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ZAMBIAN AGRICULTURAL SECTOR POLICY  
IMPACT ASSESSMENT

by

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E. Scott Thomas, Bureau for Africa, A.I.D.,

March, 1987



ROBERT R. NATHAN ASSOCIATES, INC.

DEVELOPMENT ALTERNATIVES, INC.,

BUREAU FOR AFRICA, OFFICE OF DEVELOPMENT PLANNING,  
AGENCY FOR INTERNATIONAL DEVELOPMENT

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## PREFACE

This study was commissioned by the Office of Development Planning in response to a request from the senior management of the Africa Bureau. The purpose of the request was to improve A.I.D.'s knowledge regarding the impacts on economic growth and equity of policy reform programs in Africa. This study and related studies, in Mali and Somalia, constitute the field studies for Phase I of the Office of Development Planning's Policy Reform Impact Assessment activities.

Each of the three country studies was prepared in the field during January 1987 by three member teams. Teams were comprised of 2 members provided under A.I.D.'s Macroeconomics Indefinite Quantity Contract with Robert R. Nathan Associates, Inc., Development Alternatives, Inc., and Boston University. The Bureau for Africa, Office of Development Planning provided the third member for each team. A fourth report synthesizes the findings with respect to the impact of policy reform programs in Africa.

Under Phase II, analytical activities will continue to broaden and deepen A.I.D.'s knowledge of the impacts of policy reforms in Africa. These activities will continue in fiscal 1987 and 1988.

John A. Patterson,  
Associate Assistant Administrator  
Office of Development Planning  
March 16, 1987

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## I. EXECUTIVE SUMMARY

This study examines the impacts of Zambia's economic policy reform program on agricultural production, marketing and processing, as well as on consumption of food, import substitution, and export promotion in the agricultural sector. The study also assesses, to the extent possible, the effects of policy changes on economic growth and the distribution of benefits and losses resulting from those changes. Finally, an effort is made to draw lessons and implications from the Zambian experience.

The Zambian economy is changing from a very interventionist and controlled system to a more liberal, mixed and de-centralized one. The policy changes are beginning to show positive results in terms of increases in agricultural and manufacturing income, replenishment of capital stock, rising agricultural exports, and a reversal of the longstanding decline of rural, relative to urban, incomes. The turnaround in Zambian agriculture suggests that it was the policy environment, and not the physical environment, which until recently acted as the constraint on agricultural production.

Farmers have responded to the decontrol of producer prices by planting and producing more maize -- an estimated production increase of 12 percent in 1986. Preliminary survey figures from Eastern Province indicate that since 1981 small-farm households have greatly expanded hectareage under maize cultivation in response to the new price incentives. Moreover, by all accounts the small farmer has increased production at a faster pace than the commercial farmer. The sheer magnitude of the national response in terms of maize marketed -- representing an increase of 31 percent in 1986 -- has strained to the limit the country's storage and transport facilities.

Freer markets also have induced crop diversification by farmers, who have been encouraged by higher fertilizer prices to grow less fertilizer-intensive crops, a desired result given Zambia's relatively high fertilizer usage. Deregulation of prices on other crops has also encouraged crop diversification, as has the incentive to diversify risks, especially by growing drought-resistant crops. Higher import costs, induced by nearly 80 percent depreciation of the real effective exchange rate, have decreased past trends of reliance upon imported machinery in favor of labor-intensive and animal-intensive production. Increased sunflower and soybean production has allowed reductions in imports of fish meal for use in animal feed.

It can be concluded that the longstanding decline of rural areas' share of national income, due to policies that effectively taxed farmers and subsidized town-dwellers, has been reversed, greatly improving the equity of the economic system. USAID/Zambia estimates that the value of this year's maize crop produced by noncommercial farmers is nearly 63 percent higher than last year's, even after deflating by the consumer price index. Clearly, rural incomes are up as a result. Rural areas represent some 53 percent of population and employment in Zambia. Eighty percent of the population in rural areas can be classified as poor or very poor. Thus, the government's policy changes largely are benefitting the desired target group.

Reduced regulation and quite competitive exchange rates have provided tremendous encouragement to exports. IMF figures suggest that exports other than copper and cobalt are likely to have increased in 1986 by 11 percent in SDR-valued terms. The rise has been led by agriculture, especially specialty crops. The Zambian Export Growers' Association estimates that the volume of non-traditional, horticultural exports has more than doubled since the currency auction was initiated in 1985. ZAMHORT, a parastatal active in fruit and vegetable trade, in the 1985-86 season has seen the volume of its exports grow by a factor of 26 over the previous year. It is noteworthy that these export increases have come from both small and commercial farmers.

Exports to neighboring countries, such as Zaire, Tanzania, Malawi, and Zimbabwe, also have become lucrative. The Commercial Farmers Bureau reports significant increases in volumes of small livestock, fruits, vegetables, and other foodstuffs exported to neighboring countries. Interviews with a quasi-parastatal sugar company in Mazabuka revealed

that strong sugar export markets are being developed in Zaire, Tanzania, Rwanda, and Burundi. Zambia only recently has become self-sufficient in sugar.

These leading indicators of growing import substitution and rising exports are quite encouraging. Nevertheless, optimism as to Zambia's overall trade balance must be tempered by realistic assessment of the contribution which non-traditional exports make to Zambia's total exports. The base from which agricultural exports are growing is small. Hence, substantial growth in this sector does not contribute much to helping the balance of payments in absolute terms.

In the final analysis, success in the agricultural sector still depends to a large degree on the ability of the country to earn and garner foreign exchange. Zambia's trade balance, which fell into deficit in 1986, is expected by the Bank of Zambia to continue deteriorating through 1988. This will mean high costs of foreign exchange for everybody, including agriculture.

Zambia's exports continue to be dominated by copper and cobalt, whose combined trade value is estimated to have fallen by 62 percent between 1983 and 1986. Copper and cobalt alone still accounted for 86 percent of total exports in 1986, according to figures available from both the Bank of Zambia and the Central Statistical Office.

Zambia's ability to service external obligations is expected to be severely constrained for the foreseeable future. Zambia's current account deteriorated significantly from 1983-1986, due to a 28 percent fall in exports, a 37 percent increase in interest payments, and a 25 percent increase in debt amortization. The debt-service ratio rose from 56 percent to 64 percent. Overall balance-of-payments deficits have been financed for the past three years principally through debt reschedulings and accumulation of external debt payment arrears. With arrears reductions in 1987, and without further rescheduling, the ratio would rise again to 121 percent. Significant financing gaps may be expected through the remainder of the decade.

By any standards, therefore, Zambia's external creditworthiness position looks grim. Perhaps nowhere is it clearer that continued commitment of the donors is crucial to a debtor country's success in economic revitalization. The principle in Africa should be to support progress in policy re-alignment with external payments reschedulings and additional, concessional, resources, if not outright debt

relief. This holds particularly in Zambia's case, where the re-alignment is expected to be quite protracted.

Implementation of reforms has been a major problem. Overlap of the responsibilities of NAMBoard (the national agricultural marketing parastatal) and farmer's cooperative unions (also largely regulated and/or subsidized by the government) has generated tremendous confusion, leading to costly delays. A case in point is the planned change in the point of maize subsidization from NAMBoard and the cooperatives to the millers. Planning and implementation difficulties in deregulating the price of maize meal and in assurance of delivery of subsidy payments were primary factors leading to maize meal shortages. Riots, in which at least 15 people were killed, followed price increases of 120 percent and concomitant shortages of this dietary staple, late in 1986.

Although numerous problems have arisen in planning and implementation, retention of some ineffective policies also has had deleterious impacts. Small farmers, for example, are still encouraged by a combination of producer prices that do not reflect transportation and storage costs, and consumer prices that remain subsidized, to market maize they otherwise would retain for their own consumption. This has led to an unnecessary and rising burden on storage and transportation facilities. This in turn has exacerbated an already acute shortage of covered storage facilities. In addition, the budget deficit has increased, as the spread between producer and consumer prices has widened, with government expenditures bearing the brunt.

Yet the government's decision to continue maize consumption subsidies has deferred much of the cost to the urban areas of the re-structuring program. (It is notable that maize subsidies alone accounted for fully 16 percent of the government's budget deficit in 1986.) On the other hand, both rural and urban consumers share the burden of perhaps 50 percent inflation, driven by price deregulation, rapidly increasing import prices and an expanding money supply to finance the budget deficit. Of these sources, only the monetary growth contributes to increases in the underlying rate of inflation.

Although large-scale layoffs have been avoided so far, the burden of employing a rapidly-increasing population is not being met by job creation in the "formal" sector: mining, manufacturing, and the civil service. The perquisites of the elite in the formal sector -- a car, overseas

education of a child, household appliances -- have ratcheted out of reach of many with depreciation of the local currency (the kwacha). The World Bank estimates that by 1983, real urban "formal" sector wages had fallen to between 45 and 90 percent of their 1975 levels.

Zambians continue to bear the burden of the slide in copper prices and production and of old debts which were undertaken partly to finance consumption and inefficient investments. The brunt of the resultant economic contraction (an estimated decline in per capita gross national income, adjusted for changes in terms of trade, of 3.8 percent on average annually from 1980 to 1986) has fallen on Zambians in the urban areas. The costs of the economic restructuring over the past few years have been severe, although it is impossible to say what the course of the economy would have been if decisive actions had not been taken. The government and the donors continue to search for a workable program to target temporary income or food subsidies to those most in need.

## II. INTRODUCTION

The Government of the Republic of Zambia (GRZ) has implemented a series of policy and regulatory changes in recent years as part of an economic restructuring effort. The main thrust of these changes has been to decontrol and liberalize the economy from the degree of state participation and regulation that has existed since Independence in 1964 in order to diversify its structure away from an undue dependence on copper. The objective is revitalization of the economic structure in order to provide the conditions necessary for sustainable growth.

High copper prices in the late '60s and early '70s allowed the GRZ to establish a complex set of state-run enterprises accompanied by subsidies and administered pricing for the benefit of consumers, farmers, and other important groups. Increasing restrictions were placed on the private sector and in many cases private sector participation was explicitly prohibited. The GRZ purchased majority ownership in industry, transportation, and utilities concerns. Government monopoly control was maintained in agricultural marketing.

Copper prices declined severely in the mid-seventies, causing the country's balance of trade to deteriorate. To adjust to what was perceived as a temporary slump, additional restrictions were placed on imports, foreign exchange, and credit. Continued declines in copper prices and revenues began to reveal the inappropriateness of a rigid and administered economic structure. By 1982 real GNP per capita was 20 percent lower than in 1974. Fiscal deficits averaged 18 percent of GDP by 1980-82. Heavy external borrowing due to diminishing foreign exchange earnings led to large external debt accumulation and then to arrears. Because of the inability to remain current on foreign debt obligations, by January 1983 the GRZ concluded that foreign exchange requirements could not continue to be met with further borrowing.

