

PD-BAQ 767

OFFICIAL PROJECT DOCUMENT

CLASSIFICATION:

AID 1129-1 (B-66)	DEPARTMENT OF STATE AGENCY FOR INTERNATIONAL DEVELOPMENT	1. PAAD NO. AFR Loan No. 611-K-009
		2. COUNTRY Zambia
PAAD	PROGRAM ASSISTANCE APPROVAL DOCUMENT	3. CATEGORY Commodity Financing-Standard Procedure
		4. DATE
5. TO: F.S. Ruddy, Assistant Administrator, Bureau for Africa		6. OYS CHANGE NO. N/A
7. FROM: John A. Patterson AID Representative		8. OYS INCREASE N/A
9. APPROVAL REQUESTED FOR COMMITMENT OF: \$20,000,000		10. APPROPRIATION - ALLOTMENT ESF Funds FY 1983
11. TYPE FUNDING <input checked="" type="checkbox"/> LOAN <input type="checkbox"/> GRANT	12. LOCAL CURRENCY ARRANGEMENT <input checked="" type="checkbox"/> INFORMAL <input type="checkbox"/> FORMAL <input type="checkbox"/> NONE	13. ESTIMATED DELIVERY PERIOD Dec. 1983-June 1984
14. TRANSACTION ELIGIBILITY Loan Authorization Date		
15. COMMODITIES FINANCED Commodities for the Agriculture Sector such as fertilizer materials (di-ammonium phosphate, triple super phosphate, potassium sulphate, etc.)		
16. PERMITTED SOURCE U.S. only: \$15,000,000 Limited F.W.: \$5,000,000 (Code 941 and 899) Free World: Cash:		17. ESTIMATED SOURCE U.S.: \$15,000,000 Industrialized Countries: \$5,000,000 (Code 941 and 899) Local: Other:
18. SUMMARY DESCRIPTION The loan will provide U.S. assistance in the procurement of commodities to the Government of the Republic of Zambia (GRZ). The loan will provide: (1) short-term balance of payments relief, (2) urgently needed foreign exchange, (3) contribute to GRZ objectives of accelerating agricultural development and diversification of the economy, and (4) support GRZ-AID/Zambia's goals of increasing food production and raising small farmer income. The loan will be made under concessionary terms. Support measures will include: (1) increase of prices paid to farmers and marketers to allow a fair profit margin on agricultural products, (2) reduction of subsidies on fertilizers sold to farmers to reach parity with imported fertilizer prices, (3) increase food prices paid by millers to a level which covers costs and a fair profit, and (4) conduct a series of reviews, studies and analyses which address critical agriculture issues and which are used to help guide GRZ policies. Local currencies should be jointly attributed by AID/Zambia and the GRZ for improvement of the agriculture infrastructure, for local currency costs of certain studies and analyses, for the improvement of agricultural management.		
19. CLEARANCES		20. ACTION
REG/DP	DATE	<input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED
REG/GC	_____	
AA/PC	_____	
A/CONT	_____	
AA/MR	_____	
AA/DFPE	_____	
		AUTHORIZED SIGNATURE F.S. Ruddy Assistant Administrator, Bureau for Africa
		DATE
		TITLE

CLASSIFICATION:

Acronyms

AN	-	Ammonium nitrate
BOP	-	Balance of Payments
CFB	-	Commercial Farmers Bureau
CIDA	-	Canadian International Development Assistance
D	-	NPK compound fertilizer
DAP	-	Di-ammonium phosphate
EEC	-	European Economic Community
GRZ	-	Government of the Republic of Zambia
ILO	-	International Labour Organization
IMF	-	International Monetary Fund
Kw	-	Kwacha, Zambian currency unit (Kw1 = \$1.10)
MAWD	-	Ministry of Agriculture and Water Development
M.T.	-	metric ton (2,200 pounds)
NAMBoard	-	National Agricultural Marketing Board
NCZ	-	Nitrogen Chemicals of Zambia, Ltd.
NPK	-	Nitrogen-phosphorus-potassium
PH	-	Acidity level (neutral Ph7)
R	-	NPK compound fertilizer
SSP	-	Single super phosphate
TNDP	-	Third National Development Plan
TSP	-	Triple super phosphate
X	-	NPK compound fertilizer

ZAMBIA FY 1983 CIP
TABLE OF CONTENTS

	<u>Page</u>	
I. RECOMMENDATION AND SUMMARY		
A. Recommendation	1) New Section
B. Summary and Economic Update	1) February 1983
II. POLITICAL SITUATION		
A. Background	5	
B. U.S.-Zambia Relations	6	
C. U.S. Economic Assistance Programs	7	
III. ECONOMIC SITUATION		
A. Structure of the Economy	10	
B. Development of the Economy	12	
C. Current Status	22	
D. Other Donor Assistance	24	
E. Prospects for Economic Recovery	24	
IV. AGRICULTURAL SITUATION		
A. Structural Characteristics	27)
B. Sector's Performance	29)
C. Major Policy Constraints	35)
D. Prognosis	35F) New Section
E. Usage and Impact of Fertilizer	35J) February 1983
F. Fertilizer Marketing System	35J)
G. Key Institutions	35K)
V. PROPOSED U.S. ASSISTANCE		
A. Problem Identification	35M	
B. Description of Proposed Assistance	37	
C. Support Measures and Local Currency Generation Uses	38	
D. Economic and Financial Analysis and Justification	42) New Section
E. Past Performance of CIP Loans	47) February 1983
VI. LOAN IMPLEMENTATION AND ADMINISTRATION		
A. Implementation	49	
B. Administration	51	
VII. ADDITIONAL CONSIDERATIONS	52	

VIII. APPENDICES

- A. GRZ Request for Assistance
- B. Economic Statistical Tables
- C. CIP Attributions of Local Currency Generations
- D. Agricultural Tables
- E. NCZ Fertilizer Production and Requirements
- F. NCZ Equity Assumption Proposal
- G. Initial Environmental Examination
- H. Statutory Checklists
- I. Ocean Transport Waiver

- New Section Feb.1983

PAAD (CIP) DESIGN TEAM -- 1982

TIMM HARRIS : REDSO/EA, Project Design Officer/Team Coordinator
JOHN LEWIS : AID/Zimbabwe, Supply Management Officer
CURTIS NISSLY : REDSO/EA, Agronomist

UPDATE TEAM - 1983

C. STUART CALLISON : REDSO/ESA, Economist
DIRK DIJKERMAN : REDSO/ESA, Agricultural Economist

1.

I. RECOMMENDATION AND SUMMARY**A. Recommendation**

It is recommended that AID authorize a US\$20 million loan to the Government of the Republic of Zambia (GRZ) to be used for the procurement of fertilizer products and related services. They shall have their source and origin in the U.S. except possibly for charges related to ocean transportation.

Repayment to AID in U.S. dollars is to be made within forty years after the first disbursement, including a grace period on repayment of principal not to exceed ten years. Interest is payable to AID in U.S. dollars at 2% simple interest per annum during the grace period and 3% simple interest per annum on the declining balance thereafter.

B. Summary and Economic Update

Zambia has severe shortages of foreign exchange and a large negative balance of payments position. There are few production linkages between industry/agriculture/GRZ and consequentially there is a high dependence on imports. There are food production shortages and farm income imbalances with the urban sector.

AID/Zambia has concentrated its efforts on the agriculture sector as the area with the greatest potential for sustained growth, individual initiative, and with major significance for the nation as a whole. Within the agriculture sector CIP imports have been concentrated on fertilizers in recent years for the following reasons:

1. Zambian agricultural production is highly dependent on fertilizer.
2. Fertilizer is used by farmers at all levels.
3. Fertilizer usage increases production and income.
4. AID assistance will constitute a significant percentage of Zambian fertilizer requirements.
5. Procurement and transport of fertilizer materials imported from the U.S. can be done quickly and efficiently, thus minimizing the administrative burden on AID/Zambia staff.
6. U.S. fertilizer prices are amongst the lowest in the world.
7. Zambia is dependent on fertilizer imports. AID can assist at a substantial saving to Zambia.

X5

Additionally the assistance helps with foreign exchange and BOP difficulties. Fertilizer assistance can be provided in two forms, either as finished compound fertilizer or as raw materials used in the manufacture of compound fertilizers. The commissioning of the Nitrogen Chemicals of Zambia (NCZ) fertilizer manufacturing plant makes raw material importation a possible alternative.

Economic Analysis

1. The NCZ fertilizer plant employs 613 people, increasing to some 780 employees by 1984. They represent a total population of some 4,700 supported by one factory. Direct importation of fertilizer will not directly help create jobs.
2. Foreign exchange savings from both options are major, a direct \$20,000,000 in each case. The foreign exchange cost of compounds imported is roughly \$420 per ton. Raw material components imported cost about \$310 per ton of fertilizer produced locally. Foreign exchange savings through the importation of raw materials is therefore \$110 per ton. For the estimated production of 68,000 tons, the savings are \$7,480,000 for locally produced fertilizer.
3. The NCZ plant uses natural resources that might not otherwise be used, such as some coal, water resources, pyrites and lime.
4. Some transport congestion will be eased by importing raw materials vs. finished compounds, as less materials are brought in (for tonnage sold) and the shipments can be staggered.
5. The variable economic costs of producing fertilizer at NCZ from the imported raw materials to be financed under this program, calculated with appropriate shadow prices to approximate the opportunity cost of labor and the true scarcity value of foreign exchange (both costs and savings), are 32-41 percent less than the average costs per ton of importing the final fertilizer compounds directly. These savings are 21-31 percent (increasing each year as the higher initial costs are reduced) even without shadow prices. Even when fixed (or "sunk") economic costs of NCZ production are counted, (but not taxes and other domestic transfer payments), the analysis indicates they remain less in economic terms than the cost of final fertilizer imports, resulting in economic cost savings which rise from 5.9 percent the first years to 24 percent in years 3 and beyond.
6. A preliminary analysis suggests that the level of fertilizer sales is one of the major determinants of the amount of maize supplied to official marketing channels.

Financial Analysis

The financial analysis reflects the recent 20 percent devaluation of the kwacha foreign exchange rate. It indicates that present import parity prices for finished fertilizer compounds would be sufficient to cover NCZ financial costs by year 3, though losses of 14 and 4 percent would occur in years 1 and 2, respectively. These losses are attributable to depreciation charges and domestic interest and tax payments, the former representing a fixed, or "sunk", cost and the latter two domestic transfer payments. A further devaluation of the kwacha would reduce or eliminate these comparative losses.

Therefore it is concluded that AID assistance should be made available for the purchase of raw materials needed for compound fertilizer manufacture at the NCZ factory. The raw materials required include the following:

Di-ammonium phosphate	13,000 metric tons
Triple super phosphate	20,000 metric tons
Potassium sulphate	1,000 metric tons
Chemicals and catalysts .	1,000 metric tons
Coating agents	1,000 metric tons
	<hr/>
Total	36,000 metric tons

Support Measures

Under the CIP loan several measures supportive of the AID/Zambia program will be negotiated with the GRZ. These measures are consistent with the goals of increased food production and increased farmer income, as expressed in the AID/Zambia CDSS and the GRZ development strategy. They are a continuation of the thrust of support measures and currency attributions included in previous PL 480 agreements and CIPs. They are seen as steps in the effort to realize self-sufficiency in food production and an equitable income in the Zambian farming community.

Under this agreement it is recommended that the Government of the Republic of Zambia:

- a. Continue appropriate incentives, especially in pricing structures, to farmers and marketers for the encouragement of production increases in maize and other food crops needed to meet national requirements. The level of incentives should be determined through a careful review of production and marketing costs.
- b. Continue to reduce the subsidies present in the sale of fertilizers and of produce sold to millers or consumers. Parity with equivalent import costs of these goods should

X

be met within a specific time period (especially for maize and fertilizers). Subsidies/restitutions paid by the GRZ for marketing, transport, storage, handling and overheads of agricultural products should be eliminated within a mutually agreed upon time period (perhaps within five years) and these expenses should be included in the sale price of the commodities.

- c. Continue to conduct a series of reviews and studies which address critical agricultural issues and that will be used to help guide GRZ policies. Such analyses would include: a review and analysis of current export/import policies which affect the agriculture sector; a review of current technological recommendations for all crop inputs; a study and analysis of the potential for procuring raw materials locally for fertilizer production; a review and study of agricultural input requirements and availability in Zambia; and production costs of agricultural products from planting to consumption.
- d. Decide jointly with AID/Zambia the utilization of the local currency attributable to this loan agreement and meet periodically to review the progress made to date. The priorities for the use of these currencies are: to support price incentives; to strengthen the agricultural infrastructure through assistance to the marketing system; to provide local currency for certain studies and reviews; and to assist with the improvement of agricultural management and technical capabilities.

Economic Update (as of February 15, 1983)

The descriptive analysis of the Zambian economy developed in July and August of 1982 and presented in Part III of this paper is still generally valid, and more detail on certain aspects of the situation has been presented in the FY 85 CDSS of February 1983. Part IV below has been rewritten to include some of the new analysis prepared for the CDSS, to update certain information, and to address some of the specific questions raised in 82 State 331762. The Economic and Financial analysis section of Part V has been revised to:

- (1) Include a new section comparing the economic (as opposed to financial) costs of producing fertilizer compounds at NCZ from imported raw materials, as proposed in this PAAD, with the alternative costs of importing the compounds directly in final form.
- (2) Indicate the effect of the January 1983 exchange rate devaluation on the financial analysis of NCZ, although time and data constraints preclude a complete revision of the financial tables of Appendix E.

This section discusses the major macro-economic reforms announced

since Part III was written in the summer of 1982 and discusses specific macroeconomic issues raised in 82 State 331762 not addressed elsewhere in the revised sections below.

On December 27, 1982, consumer price controls on all goods except maize, maize meal, wheat flour products, and candles were revoked, allowing retailers and wholesalers to raise prices sufficiently to cover costs of processing, handling and distribution even to the remote areas. This should improve both the availability of consumer goods in rural areas and the profitability of firms previously constrained to absorb many of these costs, consequently reducing the need for loans and subsidies to cover losses, as well. That controls over uniform agricultural producer prices were not revoked, and the implications of this for agricultural production, is discussed in Part IV, below.

On January 7, 1983, a 20 percent devaluation of the kwacha against the SDR was announced, along with a limit of 5 percent on wage increases in 1983 for lower income workers and no increase for higher income workers, as parts of a GRZ effort to stabilize the economy and, in the process, to reach an agreement with the IMF on a one-year standby credit program. The magnitude of the devaluation was not considered by some observers to be large enough to restore equilibrium in the foreign exchange markets. However since it means imports will cost the Zambians 25 percent more kwacha than before, it represents a significant policy change on the part of the GRZ in what is generally agreed to be the right direction. The decision to limit wage increases to 5 percent, in view of the current rate of inflation of 12 percent or more (and probably higher this year due to the price effects of devaluation and the continued inflationary impact of the large budgetary deficits), especially when taken in conjunction with other measures that will substantially raise prices of consumer goods, represents considerable political courage in an election year. Since the January devaluation simply restored the kwacha purchasing power parity to the approximate 1979 level and left it still overvalued, it is hoped the the GRZ will be able to continue its exchange rate adjustment process in the future. Nevertheless, while encouraging the GRZ to do more, the significance of its recent decision to make some difficult policy changes should not be underplayed.

The excess demand for imports has been controlled by relatively high rates of effective tariff protection (particularly on food, textiles, wood and furniture products) import licensing and a foreign exchange allocation system. Nominal tariff rates average about 15 percent, but they are much higher on manufactured goods and lower or non-existent on intermediate and capital goods, leading to high "effective rates" of protection in many industries. Highest priority in foreign exchange allocation is given to raw

materials, mining equipment and certain foods (e.g., wheat, rice, milk and cooking oil); other intermediate and capital goods are next, followed by nonfood consumer goods; while luxury consumer goods receive the lowest priority. Imported goods that compete with domestic production also receive low priority or are not allowed. Thus, the priorities of the foreign exchange allocations system reinforce the protective effects of the tariff system. There does not appear to be a clear, publicly announced rationale behind the import licensing and foreign exchange allocation system in Zambia, and this causes considerable uncertainty within the business community. Business decisions concerning production and investment are dependent on complicated and judgemental bureaucratic decisions, and this adversely affects the development of the manufacturing industry.

Foreign exchange controls are presently so tight that leakages of foreign exchange through the blackmarket are not thought to be of very large magnitudes, though this may also be due to the reluctance of foreign exchange holders to purchase the Zambian kwacha at any price, given the depressed state of the economy, the scarcity of consumer goods to purchase, and the extreme difficulties of converting kwacha back into foreign exchange. As a result of the limited supply of foreign exchange in the unofficial, as well as the official markets, the blackmarket kwacha rate for the U.S. dollar is currently reported to range between K2.00 to 2.50, or between 70 and 112 percent above the current rate of K1.18.

There has also been some indication that the GRZ is considering an upward revision of its interest rate structure as another part of its package of reforms, but a final decision on this measure has not yet been announced. At present, interest rates on loans to manufacturing are 10.25 percent, which is negative in real terms since the inflation rate remains higher than that.

Agricultural credit has long been scarce for smallholders, but since 1979 it has become a major problem for all producers. Heavy credit demands by the GRZ itself to finance the growing budgetary deficits, coupled with attempts to restrict the overall growth of credit in the society to comply with IMF stabilization agreements, have sharply reduced credit availability to the agricultural sector. In addition, the poor debt service performance of the borrowers and the unrealistically low on-lending interest rates charged by parastatal lending agencies have resulted in heavy operating losses and a steady decapitalization of lending agencies. The government is presently trying to establish a new parastatal credit organization, the Agricultural Development Bank, with freshly supplied capital funds from external sources, to deal with this situation and to expand lending activities to the heretofore neglected smallholder and

emergent farmers. Substantial reforms will be required, however, for the new effort to succeed.

The 1983 GRZ Budget was presented near the end of January. Its main features were summarized and discussed in Lusaka 00454. Several sales taxes and customs duties are to be increased to raise more revenue, which fell in 1982 due to the recessionary decline in the tax base* and contributed to the record overall deficit of K546.5 million (17 percent of GDP). Recurrent expenditures are projected at barely more than 1982 actual levels, despite a 12 percent expected rate of price escalation, while capital expenditures are to be reduced 20 percent below last year's actual level in nominal terms. The overall deficit is projected at K316.3 million, still high at 8-9 percent of expected GDP, but considerably less than in 1982. About half of the projected deficit, or only K152 million, is expected to be financed by the Central Bank, as opposed to K461 million in 1982. Government subsidies for fertilizer use and maize consumption are projected to decline from K153.4 million in 1982 to K82.9 million in 1983. However, the maize consumer subsidy is subject to an increase if maize production shortfalls require higher-priced imports.

The macroeconomic policy objectives announced in the budget presentation provide some indication of the direction in which the GRZ is trying to move. These include:

1. Restrain inflation by reducing Central Bank borrowing.
2. Improve the balance of payments by diversifying exports and reducing the outflow of foreign exchange.
3. Encourage the utilization of domestic raw material inputs.
4. Sustain agricultural growth with better technical assistance and extension services.
5. Stimulate capital investment.
6. Increase employment opportunities and assist small-scale industry.

While the policy reforms and budget estimates announced so far are not sufficient to achieve these objectives satisfactorily, they are a positive indication the GRZ is seriously trying to move in that direction, despite the strong domestic political pressures to the contrary about which the authorities frequently express concern. It remains AID/Zambia's belief that if the GRZ, with sufficient financial support from the international community to ease the economic and political trauma of the transition period, can be persuaded to continue along this path of reform, the long decline of the last decade or so can be halted and reversed, and

*Total real GDP was estimated to have declined by 6 percent or more in 1982, compared with 1981.

the substantial agricultural and industrial potential of the country can begin to be more fully realized.

The proposed FY 83 Commodity Import Program and subsequent follow-on programs are well-suited as support packages to buttress AID's own recommendations for reform. They will help directly to reduce the foreign exchange constraint and improve the balance of payments, thereby permitting higher levels of fertilizer and other inputs needed to keep the Zambia economy going. The concentration on fertilizer is designed to assure a higher level of this vital input availability in Zambia to permit increasing food production, which not only increases farmer incomes but also avoids higher levels of food imports and their associated foreign exchange costs and, it is hoped, will eventually lead to higher levels of agricultural exports. By increasing the efficiency of food production, the fertilizer also helps keep marginal costs, and thus the producer price levels necessary to stimulate the required supply, lower than they would otherwise be, thereby reducing either the consumer price for food or the consumer subsidy burden of the government. By using the continuation of the CIP as both a bargaining tool and an instrument of constructive support to help the GRZ accommodate what it perceives as difficult policy reforms, the AID program can help achieve a package of reforms that will improve investment incentives, rationalize resource allocation and reverse the decline in per capita income.

II. POLITICAL SITUATION

A. Background

Upon attaining Independence in 1964, the Republic of Zambia was established with a single legislative house. A new constitution was promulgated in 1973 creating a "one party participatory democracy". The 1973 constitution provides for a strong executive branch and unicameral parliament (National Assembly). Under the new system, a 25-member Central Committee formulates national policy and the Cabinet executes the policy. The sole legal party is the United National Independence Party (UNIP).

