

IV Cash Crop Production and Peasant in Southern Zambia

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1. INTRODUCTION

As often cited by development economists, the agricultural sector is expected to play a vital role in the process of economic development. In the current African context of prevailed economic crisis, agricultural development has further significance for improving economic performance. Among scholars and policy-makers alike, there is much agreement that the agricultural crisis is the major structural and policy problem facing Africa today (Gephart 1986: 57). Sluggish record of agricultural output in recent years is the principal factor underlying the poor economic performance of sub-Saharan Africa (World Bank 1981: 45). The argument that the poor performance of African agriculture over the past decade has political roots is shared by commentators of varying analytical hues. The World Bank's Berg Report highlighted the negative effects of excessive state intervention. Robert Bates has identified the political calculus which underlies self-defeating agricultural policies, and neo-Marxists have argued that the peasantry is being dominated and exploited by a state 'bureaucratic bourgeoisie' (White 1986: 1). While they paint a picture of across-the board bureaucratic and political failure in official attempts to develop agriculture, some of the detailed case studies of state involvement in agriculture depict a more complex and ambiguous situation.⁽¹⁾ This reflects the complexity of the factors and causal chains involved in determining agricultural outcomes. The relations between peasants on the one hand and the political and economic

order on the other hand vary both among and within states. We, therefore, have to look more closely at the nature of the interaction between rural producer-sellers and state in Africa today.

In this paper I intend to explore the general issue of state and peasant in agricultural development through an examination of Zambian experience, focusing on a case study of the development of cash crop production in southern Zambia. I shall be concerned, first, to investigate peasant responses to the production opportunities of several cash crops which are under different production and marketing conditions. Second, particular attention is paid to examining the effects of cash crop development on peasant differentiation.

One of the central arguments of this paper is that, although price incentive is important in determining how small farmers respond to opportunities of cash crop production, it alone cannot explain fully the expansion of cash crop production by small farmers. Other factors including non-price incentives, credit availability, ecological conditions and resource base of peasants played an important role in the expansion of cash crop production in southern Zambia.

In the current debate on the relative merits of competitive market versus state controlled market, proponents of free market solution look for the major cause of agrarian failure in the inefficiency of state sector monopolies. Berg Report for instance emphasises that the insufficient price incentive for agricultural producers are an important factor behind the disappointing agricultural growth. For the Zambian case, some studies argue that the price structure which the state enforced through its monopoly control over markets depressed overall agricultural production and

retarded the growth of the emergent farming sector (Pletcher 1986: 612). Although price incentive is often stressed as the most important incentive, "incentive structure" refers to all those aspects of the farmer's environment which affect his willingness to produce and to sell. As such, it includes not only price level but also the efficiency of marketing arrangements, the availability and prices of off-farm inputs and of consumer goods, and the degree of participation in decision-making (World Bank 1981: 52,55). The issue of non-price incentives relates to comparative institutional analysis. Efficiency and effectiveness of development institutions are one of the important determinants of smallholder agricultural development. While the debate about the relative merits of market-directed as opposed to state-directed forms of activity is often based on the traditional antithesis of 'state-market', 'public-private', actual effectiveness of state-controlled agencies vary greatly from one to another and there are cases of mixed results and relative success of parastatal marketing bodies. The Kenya Tea Development Authority (KTDA), for instance, is widely acknowledged to be a remarkably successful public sector enterprise in the field of smallholder agricultural development⁽²⁾. In this paper I will take up the case of Lint Company of Zambia (LINTCO), a case of relative success of parastatal marketing agency.

The second concern of the paper is the implications of commercialization for social differentiation of small farmers. Who are the major beneficiaries of the commercialisation? To assess the impact of development policies, one must analyze the internal dynamics of rural households, and their relations to changing structures of access to resources, market opportunities and political control (Berry

1984).

Social impact of commercialization is important because if major beneficiaries of commercialization is limited to small minority of rural community and many rural households with insufficient resources are unable to respond to new agricultural opportunities, it will frustrate the state goal of increased marketed production and rural development.

Of related concern is the patterns of distribution of development resources at the local level. Some studies of African politics on local level and rural change indicated the importance of the local politics in the course of rural development. According to them, rural development in practice is the result of the interaction between the local structure and the implementation of state developmental strategy. The actual impact of state intervention in rural areas is not comprehensible without reference to the local politics and the social context of implementation (Bratton 1980:6-7). Growth and distribution of development resources typically occur in rural localities in patterns different from those articulated by leadership at the center. Access to resources may still be mediated through relations of kinship, marriage or patronage. The patterns of resource distribution may not result in agricultural development. The paper will show how agricultural credit was distributed at local level and how peasant strategy to evade loan repayment under the difficult situation of drought undermined the financial viability of state credit institutions.

2. ZAMBIAN ECONOMY AND CASH CROP PRODUCTION

At the time of independence Zambia inherited a highly dualistic economy; biased toward production and export of copper, leaving rural areas as a source of labour supply.

Moreover, agricultural sector itself was characterized by a dualism; large-scale commercial farming run by a small number of Europeans and small-scale subsistence agriculture of the majority of African peasant farmers. After independence, successive development plans aimed at diversifying the copper-based economy. However, even after independence most of the peasant farming areas, particularly remote outlying provinces, continued to play a role of labour reservoirs for mines and urban areas. Government encouraged marketed production by peasant farmers through the extension of state-controlled marketing boards. In more developed areas such as Line of Rail provinces where increased marketed production by peasant farmers was seen, officially marketed crop was virtually confined to maize which is the major staple food for rapidly growing urban population. Unlike many other African countries where agricultural products have been the major export commodities, agricultural export from Zambia has been non-existent except small export of tobacco produced by large-scale European farmers.