Recognizing that earlier economic policies were not conducive to realizing national goals of economic diversification and self-sufficiency, political leaders undertook to seek a consensus for needed changes. The culmination of this process was the convening of the Third National Convention in July 1984, which passed a series of resolutions endorsing fresh approaches to government and administration. Humanism was endorsed as the philosophy to guide the economy, but the way was opened to a more pragmatic approach to managing the economy.

Zambia is now in the midst of an economic restructuring program, the beginnings of which date back some seven years or more. Major policy innovations have taken place in the past four years which, taken together, represent a basic change in economic structure, from state-led economic decision-making in favor of a "mixed" economy. The latter refers to a pragmatic assessment that market signals and incentives play an important role in the success of any economic development strategy.

The untenable financial position of the country, due to the decline in copper prices and an absence of access to foreign capital from private sources, led President Kenneth Kaunda in the early 1980s to launch a major economic restructuring program. The main components of Zambia's economic restructuring program have been deregulation of market structures, freeing-up of prices, including the price of foreign exchange, greater market access extended to the private sector, and streamlining of public sector activities and interventions. A commitment was made to provide incentives for agricultural production and emphasize development led by the agricultural sector.

#### Role of Donors in Zambia's Economic Restructuring

While the economic restructuring program is a GRZ effort, donors have played a significant supporting role. In addition to providing much-needed financial resources, donor activities have provided advice, suggestions, and technical assistance in developing the policy changes that form the heart of the restructuring program. Major assistance has come from bilateral and multilateral sources. Not all donor assistance has been predicated on or supportive of policy reform. Estimates from the OECD Development Assistance Committee of the levels of support are shown in Table 1.

Table 1. Estimated Levels of Donor Support  
(\$US millions)

	1978	1979	1980	1981	1982	1983	1984
Bilateral disbursements	314	355	322	343	405	256	342
Multilateral disbursements	<u>48</u>	<u>79</u>	<u>91</u>	<u>75</u>	<u>71</u>	<u>36</u>	<u>76</u>
Total concessional assistance	362	434	413	418	476	292	418

The lead donors in the development of the restructuring program have been the IMF and the World Bank. USAID and other bilateral donors have been supportive of IMF and World Bank efforts through (1) sharing of information and analyses of specific problems of mutual concern with these multilateral institutions, (2) bilateral policy dialogues with the GRZ, and (3) the occasional use of conditions precedent or covenants to support policy changes identified in the analyses and policy dialogue. The major role played by USAID has been to support reforms with funding under Commodity Import Programs, the Zambia Multichannel Agricultural Marketing Program, Zambia Auction Program Support, and P.L. 480, as well as projects in agricultural policy analysis and planning, agricultural research and extension, and manpower training (see Appendix C).

During the period being examined, donor concern focused principally on analyzing and identifying the policy changes necessary for the GRZ's economic restructuring effort to be successful. While analysis and policy identification continue to be the emphases of donor activity, donor attention began shifting toward the implementation of the policy changes in mid-1986. Based on discussions with various donors, it is clear that implementation of the policy directions will take on much greater importance in donor activities over the next several years.

### III. IMPACTS OF REFORMS ON THE AGRICULTURAL SECTOR

#### Summary of Impacts

Farmers have responded to the increase in producer prices by planting and producing more maize -- an estimated production increase of 12 percent in 1986. Moreover, by all accounts the small farmer has increased production at a faster pace than the commercial farmer. The sheer magnitude of the response in terms of maize marketed -- representing an increase of 31 percent in 1986 -- has strained to the limit the country's storage and transport facilities.

It can be concluded that the long-standing decline of rural areas' share of national income, due to policies that effectively taxed farmers and subsidized town-dwellers, has been reversed, greatly improving the equity of the economic system. USAID/Zambia estimates that the value of this year's maize crop produced by noncommercial farmers is nearly 63 percent higher than last year's, even after deflating by the consumer price index. Clearly, rural incomes are up as a result. Rural areas represent some 53 percent of population and employment in Zambia. Eighty percent of the population in rural areas can be classified as poor or very poor. Thus, the GRZ's policy changes are resulting in more equitable income distribution in the country.

The government's decision for the present to continue maize consumption subsidies has delayed much of the cost to the urban areas which would otherwise have been felt from the economic restructuring. It is notable that maize subsidies alone accounted for fully 16 percent of the government's budget deficit in 1986. On the other hand, both rural and urban sectors share the burden of perhaps 50 percent inflation, driven by price deregulation, rapidly increasing import prices, and an expanding money supply to

finance the budget deficit. Of these sources, only the money supply increases contribute to the underlying inflation rate.

Freer markets have induced crop diversification by farmers, who have been encouraged by higher fertilizer prices to grow less fertilizer-intensive crops, a desired result given Zambia's relatively high fertilizer usage. Deregulation of prices on other crops has also encouraged crop diversification, as has the incentive to reduce risks by growing drought-resistant crops. Higher import costs, induced by nearly 80 percent depreciation of the real effective exchange rate, have reversed past trends of reliance upon imported machinery in favor of labor-intensive and animal-intensive production. Increased sunflower and soybean production have allowed reductions in imports of fish meal for use in animal feed.

Reduced regulation and quite competitive exchange rates have provided tremendous encouragement to exports. IMF figures suggest that exports other than copper and cobalt are likely to have increased in 1986 by 11 percent in SDR-valued terms. The rise has been led by agriculture, especially specialty crops.

Import liberalization, which accompanied the introduction of the foreign exchange auction, has resulted in manufacturers having easier access to new materials, supplies, and spare parts. As a result, capitalization in manufacturing, after a long decline, has begun to rise, portending a revival in the sector.

Implementation of reforms has been a major problem. Overlap of the responsibilities of NAMBoard (the national agricultural marketing parastatal) and farmers' cooperative unions (also largely regulated and/or subsidized by the government) has generated tremendous confusion and redundancies leading to costly delays. A case in point is the planned change in the point of maize subsidization from NAMBoard and the cooperatives to the millers. Planning and implementation difficulties in deregulating the price of maize meal and delivery of subsidy payments were primary factors leading to maize meal shortages. Riots, in which at least 15 people were killed, followed attempted price decontrol and concomitant shortages of this dietary staple, late in 1986.

Although numerous problems have arisen in planning and implementation, retention of some ineffective policies also has had deleterious impacts. Small farmers, for example, are still encouraged by a combination of producer prices that do not reflect transportation and storage cost and consumer prices that remain subsidized to market maize which they otherwise would retain for their own consumption. This has led to an unnecessary and rising burden on storage and transportation facilities. In addition, the budget deficit has increased, as the spread between producer and consumer prices has widened, with GRZ expenditures bearing the brunt.

Zambians continue to bear the burden of the slide in copper prices and production, and of old debts which were undertaken partly to finance consumption and inefficient investments. The brunt of the resultant economic contraction (an estimated decline in per capita gross national income, adjusted for changes in terms of trade, of 3.8 percent on average annually from 1980 to 1986) has fallen on Zambians in the urban areas. Although large-scale layoffs have been avoided so far, the burden of employing a rapidly-increasing population is not being met by job creation in the "formal" sector: mining, manufacturing, and the civil service. The perquisites of the elite in the formal sector -- a car, overseas education of a child, household appliances -- have ratcheted out of reach of many with depreciation of the local currency (the kwacha). The World Bank estimates that by 1983 real urban "formal" sector wages had fallen to between 45 and 90 percent of their 1975 levels. Many town-dwellers have resorted to growing their own vegetables and maize, or moonlighting in other jobs to make ends meet.

Of particular concern are the growing numbers of job-seekers unable to find any work. It is recognized that these families would be hardest hit by removal of consumption subsidies on maize meal. Some 19 percent of the budgets of families in the poorest 5 percent of the urban population is estimated to be allotted solely to the purchase of maize meal. The government and the donors continue to search for a workable program to target income or food subsidies to those most in need.

### Sectoral Policies and Regulations

#### Maize Policies

Maize is by far the most important crop in Zambia. In nutritional terms it is the staple of the Zambian diet. In terms of value of crops marketed through official channels,

it accounts for over 70 percent of marketed value of agricultural commodities. The policy changes that have affected maize markets most directly are the increases in official producer prices, reduction of the subsidy on maize consumption, rising fertilizer prices due to decreases in the level of subsidy, and partial deregulation of the marketing system. The stated policy of the GRZ is to focus adaptive research on smallholder crops. Maize is considered a smallholder crop and recent research results have featured releases of nine improved seed varieties.

Improved price incentives are believed to have stimulated increased maize production in recent years, particularly among small farmers, who now account for 60 percent of marketed production. During the period from the 1981-82 marketing season to the 1985-86 marketing season, the official producer price of maize increased from K16 per bag to K55 per bag. This was an increase of 185 percent adjusted for inflation. The major portion of this increase in producer prices has come during the last three years. During this period the amount of maize marketed increased from 6.3 million bags to 10.5 million bags, a 65 percent increase.

All indications point to the responsiveness of farmers to price incentives. Preliminary survey figures from Eastern Province indicate that since 1981, small-farm households have greatly expanded hectareage under maize cultivation in response to the new price incentives (see Table 2). The surveys show that only 23 percent of small and traditional households in 1981 tilled more than three hectares. By 1986, the figure had risen to 53 percent.

Price responsiveness is hidden by other factors that have dominated production or marketing figures in some years. The most obvious of these other factors is weather. The 1983-84 season was poor for maize growing. The 1984-85 season improved and the 1985-86 season had good weather conditions. These three seasons featured progressively better weather and progressively more favorable price incentives. Marketed output increased over this time period, but it is almost impossible with available data to separate cause and effect. Further complicating the situation was the irregular availability of fertilizer, seed and credit during the same period.

Table 2. Small and Traditional Farmers:  
Distribution of Maize Production by  
Household in Chipata District,  
Eastern Province, Zambia

Crop area (hectares)	1981		1986	
	Production (N=139)	Households (N=139)	Production (N=310)	Households (N=310)
	-----Percent-----			
L.T. 1	15	40	1	10
1-2	17	26	3	21
2-3	11	11	6	15
G.T. 3	57	23	89	53

Source: Based on surveys by the International Food Policy Research Institute; 1986 figures preliminary.

However, other indicators that are not dominated by weather show that farmers are responding to more favorable prices. A farm-level survey by the USAID Zambia Agricultural Research and Extension (ZAMARE) Project in the Central District, conducted prior to the current planting season, showed planting intentions for maize up 30 percent from the previous year. This would be expected due to the more favorable price structure for maize. The production manager of Zambia Seed Company said that the company in January had run out of seed for the current growing year and that sales had run about 20 percent greater than expected. The increases in seed sales were primarily to small farmers, as commercial farmers did not increase purchases appreciably. About 60 percent of the small farmers paid cash for the seed, which shows that availability of credit was not a major factor in the seed purchase decision since farmers who receive credit for seed purchases use a voucher.