The major figure in Zambian politics is President Kenneth Kaunda who was selected as the first president in 1964 and has been re-elected president in every election since then. He has wide popular support and has proven himself capable of bridging rivalries that have existed among the country's various regional

5.

and ethnic groups. He advocates government according to his philosophy of "humanism", a loosely structured African socialist doctrine which stresses the tradition of cooperation among the people, but not at the expense of the individual.

Reflecting this philosophy, the Government's constitution provides extensive guarantees for the protection of basic human rights. These guarantees have not been seriously impaired despite the guerrilla movements that have operated in recent years along the country's borders with Namibia, Zaire, and Zimbabwe. Freedom of speech and press are somewhat restricted. Political activities are subject to control by the single party, but the country does not suffer from an atmosphere of repression.

In foreign affairs, Zambia follows a policy of non-alignment. Its major foreign policy concern is to promote a transition to majority rule in Namibia (South West Africa) and South Africa. Zambia had worked for the peaceful transition to independence

in Angola and Mozambique (1975). Zambia was also active in working for a merger of black nationalist movements in Zimbabwe (then Rhodesia) and for helping with the breakthrough agreement providing for supervised elections involving all major parties. These efforts contributed to the establishment of majority rule in Zimbabwe on April 18, 1980. Most recently, Zambia has met with South Africa to discuss political differences in the region. This was widely seen as an important step to getting the parties talking about solutions to the problems in southern Africa.

B. U.S. - Zambia Relations

Although the United States and Zambia have differing viewpoints on some international issues, relations between the two countries until recently were amicable. The United States shares Zambia's concern for the promotion of self-determination and majority rule in the white controlled areas of southern Africa. In support of these goals, the U.S. Government bans the sale of arms for use in South Africa and discourages new American investment in Namibia. Zambia would prefer that the United States take a more vigorous role or stand on the apartheid issue.

In June 1981, Zambia expelled two U.S. diplomats on charges of interfering with Zambia's internal affairs. Although relations between the two countries were strained, they are moving back towards the levels experienced in the past (the reader should review Lusaka 1071 of March 16, 1982, Lusaka 1505 of April 13, 1982, and Lusaka 2225 of May 27, 1982 regarding the political events in 1981 which affected the AID strategy and program in Zambia). There has been a reaffirmation of AID's strategy and renewed proposals for a future course of action which included the continuation of a Commodity Import Program to assist Zambia's nagging balance of payments problems while at the same time supporting and influencing GRZ policy in the agricultural sector.

The United States foreign policy in southern Africa is to support self-determination, majority rule, and equal rights and human dignity for all people of the region. The focal point of this policy was concentrated on Zimbabwe until its transition to majority rule in April 1980. Prior to this transition, the U.S. assisted countries bordering Zimbabwe which were sustaining economic losses by enforcing sanctions against Zimbabwe. Zambia was one of these countries.

19

Although Zambia had to bear an extremely heavy financial burden to maintain sanctions, President Kaunda consistently supported a political solution in Zimbabwe and provided moderate leadership for African efforts to bring settlement. Now that majority rule has been established in Zimbabwe, Zambia is using its influence to encourage change to majority rule in Namibia and South Africa. President Kaunda's continued ability to play a constructive and moderating role in those countries still under minority rule has in part been undermined by Zambia's present economic crisis, the worst since Independence. The crisis is primarily attributed to the rapid and prolonged decline in copper prices from mid-1975 through 1978 with significant declines in copper output thereafter; to the resulting inadequate adjustments in GRZ spending and development plans; and to the heavy cost of sanctions applied against Zimbabwe prior to its transition to majority rule. Over the past year the situation has been exacerbated further by the GRZ's continued inability to show financial discipline and the effects of the drought in reducing agricultural output.

The U.S.A. has, as a further incentive to the maintenance of good relations with Zambia, economic ties which flavor its view and approach. Zambia enjoys a favorable balance of trade with the United States and has significant positions in U.S. markets for copper and cobalt. Zambian-U.S. bilateral trade has averaged about \$150 million (k119.3 million) per year over the last three years. Through the Export-Import Bank, the United States has provided millions of dollars in financial guarantees to American exporters which enabled them to continue doing business with Zambia during the difficult Rhodesian war period when the Zambian economy was suffering the combined effects of the war and low commodity prices. Lines of credit activated by 1981 included over \$33 million to the mining industry. There are also US agricultural market development opportunities in Zambia for wheat, rice and vegetable oil (see FY 1982 Title I request).

C. U.S. Economic Assistance Program

1. AID Strategy

At present, as in recent years, the principal aim of U.S. aid to Zambia is to assist the GRZ in its efforts to recover from its continuing economic and financial crisis. This is being done by providing balance of payments support through the Commodity Import Program (CIP) and the PL 480 food aid program. As Zambian policy measures to promote the

X15

diversification of the economy continue, and as the prospects for economic recovery improve, U.S. stabilization assistance is gradually being supplemented by a longer view development program.

The AID program supports the objectives of the Government's Third National Development Plan (1979-1983) and Three Year Investment Plan (1981-1983). These plans aim to diversify the economy by giving priority development emphasis to agriculture and rural development. The AID program concentrates on these areas. AID's assistance will help Zambia move away from heavy reliance on revenues from copper, thereby cushioning future development efforts against the volatile financial fluctuations characteristic in the past.

2. Aid Program Elements*

(i) Commodity Import Program

AID initiated a program of commodity assistance to Zambia in FY 1973. Since then resource transfers under this program have totalled US\$115 million. By providing foreign exchange to purchase essential imports, this assistance is aiding the GRZ in its efforts to recover from severe balance of payments difficulties. Most of the commodities imported under this program have been for use in the agricultural sector; e.g., fertilizer, fertilizer raw materials, stockfeeds, spare parts and equipment for vehicles used in agricultural production and in transporting these commodities. The local currency attributions have been used to support the GRZ's national budget, with an emphasis on agriculture. Among other things, the monies have been used to support producer price increases.

(ii) PL 480

Total PL 480 Titles I and II aid over the 1975-81 period was U.S.\$3.4 million. The program for FY 1982 was U.S.\$7

*Also see FY 1982 Congressional Presentation, pages 495-503 and Table 1. All tables referenced are in Appendix B.

million. A U.S.\$10 million program is proposed for FY 1983. PL 480 helps Zambia with its foreign exchange requirement and provides essential food supplies. Self-help criteria designed to encourage domestic food production is a major feature of the program. Local currency supports agricultural policy change, programs and projects.

(iii) Technical Assistance

AID's gradual transition to an extended development assistance program was initiated in FY 1980. This program is directed towards AID/Zambia's two basic objectives: (1) to increase small farmers' incomes; and (2) to increase food production. The Zambia Agricultural Training, Planning and Institutional Development Project (611-0075, \$4.8 million) is important to the overall program. On the basis of this activity, priority policy issues and supporting program interventions are identified. AID assistance will help strengthen the GRZ's capacity to analyze, define, and implement development policy, particularly as it relates to agricultural development. The Agriculture Research and Extension Project (611-0201, \$12.5 million) seeks to establish a crop specific research capacity as well as an on-farm research approach in one or two geographic areas, aimed at increasing small farmer income and at increasing the GRZ's capacity for managing and replicating such programs.

(iv) Other U.S. Economic Assistance

In addition to the U.S. bilateral aid program the U.S. indirectly supports Zambia's development efforts through multilateral institutions. The U.S. is the single largest donor to the World Bank group, provides the United Nations with about 25% of its total budget, and is the largest subscriber to the International Monetary Fund. Zambia has benefited substantially from the economic and financial programs of these institutions for many years. The U.S. has also provided U.S. Export-Import Bank loans and guarantees and Overseas Private Investment Corporation (OPIC) guarantees.

X17

III. ECONOMIC SITUATION

A. Structure of the Economy

The Zambian economy is composed of a comparatively large urban sector (dominated by the mining industry) and a rural agricultural sector. Over 40 percent of Zambia's population of 6 million (1982 estimate, growing at 3.2 percent per year) live in urban areas making Zambia one of the most urbanized societies among African developing countries.

Both the urban and rural sector economies are markedly dualistic. The urban economy is split between a modern and capital intensive formal sector, and an informal sector characterized by relatively low skills levels and activities which are comparatively labour intensive. Wage inequalities also distinguish the modern sector. The average wage in the informal sector is believed to be less than 40 percent of the average formal (modern) sector wage.

To a large extent, the rural agricultural economy retains the same dualistic structure it had at Independence. There are roughly 400 comparatively large modern commercial farms located on the line-of-rail* and other major transportation arteries. These farms produce 20-30 percent of all officially marketed production, and over 40 percent of all officially marketed maize, the country's staple. The remainder of the rural agricultural economy is dominated by roughly 600,000 subsistence oriented farmers who for the most part are widely and sparsely dispersed.

Income disparities between and within the rural and urban sectors, although large, have improved since 1977. According to the most recent survey (for 1979, released in 1982), average earnings in the agriculture sector were Kw.919 per annum compared to K3,306 in the mining sector and K1,968 in the manufacturing sector. Since 1977, the agricultural workers wages have gained 3%

*Farmers located near the railroad line which runs from Livingstone to Zaire and Tanzania.

and 5% on wages in the mining and manufacturing sectors respectively. Cash incomes for half of Zambia's 600,000 subsistence oriented farmers were estimated to be K60-70 per annum in 1977.

Mining is estimated to have accounted for 26 percent of real GDP in 1981 (Table 2b). Other major contributors to GDP were agriculturure, 13 percent; manufacturing, 12 percent; and services 17 percent. Since Independence in 1964, mining's share of GDP has declined from 53 percent to 26 percent in 1980-81. Over this period agriculture's contribution has declined by one percent. Services and manufacturing have increased from 9 percent to 17 percent and 7 percent to 12 percent respectively. Despite the mining sector's relative decline, the industry remains the primary determinant of Zambia's economic and financial performance.

The Zambian economy has been affected by President Kaunda's philosophy of Humanism. In economic terms this has led to a mixed socialist-capitalist system which seeks to achieve an equitable distribution of economic power. Having inherited an economy with a capitalistic, private ownership orientation, the structure has changed significantly to a mixed economy with a heavy emphasis on government participation through parastatal organizations. Many parastatals were created through nationalization of existing firms. Over half of the GDP is generated by parastatals and they are predominant in most productive sectors, with the exception of construction and agriculture. As a group, parastatals employ 43 percent of all wage earners, while the government employs 22 percent and private companies account for the remaining 23 percent. (Table 3).

Zambia, although landlocked, has a significant natural resource base, primarily in the form of minerals and arable land. Revenues from mining are steadily declining, as has production since 1975. As a result, GRZ has begun to pursue policies which are intended to decrease the economy's dependence on mining and expand the importance of agriculture and manufacturing. Gross domestic investment in 1981 equaled 23 percent of GDP, with 26 percent of this investment financed from domestic sources and 74 percent financed from external grants and loans. All efforts to restructure the economy have been seriously hampered by the current economic crisis.

x/19

B. Development of the Economy

1. General: During the first ten years of independence the Zambian economy averaged a real growth in GDP of about 2.3 percent per annum (Tables 4 and 5). However, due to an average population growth rate of 2.7 percent per annum, real GDP per capita declined 0.5 percent per annum. Zambia's second development decade has not been promising. Real growth in GDP during the 1974-1978 period declined to 0.3 percent per annum. It dropped to minus 2.3 percent per year during the 1978-1981 period. As a result of an upward revision of the population's estimated growth of 3.2 percent per annum, real GDP per capita declined an average of 3.7 percent during 1974-1978 and 4.3 percent per annum during 1978-1981. The 1981 level of real per capita GDP was roughly 30 percent below the 1964 Independence level.

Zambia's record is not unique by African standards. During the same period, some 15 other African countries experienced declining levels of real per capita income. Furthermore, by the end of the 1970's, economic crises were battering even the high growth countries like Kenya, Malawi and Ivory Coast, also compelling them to develop strategies for restructuring their economies.

Zambia's second decade of development has demonstrated its vulnerability to external economic and political events including the oil price increases, the international recession, and the political and military occurrences in Angola, Namibia, Zaire, and Zimbabwe. In addition, a 40 percent drop in copper prices was followed by significant reductions in copper output and had lead Zambia into its current financial hardships. The decline in political and military activity in the area has mitigated these problems somewhat. Unfortunately, the GRZ's internal political situation has exacerbated the status.

2. Employment and Wages: Zambia's labour force is growing at roughly 3-4 percent per annum. As a result, 1981 saw an additional 63,000 entrants into the job market. GRZ labour statistics focus on jobs in the formal sector* such as mining,

*Positions which provide formal employee records, contribution to pension funds, etc. are included.

private and parastatal industries and government. Total formal employment has stagnated since the mid-seventies. A factor has been the IMF/ILO pressures on the GRZ to limit the total public and private wage bill. In 1977-79 the IMF found excessive real wage levels in the formal sector as evidenced by the growing gap between formal paid employment and the labour force and the rising labour costs per unit value added in most sectors of the economy. Pressure from an IMF and ILO task force study has led to limitations in government wage increases. Other GRZ efforts to control the overall wage bill in the private sector have contributed to reducing any substantial growth in formal employment. In 1981, formal sector employment grew by less than one percent. More importantly, formal sector employment is not a large share of the total labour force. During the 1977-1981 period, formal sector employment averaged 20 percent of the total labour supply. (Table 6).

The Third National Development Plan (TNDP) candidly acknowledges the magnitude of the employment problem. Under optimistic conditions, the TNDP estimated that formal wage employment would absorb only one fourth of the estimated increase in the labour force during the 1979-1983 period, with no contribution made to absorbing the backlog. The immediate implication of this is that the country will have to rely heavily on the opportunities of self-employment in both the urban and rural areas. With rural to urban migration rates of roughly 6-7 percent growth per annum, and the estimate that over 40 percent of the urban population could be classified as "squatters", employment generation will probably become an increasingly political issue if the current economic crisis continues. Realizing this potential problem, the GRZ is working to improve the investment climate in agriculture and rural Zambia to stem migration trends and to make the agriculture sector a more important source of employment.

The majority of the labour force is either employed in the informal sector (self-employed or some other informal arrangement), unemployed, and/or underemployed. Due to the manner in which the GRZ maintains its labour statistics, it is hard to determine the level of unemployment.

x21

3. Savings and Investment: Zambia has had high savings and investment rates relative to many African countries. This pattern has been altering as a result of the GRZ's development policies and the country's current financial hardships. Net national savings as a proportion of national disposable income has declined continuously since the Independence level of 32 percent to minus 13 percent by 1981. (Table 7). The major reason for this fall has been the decline in GRZ and parastatal savings rates. Of particular importance has been the GRZ's negative savings rates as government consumption (expenditures) out-stripped revenues (Table 8). As a result of these trends there has been an increase in net borrowing from abroad to cover the gap. By the late 1970's and early 1980's, increases in arrears became a major financing tool in addition to national borrowing and declines in net foreign assets. The proportion of investment financed domestically has declined from 100 percent during 1965-1970 to roughly 78 percent in 1978. This fall continued and by 1981, the domestically financed proportion stood at 26 percent. If domestic and, particularly, foreign resources do not continue to increase, the overall level of investment will fall. Gross fixed capital formation as a proportion of GDP has already fallen from its 1971-76 average of 31 percent to 24 percent in 1981. This, however, still compares favourably to other African countries. For example, Kenya managed slightly over 24 percent per year during the 1970's. In real terms investment has declined by over 45 percent since 1975 as increases in the nominal level of investment remained below the increased costs of capital goods.

In spite of the high investment rates in Zambia, growth of both production and employment has been disappointing. To some extent this is due to the economic depression which has resulted in underutilization of factory capacity. However, the high capital intensity of many investments and the amount of investments devoted to longer gestation or as yet incomplete projects also contribute to the problem. Formal sector employment went from 367,000 in 1972 to a high of 393,500 in 1975 and then fell to 316,000 in 1979. Even during the relatively stable (1973-1975) period net investment per job created in the formal sector averaged K43,792 or about \$55,000, a high investment level per position by most standards.

The Government's oft-repeated goal of employment creation, especially in the non-urban areas, is inconsistent with the capital intensity and pattern of investment, both of which the Government itself influences heavily. Government-controlled investment in the parastatals and the GRZ itself constitutes an estimated 60-70 percent of the total. The Government

22

could decree that the capital intensity of the investment it controls be lowered, but given the present incentive system (i.e., relatively high wages and relatively low interest rates) such a move could increase financial costs.

Price increases, no matter how they are measured, have been high during the 1970's and especially large during the 1974 to 1978 period (Table 9). Wholesale price increases have tended to exceed all others, partly because the Government's main price control scrutiny is directed toward retail prices of basic consumer goods and partly because a major influence on the wholesale price index is the cost of capital goods which have risen by 27 percent per year since 1974. If inflation continues its upward trend, the GRZ can again expect strong pressures for wage increases from the country's powerful unions. Unfortunately, such wage increases would reinforce the country's present investment habits.

The availability of domestic credit has been a constraint for Zambia's private sector, although the situation has altered since 1979-1980 (Table 10). During 1974-78, the rapid expansion of the money supply (17 percent per annum) offset the balance of payments problems (Table 11). Roughly 80 percent of the credit expansion went to Government*. As a result, the major pinch on credit was experienced by private users and those parastatals which had difficulty obtaining GRZ loans or subsidy payments. However, with the GRZ's 1981 IMF agreement, efforts were made to control credit to the GRZ and the mines. Although not entirely successful in meeting credit ceilings, the availability of credit to the private sector (agriculture and manufacturing) appears to have eased slightly. Although still relatively tight, the private sector demand for credit has not pushed interest rates to the maximum allowed by law, nor have the existing overdraft facilities been fully utilized. The average utilization of overdraft facility remains a low 25%. The lack of a strong private sector demand for credit reflects the cautious atmosphere surrounding new investments. This would suggest that the GRZ policy changes to date have not been sufficient to pull the private sector out of its current production and investment depression. It appears that the

* IMF estimate, Report 3007-ZA, Feb 1981. An estimated 34 percent of the GRZ's borrowing was on-lent to the mines and parastatals.

x73

GRZ should continue its efforts to stimulate the private sector. Government directed investment should also continue to be aimed at those activities which will restructure and diversify the economy.

4. Agriculture: The real value added in the agricultural sector has grown at a disappointing average annual rate of 1.5 percent (Table 12). Poor performance in the agricultural sector since Independence has undoubtedly increased the tendency for people to migrate to the urban areas, especially to the Lusaka and Copperbelt provinces. The sector's importance in terms of employment and as the source of Zambia's future economic development has already been alluded to. In addition, however, food production will be a primary concern during the current decade as the population increases by roughly 33 percent by 1990. Food production needs to increase by at least 3.2 percent per annum just to keep pace with population growth.

Farm production and farm income are, of course, closely related. The keys to increasing Zambia's food crop production lie in (a) rationalizing agricultural pricing and marketing policies, (b) increasing incentives for investment in agriculture, (c) adapting agricultural research to the conditions small farms face, and (d) provision of required inputs.

Since the beginning of 1981, the GRZ (with support from the IMF, IBRD, and AID) has made major agricultural policy adjustments which have stimulated agricultural production, particularly maize, and will help stabilize the Government's continuing financial status.* These policy adjustments have been designed to stimulate both small farm and commercial farm production. They are among the most significant set of policy revisions taken by the GRZ since Independence and are designed to help resolve the financial crisis and to strengthen the contribution agriculture can make to Zambia's economy.

Among the more important agricultural policy changes undertaken by the GRZ were (a) an 18 percent increase in the maize producer price; (b) price increases for other crops ranging from 12 to 51 percent; (c) schedule for reducing fertilizer subsidies; (d) elimination of a component of the maize subsidy --the differential between the producer price for maize and the subsequent selling price to milling companies; (e) increased

*See Zambia FY 82 CIP Loan paper for detailed discussion of how the GRZ statements satisfied the agreement conditions.

24

consumer prices of mealie meal (ground maize) by an average of 32 percent; (f) consumer price increases for other staple foods (e.g., milk, flour, bread, and sugar); (g) maize producer bonus, in foreign exchange of US\$0.50 per bag for each bag delivered over the first 5,000; (h) tax laws adjusted to be more favorable toward farmers and agricultural investments; (i) liberalization of depreciation allowances and agricultural investment write-offs; and (j) the transfer of local marketing and input distribution responsibilities from the parastatal NAMBoard to farmer cooperative unions.

In the January 1982 Budget speech, the Minister of Finance announced additional policy changes which made private investment in agriculture even more attractive. In another positive move that will cost Zambia little, but will be of great value to the country, Barclays Bank has won Bank of Zambia approval for a scheme to allow individual farmers to import up to K500 per annum of agricultural spare parts without an import permit. This program should increase the rates of agricultural machinery utilization. In July 1982, producer prices are again increased (maize by 15%). Furthermore, the fertilizer subsidy was reduced by nearly K.75 per ton. These actions should lend further credence to the GRZ's statements that it intends to get agriculture moving in Zambia.

Agricultural output in 1981 staged a good recovery, registering a real growth of 9.8 percent over 1980. This increase was partially due to improved weather and partially due to the GRZ's positive policy actions toward agriculture. Prospects for 1982 had looked even better as farmers expanded acreage. The Commercial Farmers Bureau reported its 700 members expanded acreage by an average of 30 percent. Unfortunately, the current drought is expected to reduce yields in the largest maize producing areas by over 50 percent, which will result in a need to increase basic food imports. Senior GRZ agricultural officials estimate their country's maize import needs for 1982/83 will be between 100,000 to 200,000 tons, nearly equal to the drought year import levels of 1979.

