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Agribusiness Firms in Zambia's Oilseed Subsector: A Review of their Characteristics, Constraints, and Innovations During the 1993-1994 Oilseed Marketing Season FINAL REPORT

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**FINAL REPORT**

**September 1993**

**Christine Erbacher  
Dr. Joseph Temba**

**AGRICULTURAL MARKETING IMPROVEMENT STRATEGIES PROJECT**

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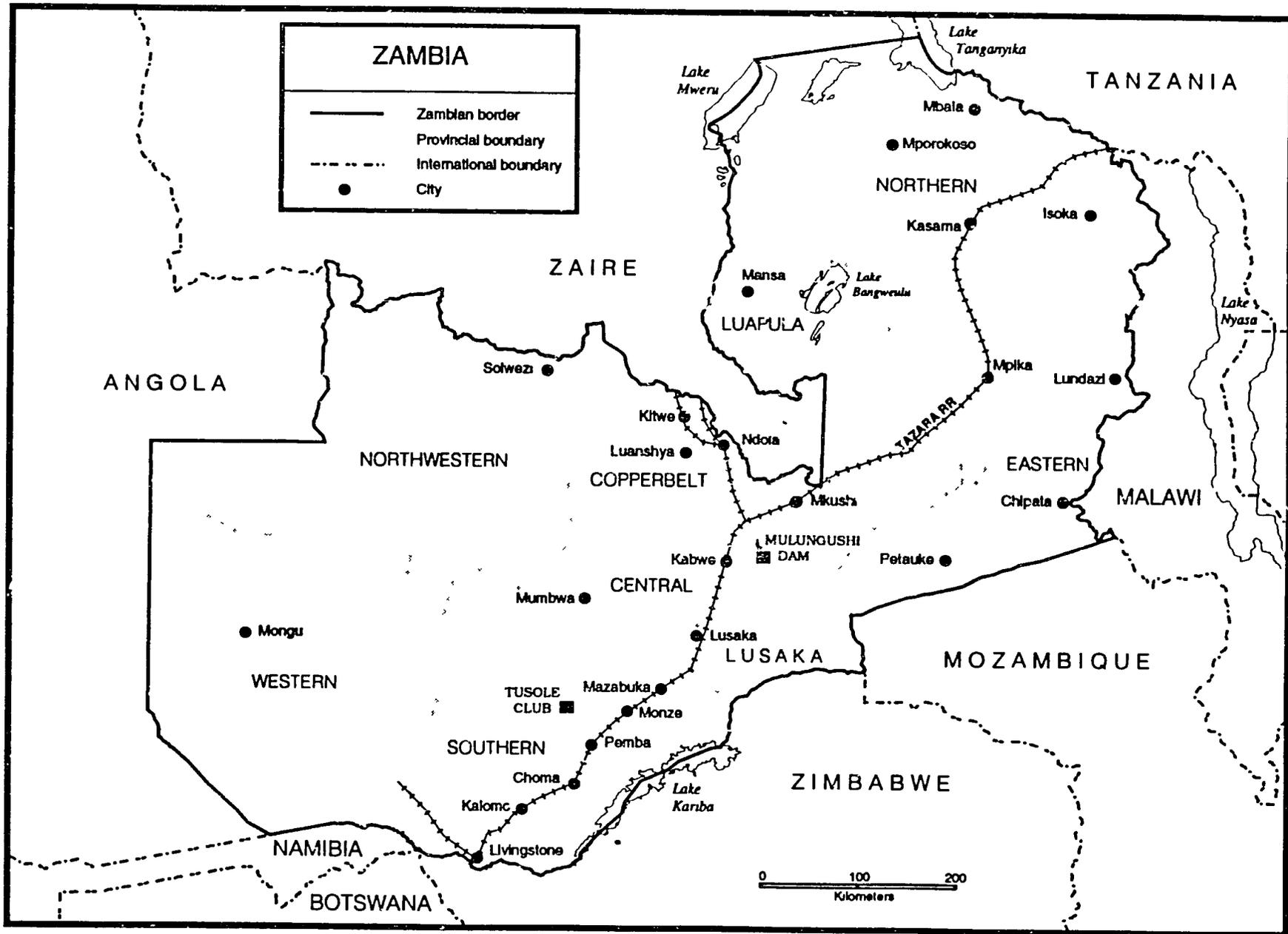
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## **ABSTRACT**

This report, funded under the USAID Africa Bureau's analysis of agricultural marketing and agribusiness development in Sub-Saharan Africa, with contribution and support from USAID/Zambia's ZAMS Project, reviews the characteristics and constraints that affect the ability of Zambian agribusiness entrepreneurs to invest in new or existing oilseed marketing and processing activities. It further examines the innovations developed by these entrepreneurs to survive and compete under the new market liberalization policies in Zambia. In the final sections, the authors suggest public sector strategies for alleviating constraints and supporting agribusiness enterprises in Zambia.

The exchange rate in June 1993 was K 550 per US \$1.



## LIST OF ACRONYMS

c.i.f.	cost insurance freight
CMU	Cooperative Marketing Union
FAS	(U.S. Department of Agriculture's) Foreign Agricultural Service
GRZ	Government of the Republic of Zambia
MAFF	Ministry of Agriculture, Food, and Fisheries
MMD	Movement for Multiparty Democracy
MMDC	Mazabuka Marketing and Development Company Ltd.
MT	Metric Tons
NAMBOARD	National Agricultural Marketing Board
OILS	Oil Industry Liaison Service
POI	Premium Oil Industries
PPM	Program for the Prevention of Malnutrition
PTA	Preferential Trade Area
ROP	Refined Oil Products (parastatal)
RSA	Republic of South Africa
SAOM	Southern African Oil Mills
SPCMU	Southern Province Cooperative Marketing Union
USDA	U.S. Department of Agriculture
VOCA	Volunteers in Overseas Cooperative Assistance
WFP	World Food Program
ZAMS	Zambia Agribusiness Management Support Project
ZAMSEED	Zambia seed production and distribution parastatal
ZATCO	Zambia Agriculture and Trading Cooperative Ltd
ZCF	Zambia Co-operative Federation
ZEGA	Zambia Export Growers Association
ZNFU	Zambian National Farmers Union (formerly Commercial Farmers Union)

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Lastly, we wish to thank the Ministry of Agriculture Food and Fisheries (MAFF) and all the participants interviewed during the study for their openness, honesty, and friendliness.

## EXECUTIVE SUMMARY

This is a study of agribusinesses in the oilseed subsector, their characteristics and constraints, and the innovations and changes that have appeared with Zambia's agriculture marketing liberalization. Zambia continues to import over two-thirds of its vegetable oil requirements. Medium- and large-scale processing companies, primarily parastatal, have historically dominated the domestic marketing and processing of oilseeds, and as a result there has been limited private agribusiness development. The two large firms that dominate Zambian cooking oil production are parastatal companies, Premium Oil Industries (POI) and Refined Oil Products (ROP). In combination with one private company which just recently expanded to join the ranks of the large-scale firms, and with medium-scale firms, they process most of the commercially processed oilseeds in Zambia. However, the majority of the agribusinesses in the subsector are relatively new. There is a viable, growing sunflower micro- and small-scale processing industry in rural areas and small towns. A recent census of hammermills and oilseed presses revealed that there were a total of 171 presses in the country, primarily small-scale and hand-operated presses.

**The oilseed agribusiness subsector in Zambia consists primarily of three crops, sunflower, soybean, and cottonseed.** For the most part, only the large-scale processors process more than one type of oilseed. Sunflower is the raw material for most of the new micro and small-scale oilseed processors. It is also the most prevalent oilseed crop among small-scale farmers and is used as a late-planting, low-input crop. Consequently, it often is planted too late in the season, using inferior seed and little fertilizer, which results in low yields (and low oil content). Soybean, only recently introduced into Zambia but with production steadily increasing, requires considerable amounts of inputs and ongoing care, as well as a relatively complex processing technique. Cottonseed also requires a complex processing technique, and therefore competition in cottonseed processing is limited and will likely remain so.

**The new dynamism of the oilseed subsector is evident in the increasing number of firms that transport raw seed from producers to processors or to other marketing organizations.** This key function was previously performed by government agents or government-supported Cooperative Marketing Unions (CMUs). There are six different types of organizations involved in oilseed marketing in Zambia with different degrees of importance in each commodity subsector. These include producers who sell directly to processors, independent traders and agents, private contract marketing companies, parastatal contract marketing companies, cooperative marketing unions, and private marketing cooperatives.

**Particularly noteworthy is the emergence of private contract marketing companies in each of these subsectors.** They have a potentially important role to play in replacing the government-supported institutions that provided financing for inputs to production and extension services, and that marketed the produce of small-scale farmers. However, these contract marketing companies face several important constraints, only some of which are shared by other marketing organizations. These constraints include difficulty in gaining access to commercial

credit to purchase all of the crop for which they have contracted; difficulty in enforcing contract arrangements with producers, especially given the high level of competition in the marketing system; poor transportation infrastructure, which increases marketing difficulties and costs; expensive replacement parts for trucks; and problems acquiring inputs in a timely manner from input suppliers.

**Independent traders and agents are increasing in number and creating a high level of competition in the sunflower market.** The number of sunflower producers who sell their seed directly to processors is also increasing. In addition, contract marketing companies for sunflower are appearing; these provide small-scale producers with inputs on credit and with extension services in exchange for a certain amount of the sunflower produced and the right to purchase the crop. The Cooperative Marketing Unions are in decline relative to the other sunflower marketing organizations. They were formerly government-supported organizations that generally operated inefficiently and were primarily responsible for carrying out the government's pan-seasonal, pan-territorial pricing policy for agricultural produce. They have now become purchasers of last resort in Zambia and remain popular in oilseed marketing primarily with producers who are very distant from the main transportation routes and from processors.

**Soybean marketing is also becoming increasingly competitive,** particularly since 1992 when marketing organizations and farmers were first permitted to export the soybean crop. Private marketing cooperatives, which entered soybean marketing in 1992, are now playing a large role in negotiating prices, marketing, and exporting soybeans. In addition, an increasing number of independent traders are competing to purchase the soybean crop from the smaller producers, and some commercial farmers continue to sell seed directly to domestic processors. Contract marketing companies have also appeared in the soybean subsector.

**Seed cotton production is dominated by large commercial farmers,** who sell their cotton directly to private gins. These gins then export the majority of the seed following delinting. However, **small-scale seed cotton production remains strong,** under the continued support of the smallholder cotton parastatal, Lintco, which will be privatized next year. In addition, a number of new contract marketing companies are providing competition for this parastatal in financing smallholder production and marketing of seed cotton, although they face most of the same constraints as other contract marketing companies.

**Sunflower seed processing is characterized by the increasing role of the micro- and small-scale processors and by the decreasing role of the large, parastatal processors in Zambia.** The ranks of large-scale processors have just been joined by one of the private processors, SAOM, which expanded from medium to large scale by adding additional expeller plant capacity. Micro-processors, small-scale processors, and medium-scale processors are all gaining importance in sunflower seed processing as the large parastatals lose capacity due to deterioration of their processing plants. In particular, micro-processors, which utilize hand-operated presses, are proving to be profitable when located far enough apart, and are of great benefit to rural dwellers who live far from the main roads and from other sources of oil.

**Soybean processing continues to be primarily a medium- and large-scale operation in Zambia**, although this year soybean processors are faced with a short supply of soybeans. This is a result of the strong export incentive that foreign exchange provides farmers and marketing companies, especially given the high-inflation environment in Zambia. **Domestic cottonseed processing is still dominated by one private processor**, with a small portion processed by one of the large parastatals.

**The support system for agribusiness in Zambia is minimal.** Few services are available to assist the marketing system in its developmental stages. Government policy regarding agriculture and agribusiness is essentially nonexistent outside of the maize subsector. The Agricultural Marketing Act of 1989 is the only government legislation that exists to organize agricultural marketing. This act replaced the National Agricultural Marketing Board (NAMBOARD) and transferred all marketing functions to the cooperatives, making them semi-governmental bodies with the power to control marketing and inputs, among other things. However, under the liberalized economy, this act is no longer suitable, as it gives the government the ability to set prices.

**The oilseed industry, like much of the agricultural sector in Zambia, is the subject of minimal government policy.** It receives only marginal protection from imports of cheap cooking oil, despite the tax increases on imported oil in February 1992. Official import duties were increased from the official 15 percent and concessional 5-percent rate for processors to an across-the-board 30-percent duty. Import levies were also raised from 5 percent to 10 percent. Despite these taxes, refining and marketing imported crude oil continued to be very profitable, as of September 1992.

**This importation of cheap oil depresses growth in the domestic industry and may result in little or no increased production or processing capacity utilization.** The oil industry in this current marketing year has been further depressed by the late arrival of cooking oil from France as part of the drought relief Program to Prevent Malnutrition (PPM).

**Despite the dynamism of the oilseed sector in Zambia, key constraints, identified by the agribusinesses involved, are inhibiting growth in the sector.** In the area of government support and policies, businesses suggested the need for the government to exhibit a clearer and unwavering commitment to liberalized marketing, particularly with regard to liberalized exports of soybean. Marginal protection from cheap imports, in the face of what many businesses consider to be dumped imports of cooking oil, is depressing the market price for oil and hurting the agribusinesses involved. This is compounded by the late distribution of drought relief oil. The lack of grades and standards and of means to enforce them have resulted in little incentive to produce higher quality sunflower seed. Finally, the inadequate level of market information and the communications network to distribute that information will continue to inhibit the efficient marketing of oilseeds and oilseed products.

**Financial and credit constraints are a significant problem in Zambia.** Even without the current tight credit policy, which is intended to reduce inflation in Zambia, access to

commercial financing is difficult to obtain. This is a result of the lack of an agricultural credit act and the need for reform in land ownership and titling.

**Poor infrastructure is ever a problem in Zambia.** Poor roads, particularly secondary and feeder roads, make marketing of oilseeds difficult and costly. This problem is compounded by poor enforcement of weight limits and vehicular standards, limited funds available for road maintenance, and Zambia's low pricing of international transit fees in comparison with those of its neighbors. In addition, lack of onfarm storage, resulting from the former pan-seasonal, pan-territorial pricing policies, puts a strain on the marketing system and transportation infrastructure during the primary marketing season. All of the commercialized crop must move from farm to processor during a relatively short five-month period.

**The increasing role of trade associations in the oilseed industry** in voicing concerns to the government and in working to solve industry problems is a **positive move toward further growth in the industry.** This is particularly apparent in the efforts being undertaken by the Oilseed Industry Liaison Service (OILS) and by the potential role that the new Association of Supporters of Smallholder Development can play in working to alleviate the constraints faced by contract marketing companies.

There are several **primary recommendations** derived from this study. First, the government should pass the Agricultural Credit Act and reform the land ownership and title system, which will increase agribusiness access to commercial credit once inflation is successfully under control. Second, promote development of more onfarm storage and a rational system for leasing or selling government-owned storage. Third, support training in marketing and management for private sector businesses to increase the efficiency of the oilseed sector. Perhaps of greatest importance, conduct a study of import prices, import tariffs, and regional trade in oilseeds and oilseed products to help determine what policy the government should implement in the oilseed subsector and what positions it should take in negotiations with its trading partners. Also, increase international transit fees to generate more revenue for road maintenance and reduce road deterioration.

## 1. INTRODUCTION

The concept of an open market and private enterprise is new to Zambia. From 1964 until the end of 1991, almost all functions related to agribusiness in Zambia were controlled by government and its parastatals. The government not only set prices for inputs and products for most of this period but also acted as a major distributor, buyer, and financier of agricultural inputs and a purchaser of crops. All this was done at the expense of private initiative

Maize meal or "mealie meal" as it is called in Zambia is the main staple for more than 90 percent of Zambian households. In 1991, maize meal represented 8 percent of household food expenditures; up to 19 percent if other maize products are included. In contrast, cooking oil accounted for 4 percent of household food expenditures in 1991. Maize meal consumption in urban households usually decreases as income increases,<sup>1</sup> thus as real household incomes fall due to inflation and stagnant wages, the percentage of income spent on food and on maize meal will likely increase.

As a result of maize's dominance, agricultural marketing in Zambia has been largely influenced by maize marketing. Prices of other crops were set in reference to the price of maize. Producer prices of sorghum and sunflower, for example, were always set slightly lower than prices for maize with no regard to cost of production of each crop or the demand and supply situation. This control was a deliberate attempt by government to keep the cost of food affordable to poor families. At times price setting (particularly for maize) was politically motivated due to the highly urbanized and somewhat volatile population.

The government had to bear the burden of these subsidies in its attempt to keep prices low which was costly to the already crippled Zambian economy. These huge subsidies in the 1980s, given the government's limited budget and budget deficit, became increasingly difficult to sustain. In monetary terms subsidies grew to 3.4 billion kwacha. Due to depressed maize prices (as compared with border prices) consumer purchases were subsidized as high as 58 percent from 1986 to 1989 and maize smallholder incomes were depressed on average 15 percent from 1967 to 1984.

Since the new government came into office in 1991 a number of policies have been instituted to reverse previous practices. One of the bold decisions made by the Movement for Multiparty Democracy (MMD) government was to decontrol prices of products and inputs, although in practice the government still interferes in maize prices. This decontrol was initiated in conjunction with other policy changes that included liberalizing export and import trade regimes, providing export incentives, adjusting the exchange rate in real terms, and eliminating exchange rate restrictions. The government no longer has a monopoly in agribusiness. It now acts as a facilitator, rather than an active participant, in the marketing of agricultural products other than maize

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<sup>1</sup>Stampley, et. al, Expenditure Patterns, April 1992.

The removal of subsidies on agricultural inputs and produce, price decontrol, and promotion of a liberalized market are some of the new policies that are likely to influence the agribusiness development in Zambia. These policies place marketing activities in the hands of private individuals or organizations, not under the control of government or organizations supported by the government.

The individuals and companies that have never before operated in a free market may have difficulty adjusting to this change. While some may benefit from these policies, others, especially those who benefited most from government support, may not survive under these new conditions. This is the second marketing season (May 1993 to April 1994), although effectively the first for many crops due to last year's drought, during which the new marketing policies and the removal of government support from the Cooperative Marketing Unions (CMUs) will be tested. This study was commissioned to collect information on marketing innovations that have appeared following the liberalization of the agricultural marketing system in Zambia, and on the constraints agribusinesses perceive as inhibiting their operations.