The performance of the agricultural sector was not satisfactory and Zambia still remained a copper mono-economy in the mid-1970s when the sharp decline of world copper prices and the worldwide recession badly hit the Zambian economy. Since then agricultural development has assumed a new importance and urgency. First, the attainment of food self-sufficiency has become more vital. The demand for food was rapidly escalating and national maize surplus disappeared in the mid-1970s, the very time when Zambia could not afford to continue generous food import due to the deteriorating foreign exchange position. Second, it has become necessary to generate new exports and to gradually replace copper as sources of foreign exchange. The agricultural

sector is required to develop new export commodities. Third, as a result of the recession in mining and manufacturing sectors and government's austerity measures, the prospects of employment opportunities in urban areas are bleak. Agricultural sector and rural areas are expected to create more employment opportunities and absorb larger share of rapidly growing labour force. Fourth, manufacturing industries are now forced to look for the local products as raw materials due to the shortage of foreign exchange or the greatly increased prices of imported goods.

Under this context development of cash crop production by small farmers is expected to play a vital role. Cash crops such as cotton, tobacco, oil seeds and coffee would be important export commodities and/or raw materials for local industries, so that they can earn foreign exchange that is badly needed by Zambia or save foreign exchange through import substitution. The expansion of cash crop production would increase the rural income earning capacity and employment opportunities. The development of cash cropping among small farmers, in particular, would contribute to dissolve not only the dualism of the economy but also that of the agricultural sector between large scale commercial farmers and small scale farmers. The achievement of national self-sufficiency in food requires further commercialization of food crop production by peasant farmers.

Marketed production by small farmers was virtually confined to maize production until the mid-1970s, although it developed quite rapidly. However, since the mid-1970s marketed production of some crops such as rice, cotton, and sunflower which was either non-existent or negligible by that time has expanded rapidly among small farmers. Since the mid-1970s when the Cotton Development Project was initi-

ated and LINTCO was established, cotton production has grown tremendously to a record figure of 44,000 tonnes in 1984/85, seventeen times more than that in ten years before. During the past decade the number of cotton growers has increased almost tenfold and the area under cotton more than sixfold. Production of sunflower seeds started only in early 1970s but it has expanded rapidly then. The marketed production of sunflower was only 2,000 bags in 1972/73. The production more than trebled from 238,000 bags in 1979/80 to 808,000 bags in 1984/85.

Significant regional differences can be identified with regard to recent commercialization of peasant agriculture. In more developed areas such as Southern and Central Provinces production of cotton and sunflower has expanded rapidly since the mid-1970s while the production of the traditional cash crop, maize, has fluctuated. As an increased number of small farmers in these provinces entered into the production of cotton and sunflower which are not edible, commercialization of small-scale agriculture in these provinces advanced further. In the outlying provinces such as Northern Province which were the traditional supplier of labour force for urban areas, marketed production of maize and rice grew rapidly after mid-1970s. It means that farmers in these areas are shifting from subsistence agriculture to cash crop production.

3. THE STUDY AREA AND THE SAMPLE

The Study Area

The study area is in Mazabuka District, Southern Province. The District is occupied by the Plateau Tonga, a division of the Bantu-speaking Tonga peoples. Important features of agricultural change in the Plateau Tonga area

that extends on the central plateau of Southern Province have been the early acceptance of the ox plough and other ox-drawn implements and the early development of marketed production of maize. Maize has been produced for sale in large quantities for several decades, in marked contrast to other peasant farming areas of Zambia. Hoe cultivation has virtually disappeared in favour of the plough and is now very much the exception rather than the rule. The Plateau Tonga area had the most developed peasant cash crop production throughout the country by the end of the colonial period.

Villages in the M. Agricultural Camp area of the M. Block were surveyed. Department of Agriculture divides Mazabuka District into five Blocks including M. Block. M. Block had 103 villages inhabited by 1,278 farming families in 1985. The Block had eight agricultural camps each of which was stationed by an agricultural camp officer with one exception which was vacant. M. Camp, as one of eight camps in the Block, was located in the Ila Tonga Reserve. The camp covered 16 villages which were inhabited by 182 farming families in 1985⁽³⁾. Although a village was composed of eleven farming families on average in 1985, the size of each village varied greatly, ranging from three farming families to 33.

The area lies between the Kafue River in the north and the railway and the Great North Road in the south. Kafue Flats, the flood plain of the Kafue River, provides valuable dry season grazing for cattle of farmers in the area. The altitude of the area is around 1,000 meters above sea level. The mean annual rainfall of Mazabuka District is 750 to 880 millimeters, extending from mid-November to the end of March. While mean rainfall is not limiting, variation in

the amount between seasons and the pattern of rainfall within a season can be critical to farming in certain years. The study area has suffered from flooding and water-logging when it rained heavily in the rainy season. Recent records of floods were in February-March 1974 and 1981. The area also suffered from drought in dry years. While farmers in the area had bumper harvests in 1985/86 season thanks to good rainfalls, the area was badly hit by drought in 1986/87.

Data Collection and Sample

I carried out a field survey in M. camp area several times between December 1986 and May 1987. Additional data were collected in a follow-up field work conducted in November 1987. Data were collected by means of structured interviews, using formal questionnaire. After the first round of interviews I, together with my research assistant, visited these households twice to three times to collect additional data. We eventually collected data from a total of 94 households.

The sample was drawn from farming families in the M. Camp area. Neither random sampling nor stratified sampling method was employed for two reasons. First it was difficult to get the reliable sampling frame from which to draw a random sample. The second reason we did not employ the random sampling method was that if sample households were scattered in space it was difficult to collect data on relationships between households. A village household has many relationships with neighbouring households such as lending of farm implements, work cooperation in the field, exchange of gifts and contributions. The data can be counterchecked easily if both parties of a relationship are

included in the sample.