5. Mining: The mining sector has been the dominant influence in Zambia's economic development. The sector now has significant medium and long-term problems which make it apparent that unless the Government's diversification policy succeeds, Zambia faces a difficult future. The two most significant occurrences affecting the medium-term prospects for the sector are the pronounced fall in copper production and prices and decreasing cobalt prices. The immediate causes of lower copper production are the declining number and quality of

X 25

upper- and middle-level managerial and technical personnel, and shortages of resources needed for replacement of machinery and spare parts inventories. The decrease in the copper stock is a long-term problem not affecting production at this time. Wild-cat strikes (the last two were in January and July, 1981) have also been significant and costly. Management problems will probably increase if the mines lay off an additional 500 expatriates as planned. Cobalt revenues present an offsetting potential. However, the bulk of any earnings from mining will continue to be from copper.

The long-run prognosis for copper and allied mining activities in Zambia over the next 20 years is for declining output and increasing costs of production. Basically, these mining activities have reached their full maturity. Ore deposits are becoming less rich and less accessible, major pieces of equipment will become obsolete and many experienced mining technicians and managers will begin to reach the age of retirement. These occurrences tend to cause increasing real costs in the sector. However, the actual outputs of copper and cobalt and allied products, though expected to decline over the next 20 years, could fluctuate considerably depending on the intensity of prospecting and surveying activities and on the extent to which newly initiated mining activities elsewhere in the world affect longer-run real mining costs and thus prices of copper and associated products.

6. Manufacturing: Growth of real value added in the manufacturing sector, excluding mining, has averaged 5.4 per annum since 1965 or more than double the undeflated average annual growth rate of GDP. The sector's contribution to GDP has jumped from 7 percent in 1965 to 12 percent in 1981. However, the manufacturing sector has been particularly hard hit by the economic and financial crisis. In fact, the production index of the manufacturing industry has declined to 97 in 1981 (1973 = 100), down from the 1975 high of 107.

The manufacturing sector is dominated by parastatals. Uneconomic prices and poor management, plus the country's weak external position have resulted in low earnings. Zambia's main profit earners are companies without product price controls and the major losers are those which produce essential commodities and are not allowed to charge economic prices. Although the parastatals are the predominant corporate organizations in Zambia, a recent World Bank report* stated that they provide only 20 percent of company tax revenues.

*See the FY 82 CDSS.

26

The manufacturing sector is primarily engaged in processing imported intermediate goods and raw materials for the domestic market.^{1/} In spite of the fact that nearly 50 percent of value added is contributed by the food, beverage and tobacco sub-sectors, the manufacturing sector as a whole is heavily dependent on imports to maintain production. For example, during the period 1968-70 imports for the manufacturing sector required about 22 percent of the total foreign exchange for visible imports, of which 75% was for inputs and the remaining 25% for capital goods. By 1977 manufacturing received over 37 percent of the value of visible imports of which 85% was for inputs and 15% was for capital imports.^{2/} Estimates for 1980 indicate that the manufacturer's share has again risen and is now close to 40 percent.

In 1981, 64 percent of the real GDP generated in the manufacturing sector was food, beverages, tobacco, textiles, and wearing apparel industries. Combining this structural characteristic with the sector's high dependence on imported goods suggests very weak forward and backward linkages with the rest of the economy. As a result, the expected spread effects of growth in the manufacturing sector (i.e., expanded support industries) and employment will continue to be minimal.^{3/}

Industrial development built upon imported intermediate goods has run its course in Zambia. The result has been to make Zambia highly dependent on imports, hence the high foreign exchange requirements, to maintain current production. Given the declines in the terms of trade, low probability of a rebound in copper revenues (e.g., foreign exchange earnings), and a limited remaining supply of copper, Zambia must continue to pursue policies and activities to diversify the economy and make future economic growth more reliant upon its domestic resource base, particularly agriculture. Foreign exchange earnings will continue to be far below those levels experienced in the 1960's and early 1970's. If Zambia fails to effectively implement this strategy, it will continue to find itself in a position where the scarcity of foreign exchange inhibits domestic manufacturing.

The other major economic diversification issue confronting Zambia is the continuing inefficiencies of its large parastatal sector.

^{1/} See Applegate Report, 81 Lusaka 3393. "Macro-Economic Issues Affecting AID Programs".

^{2/} IMF report 3007-ZA, February 1981.

^{3/} Applegate, Ibid.

x 27

Reorienting or dismantling this productive system and developing a more open, responsive organization of production is a key problem facing the development of the manufacturing sector in the 1980's.

7. External Sector: The critical elements of Zambia's external sector continue to be the heavy dependence on copper exports (earnings), the large amounts of foreign exchange required to maintain current production, and the continued adverse movements in the terms of trade. Unlike the early 1970's and the 1960's when Zambia ran surpluses in the balance of trade, the decline of copper prices in 1975 marked a 43 percent decline in exports while imports soared. The current deficit was substantial (85 percent of exports). Since 1975, Zambia has had an average annual balance of payments deficit (with the exception of 1979) of K230 million (Table 13). These deficits were primarily financed by payment arrears. By the third quarter of 1981, arrears amounted to about K556 million (\$617 million).

The deterioration of the balance of payments situation and terms of trade left the GRZ with no choice but to limit imports. By the end of 1981, Zambia's external terms of trade index had declined to 31 (1970 = 100, Table 14). The fact that much of Zambia's imports are production or investment related -- roughly 82 percent in 1978 -- indicates the country's long run dependency on the external sector (Table 15). These sharp declines in the availability of foreign exchange have severely constrained production activity. The potential long-run consequences of Zambia's balance of payments difficulties can be appreciated by viewing changes in the levels of foreign assets and liabilities and the implied flows which would be required to reverse them. (Table 16). The figures in the table indicate that since 1969 drawdowns of foreign assets equal to almost K2.8 billion, nearly the equivalent of the GDP in 1980-81. Debt service flows for the next five years are expected to average K210 million per year compared with average repayments since 1975 of K100 million per year. Further outflows of over K100 million a year would be required to eliminate arrears over a five year period, suggesting that some Kw. 310 million or 33 percent in foreign exchange earned by exports will go for debt and arrears repayments each year. These payments do not include repayments to the IMF by the middle of 1982 on a total debt of around K600 million.

8. Government: The present government financial crisis results from the long-run tendency for government expenditures

to grow faster than revenues (Table 17). Declines in the terms of trade and copper used to account for about 40 percent of GRZ revenues during 1970-74, but since 1975 copper revenues have been virtually zero or negative. Public debt, which includes internal borrowing, has more than doubled since 1974, from K636.5 million to K1,474.8 million in 1980 (Table 18). It is significant that domestic borrowing in 1974 comprised approximately 44 percent of the total while borrowing from external sources took up the remaining 56 percent. Since then loans from external sources gradually increased its share, reaching K1,088 million or 64 percent in 1981. As the implementation of the Third National Development Plan progresses, external financing will become even more important for the implementation of the various investment programs.

Total expenditures by the GRZ as a percentage of GDP have declined slightly since the mid-1970's (Table 19). In real terms, expenditures have declined by roughly 39 percent since 1974. Particularly hard hit have been certain recurrent budget items, resulting in an under-utilization of existing manpower and infrastructure since as salaries rose and other items (i.e., travel, subsistence allowance, internal transport, maintenance) declined even faster than the total. The IBRD Agriculture Recurrent Budget Study of 1981 found that in real terms, personnel emoluments (salaries) in the Ministry of Agriculture and Water Development (MAWD) grew at an average annual growth rate of 4.1% from 1975 to 1980, while recurrent department charges "operating expense budget" fell 13.6% per annum. As a result the amount of resources available to operate and maintain MAWD's capital stock and to support its permanent labour force have declined significantly.

The 1982 Budget is projected to increase by 7 percent over 1981 levels (Table 20). Roughly 24 percent will be financed from internal and external sources and the remainder from general revenues. Of the total required financing, 81 percent or K271 million will come from external sources - reflecting the GRZ's continued dependence on foreign resources. Subsidies are projected to decline by an additional 30 percent, down to K88 million. If achieved, the total subsidy bill will have declined by almost 60 percent since the 1980 high of K206 million. This year's drought could upset budget estimates as additional outlays for imports of basic food stuffs will be required. For maize imports alone, between K22.0 million to K44 million may be required.

429

C. Current Status

By 1980 the GRZ efforts to restructure the economy had yielded little as the country's economy did not grow appreciably in 1980 (0.9 percent real GDP) and declined in 1981 (1.8 percent drop in real terms). With agricultural output declines expected due to the drought and the estimated mining sector's losses of K200 million (almost 50 percent higher than 1981), Zambia's real GDP appears set to decline by at least 5 percent in 1982. Contributions from agriculture and mining are expected to fall by twice this amount.

After the end of war in Rhodesia and nearly simultaneous conclusion of Zambia's 1978-1980 program with the International Monetary Fund (April 1980), the Zambian Government attempted a fast growth economic strategy which sought to address many spending demands held in check during the war years. These demands led in 1980 to heavy importation and high deficit spending as the government attempted simultaneously to stimulate an economy in deep recession, to provide real relief to hard-pressed consumers and labour, and to launch development programs. (Table 21).

The one year hiatus between Zambia's programs with the International Monetary Fund (April 1980 to May 1981) proved difficult for Zambia. Increased import levels and costs were not matched by growth of export earnings as world copper prices decline and cobalt markets remained soft. Heavy balance of payments pressure resulted and continued through 1981. Zambia's ability to service its short and medium term foreign debt weakened and total arrears was estimated by the Bank of Zambia to have climbed to about \$556 million by the third quarter of 1981. However, the high spending and import levels and sharply increased agricultural production postponed further contractions of the economy. But by early 1981, Zambia's financial resources and international creditworthiness were strained and the volume of imports dropped by about 20 percent below the 1980 level causing the manufacturing sector's import dependent output to fall. Continued heavy deficit spending, lower production levels and higher import costs (especially oil) drove up inflation (Table 9). Two major strikes in 1981 by Zambia's mineworkers and other unions further complicated the situation. As a result of the strikes and other mining industry problems, copper production fell and other exports declined in 1981, further exacerbating Zambia's balance of payments difficulties.

170

In May 1981, Zambia and the IMF agreed upon a new three year, 800 million SDR program (US\$944 million). The most immediate effect of this program was to finance increased imports beginning in the latter half of 1981. Problems developed after the first drawing when Zambia did not fully meet its foreign arrears payments and exceeded the IMF credit ceiling limitation. A June IMF drawing was delayed, but by late 1981, after the IMF Board granted a waiver, the Fund released drawing rights for another tranche. By late December, it was again clear that Zambia would have problems reaching the IMF limitations on credit and arrears. A high level GRZ team went to Washington in January 1982 to discuss these problems. During this time Zambia also drew additional financial support from the IMF's compensatory finance facility. Most of these funds were applied to the reduction of foreign arrears. Implementation of the GRZ/IMF agreement has been very difficult for Zambia. The inability to meet agreed to targets has delayed the program for 1982. As of August 1982, the GRZ and IMF have not agreed upon a continuation of the old program or a new one. Discussions are continuing.

An area the GRZ is considering with the IMF is the possibility of a devaluation. However, the mining sector is in opposition to such a move to "improve" the economy and has presented a detailed case to the GRZ outlining the expected impact on the mines. Other observers of the Zambian economy (i.e., The Economist Intelligence Unit) are also wary of the possible benefits of a devaluation. A general feeling is that in the face of the economy's dependence upon imports, the benefits of devaluation will be modest in relation to the magnitude of the country's present problems. In any case, the GRZ and IMF face a difficult task in trying to assess the benefits of a devaluation -- let alone the question of the magnitude of the devaluation and the size of the IMF's assistance.

The latest data on Zambia's overall foreign exchange position shows no improvement, despite the drawing of the first two tranches of IMF credit in 1981. (Table 22). The official statistics reveal that the country's reserve of foreign exchange, which surged ahead from K32.2 million in July 1981 to K182.9 million in November, had fallen back to only K33.8 million by February 1982. Net foreign assets stood at a deficiency of almost K1 billion -- the largest deficiency recorded so far*.

*This represents the balance of accounts at the Central Bank of Zambia, Zambia commercial banks, and the debt with the IMF. See Appendix B, Table 16.

x31

Assuming that an IMF/GRZ agreement is reached, that additional foreign credits are made, and that economic management is improved, Zambia should begin paying a portion of its foreign arrears backlog. Zambia is obliged under the past IMF agreements to reduce arrears. Higher world copper prices and stronger cobalt markets could encourage these trends, although basic problems of the economy's continued dependence on foreign exchange will probably keep real economic growth in 1982 and 1983 at low levels. The serious structural problems (its dependence on copper and import dependence of the manufacturing sector) of the Zambian economy remain and further reforms will be needed if Zambia is to become less dependent on international assistance and achieve sustainable growth and development.

D. Other Donor Assistance

Bilateral donors have responded very favourably to Zambia's request for assistance. Although 1981 figures are not available, the 1980 increase of donor inflows over 1979 and 1978 levels were US\$299 million and US\$334 million respectively. Zambia signed assistance agreements amounting to \$446.4 million in 1980. Of this total, \$119.7 million was commodity assistance, \$218 million was capital aid, and \$108.6 million was project assistance. In terms of overall aid, the U.K. remains the major bilateral donor, providing \$53.8 million, Germany \$57.4 million, United States \$43.0 million, Japan \$27.3 million, the EEC \$32.8 million, and Canada \$24.5 million. Under the SDR 250 million IMF Standby Agreement, SDR 83 million was utilized in 1980. Donor assistance probably increased in 1981.

In the past, 35% of technical assistance went to agriculture; 13% to education; 11% to health; and 12% to humanitarian aid and relief. Transport and communications accounted for 64% of commodity aid, followed by agriculture representing 25%.

E. Prospects for Economic Recovery

Economic recovery will require stringent financial discipline and persevering efforts to diversify the economy. Long term exploitation of Zambia's economic development potential will depend upon the determination with which the GRZ continues to adopt economic policies conducive to structural change and economic growth, especially in the areas of agriculture and rural development. Zambia's need for economic structural

32

change is justified not only by the severe and erratic economic fluctuations of the past but by the future prospects for the exploitation of Zambia's copper resources.

Four major problems will confront the GRZ in its efforts to recover. Firstly, the GRZ must work to improve the efficiency of the parastatal sector. The country cannot afford a continuation of poor management and prices fixed at uneconomic levels. Zambia's present solution has been in part the creation of more parastatals to overcome the difficulties of the present ones. In March, 1982, President Kaunda announced the formation of four new parastatals to improve the efficiency of the government controlled sector; the Zambia National Tender Board, Zambia National Audit Service, Legal Services Corporation, and Zambia National Forwarding and Clearing Company. All are to receive business from public and parastatal sectors which used to go to private sector companies. Furthermore, to increase food production the GRZ has spent K5 million on acquiring land for the establishment of state farms.* These developments will have to be monitored closely to see if they will improve or hinder the recovery of the economy.

Secondly, with the national election coming up next year, it will become increasingly difficult for the GRZ to change policies and pass unpopular decisions that would adversely affect the urban population. Thus, further efforts to reduce the level of subsidies and rationalize pricing of goods may be postponed for political expediency until the elections are over.

Thirdly, in the face of continuing inflation, the GRZ can expect efforts by unions to push for upward adjustments in wages. The powerful Mineworkers Union recently repudiated the pension agreement signed by the former Union president and negotiated a new agreement. Also, the Industrial Relations Court in March approved a pay agreement whereby the mining union members received high minimum wages and with all pay increases backdated to November, 1981. It can be expected that other Government and parastatal sector unions will begin pressuring for wage increases.

Finally, further GRZ policy adjustments are required to stimulate private sector manufacturing investment. Those changes made to date appear to have an impact muted by the continued financial and economic crisis. Government directed investment should continue its stated focus of increasing the forward and backward linkages with the rest of the economy,

* The funds for these purchases were provided by Iraq, Italy and Saudi Arabia.

X 33

particularly the agricultural sector.^{2/} The recent steps taken by the GRZ to revitalize the agricultural sector are encouraging, although the government should not rest upon the gains made to date. The positive policy changes and producer price increases made appear to have been eroded by the continuation of the economic crisis as evidenced by supply of credit not being fully utilized by the private sector. Further policy changes must be made to make investment in agricultural more profitable. Needless to say, the current drought is an unfortunate and uncontrollable event which has hurt the development of the agriculture sector. This year's substantial expansion in planted acreage was financed, in large part, with the expectations of another good crop year. Some farmers are saying this drought is the worst experienced in the last 30 years. GRZ efforts to keep agriculture moving should be redoubled.

In view of Zambia's current economic situation, it can be readily concluded that the implementation of Zambia's stabilization and diversification programs will require substantial flows of external assistance for the next several years. Despite stated GRZ priorities toward rural development, recovery in the mining sector and diversification of manufacturing sector and increased forward and backward linkages with the rest of the economy must be supported as well. Assuming the balance of payments situation stabilizes, at least five years will be required to simply eliminate arrearages and bring capacity utilization of the industrial sector up to more normal levels. Foreign exchange allocations supportive of structural diversification will probably be constrained by these competing needs. This "competition" can be reduced to the extent external assistance is available to fund structural diversification programs.

The FY 1983 Commodity Import Program (CIP) addresses important short-term macroeconomic problems facing Zambia, while providing assistance to the agricultural sector through the financing of fertilizer imports and the use of local currency generations. In the short term, the serious balance of payments deficit must be overcome to permit Zambia the foreign exchange flexibility required to diversify the economy. This program will also ease GRZ revenue shortfalls caused, at least

^{2/} One example of Zambia's altered investment policy is the expansion of Metal Fabrication of Zambia, a subsidiary of GRZ's Industrial Development Corporation. It will increase the supply of irrigation equipment. In addition the export demand of these products is expected to pick up eightfold. Thus, a K0.7 million investment is expected to yield a minimum of K2.8 million per year in foreign exchange.

159

in part, by its efforts to slow the economy in order to prevent further deterioration of the balance of payments position.

IV. AGRICULTURAL SITUATION

A. Structural Characteristics

(a) Land Use

Roughly one third of Zambia's surface area is well suited to crop agriculture.* Of the roughly 25 million hectares presently suited to agriculture, 12 million hectares are cropped intermittently and two million hectares are cropped continuously. The amount of land used for agriculture varies greatly between different agro-ecological zones. Overall, land use relative to potential remains low as evidenced by the fact that only eight percent of the land presently suited for agriculture is continuously cultivated.

The country, as a whole, has above average water resources when compared to similar regions elsewhere. However, its lack of availability on a year round basis is often a serious problem. Along the same lines, Zambia's soils have a generally low inherent fertility.** No large areas of naturally fertile soils, where good yields can be obtained without the use of fertilizers, are found in Zambia. The soils do have a high potential for crop production provided that fertilizers are used. In addition, the major nutrients, except for nitrogen, are required in relatively modest levels.

The country's potential for growing a wide variety of crops is large. A major report ***, which identifies the rainfed production possibilities of eleven major crops in Africa found that Zambia as a whole has suitable to very suitable (the highest rating) conditions for growing millet, sorghum, maize, beans, sweet potatoes, and cotton. The conditions for growing rainfed rice and wheat are not suitable (the lowest rating) in most of Zambia.

(b) Rural Labor Force

Zambia's rural populace is highly dualistic. At one extreme are about 600,000 widely dispersed small-holder subsistence farm families. Traditional farming methods are practiced using hand tools and generally work is unassisted by either animal or mechanical power. This group chiefly produces such staples as maize, millet, sorghum, cassava, beans and peanuts, and in tsetse-free areas they also raise open range cattle. Of the traditional farm families, about three-fourths are believed to be farming less than one hectare at any time. Only 40 percent of these farms sold

* "Development Needs and Opportunities for Cooperation in Southern Africa: Zambia," USAID (March 1979).

**J.K. McPhillips, "Fertilizer Recommendations and Crop Yields in Zambia," MAWD (undated, late 1970's).

*** "Report on the Agro-ecological Zones Project, Volume I," FAO (Rome 1978).

or bartered any part of their produce in the early 1980's and less than half were believed to have produced any surplus. For those who produced surpluses, the cash value was estimated to be between K60-70 a year per farm (US\$66-77). It is estimated that they farm about 75-80% of the total cultivated land. Although this group accounts for the majority of total production, they supply little to the official marketing channel.

At the other extreme are 600-800 capital intensive commercial farmers including about 100-200 non-Zambians. Their high technology operations account for roughly five percent of the total cultivated land area. They grow maize, wheat, soybeans, rice, and in some areas they raise cattle. Gross annual sales from commercial farms average about K25,000-30,000 a year per farm (US\$27,500-33,000). In terms of the volume of officially marketed production, this group supplies upwards of 60% of the total. Annually, they produce about 30-40% of the country's preferred staple - maize.

Between the subsistence and commercial farmers groups is a small but growing group of "emergent" farmers who are using improved seeds, oxen or tractors to produce the same range of crops as commercial farmers, in addition to cotton, which remains a small-holder crop in Zambia. There are roughly 60,000-100,000 emergent farm families. Gross annual sales from this group varies widely but lie typically in the range of K1,000-3,000 per year (US\$1,100-3,300). They account for roughly 15% of the total cultivated area.