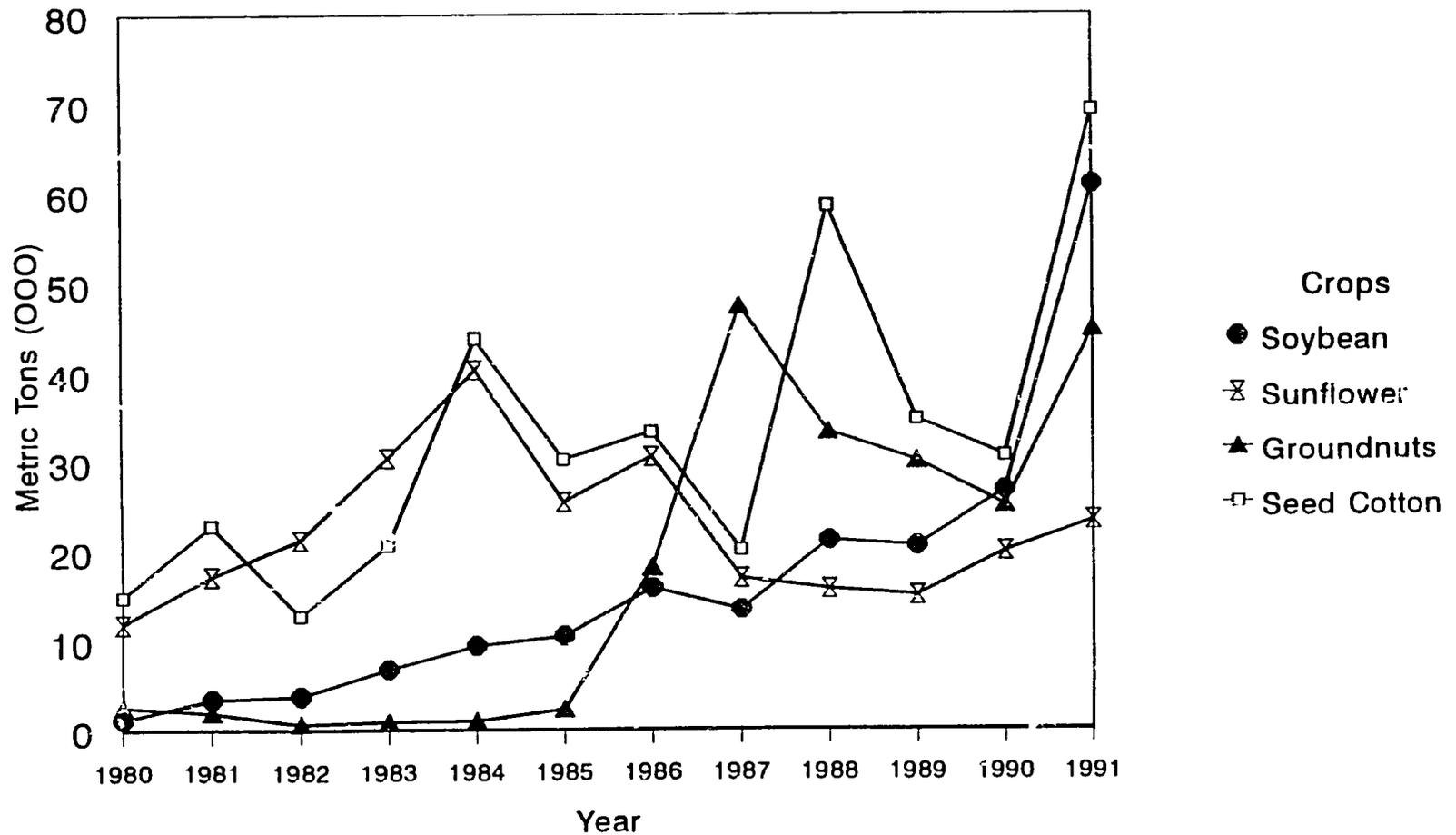
With maize the dominant food crop and food security concern, the oilseed sector in Zambia is underdeveloped. Exhibit 1a and 1b shows the production of some of the key oil crops in Zambia. It also demonstrates that until the mid-1980s, soybean production was minimal, due to the recent introduction of soy culture. Other crops' production has been highly volatile, in part due to Zambian dependence on rainfed agriculture for most commodities.

Zambia does not come close to meeting its vegetable oil needs. Based on estimated human dietary requirements, food security experts estimate that Zambia's oil needs for nutritional purposes should be about 100,000 tons, yet current demand is estimated between 46,000 and 60,000 tons, of which Zambia produces less than one-third. Zambia produced only an estimated 8,000 tons during 1991-92 due to the 1991-92 drought, compared with 13,000 tons the previous year. Very preliminary oilseed production estimates (September 1992) from USDA/FAS for 1992-93 seed processing are 77,000 tons, producing 16,000 tons of oil. Due to foreign exchange and financial difficulties, total oil imports were a low 13,000 tons in 1992-93 and 17,000 tons in 1991-92.

There were very few agribusinesses involved in oilseeds, although there are an increasing number of new ones, many of which are traders or small-scale and microprocessors of sunflower. Sunflower is most prevalent among small-scale farmers, used as a late planting, low input crop. Consequently, it often is planted too late in the season, using inferior seed and little if any fertilizer which results in a poor-quality crop. Soybean, only recently introduced into Zambia, requires considerable inputs and ongoing care, as well as a relatively complex processing technique. Cottonseed also requires a complex processing technique, and therefore competition in cottonseed processing is limited and will likely remain so. Presently the industry is dominated by one private plant that was established in agreement with the government in the mid-1980s to serve as the primary processor of the cotton parastatal's seeds.

# Zambia Agricultural Production, 1980 - 1991

## Major Oilseed Crops



Source: MAFF

**Exhibit 1b**  
**Production of Major Agricultural Crops**  
**1980 – 1991**  
**(Metric Tons) 1/**

Harvest Year 2/	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
<b>Cereals</b>												
Maize	335959	382266	513502	531164	564087	636267	1230594	1063449	1943219	1844978	1092671	1447793
Wheat	6528	9585	12843	10216	11314	—	30800	30200	42200	44915	51751	52753
Paddy—Rice	1852	2213	2896	5068	5439	6280	11207	8242	9352	11734	9213	14039
<b>Oil Expressing Seeds</b>												
Soybean	1295	3531	3876	6898	9555	10602	15906	13463	21225	20578	26791	60865
Sunflower	11919	17238	21304	30465	40425	25496	30577	17001	15773	15033	19966	23393
Groundnuts (shelled)	2737	2028	773	1042	1158	2419	18184	47426	33400	30104	25086	44809
<b>Seed Cotton</b>	14916	22913	12786	20718	43907	30254	33357	20156	58520	34814	30666	69152

1/ Production numbers through 1991 are crop intake amounts through official marketing organizations only

2/ Harvest year refers to year in which the bulk of the crop is harvested. For example, statistics for agricultural year 1980–1981 are shown in Harvest year 1981.

## **1.1 Methodology**

Upon commencement of the study, the consultants spent two days conducting literature reviews and identifying the key regions and commodities for research. Research efforts focused on agribusinesses related to soya, sunflower, and cottonseeds; groundnuts were not included in the survey because the primary areas of production are remote and because they are used primarily as a confectionery food. Field research was limited to four provinces—Lusaka, Central, Copperbelt, and Southern—due to time and distance constraints.

The consultants spent five days in Lusaka interviewing representatives of trade and industry associations, financial institutions, parastatal processing organizations, and private businesses. These meetings helped to identify the primary issues and constraints that face agribusinesses involved in oilseeds and to assess the current state of the industry.

The consultants spent five days in the Central and Copperbelt Provinces, identifying the main agribusiness participants in the oilseed industry and investigating the primary areas of production.

Four days of investigation were spent in the Southern Province, interviewing micro-, small-, and medium-scale processors, traders, and cooperatives, both private and quasi-government.

## **1.2 Limitations of the Study**

A short time period, long travel distances, and the need to cover at least several different areas of the country made it impossible for the two consultants to conduct an extensive survey of agribusiness in oilseeds in Zambia. Rather, the consultants focused on the detailed experiences of agribusiness entrepreneurs and of parastatals active in the sector. This primarily included sunflower and soybean, with some limited discussion of the cottonseed agribusiness subsector.

Groundnuts were not included in this study. While groundnuts have long been a traditional food in Zambia, no more than 20 percent of the crop enters commercial market channels and generally only 6 percent of the total production is processed into oil. The majority of groundnuts are sold to private traders and sold in informal markets, and hence official marketing information is limited. Much of the groundnut crop is consumed in rural areas, either eaten as a confectionery nut or ground and used in cooking. Four plants in Zambia, all in the Eastern Province, process groundnuts into cooking oil whenever local production exceeds rural household needs and regional commercial confectionery demands.

While some production issues are addressed, this is not a production study. Rather, it is a study of the characteristics, constraints, and innovations in the oilseed agribusiness subsector, focusing primarily on marketing and processing of the oilseeds. Its aim is to identify

firm-level and industry-wide constraints as a means to guide further donor efforts in promoting the growth of agribusiness in Sub-Saharan Africa.

Detailed information on the oilseed subsector in Zambia is lacking due to the dominance of the maize subsector and the relatively new presence of entrepreneurship in the oilseed subsector. Thus, the statistical and financial cost data obtained was provided voluntarily by the agribusinesses themselves. The source for these numbers should be taken into account.

### **1.3 Study Presentation**

This is a study of the agribusinesses in the oilseed subsector in Zambia, their characteristics and constraints, and the innovations and changes that have appeared with the liberalization of the marketing system in Zambia. It focuses on key agribusinesses in the sunflower, soybean, and cottonseed subsectors.

Chapter 2 examines the key agribusinesses operating in the three oilseed subsectors. Each subsector is examined individually in separate sections because there is limited overlap among firms that operate in each. Production data and key production issues for the subsector are presented at the beginning of each section. The firms that purchase raw oilseed directly from producers are then discussed, with special attention to the recent entrants into the market. A discussion of processors follows highlighting issues related to marketing oilseed products in both the sunflower and soybean sections. A brief overview of transportation and agricultural inputs follows.

Chapter 3 describes the agribusiness environment and support framework in Zambia, which include sections on the government role and policy, market information, and trade associations.

Chapter 4 presents the conclusions of the study, particularly the key constraints that face the agribusinesses in the oilseed subsector in Zambia.

## **2. AGRIBUSINESSES IN THE OILSEED SUBSECTOR: CHARACTERISTICS, CONSTRAINTS, AND INNOVATIONS**

This is a study of agribusinesses in the oilseed subsector, their characteristics and constraints, and the innovations and changes that have appeared with the liberalization of the marketing system in Zambia. Until a few years ago, there had been very little development of the private oilseed agribusiness subsector, due both to the dominance of parastatal firms and low growth of oilseed production. With Zambia still importing over two-thirds of its vegetable oil requirements, the subsector had previously been characterized by medium and large processing firms, primarily parastatal. Almost all oilseeds marketed by government-sponsored cooperatives were shipped to major urban centers for processing before the oil was transported to consumers. The rural population of Zambia (approximately 30 percent of total population) faced significantly higher prices for oil as a direct result of transportation costs incurred in the shipment of oilseeds to distant processing plants and the return transport of the processed product to the interior.

The oilseed agribusiness subsector in Zambia consists primarily of three crops, sunflower, soybean, and cottonseed. There is little overlap among the agribusinesses that process the three different oilseeds. In general, only the large (and a few of the medium-scale) processors produce cooking oil from more than one crop due to the different processing requirements for each. Sunflower is the primary oil crop and is produced mainly by small-scale farmers. It has an oil to protein ratio of 1:1. In contrast, processors of sunflower range from micro- to large-scale. Processed sunflower products include cooking oil and cake, the latter of which is frequently used as an ingredient in cattle feed. Sunflower cake, composed of a commonly grown, hard-shelled variety of sunflower, contains too much fiber for monogastric animals such as chickens.

Soybean is the second most important oilseed crop in Zambia, but has only been produced on a significant scale since the early 1980s. Initially commercial farmers were the major producers until the mid-1980s, when, supported by a parastatal, significant numbers of small-scale farmers entered into production. Soybean processing results in 17-18 percent oil by weight, which is sold as an undifferentiated product from sunflower oil in Zambia. However, the soy cake generally finds a strong market both domestically and internationally. This cake is used both as an ingredient in human food, such as porridges, and as a valued stockfeed ingredient. Unlike sunflower, most soybean processing is conducted by medium- and large-scale companies.

Cottonseed marketing and processing is only briefly addressed here, due to limited field time. Seed cotton in Zambia is grown first for its lint, and second for its seed which, like soybean, enjoys both a domestic and international market. Cottonseed processing produces both oil and cake. The oil is generally sold in Zambia undifferentiated from the other types of domestically produced cooking oil, and therefore competes for the same market. After undergoing processing to eliminate naturally existing poisons, from the seed, cottonseed cake is used as a protein additive for stockfeed.

The two large firms that have historically dominated Zambian cooking oil production are parastatal companies, Premium Oil Industries (POI) and Refined Oil Products (ROP). One private company which recently expanded to join the ranks of the large-scale firms and five medium-scale firms, including two cooperatives, also produce edible oil. However, while the large portion of oilseed in Zambia is processed by these eight firms, there is a viable, growing sunflower micro- and small-scale processing industry. The January 1993 census of hammermills and oilseed presses, conducted by the ZAMS project, revealed that there were an additional 150 previously uncounted presses in the country, primarily small-scale and hand-operated presses, bringing the known total to 171. Appendix 1 shows the four primary provinces and the type of small presses operating. Approximately 85 percent of these are located in Eastern, Central, Lusaka, and Southern Provinces. This developing small-scale industry is a positive trend, reducing the transportation difficulties and costs while increasing access to cooking oil in rural areas where sunflower is grown.

This chapter discusses, separately, the agribusiness subsectors related to each of the three oilseeds: sunflower, soybean and cottonseed. Two primary types of agribusinesses are detailed. First are those firms that transport the raw seed from producers to processors or to other marketing organizations. This key function was previously performed by government agents or government-supported CMUs. Thus, most processors do not have extensive purchasing and transport operations for unprocessed seed. The second category includes the various types of processors for each of the different oilseeds. At the end of the chapter, transportation and input distribution issues are briefly discussed.

The examination of these agribusinesses focused particularly on innovations in the subsector. With the recent switch to a private sector approach to agricultural marketing, private companies have begun to take on the roles previously filled by parastatals or other government-supported organizations. This paper emphasizes the new functions and innovations of the private sector's activities in Zambia. In addition, private sector attitudes toward industrial organizations, such as trade associations, are illustrated. Finally, firm-level constraints, as perceived by the agribusinesses themselves, are examined as are their recommendations to alleviate these constraints.

The constraints discussed here have been identified in earlier works as the most important to agribusiness development in Sub-Saharan Africa. These include firm-level constraints; management; credit and financial constraints (not explored in detail here because of Ohio State University's focus on these issues); state intervention; macroeconomic issues such as inflation and demand; and the donor-induced demand constraint resulting from food relief distribution. Because of the importance of infrastructure constraints, transportation issues addressed throughout the chapter are more specifically examined in the last section.

## **2.1 Sunflower Subsector**

Sunflower is the chief oilseed crop grown in Zambia. Mainly a smallholder crop, it is suitable for small-scale processing. Sunflower's popularity stems in part from its suitability for

planting later in the season, which eliminates some of the labor constraints that growers would face if they had to compete for labor during the maize-planting periods. Exhibit 2 is a simplified map of the sunflower subsector in Zambia, showing the subsector from input distribution to consumption. This section will briefly address sunflower production before concentrating on sunflower marketing and processing. Marketing of sunflower products will also be touched upon briefly.

### 2.1.1 Sunflower Production

Sunflower is primarily grown for its oil that contains an oil to protein ratio is 1:1. The oil content of varieties grown in Zambia range from 25 percent to 40 percent, but that of the most commonly grown varieties ranges from 28 percent to 30 percent. Sunflower is the predominant oilseed processed in Zambia by both large and small processors. The key production areas for sunflower are in the Central, Southern, and Eastern Provinces. It is estimated that these three provinces produce over 90% of all the sunflower in the country.

**Quantities Produced.** National production of sunflower rose rapidly from 10,000 tons in 1975 to 40,000 tons in 1984. However, between 1985 and 1989 production dropped from 26,000 to 7,400 before it increased from 18,647 in 1990 to 42,000 tons in 1991. The 1993 crop is conservatively forecast at 21,176 tons. With the removal of price restrictions and the increase in rural processing, sunflower production is likely to increase. It is speculated that the removal of subsidies on maize and the high cost of fertilizer will also encourage more farmers to plant sunflower as the alternative cash crop to maize. Despite this growth, the low onfarm yields, often below 500 kg/ha, will continue to constrain sunflower production until efforts to promote better cultural practices, such as those efforts by Africare and the ZAMS project, are more widely effective.