Several cooperative officials and farmers interviewed indicated that planting intentions were up in the current season because of the profitable prices of maize. Even

though the production of maize will probably be down in the coming harvest season, because of late arrival of fertilizer and an extended drought in the southern areas of the country, farmers are responding to the favorable pricing environment and are attempting to grow more maize, soybeans, sunflower, wheat, and other crops.

### Consumption Effects

The first step in assessing what the consumption effects of rising maize prices have been is a basic understanding of urban and rural patterns of consumption. Based on an FAO study in 1974-75, Shubh Kumar of the International Food Policy Research Institute (IFPRI) found that the poorest 5 percent of urban dwellers spend some 19 percent of their income on cereals (mainly maize), while over 76 percent of the budgets of these families is allotted solely to purchases of food. The median-income household in urban areas spends only 12 percent of all the family budget on cereals, and perhaps 53-55 percent on all food. On the other hand, roughly 20 percent of income in rural families (including in-kind income) goes for cereals consumption.

Urban consumers have been hit hardest by increases in maize prices. On the other hand, this impact has been softened by the gradual removal of consumption subsidies. Comparison of the pattern of price increases on breakfast meal (the preferred staple) with increases in the price index for goods purchased by low-income consumers confirms that consumption subsidies have cushioned the impact of price changes. Over the past 10 years, prices of breakfast meal have risen only two-thirds as quickly as the general price level. Thus it is not surprising that the attempt to decontrol breakfast meal prices late in 1986, leading to price increases of 120 percent, met with resistance. The price increases and mistakes in implementation led to riots in which at least 15 people were killed.

The government kept prices of roller meal (the less-preferred staple) at their previous (low) levels, engendering immediate shortages, as price-sensitive consumers switched to the purchase of the now much less expensive type of meal. Contributing significantly to the problem was lack of confidence on the part of the millers that they would receive timely compensation from the government for continuing to produce roller meal and selling it at the low price. Hence their reluctance to produce roller meal.

Recent estimates indicate that breakfast meal accounts for 40 percent of total maize meal consumption, although some Zambians believe that the proportion is much higher. If these estimates are correct, they represent quite a marked shift away from roller meal, which in the 1974-75 FAO study was estimated to constitute over 85 percent of total maize consumption. The reason is simple: government-set margins, which gave better returns to breakfast meal, caused millers to produce more breakfast meal. The pricing policy also had the unintended effect of shifting consumption patterns in favor of breakfast meal, the preferred staple. At the same time, the subsidy has caused shifts in consumption patterns away from traditional foods (cassava) and other non-traditional foods (peanuts), in favor of maize.

Roller meal appears to be a less desirable food, with breakfast meal being consumed mainly by higher-income householders. The breakdown in fact is not so simple. Informal interviews with Zambian housewives indicated that although it is not as nutritious, breakfast meal is preferred because it is easier to cook, and there is less wastage in its preparation, which means the cost differential per plateful is not as distinct as might be expected from the difference in the price of the meal itself. This suggests that there is a large degree of substitutability between the two types of meal. Indeed, the shift from breakfast to roller meal when the price of the former doubled actually was anticipated, although planning for its consequences was inadequate. (The price increases ultimately were rescinded. A further discussion of these events appears below in the section on Processing of Maize.)

Consumption subsidies may also have fostered some distortions not intended by the government. Roller meal is reported to be used as an input to the production of traditional beer (chibuku). The FAO study found that rural Zambians consumed 56 percent as many grams per capita of chibuku as of maize meal. The figure for town-dwellers was 93 percent. Although roller meal subsidization is clearly not intended by the government for this type of usage, its subsidization may make its use for this purpose economical.

#### Marketing and Transport Efficiency

Maize marketing continued after Independence along state-regulated and state-run lines in Zambia for reasons which were in varying degrees both practical (lack of an entrepreneurial class) and ideological (the desire to

eliminate what were perceived as exploitative and profiteering activities). The parastatal marketing organizations (as well as land tenure arrangements) were holdovers from the colonial era.

Since 1981 the government has tried numerous measures to improve maize marketing efficiency. Provincial cooperatives were formed and given increasing responsibility for rural fertilizer procurement and for intra-provincial maize trade, while trade between provinces remained under the control of NAMBoard, the agricultural marketing parastatal. Roles were changed in 1985, with responsibility for all maize marketing reverting to NAMBoard and cooperatives acting as marketing agents. Under a "liberalization" scheme in 1986, anyone was allowed to buy maize, but NAMBoard was designated buyer of last resort. Subsidy payments were made through NAMBoard to the cooperatives. Plans were also drawn up to channel subsidies through the millers. (The reasons for withdrawal of this plan are detailed below.) Recently NAMBoard has been subsumed under the Ministry of Cooperatives.

The result of all these changes often has been a lot of confusion. Interviews with small farmers, commercial farmers, cooperative officials, NAMBoard officials, truckers, millers, various technical experts, and government officials all tended to confirm that problems had arisen in the management and implementation of reforms. The problem areas mentioned centered on agricultural credit, distribution of fertilizer, purchase of maize, evacuation of the crop from rural areas, and storage.

NAMBoard and the coops are required to operate under prices fixed by government fiat, which often are insufficient to cover costs. Thus subsidy payments are required. These payments frequently are delayed. The coops resort to borrowing while waiting for their subsidy payments and although the government as a matter of policy may guarantee these loans, interest payments represent additional costs. As government funds become more constrained, the length of the delays tends to increase. In 1986, some K333 million were allocated for subsidy payments. Estimated claims, however, ran to over K500 million. Thus a system of short-term credit has been created to cover delays in subsidization, a system which soaks up a good deal of the scarce liquidity of financial markets.

Frequent changes in responsibilities have generated difficulties. The following dilemma, discovered in the course of numerous interviews in Southern Province, is illustrative of the types of problems encountered.

The coops at harvest time borrowed from commercial banks to finance maize purchases from farmers. (These loans ultimately were guaranteed by the Finance Ministry.) NAMBoard, required to purchase from the coops excess maize for transport to other provinces, ran out of funds to reimburse the coops for maize purchases and subsidy payments. The loans were costing the coops 30-35 percent in annualized interest charges.

Securing credit to small farmers is difficult because typically they hold no formal title to their lands. Reserves and Trust Lands generally are allocated by tradition, although an increasing number of "emergent" and commercial farmers have obtained leaseholds in these areas. Initially, leaseholds may only be granted for 14 years, however, discouraging long-term investment. Land tenure is more secure along the line-of-rail (State Land), where it is allocated mostly by leaseholds which extend to a maximum of 99 years. But the transfer of leaseholds is a cumbersome process, reducing the land's value as collateral. Although fixed land improvements may be used as collateral, their value also is reduced by the difficulty in transferring leaseholds.

Farmers, particularly small farmers, receive credit from the coops in the form of seed, maize bags, and fertilizer. Since land is not readily usable as collateral, the coops have developed a system of securing production loans to small farmers against their future crop yields. With "liberalization" of the market in 1986, however, NAMBoard, as well as other coops and traders, was allowed to buy from the small farmers directly. Some farmers saw an opportunity to default on their loans from the local coop, bypassing the market stop order by selling to NAMBoard, and did so. The upshot is that the coops now are unsure how to secure future loans to small farmers.

Retention of some other policies continues to create distortions. Small farmers, for example, still are encouraged by producer prices that do not reflect transportation and storage costs, and consumer prices that remain subsidized, to market maize which they otherwise would retain for their own consumption. In 1986, for example, whereas maize production was estimated to have risen by 12 percent, the amount of maize marketed rose by 31 percent, while the budgeted subsidy increased by 130 percent. Since storage capacity year-to-year on small farms is thought to

be rudimentary, some of the increase could be due to small farmers attempting to capture the consumption subsidy by selling raw maize and repurchasing it as subsidized meal.

If so, the result is an unnecessary burden on storage and transportation facilities. Demand for transportation services is also high due to pan-territorial pricing, which encourages production in remote districts. This promotes long-range hauling. Thus, according to NAMBoard estimates, transport alone accounts for 53 percent of maize marketing costs and 36 percent of fertilizer marketing costs nationwide. The Southern Province Cooperative Marketing Union estimates transportation and interest charges make up 85 percent of the cost of marketing maize.

Roads have not been maintained properly, largely due to a long period of neglect when the kwacha was rationed. The same holds for the trucking fleet, rolling stock, and railbeds. Although foreign exchange now is more widely available, due to the foreign exchange auction, devaluations have pushed costs of new imported vehicles out of reach of most Zambians for the time being. Spare parts imports are thriving, however, as is demand for mechanics, according to a Ford dealership. The average age of the trucking fleet is now thought to be ten years.

The trucking industry operates under a fixed rate schedule negotiated with the government. Rates are differentiated by distance and road conditions in rural areas, with government picking up the tab through the subsidy payments. The differentials typically are not sufficient to encourage the truckers to venture deep into the rural areas, however. Significant delays are experienced in gaining access to transport in the farther reaches. Indeed, one trucker said that wet weather might multiply by seven the number of days necessary for transport and handling in remote areas -- and it just wasn't worth it at fixed rates.

A number of small farmers indicated they would prefer to receive a smaller immediate cash payment rather than wait several months for the full payment at the official price or for transport from remote areas. In other words, they might be induced in effect to pay at least part of the transportation and handling costs themselves in order to avoid payment delays.

The most recent liberalization plan, which was to change the point of subsidization from NAMBoard to the millers after transportation and handling had already been paid, would have in essence changed the pan-territorial

pricing structure. The farmer would have had the option to pay more in order to get his maize to the millers on time, or to wait for NAMBoard, which would have sold his maize to the millers at a cost-recovery price. This system was not implemented, partly because planning of how and when subsidies would be advanced to the millers was not done. (See the next section.)

There tended to be general agreement among farmers, coop representatives, NAMBoard and government officials, and technical advisers alike upon the need for more storage facilities, particularly storage facilities located in the more remote rural areas, plagued by delays in both fertilizer and maize transport.

The crunch on centrally-located storage facilities was demonstrated amply at several points along the line-of-rail in Southern Province. NAMBoard was still holding grain in January 1987 on out-of-door slabs, covered by tarpaulins, which should have been shipped to more permanent sites in October or November of 1986 (the end of the harvest season). NAMBoard officials, when interviewed, said that shipment of a large part of the country's maize surplus to the urban centers would be delayed indefinitely by the fact that storage there was already full.

Thus, although covered national storage capacity, estimated at 7.6 million 90-kg grain bags (460,000 metric tons), is just sufficient to cover national demand, it is wholly insufficient to cover 10.5 million bags, the amount of maize marketed in 1986. The danger is that a good portion of the surplus will be lost to rains and pests.

