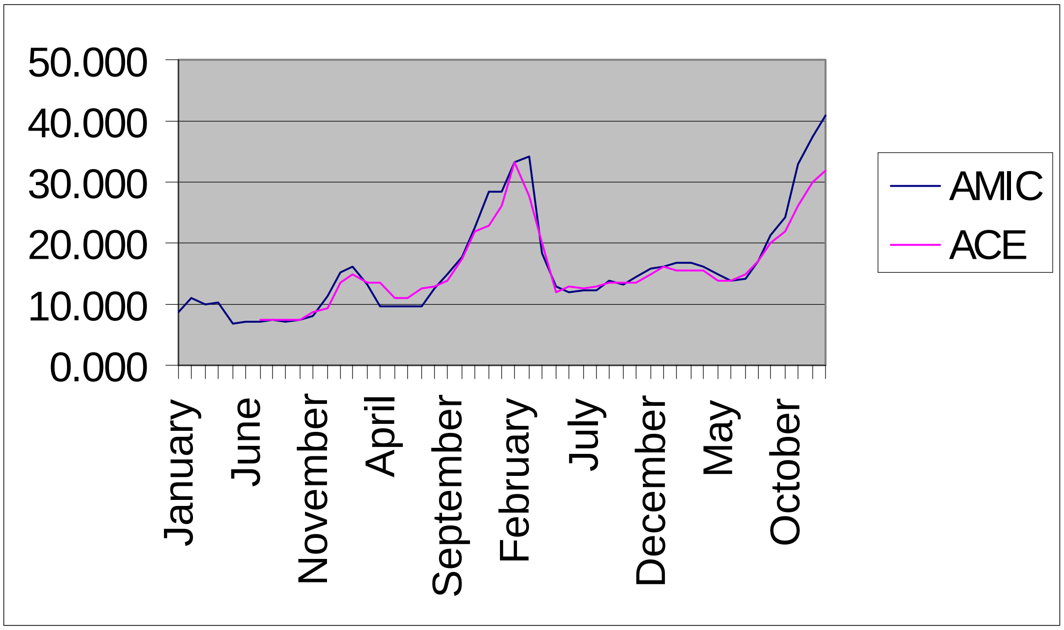
The Agribusiness Forum An Agri-Business Forum (ABF) was created in 1997 to work with government in promoting the role of the private sector in agriculture. The forum comprises of outgrower operators and other agribusiness companies.

Diversity in Contractual Arrangements As a response to the policy of liberalization, the private sector has developed more diverse and sophisticated contractual arrangements. Some examples are outgrower schemes, forward contracting and futures. Forward contracting is not transacted through commodity exchanges and do not entail legally binding contracts. Futures contracts are transacted through commodity exchanges and involve fixed timeframe, tonnage and specifications of the commodity, the parties pay insurance and the contract is legally binding. The contractual arrangements under outgrower schemes lead to small scale farmers increasingly becoming viable, sustainable partners in outgrower schemes. This is achieved through strengthened supervision of small scale farmers by outgrower operators. However, the lack of an adequate legal framework is an important constraint leading to the emergency of 'commodity raiders'.

Establishment of Commodity Exchanges As part of the private sector response to agricultural market reforms, agricultural commodity exchanges have been established. The Agricultural Commodity Exchange (ACE) was set up in Lusaka in 1996 and the Kapiri Commodity Exchange (KCE) was set up in Kapiri in 1997. The commodity exchanges provide centralised trading facilities for buyers and sellers of agricultural commodities and inputs, and regular price information of traded commodities and estimates of futures price based on the SAFEX, Randfontein futures price, adjusted for transfer costs to Zambia.

The ACE and KCE provide agricultural traders a market place that is transparent, efficient and low cost. The emphasis of the commodity exchange has so far been on spot market transactions for immediate delivery and cash basis. About 1.5 percent of the domestically produced marketed maize passes through the ACE. The ACE and KCE, though accounting for a relatively small share of the market, provide an alternative to the traditional methods for exchanging commodities. The commodity exchanges have become an integral part of the market, with potential for growth and prominence. The transparency in which prices are quoted on the commodity exchange, instils a sense of confidence in the open market place by market players. Confidence is an important benchmark for the efficiency of a market. ACE wholesale maize prices and Lusaka spot market prices are closely related (Figure 2).