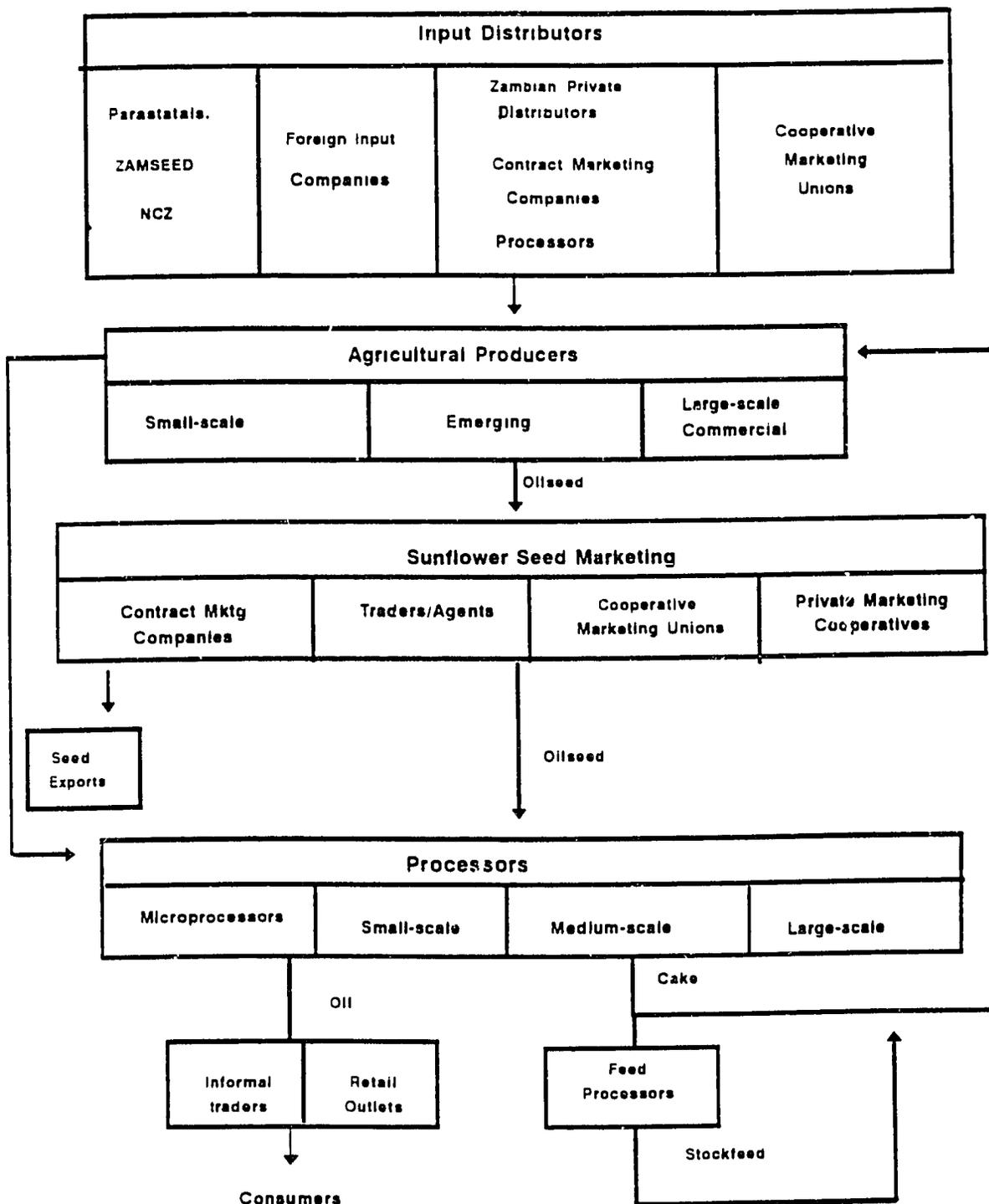
The constraints to sunflower production identified by the Mt. Makulu Central Research Station in Chilanga were, in order of priority: (1) a planting date at least one month too late for optimum yields, which results in a loss of more than 50 percent of potential yield and 5–50 percent in oil content; (2) inappropriate planting methods with most of the crop broadcast-seeded, which results in uneven distances between plants and subsequent crowding; (3) weeding conducted on less than 10 percent of all sunflower fields, which results in potential yield losses of 30–75 percent; (4) fertilization of less than 5 percent of the crop; and (5) less than 10 percent of the crop planted with improved varieties.<sup>2</sup> Solution of these constraints is further complicated by the poor extension services available to producers.

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<sup>2</sup>V.J. Eylands and B. Lubozhya, Agronomic Constraints.

**Exhibit 2**

**Sunflower Subsector Map**



**Type (size) of Producer.** Sunflower is produced primarily by small-scale producers, with some estimates at 95 percent. Commercial farmers eschew growing sunflower partly because of the short supply of improved seed. Due to this poor-quality seed, sunflower seed yields average about 500 kg/ha. More than half of the crop is planted using farmers' retained seed, unlike cotton and soybeans, where farmers depend on commercial sources of seed. In addition, the producer price for sunflower has been too low to attract large-scale farmers. With the recent increase in prices for sunflower, and the gradual entry of improved varieties, smallholders may increase their production of sunflower provided that: information on market prices and variety availability are disseminated by ZAMSEED, the seed parastatal, and the Ministry of Agriculture, Food and Fisheries (MAFF) extension officials, and that processors and traders begin differentiating prices for different types of sunflower seed.

**Quality/Type.** The use of poor seed and late planting contribute to the poor quality of sunflower growth. Local seed is low in oil (less than 30%) and has hard hulls, which cause wear and tear on processing machines.

Few buyers of sunflower check for seed quality, which has helped to perpetuate its poor quality. ZAMS and Africare plan to introduce a composite sunflower variety with a high oil content (40%) and soft hulls. The Research Branch of (MAFF) has developed high-yielding open-pollinated, and hybrid varieties (CCA 81 and CH 311). Africare intends to distribute 30-40 tons of improved seed for multiplication by farmers during the 1993-94 planting season, which will result in greater quantities available at rates considerably less than ZAMSEED charges for the hybrid varieties. In addition, emergent farmers in isolated regions will be contracted to multiply this seed.

A new organization of vegetable oil producers, processors, and consumers as well as representatives from non-governmental organizations and from government was formed in Zambia in 1992 to discuss constraints to the growth of the vegetable oil industry and come up with solutions. This group, called OILS, the Oilseed Industry Liaison Service, had its first annual workshop on June 8, 1992. In this workshop, one of the suggested solutions to the quality production difficulties for sunflower were the development and institution of a quick tool to measure oil content in the sunflower crop so that farmers will be paid for oil content rather than dead weight, and therefore will be more likely to use hybrid or improved parent seed.

### **2.1.2 Marketing Sunflower Seeds**

The marketing of sunflower and soybean in Zambia was picking up momentum by mid-June 1993. The prices offered in June per 50-kg bag of sunflower ranged from K3,000 without transport and K5,500 delivered at the factory. Premium Oil offered the highest price, although its payment terms included a three week delay. Few of the growing number of traders and marketing agents regularly check for impurities and oil content for sunflower, although this practice is on the rise.

The sunflower subsector map (Exhibit 2) shows five different types of participants in sunflower marketing in Zambia. The numbers of traders and agents and the numbers of producers selling their seed directly to processors are increasing in Zambia. In addition, newly appearing are the contract marketing companies which provide small-scale producers with inputs on credit and with extension services in exchange for a certain amount of free product and the right to purchase the crop. In decline are the Cooperative Marketing Unions, formerly government-supported organizations, which generally operated inefficiently and were primarily responsible for carrying out the government's pan-seasonal, pan-territorial pricing policy for agricultural produce. They have now become purchasers of last resort in Zambia and remain particularly popular for producers which are very distant from the main transportation routes and from the processors.

**Direct Selling.** Until recently, most farmers sold their sunflower to cooperatives, which in turn sold to processors. However, many processors, such as Bulyo Limited, Southern African Oil Mills (SAOM), and Premium Oil Industries (POI), began buying directly from farmers. Direct selling is more pronounced this year than in past years as a result of the introduction of an open market and of the diffusion of small- and medium-size processors into more remote areas. Farmers find their own transport to deliver bags of sunflower to selling points or processing plants. Direct selling provides the farmer with additional profit, and reduces the additional transport and transaction profits that would have accrued to the marketing agent or cooperative. During the primary marketing period, most farmers do not have pressing farming activities with which to occupy themselves and therefore have some time available to market their crop.

**Contract Marketing Companies.** A variety of firms including some processors have contracted small-scale farmers to grow sunflower using improved seed this year, providing financing for the necessary inputs. This was done with an understanding that the financing company would have the first chance to purchase the harvested crop. Some of these processors have been disappointed to find that private traders purchased the crop before they could mobilize their own finances to do so. This loss of improved seed, combined with a severe shortage of operating capital, disrupted their plans to such an extent that at least one will most likely not begin processing this year, and another new plant claimed it would likely shut down after operating for only three weeks.

At least one contract marketing company and one commercial farmer have also financed small-scale sunflower growers, in exchange for sunflower and for contractual first right to purchase the remainder of the crop as interest payment. The contract marketing company's primary market for both soybean and sunflower is the export market, where faster payment and scarce foreign exchange are attainable. However, as of the June 1993 marketing season, it had not secured a contract for sunflower exports. Nor had it been able to obtain a loan to finance its export contract. However, with the World Bank loan to finance agricultural marketing, the company feels that its good bank relations will enable it to obtain the necessary financing.

**Traders/Agents.** Although Cooperative Marketing Unions (CMUs) have been the primary force in marketing for years, processors have used purchasing agents to buy sunflower from farmers for several years. Reports by several companies indicate that the competition to buy sunflower has become intense in some areas this season. Companies that cannot compete on price or are slow to arrange financing are likely to end with insufficient raw material to process throughout the year, in particular if CMU stocks are low, due to their potential shortage of funds to purchase the crop in some provinces.

Some independent traders have entered the sunflower market as well. They are offering as low as K3,000 per 50-kg bag while selling the same to processors or cooperatives at prices ranging from K4,000 to K5,500, after paying for transportation. For the first time in Zambia, a bag of sunflower is fetching a price that approaches the price of a bag of maize. The problems traders face include the high costs of diesel and the difficulty of purchasing replacement parts. In addition, coordination is made more difficult by the lack of means of communication, which necessitates several trips to each pickup area to organize the purchase, supply of bags, pickup and payment for product.

**Cooperative Marketing Unions/Private Marketing Cooperatives.** There are now several private marketing cooperatives in Zambia. The Zambia Agriculture and Trading Company (ZATCO), which operates a sunflower seed oil and stockfeed processing plant, has existed since 1927 and is the only private cooperative that concentrates on purchasing sunflower. This year ZATCO faces severe financing constraints that are impeding its acquisition of sunflower seed for processing. Of the private cooperatives which newly entered into marketing activities in 1992 to assist in the marketing of the soybean crop, at least one, Mazabuka Marketing & Development Company (MMDC), purchases sunflower in small quantities from small-scale farmers, on an unadvertised and no-profit basis. The seed is then sold immediately to Premium Oil, almost at cost, with a K500/50-kg bag differential between purchase cost from the farmer and sale price to Premium Oil in Lusaka.

Farmers have the option to sell sunflower to the provincial CMUs, where they can deliver the seed to small rural depots for payment in fourteen days. In the Southern Province, where 41 percent of Zambia's sunflower is grown, the Southern Province Cooperative Marketing Union (SPCMU), unlike most other CMUs, remains financially sound and is expected to be able to purchase the sunflower crop in the Southern Province. This is particularly important due to the distribution of drought relief oil under the Program to Prevent Malnutrition (PPM). This late arriving oil had disrupted the market for cooking oil by June, through both decreased demand for oil and the leakage of the oil onto the market. This disruption slowed the turnover of oil, and therefore limited the operating capital available to processors and inhibited their ability to purchase seed.

### 2.1.3 Sunflower Processing

Sunflower, the major oilseed crop in Zambia, is grown primarily for its oil. For other oil crops in Zambia, such as soybean and cottonseed, oil is more of a by-product of cake and lint production.

The processing capacity for sunflower in Zambia is currently underutilized. It is estimated that POI alone has a capacity of 60,000 tons per year. The national production of sunflower is less than half that capacity.

Sunflower seed processing is characterized by the decreasing role of the large, parastatal processors in Zambia, who have just been joined in their size ranking by one of the expanding private processors, SAOM, which has just expanded from medium-scale to large-scale. Microprocessors, small-scale processors, and medium-scale processors are all gaining importance in the subsector as the large parastatals lose capacity.

Zambia's oilseed processing sector is dominated by the processing capacities of three large plants (Premium Oil, ROP, and SAOM) and several medium mills such as Eastern Cooperative Union (ECU), ZATCO, Supa Oil, and Robinhood Milling, however Supa Oil and ROP do not process sunflower seed. There are more than 160 small-size oil presses distributed in various provinces, processing almost exclusively sunflower seed. Hand-operated oil presses, such as spindle-and-ram presses, are becoming popular for micro-scale processing of mostly sunflower. A recent study undertaken by the ZAMS Project Monitoring and Evaluation Offices revealed that of this 160, 133 are located in Eastern, Central, Southern, and Lusaka Provinces (Appendix 1). This is a 485 percent increase in the number of processing plants over the number cited in a report in 1987 which focused on medium- and large-scale presses. About 63 percent of these small presses are hand-operated, the remainder are either diesel-powered or electric.

**Microprocessors.** Sunflower processing at the microprocessor level is a result in large part of the Africare project, whose objective is to introduce and promote rural oilseed processing by small-scale business men and women by introducing small hand-operated oil presses. This project started in 1988 and has been most active in the Southern Province. Together with the Zambia Agribusiness and Management Support (ZAMS) Project, Africare has introduced a ram press for processing sunflower, and potentially, other crops such as sesame. However, at this time only sunflower is being processed by this group of processors, as sesame has not yet become widely cultivated and the oil extraction process for soybean and cottonseed is too complex.

While this study was only able to get detailed cost and revenue information from one microprocessor, the ZAMS project undertook a comprehensive feasibility and financial analysis of a process involving a series of hand-operated machines, including a decorticator, winnower, roller, and spindle press. This analysis was conducted with seeds of varying oil contents and other characteristics and can be examined in detail in the analysis published by RONCO.

The hand-operated ram presses were sold to women's groups and individuals located in 20 sites in the Southern Province. Africare also sold improved seed to members of these groups to promote production of good-quality seed. One of the most active and well-organized groups is the Tusole Women's Club (45 km west of Monze and Pemba), which makes about K40,000 per month in revenue. It was established in 1989 and now has a membership of 20. Although a club for women, a male bookkeeper is employed to manage the business. (See Case Study of Tusole Women's Club.)

The number of private individuals processing sunflower at the micro-level is increasing to levels that are forcing Africare to stretch its services more than before. Although the majority of these groups were started as community groups, some members have undertaken individual ownership. These include Mr. Hamuwele, a teacher at Batoka, and Mr. Brian Chatembwa, a shopowner in Pemba. The women's group at Pemba is another example of a group that operates more as a business than as a social activity, generating profits and investing in other enterprises.

These microprocessing operations appear to be most economically viable when they are far from primary roads and competition from other processors and traders. For example, the Tusole Club is 45 km from the nearest store. In contrast, the Batoka press, located on the primary road, was very much affected by changes in supply, due to the high level of competition. This was apparent when the operation went from revenue-generating to relatively stagnant sales of oil as a result of the supplies of donated oil still being distributed through drought relief efforts.

**Small-scale Processors.** Small-scale processors include those that use motorized oil expellers capable of processing 10–14 50-kg bags of sunflower per day. Expellers such as Rosedown Mini 40 (Chikankata and St. Edmund's Secondary School), Tiny (Maruti, Monze District SPCMU, and Bulyo Ltd.), and Komet (Scherrer in Pemba and Monze Diocese) are in this category. ZAMS estimates there are more than 200 micro and small presses in the country.

Sunflower is the common raw material processed by the small presses. Competition between micro- and small-scale processors for sunflower was reported by operators of the SPCMU oil expeller at Monze. However, in a good year, when sunflower is abundant, this competition is not sufficient to affect production.

Because small-scale expellers have a greater capacity, and thus must purchase larger quantities of crop during the marketing season, they suffer more from lack of finance than do microprocessors. Small-scale processors, together with medium and large processors, are constrained by the high interest rates on borrowed money in Zambia, which in June reached 140 percent.

For example, the owner of Bulyo Ltd. reported that he needs about K200 million to buy all the seed he needs to process in a year. He depends on bank overdrafts to finance the purchasing. However, with the current interest rates, he feels that it does not make economic sense to borrow too much money. Therefore, this year he is buying the seed in installments.

## Case Study: Tusole Women's Club

Begun in 1990 under the auspices of Africare, the Tusole Women's Club pressing operation has become a profitable enterprise able to supply local residents with oil at reasonable prices, while paying labor expenses and the loan amount for the ram press. While owned by a women's social club of twenty members, the ram press operation is profitable and is supplying both a need for a market for sunflower and for accessible sources of cooking oil, with the nearest town 45 km away. Because it is a social group and owned by those it services, the potential problem of monopoly rents is alleviated.

By June of 1993, the operation expects to have paid off its interest-free debt to Africare on the first ram press and to begin to raise funds for a bicycle for transportation purposes to the bank in town and to the various farms to solicit business.

Faced with the primary business constraint that most surrounding farmers are short of kwacha for the purchase of cooking oil, in particular immediately before the new maize and oilseed marketing season, the manager of Tusole instituted a barter system which would enable the club to expand its client-base and make extra profits. By selling a K750 750 ml bottle of oil for a tin (15 kg) of maize, collecting enough maize to make a small truck load, and renting transportation at up to K700 per bag, the maize can be sold in town at K7000 for a total additional net revenue, beyond that from the sale of just a bottle of oil, of K3550 per bag maize or K645 per bottle of oil. Also relatively uncommon, Tusole differentiates purchase prices between hybrid and other sunflower seed. Following is the breakdown of expenses and revenue for May, which does not include the maize which was traded.

CATEGORY	VALUE	PERCENT	
Purchase Costs - sunflower	27,000	85%	
Wages	4,350	14%	
Other management	80	0.3%	
Other transaction costs	180	0.6%	
<b>TOTAL MAY COSTS</b>	<b>31,610</b>	<b>100%</b>	
<b>Revenue:</b>			
oil (@k750/750 ml)	31,500	85%	
cake (@k150/bag)	5,000	13%	
press fees (k150/bag)	650	1.7%	
<b>TOTAL MAY REVENUES</b>	<b>37,150</b>	<b>100%</b>	<b>PROFIT (without capital or repayment costs): 17.5%</b>

The business constraints perceived by the Tusole Women's Club bookkeeper, in priority order, include:

\* Transportation: Although accessible by relatively good roads, the Tusole club has no local transportation available. A bicycle would assist the bookkeeper to more easily deposit funds or hire transport for delivering products to the towns.

\* Storage: Although the turnover for sunflower seed is fast enough to limit storage needs, barter trade created a need to accumulate maize for later sale.

\* Marketing: Lack of transportation and communication avenues makes it difficult to inform large farmers of the availability of cake for stockfeed or village farmers of sunflower and oil prices.

Mr. Amin Scherrer of Pemba, who operates a Komet expeller that crushes 10 bags per day, faces a similar financing problem. Last planting season he financed the purchase of hybrid seed for 350 farmers. However, due to lack of income resulting from the sharp decline in sunflower oil turnover, he is having difficulty keeping his financing agreement and purchasing the crop which he financed. This decreased turnover in oil sales dates from the beginning of the drought—relief oil distribution under the World Food Program's Program to Prevent Malnutrition (PPM). Distribution of relief oil began at the start of the oilseed marketing season. Prior to the distribution of the PPM cooking oil, he could sell his oil at K1000 per liter and he would sell 40 to 103 liters per day. Now, he sells only 5 to 10 liters per day and cannot lower price enough to sell a high enough volume to turn a profit. Instead, he is storing the oil and waiting to sell when prices rise again.

Mr. Scherrer is managing to continue his operations by taking the seed owed to him by farmers for financing expenses. In addition, he purchases some of the remaining crop per his agreement. Part of his purchases he keeps for future use, part he sells to a medium-scale processor, using the profit he makes in trade to finance more seed for his own processing operations.

Mr. Scherrer ranks the constraints to his business in order of importance, as (1) the significant drop in demand for oil from an average 60 liters per day to 10 liters per day, resulting from the distribution of the food aid oil, (2) the shortage of credit to purchase the sunflower crop, resulting from both high interest rates and low turnover, and (3) the lack of storage capacity that creates a short marketing season. During the rainy season, bad roads and moisture damage to seed caused by transportation in the rains further increases the difficulty in purchasing suitable sunflower for processing.