### Processing of Maize

There is little doubt that the riots in the Copperbelt following an attempt to deregulate the price of breakfast meal were incited partly by the importance of maize meal in the budget of the poor urban dweller. Apparently, the intention was to target food subsidies to the poorest in the urban areas by holding prices on the less expensive grade of meal, roller meal, at previously subsidized levels.

The move failed and had to be rescinded partly for reasons other than the price increase. First, the increase was announced in the planting season, when few alternative foods are on the market. Moreover, the government had announced that the point of subsidization would be moved from marketing parastatals and coops directly to the mills,

some of which were privately owned and run. It was not made clear how subsidies on roller meal would be distributed to the millers, nor was an advance announcement of an implementation date made which would have allowed millers to put in inventory extra stocks of roller meal. A rush on demand virtually depleted all roller meal stocks when the price increases on breakfast meal were announced. The millers had little incentive to produce more roller meal, because they were unsure how or when they would be receiving subsidy payments to cover their losses in selling it. Shortages of roller meal apparently contributed to triggering the riots.

The policy to subsidize the millers directly and to streamline transportation and handling inefficiencies was well-conceived. But the implications of that policy were not adequately addressed in terms of what steps would be needed in order to carry it out and who would be responsible. The millers were given assurances of subsidy payments, but the industry is much more decentralized than NAMBoard or the provincial coops, and the mechanics of how or when subsidies were to be paid were left unclear.

Advance notification of the move would have allowed stocks to adjust in anticipation of the shift. Gradual, pre-announced changes in the prices would have dampened short-term consumer hoarding. Instead, roller meal stocks were depleted almost immediately. Thirteen of the larger private mills were nationalized after the riots, and their owners' bank accounts frozen. The total number of private sector mills is 121, yet 69 percent of processing prior to the nationalization was being done by parastatals, so that they, too, shared responsibility for roller meal production. The price increases, as well as the plan to change the point of subsidization to the millers, were shelved. What started as a laudable effort ended up in a gross misstep because of insufficient planning and inadequate implementation.

A final point is worth noting concerning the distortions created by the consumption subsidy. The subsidy on maize creates an incentive to export processed maize to neighboring countries -- notably Zaire. This is considered smuggling. The government attempts to thwart this, partly by allocating maize to millers based on regional population. But this means that some more efficient millers cannot operate anywhere near capacity, while other are overbooked. One general manager of a parastatal mill in Southern Province pointed out that since his region is a net exporter of maize, its population by definition is small relative to

production. Thus, although his plant was quite modern, his maize allocation allowed him to operate at only 49 percent of capacity.

### Other Crops

In December of 1982, retail prices of major items except candles, maize, and wheat were decontrolled. In 1984 wheat prices were deregulated. The system of official producer prices remained in effect. As long as official buying and selling prices were in force there was no incentive for private businessmen to engage in trade because of the unprofitable margins. However, with free market pricing at the retail level, the possibility was opened that the margin between free market retail prices and official producer prices would be large enough to induce private businessmen to purchase directly from farmers, bypassing the official channels. There is strong evidence that this is just what happened and that in deregulated crops the official buying price became a support price rather than an administered price. If free market prices were above the official buying price, farmers sold to private businessmen. If official prices were above free market prices, farmers sold through officials channels.

A second result of retail price deregulation was that retail products flowed into rural areas, since transportation costs could be covered in the retail price. This created a need on the part of farmers for cash to purchase newly available goods. The result has been more incentive for small farmers to sell output for cash. In effect, retail price deregulation encouraged more subsistence farmers to become "emergent" commercial farmers.

With the deregulation of retail prices in December 1982 the first growing season which would reflect the deregulated pricing structure would be the 1983-84 season. Table 3 shows amounts marketed of various crops. Comparisons were made of the percentage change in the output marketed through official channels of various crops between the 1982-83 season and the 1985-86 season. The figures show that most marketing of deregulated crops increased faster than marketing of regulated crops. What we are witnessing here is a diversification of cropping patterns into crops that are subject to free market pricing.

Table 3. Marketed Output of Selected Agricultural Commodities

	Maize 90 kg	Sunflower 90 kg	Soybeans 90 kg	Rice 80 kg	Groundnuts 80 kg	Wheat 90 kg	Cotton	Sorghum 90 kg	Tobacco	Millet 90 kg
	-----Thousands-----						-Tons-	-Thousands-	-Tons-	-Thousands-
1978-79	5,192	236	14	23	34	73	1,490	1.7	4,600	0.0
1979-80	5,446	345	39	28	25	106	2,290	1.0	4,100	2.6
1980-81	7,734	385	41	33	16	126	1,680	1.4	2,400	2.4
1981-82	5,705	426	57	30	9	143	1,280	1.7	1,900	N.A.
1982-83	5,901	609	77	63	13	113	2,070	1.1	2,300	1.1
1983-84	6,347	808	106	69	14	49	4,390	3.2	2,500	0.2
1984-85	7,069	510	178	79	30	N.A.	3,030	12.4	2,200	0.5
1985-86	10,500	475	130	101	50	N.A.	3,230	20.0	3,400	1.0

N.A. = not available.

Frequent mention was made of increased plantings of sunflower and soybeans. Soybeans are more commonly grown by commercial farmers; sunflowers are grown by smallholders. Continuing the GRZ policy of focusing agricultural research and extension efforts on smallholder crops, in recent years six new varieties of soybeans have been released, two of which are self-inoculating and therefore can be planted by small farmers from their own seed. Research is underway into management practices in soybeans that will make the crop more practical for small farmers to raise to supply a growing domestic animal feed industry. Two new varieties of sunflower have been released in the last few years. The practical result of the government's agricultural research policy is that new cropping possibilities have been opened up for small farmers.

One apparent reason for the recent popularity of these two crops is that the fertilizer requirements are not as high as those for maize. Farmers perceive that their returns are competitive with maize because of the increase in the cost of fertilizer. Although it may not be strictly true that sunflower requires a lower level of purchased inputs, the grading system for sunflower up to September 1986 was not adequate to allow price differentials to be paid for seed with higher oil content. Thus there was no penalty under the grading system for producing sunflower with a lower oil content, and therefore little incentive to adopt new varieties with higher oil yield. Farmers perceived that reasonable profitability could be attained with minimal input of expensive fertilizer. The situation changed in September 1986 when a price differential between traditional and newer varieties of sunflower was announced.

The team also received reports of significant increases in the number of cattle in recent years. The reported reason is that adequate pasture land is available at little or no cost. With minimal cash costs, raising of beef was reported to be more profitable than cropping, which requires significant cash outlay for fertilizers. Again we are seeing a diversification in the agricultural economy into non-regulated enterprises and into enterprises which do not require such a large input of now-expensive imported inputs.

#### Fertilizer: Production, Consumption and Import

Fertilizer prices are controlled by the Government and in the past have been heavily subsidized. There is a uniform pricing system for individual products throughout

the country. Price levels have increased significantly in the last three years, with increases in price for the mixtures typically used on maize increasing almost 300 percent. The current price for the mixture most often used on maize is K80. There is little variation in the prices of compound fertilizer. Nitrogen fertilizers used on maize, such as urea and ammonium nitrate, show substantial price variation because of a new policy to allow pricing at approximately import parity levels.

The primary objective of maintaining a subsidy in the price of fertilizer was to increase the use of fertilizer and therefore crop production. Calculations of the level of subsidy involved are very difficult because there is not a free market in fertilizer with which prices can be compared. It is difficult to distinguish whether a payment is a subsidy on the delivered price of fertilizer or whether it is simply a subsidy to an inefficient delivery system. Even though the kwacha price of fertilizer has increased significantly in the last year, the devaluation of the kwacha has been even more steep, and the dollar-denominated price of fertilizer to the farmer is actually lower.

A number of those interviewed indicated that there has been less wasteful use of fertilizer because of the higher cost. In the past, Zambia has had one of the highest rates of fertilizer disappearance per hectare in East Africa. This may have been as a result of wasteful usage and smuggling into neighboring countries. Both of these problems are caused or exacerbated by a highly subsidized price. The GRZ is making progress in the effort to eliminate the subsidy. It is the precipitous devaluation of the kwacha which conceals the tremendous progress made in establishing import parity pricing on fertilizer.

An approximate price parity has been maintained between the price of a bag of fertilizer and a bag of maize in recent years, with the exception of a brief time period in 1985-86. It is not clear whether this has been by design or happenstance. Farmers are quick to recognize this input/output price relationship between fertilizer and maize and are able to make rational economic choices as a result. Since the price of a bag of fertilizer and the price of a bag of maize are about the same, small farmers recognize the profitability of using fertilizer, since one bag of fertilizer will yield three to four additional bags of maize. In 1985 the increase in the price of fertilizer lagged behind the increase in the price of maize by several months. For a

period of time the input/output price ration fell and therefore more fertilizer could be purchased with a bag of maize. Fertilizer purchases increased by 50 percent over the previous season even though no significant new sources of credit were available. From this example it is readily apparent that farmers are aware of, and responsive to, input/output price relationships.

Data on farmer consumption of fertilizer are not available, so deliveries by NAMBoard are used as a proxy. (This does not allow for any on-farm carryover from one season to the next that may be caused by late delivery, drought conditions, or storage in anticipation of price increases.) Table 4 shows deliveries from the 1980-81 season to the most recently available one. The input/output price relationship of fertilizer/maize remains roughly at parity, indicating that the profitability of using fertilizer remains about the same. The team heard from Cooperative Union officials, however, that small farmers were cutting back on the rate of application per hectare because the out-of-pocket costs for fertilizer were higher.

Table 4. Fertilizer and Maize Prices and Fertilizer Deliveries

Cropping year	Fertilizer price (K/bag maize mixture)	Fertilizer deliveries (1,000 MT)	Maize price (K/90-kg bag)	Price ratio (maize/fertilizer)
1980-81	9.60	196	13.50	1.41
1981-82	11.75	212	16.00	1.36
1982-83	14.95	211	18.30	1.22
1983-84	24.10	166	24.50	1.02
1984-85	26.75	141	28.50	1.06
1985-86	48.00	211	55.00	1.15
1986-87	80.00	N.A.	78.00	0.98

N.A. = not available.

Zambia has one fertilizer producer, Nitrogen Chemicals of Zambia (NCZ). From 1980-81 to 1984-85, NCZ supplied approximately 20 percent of the fertilizer consumed in the country. The balance of consumption comes from imports. In recent years, domestic production has been hindered by foreign exchange availability shortages which have resulted in maintenance problems and non-availability of fuel and raw materials. The Japanese, the Germans, and the World Bank have undertaken a program to support rehabilitation of NCZ. USAID, until 1986, financed the supply of imported raw materials for this purpose. These donor programs, along with the recently granted freedom to price compound fertilizers roughly at import parity, have combined to result in much higher local production. Current levels of production are between 60 and 90 thousand metric tons, while demand is estimated at 160 thousand metric tons. Thus, local production is now estimated to be between 37 percent and 56 percent of local demand.