Instead of taking a random sample, we first endeavored to enumerate all the farming households in M. Camp area. But we were unable to do that due to several reasons including the limit of time. Our sample did not include government officers and teachers who resided in the Government block of the area, although most of them cultivated land and some produced a substantial amount of maize and cotton. Consequently, the selection process was non-random while a census method was not employed.

Eighty-six farmers were listed as Recruited Cotton Growers for 1986/87 in M. Camp area⁽⁴⁾. Our sample included 69 of them, thus the coverage was 80 percent. Various lending institutions provided agricultural credit for 56 farmers in the M. camp area in 1986/87 season. Forty-six of them were included in our sample, the coverage being 82 percent. According to a report by the Block Supervisor of the Ministry of Agriculture for M. Block, farmers in M. camp area sold 4,273 bags of maize, 98,928 kg of cotton and 2,346 bags of sunflower in 1985/86 season. Our sample farmers reported to have sold 2,155 bags of maize, 58,741 kg of cotton and 1,200 bags of sunflower in the same season. The shares of the sales by our sample in the total sales from the camp area were 50 percent for maize, 59 percent for cotton and 51 percent for sunflower. From the coverages calculated above it could be estimated that our sample covered between 50 and 60 percent of the total population in the area. The sample probably represented higher proportion of cotton growers and farmers who had access to agricultural credits compared to the original population.

4. POPULATION AND AGRICULTURE

Population

The sample households had total population of 1,111 of which 44 percent were boys and girls under 14 years and 7 percent were old people over 61 years old. There were more females in the sample than males. The females accounted for 51.5 percent of the total population of sampled households. Farmers in the area have big families. The average size of a household was 11.8. Household size varied widely from 3 to 33, depending mainly on the number of wives and dependents such as aged relatives and grandchildren. Incidence of polygyny was high. Thirty-one percent of all households were polygynous, while 10 percent of the heads of households had more than two wives.

Land Use and Cropping Patterns

Major crops grown in the area were maize, sunflower and cotton. Minor crops produced included groundnuts, sweet-potatoes, sorghum, and pumpkin. Table 1 shows planted hectares of major crops grown by sample households. Maize, the most important food crop as well as cash crop, was grown by all the households in the sample. Maize occupied largest area in planted hectares. Hectareage under maize accounted for more than 50 percent of the total planted hectares in 1985/86 and over 60 percent in 1986/87. A household planted around 5 hectares of maize on average. Two other important cash crops in the area were sunflower and cotton. Planted hectareage of sunflower, second to maize, was about a third of that of maize in 1985/86 and a fifth in 1986/87. Decreased hectareage under sunflower in 1986/87 was due to dry weather during the planting time of sunflower. Hectarages under cotton were 10 to 13 percent of that under maize.

Table 1. Hectarages of Major Crops by Sample Households
1985/86

	maize	sunflower	cotton	total
Hectarages	463.5	158.1	62.6	684.2
No of hh. Growing	94	84	48	94
Average hect. per hh. growing each crop	4.9	1.9	1.3	7.3

1986/87

	maize	sunflower	cotton	total
Hectarages	499.0	100.5	51.5	651.0
No of hh. Growing	94	67	39	94
Average hect. per hh. growing each crop	5.3	1.5	1.3	6.9

Thus combined hectarages of cotton and sunflower were about a third of maize hectare in 1986/87 and about a half of that in 1985/86. Households growing sunflower planted 1.9 hectare in 1985/86 and 1.5 hectare in 1986/87 on average. Average hectare of cotton per household growing it was 1.3 hectare.

Considering that both cotton and sunflower are relatively new crops in the area, changes in the land use and cropping pattern for the last decade must have been dramatic. As is shown in the Table 2 most of the farmers introduced sunflower after 1977 and cotton after 1979. The distribution of the year when these crops were introduced by our sample farmers corresponds with the production trends of these crops at the national level.

Some other minor cash crops were grown in the area. Lint Company of Zambia (LINTCO) tried to encourage soyabean production by small farmers. In 1985/86 four sample households planted soyabeans, each growing 0.1 to 0.3 hectare, all of them for the first time. But none of them planted soyabeans in 1986/87 and there was no soyabean grower in the sample in the same year. An old lady grew tobacco for a

Table 2. Year of introduction of cotton and sunflower by farmers in the sample

year of introduction	cotton	sunflower
1950s	2	1
1960s	2	2
1970-74	1	4
1975	0	0
1976	1	1
1977	0	5
1978	0	8
1979	8	7
1980	4	9
1981	4	6
1982	6	8
1983	19	15
1984	11	21
1985	2	14
1986	6	2
TOTAL	66	105

small scale. She sold it locally.

Other crops grown in the area included pumpkin, sorghum, groundnuts, sweetpotatoes, cowpeas and beans. All these were mainly for home consumption, but some households sold some groundnuts, sweetpotatoes and sorghum. All the sample households grew either groundnuts or sweetpotatoes or both.

Production and Sale of Crops

Tables 3 and 4 show estimated production and sales of crops by sample farmers⁽⁵⁾. Production and sales of crops in the survey area were affected by weather conditions. Two cropping seasons we covered were contrasting in terms of rainfalls. The 1985/86 season was a good one and production of most agricultural products recorded bumper harvests. In contrast agricultural production in Southern Province was

seriously affected by the drought in 1986/87 season. Maize was the most important cash crop as well as the most important food crop in the area. Twenty-eight percent of the total maize harvest was marketed in 1985/86. It was predominant in crop production accounting for almost three-quarters of the total value of crop production in 1985/86. Maize was still the most important crop in terms of the value of production even in 1986/87 season when all the farmers experienced reduced yield or complete crop failure of maize due to the drought. Despite the rapid expansion of cotton and sunflower as cash crops in recent years maize still accounted for slightly less than half of the total crop sales in 1985/86. However, in 1986/87 maize sales decreased by 86 percent compared to the previous season due to the drought. As a result the value of marketed maize declined to a third of the cotton sales in 1986/87.