Not much more is known about the three categories of rural producers. In fact the Ministry of Agriculture and Water Development (1982) divides the producers into two categories: subsistence and commercial producers. Under this classification system, a commercial farm is any operation that cultivates five hectares or more, or earns K1,000 or more annually from crop sales.*

The growth of the rural labor force (0.5%) has been low relative to the country's population growth rate of 3.1%. (See Table 1**). The negative effects of migration on the supply of labour for agriculture is perceived by various sources to be critical in some places at certain times of the year. There is no evidence of migratory labour between rural areas which would alleviate the problem.

* "Final Crop Forecasting Report: 1981/82 Crop Season," MAWD (June 1, 1982).

** All tables referenced in this Section IV, Agricultural Situation; are in Appendix D.

(c) Marketing Systems

Zambia's rural markets operate on two tiers. The first is the collection and distribution of commodities, primarily agricultural, by parastatal organizations. The second is the private marketing system which handles agricultural and consumer goods. Not much is known about the latter system. However, it is generally accepted that it has been adversely affected by monopolistic marketing policies favoring parastatals and by the GRZ uniform price structure for many commodities which is enforced on a nationwide basis and which makes no allowance for differing distribution costs. Many observers point towards a decreasing availability of essential goods such as salt, oil, soap, etc. in the rural areas as evidence of the impact that this policy has had on the private marketing system which tends to handle such items. However, it is noted that as of December 27, 1982, the GRZ removed price controls on most commodities, but preliminary indications are that agricultural producer price controls will remain in effect.

The most visible agricultural marketing organization is the GRZ. Working through parastatals and their appointed agents (i.e. cooperatives) and via legislated uniform national producer prices, the system tries to control the marketing of major crops, with particular attention to maize which is the country's largest food crop.

The marketing of vegetables, sorghum, millet, beans, cassava and other food crops apart from maize, is dominated by the private sector. This is because official producer prices for these crops have tended to be below the prevailing prices in rural markets and regulations requiring that those food crops to be marketed through official channels have not been enforced. Hence, the official marketing agencies, in essence, have become buyers of last resort for many of the other major food crops, such as sorghum, millets, etc.

B. Sector's Performance

Accurate data about total agricultural activity in Zambia are not available. However, the available estimates are believed to be sufficiently accurate to indicate trends. Comprehensive analysis of the sector will remain suspect unless improvements are made in the quality of data and information.*

The sector's performance is evaluated against two goals: increased food production and increased small farm incomes. These sector goals have been adopted by both the GRZ and AID/Zambia.

* A recent (1982) WFP food assessment team reported that the quality of agricultural crop forecasts were inadequate to draw firm conclusions regarding the food situation in the country. (See Lusaka 3708).

(a) Increased Agricultural Production

Total output (value added in constant prices) in the agricultural sector has increased since 1979 by 3.4% and 9.8% in 1980 and 1981, respectively (See Table 2). This is a turn-around from the 3.2% average annual decline experienced during the 1976-79 period.

The major source of change in total agricultural output historically has been the commercial farmer group. On average they account for an estimated 30-35% of total output. During 1976-79, this group's output fell by nearly 11% per year. The rebound since 1979 was again led by this group whose output grew by 9.8% and 28.6% in 1980 and 1981, respectively.

The traditional or subsistence farmer group's contribution to total output remains dominant (65-70% of the total, while their annual changes in output (1-2%) are much less than that of the commercial farm sector's.

Estimates of officially marketed production are more reliable than total production estimates which often vary by 100+% between the various services of the GRZ. In 1980/81 and 1981/82* the level of officially marketed production for most of Zambia's crops rose back towards or above their respective 1972/73-1979/80 trends (See Table 3). The majority of the officially marketed production is processed and sold in Zambia's large urban sector (40% of the total population).

The increase in officially marketed production was particularly important with respect to maize, which in any given year accounts for at least 90 percent of the total volume marketed through official channels. Furthermore, maize is the staple of the majority of the urban sector and thus its availability is a sensitive political issue. Officially marketed production of maize in 1979/80 was 336,000 MT or roughly 61% of the 1972/73-1979/80 production trend. In 1980/81 and 1981/82, it increased to 70% (383,000 MT), and 128% (693,000 MT - provisional) of trend, respectively. Although the data are not available, most of the increase probably came from the commercial farm sector, which now also includes a proportion of those farmers formerly labeled "emergent farmers".

None of the other crops marketed through official channels accounts for more than five percent of the volume of crops marketed officially, while most average less than one percent.** As a result of the low volumes marketed, the percentage changes in these figures are not as meaningful since a small quantity change can result in a large percentage change. However, the fact remains that for most crops, that the level of officially marketed production has increased significantly since 1979/80. (See Table 4).

* The crop season runs from October 1 through September 30 (MAWD report, June 1982)

** Seed cotton is the exception.

The differences between total marketed production and officially marketed production for the various crops are not known since the GRZ does not maintain statistics on these nor make public any estimates it might derive. Observer opinions as to the importance of the non-official marketing channels vary significantly. For example, the estimates of the quantity of maize illegally exported to Zaire each year ranges between 45,000-90,000 MT. This is roughly 10-30% of total quantity marketed officially depending on the year chosen for comparison. The recent WFP food assessment team estimated that the parallel market price ranged about 100 percent above the official price. For other crops, such as rice, groundnuts, sorghum, millet, and cassava, even less is known. (See Table 5). Most observers would agree that the quantities of these crops marketed outside the official channels are significant, particularly for sorghum, millet, and cassava, which are an important part of the diet in many parts of the country, (i.e., in the northern and western agro-ecological zones).

Total productivity in agriculture declined continuously, as it did for the entire economy, from Independence in 1964 to 1979 (See Table 6). Beginning in 1980, productivity per worker in the agricultural sector rose 2.6% and another 7.6% in 1981, while the economy's productivity as a whole continued its long decline. However, between 1964 and 1981 the average productivity of a worker in the agricultural sector had declined by about 9.1%, while for the economy as a whole, it declined by 19%.

Not unexpectedly, the gains in agriculture's productivity came from the commercial farm sector which grew by an estimated 15.5% and 22.6% in 1980 and 1981. The traditional sector's productivity, which had been declining since Independence, has held even since 1980.

The value of output per worker in the commercial sector has been above the average for the economy since around 1970. In 1981 it stood at K1,842 per worker, while it was K111 in the traditional sector, and K737 for the entire economy.

As with all analyses of agricultural sectors, the importance of weather, availability of inputs on a timely basis, attractive producer and input prices and a series of other factors cannot be ignored.

(b) Increased Agricultural Incomes

Since 1979, total real income in the agricultural sector once again started rising relative to the rest of the economy. Increased income comes from two sources: increased production and increased prices for that proportion of value added by the sector.

Between 1973 and 1976, both total agricultural production and relative agricultural prices increased. During this period, the per unit price in the agricultural sector rose by 9.4% per annum, while it rose only by 2.7% for the economy (See Table 2).

This changed during 1976-79 when the price gains in the economy were greater than in the agricultural sector. Production during this period declined by 3.2% per year, in part as a reaction to the loss in income from declining prices.

By 1980 and 1981, producer price increases outpaced the general rate of inflation. In 1980 and 1981, agriculture's average price increases (on value-added) were 12.3% and 11.4%, while the economy's average increases were 11.5% and 2.0%, respectively. Partially as a result of these real increases, total agricultural production rose, thus further increasing total income in the sector.

Most of the increased income has gone to the commercial farm sector. In 1980 and 1981, prices for the proportion of agricultural value-added contributed by the commercial farmers increased by 21.4% and 15.4%, while it rose by only 8.1% and 9.8% in the traditional farm sector.

When coupled with the fact that productivity in the commercial farm sector rose by 2.6% in 1979-80 and 7.6% in 1980-81, while the traditional sector's productivity remained stagnant, the observation that most of the increased agricultural income went to the commercial sector becomes even clearer. Even though the traditional sector did not do as well as the commercial sector, it did better than the economy as a whole in 1981. That was the first time since the 1973-76 period that the traditional sector did better than the rest of the economy.

(c) GRZ Role

The sector's performance since 1979 has clearly improved over its performance during the previous several years when agricultural production and incomes were falling. Agricultural policy adjustments by the GRZ have played a major role in bringing about this turnaround.

Real produce price increases for various crops, particularly maize, contributed significantly to the sector's improved performance. Although the GRZ has been actively using price increases as a tool for increasing production since 1974/75, it was not until 1980/81 that the increases represented increases in real terms (See Table 7 - analysis utilized implicit GDP deflation calculated from the IMF's data on Zambia).* The producer price increase in 1980/81 slowed the rate of decline for wheat and rice, while others increased in real terms (i.e. maize, soyabeans, groundnuts, sorghum). If inflation does not rise significantly over projected levels, the price increases announced up to the 1983/84 crop season will amount to real increases for most crops during the two-year period.

*The producer prices were deflated by the implicit GDP deflator as calculated from the IMF's IFS. Although other deflators could be used, such as the urban low income group's inflation rate or even the urban high income group inflation rate, they are not as appropriate since they represent changes in only one segment of the economy. Furthermore, what happens in the urban sector is not necessarily reflective of the changes taking place in the rural sector. For this reason, the prices are deflated by the deflator for the entire economy.

The real price of maize increased 8.8% per year during 1979/80-1981/82 and is projected to increase another 3.4% per year during 1981/82-1983-84. This compares to the real decline of 2.2% per year experienced between 1973/74 and 1979/80.

On average, the real producer price increases announced for the other crops have not been as large as those for maize. For the 1981/82-1983/34 period, some of the big "gainers" were rice at 30.8% per year and sorghum at 18.8% per year. Unfortunately real seed cotton and millet prices continued their declines which began back in the mid-1970's. These changes suggest that the GRZ's pricing policies have not taken adequate account of the traditional price relationships among these crops.

Analyzing past fertilizer sales reveals that the GRZ has imported and produced sufficient quantities of fertilizer to allow sales to increase by a compound rate of 7.3% per year since 1972-73 (See Table 8). The preliminary results of an analysis suggests that fertilizer sales is one of the major factors in explaining the changes in officially marketed production.* Thus, the GRZ's continued efforts to supply fertilizers to farmers at subsidized prices has helped increase agricultural production and incomes of those farmers who use fertilizer.

The GRZ has also continued its policy of supplying fertilizer at a subsidized price to Zambia's farmers, although several reductions were made in 1982. Data on the amounts sold to traditional or commercial farmers is not available. It is believed, however, that roughly 50-70% is bought by commercial producers. Fertilizer demand at the present subsidized rate has never been clearly established because each season the late arrival and/or inadequate distribution of supplies have prevented the identification and satisfaction of effective demand.

The effect of the GRZ fertilizer subsidy has been to increase the economic returns to maize production for those farmers that use it. Fertilizer in Zambia tends to be used primarily on maize, hence the impact of the subsidy on maize production is significant. For example, if the GRZ increases the fertilizer subsidy during the 1981/82-1983/84 period in order to keep fertilizer prices constant, it will effectively raise the relative price of maize by another 13%.

To improve the efficiency of the official marketing system, the GRZ began a major reorganization of its largest agricultural marketing parastatal, NAMBOARD, in 1980. Since January 1981, the provincial cooperative unions have been assigned the responsibility of becoming the official purchasers of maize and other crops at the provincial level while NAMBOARD retains its national level responsibilities.

* D. Dijkerman, See also Section IVD of this report for further details. "Major Factors Explaining the Level of Officially Marketed Maize in Zambia", REDSO/ESA, Nairobi, October 1982 (draft).

The cooperatives are not permitted to charge a fee for marketing and handling services and instead must rely upon government transfer payments to cover expenses. These expenses are negotiated by the cooperatives on an estimated cost plus 10 percent formulation known as the "restitution" system. Briefly, the amount each cooperative receives from Government for its handling of marketing services is a function of its operating expenses and volumes handled. This, of course, varies by region and cooperative union.

Because of this change NAMBOARD was able to reduce its work force by several thousand, and the responsibility of marketing was partially decentralized to the regional level. Unfortunately, not all the cooperative unions are ready for this responsibility. Furthermore, the GRZ has been slow in reimbursing the cooperatives for their expenses, hence causing them severe cash flow problems. With regard to cash flow, one of NAMBOARD's problems has been transferred to the cooperatives, but no improvement has been made.

Whether or not this change has been beneficial remains an empirical question. However, those cooperatives who have been able to assume their expanded role seem to be pleased with having a greater role in the management of their affairs.

In addition, the GRZ has legislated a wide range of reforms to make investment in agriculture more attractive. These changes include: (a) maize producer bonus in foreign exchange of US\$0.50 per bag for each bag over the first 5,000 delivered to an official marketing agency depot; (b) tax laws adjusted to be more favorable toward farmers; and (c) liberalization of depreciation allowances and write-offs on agricultural investments.

During December of 1982 and January of 1983 the GRZ announced additional policy changes. Two are of particular importance to the agricultural sector. First, price controls on all goods, except maize, maize meal, wheat flour products, and candles, were revoked. Second, the Kwacha was devalued by 20 percent against the SDR.

Although both these changes were effective immediately, it will be at least a year before their effects fully work their way through the rural system. The potential impacts are considerable. By removing price controls for most goods, the GRZ has removed a major constraint to private and public business activities in rural areas. In effect, the GRZ has legitimized the setting of prices based on the cost of production, transport, handling, and a return (or profit) for undertaking the activity. Rural shopkeepers now have an incentive to order goods from urban centers, traders now have an incentive to bring goods into rural areas and

A2

transport rural goods to urban centers. However the preliminary indicators from the GRZ are that farmers are still expected to market all their production through official GRZ agents (e.g., NAMBOARD and cooperatives).

By the same token, GRZ agricultural buying agents, are still restricted to offering only official prices. In essence, private marketing channels for government controlled crops will continue to be perceived as illegal.

The amount by which Zambia's parastatals will increase their prices to cover higher costs is not yet known. Parastatal managers probably will not seek to raise prices rapidly because of the perceived political impact of such changes on consumers and the evaluations the managers might receive from their superiors. Hence, the impact of removing price controls is expected to help the private sector more than the public sector in the near term. In any case, it will be several months before the details of how the deregulation of prices will actually be implemented by the GRZ.

The devaluation of the kwacha will improve the attractiveness of Zambia's agricultural goods in the world markets (i.e. Zaire, Zimbabwe, Europe, etc.). The effect, however, may not be dramatic in the short term due to bottlenecks in the present export system and the fact that the kwacha is still overvalued.

The agricultural sector appears to have begun to reverse its decline, which is significant in light of the continuing decline in the rest of the economy. Furthermore, these most recent changes suggest further improvements in the performance of the agricultural sector can be expected. However, there are areas where substantive changes could still further improve the sector's performance. Presented below are the major remaining policy constraints which have not been addressed by the GRZ.

C. Major Policy Constraints

(a) Uniform National Producer Pricing

Although adopted for the purpose of decreasing income inequalities between agricultural producers, particularly the commercial farmers and traditional farmers, uniform pricing has not had its intended effect. As was seen in the previous sections, the major beneficiaries of the present system appear to be the commercial farmers.

Uniform national producer prices also has the impact of ignoring the comparative advantages different regions throughout the country have for growing various crops. In Zambia, this negative impact is exacerbated because producer prices are based on the

XA³

Estimated cost of production on large commercial farms. Transportation, handling and distribution costs are not accounted for in the GRZ's producer price calculations. Most of these costs are absorbed by the GRZ. Because most of Zambia's producers are not commercial operations, the commercial farms cost of production data are largely irrelevant. On average, the smallholders are believed to have lower monetized production costs than the commercial farms. As a result, the artificially higher prices for crops, particularly maize, promotes inefficient crop production patterns. Smallholders now receive a greater incentive for the production of those crops favored by GRZ price increases. That in itself is not necessarily bad; however, because transportation and distribution costs are not accounted for in the farmer's production decision matrix, the small holder in an isolated area far from any markets has the same price incentive to produce maize as a farmer along a major transportation artery. Not accounting for the transportation costs of various crops favors low value, high bulk crops. For example, on a per metric ton basis, maize has a lower value than wheat, rice, soyabeans, groundnuts or cotton. Thus, if transportation costs were accounted for, maize might not be a profitable crop for the isolated farmer to produce. In a more free market situation the isolated farmer would probably not grow maize because he would have had to account for the cost of transport and handling. From the economic perspective of the nation, the transportation costs should be included in the calculations of which crops to grow where. The present pricing system ignores the economies of location or comparative advantage.

Given Zambia's present distribution of producers, it is not unexpected that the GRZ transportation subsidy has become significant. In 1975, the World Bank Rural Sector Survey found that government subsidized transport costs per metric ton of maize from a large number of rural purchasing points to rail heads averaged about 60% of the cost of the maize. In some cases the percentage was nearly 90%. Since the domestic transport situation did not improve markedly after 1975 and the cost of petrol, oil, etc. have increased, the transport and handling subsidies have grown. In 1976, the maize handling subsidy to NAMBOARD was estimated to be under K25 per metric ton while by 1981 the average transport handling subsidy to NAMBOARD and the cooperatives was over K95 per metric ton. In comparison, the price of maize was K130 per metric ton.

The negative impact of the uniform national pricing policy is expected to be only partially mitigated by the removal of most price controls. The price of maize, and maize flour, the single most important crop still is controlled. For other crops, the effect of uniform pricing will be nullified in areas where the market determined price is above the official price offered by the GRZ, but will impact on production decisions in areas where

AA

the official price is above the market determined price.

(b) Uneconomic Relative Crop Pricing

Maize prices have increased in absolute and relative terms faster than virtually any other crop in Zambia, definitely faster than any other food crop (See Table 9). Between 1976/77 and 1981/82, wheat, rice, soyabeans, groundnuts, sorghum, millets, and seed cotton all lost ground. The average annual loss of other crop prices against maize prices was 8.2% per year during 1967/69-1979/80 and the loss increased to 9% per annum during 1979/80-1981/82.

This pricing policy provides additional incentives for maize production at the expense of other crops. If the availability of labor is an important constraint to increasing production, then these policies would tend to reduce the acreages of other crops as producers shift into maize production, because the per unit returns for maize are higher and farmers do not have to grow as much to achieve the same level of cash income.

A point frequently made is that domestic producer prices should at least approximate the import parity or world market prices for the same goods.* The rationale is that the agricultural sector is being implicitly taxed if domestic prices are below import parity and this acts as a disincentive for increased production. This argument becomes particularly applicable when the government has to import the same food at a higher price to meet domestic demand which is the case in Zambia. In Zambia, during the late 1970s, domestic prices were below import parity prices for most crops, the exceptions being wheat and rice (two crops for which Zambia does not seem to have any real agro-ecological potential for producing efficiently). The GRZ price increases since 1979/80 has resulted in gains on the world prices for most goods. (See Table 10).

During 1980/81-1981/82, Zambian producer prices were above import parity for most crops except sorghum and seed cotton (two crops for which Zambia has a significant agro-ecological potential for producing effectively). The domestic maize price has improved steadily against the import parity prices, rising from an average of 59% during 1973-1976/77 to 119% during 1980/81-1981/82.

An important assumption of this comparison is that the present exchange rate properly reflects the value of the Kwacha. There is considerable evidence that is not the case. Some observers (IMF in particular) feel the exchange rate may be over-valued by

* This following comparison was completed before the Kwacha was devalued 20% against the SDR and time precluded updating the analysis.

x45

at least thirty percent. The extent to which this is true affects the above comparisons. In essence, the effect would be to reduce the gain the GRZ has made on import parity prices. (See Table 10). For example, if the actual "shadow" exchange rate was equivalent to a thirty percent devaluation of the Kwacha, then the maize price including the fertilizer subsidy would be only 6 percent above the import parity price in 1981/82, down from unadjusted level of 51 percent. Even if this is the case, it should not be forgotten that gains have been made, although perhaps not as much or as uniformly distributed as would have been liked.

(c) Subsidized Inputs

The GRZ also has a policy of subsidizing various agricultural inputs, the most important of which is fertilizer. What started out as a small program by the GRZ to increase the use of fertilizer by Zambian farmers has turned into a major expense. In 1972, the fertilizer price and handling subsidy to NAMBOARD for 112,800 MT of fertilizer sold was K3.7 million. By 1980, NAMBOARD's subsidy for fertilizer increased to K50.0 million for 196,361 MT sold, almost a 14 fold increase for only a 74% increase in sales. (See Table 11). In 1981, the fertilizer subsidy to NAMBOARD declined by K12 million. While fertilizer subsidies have been reduced, a sizeable subsidy level still remains (an estimated 28 percent for 1983).

Fertilizer subsidies promote the use of fertilizers more than would be the case in their absence. In Zambia, most of the fertilizer is believed to be used on maize and most of that by commercial farmers. In addition to being another incentive for maize production, it is an income transfer mechanism to those farmers that use it. In essence, the GRZ is transferring income (in the form of reduced fertilizer prices) to the farm group in Zambia whom it was not trying to help. This policy is biased against traditional farmers, particularly those who do not have access to fertilizer due to lack of credit or distribution.