#### Macroeconomic Policies and Indicators

The economic restructuring program is having far-reaching effects throughout the economy. We have just examined some of the changes in agricultural policies and their impacts. We now turn to a discussion of macroeconomic policies and what effects they have had on the agricultural sector. In many cases the macro effects of policy change far outweigh the effects of policies specifically targeted to agriculture.

#### Impacts on the Trade Balance

The foreign exchange auction system has caused a rapid increase in kwacha prices of imports and has enhanced the competitiveness of Zambian exports. In real, trade-weighted terms, the kwacha has fallen in value against the dollar by 80 percent since the beginning of the auction. The result has been a shift in expenditures in favor of domestically produced goods, and in production in favor of exportables. Agriculture in particular has benefitted from this shift.

The Zambian Export Growers' Association estimates that the volume of non-traditional, horticultural exports has more than doubled since the auction was initiated. Moreover, the Association projects that such exports again will more than double in the year to come. This growth has come from both large and small-scale farmers. ZAMHORT, a parastatal active in fruit and vegetable trade, has seen the volume of its exports grow from 16.1 metric tons in 1984-85 to an estimated

438.3 metric tons for the 1985-86 season. It is noteworthy that these exports come from increases in production by smaller, commercially oriented farms without the capital necessary to engage directly in export to markets in the industrial countries.

Exports to neighboring countries, such as Zaire, Tanzania, Malawi, and Zimbabwe, also have become lucrative. The Commercial Farmers Bureau reports significant increases in volumes of small livestock, fruits, vegetables, and other foodstuffs exported to neighboring countries. Interviews at the sugar company in Mazabuka revealed that sugar export markets are being developed in Zaire, Tanzania, Rwanda, and Burundi. Nakambala Sugar Company also indicated that rules in place since 1984 allowing retention of 50 percent of foreign exchange earnings on exports were making possible payments on its foreign debts and rehabilitation of its industrial plant. During the long hiatus of foreign exchange, when the kwacha was over-valued, the plant had deteriorated due to lack of access to imports for maintenance and new investment.

Calculations by USAID concerning maize, wheat, and rice indicate in each case that Zambian producers are very competitive in export markets since the introduction of the auction system. In the latter part of 1986, it became more cost-effective for Zambians to produce and consume their own maize than to import from neighboring Malawi, one of the region's lowest-cost producers. So far, Zambia has not begun exporting its maize surplus in any significant amounts.

Considerable import substitution also was taking place in the agricultural sector, according to those farmers, coop representatives, and technical experts interviewed. Ministry of Agriculture and Water Development estimates show that ox-plow production in maize results in costs 22 percent lower than those faced by tractor users. USAID agricultural extension agents (on the ZAMARE team) reported that "oxenization" is rising in rural areas because of lower costs compared to import-intensive tractor-driven agriculture.

Some of the "emergent" small farmers, closer to the line-of-rail, reportedly are substituting walking tractors for full-size tractors to hold down import costs. This is another example where labor-intensive production is beginning to substitute for capital-intensivity following the devaluation of the kwacha. Labor, in general, was described as the constraining factor for most small farmers, especially with increased agricultural production.

Other interviewees reported on crop diversification into soybeans and sunflower. This is permitting substitution of domestically-grown protein concentrates in livestock feed and reductions in fish meal imports for that purpose.

These leading indicators of growing import substitution and rising exports are quite encouraging. Nevertheless, optimism as to Zambia's overall trade balance must be tempered by realistic assessment of the contribution that non-traditional exports make to Zambia's total exports. The base from which agricultural exports are growing is small. Hence, substantial growth in this sector does not contribute much to helping the balance of payments in absolute terms.

In the final analysis, success in the agricultural sector still depends to a large degree on the ability of the country to earn foreign exchange. Zambia's trade balance is expected by the Bank of Zambia to continue deteriorating through 1988. This will mean high costs of foreign exchange for all sectors, including agriculture.

Zambia's exports continue to be dominated by copper and cobalt, whose combined export values are estimated to have fallen by 62 percent between 1983 and 1986. Other exports, including mainly agricultural exports, are estimated to have increased in 1986 by 11 percent.<sup>1</sup> Copper and cobalt alone still accounted for 86 percent of total exports in 1986, according to figures available from both the Bank of Zambia and the Central Statistical Office.

Thus, Zambia's ability to service external obligations is expected to be severely constrained for the foreseeable future. Zambia's current account deteriorated significantly from 1983 to 1986, due to a 28 percent fall in exports, a 37 percent increase in interest payments, and a 25 percent increase in debt amortization. The debt-service ratio rose from 56 percent to 110 percent over that period, before a rescheduling which reduced the ratio to 64 percent. The overall balance-of-payments deficits have been financed for the past three years principally through debt rescheduling and accumulation of external debt payment arrears. With arrears reductions in 1987, the ratio is projected to rise again to 121 percent. Significant financing gaps may be expected through the remainder of the decade.

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1. Both of these figures are quoted in terms of Special Drawing Rights issued by the IMF.

Considering Zambia's extreme export-dependence on copper, her external creditworthiness position looks grim. But the external debt overhang alone represents a tremendous burden. Perhaps nowhere is it clearer that continued commitment of the donors is crucial to debtor countries' success in economic revitalization. Progress in policy realignment accompanied by external payments reschedulings and additional concessional resources, if not outright debt relief, will be required. This is particularly important in the case of Zambia, since the re-alignment is expected to be quite protracted.

### Output Indicators

There are indications that the long period of decline in GDP may be coming to an end. The gross domestic product (GDP) grew in real terms by 3.4 percent in 1985 (Table 5). After adjustment for changes in the terms of trade, the growth rate falls to 2.7 percent.<sup>2</sup> This modest overall growth was led by agriculture and manufacturing. Production in the agricultural sector increased by 9.2 percent between 1984 and 1985, while production in the manufacturing sector increased by 8.9 percent. Taken as a group, all of the other sectors showed no real growth. This includes the mining sector, where output actually fell by 5.3 percent in 1985, following a fall of 10 percent in 1984.

Growth in GDP during 1986 could be higher than it was in 1985, led by a significant increase in agricultural output. Marketed maize production, for example, appears to have reached 10.5 million bags, compared to about 7 million in 1985. Thus, for the first time since 1978, the domestic supply of maize has exceeded domestic demand.

There has been a further increase in manufacturing output as a result of the weekly foreign exchange auction. Import liberalization, which accompanied the auction, gives manufacturers access to required imports. A high percentage of foreign exchange has been allocated for the import of raw materials, spare parts, and machinery. For example, in the final quarter of 1986, the proportion allocated to imports of raw materials and spares ranged between 56 and 65 percent. The improved availability of these types of imports has led to higher rates of capacity utilization, according to an informal World Bank survey in 1986. Increased activity in both agriculture and manufacturing has also stimulated the trade, finance, and transport sectors.

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2. This adjusted rate of economic growth fell below the rate of population growth, moreover, so that there was a further decline in per capita income.

Table 5. Gross Domestic Product by Type  
of Economic Activity  
(Constant prices of 1977, in millions of kwacha)

Type of economic activity	1981	1982	1983	1984	1985
Agriculture, forestry, and fishing	328.7	290.3	314.6	332.2	362.7
Manufacturing	430.2	415.1	384.5	389.3	423.9
All other economic activity	1,360.0	1,353.9	1,319.7	1,291.0	1,293.8
Gross domestic product (total)	2,118.9	2,059.3	2,018.8	2,012.5	2,080.4

Source: Progress Report of the Republic of Zambia to the Consultative Group on the Action Program for Economic Restructuring, December 1986.

The reasons for output growth go back several years. Between 1983 and 1985, a series of fiscal incentives to invest in non-traditional export goods were enacted. Taxation on enterprises producing non-traditional exports was reduced to a maximum rate of 15 percent. Since 1984, non-traditional exporters have been allowed to retain half of their foreign exchange earnings. In 1985, the Government began to reduce the protection levels enjoyed by many domestic industries by introducing relatively low minimum import duties and maximum duties of 100 percent. Most imports were to be taxed in the 30-40 percent range. In 1986, the Government passed a new Investment Act, which provided fiscal incentives not only to export-oriented activities but also to those utilizing domestic inputs intensively or locating in rural areas. All of these measures have provided a stimulus to the agricultural economy.

#### Investment and Savings

Zambia in recent years has relied heavily on transfers of capital from abroad to finance a major portion of investment and growth. A major continuing drain on the economy is interest payments on foreign debt (see Table 6). In the last three years for which data are available, foreign sources accounted for slightly less than half of gross domestic investment. Since continued access to foreign savings sources cannot be assured in the future, domestic savings will have to increase to maintain levels of investment and resultant growth.

Table 6. Investment and Savings  
in Zambia, 1981-85  
(Current prices in millions of kwacha)

	1981	1982	1983	1984	1985
Gross Domestic Investment (GDI)	673.3	602.9	575.0	724.0	756.9
Capital formation	610.0	618.0	615.0	622.6	603.3
Change in stocks	63.3	(15.1)	(40.0)	101.4	153.6
Resource gap <sup>a</sup>	436.1	316.4	48.1	(187.5)	(78.0)
Gross Domestic Savings (GDS) <sup>b</sup>	237.2	286.5	526.9	911.5	834.9
Net factor income from abroad	(97.9)	(219.2)	(246.4)	(375.0)	(548.0)
Current transfers	(114.5)	(36.1)	(3.8)	(64.1)	17.2
Gross National Savings (GNS) <sup>c</sup>	24.8	31.2	276.7	472.4	304.1
Gross Foreign Savings (= GDI - GNS)	648.5	571.7	298.3	251.6	452.8
Consumption of fixed capital	383.4	405.8	426.4	630.3	851.6
Net domestic investment <sup>d</sup>	289.9	197.1	148.6	93.7	(94.7)
Net fixed capital formation <sup>e</sup>	276.6	212.2	188.6	(7.7)	(248.3)

a. Imports of goods and non-factor services (NFS) less exports of goods and NFS.

b. GDS = GDI less the resource gap.

c. GNS = GDS plus net factor income from abroad plus current transfers.

d. Net domestic investment is equal to GDI less consumption of fixed capital.

e. Net fixed capital formation is equal to fixed capital formation less consumption of fixed capital.

Source: Zambia: Country Economic Memorandum, Economic Reforms and Development Prospects, November 1986, a document of the World Bank.