Cotton and sunflower are a genuine cash crop that is non-edible. All the cotton harvest is sold. Although many farmers retain small amount of sunflower harvest as seeds for next season virtually all the harvest is sold. Sales of

Table 3. Estimated Production of Crops by Sample Households

	1985/86		:	1986/87	
	value	volume		value	volume
maize	433,005	7,874	:	164,079	2,104
cotton	58,154	58,741	:	68,152	42,595
sunflower	52,246	1,245	:	3,944	56
groundnuts	24,435	530	:	n.a.	n.a.
sweetpotato	18,127	342	:	n.a.	n.a.
sorghum	5,901	96	:	n.a.	n.a.
soyabean	755		:	0	0
total	592,623				

unit: value=kwacha, volume--maize, sorghum, soyabeans=90kg bag
cotton=kg, sunflower=50kg bag ; number of sample households--94

Table 4. Sales of Major Crops by Sample Households

	1985/86		:	1986/87	
	value	volume		value	volume
maize	121,657	2,218	:	23,950	307
cotton	58,154	58,741	:	68,152	42,595
sunflower	50,563	1,205	:	2,926	41
other crops	14,585	---	:	n.a.	

unit: value=kwacha, volume--maize=90kg bag, cotton=kg, sunflower=50kg bag ; number of sample households--94 sales include both official and private sales

cotton and those of sunflower by sample households were almost the same amount in 1985/86. Combined sales of cotton and sunflower by sample households accounted for 44 percent of the total crop sales in 1985/86. Although production of these crops expanded only recently in the area, both crops have already become important cash crops.

5. FACTORS OF CASH CROP DEVELOPMENT

Price Incentive and Supporting Services

As I pointed out elsewhere, the rapid expansion of cotton and sunflower production in Southern Province can hardly be explained in terms of official producer price developments (Kodamaya 1987). The producer prices of cotton and sunflower rose much less than that of maize between the mid-1970s and 1985/86. Consequently prices of cotton and sunflower fell substantially in relation to maize price during the same period. Producer prices of both crops do not seem to have kept with the cost of living. It is difficult to conclude that the rapid expansion of cotton and sunflower production in the past decade is a result of a high degree of responsiveness displayed by producers to price incentives. In the 1986/87 season contrary to the price development in the previous seasons, producer price of

cotton was raised more than that of maize. While maize price was raised by 42 percent, that of cotton was raised by 62 percent. In the 1986/87 season farmers of our sample increased planted hectarage of maize, while they planted smaller hectarage of cotton than in the previous season. Again this can not be explained in terms of the farmer response to price changes.

Behind the expansion of cotton and sunflower production there were factors including responses to non-price incentives, credit availability, labour requirements of a crop and weather conditions. First, level of producer prices was affected by the delay in the payment. As is suggested in Table 5 sample farmers considered late payment to farmers to be one of the most serious problems constraining their agricultural production. Maize and sunflower were marketed through Provincial Cooperative Marketing Unions and/or National Agricultural Marketing Board (Namboard) at the time of the survey. They were notorious for the delay in paying for delivered farm produce. When talking of late payment to farmers, farmers were talking about late payment for maize delivered to these official marketing organizations. In contrast cotton growers were generally satisfied with the prompt payment by Lint Company of Zambia (LINTCO). The prompt payment was important to farmers under the context that many of them were with a cash constraint and the minority had access to credits, because majority of farmers had to buy inputs for maize production for next season with the crop payment. Farmers preferred prompt payment of lower prices to late payment of higher prices. Higher prices of maize were greatly discounted with the late payment.

Table 5. Perceived Constraints to Agricultural Production*

Items	Points
High prices of fertilizers	205
Late payment to farmers	199
High prices of seeds	177
High prices of implements	176
High prices of insecticides	156
Low prices for farm products	138
Lack of cash to buy inputs and implements	115
Poor rainfall	102
Late arrival or unavailability of seeds	68
Lack of information from agricultural officers	35
Lack of enough land to farm	27
Lack of labour	25
Delivery of wrong seeds or fertilizers	7

* Farmers were asked how important each item was as a constraint to their farming. Points were calculated according to the following points: very important= two points, important= one point, not important= zero.

Level of producer prices must be set in relation to prices of purchased inputs. Farmers consider producer prices in relation to input prices. Table 5 suggests that the majority of sample farmers considered high prices of purchased inputs to be more important constraint than low prices of farm products.

Theoretical costs of purchased inputs for sunflower were low, while those for maize and cotton were substantial. Sunflower can be grown without application of fertilizers and insecticides which became very expensive by the time of our survey. Ten kilogrammes of sunflower seeds (composite) cost 28 kwacha which was equivalent to only 6 percent of the market value of ten bags of sunflower in 1985/86. In addition, actual input expenses by sample households were much lower than the theoretical costs. Mean seed costs per hectare for households growing sunflower in the sample were

less than 5 kwacha in 1985/86. This was less than a fifth of the theoretical cost and equivalent to less than 2 percent of the sales of one-hectare sunflower. Undoubtedly this low production cost was one of the major factors contributing to the rapid expansion of sunflower production by small farmers. Although expected revenue from one-hectare sunflower was less than half of those from maize and cotton, required cash outlays for sunflower production was virtually nothing. In contrast, theoretical costs of purchased inputs at the recommended rate were substantial for maize and cotton production. High input prices discounted the price incentives of increased producer prices for maize. Large increases in input prices adversely affected the farmer's purchasing power even if the producer prices were raised accordingly, because a farmer had to pay the increased input prices before the season while he had to wait the payment for marketed produce until after the harvest.⁽⁶⁾