Figure 2 ACE Nominal Wholesale Maize Prices and Lusaka Spot Market Prices



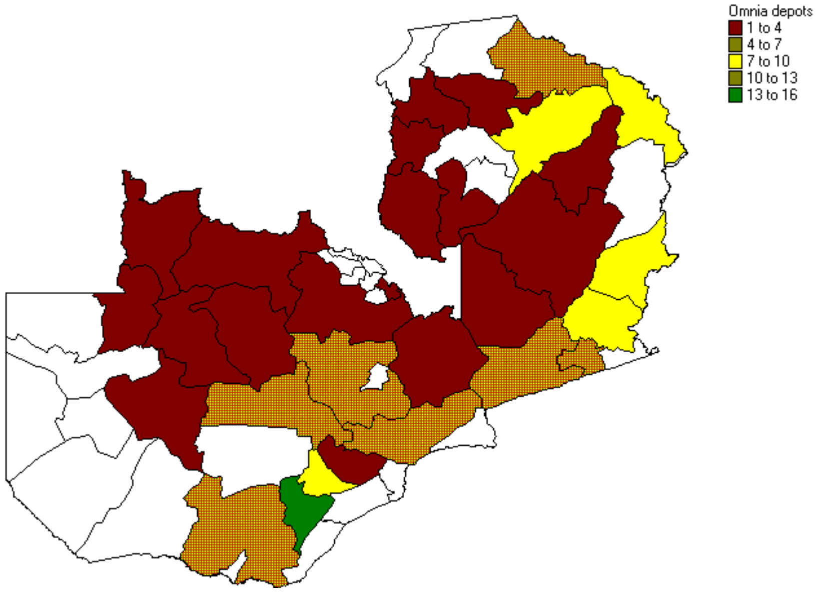
Source ACE and Agricultural Market Information Centre (AMIC)

To maximize the benefits from a commodity exchange, in terms of food security and market stabilization, the ACE and KCE are moving to forward contracting. This would minimise the gap between import and export parity prices. Forward contracting involves the establishment of prices outside the commodity exchange. This allows for direct bargaining between the buyer and the seller. When the import parity is high the farmer signs up with the miller. When the import parity is low the farmer bargains with the miller for a higher price. Unlike in futures, forward contracting provides for some flexibility that permits continuous bargaining. The end result is a reduced margin between the import and export parities. Forward contracting also enhances market stability and facilitates forward planning, especially for millers, as long as the market remains liberalized.

Expansion in Small-Scale Milling and Trading Sectors Since 1993, large scale millers have lost a large proportion of their market share to small-scale millers. Hammermills now account for 60% to 70% of maize milled in urban areas GRZ/FAO, 1996). With the liberalization and removal of monopoly of large scale millers, hammermills have become an alternative source of mealie meal, and thus provide competition to large scale mills. Hammermills owners, also buy maize directly from farmers and traders and supply large scale mills. These small-scale traders have provided for flexibility to consumers to buy maize, as grain and also as mealie meal.

Fertilizer Marketing A number of private companies have responded to the Government's policy of market liberalization and have established marketing channels parallel to those of Government. These companies initially concentrated their efforts on serving commercial farmers due to the fact that commercial farmers possessed the liquidity and access to credit that facilitated procurement of fertilizer. However, some of the private companies, such as Omnia Small Scale Ltd, established specialised divisions, that serviced small scale farmers. The major private fertilizer distribution companies operating in Zambia are Sasol Ltd., Omnia Small Scale Ltd., and Kynoch Ltd. These companies operate their own depots and sell fertilizer directly to farmers and other fertilizer dealers. The private fertilizer distribution companies have also supplied fertilizer to Government and outgrower companies on a commercial basis. The private fertilizer distribution companies distributed 5% of the total fertilizer marketed during the 1992/93 season. This amount had increased to 45% by the 1996/97 season.