Even with the infusion of foreign savings into the economy, there is evidence that investment has not been sufficient to replace capital used in production and that Zambia may have a smaller stock of capital in 1987 than it had in 1983. In addition, there is evidence that GRZ outlays on the agricultural sector have been inadequate. As can be seen in Table 7, by 1985 Gross Domestic Investment (GDI) had fallen to 12 percent of Gross Domestic Product (GDP), from about 19 percent in 1981.

Table 7. Gross Domestic Investment  
as a Percent of GDP (1981-85)

	1981	1982	1983	1984	1985
Gross domestic investment	19.3	16.8	13.8	14.7	12.0
Gross domestic savings	6.8	9.0	12.6	18.5	13.2
Gross domestic consumption (GDC)	93.2	91.0	87.4	81.5	86.8

One of the major aims of the recovery program is to restore investment to a level at least 17-18 percent of GDP, which is a necessary condition for any future growth of output and employment. With per capita consumption already 20-25 percent below its 1981 level, further reduction in consumption to meet these investment goals will be especially difficult. While all segments of Zambian society have been affected, unquestionably the hardest hit have been households in the urban areas. Rural households have been affected mostly through the fall in public services, like education, health, and potable water supply, that has resulted from budget cuts.

### Government Finances and Agricultural Subsidies

Government deficits (Table 8) have existed since 1983. To make the connection between agricultural subsidies and Central Government deficits, we need only refer to very recent events. President Kaunda pointed out that imports in kwacha now are 5-6 times more expensive than before the devaluation which accompanied the foreign exchange auction system. To help cushion the effects of the rising cost of living on the population, the consumer price of maize meal was subsidized. Increasing general price levels led to increases in subsidy payments. Budgeted agricultural sector subsidies were K334 million in 1986. Actual subsidies probably exceeded K500 million. (The 1987 budget for subsidies is K677 million, but the USAID Mission estimates that subsidies could easily reach K1.2 billion.)

Table 9 shows agricultural sector subsidies between 1981 and 1984. Maize subsidies are a large fraction of the direct subsidies, ranging between 51 and 80 percent of the total. Direct subsidies for maize and fertilizer together account for about 98 percent of the total.

Direct subsidies have been ranging between 7 and 12 percent of current expenditures by the Central Government and between 5 and 10 percent of total expenditures. They account for a significant share (between 19 and 30 percent) of total deficits.

### Money and Prices

The Government introduced a daily auction of Treasury Bills in September 1985. This was to be a less inflationary means of financing deficits than resorting to overdrafts with the Bank of Zambia. The Treasury Bill auction would also be used to control the money supply, through changing monetary reserves, and to affect interest rates on savings and loans. The establishment of the Treasury Bill market and the decontrol of interest rates meant abandoning credit allocation and official deposit and lending rates as instruments of monetary policy.

Even though during the last quarter of 1985 the authorities used the new monetary-policy tools, sharp increases occurred in both domestic credit and money supply, particularly following the introduction of the foreign exchange auction. With the plunge in the value of the kwacha upon the introduction of the auction, the prices of consumer goods shot up rapidly.

Table 8. Central Government Finances, Domestic Credit, and Money Supply  
in Zambia, 1981-86  
(Millions of kwacha)

	1981	1982	1983	1984	1985	1986 (quarter)		
						I	II	III
Gross domestic product (at market price)	3,485.4	3,595.3	4,181.2	4,931.0	6,332.1			
Current expenditure	1,230.5	1,242.6	1,244.1	1,355.0	2,280.3			
transfers and subsidies	143.1	160.4	121.4	211.7	386.9			
Total revenue and grants	852.1	868.0	1,069.0	1,161.0	1,691.8			
Government deficit <sup>a</sup>	378.4	374.6	175.1	194.0	588.5			
Capital expenditure and net lending	158.1	228.0	198.0	266.0	456.3			
Exceptional expenditure <sup>b</sup>	--	--	--	--	209.1			
Deficit <sup>c</sup>	536.5	602.6	373.1	460.0	1,253.9			
Domestic credit <sup>d</sup>		2,994	3,296	3,688	4,388	4,534	4,746	4,958
Claims on government (net)	N.A.	1,983	2,099	2,287	2,529	2,512	2,622	2,693
Claims on private sector (non-government)	N.A.	1,011	1,197	1,401	1,859	2,022	2,124	2,265
Broad money <sup>d</sup>	N.A.	1,309	1,454	1,704	2,104	2,504	2,713	3,185
Consumer Price Index (seasonally adjusted), 1980 = 100.0 <sup>e</sup>	N.A.	133.4	162.4	196.9	301.5	348.8	374.1	
Kwacha/U.S. dollars <sup>e</sup>	N.A.	1.21	1.78	2.63	7.09	8.20	9.01	

N.A. = Not available.

a. Current expenditure less total revenue and grants.

b. A one-time payment arising from foreign exchange losses related to exchange rate reform.

c. The total of government deficit, capital expenditure and net lending, and exceptional expenditure.

d. End of period.

e. In 1982, 1983, 1984, and 1985 for the fourth quarter.

Sources: Gross domestic product and all Central Government finances from Zambia, Country Economic Memorandum, Economic Reforms and Development Prospects, November 1986, a document of the World Bank. Domestic credit, broad money, CPI, and foreign exchange rate from official Zambian and IMF estimates.

Table 9. Agricultural Subsidies  
in Zambia, 1981-84  
(Millions of kwacha)

	1981	1982	1983	1984
Total agricultural sector subsidies	106.7	153.4	117.8	90.1
Pricing policy subsidies	100.3	143.7	112.8	87.7
To maize <sup>a</sup>	51.6	89.6	90.6	65.5
To fertilizer <sup>b</sup>	37.9	50.3	19.9	20.1
To tobacco <sup>c</sup>	10.8	3.8	2.3	2.1
Pricing policy subsidies				
As percent of total agricultural sector subsidies	94.0	93.7	95.8	97.3
As percent of Central Government recurrent expenditures	8.2	11.6	9.1	6.5
As percent of Central Government total expenditures	7.2	9.8	7.8	5.4
As percent of Central Government deficit	18.7	23.8	30.2	19.1

a. Price differential, handling (by NAMBoard), other NAMBoard costs, cooperatives.

b. Price differential, handling (by NAMBoard).

c. Price differential, subsidy to the Tobacco Board of Zambia.

Source: Doris J. Jansen, A Comparative Study of the Political Economy of Agricultural Pricing Policies in Zambia, June 1986.

Price increases followed the devaluation which accompanied the foreign exchange auction. The jump in the consumer price index in 1985 should have been a one-time price adjustment caused by an upward adjustment in the price of all imported commodities. However, increases in the money supply in the first half of 1986 provided fresh fuel for price increases. Monetary accommodation appears to be causing continuing inflationary pressures. After mid-1986 there appeared to be somewhat of a slackening of inflationary pressures, but one cannot be sanguine about this view, especially since the newly released official 1987 budget deficit projections exceed earlier IMF program estimates and targets by almost K1.0 billion. In addition, the estimated deficit for 1987 is certain to exceed the levels given in the budget presentation, and this will lead to additional pressures for an accommodative monetary policy and resultant inflationary pressures.

Interest rates have been increased stepwise starting in 1983. By September 1985, all official controls over interest rates had been eliminated. Lending rates in the agricultural sector rose to between 30 and 35 percent. In spite of the high nominal rates of interest, real rates of interest are negative, since the annual inflation rate exceeds 50 percent. In February 1987, interest rate controls were reinstated; sector interest rates remain unclear at this writing.

#### Employment and Wage Policies

There is no reliable estimate in Zambia of the rate of unemployment. Indications are that unemployment is rising. In the medium term, the unemployment situation may get worse as large numbers of employees in the mining industry, some public sector industrial enterprises, and the Civil Service find themselves redundant as a result of the new employment policy. The GRZ is undertaking a program to resettle jobless people on the land so they can make a living in farming. The provisions of this new initiative are just beginning to take form, but a goal of this program is to expand agricultural production credit to these individuals. It should be noted that such a resettlement program has a chance of success in Zambia, where less than half of the arable land is being cultivated.

The Government has always had a weighty influence on wages in the formal sector. The main feature of the Government's wage policy since the early 1970s has been the narrowing of the relative wage differential between lower-

and higher-salaried employees. This policy, while motivated by the desire to protect less-skilled workers against inflation and to improve their relative economic position, probably widened income differences with formal sector workers. Small and subsistence farmers are among those who have little protection against inflation or economic recession or decline (see Table 10).

Table 10. Population, Labor Force and Employment

	1980 <sup>a</sup>	1985	Average annual growth rate
	--Thousands--		--Percent--
Total population	5,680	6,725	3.4
Urban population	2,259	2,998	5.8
Labor force <sup>b</sup>	1,650	1,991	3.8
Formal sector employment <sup>c</sup>	379.4	361.5	(1.0)
Agriculture, forestry and fishing	32.6	35.1	1.5
Manufacturing	47.8	48.5	0.3
All other sectors	299.0	277.9	(1.5)
	-----Percent-----		
Ratios			
Urban/total population	40.0	44.6	
Labor force/total population	29.0	29.6	
Formal sector employment/ labor force	23.0	18.2	

a. A census year.

b. Population between 15 and 64 years of age either working or seeking work.

c. Does not count domestic services.

Source: Zambia: Country Economic Memorandum, Economic Reforms and Development Prospects, November 1986, a document of the World Bank.

It appears that when the Government decontrolled key retail prices in December 1982, it practically abandoned its policy of setting both prices and wages. Since then, on the wage side, the Government has not forced firms employing non-Union labor to match Union wage gains, and it has kept increases in Civil Service salaries well below increases in the cost of living.

#### Income Distribution

There is no reliable and up-to-date information on income distribution in Zambia. Various surveys were done by the ILO and the Central Statistical Office during the latter part of the 1970s. These may still be regarded as basically valid for current income distribution, since income distribution usually does not change significantly within a decade and there are no indications of any significant changes having taken place in the last decade. These surveys indicate great income disparities between rural and urban households and between the richest and the poorest families and individuals within the two sectors (Table 11).

Table 11. Income Distribution by Household

Income group	Percent of households	Percent of total income
Top	5	33 1/3
Middle	35	46 2/3
Bottom	<u>60</u>	<u>20</u>
	100	100

These surveys show that average annual household incomes in the urban areas are over four times as large as those in the rural areas. The richest 5 percent of Zambia's population receives over one-third of the total income, while the poorest 60 percent gets one-fifth. Four out of five rural households earn less than necessary to satisfy

minimum basic needs, and 30 percent of urban households fall into this category.

The present restructuring of the Zambian economy is based on a long-term strategy to promote sustainable economic growth. In the transition period, not all paths will be the same and certainly not all will be rising smoothly. It is likely that in the short run selected groups will be seriously disadvantaged. Consequently, during the transition period, there may be rising tension and conflict. If tensions cannot be soothed along the way, there is an increasing risk that the entire strategy of economic restructuring will be abandoned.