Availability of Credit

However, if inputs are supplied on credit the problem of high prices of purchased inputs is greatly alleviated. This was the case with the cotton production. All the cotton growers registered with LINTCO were entitled to input supply on credit. Those farmers with cash constraint had easy access to inputs for cotton production. In addition credit provided by LINTCO for cotton production is interest free. In contrast, only a small minority of small scale maize producers had access to credit. In Zambia institutional credit to maize producers is provided by commercial banks and parastatal organizations. At the time of the field study the parastatal organizations included Agricultural Finance Company (AFC), Zambia Agricultural Develop-

ment Bank (ZADB) and Zambia Cooperative Federation (ZCF)⁽⁷⁾. Commercial Banks lend primarily to large-scale commercial farmers. AFC was the only significant source of seasonal and medium-term credit to small-scale and emergent farmers, though about half of its total lending also went to large-scale borrowers. In addition, ZCF provides, through the Provincial Cooperative Unions, seasonal credit to small-scale cooperative members. ZADB was established in 1982 to become the principal agricultural credit institution. However, its operations were limited. Low loan recovery has been the biggest problem of the parastatal credit organizations. In the study area, as in other areas of the country, low repayment rate of credits resulted in a situation where many farmers disqualified themselves from further credit facilities. In 1985/86 season M. Camp area had only five farmers who had access to maize credit and all of them received credit from AFC. However, the credit situation changed in 1986/87 season. In a move partially to offset the increase in fertilizer prices, the government made extra fund available for lending to farmers, which resulted in the much wider access to credit for maize production. Although AFC credit facility did not expand, ZADB embarked on credit supply in the area in 1986/87 season and 15 farmers received ZADB credit in M. Camp area. In addition, 42 members of the M. Cooperative Society that was the only society in the survey area had access to maize credit through Rural Cooperative Agricultural Credit Scheme embarked in 1986/87. A total of 60 farmers had access to maize seasonal credits in 1986/87 in the survey area compared to only five in the previous season⁽⁸⁾. In our sample 46 farmers of 34 households received the maize credits. Table 6 indicates that access to the credits resulted in increased hectareage of

Table 6. Maize Credit and Planted Hectarages
by Sample Households

		1985/86	1986/87
Hectarages planted by Households with access to maize credits in 1986/87 (N=34)	maize	207.4	247.4
	sunflower	57.1	42.3
	cotton	34.7	21
	TOTAL	298.1	310.7
Hectarages planted by Households without access to maize credits in 1986/87(N=60)	maize	256.1	251.6
	sunflower	101	58.2
	cotton	27.9	30.5
	TOTAL	386.1	340.3

maize by the sample farmers. Those households which had access to maize credits increased maize area by 40 hectares in 1986/87, while the total maize hectarages by those which did not receive maize credits were stagnant. It is also noteworthy that the former decreased cotton area by 40 percent, while the latter increased it by 10 percent. This suggests that if credit was available farmers were ready to turn from cotton to maize that gave them higher net return per hectare.

LINTCO with integrated supporting services was evidently successful in making a number of improvements with respect to prompt payment to growers, more effective organization of extension, marketing and supply of inputs. The improvements were undoubtedly critical to the spread of cotton cultivation since the mid-1970s. LINTCO, initiated in 1978 to take over the cotton marketing and input supply from Namboard, established a buying depot near the survey area in 1980. A sudden increase in the number of cotton growers in the survey area around 1980 as indicated in Table 2 can be explained by the establishment of LINTCO and opening of its depot in the area.

Weather conditions

Parts of Southern Province were hit by a series of drought in the past decade. The 1978/79 season experienced adverse weather conditions with poor rainfall. In 1979/80 although total rainfall was above normal it did not rain in first half of the rainy season. Then the province experienced the consecutive three years of drought of 1982, 1983 and 1984. The drought in 1986/87 was very severe. Maize was particularly affected by the shortage of rainfall. Annual marketed production of maize in the Province has fluctuated sharply depending on rainfalls during the past decade. Parts of Southern Province were so seriously hit by drought in 1986/87 that government distributed maize to farmers through a famine relief programme.

Due to its deeper root system and its long flowering period cotton is more drought resistant than maize. A good cotton crop may be obtained when other crops fail due to poor rainfall. The distribution of the year of introduction of cotton by sample farmers in Table 2 seems to indicate that farmers were led to growing cotton after the drought years. A comparison of the production and sales records of 1985/86 and 1986/87 shown in Tables 3 and 4 clearly demonstrates how cotton was drought tolerant. Cotton production decreased by only 27 percent, while maize production dropped to a quarter and sunflower production to virtually nothing in 1986/87. Cotton was the only significant source of cash income for many of the sample households, while many of those without cotton had no cash income in 1986/87.

Labour Resources

In responses to inquiries about what they considered to be their main problems in their farming few farmers in the

sample complained of shortage of labour, as is presented in Table 5. However, other data collected during the study suggest that availability of labour resources affected the farmers' crop choices and crop production. In responses to a question about the motivation to introduce sunflower many sunflower growers in the sample answered that small labour demand of the crop had motivated them to introduce it. Many of those sample farmers who had never grown cotton or stopped growing it claimed that they did not grow cotton because the crop required too much labour. These responses suggest that labour requirement of a crop is an important factor in farmers' crop choices. Sunflower is a comparatively undemanding crop. Besides, its planting periods do not clash with the planting time of maize, hence peaks of labour demand for both crops do not compete. In contrast cotton is the most labour demanding crop, especially during the picking time. Weeding cotton is also labour demanding. In addition farmers have to spray cotton many times. Cotton packs of insecticides and solubor have to be sprayed ten to eleven times a season. Labour peaks of cotton coincide with those of maize, most important and indispensable crop for all farming households in the area.