FIGURE 3 - OMNIA DEPOTS

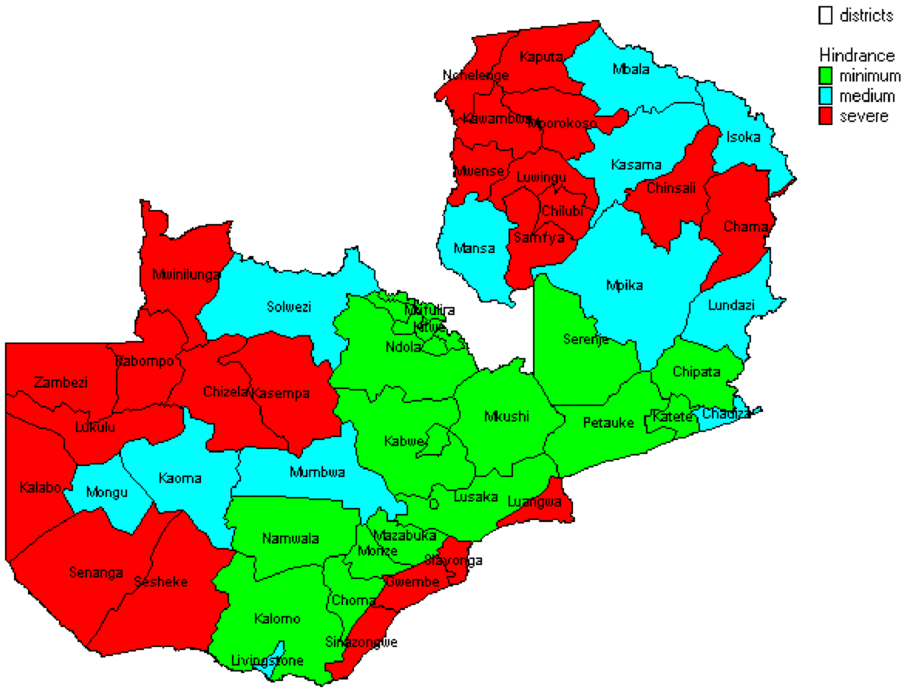


Source, ACF, 1999

However, private sector direct presence and dealer networks are mainly along the line of rail, except for Omnia Small Scale Limited with elaborate infrastructure in Southern, Eastern, Lusaka and Central provinces. The Southern, Central, Lusaka, Eastern and Copperbelt provinces which account for 80% of food production in Zambia are by and large better serviced by the private sector (ACF, 1999). There are however pockets within these areas that the private sector cannot service given the duality of the agricultural sector. The main problem areas for private sector service delivery are Luapula, Western, Northwestern and Northern provinces.

Hindrance factors showing the degree of difficulty in trading fertilizer are summarized in Figure 4. Based on these hindrances, 85% of the national demand can be serviced through the private sector (ACF, 1999).

FIGURE 4- HINDRENCE IN TRADING FERTILIZER



Source, ACF, 1999

The private fertilizer distribution companies are gaining importance in the overall fertilizer distribution network. It must be noted, however, that all the private sector fertilizer distribution companies are multinationals. Consequently, these companies are able to draw funds from external financial sources via links with their sister companies. These companies are therefore able to avoid borrowing locally, and thus avoid the high interest rates associated with local borrowing but are not shielded from the changes in the exchange rates.

The private sector view the recent Government involvement in the fertilizer market as dampening their participation in the market. This perception may crowd out the private sector. But does the private sector have the capacity to meet the challenge of marketing fertilizer especially to small scale farmers? The private sector has the potential to meet effective demand on cash or barter basis wherever it exists (ACF, 1999). It can take up the challenge of fertilizer marketing to small-scale farmers if accorded the opportunity to do so. The key challenge in fertilizer marketing in Zambia is how to break this vicious circle on public/private sector roles in the agricultural markets, arising from the mixed signals from government and the mutual mistrust between public and private sectors in their role in the fertilizer market.

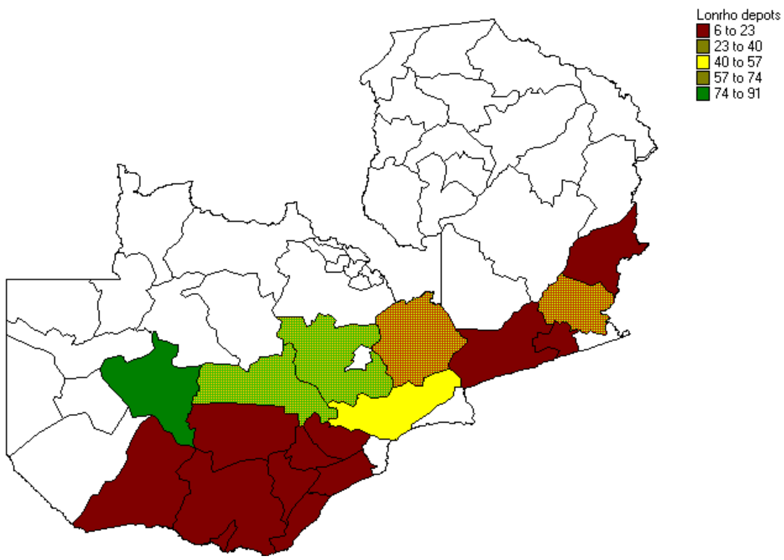
Oligopolistic Market Behavior In general common marketing margins of 40% to 50% are observed in Zambia, given production is more scattered, supply is confined to a one major crop season, long distances and less developed infrastructure (GRZ/FAO, 1995). This is consistent with findings in other countries with similar characteristics (Mellor and Ahmed, 1988). However, in areas where infrastructure is relatively developed and private sector networks have developed, there is high market concentration and oligopolistic market behavior. The leading four firms backed by international trade houses control 40% or more of the total Zambian agricultural market (MAFF/ASIP, 1997). Pricing decisions of the leading traders can therefore be interdependent and the firms recognize the mutual interdependence in profit levels. As a result, cooperative strategies may be followed so that even without formal collusion, the desire to maximize the collective profits may lead to pure monopoly prices driven by excessive arbitrage to cover the high transaction costs and inefficient marketing. Consequently, farmers in these areas may receive low prices and pay high input prices and high consumer prices. This would increase their indebtedness and food insecurity. The Zambia Competition Commission, established as an antitrust tool, to promote more competitive market behavior, may however help redress this distortion in Zambia's agricultural markets.