(d) Uneconomic Relative Pricing for Consumption

The GRZ also subsidizes maize consumption in order to maintain low urban prices for its major foodstuff. The total subsidy costs per bag of maize handled by the GRZ are substantial. (See Table 11). For the 1980/81 crop season, total official maize purchases and imports were valued roughly at K104 million (US\$120.0 million) which is equivalent to 9.5 million bags of maize. Preliminary (and conservative) estimates of GRZ subsidy outlays to NAMBOARD and cooperatives are K78.0 million and K16.0 million respectively. Thus, total subsidy outlays are K94.0 million (US\$110 million) or equivalent 90% of total GRZ outlays for maize purchases. Based on past trends, roughly 40 percent of the subsidy is for fertilizer, another 50 percent is for maize handling and distribution and the

remainder for other input subsidies (i.e., seeds). From comparing this subsidy element to the consumer price of maize, it can be readily understood why the consumption of maize has been stimulated relative to the other less subsidized or unsubsidized staple food crops.

The final beneficiaries of these GRZ policies are the urban populace who pay lower food prices, particularly for maize. However, the low staple food prices have not guaranteed sufficient quantities of staple foods at official prices. Parallel markets have risen in these and other "controlled" food commodities,* although they are thought to be relatively small due to the GRZ's policies which have reduced the importance of the private traders in agriculture. In rural areas sorghum, beans, and millet are often more expensive than the controlled price for maize. Even in cities, the unofficial market price of cassava flour, if and when available, has been reported at roughly two times the official consumer price of maize flour.

The consumption of these staples often is constrained to "filling in" the market when maize or other cheap foods are not available. Even though these staples can be grown more cheaply than maize in many areas, it is difficult to compete with the GRZ's relatively high producer prices and relatively low consumer prices for maize.**

To summarize, the main impact of the GRZ's pricing policy has been to favor maize production (due to the relatively high producer price) and favor maize consumption (due to the relatively low consumer price). This has reduced the profitability of producing and distributing other crops. It also results in the country becoming more of a monoculture crop economy. Although not discussed here, there are probably significant nutritional implications of this trend. Neither the freeing of price controls for most commodities nor the devaluation addresses the problem caused by the policy favoring maize production and consumption.

(e) Uneconomic Markets and

Inefficient Marketing Parastatals

Virtually all of Zambia's marketing parastatals receive subsidies annually. NAMBOARD, even after the reorganization, still gets the largest share of all the subsidies passed out annually. To be fair, a large part of NAMBOARD's problems, which is also the case for the other parastatals, is having to operate within the GRZ's legislated price structure. This system does not allow NAMBOARD the possibility of turning a profit. Maize purchased from farmers

* See recent Food Strategy Study (1982) for more details.

** This conclusion is also supported by Alan Martin, "Cassava or Maize: A comparative study of the economics of production and market potential of cassava and maize in Zambia", Rural Development Studies Bureau, University of Zambia, 1978 and Doris Dodge, "Zambian Agricultural Pricing and Marketing Policy", (July 1979).

KA 7

is sold to millers at one kwacha above the purchase price. (This is an "improvement" because prior to 1981, maize was sold to millers at prices below what the farmers received). Thus, to operate NAMBOARD has to rely on GRZ transfers to cover its handling and distribution costs. As noted earlier, it remains to be seen as to how fast the parastatals' prices will increase as a result of the new price deregulation policy.

However, a more important problem which leads to the development of an inefficient marketing system is the lack of incentive parastatals have to become efficient. If losses increase, the GRZ will bail them out. Because of this situation, the total cost of this system increases.

The other major problem of this type of price setting and marketing system is that a considerable amount of managerial talent is required to run it, not only at the top but at the middle and lower levels too. As noted in virtually all reports on Zambia, trained manpower is clearly a major constraint throughout the government. Most skilled people often leave to work in the formal private sector or the mining sector where salaries and "perks" are better.

The reliance on budgetary transfers to cover operating expenses has caused serious cash-flow problems for the parastatals because the GRZ has been increasingly slow in approving the transfers. (This is its response to its own financial crisis). This has pushed the parastatals into the commercial credit market where they have soaked up credit which might otherwise have gone to productive activities (i.e., private sector investment).

A significant benefit of the agricultural marketing reorganization has been that the marketing responsibilities, as well as for input distribution, has been placed into the hands of the cooperatives (e.g., farmers). Although not all the country's cooperative unions are ready for this responsibility, those who are ready seem generally pleased with this change.* As was noted earlier, the GRZ has been slow in reimbursing the cooperatives for their expenses, hence placing them into severe cash flow problems.

The GRZ has publicly stated that it wants the cooperatives to play a major role in agriculture. However, the present situation requires that the cooperatives receive support to survive and grow. Although the Cooperative Federation (the umbrella organization for all provincial Cooperatives) actively works for its members interests, it still could turn into an organization which responds obediently to GRZ demands. If this occurs, then Zambia will once again have a NAMBOARD, but with a different name.

*Based on discussions with cooperative movement leaders and MAWD personnel.

16

(f) Other Constraints

Other constraints on agricultural performance are the lack of credit, agricultural information, appropriate agricultural research and extension, and restrictive land tenure laws. These other constraints, however, are viewed as less important than the pricing and marketing policy constraints. The two most important macro policies that impact negatively on the sector are the overvalued exchange rate and low interest rate policies which are discussed in the macro economic section.

D. Prognosis

The changes in the last several years show that the GRZ is committed towards incentive pricing for producers, and reduction in consumer and fertilizer subsidies. However, there are still problems in these areas and, as a result, the net effect on the agricultural sector has been to suppress production and incomes below what they could be. While the recent policy changes (removal of price controls and devaluation) are significant, and will, in all probability, stimulate the sector, the net effect of these changes will be dampened by the remaining constraints. Of particular importance is the GRZ pricing policy bias which favors maize production (relatively high producer price) and maize consumption (relatively low consumer price). Also of importance is the impact of the maize and fertilizer subsidies on the GRZ's budget. Their sheer size constrains the amount of productive investments which are possible.

The GRZ cannot afford to continue its present pricing and marketing policies which are sending signals to the economy that have resulted in misallocation of resources. As a result, AID/Zambia's major program thrust will continue to be to assist the GRZ in developing an agricultural development strategy and policy environment commensurate with the sector's potential and the GRZ's resources. AID/Zambia will actively support policy reforms which (1) continue to reduce both consumer and producer subsidies; (2) improve the flow of financial and credit resources to agriculture; (3) improve regional food production and consumption patterns; (4) improve the marketing system; and (5) improve access of the rural population to essential consumer goods. Information gathering, analysis, and training are major components of all the above. The relationship of this CIP to AID/Zambia's program thrust is discussed in detail in Section V.

The following table shows the average general fertilizer recommendation for the most important crops:

X49

Fertilizer Recommendations in Kg per hectare
Level of Management

<u>Crop</u>	<u>Improved</u>	<u>Top Commercial</u>
Maize	200 X + 200 A/N	300 D + 300 Urea
Cotton	200 X	300 D + 100 Urea
Soyabean	200 D + inoculum	300 D + inoculum
Sunflower	200 D	300 D + 100 A/N
Tobacco	300 C	600 C

Source: Research Branch, MAWD

It should be noted that the rate of recommended fertilizer input is related to managerial ability. The Southern, Central and Eastern Provinces have the most favourable soil and climatic conditions for arable agriculture and it is in these areas that large scale production of most field crops is found. The average expected response to the use of the recommended levels for these areas is shown in the following chart:

Crop Yield Levels and Response to Fertilizers
in Kg per Hectare
Level of Management

<u>Crop</u>	<u>Traditional</u> <u>(no fertilizer)</u>	<u>Improved</u> <u>(small and medium)</u>	<u>Commercial</u> <u>(large scale)</u>
Maize	900	3600	6-9000
Cotton	500	1500	2-3000
Soyabean	200	1000	1500-2500
Sunflower	200	700	1000-1200
Tobacco	400	800	1000-2000

Source: Research Branch, MAWD

The above chart assumes fertilizer applications in the range described in the previous table and acknowledges that the response may vary by plus or minus 20% according to the area, rainfall and numerous other variables. However, top commercial yields are consistently achieved on many of the better managed farms. In order to realize a more efficient use of fertilizer and to maximize the economic return to farmers, fertilizer response curves should be established for specific crops according to soil type and the level of management.

Although research station trials and a limited number of case studies

on farmers fields which estimate the impact of fertilizer are available, there is a dearth of information which would allow the estimation of the actual impact of the present supply of fertilizer on agricultural production. The unreliable estimate of total maize production is just one example of the problems faced in quantifying the actual impact of fertilizer.

As a second best solution, an attempt was made to evaluate the importance of fertilizer in explaining the level of officially marketed production. When the level of officially marketed maize was correlated with the level of fertilizer sales (excluding tobacco fertilizers) for the last ten years, a significant (49%) relationship was found. This suggests fertilizer is important in explaining the level of officially marketed maize.

Next, a simple ordinary least squares (OLS) regression was estimated with the level of officially marketed maize as the dependent variable to be explained by the previous year's real price of maize, the previous year's real price of maize adjusted for the effect of the fertilizer subsidy and the level of fertilizer sales.* These three variables accounted for roughly 85 percent (adjusted R^2) of the variation in officially marketed maize production. It should be repeated that this was a preliminary analysis with a small set of data and thus these conclusions are tentative.

Even though any conclusions drawn must be tentative, they do appear to support theoretical expectations. Fertilizer sales, hence the availability of fertilizer supplies appear to be a significant determinant of the level of officially marketed maize. By the same token, the previous years' real price for maize with and without the fertilizer subsidy also appears to be significant explanatory factors. This suggests that while the real prices of maize and the size of the fertilizer subsidy affect the supply of officially marketed maize, the availability of fertilizer is also important. Furthermore, based on the above regression, the availability of fertilizer may be more important than the real price of maize including the fertilizer subsidy. This suggests the supply of fertilizer to Zambia is important to maintaining food production in Zambia. In fact, the estimated relationship suggests that a ten percent decline in fertilizer sales will result in over a 25 percent reduction in the level of maize marketed officially.

* The correlation between the real price of maize and the real price of maize adjusted for the effect of the fertilizer was an acceptable 50 percent. The correlation of fertilizer sales with these two price variables showed an insignificant relationship. The previous year's prices were used because GRZ price changes prior to 1980/81 were usually announced too late to affect the crop season during which it was announced. A variable for the effect of weather was constructed and correlated with officially marketed maize, but was found to be insignificant, suggesting that the weather variable constructed was incorrect and/or the quality of the data is poor.

Before too much credence is placed in these results further research is required.*

Another question which remains difficult to answer is whether farmers would dramatically alter their purchases of fertilizer if the price increased, for example, as a result of a reduction in the fertilizer subsidy. One study** suggests that the benefits of using fertilizer are substantial enough that fertilizer sales are relatively insensitive to changes in price. This conclusion is supported by officials and other observers of agriculture in Zambia. However, what the magnitudes of the changes in fertilizer prices could be and still not dramatically affect fertilizer sales remains an open question.

Illegal exports of fertilizer probably are occurring, but the levels are believed to be insignificant, particularly in light of the benefits of using it for maize production. There appears to be a larger profit in illegally exporting maize and maize flour. As noted earlier, these are estimated to be between 45,000 MT and 90,000 MT per year.

In summary, the usage of fertilizer can result in substantial increases in production.*** The actual impact of fertilizer in Zambia is more difficult to determine at the present time, although preliminary indications are that its availability does explain over 40 percent of the variation in officially marketed maize. By the same token, the actual sensitivity farmers have towards fertilizer price changes and the level of illegal fertilizer exports are unclear.

* The reason why there appears to be a significant percentage decline in officially marketed maize production as a result of a decline in fertilizer consumption is due to the base from which the percentage is calculated. For example, if total production declines, a farm family will probably ensure that its needs are met before it sells its surplus. In percentage terms, a 10 percent decline in total production may easily result in an 80 percent decline in officially marketed production if the family's marketed surplus was around 10-15 percent of total production. The same analogy applies to the estimate derived from the preliminary analysis regarding the impact of a change in the supply of fertilizer.

** Dodge, ibid, p.iv.

*** Comparing the rise in fertilizer consumption with a constant per capita food production during the same period can be misleading. The fact is that production has kept pace with a high rate of population growth in Zambia, whereas in much of Africa it has not. Furthermore, given the high rural to urban migration rates, the working rural labour force has grown at a rate considerably less than the population growth rate. This implies that those remaining in the rural areas have been relatively effective in increasing output. Fertilizer was undoubtedly a factor in this increase. As noted in the paper, a large proportion of the productivity gains are attributable to the commercial farm sector, which annually uses an estimated 50 percent of the total available fertilizer. This sector has improved its productivity continuously since Independence, except for the 1976-1979 period.

E. Usage and Impact of Fertilizer

A glance at any soils map of Zambia indicates the generally low inherent fertility of the soils. Large areas of naturally fertile soils are not found where high sustained yields could be obtained without the use of fertilizer. Acceptable responses to the three major nutrients commonly required by all plants, i.e., nitrogen, phosphorus and potassium, have been established through the large amount of high quality research work accomplished by the Ministry of Agriculture's Research Branch. Even though Zambia's soils are considered to have low inherent fertility, they have high potential for crop production provided adequate levels of fertilizer are used. Nitrogen is required in fairly large amounts for all but leguminous crops, but this is not unexpected with the 1-3% organic levels found in Zambia's soils. Relatively modest amounts of phosphorus, potassium and sulphur are required. Sulphur deficiency is widespread and good responses to sulphur have been observed. Of the minor elements studied only boron has been shown to be required, although zinc and molybdenum deficiencies have been established in particular situations. Of the field crops cotton has been shown to be particularly susceptible to boron deficiency.

From the 1960-1970 decade of research findings, the composition and nutrient ratio of the recommended fertilizer mixtures were established. The mixtures are formulated specifically for Zambian conditions and are designed for multi-purpose application. Table 13 shows the compound fertilizers with their respective formulations and the main ingredients necessary for their manufacture by the Nitrogen Chemicals plant in Kafue. Ammonium nitrate has been produced by the plant for several years while the NPK mixture formulation began production in 1982.

F. Fertilizer Marketing System

NAMBOARD has the primary responsibility for fertilizer distribution and operates 14 major depots covering all provinces. Up to this current season NAMBOARD also operated over 450 permanent rural depots but now these are being turned over to the agricultural cooperative unions. The expected problems associated with a turn-over of responsibility of this magnitude are currently being experienced and it is reasonable to assume that fertilizer distribution and maize buying will be very problematic this season. As already suggested, many if not most of the cooperatives have insufficient resources and lack the trained personnel required to rapidly assume the task of servicing all the rural areas.

To date the cooperative unions have focused more heavily on purchasing crops rather than selling inputs. It has been reported that in 1977, cooperative unions operating in four provinces purchased 83 percent of all official maize bought but sold less than 15 percent of fertilizer marketed.

The GRZ has been following the policy of maintaining a one year

supply of fertilizer composed of in-country stock and import shipments in the pipeline. This is justified in view of Zambia's long history of difficulties in meeting farmer needs on time. Factors such as (i) limitations in domestic transportation capacity, (ii) congestion in the ports and inland transportation routes, and (iii) the ever present problems of obtaining necessary foreign exchange are reasons for maintaining such a large pipeline and inventory level. Appendix D shows the current stock position in the country.

G. Key Institutions

Prior to Independence in 1964, Zambia relied on inputs of all types to be supplied by its southern neighbour Rhodesia, which were marketed through the three commercial companies, Fisons, Rodia and Windmill. A large range of maize and tobacco mixtures and straight fertilizers were imported directly at competitive prices. In 1968 the National Agricultural Marketing Board became the sole supplier to the farmer following the nationalization of the commercial companies. Consumption of fertilizer more than doubled in the ten years following Independence, i.e., from 38,000 metric tons of compounds and ammonium nitrate to 80,000 tons in 1974. In the last eight years demand has dramatically increased to the estimated consumption of a total of 238,000 tons for 1982.

GRZ has a strong commitment to NCZ and has provided the capital for expansion. By 1985 the plant expects a production capacity of about 186,000 tons of ammonium nitrate and compound mixtures. This production requires the importation of substantial quantities of raw materials. However, possible future exploitation of local supplies of rock phosphate and regional supplies of phosphates could lower the foreign exchange requirement of this production.

Listed below are the major institutions involved in the fertilizer sub-sector and a brief description of the functions they perform:

1. National Fertilizer Committee

The National Fertilizer Committee advises NAMBOARD and the NCZ plant on the type and quantities of fertilizer to be imported and/or produced. Committee members include representatives from the Ministry of Agriculture and Water Development (MAWD), Nitrogen Chemicals of Zambia LTD. (NCZ), National Agricultural Marketing Board (NAMBOARD), Bank of Zambia (BZ), Commercial Farmers Bureau (CFB), Tobacco Board of Zambia (TBZ), and NAMBOARD's bankers.

2. National Agricultural Marketing Board (NAMBOARD)

NAMBOARD has been the most significant of all institutions

EA

involved in the fertilizer sub-sector in that it has carried the responsibility for the importation, storage, distribution and marketing of fertilizers. It now shares the distribution and marketing functions with the Provincial Cooperative Unions.

3. Provincial Cooperative Unions

The Cooperative Unions through their primary societies have within the past two years received responsibility for the marketing and distribution of fertilizer from NAMBOARD. This function is being assumed in all of Zambia's nine provinces. NAMBOARD will sell fertilizer to the cooperatives from their 14 regional depots.

4. Nitrogen Chemicals of Zambia Ltd.

Nitrogen Chemicals of Zambia Ltd. (NCZ) is the sole industrial manufacturer of fertilizer in Zambia. The capacity to produce fertilizer mixtures has been added this past year to augment and utilize the ammonium nitrate production. By 1985 the plant should have the capacity to satisfy approximately 60% of total domestic fertilizer demand.

5. Central Supply and Tender Board

The Central Supply and Tender Board tenders for the fertilizer requirements on behalf of NAMBOARD.

6. National Commission for Development Planning

The National Commission for Development Planning (NCDP) is a GRZ unit partially responsible for determining fertilizer prices. NCDP helps set prices in consultation with NAMBOARD, subject to approval of the Cabinet and the Office of the President. Maintaining a fair rate of return for the producer is considered the main criteria for price policy.

7. National Council for Scientific Research

The National Council for Scientific Research coordinates the agricultural research activities for the nation.

8. Ministry of Agriculture and Water Development - Extension Services

Zambia has 12 research stations and 17 zonal sub-stations to research and field test fertilizer products and make recommendations. The Extension Service has the responsibility to undertake promotional activities such as on-farm fertilizer trials, farmer meetings and to advise farmers on fertilizer use, rate and method of application.

V. PROPOSED U.S. ASSISTANCE

A. Problem Identification

Zambia has severe shortages of foreign exchange and a large negative balance of payments position. There are few forward and backward linkages between industries and Zambian internal requirements for goods and services. There is a definite need to increase food production to meet the nation's requirements. These weaknesses in the economy and agriculture sector have been discussed at some length in previous sections of this document.

The size and complexity of Zambia's problems and the range of alternative solutions must be studied in light of the resources available, the Zambian capabilities, the level of acceptance and support from the populace, and the time horizon for such solutions. Donor assistance could be given in many different ways, yet a diffuse effort with limited resources may not have the desired impact on the problem area being addressed. AID/Zambia approaches the problem by concentrating its efforts in a limited field where the impact of assistance can be significant.

In the past, the CIPs and overall AID/Zambia strategy has been concentrated on the agriculture sector as the area with the greatest potential for sustained growth, individual initiative, and with major significance for the nation as a whole. Within the agriculture sector CIP imports have been concentrated on fertilizers in recent years. This concentration of effort has been done for a number of reasons:

1. Zambian agricultural production (particularly maize) is highly dependent on fertilizer. The soils require and respond well to proper fertilizer and the yield potential increases dramatically with appropriate inputs.
2. Fertilizer is used by farmers at all levels of operation. The bulk of fertilizer is used by the target population of small farmers.
3. Fertilizer usage increases production and income for the farmer. The financial returns from proper use are significantly greater than the cost of the fertilizer itself.
4. AID assistance can (and has) constitute a significant percentage of the fertilizer requirements. The AID program will thus have a major impact on agriculture in Zambia.
5. Procurement and transport of fertilizer materials imported from the U.S. can be achieved fairly quickly and efficiently. The involved Zambian institutions have experience with these commodities and delays can be minimized.
6. U.S. fertilizer material prices are amongst the lowest in the world. Even with shipping costs included, U.S. products are competitive with those of alternative sources. AID assistance can therefore fund amounts of materials similar to those that could be procured from other sources.

X 157

7. Zambia is dependent on imports for a minimum of some 40% of its fertilizer requirements and must use foreign exchange to purchase it. This minimum import requirement is based on the assumption of full production at the NCZ plant. The need can partially be met through AID at a substantial saving to Zambia.

These are the major factors which have encouraged AID to provide fertilizer products under the CIP. The assistance helps with foreign exchange and BOP difficulties in Zambia, it can help with linkages between industry and agriculture, raw materials and input requirements, and with the need to increase food production. The completion of the Nitrogen Chemicals of Zambia (NCZ) fertilizer factory expansion has opened up a possible use of fertilizer products through this facility. The reasons given for AID assistance in fertilizer procurement would hold valid if NCZ is to be used as the channeling agent for fertilizer products. The following section reviews the advantages and disadvantages of utilizing NCZ as the vehicle for AID assistance, as compared with the alternative of assistance with the procurement of finished fertilizer compounds.