6. CASH CROPS AND PEASANT DIFFERENTIATION

Cultivated area

In general land was not a limiting factor for crop production in the study area. Labour supply and availability of oxen and ox-ploughs were more important in determining the cultivated area. Since family labour constituted the most important part of agricultural labour force in the study area, labour availability of a household depended much on the size and composition of the household. This means

Table 7. Household Size and Planted Hectarage in 1985/86

Household size	Combined Hectarages of Maize, Cotton and Sunflower in 1985/86			
	-4.4	4.5--5.9	6-10	over 10
3-- 7	11	8	3	1
8--10	10	10	5	1
11--14	4	6	9	3
15+	0	1	9	13

the importance of the size of family labour for a household to cultivate larger hectarage and to grow a variety of crops. For households of small size, the availability of family labour might be a constraint on the amount of time they could devote to cultivating larger area or growing additional crops in general and labour demanding crops such as cotton in particular. As is shown in Table 7 the size of a household and hectarages planted by a household in the sample were closely associated. In addition, both in 1985/86 and 1986/87, those households growing a variety of crops cultivated the larger total hectarage as is shown in Table 8. Households growing three crops cultivated the largest hectarage, while those growing only maize cultivated the smallest hectarage. Those households growing all three crops or maize and sunflower cultivated not only the larger total hectarages but also larger maize hectarages. Therefore, as far as these households are concerned it cannot be said that these households grew sunflower (and cotton) at the expense of maize production.

Average hectarage under maize per household was around 5 hectares. Although maize was grown by all the sample households its hectarage planted by each household ranged widely from 0.75 hectare to 28.5 in 1985/86 and 1 hectare to 33 in 1986/87. Top ten largest maize cultivators accounted

Table 8. Cropping Patterns

1985/86

patterns	N	average hectarages per household			
		maize	S/F	cotton	total
M,S/F,C	42	5.8	2.0	1.3	9.1
M,S/F	42	4.6	1.7	0	6.3
M,C	6	2.7	0	1.2	3.9
M	4	3.4	0	0	3.4
TOTAL	94	4.9	1.9	1.3	7.2

1986/87

patterns	N	average hectarages per household			
		maize	S/F	cotton	total
M,S/F,C	29	6.0	1.4	1.1	8.6
M,S/F	38	5.5	1.6	0	7.0
M,C	10	3.7	0	1.8	5.5
M	17	4.7	0	0	4.7
TOTAL	94	5.2	1.5	1.3	6.9

for 29 percent of the total maize hectareage of the sample households in 1985/86. Sunflower was also grown by most of the households in the sample. Ninety percent of the sample households grow sunflower in 1985/86. Even in 1986/87 when the number of sunflower growers decreased due to the shortage of rainfall at the time of the sunflower planting period 71 percent of the sample households planted the crop. Households growing sunflower planted 1.9 hectare in 1985/86 and 1.5 hectare in 1986/87 on average. Median was 1.5 hectare and 1.2 hectare respectively. Hectarage under sunflower by each household ranged from a quarter hectare to 8.1 in 1985/86 and from 0.1 hectare to 6.5 in 1986/87. Majority of the households (47 in 1985/86 and 42 in 1986/87) planted between 1 hectare and 2.9 hectares. Cotton was grown by about a half of the sample households in 1985/86 and 41 percent in 1986/87. Average hectareage of cotton per

household growing it was 1.3 hectare. Median was 1 hectare. Three households planted cotton of 3 hecrare and more in 1985/86 but the majority of cotton growing households planted around one hectare. In 1986/87 except one household which planted 5.5 hectares of cotton all the cotton growing households of our sample planted less than 2.5 hectares, and again the majority of them planted around one hectare of cotton. The number of those households that planted between 0.75 hectare and 1.25 hectare of cotton totalled 29 in 1985/86 and 19 in 1986/87.

Distribution of Crop Sales

Although maize was grown by all the households distribution of maize sales was highly skewed as is summarised in Table 9. Two-thirds of the sample households sold maize in 1985/86. These households sold on average 36 bags of maize that were equivalent to 1,994 kwacha but the sales by each household varied greatly ranging from 2 bags to 260 bags. Six households that sold more than 100 bags accounted for 47 percent of the total maize sales by sample households. In the drought year of 1986/87 only 16 percent of the sample households recorded maize sales. Mean sales of cotton per household selling it amounted to 1,264 kwacha in 1985/86 and 1,842 kwacha in 1986/87. Cotton sales were more equally distributed among cotton sellers than in the case of maize sales. Thirty-one out of 46 households that sold cotton in 1985/86 sold cotton equivalent to 501 kwacha to 1500 kwacha (see Table 10). Average sunflower sales per household that sold the crop were 602 kwacha in 1985/86 and 225 kwacha in 1986/87, which were much smaller than averages for maize and cotton. Table 10 shows that 46 out of 84 households that sold sunflower in 1985/86 earned less than 500 kwacha.

Table 9. Distribution of Maize Sales by Sample Households

kwacha	1986/87	1985/86
0	79	33
1-1000	9	31
1001-2000	1	17
2001-3000	3	2
3001-4000	1	2
4001-5000	0	2
5001-6000	0	2
6001-7000	0	1
7001-	1	4
TOTAL	94	94

Table 10. Distribution of Cotton and Sunflower Sales

kwacha	cotton		sunflower	
	1986/87	1985/86	1986/87	1985/86
0	57	48	81	10
1-- 500	4	6	12	46
501--1000	7	16	1	24
1001--1500	6	15	0	9
1501--2000	8	6	0	3
2001--2500	3	0	0	1
2501--3000	1	0	0	1
3001 and over	8	3	0	0
TOTAL	94	94	94	94

However, in terms of the number of households selling the crop sunflower was the most important cash crop in 1985/86.