Outgrowers Private sector interest in outgrowing has been on an increase since 1991. The response is partly due to the need to fill in the vacuum left by the collapse or privatization of public sector organizations. Many outgrower schemes are involved in the production of traditional smallholder commodities of tobacco and cotton, new export crops such as fresh vegetables, paprika, castor seed and food crops, maize, sunflower, soybeans, cowpeas, groundnuts and sorghum.

Outgrowers are driven by the: (1) comparative advantage in production and marketing that accrue to smallholders; (2) need to effectively provide inputs, extension and marketing services to help small scale farmers diversify; and (3) donors who use outgowers as a tool for targeting vulnerable groups of farmers.

There are about 30 outgrower schemes operators operating 53 schemes in Zambia (MAFF 1997). The schemes are highly concentrated in terms of location. About 50% of the outgrower schemes are located in two provinces, Eastern and Central. About 80% of the schemes are located in just four provinces. There are about 190,000 small scale farmers served by outgrowers. The majority of these are served by Lonrho cotton.

FIGURE 5. - LONRHO MAP



Source, ACF, 1999

The main advantage of implementing outgrower schemes is that small scale farmers are able to gain an advantage in production and marketing. Outgrower schemes also facilitate the efficient and effective provision of inputs, extension services, and marketing services to small scale farmers. The objective of crop diversification is also achieved through outgrower schemes. However, most outgrower schemes have started without adequate research, staffing, finance, and management skills. This has resulted in: (a)a long and expensive learning curve for operators; (b)poor recovery rates and creation of defaulters; and © loss of hard earned scarce capital and business integrity.

The Role of NGOs As a result of reforms, the number of NGOs operating in agriculture have increased. Many NGOs are operating development programmes with components of agricultural services delivery designed to fill in the gap left by government agencies. Some of these are Programme Against Malnutrition (PAM), Africare, CARE, World Vision International, Riverside Development Agency and Cinci wa Babili.

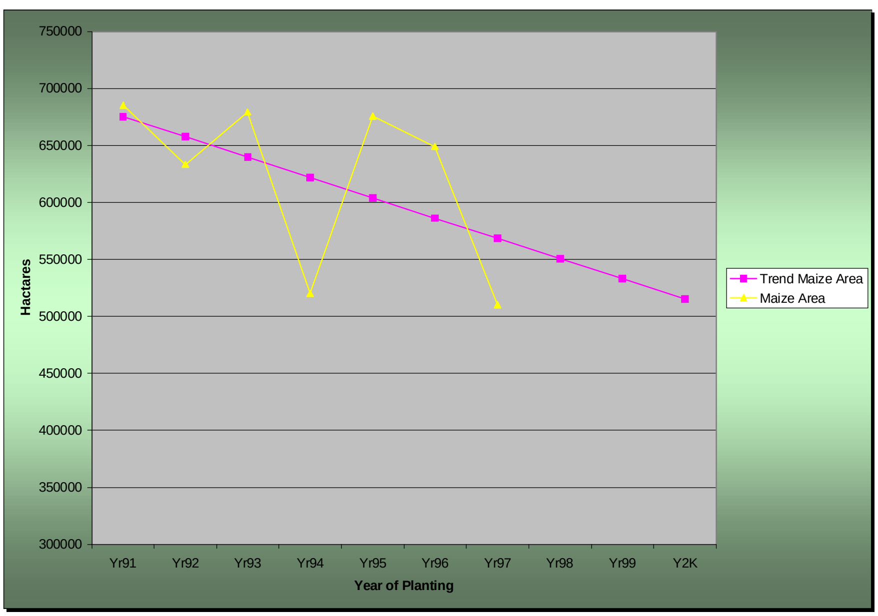
The outreach of the NGOs is fairly wide and they are able to service a high number of small scale farmers around the country. The growth of NGOs in the delivery of services to small scale farmers can be partly attributed to the folding of a number of public institutions. It is expected that the intervention of NGOs in the delivery of agricultural services to smallholders will grow until private sector institutions begin to take advantage of opportunities that exist in agricultural markets. However, a number of NGOs are reliant on grants. In addition, some of the NGOs have high subsidy dependency ratios, thereby, resulting in most of the NGOs not being sustainable. Consequently, the participation of most NGOs in the delivery of agricultural services to small scale farmers may be transient.

V. FARMING SECTOR RESPONSE - COPING STRATEGIES

Crop Diversification Regionally differentiated pricing has made maize production in some remote parts of Zambia uneconomic. As a coping strategy, and in response to the government programme of diversification, farmers are diversifying into the crops most suited for their respective areas. There is growing demand for seed for traditional, drought-resistant, non-fertilizer demanding crops such as sorghum, millet and non-traditional export crops such as soybeans, sunflower. The production of roots and tubers has increased. There is more internal trade in roots and tubers and these crops have moved form food security to cash crops. The production of exportable high-value crops is expanding given conducive market prospects and outgrower programme. The share of agricultural exports in total non-traditional exports increased to 33% in 1997 compared to 23% in 1995 and 1996(MAFF1998).