B. Description of Proposed Assistance

In view of the GRZ balance of payments difficulties, shortage of foreign exchange, weaknesses in linkages between industries and agriculture and the Zambian objective of food production self-sufficiency, as well as AID willingness to provide assistance in these areas, it is proposed that AID lend the Government of Zambia U.S.\$20 million from the Economic Support Fund. The concessionary loan will be in the form of a commodity import program to provide needed foreign exchange, support the GRZ effort to construct an integrated agricultural infrastructure, support efforts to increase food production, and raise farmer income through increased yields. Local currency will help strengthen the agriculture sector. Support measures and local currency attributions are discussed in Section V.C. Determination of attributions are to be decided jointly by AID/Zambia and the GRZ.

As proposed by AID/Zambia and requested by the GRZ, the loan will be used to procure raw materials used in the manufacture of fertilizer compounds. The requirements are estimated as follows:

<u>Raw Materials</u>	<u>Quantity (in metric tons)</u>	<u>Landed Cost</u>
Di-Ammonium Phosphate	13,000 tons @ \$470 each	6,110,000
Triple Super Phosphate	20,000 tons @ \$445 each	8,900,000
Potassium Sulphate	1,000 tons @ \$490 each	490,000
Chemicals and Catalysts	1,000 tons @ \$1600 each	1,600,000
Coating Agents	1,000 tons @ \$540 each	540,000
	sub total	\$17,640,000
Contingency and Inflation		2,360,000
	total	\$20,000,000
		=====

These materials, coupled with the amount of raw materials that NCZ should have in stock at the end of FY 1982/83 (see Appendix E), will allow for the production of 93,000 tons of compound fertilizers (X and R) used principally in maize and wheat production. The materials include 5,000 tons of TSP and 2,000 of DAP that can be used for the production of some 20,000 tons of compound D, used principally by commercial farmers.

The FY 1983 CIP is an integral component of AID/Zambia's overall program of increasing food production and of raising small farmers' income. The program ties in with PL 480 program efforts to assist with foreign exchange problems and to provide essential food supplies. Both the Zambia Agricultural Training, Planning and Institutional Development Project (611-0075) and the Agriculture Research and Extension Project (611-0201) are designed to improve the agricultural sector through research and planning improvements, which are also an integral part of the overall program and have the same ultimate goals.

C. Support Measures and Local Currency Generation Uses

Under the FY 1983 CIP loan several measures supportive of the AID/Zambia program will be negotiated with the GRZ. These measures are consistent with the goals of increased food production and increased farmer income. In order to achieve these goals AID/Zambia is assisting the GRZ in its efforts to accelerate growth in the agriculture sector by both increasing and redirecting investment resources, by developing food production incentives including pricing policies, by improving government management of the sector (including the reduction of subsidies), and by improving the marketing system. These measures are important elements of the AID/Zambia strategy. They are another advancement in the policy dialogue with the

X59

GRZ and a continuation of support measures included in past and current CIP loans and PL 480 agreements.

Zambia is not self-sufficient in food production. The nation will need to import an excess of 100,000 tons of maize in the next few months. Importation of wheat and rice will be required together with other basic foodstuffs. Given the need for self-sufficiency in food production, increases are definitely required. The support measures are directed toward that end. The means for achieving production increases are seen as strengthening the overall ability of the agriculture sector, eliminating false economies and developing the means to plan and research for the future needs of the country.

The two strategic target areas in the agricultural sector which AID/Zambia has selected for priority attention in FY83 are agricultural pricing policies and market development policies. In the first area, AID/Zambia, in an effort parallel with that made by the IMF and IBRD, has concentrated on increasing producer prices (primarily for maize) and on reducing GRZ subsidies of consumer maize prices and of fertilizers. The GRZ has substantially increased not only producer prices paid to farmers for many food crops, but also has provided a number of other incentives as well. The support measures for this loan will continue these initiatives by helping the GRZ to maintain incentive producer prices and to reduce fertilizer subsidies.

In the area of market development policies, AID/Zambia efforts will be to assist the GRZ in the decentralization of crop related input/output marketing functions (helping to reduce NAMBoard responsibilities and passing them on to provincial cooperatives in a move away from GRZ domination and towards a more open and flexible marketing system). Such changes cannot be implemented overnight, as time is needed to adjust distortions and imbalances in the current system. Some provinces (e.g., Southern and Eastern) have a more developed marketing infrastructure, whereas in provinces such as Western and North-Western a developed infrastructure does not exist. Some provinces have only recently established provincial cooperative unions and some time is required to establish them and the primary societies.

AID efforts will be supportive of those GRZ policy and resource decisions which lead to more viable and self-sufficient marketing organizations and toward more competitive and realistic prices of food crops, reflecting their relative supply and demand relationships. This approach has been successful and a reflexible negotiating stance is necessary given the political and economic realities of Zambia today.

Under this agreement it is recommended that the Government of the Republic of Zambia:

- a. Continue appropriate incentives, especially in pricing structures, to farmers and marketers for the encouragement of production increases in maize and other food crops needed to meet national requirements. The level of incentives should be determined through a careful review of production and marketing costs.
- b. Continue to reduce the subsidies present in the sale of fertilizers and of produce sold to millers or consumers. Parity with equivalent import costs of these goods should be met within a specific time period (especially for maize and fertilizers). Subsidies/restitutions paid by the GRZ for marketing, transport, storage, handling and overheads of agricultural products should be eliminated within a mutually agreed upon time period (perhaps within five years) and these expenses should be included in the sale price of the commodities.
- c. Continue to conduct a series of reviews and studies which address critical agricultural issues and that will be used to help guide GRZ policies. Such analyses would include: a review and analysis of current export/import policies which affect the agriculture sector; a review of current technological recommendations for all crop inputs; a study and analysis of the potential for procuring raw materials locally for fertilizer production; a review and study of agricultural input requirements and availability in Zambia; and production costs of agricultural products from planting to consumption.
- d. Decide jointly with AID/Zambia the utilization of the local currency attributable to this loan agreement and meet periodically to review the progress made to date. The priorities for the use of these currencies are: to support price incentives; to strengthen the agricultural infrastructure through assistance to the marketing system; to provide local currency for certain studies and reviews; and to assist with the improvement of agricultural management and technical capabilities.

The kinds of incentives to be used to encourage farmers and marketers and increase production are basically to create a structure in which market forces and actual costs dictate the prices they are paid (a fair margin above their costs). The

X61

support measure concerning studies includes suggested topics, such as cost analyses and pricing structures. The results of such studies should be used as the basis for any decisions on pricing made by the GRZ. GRZ decisions must provide encouragement to farmers and reward those who are most efficient and most productive.

The subsidies and restitutions now present in the agricultural sector should be eliminated, say within a five year period. These costs place a tremendous burden on the GRZ and do not truly assist the farmers (they reduce costs, but the prices paid for produce reflect this reduced cost). The restitutions do not cover marketers' (Cooperatives, NAMBoard) costs and payments are made very late. The sole beneficiary is the consumer, but those benefits are realized at the expense of the agriculture sector and the GRZ. The means of eliminating these shortfalls are to allow the cooperatives to charge farmers the cost price plus a small profit margin for the fertilizer purchased (initially at parity with the import landed cost of those fertilizers) and to allow the cooperatives and/or NAMBoard to charge millers the cost price of maize (including handling, transport, storage, and overhead costs) plus a small profit margin. This measure can only be carried out when all costs are known and could be enacted over a period of time (perhaps five years).

The GRZ, with the help of AID projects and other donor assistance, should continue to improve its capability to carry out certain studies and analyses. These improved efforts should address critical agricultural issues as suggested by the support measure. Costs of such research could be partially funded through local currency generations.

Quarterly meetings are to be held to review progress and to program local currency attributions. A number of uses of funds have been suggested. The suggestions to use funds to strengthen the agricultural infrastructure might see GRZ monies used for improving and expanding storage facilities and purchasing transport/storage equipment. This equipment could be granted or sold on loan to the cooperatives and NAMBoard. Funds could also be used to pay local costs of training seminars or education programs for farmers and cooperative staff, as well as appropriate GRZ staff.

These measures, in conjunction with other efforts to strengthen the agricultural sector in Zambia, will have a definite, positive impact on food production and income. These measures will be carried out over a period of time (perhaps five years),

but start-up should begin immediately. The result will be an enhancement of the framework for improved farm production levels and a potential for national food self-sufficiency and greater farm income.

V. D. Economic and Financial Analysis and Justification

The GRZ has requested assistance from AID for the procurement of fertilizer products. These products would be in the form of raw materials used to help support the Nitrogen Chemicals of Zambia (NCZ) fertilizer factory operations and to supply fertilizers to farmers. An alternative solution or option could be for AID to finance the importation of finished compound fertilizers. Both means of assistance are considered desirable by the GRZ, although the procurement of raw materials is considered more favorable by the GRZ and by AID/Zambia.

In the past AID has assisted the GRZ with both finished fertilizer compound imports and with raw material imports. In the FY 1980 CIP a portion of funding was utilized for raw material procurement, as was all of the FY 1981 CIP. The FY 1982 CIP did not provide for procurement of raw materials (as the NCZ plant had not fully utilized the FY 1981 commodities), but provided for finished fertilizer compounds. It will also provide some tractor spare parts.

Included in the FY 81 CIP PAAD was a description of the set-up and establishment of the NCZ fertilizer factory and its expansion. The plant, wholly owned by the GRZ, produces both fertilizer and explosive materials, as well as other minor products. The plant expansion has taken nearly five years to complete and was fully commissioned in 1982. The plant is currently operating at roughly 60% of name-plate capacity (manufacturer's estimate of optimal, 24-hour operations), using locally produced ammonium nitrate and imported raw materials. Current estimates for the period 4/82-3/83 indicate that production will total 47,000 tons of ammonium nitrate (AN) for fertilizer and 82,000 tons of various compound fertilizers. A portion of the AN (20,000 tons) will be used for compound fertilizer production. Given normal downtimes for maintenance and repairs, the optimal production projected for 1984-85 will be 62,000 tons of AN fertilizer and 106,000 tons of compound fertilizers (See Appendices D and E).

The NCZ fertilizer factory construction has been fraught with delays, cost over-runs, large financing charges, and "off-site" expenses. This has been compounded by the expensive coal defraction method of manufacturing ammonium nitrate (as opposed to natural gas or electrolysis) and the need initially to import some 75%-80% of the raw material requirements. The NCZ factory has been running at a financial loss and has been producing compound fertilizers at high financial costs, due largely to heavy finance and depreciation charges resulting from the earlier construction delays and cost over-runs, and in part to the attribution of certain local infrastructure expenses to the NCZ accounts rather than to the government development program. Operating expenses will decrease

64

rapidly as production becomes more efficient and as more inputs are produced locally (e.g., ammonium sulphate). Fixed costs will also decline with reduced financing charges and depreciation, but at a slower rate.

a. Economic Analysis

1. A sizeable savings in foreign exchange will be achieved by importing raw materials under this CIP for NCZ to process into finished fertilizer materials. Locally produced compound fertilizers have a direct foreign exchange cost of approximately \$310 per metric ton. This is the cost of transport and imported raw materials. Imported finished fertilizer compounds including transport costs are estimated at \$420 per metric ton. In direct foreign exchange costs an estimated \$110 per ton are saved. For the production of 68,000 tons of compound fertilizer (the amount directly attributable to AID-financed raw material inputs), the foreign exchange savings are US\$7,480,000. This will augment the direct support to the balance of payments deficit provided by the CIP funds themselves, and it will allow Zambia to import either 30% more fertilizer or an equivalent value of other commodities than it could if finished fertilizer compound were imported.
2. The NCZ plant operation uses local natural resources that would not be used if only finished fertilizer is imported. This includes coal from Maamba Collieries, water resources, hydroelectric power, pyrites and lime. A further potential for factory use is Zambian phosphates. Deposits of rock phosphate have been found along the Tanzania-Zambia border and they are currently being evaluated for possible mining.
3. Transport congestion has been a bottleneck to Zambian industry and commerce in the past. Imports of raw materials will mean that fertilizer transport requirements from overseas and/or African sources will be reduced by roughly 50% of that required to import finished fertilizer compounds. This would free up some 2,500 box cars (at 30 tons per box car). Actual tonnage shipped will be similar for either alternative but with the importation of raw materials twice as much fertilizer will be produced. Additionally, deliveries of raw materials could be staggered over the production period, thus not overloading the system at a given period nor burdening storage facilities.
4. The expansion plant/compound fertilizer factory currently has a muster roll of 613 employees. This level should increase to an estimated level of 780 employees by the end of 1984. Assuming an average family of six people, these employees represent a total population of some 4,700 people supported by the expanded plant.
5. An analysis was conducted to compare the economic costs to Zambia of producing fertilizer compounds at NCZ from the imported raw materials proposed for financing under the CIP with the alternative

X(65)

costs of importing the finished compounds directly. The analysis relied on data supplied by NCZ authorities, most of which is summarized in Appendix E of this paper. The results, presented in Tables 1, 2 and 3 of this section, indicate that the average variable economic costs of NCZ production, even without adjustment for appropriate shadow prices of labor and foreign exchange, are substantially (21-31%) less than the costs associated with importing the finished compounds at the current exchange rate. With shadow price adjustments to represent more accurately the opportunity cost of domestic labor and foreign exchange, the variable economic cost savings are even greater, 32-41% of the cost of importing the final products.

A marginal cost analysis provides the most appropriate guideline for a decision about whether to keep a firm in operation. As long as marginal revenues or benefits exceed marginal costs it will pay to keep the firm operational, even if the level of benefits is insufficient to cover all fixed costs as well. Since the fixed or "sunk" costs are incurred whether or not the firm is operating, losses are greater when the firm is not operating than when at least part of such costs are covered by revenues.

Due to the lack of sufficient data to calculate the actual marginal costs per ton of NCZ production, this analysis relies on average variable cost comparisons. As long as the NCZ facilities are operating at less than full capacity the average variable cost of production should be higher than the marginal cost of producing the next ton. Therefore, these estimates of variable cost savings over imports are probably less than actual marginal cost savings.

The analysis indicates that the total unadjusted economic costs of NCZ, including the fixed (sunk) economic costs of capital depreciation and interest or finance payments on foreign loans, are less than the average marginal costs of importing finished fertilizer compounds except for the first year (1982/83), when the average economic cost of NCZ production exceeds the imported cost by 7.3%. At the present exchange rate total net savings are positive in succeeding years as NCZ is expected to switch from imported petroleum fuel to cheaper domestically-produced coal-fired burners. With shadow prices to approximate the economic value of labor and foreign exchange, total net economic cost savings of NCZ will increase from a positive K47 (US\$28) per MT, or 5.9% of final good import costs in the first year to K187 (US\$110) per MT, or 24% of final good import costs in year 3 and thereafter. Thus it is clearly to Zambia's economic advantage to import raw fertilizer materials and have NCZ produce the final compounds, rather than to import the final products.

This economic analysis differs from a financial analysis in several ways. Domestic transfer payments, such as taxes, import duties, license fees and domestic interest payments, are eliminated as non-

106

economic costs, although interest payments due on foreign loans are included as an economic cost to Zambia. Domestic labor costs are valued at a shadow price of one-half their nominal levels, in recognition of the excessively high wage rates in the formal manufacturing sector of the economy, at a time of rising unemployment and underemployment, compared with the productivity of the vast majority (79%) of workers in the informal urban and rural sectors (which is less by a factor of 4). The effect of this adjustment is relatively small, reducing total variable costs in the first year analyzed by only 4%.

A shadow price is also used to approximate the true value of foreign exchange to Zambia, which is conservatively assumed in this analysis to be undervalued by 30% at the current Kwacha exchange rate. The recent 20% devaluation has restored the real trade-weighted purchasing power parity of the kwacha closer to its 1979 level; but declining terms of trade and increasing current account deficits on the balance of payments imply that the kwacha was already overvalued before its effective appreciation between 1979 and 1981. At a minimum, another 10-20 percent devaluation of the kwacha is probably needed to restore a semblance of equilibrium in the foreign exchange market, even with the relatively high levels of tariffs and quantitative import controls that can be expected to be retained. Such tariffs and controls, and continued borrowing abroad, will protect a continued over-valuation of the kwacha of at least another 15-20 percent, and possibly more. In view of these considerations, and the fact that the current blackmarket exchange rate is reportedly between US\$0.50 and 0.40 per kwacha, or 40-52 percent below the current rate, the shadow exchange rate used in this analysis is US\$0.587 = K1, 30 percent less than the current official rate of U.S.\$0.839 = K1. (Stated in reciprocal terms of kwacha per dollar, the shadow price used is K1.70 = \$1, or 43% more than the current rate of K1.19 = \$1.) The effect of this adjustment is to increase total variable costs in the first year by 28%.

6. The preliminary analysis presented in Section IV suggests that the level of fertilizer sales is one of the major determinants of the level of maize supplied to the official marketing channels. Therefore, a reduction in the supply of fertilizer (hence, sales) will, in all probability, result in a reduction in the quantity of maize marketed through official channels. Given Zambia's present maize supply and demand situation, a significant decline in the level of maize marketed through official channels would result in the GRZ expending foreign exchange to import maize in order to cover the domestic shortfall.

Given that the 1982-83 estimated compound fertilizer consumption is roughly 130,000 MT, the fact that the AID financed raw materials to NCZ will allow the production of about 90,000 MT of compound fertilizers (70 percent of 1982-83 consumption) suggests that AID assistance is significant. The preliminary analysis suggests that a roughly 90,000 MT decline in fertilizer sales would result in a decline in officially marketed maize by over 250,000 MT. It must be stressed that these results are preliminary; but the impact of a decline in the availability of fertilizer in Zambia would most likely be very significant.

x67

b. Financial Analysis

Time constraints preclude a thorough revision of the financial profit/loss and cash flow tables appearing in Appendix E of the original PAAD submission of August 1982. Table 4 presents summary revisions of the projected Profit and Loss Account, however, adjusted to reflect the 20% exchange rate devaluation of January 1983 and the GRZ assumption of a K93.3 million loan and its K11.5 million accrued interest charges deemed not properly attributed to the NCZ account. The adjusted cost account is then compared to revenue receipts that would accrue if NCZ were to charge average import parity prices for its fertilizer compounds. (As it is, NCZ charges NAMBOARD prices high enough to cover its costs and NAMBOARD sells the fertilizer at subsidized prices to the farmers, absorbing the difference.)

The analysis indicates that present import parity prices would be sufficient to cover projected costs by 1984/85, with a loss of only 3.7% in 1983/84. The loss in 1982/83, the first year analyzed, is a larger 14.3% of total costs, or K11.8 million. This is less than the amount charged against depreciation for that year, however, and more than half of it can be attributed to domestic interest and tax payments, which are transfer payments and not economic costs. By the second year the "loss" almost equals the required tax payments alone, and by the third year even these would be more than covered. If the kwacha exchange rate is further devalued, as some observers anticipate (and USAID recommends), import parity prices would be raised by a higher percentage than total costs and these comparative losses would be reduced or eliminated accordingly.

For NCZ to charge somewhat higher than present import parity prices in order to reduce these financial losses in the first two years can be justified on grounds that the kwacha foreign exchange rate is still over-valued, and that the current import parity price of fertilizer therefore undervalues its cost as an imported input. The fact that NAMBOARD subsequently sells the fertilizer to farmers at heavily subsidized prices, thereby increasing the GRZ budgetary deficit and possibly encouraging some farmers to use more fertilizer than is economically optimum, is a separate issue. The GRZ has agreed in principle to reduce or eliminate these subsidies over the next few years, and AID/Zambia continues to press toward this end. Such subsidies will to some extent affect the efficiency of resource allocations, but they do not materially change the basic economic justification for the proposed CIP presented in the preceding section. They are essentially politically motivated transfer payments within the Zambian society benefitting those farmers who use the fertilizer and those consumers who purchase the food produced at lower prices.

TABLE 1 VARIABLE AND FIXED ECONOMIC COSTS OF FERTILIZER PRODUCTION AT
NCZ COMPARED WITH AVERAGE IMPORT COSTS OF SAME PRODUCTS
(KIWACHA IN 1982 PRICES)

	<u>1982/3</u>	<u>1983/4</u>	<u>1984/5</u>
I. <u>At US\$1.045/K^{1/}</u>			
Ave. Import Cost /MT	450	450	447
Ave. Variable Cost/MT of Production at NCZ	<u>383</u>	<u>357</u>	<u>339</u>
Variable Cost Savings of NCZ Production	67	93	108
Fixed Economic Cost/MT of NCZ Production	<u>138</u>	<u>116</u>	<u>93</u>
Total Unadjusted Cost Savings (Loss) of NCZ Production (at 1982 FX rate)	(71)	(23)	15
II. <u>At US\$0.839/K^{2/}</u>			
Ave. Import Cost/MT	559	559	556
Ave. Variable Cost/MT of Production at NCZ	<u>440</u>	<u>403</u>	<u>385</u>
Variable Cost Savings of NCZ Production	119	156	171
Fixed Economic Cost/MT of NCZ Production	<u>160</u>	<u>134</u>	<u>106</u>
Total Unadjusted Economic Cost Savings (Loss) of NCZ Production (at 2/83 FX rate)	(41)	22	65
III. <u>At US\$0.587/K^{3/}</u>			
Ave. Import Cost/MT	799	799	795
Ave. Variable Cost/MT of Production at NCZ	<u>545</u>	<u>487</u>	<u>472</u>
Variable Cost Savings of NCZ Production	254	312	323
Fixed Economic Cost/MT of NCZ Production	<u>207</u>	<u>173</u>	<u>136</u>
Total Economic Cost Savings (Loss) of NCZ Production (adjusted for shadow prices)	47	139	187

1/ Average rate of exchange recorded for fertilizer imports in 4th quarter 1981 and 1982.