We differentiate the sample households by cash income group. The distinction of cash income group is based on sales of maize, cotton and sunflower which are the main component of the household cash income. We calculated average sales for each household for two seasons which stood in contrast in terms of weather conditions and credit availability.

Table 11. Group Share in Means of Production and Produce Generated (%)

GROUP	A	B	C	D	TOTAL
No. of Households	14.9	22.3	29.8	33.0	100
Population	25.4	23.8	23.7	27.2	100.1
Ploughs	29.5	23.3	28.4	18.8	100
Trained Oxen	30.3	23.4	22.2	24.1	100
Planted Hectarage					
maize	34.1	19.1	23.9	23.0	100.1
sunflower	29.3	22.3	20.6	27.7	99.9
cotton	31.7	39.4	26.5	2.5	100.1
Production					
maize	41.2	20.0	20.3	18.5	100
sunflower	28.7	31.0	21.0	19.3	100
cotton	39.2	42.7	17.9	0.3	100.1
Sales of maize, sunflower and cotton					
1985/86	51.9	22.9	19.1	6.2	100.1
1986/87	50.4	38.2	10.4	1.0	100
No of households with access to maize credit in 1986/87	29.4	17.6	44.1	8.8	99.9

Cut-off points used were:

- Group A - average annual sales over 3,000 kwacha
14 households
- Group B - average annual sales 1,500--2,999 kwacha
21 households
- Group C - average annual sales 500--1,499 kwacha
28 households
- Group D - average annual sales 0— 499 kwacha
31 households

The relative control over means of production, and the proportion of total production realised by the cash income groups are shown in Table 11. Group A, comprising only 14.9 percent of the households, controlled 29.5 percent of ploughs and 30.3 percent of trained oxen. With these means of production Group A produced 41 percent of all maize, 39 percent of all cotton. Agricultural production of this

group was more commercialized than that of other groups. The Group accounted for more than half of all sales of maize, sunflower and cotton. While maize production was concentrated on Group A, cotton production was concentrated on Group B. Group B households accounted for 43 percent of all cotton production. In contrast to these higher income groups Group D, comprising a third of all households, had access to 19 percent of ploughs, 24 percent of oxen and mere 9 percent of maize credit. Group D households were not only less favoured in terms of access to resources, but also productivity of their farming seems to be at lower levels. While they accounted for 27 percent of all population and 23 percent of all maize area, their share in all maize production was less than 19 percent. They were less involved in commercial agriculture. They accounted for only 6 percent of all crop sales in 1985/86 and mere 1 percent in 1986/87. It is evident that commercialization of crop production has benefited the minority of small farmers in the area who had access to larger share of resources with which they cultivated larger area, produced more and sold more than the rest of the farmers.

7. MAIZE CREDIT AND PEASANT

Distribution of Credit

As can be calculated from figures in Table 6, those households that received maize credits in 1986/87 cultivated larger land in 1985/86 than those which did not have access to the credits. The former cultivated on the average 6.1 hectares of maize, 1.7 hectares of sunflower and 1 hectare of cotton, while the latter planted 4.3 hectares of maize, 1.7 hectare of sunflower and half a hectare of cotton. This is not very surprising since the lending policy is to lend

to only those who are creditworthy, in other words, those who are capable of repaying the loan by producing certain amount of crops.

However, the loanees tended to be those who had certain characteristics other than being larger cultivators. First, it must be noted that credit was allocated in such a way that the allocation concentrated on small number of households. AFC, ZADB and ZCF loans reached a total of 60 people in the area in 1986/87⁽⁹⁾. Our sample contains 46 loanees out of the 60. However, these 46 loanees concentrated on 34 households of the sample because some households had more than one loanee. For instance, one household had five loanees; the head of the household, his wife, his brother (two loans), his another brother, and his cousin. The total amount of the loans they received were equivalent to 14 hectares of maize package⁽¹⁰⁾. In another household the head of the household and all of his three wives received the loans totaling to 8-hectare packages.

Second, loanees included those who were involved in the processing of loan applications and those who were in important positions of the society as well as their family members and relatives. In the M. Camp area AFC credit reached only five and four people in 1985/86 and 1986/87 respectively. Both the Ward Chairman and his wife were among the AFC loanees in these two years. To qualify for a loan from AFC an applicant must be certified eligible for a loan by Ward Development Committee. Therefore, the Ward Chairman was in a position to be directly involved in the processing of AFC loan application. The Board Members of the Cooperative Society and their family members seem to have had easier access to the loans of the cooperative credit scheme than ordinary members of the society. Chairman of the Board

received the loan of a 4-hectare package, the largest amount among the cooperative loan in the area. His 'grand son' and his concubine also received the cooperative credit. Vice Secretary of the society as well as his wife, his brother and his cousin received the cooperative credit. Another member of the Board received the credit. Although 4 other members of the Board did not receive the credit, family members of the three of them had access to the credit. Two wives of the Vice Chairman, the Secretary's nephew and a son of another Board Member were among the loanees of the cooperative credit. Thus Board members and their family received a total of 12 loans out of 42 loans of the cooperative credit scheme. This can only partly be justified in terms of higher production. Although both the Chairman and the Vice Secretary were among the most prosperous farmers in the area, other Board members and their family members were average or less than average in terms of their farming standard. Some farmers complained that the cooperative credits were allocated on the basis of favouritism.

Third, loaness included some government employees stationed in the area. Although one of the eligibility requirements for AFC loan states that those who are holding Government posts would not be eligible, one of the AFC loanees was a government officer. Cooperative Credit Scheme also provided loans with a government officer and the headmaster of the school in the area.