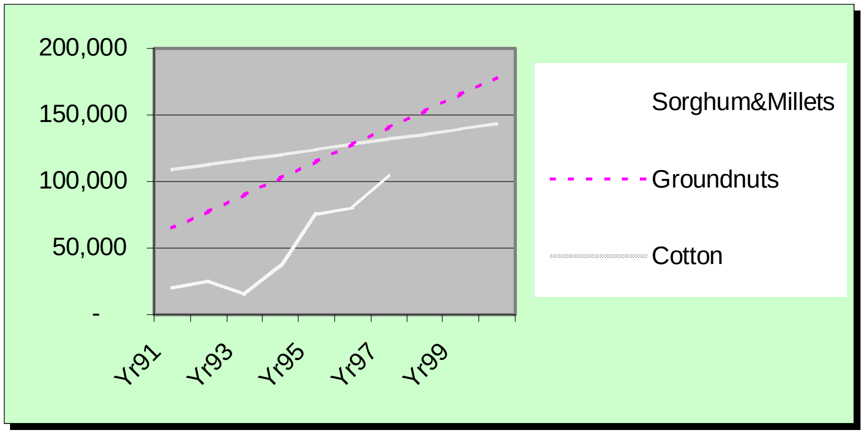
Combining the maize trend with the trend of other food crops and cash crops illustrates the shift in Zambia's agriculture after liberalization, as a coping strategy by farmers as shown in Figures 6 and 7 below.

Figure 6 Maize Area Trend



Source ACF, 1999

Figure 7 Sorghum & Millets Groundnuts and cotton Trends



Source ACF, 1999

Formation of Farmers Associations There is renewed interest in formation of farmers' associations as a coping strategy to attract production and marketing services. More than 70,000 farmers belong to groups or associations. Both government and private sector are involved in the promotion and creation of farmers as they have potential to be economically viable and sustainable entities under the liberalized market. Government is stimulating and encouraging the formation and development of farmer-owned and controlled organizations. This is through encouraging and promoting the formation of local farmer organisations, supporting farmers organizations in their role of meeting the needs of their members, encouraging organizations to provide input delivery, crop marketing, credit, training and advisory services to their members. The new Co-operative Act is increasingly being used as a tool for facilitating the formation of Co-operatives as organized clients for agricultural service delivery.

VI. WINNERS AND LOSERS OF MARKET REFORMS

The transition to liberalization has had mixed results on the market participants as shown in Table 3 below. There are winners and losers and those with mixed experiences. The key winners are those value-adding through processing and trading especially for the export markets. The liberalization of markets, including financial markets and removal of exchange controls provide favourable business opportunities for this group. On the other hand, liberalization of markets and the phasing out of subsidies and other entitlements from government, and the increased market competition, led quasi government bodies into losers. As a result, most of these have, as discussed above either been liquidated or privatized. In addition, the dualistic nature of agriculture in terms of location, disadvantages the farmers in remote areas. The transporters, centrally located food growers, consumers and commercial banks have had mixed experiences because of mixed signals from liberalization.
Free market prices under market reforms were expected to yield substantial gains in economic efficiency through more efficient structure of production and consumption. There are efficiencies in processing methods and improvements in management following the privatization and production is getting stable given the diversity in production patterns. Contribution of food processing and textiles has been rising since the early nineties. Agricultural processing accounts for one half of industrial processing. Textiles rose from 66.4% in 1990 to 73.8% in 1997 (MAFF, 1998).

Farm incomes for small and medium scale farmers rose in 1995 and 1996 by 7.5% and 8.5% respectively (MAFF, 1998). However, severe food insecurity increased for all socio-economic groups between 1991 and 1993. Households from medium cost and medium scale farmers had the highest increases in the levels of severe food insecurity (Hambai, etal, 1995). These changes in food insecurity are related to the beginning of rigorous structural adjustment programme (SAP) in 1991. SAP involved liberalization of markets and phasing out of subsidies on both agricultural inputs and on maize. As a result of reforms, prices of inputs and food, especially maize, increased and began to vary by season and region. Households participating in market-oriented activities were more adversely affected. Specifically, medium scale farmers, faced a large increase in input prices, whilst the market for output, especially for those farmers in outlying areas, was no longer assured. High transfer costs in the outlying areas led to lower prices. The combined effect of high cost of production and low output prices is a sharp increase in severe food insecurity. For the period 1993-1996, there was a decline in levels of severe food insecurity. The decline in levels of severe food insecurity ranged from 26-46% in urban areas and 11-29% in rural areas (GRZ/CSO, 1996). Though reforms were introduced in 1991, additional changes pertaining to rural areas were put in place after 1993. Agricultural lending institutions which acted as a source of credit and as buyers of last resort, were liquidated. These changes together with the tendency for farmers to lag in the adoption of technical innovations and recommendations, than other socio-economic groups, explain the lower decline in severe food insecurity in rural than in urban areas. On the other hand urban households have adapted and recovered from the external shock of the adjustment, though the recovery is lower for low cost households.