2/ Representing about 20% devaluation from Case I, effective 1/7/83.

3/ Representing a 30% devaluation from Case II, approximating the actual (shadow price) value of foreign exchange to Zambia.

Source: Tables 2 and 3

REDSO/ESA: C.S. Callison, 2/10/83

x69

**TABLE 2 - AVERAGE VARIABLE ECONOMIC COST OF FERTILIZER PRODUCTION
NITROGEN CHEMICALS OF ZAMBIA LIMITED (NCZ)
(KW 1000's IN 1982 PRICES)**

COST ITEM	1982/83		1983/84		1984/5	
	DOMESTIC COSTS	IMPORT COSTS	DOMESTIC COSTS	IMPORT COSTS	DOMESTIC COSTS	IMPORT COSTS
Raw Materials (incl. coal)	9301	19075	13990	14885	15587	20173
Fuel (excl. coal)	462	1844	488	1949	208	830
Chemicals & catan	247	986	283	1132	313	1292
Electricity	2120	-	2230	-	2300	-
Packing Materials	441	1764	508	2031	600	2400
Repairs & Maint.	725	2899	1160	4640	1188	4752
Others	-	200	-	200	-	200
Salaries & Wages:						
Adm	155	200	155	200	155	200
Mtg	4521	-	4521	-	521	-
Administrative Overhead	406	-	406	-	406	-
Guarantee Fees	-	100	-	100	-	100
Insurance	520	2080	524	2096	528	2112
VARIABLE COST	18898	29148	24265	27233	25806	32059
TOTAL	48,046		51,498		57,865	
÷MT Fertilizer Produced	125,300		144,300		170,450	
=Ave. Variable Cost/MT (at US\$1.043/kw)	383		357		339	
<hr/>						
Adjustment for 1/83 Devaluation (to US\$ 0.839/kw)		+7087		+6622		+7795
VARIABLE COST	18898	36235	24265	33855	25806	39854
TOTAL	55,133		58,120		65,660	
Ave. Variable Cost/MT	440		403		385	
<hr/>						
Adjustment for Shadow Domestic Wage Rate (-50%)	-2338		-2338		-2338	
Adjustment for Shadow FX Price (US\$0.587/kw) 1/		+15556		+14534		+17109
VARIABLE ECONOMIC COST	16560	51791	21927	48389	23468	56963
TOTAL	68,351		70,316		80,431	
Ave. Variable Econ. Cost per MT(kw)	545		487		472	
<hr/>						
Ave. Cost of Fertilizer with finished compound imports 2/ per MT/(kw):						
at US\$1.043/kw	450		450		447	
at US\$0.839/kw	559		559		556	
at US\$0.587/kw 1/	799		799		795	

11

- 1/ Representing a further 30% devaluation to approximate the actual value of FX to Zambia.
- 2/ To be comparable with NCZ production costs presented above, these averages include domestic costs of producing Ammonium Nitrate and Ammonium Sulfate, produced from domestic raw materials. Imported compounds are valued in average 1982 import prices, weighted by NCZ projected production schedule.

Source: Calculated from data supplied by NCZ

REDSO/ESA: C. S. Callison, 2/10/83

TABLE 3

FIXED ECONOMIC COST OF FERTILIZER PRODUCTION
NITROGEN CHEMICALS OF ZAMBIA LIMITED (NCZ)
(K1000's in 1982 Prices)

Item	1982/3		1983/4		1984/5	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Capital Consumption (Depreciation) 1/	4592	6889	4636	6953	4676	7013
Finance Charges and Interest 2/		4226		3551		2510
Preproduction Expense	<u>1636</u>		<u>1636</u>		<u>1636</u>	
Fixed Costs	<u>6228</u>	<u>11115</u>	<u>6272</u>	<u>10504</u>	<u>6312</u>	<u>9523</u>
Total	17,343		16,776		15,853	
MT Fertilizer Produced	125,300		144,300		170,450	
Fixed Cost/MT (K) (at US\$1.043/K)	138		116		93	
<hr/>						
Adjustment for 1/83 Devaluation (to US\$0.839/K)	6228	+2703 <u>13818</u>	6272	+2554 <u>13058</u>	6312	+2315 <u>11838</u>
Total	20,046		19,330		18,150	
Fixed Cost/MT (K) (at US\$0.839/K)	160		134		106	
<hr/>						
Adjustment for Shadow FX Rate (US\$0.587/K)	6228	+8634 <u>19749</u>	6272	+8160 <u>18664</u>	6312	+7398 <u>16921</u>
Total	25,977		24,936		23,233	
Fixed Cost/MT (K) (at US\$0.587/K)	207		173		136	

- 1/ Construction costs of capital assets depreciated are assumed to be 40% domestic and 60% foreign exchange.
- 2/ Finance charges and interest payments owed on domestic loans are transfer payments not considered to be economic costs to the Zambia society, as are taxes, import duties, license fees, etc. Such payments due on foreign loans do represent an economic cost to Zambia, however, and as such are included here.

Source: Calculated from data supplied by NCZ

REDSO/ESA: C.S. Callison, 2/10/83

Table 4. Projected Profit and Loss Account (Revised) at Import Parity Prices
New Fertilizer Plant
Nitrogen Chemicals of Zambia Ltd.
(K1000's in 1982 prices) ^{1/}

	<u>1982/83</u>	<u>1983/84</u>	<u>1984/5</u>
Variable Cost Total at US\$0.839/K ^{2/}	55,133	58,120	65,660
Capital Levy ^{3/}	1,769	1,769	1,769
Import License ^{3/}	1,187	1,024	1,263
Finance Charges and Interest			
Foreign ^{4/}	5,253	4,414	3,120
Domestic ^{3/}	4,400	4,309	4,047
Depreciation ^{4/}	13,249	13,372	13,490
Preproduction Expense ^{3/}	<u>1,636</u>	<u>1,636</u>	<u>1,636</u>
TOTAL COST	82,627	84,644	90,985
M.T. Produced	125,300	144,300	170,450
Ave. Import Price/Mt ^{5/}	<u>.565</u>	<u>.565</u>	<u>.562</u>
Total Revenues if Prices Equalled Import Parity	70,795	81,530	95,793
Projected Financial Profit (Loss) at Import Parity Prices	(11,832)	(3,114)	4,808
Projected Profit (Loss) as Percentage of Total Cost	(14.3)	(3.7)	5.3

^{1/} With FX cost components adjusted for 1/7/83 devaluation

^{2/} From Table 2, above

^{3/} Appendix E

^{4/} From Table 3 above, Depreciation and finance charges have been revised from those appearing in Appendix E to reflect GRZ assumption of K104.8 million in government loans and accrued interest as not properly attributed to NCZ accounts

^{5/} Including import duties.

REDSO/ESA
C.S. Callison
2/10/83

X73

E. Past Performance of CIP Loans

In July 1982, a team of Zambian officials traveled to the U.S.A. to select and award bids for the purchase of fertilizer compounds, using AID financed assistance from the FY 1982 CIP loan. Delays in procurement were caused by the late approval of the agreement by AID/W and difficulties in relations with the GRZ. It is viewed as possible that the fertilizers will be available for late top dressing in the south or for use in bean and wheat planting in early 1983.

Raw materials for fertilizer compound manufacture procured through the FY 1981 CIP have been delivered to NCZ. As of July 1, 1982, the stock of raw materials included:

Di-ammonium phosphate	7,300	metric tons	
Triple super phosphate	1,800	"	"
Single super phosphate	900	"	"
Potassium sulphate	2,580	"	"
Potassium chloride	180	"	"
Borax	50	"	"

The materials include some portion of those provided through the FY 1981 CIP loan. They will be fully utilized by the end of 1982 (the total supplied through USAID was nearly 44,000 tons). With the FY 1980 CIP loan, AID/Zambia began a change of program focus with an integrated effort directed towards the development of the agriculture sector. This focus, as stated in the FY 82 and FY 83 (Supplement) CDSS, has been reflected in the CIP loans since that time. The FY 1980 CIP attempted to assist the GRZ in the identification of major agricultural

problems and policy concerns, while providing needed foreign exchange to purchase fertilizer compounds and some raw materials. The FY 1981 CIP was aimed at supporting efforts to lower maize subsidies, increase maize producer prices, reinforce the MAWD planning unit and improving forecasting. The use of loan funds was for the procurement of fertilizer raw materials, in order to save the FRZ foreign exchange and support local manufacture of fertilizer compounds. Attributions of local currency generations are shown in Appendix C. They are in keeping with the terms of the loan agreements and their usage is confirmed by the GRZ.

The FY 1982 CIP loan agreement was signed in June, 1982 and contracts for commodities were awarded in July, 1982. A meeting is scheduled for September, 1982, in which support measures will be discussed and a progress report given. This meeting will be chaired by GRZ representatives, AID/Zambia and concerned Ministries will participate. A discussion of the support measures from earlier CIP agreements was given in the FY 1982 CIP loan proposal. The information provided there will not be repeated in this document.

Since June, 1981, some progress has been made in those areas addressed by the support measures. The Planning Division of the MAWD has been strengthened through an increase in the staffing (some nine people), the performance of regular reviews and forecasts, marketing information and planning of provincial programs. Producer prices have been reviewed continually and the GRZ has increased prices by as much as 37% since 1979 (maize has gone from Kw11.70 per 90Kg bag in 1979 to Kw16.00 in 1982 and Kw18.30 in 1983). Other farmer incentives have been enacted (delivery bonus, tax incentives, use of foreign exchange). Subsidies have been reduced for fertilizer, but the small increases in prices paid by farmers have not kept pace with the large increase in the cost to the GRZ of locally produced fertilizers. Certain lines of credit (through the ADB, AFC and some commercial banks) have supposedly been opened to small farmers, but this program has been inadequate. Storage and marketing facilities, through donor support from CIDA, are being improved and direct loans to cooperative unions for the improvement of marketing structures and transport facilities will be made. Training programs of various kinds are continuing. In total, AID/Zambia is satisfied that adequate progress has been made in the performance of the agreed upon support measures and that local currency has been attributed properly.

X7E

VI. LOAN IMPLEMENTATION AND ADMINISTRATION

A. Loan Implementation

1. Status of Existing Commodity Import Program Loans

There are currently four active Commodity Import Program loans in Zambia. The loan 611-K-004 (\$20,000,000) has an undisbursed balance of \$98,714.54 as of June 30, 1982. The terminal disbursement date of the loan was extended to December 24, 1982, in order to allow the Government of Zambia sufficient time to use these residual funds to procure Caterpillar spare parts for land clearing equipment, which was financed by AID under the earlier CIP loan 611-K-002. As of June 30, 1982, the loan 611-K-005 (\$20,000,000) had an undisbursed balance of \$465,030.19. Of this amount, \$343,163.10 is also to be used for the procurement of Caterpillar spare parts for the land clearing units. The remaining undisbursed balance of \$121,867.09 is to be used to cover some late billing charges recently received by AID/W. The orders for the Caterpillar spare parts have been placed and M/FM/BFD has been requested to open letters of commitment to the supplier. It is expected that the remaining funds from both these loans will be expended within their established terminal disbursement dates.

Under loan 611-K-006 (\$15,000,000), there is an undisbursed balance of \$1,256,105.52. Of this amount, \$543,602.94 is covered by letter of commitment for ocean and onland freight costs, which are currently being drawn down. The remaining balance of \$712,502.58 is presently uncommitted. However, the Ministry of Finance has indicated that its plans are to use this amount for the procurement of additional fertilizer products.

The loan 611-K-007 (10,000,000) was signed on June 24, 1982. The entire amount is to be used for the procurement of fertilizer finished products. Purchase contracts for 30,000 metric tons of fertilizer were finalized in Washington the week of August 2, 1982, with shipment to commence in September. These contracts for the fertilizer and related freight charges have committed virtually all funds under the loan. It is now planned that an additional \$5,000,000 will be authorized for inclusion under this loan. It is expected that this amount will be rapidly disbursed for agricultural tractors and related implements.

As evidenced from the above discussion, disbursement of the loan funds has taken place at acceptable rates. The efficient disbursement of the funds can be attributed to early planning and the smooth working relationship that has been developed between the GRZ, AID/Zambia and AID/W, with the exception of the FY 1982 CIP.

2. Commodities and Authorized Source of Procurement

The GRZ has requested that the entire loan be used for the procurement of fertilizer products. As is normally the case under such large procurements, there will be residual amounts once the procurement transactions are completed. These amounts will be used for the procurement of goods related to the agriculture sector.

The authorized source of procurement under the loan will be the AID Geographic Code 000 (USA only), with the exception of a waiver to Geographic Codes 941 and 899 for ocean transportation. The waiver request is included herewith as Appendix I.

3. Implementation Schedule

The following is the proposed implementation schedule for the loan:

(a) Loan Authorization	October 1982
(b) Loan Signing	October 1982
(c) Conditions Precedent Satisfied	November 1982
(d) Issuance of IFB for Fertilizer Products	November 1982
(e) Contracts awarded for Fertilizer Products	December 1982
(f) First L/Comm opened	December 1982
(g) First Commodity Shipment	December 1982
(h) First Disbursement	December 1982
(i) Final Disbursement	April 1984

In view of the GRZ's past experience in procuring fertilizer products under AID Commodity Import Programs, the above schedule is considered to be a realistic one. As noted earlier in this PAAD, the products to be purchased have been identified.

This schedule will also allow for the procurement and shipment of the products prior to AID's February-May "window period" on fertilizer transactions.

4. Inland Transportation of Commodities

During the last four years, almost all the fertilizer products financed under the AID Commodity Import Programs have arrived at the South African port of East London, for forwarding by rail to Zambia. This route was favored over Dar es Salaam and, more recently, Beira in Mozambique, due to either congestion and/or transport problems from these ports to Zambia. Over the last several months, the situation at the port of Dar es Salaam has improved considerably, along with the operation of the Tazara Railroad. While the situation in Dar es Salaam is considered fluid, it is expected to become somewhat congested again later in the year due to planned shipments over this route. Although the Beira route is open and being utilized, reports are that cargo is not yet moving smoothly, causing importers to favor other routes.

With the improvement of the situation in Dar es Salaam, and the East London route moving cargo relatively smoothly, it is not anticipated that there will be any significant problems in moving the fertilizer products to be financed under this CIP from the selected African port of discharge to Zambia.

B. Loan Administration

1. Administrative Responsibility

As has been the case under previous CIP loans, the administrative responsibility for the loan will rest with the Ministry of Finance. The responsibility will include the preparation of all reports, assurance of compliance with all AID requirements and the issuance of financing requests to AID.

Primary responsibility for managing AID's implementation functions under the loan will be shared jointly by REDSO/EA in Nairobi, the Regional Legal Advisor located in Mbabane and the AID Representative in Zambia. M/SER/COM in AID/W will provide assistance to the Zambian Embassy in Washington to undertake the formal procurement of the fertilizer, including the receipt and opening bids, and review of proposed contracts prior to their award.

2. AID Procurement Procedures

AID's standard Commodity Financing Procedures, as set forth in AID Regulation 1, will apply to this loan. All procurement by

x-78

the public sector will be conducted under formal competitive bid procedures, except in certain cases where negotiated procurement would be more appropriate and justifiable. For purposes of loan implementation, any parastatal organization which is more than 50% owned by the GRZ will be considered a public sector entity. Procurement by the private sector will be carried out in accordance with the negotiated procurement procedures as set forth in Section 201.23 of AID Regulation 1.

3. GRZ Import Procedures

The normal GRZ import procedures are not applicable to imports tied to foreign loans, such as this one. While the issuance of an import licence is required for each transaction, it is a pro forma process, since the allocation of funds has already been approved by the Ministry of Finance.

4. Disbursement Period

As can be seen from the above status of existing loans, the GRZ has established a very acceptable record in drawing down the funds. The funds under this loan are expected to be disbursed within an 18-month period after the time the loan agreement is executed. Therefore, the terminal disbursement date will be set 18 months from the loan agreement date. The terminal date for requesting disbursing authorization will be set at 12 months from the loan agreement date.

5. Method of Disbursement

Since there will be only a few transactions of large values under this loan, it is expected that all disbursements will be through direct AID Letters of Commitment to suppliers.

6. Conditions Precedent to Disbursement

It is proposed that the Loan Agreement include the standard conditions precedent to disbursement for a Commodity Import Program, i.e., legal opinion, designation of representatives and their specimen signatures, and a procurement plan.

VII. ADDITIONAL CONSIDERATIONS

Impact on U.S. Balance of Payments

The short run impact of the loan on the U.S. balance of payments position will be minimal. Repayments will not be

111

initiated for a period of ten years, although interest payments will be received annually. Expenditures under the loan will be made in the U.S.A., therefore the change in BOP will not be apparent. In the long run, U.S. exporters may be able to establish market positions in Zambia, although the transportation costs may make certain U.S. products uncompetitive with European or Middle Eastern products.

Use of U.S. Government Excess Property

AID will review the possibilities of usage and financing of excess U.S. government property under the loan. However, it is very unlikely such property will be appropriate given the nature of the commodities to be purchased.

Relation to U.S. Export-Import Bank

The U.S. Export-Import Bank's (Eximbank) exposure in Zambia as of May, 1982 was U.S.\$39,007,000 in loans outstanding. Undisbursed loans stood at \$2,126,000 and interest plus fees owed stood at \$25,339,000. No explanation is available here for the large interest due.

Eximbank guarantees outstanding on loans stood in May, 1982 at \$20,224,000. Undisbursed guaranteed loans totalled \$7,995,00. Interest and fees outstanding were \$1,010,000.

Eximbank has avoided taking on any additional exposure in transactions which would be subject to the trade arrears delay. The last loan given was in March, 1981. There is willingness to consider new supplier credits if GRZ guarantees are available.

Given the nature of Eximbank's activities in Zambia, it can be concluded that this proposal for a loan does not present any conflict of interest to current or planned Eximbank exposures.

X80

APPENDIX A

GRZ REQUEST FOR ASSISTANCE

Communications should be addressed
to the Permanent Secretary

Telephone: LUSAKA 213222

Telegrams: FINANCE, RIDGEWAY



In reply please quote:
MF/L&I/IN/418

REPUBLIC OF ZAMBIA

MINISTRY OF FINANCE

P.O. BOX 50362
LUSAKA

7th July, 1982

Mr. John A. Patterson,
AID Representative,
Agency for International Development,
P. O. Box 32487,
LUSAKA.

Dear Mr. Patterson,

GRZ REQUEST FOR USAID COMMODITY IMPORT PROGRAM LOAN FOR FY 1983

On behalf of the Government of the Republic of Zambia, I wish to formally request the Government of the United States of America for a U.S. \$20 million Commodity Import Program Loan to finance the importation of fertilizer products.

As you are aware, USAID has assisted with loans for fertilizer procurement in the past. Increased requirements, because of expansion of agricultural lands and Governmental incentives, are being felt throughout Zambia. The need of Zambia for this assistance is large and your Government can be of great help.

I await your favourable response to this request.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'P. S. Kazunga'.

P. S. Kazunga,
Permanent Secretary,
MINISTRY OF FINANCE.

82

APPENDIX B

ECONOMIC STATISTICAL TABLES

APPENDIX B

STATISTICAL TABLES

1. U.S. Economic Assistance to Zambia, 1976-79.
- 2.a. Gross Domestic Product, by kind of Economic Activity at Producer Values at current prices, 1973-81.
- b. Gross Domestic Product, by kind of Economic Activity at constant prices, 1973-81.
- c. Gross Domestic Product, by Type of Expenditure, at current purchaser's values, at current prices, 1973-81.
- d. Gross Domestic Product, by Type of Expenditure, at constant prices, 1973-81.
3. Formal Employment by Sectors, 1979.
4. Total and Per Capita Gross Domestic Product, Selected Years.
5. Total and Per Capita Growth Rates, Selected Years.
6. Estimated Employment of Zambians, 1977-81.
7. Savings and Investment, 1965-1981.
8. Sectoral Shares of Gross National Savings and Gross Domestic Investment, 1972 and 1977.
9. Recent Price Changes, 1970-1981.
10. Credit, selected years.
11. Aggregate Monetary Resources and Factors affecting these Resources, Selected Years.
12. Officially Marketed Production for Major Agricultural Crops, 1970-81.
13. Balance of Payments, 1976-1981.
14. Zambia's Terms of Trade, 1970-81.
15. Real Value of Imports Classified by End Use, selected years.
16. Foreign Exchange Inflows, 1969-1981.
17. Summary of Government Finance, 1977-1981.
18. Growth of Public Debt, 1977-1981.
19. Recurrent and Capital Budget Expenditures, in current and constant (1970) prices, 1977-1981.
20. Recurrent and Capital Budget, Comparative Figures.
21. Macro-economic Indicators, 1975-81.
22. Balance of Payments Projections, 1981-83.