The breakdown of Mr. Scherrer's costs is shown in Exhibit 3. He has no transportation costs because he purchases seed from nearby farmers, but his equipment costs, including the replacement of the worm every 4,000 liters, are fairly high. His personnel costs are a lower percentage of his total than those at the Tusole Women's Club, despite his relatively generous wage rates, due to his higher volume and the electric-powered motor.

### Exhibit 3

#### Komet Expeller Cost Centers

Cost Centers	Value/liter	Percent
Seed	400	53.5%
Personnel	48	6.4%
Electricity	20	2.7%
Worm	140	18.7%
Strawer	70	9.4%
Heater	40	5.3%
Maintenance/Other	30	4.0%
<b>Total</b>	<b>748</b>	<b>100.0%</b>
Sells @ K1,000/liter, resulting in K152/l as return to capital and debt to friends		

**Medium-scale Processors.** Medium-scale processors, those capable of processing up to 50 tons per day, are hurt more by high interest rates than small processors because they need to buy their entire, and significantly larger annual requirement of sunflower within a period of three months, due to lack of on-farm storage capacity to protect the seed from the rains.

The lack of funds to purchase seed is such a severe problem that several processors had almost decided to shut down their operations at the time of the interviews. Mosi Textiles is seriously considering not beginning to process this year because of what Mr. Patel called uncertainty in the supply of sunflower and lack of financing to purchase it. High Protein Foods, a new factory commissioned this year, is likely to stop processing after operating for only three weeks.

Companies that have been in the oil processing business for some years also complain about the confused state of the market for oil. Many companies consider it too expensive to operate under the current marketing environment, particularly in the face of the high returns which can be made on short-term bonds. Management generally feels that cheap imports of oil have made it impossible for locally processed oil to compete.

Medium-scale processors such as ZATCO and High Protein Foods are seeking bank loans, but with little success because banks have been slow to approve loans for operating capital. The soonest ZATCO can expect to get money from its bank is July, which is almost too late to purchase sunflower seed directly from farmers. Despite the high bank interest rates, ZATCO and the others are still approaching banks for loans.

**Large-scale Processors.** Premium Oil Industry (POI), a parastatal company, is the largest processor of sunflower in Zambia, processing up to 50 percent of the entire crop. It's

processing capacity is 80 tons per day, but it plans to operate on a minimum 12,100 tons for the 1993–94 processing year and processes more imported crude oil, due to deteriorated plant capacity for seed processing. POI is the largest processor of sunflower in the country, processing up to 50% of the crop by some estimates. The company both expels and refines oil and is the only plant in the country that uses a solvent extraction process. In addition, POI promotes the production of improved sunflower seed by sponsoring multiplication of hybrid seed and distributing it to farmers. In 1992, POI distributed 8 metric tons (mt) of seed, in 1993 7 mt. Unfortunately, POI only has enough funds to assist a relatively small number of farmers and to hire only two extension agents. The company also imports crude oil for refining in addition to its raw sunflower and its soybean processing.

Like smaller processors, POI has difficulty financing the purchase of raw sunflower seed. In addition, the size of its needs, its central location, and its three-week delay in paying farmers and other sunflower marketing agents forces POI to pay higher prices for the raw seed, (K5,500/50-kg bag) than processors in comparison to Pemba and Choma (K4,000), and in Mazabuka (K4,000–K5,000). While export of the sunflower crop is not imminent, as it is for soybean, unless organizations such as the cooperative marketing unions with adequate storage space purchase the crop from the farmers, it will be destroyed with the rains in November. If cooperatives have difficulty with their finances, this may be a problem.

The lack of widely disseminated reliable market information on price and quantities of product, beyond that offered by the cooperatives, the magazines, and word of mouth is another constraint identified by POI as inhibiting the production and marketing of agricultural products.

SAOM, the private large-scale sunflower and soybean processing company, is considered by many to be one of the most efficient and the fastest growing processors, having only recently expanded to 100 tons crushing capacity per day, from its origin of 25 tons per day. However, SAOM considers it to be uneconomic to operate in the current marketing environment, despite the company's apparently good planning and management. Management feels that cheap imports of oil have made it impossible for locally processed oil to compete. Business is so bad that the company may close the factory for the current year and wait to see what next year brings. Commercial loans are too expensive for them to be considered worthwhile, considering the low selling price for cooking oil.

#### **2.1.4 Marketing Sunflower Products**

Sunflower seeds are processed into two primary products, cooking oil and sunflower cake, although the domestically produced products face some serious problems. The generally low quality of the composite seed prevalent in Zambia reduces the output of oil and at the same time reduces the quality of sunflower cake and its ability to be used as a stockfeed. Additionally, domestic processors suffer due to consumers' preference for imported products which they feel to be superior. This prevailing attitude has compounded the problem caused by inexpensive and/or donated imports of cooking oil from Europe.

**Oil.** Domestically produced cooking oil is generally undifferentiated by type in Zambia and therefore is all the same price. A large portion of the domestically produced vegetable oil in Zambia is sold as partially refined oil and is sold in crude and unattractive containers, by international standards. Much of the oil is sold ex-factory and distributed via small retailers. A significant portion of this is in turn sold on the informal market, with a relatively limited supply sold in stores.

Almost all oil processors are worried about the negative effect of cheap imported oil on the sale of Zambian processed oil. The damage to Zambian industry from cheap oil imports has been complicated this year by donor and NGO drought relief efforts. The continued supply of food aid oil by the PPM in the Southern Province particularly affects the processors in that province, and combined with the tight financial market, inhibits their ability to purchase this year's crop. A total of 730,000 liters was donated through the PPM program, 655,000 liters of which arrived from France near the end of February, very late delivery for drought relief purposes. Stocks of oil in mid-July remained at 336,000 liters. In some areas of the province, families with children under five years old and those with older members get 2.5 liters of oil per month. Some of this free oil is finding its way onto the open market, thus depressing prices and demand. ZATCO, for instance, is holding 1 million Kwacha worth of oil due to diminished sales volume.

**Cake** A market for Zambian sunflower cake exists both domestically and internationally in Namibia and South Africa. Zambia produced an estimated 5,000 tons of cake from commercial sunflower extraction and 3,200 tons from extrusion in 1989. The actual amount of sunflower cake produced is probably increasing due to the proliferation of small processing units, particularly in the Southern, Eastern, Central, and Lusaka Provinces. This cake is often sold informally to nearby commercial farmers or used locally and therefore may be unaccounted for. However, the market for sunflower cake is not as good as that for soy cake, due primarily to the high-fiber, low-protein content of sunflower cake derived from composite seed and therefore its unsuitability for monogastric animals. Further, the prevalent Zambian composite seed is often so light and small that decortication to lower the fiber content of the cake loses too large a portion of the seed. The Africare oilseed project in Zambia is addressing this problem by sponsoring the multiplication of 30 to 40 tons of high oil content composite seed to be distributed at a reasonable price. As the effects of the Africare program of spreading improved seed throughout Zambia take hold, the market for sunflower cake for use in stockfeed might grow.

## **2.2 Soybean Subsector**

Soybean production in Zambia is a fairly recent phenomenon. Following years of government-sponsored research and promotion, it was introduced to augment the protein supply in Zambia. Largely a commercial farmer crop, 8 percent of national soybean production is now produced by smallholders. While the soybean crop is an important source of oil, it is processed first as cake for use in both human foods and stockfeeds and second for cooking oil. There are very few small-scale processors involved in soybean oil extraction because of the complex nature

of processing soybean for efficient oil extraction and the limited number of farmers producing soybean. Exhibit 4 is a simplified map of the soybean subsector in Zambia, displaying the subsector from input distribution to consumption. The companies involved in soybean marketing and processing will be the focus of this section, with only a brief discussion of production and of product marketing.

### 2.2.1 Soybean Production

Soybean was first produced commercially in Zambia on a significant scale in the 1980s, with production of 10,000 tons in 1985 and 26,000 tons in 1988. Soybean has an oil to protein ratio of 1:2, generally containing only 18 percent oil by weight, in contrast to sunflower's oil content range of 25–40 percent. The major production areas for soybean are Central, Copperbelt, Eastern, Lusaka, and Southern Provinces, which grow 99 percent of Zambia's crop.

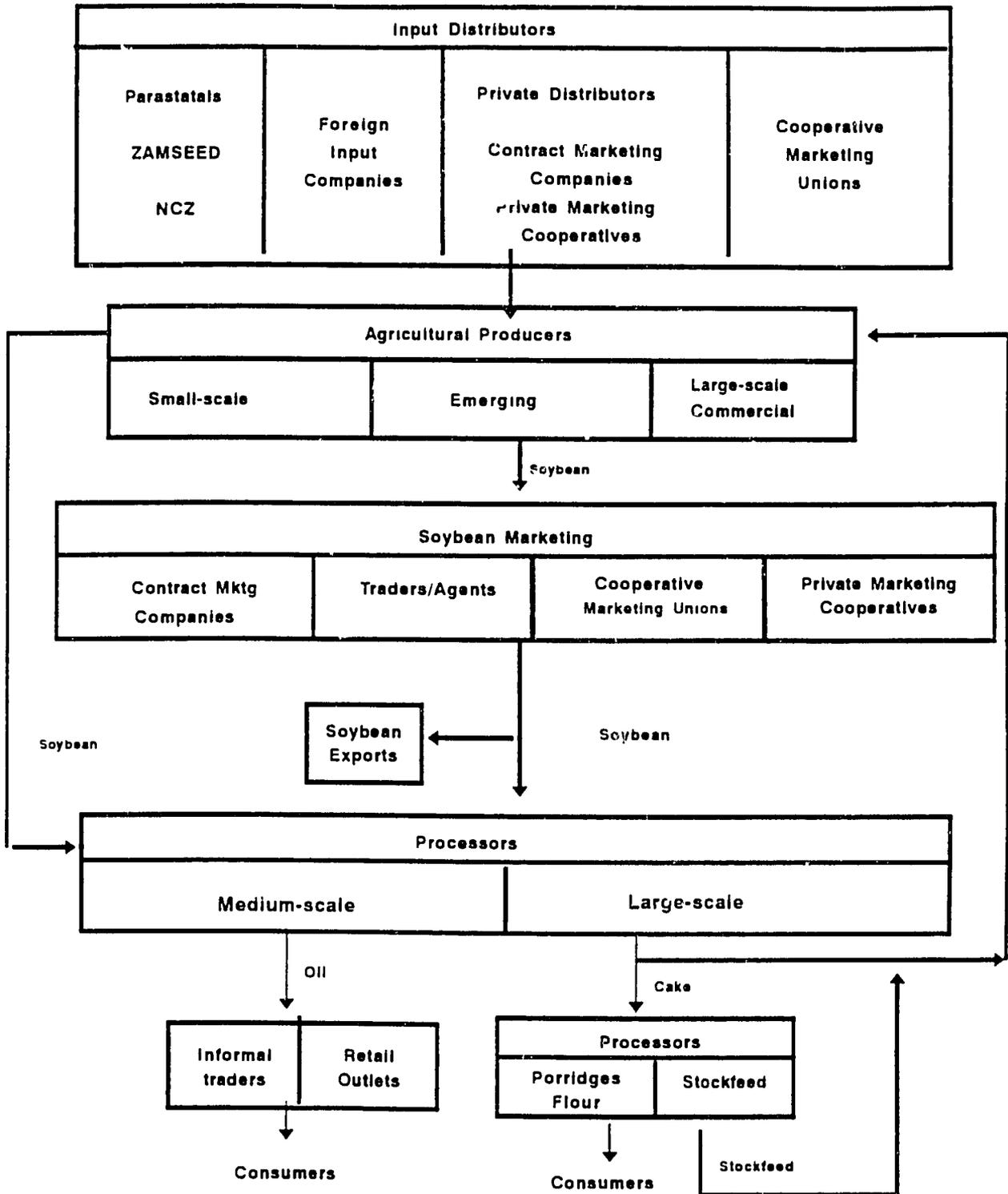
**Quantities Produced.** The area planted to soybean has declined from 22,786 hectares in 1991 to 19,863 hectares in 1992 (a 13% decline). However, this follows a period of significant growth in soybean production since 1980. Small farmers began growing soybeans in the early 1980s, and an estimated 37,000 small farmers grew soybean in the 1991–92 season. The MAFF-reported rise and then drop in hectares planted may be a result of the beginning and the end of parastatal crop financing and extension support for small farmers. Total production is difficult to estimate because some of the seed is used on farms as stockfeed. However, an unofficial production forecast (from an advisor to the MAFF) for the 1992–93 season is about 50,000 tons of soybean, higher than the official forecast.

**Type (Size) of Producer** More than 90 percent of the soybean crop is produced by medium-scale (20–60 hectares) and large-scale (>60 hectares) commercial farmers. The remainder is produced by small-scale growers, many of whom received crop financing and extension services from Lintco, the smallholder development parastatal, until 1992. Because farmers can earn foreign currency by exporting, an increase in production by commercial farmers may occur if international prices do not continue to drop from their 1992 level. Increases in production by small farmers will depend on several factors: the rise of independent, private input financiers who provide extension services and inputs to small farmers; availability of price information; and increased knowledge of the recently introduced soybean crop.

**Quality/Type.** Zambia produces export-quality soybeans, yet there are no consistent quality control measures or grades in Zambia. With the market liberalization and the export of soybean, however, marketing agents and marketing cooperatives are monitoring the quality of the soya and holding the commercial farmers more accountable for quality than in the past in order to meet international standards. Soybean produced by small-scale growers and harvested by hand tends to have a lower percent foreign matter than seed harvested by combine. Seed harvested early in June is likely to have higher moisture content than that harvested in July, and therefore needs to be tested for moisture content to determine what the weight will be at the time of export and to meet international moisture content standards.

**Exhibit 4**

**Soybean Subsector Map**



### 2.2.2 Marketing Soybeans

Soybean marketing has undergone some important changes in the past three years. Through 1990, commercial farmers sold their crop directly to the Zambian processors, which are dominated by POI. They generally sold at a price arrived at by the parastatals in discussions led by the Commercial Farmers' Bureau (now the Zambia National Farmers' Bureau, ZNFB), in keeping with the government policy of maintaining low cooking oil prices through subsidies to parastatals. Small-scale farmers sold their soybean crop to Lintco, the parastatal company that until 1992 financed the inputs of small farmers in exchange for marketing contracts

In 1991 the marketing system for soybeans began to change. The Commercial Farmers' Bureau (CFB) agreed with POI at planting time on a price for the crop to be harvested in April–May 1991. This price was tied to the import parity price and was followed by the small processors as well. CFB negotiated at planting time the next year with all of the processors. However, financial difficulties kept POI out of the market for soybean purchases at harvest time and new marketing agents and regulations were needed to market the 1992 crop. This led to government encouragement of new marketing organizations and to the export of a portion of the soybean crop in 1992.

This year there is an increasing variety and number of oilseed marketing options and companies, including contract marketing companies, independent traders, agents, private marketing cooperatives, and cooperative marketing unions (CMUs), with CMUs the purchaser of last resort for the marginal producers in the subsector. June 1993 prices for soya ranged from K9,500 and K11,000 per 90-kg bag of soya, with various delivery and payment terms attached to different prices. The organizations that pay the highest prices generally have delayed payment terms and require that transportation be covered by the seller. Those with the most favorable terms, such as immediate payment and ex-farm pick up or hard currency payment, generally pay lower prices for the beans.

**Direct Selling.** Large commercial farmers have historically used the Zambia National Farmers' Union (ZNFU), a union of more than 1,600 farmers grouped in 24 local associations, to negotiate the price for soya with the processing firms. The associations then sold directly to the processors or to the cooperatives. This practice continues for farmers who sell on the domestic market. In contrast, the small soybean farmers historically sold to Lintco, which arranged for transportation of the soya from the farms to the processors.

**Contract Marketing Companies.** One of the recent innovations in the oilseed marketing system in Zambia is the entry of private firms into contract marketing, previously the exclusive role of the parastatal organizations. Only one private company is reportedly operating an outgrower contract marketing scheme for soybean, although other companies using outgrowers have expressed interest in producing commodities such as soybean. This oilseed outgrower company was established originally in 1989 as a marketing firm to provide soybeans to Lintco. It evolved into a contract marketing firm, contracting farmers to produce both sunflower and soybean. The firm provided farmers with inputs at discounted interest rates in return for "first

refusal rights" to buy the crop. In 1992, despite the drought in Zambia, this firm purchased and exported 1,500 mt sunflower and 2,000 mt soya to the Republic of South Africa (RSA) and 1,000 mt soya to Botswana. As of the end of June 1993, the company had a contract to export up to 10,000 mt of soya to South Africa, but no sunflower.

Exhibit 5 shows the breakdown of costs forecast by this contract marketing firm for the period May–October 1993, for soybeans only. Although it does not include depreciation of transport equipment or other capital outlays, it shows a very profitable return on soybean marketing and exporting in Zambia. Transportation costs do not seem excessively high, likely a result of owning its own trucks.

### Exhibit 5

#### Expenditure and Revenue Forecast for Contract Marketing Company

#### Soybeans

Categories	Percentage
<b>EXPENDITURES</b>	
Purchases	96.1
Rates and Rents	0.7
Salaries, Wages, Casual Labor	0.0
Travelling	0.7
Repairs and Maintenance MV	0.2
Fuels & Oils	0.1
Insurance & Licenses	0.4
Loan Interest	1.6
<b>TOTAL EXPENDITURE</b>	<b>100.0</b>
Net Revenue as a % of Expenditure	25

The lack of financing is a large problem for marketing firms. Despite holding contracts for export, firms have difficulty obtaining credit to purchase the quantity of product necessary. This is particularly difficult for marketing companies, which, despite good business records, have very little collateral to offer banks in exchange for the loans. In this case, the company intends to apply for funds provided by the MAFF through a recent World Bank loan, making credit available through commercial banks for agricultural marketing purposes.

One of the largest issues faced by contract marketing companies, after the issue of finance, is the problem of fulfillment of contracts by small farmers. In Zambia, there is a long history of permissiveness in the enforcement of contracts and collection of debts from

smallholders. The confusion by farmers over their negotiation rights and obligations have created a considerable obstacle for contract marketing companies, in addition to their delayed financing for purchasing all of the crop which they financed during planting season.

Currently, contract marketing companies, those working in the same commodities and in different commodities, bring up the same issues such as difficulties with transportation, difficulties acquiring inputs, breaking of purchasing contracts by farmers, and farmers' sales to independent traders and others. These companies feel a need to develop an organization, as the industry grows larger, to address common problems and solutions.