There are however benefits to national food security from liberalization. The key benefit is overall increase in the value of agricultural production and an increase in the capacity to source food either from local production or through imports using the export earnings. As noted above, the share of agricultural exports in total non-traditional exports has been increasing, showing a rising trend in agriculture's contribution to export and balance of payments (MAFF, 1998). However given the big difference between import and export prices, the Zambian maize market is likely to remain unstable. Strategies should therefore be worked out to mitigate against these fluctuations. One tool for price stabilization is the use of an effective stocking policy.

TABLE 3 WINNERS AND LOSERS OF MARKET REFORMS

Winners	**Losers**	**Mixed Experience**
Small micro processors	Large industrial mills	Local transport companies
Export crop producers	Remote area farmers	Centrally located food growing farmers
Small/large traders	Co-operatives	Consumers
Corporate agribusiness	Lima Bank, CUSA, ZCF	Commercial banks
Reasons ➢ Elimination of market and price controls ➢ Relaxation of import and export controls ➢ Access to and retention of foreign exchange ➢ Privatization and leasing process ➢ Specialized finance and technical assistance	Reasons ➢ Elimination of market and price controls ➢ Loss of official privileges and subsidy and recapitalization entitlements ➢ Higher transport costs ➢ Increased market competition	Reasons ➢ Elimination of market and price controls ➢ Increased market competition ➢ Wider range of available foods ➢ Growth of public markets and informal food trade ➢ Food imports ➢ Financial market deregulation

Source MAFF/FAO, 1996

VII. CONSTRAINTS TO OUTPUT MARKET REFORMS

The transition to liberalization has experienced some constraints. These are however less prevalent than the achievements. Nevertheless, it is important that they are addressed in order to sustain the momentum of reforms. These constraints relate to policy, financing and information. If not addressed these constraints limit the impact of reforms on food security and incomes especially for the resource poor households in remote areas, and may derail Government commitment to the process and frustrate the consolidation of the reforms.

Mutual Mistrust Between Public and Private Sectors Overall, there is mutual mistrust between the private and public sectors leading to conflicting signals in implementing the agricultural marketing policy reforms. The private sector seemingly lacks confidence in Government resolve not to interfere in agricultural markets, and Government does not trust the private sector capacity to meet market demand for produce and inputs. Such mistrust and uncertainty has, in the past, almost always led Zambian policy makers toward more controls.

As part of the policy of liberalization, the public sector was to cease to participate in the procurement and distribution of fertilizer. However, the public sector continued to participate in the fertilizer market. This has tended to send mixed signals to the private sector and may have slowed down the full participation of the private sector in fertilizer marketing. The public sector position has been that the private sector does not possess the capacity to effectively supply fertilizer to the small-scale farmers, especially in the outlying areas. But the public sector role may have slowed down the private sector capacity to assume the role of financing, importing, and distributing fertilizer to rural areas.

The mixed signals from the public sector form the premise for the perceived duality of serious imbalances in input supply across districts. From the stand point of many government officials, empirically this justifies public sector participation in the market. This presence is perceived by the private sector as constraining their expansion and may have reduced the ability of farmers, especially those in outlying areas to adapt and adjust their farming practices to liberalization. Such presence may have also crowded out financially realistic and effective private sector credit and barter arrangements.

Weak enforcement of existing legislation The enforcement of the legislation that support the private sector development is weak. The legal process for enforcing the contract law is very slow. Thus, those under commercial contracts are not well protected. Litigation is lengthy at times more than 3 years before judgement is made. In this environment the use of commercial contracts as a tool for trading in the Zambian context is very risky.

The passing of the Agricultural Credit Act is a very welcome development. The Act provides for value, interest rate and charges, fees or penalties that should form part of any transaction entered. In addition, the Act spells out the obligations of the borrower i.e. the farmer, and the lender i.e. a credit institution and also protects outgrower operators by allowing input suppliers a lien over the crop and provides for associated offences for crop raiders (crop piracy, buying from farmers who have taken out loans from other traders) and defaulting farmers. However, the enforcement of the Act is very weak. The key level for effective enforcement of the Act is the district but the charge registers are not well established at this level and thus limiting the ability of the lenders to register charges and buyers to ascertain the indebtedness of the potential borrowers.

The existing legal framework, especially the Agricultural Credit Act and Contract Law enforcement is inadequate to facilitate successful outgrower schemes because of the following reasons: (a)the register for charges on agricultural crops has not been established in all districts; (b) crop raiders can operate without any hindrance; and © lack of title deeds to land among small scale farmers encourages defaulting and failure to abide by contracts.