Planners at the center provided additional agricultural credit aiming at increased production and productivity in agriculture as well as improved viability of lending institutions. However, it is evident that the loans were allocated, under the local socio-political context, not on the basis of productivity. Credit was allocated to those who

held a post in Government or Party and those who were influential in the cooperative society. Credit was also mediated through family relationships. One of the most important development resources from the state was distributed in patterns different from those articulated at the center. In the next section, we shall show the impact of the credit on production.

Impact on Production and Repayment

As mentioned above maize credits had positive impact on planted hectarage of maize. Those sample households with access to maize credits increased maize hectarages by 19 percent (see Table 6). However, the increase in the planted hectarages did not result in increased production or productivity due to the drought. It was unfortunate that the state initiative to expand agricultural credit facility coincided with the drought. But it is also true that the current maize package provided through credit scheme was on the fragile technical basis and dependent on weather conditions. As can be seen in Table 12 maize harvest by those households which had access to the credits declined to less than a third of that in the previous season, although the rate of decline was less sharp than that for households without credits. Official sales dropped more sharply. It must be noted that local (private) sale by households with the credits increased despite the sharp decline of the harvest. While higher prices in local market in the situation of maize shortage was an important factor behind this increase, it can also be explained by the strategy of the farmers to divert part of their surplus maize to unofficial market channel in order to avoid loan repayment. Normally loans are paid back by deductions from sales of loanees'

crops. Loans are secured by borrower's crops. An applicant for cooperative credit, as one of loan conditions, must agree to deliver to the society all of his/her produce in which the society is dealing and assure that all of his/her produce will be sold to the society by himself/herself in his/her own name and not through any other person, kin or no kin. However, actual marketing record showed that most of the loanees in the area did not sell their crops to the society in their names. In 1986/87 only 11 farmers sold maize totalling 193 bags to the M. Society depot. Only two of these 11 farmers were loanees of the maize credits. In other words, only two out of the 60 loanees sold crops to the cooperative society. Although many of the loanees simply did not have surplus maize to sell, some of them either sold to the cooperative society through other person or sold locally. For instance, one of the most prosperous farming families in the area had access to a loan officially and another loan unofficially. Son of the head received a loan and the head had access to a loan that was privately diverted by a loatee. The family sold 46 bags of maize to the society by the name of a son's wife. They also sold 63 bags of maize locally. Another household that received five loans sold 20 bags of maize to the society through a member of the household who did not receive a loan, while none of the five loanees had recorded sale to the society. This household sold 19 bags of maize privately. For another example one of the most prosperous farmers who received a loan of a 4-hectare package sold 33 bags of maize and 2 bags of sorghum by the name of his grandson.

Increase in the publicly marketed maize, which was one of the most important objectives of the provision of the agricultural credit, did not materialise due to the damage

on production by the drought. The situation was aggravated by farmers' strategy to divert some surplus maize to local sale. In addition financial viability of state lending institutions would be undermined due to the poor loan recovery which resulted from dodging of the repayment on the part of the farmers as well as from declined production. As allocation of the credits was mediated through local family based networks, so the crops were marketed through family ties so that the loanees evaded the loan recovery.

Table 12 Access to Credit and Maize Production
(in 90kg bags)

		1985/86	1986/87
Production by households with access to maize credits in 1986/87 (N=34)	:official sale	1391	156
	:local sale	16.3	121.3
	:gift/contrib.	76.6	119
	:total harvest	3749	1146.5
Production by households without access to maize credits in 1986/87 (N=60)	:official sale	759	5
	:local sale	46.4	25.5
	:gift/contrib.	47	94.7
	:total harvest	4126	957.1

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NOTES

- (1) See studies by Morrison, Swainson, Wolf and Pottier in IDS Bulletin 1986.
- (2) For the success of KTDA, see Lamb and Muller 1982. Morrison 1986 criticises that in the study of agriculture and parastatals of African countries, cases of mixed results and relative success are commonly overlooked. The simplified picture of failure becomes the basis for prescribing equally simplified remedial policies for agricultural improvement.
- (3) Information by the Block Supervisor of the M. Block.
- (4) Information by the Block Supervisor of the M. Block.
- (5) Value of production was obtained by adding value of sales and value of the harvest that was not marketed. The latter was obtained by the volume multiplied by official producer prices with regard to maize and sunflower and local prices in the case of groundnuts and sweetpotatoes. Stated sales figures of crops for 1985/86 except cotton were not counterchecked with purchase records of buying institutions. Sales figures for 1986/87 were counterchecked against official purchase records of the depots of M. Cooperative Society and LINTCO in the area.
- (6) In 1985/86 demand for credit from Zambian farmers increased tremendously due to the sudden increase in the prices of agricultural inputs. This indicates that the importance of credit increased when input prices were raised substantially every season as was the case in Zambia in mid-1980s.
- (7) AFC and ZADB was merged and a new parastatal agricultural bank called Lima Bank was established in 1987.
- (8) Information on the credit is based on the data provided by the Block Supervisor for M. Block, the agricultural camp officer for M. Camp and the Mazabuka Office of the Southern Province Cooperative Marketing Union.
- (9) Although total number of loans provided was 61, 60 people received loan because there was a case where one farmer received two loans. In theory those who receive a loan from a state lending institution are not entitled to another loan from any parastatal lending institutions at the same time. This farmer privately 'lent' one of his loan to a farmer in

the area who was not eligible for loan because he was a defaulter of AFC loan.

- (10) All the maize credit is provided in the form of the package of inputs. A major component of the package is hybrid maize seed and fertilizers. Most of the loans provided in the area were in packages of one hectare or two.

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