The restructuring of the Zambian economy is expected to lead to a more equitable distribution of income. A great emphasis has been placed on agriculture and reduction of discrimination against the rural areas. This should produce a fairer distribution of income between rural and urban populations. Descriptions and a breakdown of the various types of Zambian farmers are given in Table 12, while an evaluation of the likely net gains or losses of selected groups during the early transition period appears in Table 13.

Changes in the real distribution of income have been affected by differences in price increases in the market baskets of various income groups. Let us consider the price increases that have occurred, for low-income versus high-income households (Table 14). Even though there is not much difference between the two indexes, the prices of goods purchased by low-income urban families have not increased as quickly as those purchased by high-income households.

Table 12. Structure and Characteristics of Farm Households, About 1985

Type of farmer	Farm size (hectare)	Number		Chief characteristics
		Absolute <sup>a</sup>	Percent	
Traditional	Less than 5	500,000	83.3	Cultivates using family labor and simple hand tools and produces primarily for his own consumption with occasional marketable surpluses.
Emergent	5 - 20	94,000	15.7	Sources vary as to number; estimates are 60,000-120,000. Uses family labor, oxen, or hired tractors and purchases some inputs. Produces for his own consumption and for market.
Medium-scale	21 - 40	5,300	0.9	Produces predominantly or wholly for the market; uses oxen and tractors.
Large-scale	Greater than 40	700	0.1	Produces predominantly or wholly for the market; highly mechanized.
Total		600,000	100.0	

a. Very approximate.

Source: Dcris J. Jansen, A Comparative Study of the Political Economy of Agricultural Pricing Policies in Zambia, June 1986.

Table 13. Summary of the Probable Gains and Losses  
to Date of Selected Economic Groups from  
Economic Restructuring

Social class/group	Probable gain (+) or loss (-)
Rural	
Commercial farmers <sup>a</sup>	(+)
Emergent farmers	(+)
Traditional farmers	(+)
Urban	
Private enterprises	(+)
Public enterprises	(-)
Urban wage-earning households	
High income	(-)
Low income	(-)

a. Medium- and large-scale farmers.

Table 14. Year-to-Year Increases in Consumer Prices  
(Percent)

	Low-income households	High-income households
1983 December	23.5	19.2
1984 December	23.6	25.3
1985 December	58.3	56.4
1986 March	58.7	60.0
June	60.0	61.5
September	50.0	65.4

#### IV. LESSONS AND IMPLICATIONS

This study examined the impacts of Zambia's economic revitalization program on agricultural production, marketing and processing, as well as on consumption of food, import substitution, and export promotion in the agricultural sector. Finally, a brief summary of the overall financial and economic picture in Zambia was presented. The purpose was to formulate a preliminary assessment of the impacts of GRZ policy, changes actively supported by donor assistance. This section is devoted to presenting, in summary form, some of the lessons and implication of this study.

1. The turnaround in Zambian agriculture and agricultural exports suggests that it was the policy environment, and not the physical environment, that until recently acted as the constraint on agricultural production.

2. A basic and monumental change has been taking place in the roles of the government and the private sector in the Zambian economy. Zambia is changing from a very interventionist and controlled economy to a more liberal, mixed economy, while at the same time preserving the philosophy of Humanism.

3. The display of political will in carrying out the restructuring of the economy has been impressive in the face of some very high costs in terms of disruption and loss of income for critical groups. Among the Zambians there is nowhere near unanimity of opinion on "staying the course" in carrying out reforms, however, and there has been some equivocation.

4. Changes are beginning to show positive results after an initial period of floundering. Preliminary results are beginning to be felt in increases in agricultural and manufacturing income, replenishment of manufacturing capital stock, rising agricultural exports, and a general shifting

of the terms of domestic trade in favor of agriculture. However, there have been costs in terms of real income losses in urban areas, increased inflation, and political disruptions.

5. The economic restructuring that is underway generally seems to be regarded by most Zambian officials as heading in a laudable direction. However, they will frankly admit that mistakes have been made in the implementation and management of some programs. Many of the complaints about the restructuring are directed at implementation and management, rather than toward the contemplated change.

6. Small farmers with marketable surplus in particular have responded to changes in the incentive structure by adjusting the level and mix of inputs, altering cropping patterns, and increasing levels of output. The increased output has placed strains on the storage and marketing infrastructure.

7. The groups that most clearly have benefitted from the economic restructuring are the small and traditional farmers and, to a lesser extent, large commercial farmers, manufacturers, exporters, and the private sector in general. The groups most favored under the old system (formal sector wage workers, government employees, and public enterprises) have been hit hardest by the economic restructuring.

8. Smallholder farmers constitute a high proportion of the population and are among the poorer segments of society. Since the economic restructuring favors this group, income distribution Zambia is becoming more equitable. Because the economy was in a long-term decline, it not clear whether groups that have not yet directly benefitted (such as urban consumers) are presently better off or worse off than they would otherwise have been under the old policies.

9. The economic restructuring in progress is a long-term undertaking. The first significant steps in this restructuring process were taken four years ago and the process is still not complete. There is evidence that the economic decline that started in the mid-seventies is slowing and perhaps has bottomed out. The recovery process is anticipated to require as much as 10 years to allow the changes to work fully through the economy.

10. The IMF and World Bank have taken a lead among the donors in requiring and supporting economic restructuring. Donors are generally aware that economic restructuring places tremendous pressures on the social and economic fabric of the country and that there are likely to be mistakes, delays, and slippage. An important question is whether the donor community is sufficiently aware and committed to "stay the course" with the additional resource transfers necessary to insure the success of the restructuring program.

APPENDIX A. SOURCES AND METHODOLOGY

## APPENDIX A. SOURCES AND METHODOLOGY

The sources and methodology used by the Agricultural Policy Assessment Team in Zambia were constrained by the time available for research and completion of a final draft (3-4 weeks), the availability of timely and relevant data on the economic re-vitalization program in Zambia and its impacts so far, and the scope of work itself, which anticipates this exercise to be preliminary to more in-depth research.

The research effort itself could not have been carried out without assistance from the USAID/Zambia mission in scheduling meetings and field trips, a task which was completed with considerable alacrity despite numerous other competing responsibilities. Secondly, a good deal has been written on and about the re-structuring program in Zambia, and unusually up-to-date data were made available in many cases, particularly from Zambian sources, and so the team was exceptionally fortunate in this respect. Finally, Zambians in general were willing to make time for meetings and interviews with team members, which proved most useful to the research effort.

Nevertheless, the team faced a very definite paucity of data, particularly microeconomic survey data of the kind required for vigorous and thorough research. Where hard data are available, they are cited within the report. Numerous interviews were conducted with farmers, cooperative representatives, managers of marketing parastatals, millers, truckers, government officials, and technical experts. Based on these and supported by cross-checking against available data and by resort to economic theory, the team began to formulate a series of educated guesses as to the microeconomic impacts of policy reform efforts on agriculture and related sectors.

The result, although clearly impressionistic in some regards, is an analysis which the team believes will bear much more in-depth scrutiny following additional survey and field work, as anticipated in Phase II of this research.

A complete record of the meetings held by the members of the team, both in Zambia and in Washington, is attached to this appendix, followed by a bibliography of written sources used. Appendix B is devoted to the topic of data sources and approaches that might be usefully employed in Phase II of this research.

Zambia

Agricultural Policy Assessment Team  
January 1987

List of Meetings and Persons Met

Team Members Wesley Weidemann, IQC, Agricultural Economist  
Orest Koropeccky, IQC, Institutional Analyst  
Scott Thomas, AID/Washington, Macroeconomist

Zambia Meetings

1. Ministry of Coops
  - Lonah Chisuta, Senior Economist
2. Nakambala Sugar Estate, Mazabuka
  - Peter Nash, Mg. Director
  - G. Regnauth, Factory Division Manager
3. NAMBOARD, Southern Province, Monze
  - A. Tembo, Branch Manager
4. Southern Province Cooperative Marketing Union
  - Mr. Mudaala, General Manager
  - Mr. Hambu, Chairman of the Board  
(representing many small and commercial farmers)
5. Zambia Agricultural Trading Cooperative, (ZATCO), Livingstone
  - Mr. Sinyangwe, Branch Manager
6. NAMBoard, Southern Province, Livingstone
  - Exon S. Shema, Branch Manager
7. Ford Motor Co. (Livingstone)
  - G. Gunasebera, Branch Manager
8. ZATCO, Choma
  - Mr. D.H. Brown, General Manager

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9. Provincial Agriculture Office (Choma)
  - Henry Moomba, Assistant Officer
10. Choma Milling Co.
  - M.A. Simpemba, General Manager
11. Commercial Farmers (Choma)
  - Mr. Nielsen
  - Mr. Nieman
12. Mapanza Coop. Society  
(13 Small Farmers)
  - Daniel Simukale, Chairman
13. Eastern and Southern African Management Inst.
  - Dr. Kasuka S. Mutukwa, Dep. Director
14. Human Resources and Institutional Development  
Project Paper Redesign Team
  - David McCloud, REDSO/ESA Program Development Officer
  - Kasuka Mutukwa, ESAMI
  - Richard Moore, NASPA
  - Marcia Ellis, USAID/Zambia, Human Resources Officer
  - Gretta Middleton, Roy Littlejohn Associates
15. Zambia Industrial and Commercial Association (ZINCOM)
  - Andrew Kashita, Director
16. Ministry of Agriculture and Water Development
  - Mzonde Lungu, Director of Planning
17. Zambia Agricultural Training, Planning and  
Institutional Development (ZATPID) Team
  - Duane Shinn, Team Leader
  - Rudy Stewart
  - Ron Krenz
  - Dennis Pervis

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18. Ministry of Finance
  - James Mtonga, Permanent Secretary
  - Godfrey Mbulo, Senior Undersecretary for Loans and Investments (seconded from Bank of Zambia)
19. Prices and Incomes Commission
  - David Phiri, Director; Ex-Governor of the Bank of Zambia
20. Namibia Institute
  - Francis Mbewe, ex-Director of Planning, Ministry of Agriculture and Water Development
21. Zambia Seed Company
  - Winter Chibasa, Production Manager
22. Zambia Agricultural Research and Extension (ZAMARE) Team
  - Jim Regin, Team Leader
  - Oval Myers
  - Val Eylands
  - Mesfin Bezunah
23. Rural Development Studies Bureau
  - Dr. John Milimo, Director
24. Apollo Enterprises Limited
  - Alexander Chikwanda, Director
25. World Bank (Lusaka)
  - Shashar Khan, Economist
26. Office of the Prime Minister
  - Isaiah Z. Chabala, Undersecretary for Economics and Finance
27. Central Statistical office
  - Celestine Ssewankambo

28. Standard Chartered Bank
  - Mr. Dan Musenge, Former Director of Budget, Ministry of Finance
29. USAID/Zambia
  - Ted Morse, Mission Director
  - Vincent Chella, Economic Specialist
  - Leslie Dean, Assistant Director
  - Fred Perry, General Development Officer
  - James Snell, Agricultural Economist
  - Willie Cook, Agriculture Development Officer
30. International Food Policy Research Institute (Washington)
  - Ms. Shubh Kumar
  - Mr. Raphael Celis
31. World Bank (Washington)
  - Mr. George Gebhard, Programs (Zambia)
  - Mr. Isaac Moreithi, Projects (Zambia)
  - Mr. Amoako, (former WB rep., Lusaka)
34. Various experts in AID/Washington

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APPENDIX B. RECOMMENDATIONS FOR PHASE II

## APPENDIX B. RECOMMENDATIONS FOR PHASE II

It is anticipated that Phase II of this research will be devoted to much more in-depth data-gathering (supplemented as needed by spot surveys), institutional analysis, economic analysis, and development of monitoring and evaluation criteria. A brief outline of the recommended methodological approach for Phase II is presented in this section. As recommended, the purpose will be to develop and implement an ongoing system to evaluate the impacts of policy innovations, identify bottlenecks in management and implementation, and synthesize results for policy analysts, decision-makers, and those charged with management and implementation.