Membership in the Oil Industry Liaison Service (OILS), an association that includes members from all sectors of the vegetable oil/protein meal and by-products industry, is viewed by contract marketing firms as a partial solution for increasing communication among producers, marketers, and processors. However, this association has its limits. While the shared information, the ideas for solving industry problems, and the access to the government's ear are important, the contract marketing companies feel a need to discuss their specific problems with similar companies.

The lack of an effective market information system that can reach the majority of farmers is one of the key constraints identified by contract marketing firms. Without an effective market information system, supplying both domestic and international information on production quantities and prices, contract marketing firms do not know what prices to offer farmers. Zambia does not have an established system of forward contracting due to its previous pan-seasonal, pan-territorial pricing policies, although forward pricing is done by some commercial farmers with Zambian processors. Therefore, contract marketing firms do not have the means to reduce their risk. The future prices they offer farmers without this market information are then subject to a risk premium, which appears when they offer lower future prices than otherwise potentially possible.

**Traders/Agents.** There are a growing number of independent traders and company agents who buy crops, particularly soybean, directly from farmers, thus creating a very competitive market in the more easily accessible areas. These traders are also able to go to remote villages, where they organize the farmers to collect their soya either at the small rural depots or at a central farm for later collection with larger trucks. The problems they face include the high costs of diesel and the difficulty purchasing replacement parts. In addition, the lack of communication requires several trips to each pickup area to organize the purchase, supply of bags, pickup, and payment for product.

One trading company, which also engages in manufacturing and processing, is both growing soybean and assembling and exporting soybean. The managing director and owner, as a well-educated and experienced trader, finds nontraditional export destinations to be more profitable than the traditional regional export destinations such as Johannesburg, where the soybean price was US\$235 f.o.b. in June 1993. To identify market opportunities, this trader utilizes the commodity exchange bulletins from the ZNFU and from the international commodity

exchanges in both South Africa and the United States for market price and supply information, and utilizes international contacts and commodity exchanges. Unlike this trader, however, many Zambian companies do not understand the relationship of international commodity markets to Zambian production and marketing. Most Zambian businesses depend on inadequate information sources: word of mouth, ZNFU bulletins, and government forecasts for price and quantity information.

In addition to trading, this innovative company intends to complement its activities by purchasing a processing plant to process food colorants and soybean on a rotational basis. This plant will produce export products such as soya cake and domestic products such as cooking oil. The soya processing capacity, when not utilized for other purposes, will be 20 tons per day. To meet the need for private storage capacity, the company's export proceeds from this year will be used to build a storage facility for next year for soybean and maize, in addition to other commodities.

Several constraints were identified by soybean traders. First, the lack of agricultural commodity storage facilities on farms means that grain must be transported during one short season (May–September) before the rains come. This deficit makes transport more expensive, given the generally poor condition of the feeder roads and the high vehicular wear. Zambia also lacks systematic, thorough, and reliable market information and intelligence, which would help producers, traders, and processors identify the most favorable opportunities. Expensive credit and high inflation are also key constraints to business activities and investment, creating difficulties throughout the marketing chain.

Alleviation of one constraint, the lack of market information, may be partially addressed by the alleviation of another constraint, the lack of a commodity exchange. A private company, Inter-Africa, is considering opening a commodity exchange in conjunction with the ZNFU. It would provide a central point for the exchange of information on quantities and prices of available agricultural products, allowing these products to find markets on a more efficient basis. This commodity exchange may be modeled on the private exchange just established in Zimbabwe under the auspices of Volunteers in Overseas Cooperative Assistance (VOCA).

**Cooperative Marketing Unions/Private Marketing Cooperatives.** Following the 1989 dissolution of NAMBOARD (National Agricultural Marketing Board) the government supported the Provincial Cooperative Marketing Unions and the Zambia Cooperative Federation (ZCF) in their primary role as agricultural marketing agents. The poor performance of these marketing agencies, due to various financial difficulties, resulted in late or nonpayment to farmers for their produce. This situation discouraged agricultural production generally, including for sunflower and soybean. However, with market liberalization in 1991 and increasing competition in marketing, the reluctance of farmers to produce due to nonpayment may become less of a problem once the tight financial situation eases in Zambia.

After the liberalization of agricultural marketing in Zambia, the government encouraged the entry of private firms into the crop marketing system and provided farmers with greater

negotiating power with oilseed processors, as a response to processors' nearly uniform offering prices for soybeans. The government accomplished this by providing low-interest loans of 2 percent per month and initially rent-free storage space to private marketing cooperatives for the purchase and marketing of the 1992-93 oilseed crop. Private marketing cooperatives were formed in Mkushi, Mazabuka, Choma, Chipata, Lusaka, and Chisamba. For both the cooperatives and the farmers, the government policy of supporting private marketing firms was a success, bringing producer prices up, increasing the prices paid by local processors, and encouraging the sharing of marketing profits with producers via cooperative member benefits.

There are several key constraints to agribusiness growth which were identified by private marketing cooperatives. The most important was the high cost of financing. The commercial interest rates of 130-140 percent (end of June 1993) are perceived too high for cooperatives to undertake much needed capital investments. This is particularly important because storage facilities, and the finance to build them, are needed. Finance is also needed to pay farmers before MMDC is able to sell this season's crop. In the case of MMDC, the capital from the high profits initially earned, due both to the high price for soya and the government incentives of 1992, have been invested and are not available.

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#### Case Study: Mazabuka Marketing and Development Company Ltd. (MMDC)

Established on June 1, 1992 originally to market soybeans, Mazabuka Marketing and Development Company Ltd (MMDC) was established as a private marketing cooperative with 500 company shares and approximately 110 shareholders, with a maximum holding of ten shares per farmer. With a board of ten directors, MMDC is run on a daily basis by one general manager and an accountant, with the active participation of the Board in key decisions and in all lobbying and public relations efforts. It currently employs 15 at the depot and 17 at a Caltex station.

From a company point of view, the marketing effort was very successful, resulting in the export of 5000 tons of soya to South Africa at \$295/ton delivered to Johannesburg. With the timing of the Zambian Kwacha devaluation, the low-interest loan, cost-free storage, and the good price for soya in South Africa, MMDC managed to make a very nice profit, despite the penalty for late delivery to destination. The total costs and potential revenue figures are only estimated, but it was clear that for that first year, the cooperatives were able to make sizeable profits on marketing and exports, even in the face of organizational inexperience. While international transport prices were reasonable, not more than 12 percent of the purchase price of the soybean, the inexperience and difficulty in organizing and regulating the international transporters made the cooperative decide to negotiate for the buyer to arrange transport.

Profits from both the soya export and from the maize marketing for the World Food Program which were undertaken by MMDC in 1992 were reinvested in the company, establishing a hardware and input supply shop and service and a Caltex station for bulk fuel delivery.

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Another constraint for new exporters is the lack of clarity and training in government rules and regulations and the lack of accountability for officials. Regulations are often either not clearly understood by or revealed to the exporters. If the importer or exporter is fully informed, government officials who are mistaken often become resentful when an error is pointed out. The solution for some firms is to employ a company with experience in exporting,

although this requires a high volume of trading to be economically feasible. Another solution suggested is to increase the training and the accountability of customs officials, as well as to increase the number of officials with authority to process the needed papers

Zambian entrepreneurs also need training in business management and international marketing. With the relatively recent entry of most Zambian businesses into international markets, many entrepreneurs have little access to or training in regional and international crop forecasts. This inexperience resulted in MMDC's expectations of higher export commodity prices for this year's crop. Due to inexperience with international crop forecasts and prices, MMDC waited for higher prices for soybean and instead found only lower prices. Training in business management, financing, and international trade is a much needed service for new enterprises and management at this early stage in Zambia's market development, as evidenced by the difficulties faced by MMDC and many other entrepreneurial organizations in their planning and management.

Zambia's poor judicial system and government enforcement of contracts put Zambian companies at a disadvantage internationally. Although Zambian firms may have a strong case against another company for nonfulfillment of contract that results in lost revenue, Zambians are unlikely to pursue the loss, even in courts in other countries with strong judicial systems, due to their own domestic experience.

Storage space is scarce in Zambia. There is almost no onfarm storage and the government owns most of the grain storage capacity, which it currently wants to commercialize or sell. Whereas last year marketing organizations were given free access to the depots that are in the hands of the District Cooperative Marketing Unions, this year the government is asking for fees that marketing cooperatives feel are unsustainable (K50-60 million/year for the Mazabuka depot), and that are not imposed evenly upon the several users of each storage depot.

### 2.2.3 Processing Soya

Soy processing produces cake and oil, on a 2:1 ratio. Soy cake, the most important soy product, is a valued protein source for both human foods and stockfeeds. Soybean oil extraction is conducted primarily by medium- and large-scale processors because the extraction process is complicated. Soybean oil extraction is a difficult process that requires several steps in order to obtain oil in a form that can be consumed. Soybean oil generally is sold on the domestic Zambian market undifferentiated in price or packaging from sunflower and cottonseed oil. Much of the soybean oil is sold ex-factory, due to the relatively small retail distribution system in Zambia.

**Small-scale Processors.** There are very few small-scale processors of soybean in Zambia, although some small processors crush soya to make dairy meal. In addition, one medium-scale sunflower processor, Zambia Agriculture & Trading Cooperative Ltd. (ZATCO), also extrudes soybean on a small scale (less than 2 tons for 1993-1994) for its stockfeed formulations. One small sunflower processor, Maruti Ltd. in Kabwe, experimented processing

soybean into oil, but found it too difficult. Similar problems keep smaller firms away from soybean processing.

**Medium-scale Processors.** There are about six medium-scale soybean processors in Zambia. Of those six, two private firms and one parastatal were visited. All three have minimal distribution systems for their product, selling much of it ex-factory or in shops in nearby areas. All three are hurt by the high cost of financing their operations, in particular the purchase of their seed requirements. Robinhood Milling is purchasing cake from Premium Oil Industries (POI) and sunflower from farmers as stockfeed sales bring in the necessary capital. However, the shortage of finance, combined with the past history of the government setting too low a price for products, have left Robinhood short of funds to buy spare parts for its two oil expellers, which were broken and sitting idle in June. The problem of low oil prices is compounded by the distribution of food relief oil in the Southern Province, which reduces demand. A second company, although operating near capacity, is seeking a small operating loan and is under-purchasing its maximum supply needs for seed.

The second private company uses 8,000–12,000 tons of soya per year to produce refined cooking oil and soya cake for sale to stockfeed mixers. In addition, this company has plans to produce human porridges and other products. However, with the export of a considerable portion of the soya crop this year, the company put these plans on hold. As of late June, it had only managed to arrange purchase of 4,000 tons of soya (of the 10,000 tons for which it had budgeted), despite paying the export parity price. Management commented that with the high bank interest rates (130–140% as of June 1993), manufacturers could earn more money putting their funds in bonds.

The second greatest problem that this firm identified was the cheap imports of oil into the country, which skirt customs and harms the domestic industry. This problem was consistently repeated by processors of all sizes. Refined Oil Products (ROP), the second largest oil parastatal, also commented that under the Preferential Trade Area (PTA), imported refined oil faces lower duties than crude vegetable oil.

With its concentration on a specific niche market that is relatively free of competition and pays for high quality, one private firm, Soy Nutrients, has found a market situation that allows it to sell its products despite the economic austerity and financial difficulties. (See Case Study.)

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## Case Study: Soy Nutrients Ltd.

Originally established seven years ago by a family-based group of Zambians who also own a chain of retail outlets, Soy Nutrients currently employs 140 workers. Soy Nutrients was established to buy POI cake and cook the soya cake so that it was consumable. When POI began cooking its soya meal, Soy Nutrients began producing full fat soya meal, providing high protein and high energy ingredients for a very large chicken breeder. It then advanced to a maize and soy mix for the World Food Program. Until 1991, Soy Nutrients was a two-product, primarily two-client company, when the current, business-trained manager was hired and took the company out of dependency on only two parastatal businesses.

Soy Nutrients invested in a mechanical oil expeller, mixer, and cleaner and entered the livestock feed formulation and crude oil processing industry. Its third, and very recent, product line is the extension of its World Food Program porridges into a line for retail. Soy Nutrients now has four porridges plus soya flour. Its niche market strategy is value for money, selling as low as one third the price of its competitors for one product, but providing good, consistent quality.

Soy Nutrients is partially vertically integrated, currently selling its products through the six retail outlets owned by its group of owners and to other outlets in Lusaka. In addition, some of its stockfeeds are sold to the farms owned by the group. Although Soy Nutrients is not currently distributing its products outside of Lusaka, due to high transport costs and parastatal advantages in transportation, it has identified a distributor in Ndola for its porridges and flour and hopes to expand sales around the country. However, it feels it cannot directly compete in products nationally with the National Milling or Premium Oil parastatals due to their long production runs and low transport costs. Therefore, its strategy is to concentrate in large part on niche markets. Other constraints felt by Soy Nutrients are:

\* **Competitive environment:** The dominance of two parastatals, National Milling and POI, plus their connection to the subsidized government shops (National Home Stores, Mwaiseni Stores, and ZCBC Shops), inhibit the private sector's ability to compete in some products. Zambia needs to privatize these parastatal companies in conjunction with the implementation of an anti-monopoly law.

\* **Finance:** Finance is very difficult to obtain, with companies surviving on over-draft facilities with the banks. Current high interest rates are forcing Soy Nutrients to be conservative in its stock purchases.

\* **Demand:** The real disposable incomes of Zambians are low and getting lower. As 80% of soya cake goes into stockfeed to feed poultry, and poultry will soon be too expensive for most Zambians to buy, the stockfeed industry will decline before it improves.

\* **Market opportunities:** Due to the high costs of transportation, finance and other inputs, Zambia is at a disadvantage on the world market, according to Soy Nutrients, and will not be able to compete in its export markets for most goods. Zambia needs to look toward its neighbors such as Zaire and Malawi for trade over the longer term for higher returns and greater production incentives for farmers.

\* **Information:** Zambia needs reliable production, price, and market information for commodities and inputs, which would assist processors and farmers in their marketing. Yet, unless the information is reliable and detailed, it is unlikely to find a large paying market in the private sector.

\* **Customs:** Enforcement of customs tariffs would assist the larger, legitimate domestic industries which compete with small operations which escape these tariffs.

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**Large-Scale Processors.** According to at least one source<sup>3</sup> there are two large-scale processors of soya, sunflower, and crude oil in Zambia, Premium Oil Industries and ROP, both parastatals, which together have an oil production capacity of 32,000 mt. POI is the parastatal giant, manufacturing up to 20,000 mt of oil annually. Its utilizable (rather than installed) annual crushing capacity in 1991 was 60,000 mt of seed. However, a relatively new, private processor has quickly expanded its combined sunflower and soybean processing capacity from 25 tons to 100 tons per day, to join the ranks of the large parastatal processors in oil production.

ROP is another large-scale oilseed parastatal. However, its seed crushing capacity utilization varies and is currently crushing under capacity due to shortage of soybean and cottonseed and deteriorated plant machinery, a result of years of controlled product prices and minimal reinvestment in plant equipment. ROP now concentrates primarily on refining and processing products from imported crude oil.

The large parastatal processors cited the low price of imported refined oil, which faces fewer taxes and tariffs than crude imports, and the dumping of food relief oil on the Zambian market during the marketing season as important constraints to their competitiveness. Damaged by years of either formal or informal government control on the price they could charge for their cooking oil, both parastatals have faced severe capital and equipment depreciation.

Shortages of raw material, particularly soybean, are other constraints to POI's processing activities, with one official at POI suggesting that exports of soya be delayed in order to give local manufacturers an opportunity to buy the product. This would offset the great incentive that hard currency returns provide to exporting farmers and marketing agents. However, both ROP and POI are not affected too greatly by the shortage of beans as they are able to import crude oil to process into oil or into various consumer products. In direct contrast to POI's wish to delay export of unprocessed soya, POI itself exported 1,000 tons of soya cake last year to South Africa and would like to see the elimination of duties on cake imports in South Africa. This is in the face of shortages of soya cake, not just seed, within Zambia.

Both ROP and POI face relatively few difficulties with transportation, as they either own their own trucks or contract out transportation on an ongoing basis.

The private large-scale processing company, SAOM, sees what it considers to be the dumping of cheap imports on the Zambian market and the resulting low prices as its greatest constraint, followed by expensive financing for purchasing the oilseed crop. The problem of low vegetable oil prices is compounded by the distribution of food relief oil in the Southern Province, which reduces demand. It continues to purchase seed, but is seriously considering halting processing due to the high inflation conditions, which make commercial financing uneconomic given the pricing constraints for processed food commodities.

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<sup>3</sup>Xaphanaiah T. Muunga, "A Country Paper on the Status of Oilcrops," 1993.

## 2.2 4 Marketing Soybean Products

Soybean is processed into meal or soy cake, oil, and stockfeed. Meal and cake are the primary products produced. In Zambia and in the surrounding region, there is a good market for soy cake and meal both as ingredients in human food and as ingredients in stockfeed. In Zambia, 80 percent of the stockfeed produced is for chickens, with soybean meal as a key ingredient.

There is a relatively small formal private distribution system in Zambia, a result of Zambia's history of domination by parastatal operations. Much of the soybean products are sold ex-factory, to be resold at open-air markets or individual retail shops, or to large buyers, such as parastatal operations or commercial farmers. Outside of parastatal operations and parastatal retail stores, there is very limited national distribution of products. Most wholesale sales are to retail stores in the surrounding region. The wholesale/retail distribution connections are strengthened when the retail owners are connected by family or personal ties to the processing operations.

**Oil.** Domestic soya oil, sunflower oil, and the less prevalent cottonseed oil are generally undifferentiated by type in Zambia and sell for the same prices. Much of the oil is sold ex-factory and distributed via small retailers, who purchase it directly from the manufacturers. Subsequently, it is sold on the informal market, with a relatively limited supply of oil sold in stores. In particular, the discount government-owned stores are generally short of local cooking oil and are often forced to stock imported oil.

**Cake.** National Milling Company, the national parastatal with 49 percent external ownership, is the primary domestic consumer of soybean meal in Zambia. In 1989 National Milling purchased 7,352 tons of soya cake. The company commands 60 percent of the commercial stockfeed market, utilizing three outlets, thirteen agents, and much of the soya cake available in Zambia. The total cake demand for stockfeeds by the three major parastatal stockfeed plants was 22,080 tons of solvent extracted, according to National Milling, although only 12,400 tons were produced by POI, the only plant with solvent extraction capacity. POI, with an installed soybean processing capacity of 60,000 tons, is faced with a shortage of soybeans to process. It was only four years ago that Zambia began to produce enough soy cake to approach its domestic market demand. However, in the last two years, stockfeed demand has declined due to difficulties within the poultry industry, although this is now slowly improving with the liberalization of the import market for chicken grandparent and parent stock.