Limited Storage Facilities The non seasonal differentiation of prices and public sector presence in the market may have constrained the farmers from investing in storage. Such investment was uneconomic as storage was the responsibility of the public marketing agencies. Following liberalization, accessibility to public storage facilities by the emerging small scale millers and traders was limited because such facilities were not optimally located and also not well maintained. Farmers, processors and millers need storage to take advantage of the temporal arbitrage.

Limited Market Infrastructure. Lack of proper organization, commitment and poor management of the markets are the key constraints to the development of public markets as a marketing infrastructure. In addition, the poor state of roads, including feeder roads, and rail infrastructure increases transport costs, reduces market accessibility, suppresses farmgate prices and translates into high transaction costs. The freight rates for Zambia are about twice the international comparable rates (MAFF/FAO, 1996, MLIS).

Financing Constraints. The emerging private sector in Zambia has limited capacity to provide the financial resources for the importation of the nation's commercial imports. This is partly because of the limited collateral they posses and also due to high collateral demanded by commercial banks. Some banks ask for 100% of the value of the commodity. This reflects the historically high default rates in the agricultural sector. In 1996, Government set up a Maize Credit Import Facility to provide the financing for maize imports. The Fund collapsed because of financial undiscipline . Similar funds, such as Marketing Credit Revolving Fund, Agricultural Credit Management Programme, have also not succeeded. Overall, improved financing for maize marketing depends on a stabilized macro-economic conditions and removal of price distortions in the market.

The weak enforcement of the Credit Act discussed above has led to financial undiscipline in the credit market. The *'It pays not to pay back'* syndrome that has developed over the years is a very unfortunate phenomenon that is likely to constrain the successful implementation of future credit programmes.

Indirect production and marketing subsidies. These are in form of outstanding debts and cost government US$150 million from 1993-1996 (ACF,1999). These subsidies have the long term effect of artificially limiting private sector entry into the market and thus constraining the optimal allocation of resources through the market mechanism.

Limited Market Information - Adequate and accurate market information is a critical factor for farmers, traders and government officials to plan and make correct decisions. The AMIC and the National Agricultural Information Service (NAIS) which collect and disseminate information have not been adequately funded. This has limited the ability of these two modes of information dissemination to reach the small-scale farming sector.

Dependency Syndrome and Immoral Business Practices Following decades of controls, some private sector operators still posses a dependency syndrome and tend to lobby for the maximization of short-term benefits through subsidies and some form of protection from the policy of liberalization. These tend to dent the image of the private sector commitment to taking advantage of the enabling policy environment under market reforms.

The 1993 Government-initiated programme on leasing out grain storage facilities to traders had less than *appriori* expected results. Trading companies were unable to provide the finances for purchase of crops. Thus, Government had to provide credit to principal buyers. These buyers however defaulted as they could not monetise their maize. Subsequently, government was forced to repossess the stocks of 189,000 mt of maize and used it as reserve. Thus, private sector failed to take advantage of an enabling environment to thrive.

The maize market has also been characterized by immoral business practices by some private sector traders cheating farmers through excessive spatial arbitrage, offering very low prices and in some cases not paying farmers for their produce. This can have long lasting effect on the farmer in terms of lack of confidence in a liberalized market.

Data Constraints In-depth analysis of the effects of market reforms on farmer and consumer welfare is limited by lack of adequate and accurate data. These uncertainties tend to form the premise for government intervention in the sector.

VIII. CONCLUSION AND RECOMMENDATIONS

The consolidation of agricultural reforms in Zambia should begin with a strong information programme designed to sensitize the potential beneficiaries of liberalization to appreciate and take advantage of the benefits of liberalization. Coming from decades of controls by government, liberalization is a new concept to Zambia which must be fully explained if it is to be appreciated. Thus, information packages on implications and benefits of liberalization should be developed for farmers, bankers, transporters, millers, traders, technocrats and politicians.

The 'it pays not to pay back' syndrome should be overcome through the development of suitable institutional and legal framework that would promote effective transactions in the rural financial market and developing prudential regulatory norms for efficient operation of the rural financial institutions to improve efficiency and outreach to rural people (MAFF 1997). In addition, there is need to reinforce the mechanisms for enforcing the existing legislation. This should involve fast track judgement by courts on commercial contracts in agricultural commodities, which if delayed can lead to enormous costs.

Government macro-economic programme of market liberalization and removal of price distortions in the market are critical in improving the financing of agricultural commodities. However, the macro-economic programme cannot in itself, in the short run, generate immediate and adequate private sector response to fill in the gap left by government withdrawal from agricultural markets. Special programmes are required to effectively involve the private sector in agricultural services delivery. These should focus on factors that hinder private sector involvement in agricultural markets. In addition, targeted programmes to address the needs of those displaced by reforms are important. These may involve subsidized barter. Such schemes should however be sustainable, promote private sector development and facilitate better access to markets by farmers with a locational disadvantage.