(See Appendix A: Sources and Methodology, for a listing of sources, including studies based on known data sets and individuals in the Zambian government with access to selected information bases. In addition, surveys by the ZATPID team (of both urban and rural areas) and by IFPRI (follow-up surveys of small farmers in the Eastern Province) may yield results pertinent to Phase II.)

Task 1: Survey of Existing Data  
Sources and Data Gathering

In general, the recommended methodology for Task 1 is to rely to the fullest extent possible on data from existing sources, due to the high cost and time involved in raw data collection. Therefore, compilation of a complete inventory of relevant data available, from both the Zambian government and various survey team sources, will be accomplished. Key data sets will be compiled on a micro-computer in a format useful for further analysis.

The use of existing data is complicated by the fact that evaluation of the impacts of policy innovations generally will require maintenance of time-series information, while many surveys currently being done are cross-sectional. Thus, the latter may only be useful for benchmark purposes. In addition, many surveys currently available or underway are prompted by other research needs, so that their usefulness directly for evaluation of the effectiveness of policy changes may be limited. Finally, governmental data are spotty or non-existent in selected areas. Therefore, selected small spot surveys may be necessary to develop ballpark estimates.

Interviews and meetings with farmers, truckers, parastatal and cooperative representatives, millers, government officials, and technical representatives will be carried out as part of field research. The field trip to Southern Province proved highly useful in identifying issues and concerns, particularly in implementation of policies. As part of Phase II, field trips to each of Zambia's provinces would be desirable.

#### Task 2: Examination of the Institutional Informational Flow Process

The process by which various governmental agencies collect, compile, analyze and share data with each other, and with policy analysts, decision-makers, and those officials charged with management and implementation, will be examined. The objective will be to assess the extent to which important components of the policy design and implementation process have regular access to feedback concerning policy impacts and/or implementation effectiveness. In particular, current methods of synthesizing data for monitoring purposes will be analyzed from an institutional perspective.

#### Task 3: Development of Monitoring Criteria on Price Signals

The first objective of this task will be to develop a select group of criteria to evaluate changes in price signals due to policy innovations, and the responsiveness of

economic agents to those price signals. Examples might include:

- Market as opposed to official prices (such as economic vs. official transportation and handling costs)
- Changes in cropping patterns/mixes
- Fertilizer usage relative to prices/yields acreage planted
- Import substitution and export promotion deposit and loan rates
- Exchange rates
- Subsidies
- Wages, including in-kind income

The second objective will be to perform an assessment of the extent to which price signals are having their desired effects, in terms of inducing agricultural production, reductions in capital-intensivity and import-intensivity, increases in exports, efficient allocation of financial resources, and equitable distribution of rising incomes.

#### Task 4: Development of a Monitoring System on Policy Management and Implementation

Price signals are the mechanism by which reforms are supposed to take effect. A mitigating factor is likely to be the regulatory and institutional environment, which may create specific constraints and inflexibilities which hamper effective policy implementation. The objective of Task 4 will be to examine the effectiveness of implementation, identify sources of bottlenecks, and assess the economic impacts of such bottlenecks. Examples of topics might include:

- The role of marketing parastatals, coops, and other players in the institutional and marketing environment affecting agricultural production and food distribution

- Land tenure issues
- Access to credit
- Allocation of auction-purchased foreign exchange
- Distribution of subsidies and efficiency thereof

#### Task 5: Monitoring Social Impacts

Information as to the social impact of the economic re-structuring program is weak or in some cases completely lacking. Little is known about household expenditure patterns. There is almost no information on unemployment and underemployment. Knowledge of the urban informal sector is sketchy. Existing information on income distribution is outdated. The first objective under this task, therefore, will be to fill these gaps as necessary with spot surveys and combine results from these with data available from government household surveys and ongoing rural area extension surveys, to form a cohesive information base.

The second objective will be to identify segments of Zambian society that do not have primary claims on the benefits likely to accrue within selected sectors as a result of economic re-structuring, yet will be affected adversely during the restructuring period. Examples might include the urban poor, or urban underemployed and unemployed, who will not share in the benefits of the upsurge in agriculture, yet have been hurt by increased food prices; or traditional farmers far from the line-of-rail, who may not have benefitted as greatly as have more commercially-oriented or "emergent" farmers from agricultural producer price de-regulation.

Finally, various options to target temporary income or food benefits directly to those segments most adversely affected, which cannot draw upon significant primary or secondary claims, will be examined, based upon experiences in other countries' restructuring programs.

Task 6: Development of Recommendations Concerning  
an On-going System for Monitoring Policy  
Implementation and Effectiveness

Results and implications derived from Tasks 1-5 will be synthesized into a final report which will make specific recommendations for developing a system to monitor policy implementation and effectiveness.

APPENDIX C. SIGNIFICANT POLICY CHANGES SINCE 1979

APPENDIX C. SIGNIFICANT POLICY CHANGES SINCE 1979

The narrative which follows documents the more significant changes which have affected agriculture since 1979.

1979:

- The GRZ began placing increasing emphasis on agriculture with increasingly strong statements concerning the importance of agriculture at the 1979 Consultative Group meeting. However, actions failed to match the intensity of the rhetoric.
- Producer prices for maize were increased by 32 percent.

1980:

- The GRZ continued to improve producer incentives through timely price increases.
- The Ministry of Agriculture and Water Development Planning Unit was expanded.
- An agreement was signed with AID to improve capacity in agricultural policy analysis, research, and extension.

1981:

- Price increases were announced in a timely manner for maize and other crops. Increases ranged from twelve to sixty percent.
- The subsidy on maize consumption was reduced over 50 percent.
- The role of the marketing parastatal, NAMBoard, was reduced by decentralizing management control of the cooperatives and allowing them more freedom in marketing.

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Certain of the NAMBoard storage areas along the line of rail were turned over to cooperatives.

- Changes in tax laws and the tariff structure provided increased incentives for agricultural production. Income tax was reduced from over 50 percent to 15 percent for farmers. Equipment was given accelerated write-off, and tariffs and duties on most equipment were eliminated. Commercial farmers benefitted more than traditional or emerging farmers since most of the smaller farmers paid little or no taxes and had little equipment to depreciate.
- Some animal traction equipment was available at a lower price because of the lowering of tariffs.
- The role of the tobacco parastatal was reduced by selling off land and assets to the private sector.

1982:

- Producer prices were increased in real terms between 3 percent and 15 percent. Purchase prices were announced for cassava and sorghum.
- Retail prices were decontrolled for all major products except wheat, maize, and candles. This increased the flow of good into rural areas because transportation costs could be recovered in the selling price. This also helped to increase producer prices with the official producer price becoming a floor price instead of a fixed price.
- An early warning crop forecasting system was established.

1983:

- The kwacha was devalued by 20 percent and allowed to float against a basket of currencies of major trading partners. This was partially in recognition of the need to reduce import demand and encourage new exports.
- Fertilizer subsidies were reduced and the price of fertilizer was allowed to rise by 60 percent.
- The consumption subsidy on mealie meal was reduced and prices allowed to increase by 30 to 40 percent.

- Producer prices were increased in real terms by 7 to 20 percent.
- The subsidy to Namboard was reduced.
- Interest rates on savings and loans were increased.

1984:

- The Kwacha continued its pegged float and depreciated 40 percent against the dollar.
- Producer prices were increased and for the first time border prices instead of costs of production were introduced in the pricing decision for all crops except maize.
- Retailers were allowed to charge for transport costs on mealie meal hauled over 25 kilometers.
- Interest rates were increased to 15.5 percent on savings and 17.5 percent on loans.
- Wheat price controls were eliminated.
- Floor prices were established for all controlled commodities except maize. Farmers are free to negotiate for higher price.
- Consumer subsidies on maize were reduced and prices allowed to increase 22 percent.
- In October, exporters of non-traditional exports were allowed to retain 50 percent of the foreign exchange earnings generated from export sales.

1985:

- Restitution payments to cooperatives were eliminated, forcing cooperatives to become more cost conscious.
- Subsidies to tractor hire units were decreased and rates allowed to increase by 40 percent.
- Transportation rates for truck haulage were increased by 33 percent.
- Subsidies to NAMBoard were increased and NAMBoard was reinstated as the primary buyer and seller of maize, with cooperatives acting as agents of NAMBoard.

- Consumption subsidies on maize meal were reduced approximately 40 percent and prices were allowed to increase 40 to 50 percent.
- Interest rates were decontrolled in the economy.
- A foreign exchange auction system was started.
- Liberalized procedures for import licenses were established.
- Producer prices for maize were increased 95 percent over the previous season.
- Steps were taken to reduce the Civil Service through the early retirement and limited replacement.
- Producer prices on processed agricultural items such as dairy products and sugar were decontrolled.

1986:

- The foreign exchange auction continued and devaluation in one year reached almost 70 percent.
- Fertilizer subsidies were decreased further and prices allowed to increase almost 200 percent in one year.
- NAMBoard's monopoly on maize and fertilizer marketing was eliminated, as cooperatives and private traders were allowed to market maize.
- Full cost recovery was allowed on grain bags.
- The domestic fertilizer producer was allowed to charge import parity on compound fertilizers.
- Consumer subsidies were eliminated on breakfast meal and prices on lower quality mealie meal were set at K28.31 per 50 kilogram bag. However, the price increases were partially rescinded in the face of food riots and a number of large millers were nationalized.
- Transportation rates in rural areas were increased.

1987:

- Because of lack of foreign exchange and agreement with the London Club to negotiate and consolidate short-term commercial arrears, payments on the short-term commercial arrears have been delayed.

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