**Stockfeed.** The market for stockfeed is likely to diminish, according to some industry opinions. National Milling, which is the major stockfeed manufacturer, is producing more (> 85%) chicken feed than cattle feed for a stockfeed market that has historically been dominated by chickens (80%), pigs (10%), and cattle (10%). The total overall commercial production is estimated at 160,000 tons per year in 1990, 82 percent for poultry, 12 percent for pigs, and 6 percent for cattle. This is following a historical decline in the early 1980s from the level of the 1960s and 1970s, with an improvement in the latter half of the 1980s. Much of the

decline has resulted from the age of the stockfeed plants and the shortage of foreign exchange required to purchase essential feed ingredients. The increase in production has been partly due to new, private entrants into the stockfeed industry. However, consumption of chicken is on the decline for the short to medium term, according to some stockfeed manufacturers, due to the high cost of meat and the declining real income of the population. Consequently, consumption of chicken feed, produced primarily from soya cake, is likely to decline until the macroeconomic adjustment measures taken by the GRZ begin to turn the economy around again.

### **2.3 Cottonseed Subsector**

Although the consultants were unable to explore the cottonseed subsector thoroughly due to lack of time, they did, however, interview a few of the key players and discovered some interesting innovations and constraints in the subsector.

Seed cotton is produced by commercial farmers and by small-scale farmers, supported by Lintco. Small-scale cotton production was highly subsidized through the 1980s, but Lintco must now function on an economic basis and support only those farmers who can produce economically. Lintco also faces competition in its contract marketing support for small-scale growers from private firms and commercial farmers.

Cottonseed processing is conducted primarily by one firm in Zambia, Supa Oil, with a marginal amount of processing undertaken by ROP.

#### **2.3.1 Seed Cotton Production**

The area planted to seed cotton increased from 80,000 hectares in 1991–92 to 85,000 hectares in 1992–93. The amount of seed produced is expected to increase from 14,000 tons to 30,000 tons. Much of this will be exported directly by the private cotton gins.

Lintco, the cotton parastatal, has been the primary supporter of cottonseed production by small-scale farmers since 1978. At its peak the company underwrote 120,000 farmers whose total maximum production reached 56,000 tons. Support this year dropped to only 80,000 farmers. Lintco will no longer be working with the very small-scale farmers, restricting its support to farmers with 4 hectares or more and good performance records. Previously Lintco supported even uneconomical producers, even those with only a half of a hectare.

New firms have appeared to fill this gap in support for small-scale production and marketing. These include companies such as Marklands and the large commercial farmers which have diversified their operations as insurance against ruin by drought and to pay off past drought-related debts.

Other key producers include the large-scale commercial farms such as Gwembe Valley Development Program, Mastock Company, and others, some of whom are also active in marketing and processing.

### 2.3.2 Marketing Seed Cotton

The dominant force in cotton production and marketing in Zambia is Lintco Ltd., the giant parastatal established 13 years ago to contract farm cotton with smallholders. Lintco supplied farmers with needed inputs on a loan basis, provided training and extension services, and purchased the product at harvest time. With the liberalization of the marketing system and removal of subsidies, Lintco is no longer able to support small, inefficient farmers because it must now compete with an increasing number of marketing companies and traders. For the 1993-94 marketing season, Lintco expects to market 12,000 tons of seed. Their competition will come from independent traders, who have increased significantly in number from commercial farmers, and from other contract marketing companies.

**Direct Selling.** Commercial farmers produce a large portion of the cotton in Zambia and sell it directly to the gin operators. After separating the lint from the seed, the private gins usually export their cottonseed, generally to South Africa, to obtain hard currency.

**Contract Marketing Companies** Private contract marketing companies, which provide small-scale producers with inputs and later purchase and market the harvest, have entered into competition with Lintco and have become competitive in price, as well. These companies include commercial farmers who have diversified their production base and expanded their activities in an effort to pay off outstanding loans from the drought. These new companies perceived an opportunity when they observed Lintco offering small farmers much lower prices than the marketing companies would be willing to pay. With the liberalization of the marketing system, some farmers took advantage of this and have expanded their efforts to include financing the inputs to production, which are significant for cotton. It is likely that with the decline of Lintco's production and the difficulty farmers face in obtaining financing for agricultural inputs, private gins may begin their own contract marketing operations to ensure a steady supply.

One of the new contract marketing companies currently operates in three different cash crops: maize, cotton, and tobacco. Marklands was founded in 1988 by three management employees who left NATCO, the tobacco parastatal, with the idea that they could operate more efficiently than NATCO. In 1990, Marklands, originally purely a marketing company, established a relationship with Lima Bank, the agricultural bank for small-scale farmers, and began to offer inputs and extension assistance to farmers in exchange for the first right to purchase the produce.

Contract marketing companies face several constraints marketing cotton. Many of these constraints are similar to those experienced by contract marketing companies in the soybean and sunflower subsectors. Financing is the most difficult constraint. Faced with a tight credit environment, even established marketing companies must struggle to get agricultural marketing credit, particularly given their relative lack of capital.

Due to the influx of traders and marketing agents, these firms must confront the difficulties involved in enforcing contracts with small farmers. With their capital sunk in inputs

and the restrictive nature of the current credit environment, they are now sometimes faced with crops having been sold before they have the opportunity to approach the farmers. Some of these companies have stated that this will be the year that will determine whether their operations survive, given these finance and contract difficulties. Reform, passage, and enforcement of the Agricultural Credit Act is seen as key to the existence of private contract marketing companies. Delays in input supply have also hurt these companies, injuring, to some extent, both their reputations with farmers and the quality of the crops. Transportation costs and poor infrastructure, perpetual problems in Zambia, are also mentioned as constraints on business profits and on willingness to invest in more equipment.

Marklands has assisted the EEC/GRZ Kabwe Smallholder Development Project in Central Province to collect input and commodity price information for distribution via project depots and extension and purchasing officers. Marklands is also aware of the potential the Association of Supporters of Smallholder Development represents to address other issues related to information dissemination, such as farmers' rights, the importance of contract fulfillment, and contract fulfillment's direct linkage to obtaining future input financing.

### **2.3.3 Cottonseed Processing**

There are only two processors of cottonseed in Zambia, because much of the cottonseed is exported by private gins to obtain foreign currency. Supa Oil, a medium-scale processor, accounts for most (90%) of the cottonseed processing in Zambia. The cottonseed cake is prized as a feed ingredient for cattle, while the oil is sold on the local market, undifferentiated in price and labeling from that of sunflower and soybean oil. Cottonseed oil differentiation and oil price increases would be difficult, given the current influx of relatively inexpensive imported oil.

Until the current marketing year, Supa Oil, a private company established in the mid-1980s, obtained all of its cottonseed from Lintco. Previously, Lintco delivered seed to Supa Oil at a subsidized price, in keeping with the GOZ's policy to provide consumers with low-priced oil. Now that its own subsidies have been removed, Lintco is demanding that Supa Oil pay an export parity price and assume the cost of transporting from the gin to the oil mill. Last year, due to the drought and the dramatic drop in the cotton harvest, Supa Oil was forced to shut down in March due to lack of seed to process, having already processed the 5,000 tons supplied to it. This coming year, Lintco has promised to provide Supa Oil approximately 8,000 tons of Supa Oil's 12,000-ton capacity needs. Supa Oil management began its attempt to locate other sources of seed very late in the season, due to complacency with its previous sole source arrangement with Lintco.

The cottonseed processing capacity of ROP is now no more than 1000 tons per season due to the poor state of its equipment. Instead, the primary source of ROP's processing materials is imported crude oil, which it then processes into refined oil, various cleaners and other consumer products.

Premium Oil has not yet installed its cottonseed processing equipment (50,000-mt/yr capacity), which has been sitting in crates since 1991. Zambia does not produce enough cottonseed to meet its processing capacity due in large part to the attractiveness of the export market, despite export parity prices for seed in Zambia. The lure of foreign exchange, which is needed for purchasing inputs, and of immediate payment in the current high interest environment of Zambia creates the strong incentives to export.

## 2.4 Transporters

The two most common modes of transport in Zambia are road and rail. Oilseeds are primarily transported by road to avoid the dual problems of theft and slow delivery often experienced with the railway system.

Transportation is a significant problem in Zambia for producers, marketing companies, traders, processors, and even the transporters themselves. Zambian infrastructure lies in large part along the "line of rail" leading from the Copperbelt Province south to Livingstone on the Zimbabwe border. Along this route lies also the primary north-south road, with feeder roads that diverge from there. International and domestic trucking fleets travel the major roads in Zambia, transporting goods and agricultural products to major urban centers. Small privately owned pickup trucks circulate on primary and secondary roads, transporting both passengers and agricultural goods. Trucking costs for small loads of 2 tons on primary and good secondary roads equal US\$18.40 per ton up to 80 km (\$0.23/ton/km), with rates of \$.05 per ton per kilometer for 10 tons or more. However, the farther from the line of rail one travels into the sparsely populated interior the worse the roads and communication infrastructure become.

The poor roads, the rising costs of fuel and the excessive cost of spare parts for vehicles inhibit the transport of most domestically produced cooking oil, and frequently stockfeed, beyond the immediate region. The imported cooking oil and the parastatal oil, distributed via supermarkets and government-operated stores, are exceptions.

The rising costs of fuel and spare parts for vehicles, in addition to the scarcity of foreign exchange, are important constraints to the expansion of the transport sector and the increase in company ownership of means of transport. Fuel is reported by some companies to exceed 25 percent of the cost of operations, in large part due to the heavy surcharges on imported fuel. Spare parts are expensive, particularly for companies who lack the foreign exchange to import the necessary parts themselves. Often domestically produced parts such as tires are of inferior quality. This particular quality problem led to a significant decrease in prices of truck tires by the local producer in June.

Another problem observed by truckers' associations and trucking companies is the lack of enforcement of weight limits and other conditions of trucks operating in Zambia. Large international and domestic trucks traveling on Zambian roads are often overloaded, which destroys the roads and bridges and therefore negatively affects transport services for agricultural goods. In addition, several transport companies pointed out that Zambia does not charge transit

fees equivalent to those charged by its neighbors, thus giving international transport companies a break. Transit fees in Tanzania are US\$16 per 100 kilometers compared with US\$8 in Zambia.

One of the trucking associations is working with the government to overcome some of these problems and to protect Zambian roads.<sup>4</sup> Currently, they are working to establish a road rehabilitation committee. The association is also lobbying the government to place stricter controls at weighing stations and to patrol the borders more carefully for vehicles that do not comply with Zambian regulations.

## 2.5 Agricultural Input Distributors

Zambian producers have been highly reliant on a very few suppliers of fertilizer and improved seed. Nitrogen Chemicals of Zambia (NCZ), the national fertilizer parastatal, is only beginning to face competition in fertilizer supply. ZAMSEED, the national seed company, continues to dominate the seed market, despite the presence of foreign competitors such as Cargill, Pioneer, and Pannar (South African). Because the foreign seed companies have not established local research stations to develop varieties which are suitable to climatic and soil conditions in Zambia, they have a limited range of activities in the country and ZAMSEED continues to dominate the industry. In addition, maize, not oilseeds, is the focus of their business.

The demand for improved seed stock for oilseeds varies among crops. Groundnuts, which are primarily used as a confectionery nut or a food ingredient, do not face a high demand for improved seed. Due to the high cost of hybrid sunflower and its widespread treatment as a low input crop, demand is quite low. ZAMSEED attempts to increase the demand for hybrid seed by allowing prices for improved local sunflower seed to subsidize somewhat the price for hybrid sunflower seed. However, most small producers cannot afford to purchase sunflower seed from ZAMSEED, instead retaining their own composite seed for years. The Africare oilseed project in Zambia is addressing this problem by sponsoring the multiplication of 30 to 40 tons of high oil content composite seed to be distributed at a reasonable price. Prior to the withdrawal parastatal support of small-scale soybean production in 1992, soybean seed sales had reached 1500 tons annually. However, with the government withdrawal of its subsidy, less than 750 tons were sold during the 1992-93 marketing season.

Seed is distributed to farmers through direct sales to large farmers, through private traders and input supply and marketing agents, and through provincial and district cooperative stores. ZAMSEED sponsors an extension program to encourage seed sales, as the government extension service in Zambia is not equipped with the necessary transportation vehicles to effectively reach the farmers.

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<sup>4</sup>Bill Guyton and Joseph Temba, Agribusiness Firms in Zambia's Maize Subsector, 1993.

The national fertilizer producer and distributor, NCZ, is beginning to face foreign competition.<sup>5</sup> South African firms are gaining greater market share and have established strong distribution networks throughout the country, both for input supply and produce marketing. NCZ suffers from high costs of production for many of the same reasons that other parastatal processing plants in Zambia do. First, their equipment is outdated and less efficient, in part due to years of lack of competition and to the GOZ's low input pricing strategies, resulting in lack of funds for capital replacement. They also lack foreign exchange to purchase chemical inputs needed in fertilizer mixes. Transporting all inputs through Lusaka to be mixed prior to shipment to the outer provinces also adds extra handling costs, whereas foreign firms can ship directly to the outer provinces.

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<sup>5</sup>Ibid.

### **3. AGRIBUSINESS ENVIRONMENT AND SUPPORT**

The support system for agribusiness in Zambia is minimal. Few services are available to assist the marketing system in its developmental stages. Government policy regarding agriculture and agribusiness is widely considered to be nonexistent outside of the maize subsector.

#### **3.1 Government Role and Policy**

A proposal is being developed to establish an agency within the government to deal with food crops. This proposal for new legislation will create an agency to lease or sell government-owned storage, manage food reserves, run a market information system, and implement weighing and grading standards. At this time, there are no commodity grades in existence, as they were abandoned in 1989 with the abolishment of NAMBOARD.

The oilseed industry, like much of the agricultural sector in Zambia, is the subject of minimal government policy. It receives marginal protection from imports of cheap cooking oil, despite the tax increases on imported oil in February 1992. Official import duties were increased from the official 15 percent and concessional 5 percent rate for processors to an across the board 30 percent duty. Import levies were also raised from 5 percent to 10 percent, while a sales tax on all vegetable oil marketed in Zambia. However, despite these taxes, refining and marketing imported crude oil was very profitable in September 1992, with the estimated import price of \$500 per ton c&f Lusaka, resulting in a cost structure of 200,000 Kwacha per ton of refined oil. In September of 1992, this product could be sold at retail, including all taxes, at 290,000 Kwacha per ton, resulting in a 45% profit margin. (September 1, 1992 official exchange rate US \$1 = Kwacha 181.)

This importation of cheap oil depresses the domestic industry and may result in little or no increased production or processing capacity utilization. The oil industry in this current marketing year has been further depressed by the late arrival of cooking oil from France as part of the Program Against Malnutrition's (PAM) drought relief Program to Prevent Malnutrition (PPM). PPM is distributing cooking oil to mothers with children under five and to the elderly in the drought-stricken areas of Southern Province. This is depressing demand for locally processed oil, and some of this donated oil is reaching the market, which contributes to the competition from cheap imported oil.

Currently, the Agricultural Marketing Act of 1989 is the only government legislation to organize agricultural marketing. This act replaced NAMBOARD and transferred all marketing functions to the cooperatives, making them semigovernmental bodies with the power to control marketing, inputs, and so forth. However, under the liberalized economy, this act is no longer suitable, as it gives the government the ability to set prices.

Until 1992, the GOZ supported marketing cooperative unions as the primary marketing agents. These cooperatives maintained storage and marketing depots at different levels

throughout the countryside. With the government's exit from agricultural marketing, there is a problem about who will operate or even own the storage depots. With the short marketing season prior to the rains and the lack of adequate onfarm storage, this becomes a serious problem, particularly as financing for the purchase of crops is very tight.

Outside of the maize subsector, the government has in large part withdrawn from agricultural marketing and setting policy. There are a few exceptions. The government continues to announce target floor prices, which for sunflower this year were K4,000 per 50-kg bag. However, these floor prices are only enforced by government intervention for maize. Agricultural exports have also been liberalized, but there have been setbacks. Near the end of June, already partway through the marketing season in Zambia, the government instituted a 2-million bag export limit on maize and delayed the export of soya, although many export contracts had already been signed.

The GRZ also participates in the financing of agriculture, although this has been cut back significantly. The government assists some agricultural lending institutions who provide loans to smallholders, such as Lima Bank and SIDO, yet much of the previous support has been reduced. More detailed information on agricultural credit can be obtained from the World Bank and from other USAID-sponsored studies, as this was not the focus of this study.

In Zambia, a long history of permissiveness in the enforcement of contracts and collection of debts from smallholders prevails. Although laws exist, debt collection and enforcement of contracts has historically been lax, obstructed by the lack of titling for private land ownership and lack of other types of significant capital investments. The problem is compounded this year by the increasing number of traders and marketers who have blanketed the countryside. Tempting farmers to break their contracts by offering much higher prices than were imagined possible when the contracts were originally written, traders and marketers preempt the contract marketing firms who provided inputs at the beginning of the last planting season. The GRZ has not enforced the currently existing and inadequate Agricultural Credit Act, which is critical for development of a private sector marketing system.

### **3.2 Market Information**

Little organized agricultural market information exists in Zambia. In fact, the telephone remains the most prevalent means of obtaining price and quantity information for both national and regional markets. Most of the larger traders, marketing companies, and medium and large processing companies have information sources around the country and in South Africa, the primary destination of Zambian exports. However, most of these companies have expressed interest in a more thorough, extensive, and accurate system of market information and many are willing to pay a fee for this service.

There are several efforts underway to alleviate the need for market information. The Food and Agricultural Organization (FAO) of the United Nations is financing a program within MAFF to produce a weekly radio program, in seven languages, that will broadcast policies,

prices, and quantities of commodities available at locations around the country. At this time, two of these programs are active. In addition, a weekly television show, the Lima Program, serves as an educational and informational agriculture program. However, the effectiveness of both of these media forums is limited due to the lack of electricity, the limited range of the radio transmitters, and the lack of both radios, televisions, and batteries.

A second, regionalized effort is underway, sponsored by the EEC/GRZ Kabwe Smallholder Development Project. This project is working with local marketing and processing firms to gather market information on a weekly basis for distribution by the EEC/GRZ extension officers, private marketing agents, and local stores and depots. The project is quite effective and provides detailed information and interpretations of government policy to the farmers and others. (See Appendix 3 for an example of this bulletin.) Project results are incorporated into the FAO information effort and will be jointly evaluated in late 1993 for its effectiveness.

One suggested solution to increase market information and make marketing more efficient is the establishment of a commodity exchange. At this time, traders with the greatest international market contacts and knowledge have gradually begun playing the role of commodity brokers, putting together traders who have identified specific quantities and qualities of crops with potential buyers, frequently in the export markets. Inter-Africa and the ZNFU are considering cooperating to establish a small, private commodity exchange, which would ease this process and make the market function more smoothly. This commodity exchange may be structured along the lines of one recently established in Zimbabwe in conjunction with the regional office of VOCA.