Mixed signals from government on its involvement in the market slows down the process of involving the private sector in the agricultural markets. The private sector takes time to gain confidence in new government policies and in the continuity and stability of the new policy. Uncertainty about the actions of government therefore constrains private sector participation in the market. Thus, clear and consistent policy signals from government form an integral part for consolidating policy reforms in Zambia.

The private sector should refrain from practices that perpetuate their dependence on government programmes and should instead focus on developing their capacity to meet the challenge of services delivery in a liberalized market. Business ethics should closely be followed by the private sector if they are to be seen by farmers as genuine commodity traders and not commodity raiders.

The most cost effective and technically sound tool to improving the delivery of agricultural services to farmers is through stimulating and supporting the sustainable development of the private sector. This requires the development of collaborative mechanisms that mutually benefit both farmers and marketing firms. Concerted efforts by both private and public sectors on infrastructure investment on smallholder production, mechanisms for improving access to agricultural services, including market information, on a sustainable basis, instituting of contractual enforcement measures and strategies for optimizing the utilization of processing capacity, form the critical path for consolidating reforms in Zambia.

Lastly, there is an absolute need to strengthen the data base to permit detailed analysis on the duality of the agricultural sector and the perceived imbalances in the delivery of agricultural services countrywide and the limited capacity of the private sector to serve smallholder farmers with locational disadvantage. This empirical evidence is critical in consolidating reforms in Zambia.

REFERENCES

ASIP Consultative Forum (ACF) *Proposed Marketing Mechanisms for Fertilizer for !999/2000 Season*, 1999, Lusaka, Zambia.

Food Reserve Agency *Futures and Options Trading in Zambia:* A review of the potential for price and commodity risk management using international commodity futures and options for millers, traders, producers and the Food Reserve Agency in Zambia, FRA Research Note No. 4, Food Reserve Agency Lusaka, April, 1999.

Government Republic of Zambia (GRZ), *Zambia Economic Report*, Lusaka, Zambia, 1990

__________ *Evaluation of the Performance of Zambia's Subsector*, Lusaka, Zambia, 1991

__________CSO, *Living Conditions Monitoring Survey*, Lusaka, Zambia, 1996.

__________ *UNDP Smallholder Farm Systems Diversification,* Lusaka, Zambia, 1997.

Hambayi M.N. Kasonde P. Kaite C. Ratta A. Kumar S. *The Nutrition and Household Food Security Analysis of Zambia, Priority Survey II,* Study Fund, Social Recovery Project, Lusaka, Zambia, 1995.

Katepa, M.P. *Price Controls and Fertilizer Subsidies: A Partial Equilibrium Analysis of the Zambian Corn Sector,* MS Thesis, Department of Agricultural Economics, Purdue University. Mellor W. And Ahmed R. (Eds), Agricultural Price Policy for Developing Countries. The John Hopkins University Press, Baltimore, London, 1988.

Ministry of Agriculture, Food and Fisheries (MAFF) *Crop Forecasting Report,* Lusaka, Zambia, 1994

___________FAO Market Liberalization Impact Studies, *Maize Marketing Margins*, A Preliminary Analysis of the Effeciency and Profitability of Private Maize Trade During the 1994/95 Maize Marketing Season, Lusaka, Zambia, 1995.

___________FAO Market Liberalization Impact Studies, *Zambia from Transition to Consolidation*, A Crtical review of the Liberalization of Maize and Input Markets, 1993-1996.

___________ *ASIP Rural Finance Subprogramme*, Effective and Sustainable Rural Financial Services, 1997.

___________*ASIP Mid Term Review Report*, Lusaka, Zambia, 1998

___________USAID Crop Forecasting Study, Lusaka, Zambia, 1999

Muntanga C.M. *An Evaluation of the Uniform Pricing System for Maize in Zambia*, MS thesis, Department of Agricultural Economics, University of Manitoba, 1984

Mwanaumo. A. *The Effects of Maize Marketing Policy Reforms in Zambia* PhD dissertation, Department of Agricultural Economics, Purdue University, 1994.

Mwanaumo. A. Masters W.A. Preckel P.V. A Spatial Analysis of Maize Marketing Policy Reforms in Zambia, *American Journal of Agricultural Economics: 79 (May 1997): 514-523*

Mwape F. Chibbamulilo P. *The Impact of Agricultural Parastatals Reform on agricultural Development and Food Security in Zambia*, 1998, Lusaka, Zambia

World Bank, *ASIP Appraisal Report*, 1995

__________ *Prospects for Sustainable Growth in Zambia*, 1995-2005, 1996

Zambia Privatization Agency, *Progress Report Nos 2-9*, Lusaka, Zambia, 1997.