### **3.3 Trade Associations**

In Zambia, most associations are expected to be primarily lobbying groups to negotiate with the government and others to promote members' interests. The OILS group is the only group that represents the oilseed industry in Zambia, with the exception of Africare and the ZAMS project. OILS encourages producers, processors, and consumers to exchange information and to develop possible solutions to problems facing the industry as a whole. An initial formal exchange, the First National Oils Workshop on June 8, contributed to a better understanding of industry problems and potential solutions. (The minutes of the Workshop are in Appendix 2.) However, OILS activities are necessarily limited by the diverse range of members, who often have competing interests. Traders and processors do not want to reveal to each other either their strategies or margins.

Many of the private processors interviewed, both newly established and older, were of the opinion that associations are too time consuming and are relatively ineffective in helping their individual companies. The smaller processors feel they are too insignificant to make a difference to the associations. However, contract marketing companies are interested in discussing issues of common interest and concern, such as enforcement of contracts, with firms in their own industry. It was partially for this reason that the Association of Supporters of Small-Holder Development is being created.

ZNFU plays an important role in disseminating production and market information and in lobbying the government. In the case of oilseeds, ZNFU supports liberalized marketing and noninterference by the government, all issues that are particularly important to farmers, traders, and marketing companies.

One association called its first organizational meeting at the end of June 1993. Called the Association for Supporters of Smallholder Development, it plans to provide a self-regulatory framework for organizations that are supporting smallholders. Begun jointly by Inter-Africa and Dr. Guy Scott, former Minister of MAFF, the association's first goal is to form a lobbying group to persuade parliament to pass an Agricultural Credit Act. Its second goal is to provide an industry from which to begin a self-regulatory process aimed at informing smallholders of market prices and their rights, as well as to ensure that smallholders are not exploited through a self-regulatory process. At the same time, it hopes to encourage smallholders to fulfill their contracts, which may make it easier for the industry to monitor the traders who are purchasing products from smallholders in violation of preexisting contracts. The third objective is to create a structure that provides donor funding of smallholder projects.

#### 4. CONCLUSIONS

Despite the many difficulties facing Zambian agriculture and private agribusiness, there are many new developments in the oilseed private agribusiness sector. New companies are being formed to compete with or take the place of government parastatals, and their survival and expansion could increase the efficiency of the entire subsector. However, the long run success of these companies is dependent on the government's ability to stabilize the macroeconomic situation, particularly inflation. Although firms will continue to face short run credit difficulties, slowed inflation over time will strengthen the kwacha and eventually reduce interest rates.

The oilseed agribusiness sector, although growing, faces some important constraints. The primary constraints are regulatory, institutional and policy-related. Historically there has been an inconsistent level of oilseed production, in part due to the government-controlled producer prices. Currently depressed prices for oil are a result of the saturated market. Competition from cheap oil imports and donated supplies of malnutrition relief oil have contributed significantly to declines in price. The excess supply depresses prices processors can receive and in turn the prices they can offer to the producers. Declining disposable incomes and the Zambian preference for imported goods have compounded the marketing problems for Zambian cooking oil and other oilseed products. One step toward a solution to the problem created by cheap imports, put forward by ZNFU, is a comprehensive study of the Preferential Trade Area, border prices, import restrictions and tariffs, border leakage, and other issues that affect agriculture and industry in Zambia. Information from the study could be used in the development of government policy.

One critical constraint on the oilseed subsector in Zambia during the 1993-94 marketing season was imposed by donors and nongovernmental organizations. The drought relief cooking oil donated by Germany and France helped the Zambian population survive the effects of the previous year's drought, particularly in the Southern Province, but the relief supplies arrived in Zambia too late and in too large of quantities, and are thus interfering in the marketing of this year's sunflower crop and of cooking oil in the region. With a total of 730,000 liters of oil donated for the PPM program, 655,000 liters of which arrived near the end of February, stocks of oil in mid-July remained at 336,000 liters. These stocks were still being distributed (2.5-liters per month per recipient) in some areas of the province through early July to mothers with children under five years old and to elderly family members. Although drought relief is critical, the timing, method, and quantity of distribution need to be more carefully calculated to prevent disruption to the subsector and related agribusinesses and processing operations that are springing up in response to market liberalization.

Credit constraints and high interest rates (up to 140% in early July) currently inhibit investment in the agribusiness sector and increase the cost of operations for producers and processors. The seriousness of this problem for processors is compounded by their need to maintain large stocks of seed for continuous processing, particularly given the difficulties of purchasing seed during the rainy season. The difficulty and time involved in obtaining foreign exchange for replacement parts have added to the credit and inflation problem.

Donor agencies and the GRZ are cooperating to assist the private sector to assume the previous roles of the GRZ in agricultural marketing and agribusiness. In August 1993, the World Bank loaned the GRZ funds to finance this agricultural marketing season. These funds are currently being disbursed through commercial banks, and while much of this is being used for maize marketing, some of the \$33 million will be available for marketing other crops. The World Bank and African Development Bank will also provide financial and technical assistance to improve road infrastructure, market information, and MAFF's commodity grading and standards system.

USAID supports programs that directly assist agribusinesses in oilseeds. The Zambia Agribusiness Management and Support (ZAMS) Project promotes small-scale oil pressing and is assisting in the development of repair workshop operations, in addition to promoting production of sesame for oil processing. USAID also provides support for privatization of parastatals and will likely continue to assist in the development of marketing in Zambia. Through the sponsorship of several donors, Africare is distributing hand-operated oil presses in rural areas, and is training operators to use and repair them, as a partial solution to the transportation problems in remote areas.

The EEC/GRZ is implementing a marketing information and extension project in the Central Province to collect, analyze, and disseminate price, quantity, and policy information for the region and to contribute this information to the broader-focused FAO project. These marketing information efforts will assist small and emerging farmers to make sound marketing decisions. However, these efforts will only be effective if the communications infrastructure is improved.

With the decrease in the role of government-supported institutions in providing loans to farmers, particularly small farmers, the entry of private firms into contract farming and marketing arrangements is an important step for the private sector in supplanting the previous role of government in marketing. However, some serious difficulties regarding contracting arrangements and enforcement need to be addressed. Although steps are under way to establish a self-regulating association to monitor these contract farming and marketing arrangements to protect both the farmers and the marketing companies, efforts are needed on the side of government to support and protect contract farming arrangements, in part through the revision of the current Agricultural Credit Act. Farmers can often find higher prices for their produce on the open market than through the contracts they signed the previous season. Consequently, there is a great temptation to break those contracts and sell to the highest bidder. Clear guidelines need to be developed and enforced on loan repayments, stating when debts will be recovered and the consequences to violators. In addition, efforts need to be focused on developing a contracting mechanism for contract marketing agreements where the prices paid to farmers are related to the market prices during marketing season, less input costs and interest. Passage of an Agricultural Credit Act and enforcement of contract arrangements will benefit both farmers and traders and may expand the number of companies supporting farmers in their production of oil crops.

Donors can further assist private agribusiness to take over the former roles in agriculture marketing and agribusiness held by government-sponsored organizations by providing training to the private sector. Private sector companies need training in business feasibility analysis, understanding of domestic and international markets, organizational planning, and in some cases technical aspects of processing.

One development priority in Zambia is to increase both onfarm and commercial storage for sale or lease to marketing firms and processing companies. Because most farmers, both small and large, have limited storage space, they are forced to market their produce prior to the rains. This results in a very high volume marketing period and inhibits farmers from taking advantage of higher off-season prices for their commodities. The GRZ is currently making an effort to lease its storage facilities to private firms and may begin to sell them. If the government can arrive at economically viable prices for leasing the storage, this will ease some of the pressure on marketing companies to move the commodities immediately and will give processors the option to purchase the commodities early in the season, therefore providing more options at both stages in the marketing chain.

One of the key problems faced by Zambian agriculture and agribusiness is uncertainty regarding the permanence of government policies. The liberalized agricultural marketing system has only been in effect for two years, the first of which was a drought year. This year many conflicting statements were made by government officials regarding marketing policies. The resulting confusion inhibits the willingness of farmers to increase farming acreage and discourages private agribusiness from making additional investments. A clearer and more consistent declaration of government policies is important to create confidence in the private sector.

Another constraint to agriculture marketing in Zambia is the lack of clarity of government rules and regulations, particularly in reference to exports. This is compounded by the inadequate training of government agents combined with the generally minimal experience of many Zambians exporters in resolving export related difficulties.

There are several associations related to the oilseeds subsector which can assist in clarifying government policies and conveying the needs of agribusinesses to government. The ZNFU, OILS, the Small-Scale Industry Association in Zambia, the Zambia Truckers' Association, the Association for Supporters of Smallholder Development, and Fed-Haul, among others, are active in promoting their industries' needs to policymakers. In addition, some nongovernmental organizations such as Africare represent the needs of small businesses, such as press operators. However, efforts are needed to ensure that the needs of businesses of all sizes, not just the larger and more vocal, are represented by all of these organizations.

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## **APPENDICES**

**Appendix 1**  
**Types of Presses**

## Appendix 1

### Types of Presses

PROVINCE	TYPE OF PRESS	CAPACITY (l/day)	NUMBER PRESSES
EASTERN	Tiny	140	5
	Ram	10	8
	Alvan	100	1
	Spindle Press	40	4
	Hydr-KIT	30	2
	Ox-Driven	20	3
	Wooden	2	2
CENTRAL	Tiny	140	4
	Ram	10	2
	Min-40	110	4
LUSAKA	Tiny	140	5
	Ram	10	5
	Komet	100	4
	Spindle	40	4
	Ox-Driven	20	1
SOUTHERN	Tiny	140	16
	Mini-40	110	3
	Komet	100	4
	Spindle	40	2
	Fornovo	160	3
	Ram	10	50

Source. Temba and Lubozhya, *Rural Oil Processing*, 1993

**Appendix 2**  
**1993 National OILS Workshop**

**REPORT OF THE FIRST NATIONAL OILS WORKSHOP**

**held at**

**GARDEN HOUSE HOTEL  
LUSAKA, ZAMBIA**

**on**

**8TH JUNE, 1993**

## **INTRODUCTION**

1. The First National OILS Workshop was held on June 8, 1993 at the Garden House Hotel, Lusaka, Zambia.
2. The workshop was attended by representatives from vegetable oil producers, processors, consumers as well as representatives from non-governmental organisations, government and inter-governmental organisations. The list of participants is Annexed to this report.
3. The meeting was officially opened by Mr. John Hudson, Chairman of the Oil Industry Liaison Service (OILS). In his address Mr. Hudson highlighted the origins of OILS as a vehicle for addressing the problems facing the vegetable oils industry in Zambia. Since its establishment in November 1991, and with financial assistance from the Agricultural Research Foundation (AGREF), International Development Research Centre (IDRC) and the Preferential Trade Area (PTA), a data base for the oilseeds industry had been established and a diagnostic study initiated, the results of which were before the workshop. This work was being spearheaded by an OILS Coordinator funded by AGREF/IDRC.
4. Mr. Hudson also underscored the many serious problems that still confronted the industry. Such problems included shortage of seed particularly of groundnuts; the need to combine soya flour with maize meal to improve nutrition; more research work in sesame needed on account of its drought tolerance; oilseed marketing needing improvement; the need to control pyrenchaeta disease of soya; and the need to create more processing capacity in the rural areas.

## **II. PRESENTATION OF A STATUS REPORT ON OILSEED INDUSTRY**

5. A status report on the oilseed industry was presented by the OILS Coordinator, Mrs. Bernadette Lubozhya. The report was based on literature review on the industry undertaken by the Coordinator. The literature review attempted to categorise the strengths and weaknesses of the industry on the basis of Production to Consumption Systems Approach (PCSA).

### **Production**

6. Under production, it was stated that the major sources of edible vegetable oil in Zambia were sunflower, soyabean, cotton and groundnuts. Sesame and oil palm were still playing a minor role although they had a big potential.
7. The major problems facing production of the major oilseeds were poor supply of improved seed, high cost of seed production, low oil yields, labour shortage and poor cultural practices. It was also difficult to ascertain the actual production levels of the various seeds.

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## **Processing**

8. It was stated that soyabeans and sunflower were the principal crops being processed although small quantities of cotton seed and groundnut were also being processed.

9. The achievable processing capacity in Zambia was estimated at 49,000 mt of oil accounted for by two large size plants, 6 medium and 160 small plants. All motorized oilseed expellers and refining capacity were located in Lusaka and Copperbelt hence the rural population (60% of the total population) did not benefit from these. It was stated that Africare and the Zambia Agribusiness and Management Support Project (ZAMS) were addressing rural oil processing through manual oilseed presses.

10. One of the major bottlenecks highlighted was the low oil yielding seed, particularly for rural processing. It was mentioned that soft hulled sunflower seed had been imported from Tanzania by Africare and was currently being tried in various parts of the country.

## **Consumption**

11. Zambia's edible oil demand was estimated at 50,000 mt and only one third of this was being produced locally. However, some estimates by FAO/WHO put it 100 000 mt based on minimum dietary requirements.

12. There was therefore, a big shortfall in local production of oilseeds.

## **Marketing**

13. For a long time, oilseed marketing was under government control, featuring pan-territorial and pan-seasonal pricing, costly transport etc.

14. However, since 1992, marketing of most agricultural products has been liberalised and oilseeds should benefit from this development.

## **Policy**

15. The major bottlenecks cited were the non-existence of deliberate government efforts to promote the oilseed industry, poor extension services, lack of credit, poor technology and liberal imports which stifle local production.

## **DISCUSSIONS AND RECOMMENDATIONS**

16. In discussing the issues raised in both the Chairman's Prospectus of the Oils industry and the status reports, the workshop considered the issues under the following general headings:

- (i) Production - (production/research/extension)
- (ii) Processing - (crushing/importation/refining/feed milling)
- (iii) Marketing - (collection/assembly/distribution/trade)

- (iv) Consumption - (edible seed products/oils)
- (v) Policy - (regulatory environment)

## **PRODUCTION**

17. The following were the major bottlenecks to increased production of oilseeds (i.e. the crop):

- (a) lack of access to seed;
- (b) poorly performing marketing system (c) weak linkage among seed suppliers, processors and extension;
- (c) lack of credit particularly to small holders to facilitate hybrid seed and fertilizer purchase; and
- (d) poor infrastructure (roads, communication and information)

### **Recommendations for Increased Production**

- (i) Biological research to identify farmer and processor quality requirements and to develop suitable varieties to match quality needs and agro-ecological zones in Zambia. The case of record seed from Tanzania was mentioned and the length of time it requires to test its adaptation in Zambia.
- (ii) More research work needed to be done on sesame on account of its drought tolerance characteristics
- (iii) Requirement for a quick tool to measure oil content in the crop so that farmers could be paid for oil content instead of dead weight. This would enhance farmer response to high oil content varieties;
- (iv) Research should pay attention to the small farmer practice of genetic segregation due to continued retention of own seed, and make use of parent material as appropriate.
- (iv) OILS should help to improve the linkages among seed producers, farmers, processors and extensionists;
- (v) Promotion of on-farm oilseed processing due to high cost of transportation which would benefit producers distant from large processors.
- (vi) Buyers and traders should encourage the production of quality crop through advice and price mechanisms.
- (vii) Strengthen gathering and compilation of accurate statistics to guide production planning.

## **PROCESSING**

18. Discussion highlighted the following major constraints:

- (a) Large processors have continued underutilization of their crushing capacities, due to:
  - (i) inability to acquire sufficient raw materials (weak capital base and long distance from producers); and
  - (ii) frequent machinery breakdown
- (b) export of crop in the face of shortage.

### **Recommendations to Improve Processing**

- (i) The strategy of promoting rural processing of oilseeds
- (ii) Improve availability of capital at reasonable interest rates
- (iii) Develop national standards on processed products
- (iv) Discourage dumping of food aid except in emergency

## **MARKETING**

19. The major constraints identified were as follows:

- (a) Highly atomized production by small scale farmers making collection of crop difficult and costly;
- (b) Poor transport infrastructure;
- (c) Lack of information on prices, demand and supply;
- (d) Uncertainty over trader/middleman role and merits (whether exploitative or not);
- (e) Liberal imports of subsidised food stifling demand for local production;
- (f) Packaging of local products unattractive

### **Recommendations**

- (i) Facilitate cost-effective collection of rural produce e.g. through Hammer mill points
- (ii) Promote rural processing and improve capacity utilisation in urban processing
- (iii) Disseminate price and market information to rural areas

- (iv) Create a fund through taxation of imported oil and invest in the oils sub-sector
- (v) Explore potential for exports once national demand is met and through specialization
- (vi) Control imports of oilseeds which would compete with locally available products.

### **CONSUMPTION**

Major constraints are:

- (a) poor quality cake which is unusable by feedmillers
- (b) no incentives to produce high oil content crops
- (c) bad publicity about soya products

### **Recommendations**

- (i) Need for effective standards for oilseeds, protein cake and oil;
- (ii) Blending of soya with other products to improve taste;
- (iii) Diversification of soya-based foods;
- (iv) OILS to champion more positive campaigns for soya-based human food;
- (v) More organizations to join OILS to make it more effective.

### **POLICY**

The bottlenecks identified were:

- (a) lack of deliberate policy to develop the oils sector;
- (b) high interest rates on capital
- (c) liberal policy on imports
- (d) high cost of raw materials for local production of machinery

### **Recommendations**

- (i) Sourcing of cheap capital for ~~permit~~ purchase and processing of crop
- (ii) Subsidise production of agriculture as a strategic industry
- (iii) Use of counterpart funds to invest in the sector
- (iv) Government income from sale of agricultural parastatals to be reinvested in agricultural sector

- (v) Need for more storage space
- (vi) Strengthen extension services particularly to small scale oilseed producers
- (vii) Waive or reduce duty and tax on raw materials (steel) for local manufacture of machinery
- (viii) Phase out importation of edible oil.

### **ANY OTHER BUSINESS**

Under this agenda item the issue of time frame for taking action on the recommended activities and by who was raised. It was feared that such recommendations could continue being made without any follow-up action.

It was decided that the OILS Executive Committee should constitute itself into a task force to ensure swift action on all the recommendations. In this regard, the task force would identify actions to be undertaken by OILS itself and define the time frame and those actions requiring consultations with government and other actors. The workshop urged the task force to ensure that there was prompt follow-up so that progress could be reported accordingly.

### **ADOPTION OF REPORT AND CLOSURE OF MEETING**

The workshop adopted its report with some amendments.

In closing the meeting, the Chairman of the workshop Mr. J. B. Mutelo thanked all the workshop participants for their keen interest in the oilseed industry and for their constructive contributions. He urged all the stakeholders in the industry to ensure that the workshop recommendations are realised within a reasonable time period.

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**Appendix 3**  
**Market Information System**

**GRZ/EEC KABWE SMALLHOLDER DEVELOPMENT PROJECT**

**MARKET INFORMATION SERVICE**

**WEEK 20 (17 - 23 May 1993)**

**SOYA & SUNFLOWER PRICES (AT DEPOT/PLANT)**

COMPANY	CROP	PRICE	CONDITIONS OF TRADE
Premium Oil - Lusaka	soya	K 11,000 per 90 kg	Payments made within 25 days; max. moisture: 12%; max. trash: 3%; collection of crop only when supplied in large quantities.
Premium Oil - Lusaka	sun-flower	K 5,500 per 50 kg	Same as for soya
Chisamba Marketing Development Company	soya	K 9,500 per 90 kg	Payments made within 7 days after delivery/transport; grade A required
Chisamba Marketing Development Company	sun-flower	K 5,750 per 50 kg	Same as for soya
Kabwe Farmers Coop	soya	K 9,000 per 90 kg	Payment within 10 days.
Kabwe Grain Marketing Development Company	soya	K 9,100 per 90 kg	Marketing is only done for farmers around Kabwe through T. Asworth or D. Hunt

**COTTON & TOBACCO PRODUCER PRICES - MARKLANDS LTD., KABWE**

CROP	UNIT	PRICE
Burley Tobacco	kg	K 430
Cotton	kg	K 80

Note: Prices of cotton and tobacco listed may alter during the season

**AGRICULTURAL PACKING MATERIAL WHOLESALE PRICES - KABWE INDUSTRIAL FABRICS LTD**

PRODUCT	SIZE	USAGE	PRICE (EX FACTORY)
jute grain bag	90 kg (110x68 cm)	packing of grain	K 559 / bag
polypropylene woven bag	90 kg (118x70 cm)	packing of grain	K 246 / bag
polypropylene woven bag	50 kg (100x60 cm)	packing of grain, flour, fertilizer, etc.	K 181 / bag

Note: the polypropylene bags are UV-stabilised and thus resistant to long duration exposure to sunlight; all products available ex stock.

Kabwe Rural District Cooperative Union  
offers to farmers for sale empty grain bags  
Second Hand: K 500 & New Bags: K 800

**GRAIN PURCHASES BY KABWE MILLING & NATIONAL MILLING IN KABWE**

COMPANY	CROP	PRICE OFFERED	VOLUME REQUIRED
National Milling	white maize	K 4500 / 90 kg bag	max. 300 MT
National Milling	yellow maize	K 2050 / 50 kg bag	max. 300 MT
National Milling	wheat (Zambian)	K 9487.50 / 90 kg bag	1000 MT
Kabwe Milling	white maize	K 4500 / 90 kg bag	max. 624 MT
Kabwe Milling	yellow maize	K 3900 / 90 kg bag	max. 624 MT

Note: Both Kabwe Milling and National Milling purchase maize directly from farmers at the mill; minimum requirement around 50 - 100 bags/purchase.

**MEALIE MEAL PRICES (25 KG BAGS)**

PRODUCT	WHOLESALE PRICE (KABWE MILLING)	RETAIL PRICE (KABWE)	RETAIL PRICE (KAPDI-KAPIRI)
breakfast meal - white	K 2095	K 2280 - 2500	K 2900
breakfast meal - yellow	K 1895	K 2060 - 2200	K 2700
roller meal - white	K 1755	K 1900 - 2000	K 2500
roller meal - yellow	K 1525	K 1650 - 1700	-

**LIIBWE MILLING IN KAPIRI MPOSHI:**

- \* buys white maize from farmers around Kapiri offering about K 4,500/90 kg bag
- \* sells white roller meal for K 2,100 per 25 kg
- \* offers grinding services for K 100 per tin of 15 kg

**RETAIL & WHOLESALE MAIZE SEED PRICES - ZAMSEED KAPIRI MPOSHI**

VARIETY	UNIT	WHOLESALE PRICE	RETAIL PRICE
MM603/604/612/504	50 kg	K 20,360	K 28,500
MM601/501/502	50 kg	K 28,500	K 39,900
MM752	50 kg	K 38,270	K 53,580
MM603/604/612/504	25 kg	K 10,240	K 14,340
MM601/501/502	25 kg	K 14,250	K 19,960
MM752	25 kg	K 19,140	K 26,790
MM603/604/612/504	10 kg	K 4,070	K 5,700
MM601/502	10 kg	K 5,700	K 7,980
MM752	10 kg	K 7,660	K 10,720
MMV600/400	10 kg	K 1,720	K 2,420

**VETERINARY PRODUCTS PRICE LISTS FOR KSDP AREA**

ITEM	UNIT	PRICE (KWACHA)
Oxytetracycline 5%	100 ml	1,150
Oxytetracycline 20%	100 ml	1,900
Sulphadimidene 23%	500 ml	6,000
Furaldone 20% powder	200 gram	1,500
Berenil	each	250
Samorin	each	280
Piperazine powder	1 kg	3,700
Vitamin ADE	100 ml	2,100
Wound powder	50 gram	1,000
Panacur	5 litre	25,000
Flukazole	each	150

Note: All veterinary products are available for sale on cash basis from the KSDP Office in Kabwe, all Veterinary Assistants in the KSDP area and the Camp Officers in Mphundi and Mukonchi.

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**CONSUMER PRICES - KABWE URBAN VEGETABLE MARKET**

CROP	UNIT	PRICE/UNIT
beans	kg	K 400
cabbage	kg	K 150
onion	kg	K 500
tomato	kg	K 400
potato	kg	K 300
spinach	bundle	K 30
groundnut (shelled)	kg	K 830
orange	kg	K 300
banana	kg	K 400
eggs	10	K 600

**FERTILIZER RETAIL PRICES (PER 50 KG BAG)**

FERTILIZER	N:P:K	NCZ DEPOT KABWE	NCZ DEPOT CHISAMBA	KAPDI KAPIRI
D-Compound	10:20:10	K 7751	K 7704	K 8,800
X-Compound	20:10: 5	K 6979	K 6945	K 7,500
C-Compound	6:18:12	K 8940	K 8930	K 9,100
Urea	46: 0: 0	K 8282	K 8236	K 9,000
Amm. Nitr.	34: 0: 0	K 8282	K 8236	K 9,000

- Note: 1. prices listed are only valid when purchased on cash!  
 2. 5 % discount on NCZ retail price when more than 10 bags are bought  
 3. 10% discount on NCZ retail price when more than 10,000 bags are purchased.

**RETAIL PRICES OF OX-DRAWN IMPLEMENTS AND SPRAYERS**

ITEM	SPECIFICATIONS	PRICE - KAPDI KAPIRI MPSOHI	PRICE - AFE KABWE
plough	Zimbabwean	-	K 46,000
ridger	Northland, resp. Zimbabwean	K 51,500	K 40,100
cultivator	Zimbabwean	-	K 31,750
sprayer	15 litre	K 35,000	K 25,600
sprayer	20 litre	K 45,000	K 26,900

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**GRZ/EEC KABWE SMALLHOLDER DEVELOPMENT PROJECT**

**MARKET INFORMATION SERVICE**

**WEEK 24 (14 - 20 June 1993)**

**Highlights:**

The lending institutions (Lima Bank, CUSA and ZCF/FS) are in the process of finalising agreements with various crop buying agents for the purchase of maize from their loanees. Prices paid by the lending institutions is likely to be K 5,000 per bag.

Kabwe Milling is not buying any white maize until their headquarters has fixed their into-mill price.

National Milling in Kabwe is offering K 6,500 per bag of white maize to farmers and traders when maize is delivered at the milling plant.

Private buyers (Amaka and Marklands) are offering farmers a depot price of K 5,500 and K 6,000 per bag of maize respectively.

The crop producer prices for oilseeds remain stable.

**MAIZE PRODUCER PRICES (PRICE PER 90 KG BAG WHEN DELIVERED AT DEPOT)**

COMPANY	PRICE PER BAG	CONDITIONS OF TRADE
Amaka	K 5,500	grain bags available at K 350; payment made within 7 days; option to receive (part) payment in e.g. fertilisers or tools
Markland	K 6,000	grain bags advanced, costs deducted after delivery of maize; payment within 7 days

**GRAIN PURCHASES BY KABWE MILLING & NATIONAL MILLING IN KABWE**

COMPANY	CROP	PRICE PER 90 KG BAG	REMARKS
National Milling	white maize	K 6,500	50% payment & within 30 days, remainder after 30 days
National Milling	wheat	K 9487.50	-
Kabwe Milling	white maize	?	purchase of maize temporarily suspended until pricing is sorted out.

Note: Both Kabwe Milling and National Milling purchase maize directly from farmers at the mill; larger quantities from farmer groups are preferred.

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**TOBACCO PRODUCER PRICES - MARKLANDS LTD., KABWE**

CROP	UNIT	PRICE	REMARKS
Virginia Tobacco	kg	K 506	average price for all grades and leaves
Burley Tobacco	kg	K 430	average price for all grades and leaves

**SOYA & SUNFLOWER PRICES (AT DEPOT/PLANT)**

COMPANY	CROP	PRICE	CONDITIONS OF TRADE
Premium Oil - Lusaka	soya	K 11,000 per 90 kg	Payments made within 21 days; max. moisture: 12%; max. trash: 3%; collection of crop only when supplied in large quantities.
Premium Oil - Lusaka	sun-flower	K 5,500 per 50 kg	Same as for soya
Chisamba Marketing Development Company	soya	K 9,500 per 90 kg	Payments made within 7 days after delivery/transport; grade A required
Chisamba Marketing Development Company	sun-flower	K 4,500 per 50 kg	Same as for soya
Kabwe Farmers Coop	soya	K 9,500 per 90 kg	Payment within 10 days; only good quality required; max. trash: 3%;

**CHIPANGALI INVESTMENTS LTD. - MUKONCHI AREA**

will purchase crops from farmers in Mukonchi area from small depots in Mukonchi, Chiowela, Chanakamba, Lumbe and Mondake starting from 21 June 1993. Crop prices offered are as follows:

maize: K 5,000/bag of 90 kg  
 soybeans: K 7,000/bag of 90 kg  
 sunflower: K 4,500/bag of 50 kg  
 Burley tobacco: K 400/kg (average price)  
 shelled groundnut: K 8,000/bag of 80 kg

**COTTON PRODUCER PRICES (PRICE PER KG)**

COMPANY	GRADE	PRICE/KG	REMARKS
Marklands Ltd	-	K 110	average for various grades
Lintco	A	K 100	-
Lintco	B	K 95	-
Lintco	C	K 90	-

**MEALIE MEAL PRICES (25 KG BAGS)**

PRODUCT	WHOLESALE PRICE (NATIONAL MILLING)	RETAIL PRICE (NATIONAL MILLING)	WHOLESALE PRICE (KAPWE MILLING)	RETAIL PRICE (KABWE MILLING)	RETAIL PRICE (KAPDI-KAPIRI)
breakfast meal - white	K 2390	K 2580	K 2095	K 2280	K 2900
breakfast meal - yellow	-	-	K 1895	K 2060	K 2700
roller meal - white	K 1820	K 1965	K 1755	K 1900	K 2500
roller meal - yellow	-	-	K 1525	K 1650	-

**CONSUMER PRICES - KABWE URBAN VEGETABLE MARKET**

CROP	UNIT	PRICE/UNIT
beans	kg	K 400
cabbage	kg	K 200
onion	kg	K 500
tomato	kg	K 500
potato	kg	K 250
groundnut (shelled)	kg	K 545
orange	kg	K 300
banana	kg	K 500
eggs	10	K 700

**RETAIL & WHOLESALE MAIZE SEED PRICES - ZAMSEED KAPIRI MPOSHI**

VARIETY	UNIT	WHOLESALE PRICE	RETAIL PRICE
MM603/604/612/504	50 kg	K 20,360	K 28,500
MM601/501/502	50 kg	K 28,500	K 39,900
MM752	50 kg	K 38,270	K 53,580
MM603/604/612/504	25 kg	K 10,240	K 14,340
MM601/501/502	25 kg	K 14,250	K 19,960
MM752	25 kg	K 19,140	K 26,790
MM603/604/612/504	10 kg	K 4,070	K 5,700
MM601/502	10 kg	K 5,700	K 7,980
MM752	10 kg	K 7,660	K 10,720
MMV600/400 -	10 kg	K 1,720	K 2,420

**HAND TOOLS AND IMPLEMENTS - RETAIL PRICES IN KABWE**

DEALER	PANGA	WATERING CAN	HOE SMALL	HOE LARGE	PICK
E W Tarry	K 2,000	K 5,600	K 1,200	K 1,500	K 3,600
CPRESS	-	K 2,400	-	K 1,500	K 3,500

**PROCESSING EQUIPMENT - RETAIL PRICES IN KABWE**

ITEM	DEALER	SPECIFICATIONS	PRICE
Maize sheller	E W Tarry	MFM Zimbabwe; hand-driven	K 296,000
Hammermill	E W Tarry	Kiloskar; electric engine	K2,152,500
Hammermill	E W Tarry	Kiloskar; 2-piston; capacity 2,5 bags/hour	K2,000,000
Hammermill	AFE	Lister; 2-piston	K2,800,000
Hammermill	Kabwe Motors	Cyclone; 2-piston	K1,780,000
Hammermill	Kabwe Motors	Kiloskar; 1-piston	K1,550,000
Handgrinder	Kabwe Motors	Bentall (UK); hand operated; suitable for maize, wheat, etc.	K 28,000

**KABWE FARMERS COOP**  
 offers for sale  
 \* an insecticide ("Blue Cross") for grain storage  
 at K 1,300 per kg  
 \* grain bags (new) for about K 650 each

**STOCK FEEDS FROM KABWE FARMERS COOP (PRICE PER 50 KG)**

STOCK FEED	PRICE
broiler starter	K 8,185
broiler finisher	K 6,460
layers mash	K 5,720
pig meal	K 5,485

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**Appendix 4**  
**Key Contacts**

## KEY CONTACTS

Africare  
Lyson M. Phiri, Oils Programme Coordinator  
Africare/Zambia  
P.O. Box 33921  
Lusaka, Zambia  
Te. 226406/227279

Bimzi Limited  
Mrs. C. Mwanamwambwa, Managing Director  
P.O. Box 50514  
Lusaka, Zambia  
Tel. 247353/220502

Bulyo Enterprises  
Mr. Muleya

Changeange Company Limited  
Mr. Caleb A. Mulenga, CEO  
5th Floor Freedom House, Cairo Road  
P.O. Box 50085/37856  
Lusaka, Tel. 260-1-222915/223229

EEC/GRZ Kabwe Smallholder Development Project  
Central Province  
Mr. Frank Joosten, Marketing & Information Director  
P.O. Box 81110  
Kabwe  
Tel. 05-223511/221367

FAO - Food Security Division  
Mr. Genaro J. Clemor  
Management Information System Advisor  
MAFF, 4th Floor, Room 466  
Mulungushi House, Lusaka  
Tel. (26(1) 250745

High Protein Foods Ltd. (Hi-Pro)  
Mr. Salim Dawoodjee, Managing Director  
P.O. Box 670059  
Mazabuka, Zambia  
Tel. (032) 30668/30412/30491

Inter-Africa Corporate  
Ms. Cheryl (C.J.) Jones  
H: 34E Leopards Lane  
Lusaka  
Tel. 225243/225002/264441  
H: 264-514

Lee Yeast

Marklands Limited  
Mr. Sydney Bwalya, General Manager  
P.O. Box 80094  
Kabwe Tel. 223239  
or P.O. Box 32576  
Lusaka Tel. 220525/224783/228817

Maruti  
Mr. Ramesh Parekh, Managing Director  
P.O. Box 81651  
Kabwe  
Tel. 223996/223929

Mazabuka Marketing & Development Co. Ltd.  
P.O. Box 670441  
Mazabuka, Zambia  
Tel. 30686

National Milling Co. Ltd  
Ms. Dora Nyirenda, Quality Assurance Manager  
Cairo Road  
P.O. Box 31980  
Lusaka, Zambia  
Tel. 229548/9 ext. 136/148/150

Nicholas Transport  
Mr. Couvaras  
(Monze)

Mr. Nichols (Commercial Farmer)  
Mkushi

Premium Oil Industries Limited  
Mr. James Makamo, Agricultural Manager  
Mumbwa Road  
P.O. Box 31412  
Lusaka, Zambia  
Tel. 286541/287904

Redlines Haulage Ltd.  
Mr. A.J. Patel, Managing Director  
New Light Industrial Area  
Plot No 7291 Kambala Rd  
P.O. Box 32362  
Lusaka  
Te. 287885/213541/287541

ROP Ltd.  
Mr. R.H. Thanawalla, General Manager  
Mr. Cosmas L. Chulu, Manager - Support Services  
Nakambala Road  
P.O. Box 71570  
Ndola  
Tel. 659549/53

Dr. Guy Scott  
Leopards Hill Road  
Lusaka  
H: Tel. 263607  
Also associated with Inter-Africa Ltd.  
Tel. 225243/225002/264441

Southern African Oil Mills Ltd.  
Mr. John Constantinou  
P.O. Box 32655  
Lusaka, Zambia  
Tel. 286505/288327

Soy Nutrients Limited  
Mr. Nick H. Railston-Brown, General Manager  
P.O. Box 32908  
Lusaka 10101, Zambia  
Tel. 272705, Fax: 221428

Supa Oil Zambia Ltd.  
Mr. P.V. Jagannathan, Financial Controller  
Mr. S. Soundara Rajan, General Manager  
P.O. Box 81151  
Kabwe, Zambia  
Tel. 81394

Truckers Association of Zambia  
Mr. Charles Madondo, Chairman  
P C Box 32819  
Lusaka, Zambia  
Tel. 245495

VOCA  
Carl Shuppe  
Harare, Zimbabwe  
Tel. 263-4-302018

Zambia National Farmers' Union  
John Hudson, Executive Director  
TAZ House, Chachacha Road  
P.O. 30395  
Lusaka, Zambia  
Tel. 223222/222797

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Zambia Seed Co. Ltd.  
Mr. Chance L. Kabaghe, Marketing Manager  
Buyantanshi Road  
P.O. Box 35441  
Lusaka  
Tel 243762/243586

Zambia Agricultural and Trading  
Cooperative Limited - ZATCO  
Mr. A. Muyovwe, General Manager  
P.O. Box 630084  
Choma  
Tel. 20060

ZATPID Project  
Mr. Jim McKenzie