84

Table 1 - U.S. Economic Assistance to Zambia, 1976-79

U.S. OVERSEAS LOANS AND GRANTS - OBLIGATIONS AND LOAN AUTHORIZATIONS (U.S. Fiscal Year - Millions of Dollars)						ECONOMIC PROGRAMS OF ALL NATIONS (Millions of Dollars)							
COUNTRY	ZAMBIA	FOREIGN ASSISTANCE ACT PERIOD					TOTAL LOANS AND GRANTS 1976-79	REPAY. MENTS AND INTEREST 1976-79	TOTAL LESS REPAY. MENTS AND INTEREST 1976-79	A. ASSISTANCE FROM INTERNATIONAL AGENCIES - COMMITMENTS			
		1976	77	1977	1978	1979				TOTAL	FY 1976	FY 1977	FY 1978
I. ECONOMIC ASSISTANCE - TOTAL													
Loans													
Grants													
A.I.D. and Production Agencies													
Loans													
Grants													
(Economic Support Fund)													
Food for Peace (PL 480)													
Loans													
Grants													
Title I - Total Sub. Agreement													
Payable in U.S. Dollars - Loans													
Payable in Foreign Currency - Planned for Country Use													
Title II - Total Grants													
Emerg. Relief, Econ. Develop. & World Food Program													
Voluntary Relief Agencies													
Other Economic Assistance													
Loans													
Grants													
Peace Corps													
Other													
II. MILITARY ASSISTANCE - TOTAL													
Credit or Loans													
Grants													
a. MAP Grants													
b. Credit Financing - FMS													
c. Military Assistance Service Funding (MASF) Grants													
d. Transfers and Excess Stocks													
e. Other Grants													
III. TOTAL ECONOMIC AND MILITARY ASSISTANCE													
Loans													
Grants													
Other U.S. Government Loans and Grants													
a. Export-Import Bank Loans													
b. All Other Loans													
<p>10 - TRANSITIONAL QUARTER (7/1/76 - 9/30/76)</p>													

TOTAL	ECONOMIC PROGRAMS OF ALL NATIONS (Millions of Dollars)			
	FY 1976	FY 1977	FY 1978	FY 1979-80
IFRD	25.5	26.1	98.9	692.0
IFC	11.3	0.0	25.0	539.3
IDA	8.9	0.0	37.6	41.4
IDB	11.3	11.0	15.0	37.3
ADB	0.0	0.0	0.0	0.0
AFDB	0.0	0.0	0.0	0.0
UNDP	0.0	9.7	0.0	0.0
OTHER-UN	2.9	2.9	1.7	43.0
ECF	0.0	0.0	0.2	20.0
	0.0	2.5	0.0	2.3
				2.5

Donor	BILATERAL OFFICIAL DEVELOPMENT ASSISTANCE		
	FY 1976	FY 1977	FY 1978-79
1. O.A.C. COUNTRIES (Gross Disbursements)			
TOTAL	167.1	215.3	779.9
U.S.	35.0	43.0	107.0
JAPAN	28.0	23.5	74.7
U.K.	25.6	60.8	229.4
SWEDEN	19.4	23.9	101.0
GERMANY	17.5	22.7	76.3
CANADA	15.9	3.5	54.0
OTHER	25.7	37.9	142.5
2. O.P.E.C. COUNTRIES (Gross Disbursements)			
TOTAL	9.5	9.5	11.4

TOTAL	LOANS AND GRANTS EXTENDED BY COMMUNIST COUNTRIES		
	FY 1976	FY 1977	FY 1978-79
USSR	12	-	405
EASTERN EUROPE	12	-	15
CHINA	-	-	60
			330

35

TABLE 2—GROSS DOMESTIC PRODUCT BY KIND OF ECONOMIC ACTIVITY AT PRODUCERS' VALUES AT CURRENT PRICES (K'million)

Kind of Economic Activity	1973	1974	1975†	1976†	1977†	1978†	1979†	1980†	1981†
Total Gross Domestic Product	1,591.3	1,892.6	1,583.4	1,872.2	1,951.5	2,202.6	2,597.6	2,986.3	2,999.9
Agriculture, Forestry and Fishing	179.6	199.4	206.4	273.3	321.5	357.8	375.0	435.0	534.0
Commercial sector	62.2	67.4	62.9	95.3	110.0	112.8	105.0	138.3	206.0
Subsistence sector	117.4	132.0	143.5	178.0	211.5	245.0	270.0	295.0	328.0
Mining and Quarrying	515.0	615.7	215.2	341.8	233.7	286.8	469.7	483.9	226.3
Metal mining	506.4	607.0	204.0	330.0	223.1	271.9	456.0	468.0	210.0
Other mining and quarrying	8.6	8.7	11.2	11.8	10.6	14.9	13.7	15.9	16.3
Manufacturing	195.3	238.5	250.3	275.6	314.0	383.9	433.3	502.1	542.1
Food manufacturing	19.6	12.8	21.5	29.8	33.7	40.6	41.7	53.4	67.8
Beverages and tobacco	73.2	85.7	86.3	93.9	102.0	122.8	126.1	140.6	155.6
Textiles and wearing apparel	17.4	23.9	26.6	29.5	29.0	46.3	50.0	57.2	68.0
Wood and wood products, including furniture	6.4	10.5	8.0	6.4	10.4	13.1	15.1	13.7	28.3
Paper, paper products, printing and publishing	7.6	10.2	13.8	13.0	15.1	19.2	23.0	27.3	20.8
Rubber products	7.3	9.2							
Chemicals, petroleum and plastic products	20.4	29.0	43.6	49.6	65.2	66.7	87.5	101.7	96.6
Non-metallic mineral products	9.4	10.0	8.7	8.7	8.9	17.5	20.3	22.7	22.0
Basic metal products	2.9	4.2	4.2	5.0	7.6	10.4	11.9	13.8	16.4
Fabricated metal products	30.5	42.0	36.4	38.4	40.4	45.2	54.6	68.6	63.5
Other manufacturing industries	0.6	1.0	1.2	1.3	1.7	2.1	2.7	3.1	3.0
Electricity, Gas and Water	32.5	41.2	43.0	47.8	50.5	48.5	51.3	54.4	58.6
Construction	102.7	122.0	151.2	116.6	108.5	105.4	95.0	126.0	130.0
Wholesale and Retail Trade	139.5	168.2	132.8	154.5	182.9	209.5	253.7	302.0	305.0
Hotels and Restaurants	18.4	21.8	24.7	29.9	32.0	38.3	43.1	51.5	63.8
Transport, Communications and Storage	64.9	76.3	89.5	118.5	134.4	142.1	162.8	193.0	196.0
Rail transport	10.3	10.9	18.2	34.0	37.9	36.1	42.0	50.0	49.0
Road transport	33.9	40.5	46.0	52.6	60.9	65.5	76.0	93.5	94.0
Other transport and storage	10.9	13.7	14.9	18.4	20.6	24.5	27.1	29.0	31.0
Posts and telecommunications	9.8	11.2	9.4	13.5	15.0	16.0	17.5	20.5	22.0
Financial Institutions and Insurance	53.1	62.6	68.2	79.2	98.0	92.0	112.9	112.7	126.2
Real Estate	36.2	42.4	52.3	62.2	67.5	76.5	84.4	95.0	105.5
Business Services	29.9	30.1	39.3	40.1	46.5	53.3	64.5	76.3	77.5
Community, Social and Personal Services	204.6	235.0	268.5	309.3	345.5	382.0	420.2	499.4	572.9
Public administration and defence	79.2								
Sanitary and related services	2.1	94.0	112.7	118.4	137.4	155.7	168.0	217.0	253.5
Education	63.8	73.7	82.4	106.5	115.9	124.2	138.6	149.5	168.0
Health	25.5	27.4	29.7	36.2	38.2	41.7	47.1	52.5	63.0
Recreational and cultural services	9.6	11.9	14.5	15.6	18.0	20.4	22.0	28.4	33.2
Personal and household services	25.1	28.0	29.2	32.6	36.0	40.0	44.5	52.0	55.2
Import Duties	38.1	55.4	62.0	45.4	49.0	50.0	60.0	85.0	86.0
Less: Imputed Banking Service Charge	10.5	21.0	19.0	22.0	22.5	23.5	28.8	30.5	34.0

†Likely to undergo some revision.

‡Provisional. Estimates of the mining companies are based on their cost accounting procedures.

Source: C.S.O.

86

NATIONAL ACCOUNTS

Table 2b—GROSS DOMESTIC PRODUCT BY KIND OF ECONOMIC ACTIVITY IN PRODUCERS' VALUES AT CONSTANT (1970) PRICE (K'million)

Kind of Economic Activity	1973	1974	1975†	1976†	1977†	1978†	1979†	1980†	1981†
Total Gross Domestic Product	1,390.8	1,473.9	1,432.1	1,500.1	1,428.2	1,454.8	1,329.2	1,369.7	1,344.9
Agriculture, Forestry and Fishing	143.9	150.5	157.0	166.9	168.2	171.5	151.2	156.4	171.7
Commercial sector	46.8	52.2	56.3	63.6	62.4	63.0	45.0	49.0	63.0
Subsistence sector	97.1	98.3	100.7	103.3	105.8	108.5	106.2	107.4	108.7
Mining and Quarrying	463.1	474.3	427.9	503.2	469.7	494.1	391.0	398.6	351.5
Metal mining	454.1	465.2	418.3	493.8	462.5	487.3	384.3	392.2	345.1
Other mining	9.0	9.1	9.6	9.4	7.2	6.8	6.7	6.4	6.4
Manufacturing	165.1	178.9	157.6	151.9	141.4	152.0	151.9	154.4	153.1
Food manufacturing	16.9	9.0	13.1	16.4	15.9	18.5	16.6	16.0	16.9
Beverages and tobacco	62.3	71.6	61.0	58.4	52.5	54.1	52.5	52.4	55.1
Textiles and wearing apparel	14.2	16.8	16.0	16.6	14.3	19.6	20.5	24.2	26.1
Wood and wood products including Furniture	6.2	9.4	6.4	4.4	5.0	4.6	4.5	4.1	6.5
Paper, paper products, printing and publishing	5.5	5.2	5.7	4.6	5.1	6.1	6.2	5.2	3.8
Rubber products	6.2	6.1	24.5	25.1	25.9	24.4	27.6	26.5	23.1
Chemicals, petroleum and plastic products	17.3	19.2	7.0	6.1	5.8	8.0	3.5	8.1	6.1
Non-metallic mineral products	9.2	9.8	2.1	2.1	2.3	2.6	2.2	2.3	2.2
Basic metal products	1.9	2.5	21.0	17.6	14.0	13.5	12.5	14.7	12.6
Fabricated metal products	25.0	28.6	0.7	0.6	0.6	0.5	0.8	0.8	0.7
Other manufacturing industries	0.6	0.7							
Electricity, Gas and Water	32.5	46.0	48.9	52.6	57.8	58.3	62.6	67.2	72.4
Construction	99.9	114.5	138.5	99.5	90.4	82.0	69.3	79.1	76.7
Wholesale and Retail Trade	113.2	128.8	105.0	102.9	97.3	97.1	95.4	96.1	95.9
Hotels and Restaurants	16.9	19.1	18.9	19.3	17.2	17.8	17.6	20.2	22.9
Transport, Communications and Storage	51.7	54.6	57.6	67.0	61.5	62.1	62.2	64.6	62.0
Rail transport	8.3	7.8	11.6	18.6	16.2	14.8	14.8	15.2	14.3
Road transport	27.2	28.9	29.4	28.5	26.0	26.8	26.7	28.6	27.4
Other transport	8.8	9.9	9.7	10.1	8.9	10.0	98.6	9.2	9.1
Posts and telecommunications	7.4	8.0	6.9	9.8	10.4	10.5	10.9	11.6	11.2
Financial Institutions and Insurance	68.8	57.5	60.4	58.3	48.8	41.0	44.8	37.3	28.5
Real Estate	32.2	33.4	39.8	43.1	44.8	49.0	49.4	52.1	55.5
Business Services	27.3	28.6	32.7	35.0	32.3	33.1	36.2	32.3	38.9
Community, Social and Personal Services	159.4	172.6	183.6	188.4	190.0	191.0	192.3	199.1	207.1
Public administration and defence	60.0	66.9	73.7	70.0	73.1	75.0	75.3	78.0	78.5
Sanitary services	1.6								
Education	48.6	52.6	54.0	63.1	61.9	60.0	60.1	62.3	62.7
Health	19.4	19.5	19.4	21.4	20.4	20.2	20.2	20.9	21.0
Recreational and cultural services	6.7	8.5	9.5	9.1	9.6	9.8	9.9	10.3	10.4
Personal and household services	23.1	25.1	24.0	24.8	25.0	26.0	26.8	27.6	28.5
Import Duties	24.8	28.8	26.9	20.1	19.8	16.0	15.4	15.7	13.3
Less: Imputed Bank Service Charges	14.0	13.7	13.6	13.1	11.0	9.2	8.4	8.4	8.6

‡Likely to undergo some revision.

†Provisional. Estimates of the mining companies are based on their cost accounting procedures.

Source: C.S.O.

x 27

GROSS DOMESTIC PRODUCT BY TYPE OF EXPENDITURE AT CURRENT PURCHASERS' VALUES
(a) Expenditure on the gross domestic product
(K'million)

	1973	1974	1975†	1976‡	1977†	1978†	1979‡	1980‡	1981‡
Government final consumption expenditure ...	314.8	357.8	435.7	501.0	553.3	591.0	680.8	844.0	833.0
Private final consumption expenditure ...	530.2	664.4	814.5	823.4	959.6	1,130.2	1,308.8	1,608.9	1,717.1
Increase in stocks ...	+42.0	+190.0	+40.0	+6.5	+7.0	+100.0	-74.0	+55.0	+30.0
Gross fixed capital formation ...	422.9	502.0	602.0	445.0	493.0	437.0	450.0	645.0	725.0
Final consumption and gross capital formation ...	1,339.9	1,714.2	1,892.2	1,775.9	2,002.9	2,258.2	2,365.6	3,153.7	3,245.1
Exports of goods and services ...	783.4	943.9	575.0	832.3	781.5	755.3	1,209.3	1,129.2	1,063.5
Less imports of goods and services ...	529.0	765.5	833.8	725.0	832.9	810.9	977.3	1,296.8	1,318.7
Gross domestic product at current purchasers' values ...	1,591.3	1,892.6	1,531.4	1,872.2	1,951.5	2,202.6	2,597.6	2,985.3	2,989.9

†Likely to undergo some revision.

‡Provisional. Estimates of the mining companies are based on their cost accounting procedures.

(b) Cost structure of the gross domestic product
(K'million)

	1973	1974	1975†	1976†	1977†	1978†	1979‡	1980‡	1981‡
Compensation of employees ...	672.0	771.2	802.0	886.0	957.0	1,066.0	1,180.0	1,417.0	1,620.0
Operating surplus ...	647.5	825.8	420.7	554.1	513.5	548.0	798.5	950.0	576.6
Consumption of fixed capital ...	211.7	218.6	243.0	268.0	305.0	340.0	380.0	435.0	478.0
Indirect taxes ...	104.4	132.5	207.7	233.9	241.0	294.6	340.6	390.0	440.0
Less Subsidies ...	44.3	55.3	90.0	30.0	85.0	44.0	101.5	206.5	124.7
Gross domestic product at current purchasers' values ...	1,591.3	1,892.6	1,531.4	1,872.2	1,951.5	2,202.6	2,597.6	2,985.3	2,989.9

Table 2d

GROSS DOMESTIC PRODUCT BY TYPE OF EXPENDITURE IN PURCHASERS' VALUES AT CONSTANT (1970) PRICES
(K'million)

	1973	1974	1975†	1976†	1977†	1978†	1979‡	1980‡	1981‡
Government final consumption ...	272.3	259.0	237.2	298.9	277.0	253.7	249.0	275.2	245.0
Private final consumption ...	443.0	501.1	565.2	835.6	888.5	528.8	529.5	588.7	574.2
Increase in stocks ...	30.7	137.0	31.8	-8.2	-0.2	91.0	-50.0	+30.0	-20.0
Gross fixed capital formation ...	362.0	359.5	393.5	237.0	206.0	164.0	133.0	175.0	166.0
Final consumption and capital formation ...	1,108.5	1,255.6	1,279.7	1,056.3	971.3	1,039.5	861.5	1,068.9	965.2
Exports ...	666.5	706.7	687.2	800.1	807.1	731.1	653.3	563.5	550.0
Less imports ...	418.8	488.1	454.9	339.4	335.3	270.9	261.2	266.6	226.0
Statistical discrepancy ...	+246.6	-0.1	-67.9	-67.1	-15.1	-45.0	+76.4	+1.9	+55.7
Gross domestic product at 1970 prices ...	1,380.8	1,473.9	1,432.1	1,500.1	1,428.2	1,454.8	1,329.2	1,269.7	1,344.9
Adjustment for changes in terms of trade ...	-48.5	-104.7	-387.2	-451.7	-462.7	-448.2	-454.4	-432.0	-519.8
Gross domestic product at 1970 prices adjusted for changes in terms of trade ...	1,332.3	1,369.2	1,050.9	1,048.4	965.5	1,006.6	874.8	937.7	825.1

†Likely to undergo some revision.

‡Provisional. Estimates of the mining companies are based on their cost accounting procedures.

Sources: C.S.O.

88

TABLE 3

FORMAL EMPLOYMENT BY SECTORS - 1979*

INDUSTRY	PUBLIC		PARASTATAL		PRIVATE		All Sectors
	Zambian	Non-Zambian	Zambian	Non-Zambian	Zambian	Non-Zambian	
Agriculture, Forestry and Fisheries	9,940	110	11,600	110	9,210	840	31,810
Mining and Quarrying	-	-	53,640	6,840	220	30	60,730
Manufacturing	690	10	20,270	520	22,610	1,410	45,510
Electricity and Water	2,640	100	4,770	190	-	-	7,700
Construction and Allied Repairs	23,140	750	610	20	17,660	1,470	43,650
Distribution, Restaurants and Hotels	2,050	30	16,190	200	16,320	1,570	36,360
Transport and Communications	1,290	10	20,800	680	2,140	350	25,270
Finance, Insurance, Real Estate and Business Services	340	40	8,570	230	9,950	780	19,910
Community, Social and Personal Services	29,390	6,290	200	10	9,180	790	45,860
All Industries (Percentages)	69,480 (21.9)	7,340 (2.3)	136,650 (43.1)	8,800 (2.8)	87,290 (27.6)	7,240 (2.3)	316,800 (100.0)

* Latest figures available

Source: CSO, Unpublished provisional data

80

TABLE 4

TOTAL AND PER CAPITA GROSS DOMESTIC PRODUCT, SELECTED YEARS
(In 1970 Kwacha)

	<u>1965</u>	<u>1974</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>
Real GDP (K million)	1196	1463	1480	1329	1370	1345
Population (million)	3.67	4.67	5.67	5.65	5.83	6.01
Real GDP/capita (K)	326	291	270	235	235	224

Source: Various GRZ Reports.

TABLE 5

TOTAL AND PER CAPITA GROWTH RATES, SELECTED PERIODS

	1965-74	1974-78	1978-81
Real GDP	2.3	0.3	-2.3
Population	2.7	3.2	3.2
Real Per Capita GDP	-0.5	-3.7	-4.3

Source: Various GRZ Reports

x90

TABLE 6

ESTIMATED EMPLOYMENT OF ZAMBIANS, 1977-1981

Year	Total Labour Force*	Formal Sector Employment	% of Labour Force	Informal Sector employed and unemployed	% of Labour Force
1977	1,586,000	345,320	21.8	1,240,680	78.2
1978	1,641,000	344,480	21.0	1,296,520	79.0
1979	1,698,300	351,420	20.7	1,346,880	79.3
1980	1,761,400	367,101 ^a	20.8	1,394,300	79.2
1981	1,824,200	371,630 ^b	20.4	1,452,570	79.6

* Source: CSO, 1976, Projection of the Labour Force, 1969-84

+ Average number of employees for Quarters ending June; CSO, Monthly Digest of Statistics

a Revised

b Preliminary

TABLE 7
SAVINGS AND INVESTMENT, 1965-1981
 (current Kwacha million)

	Average 1965-1970	Average 1971-1976*	1977*	1978*	1979*	1980*	1981*
1. Net National Savings	280	205	-23	-30	-74	-203	-297
2. Depreciation	<u>82</u>	<u>212</u>	<u>305</u>	<u>340</u>	<u>380</u>	<u>435</u>	<u>478</u>
3. Gross National Savings (1 + 2)	362	417	282	310	306	232	181
4. Net Borrowing from Abroad	<u>-89</u>	<u>135</u>	<u>393</u>	<u>345</u>	<u>92</u>	<u>469</u>	<u>514</u>
5. Gross Domestic Investments (3 + 4)	273	552	675	655	398	701	695
of which changes in stocks	23	-60	7	100	-74	55	-30
Gross fixed capital formation	250	492	668	555	472	646	725
6. Net National Savings as % of National Disposable Income	32	17	-2	-2	-4	-9	-15
7. Gross Fixed Capital Formation as % of GDP	24	31	33	25	20	22	24

* The 1975-1981 figures are "provisional". Marked changes can still be expected. For example, between 1979 and 1981, the estimate for net National Savings in 1977 went from K199 million to -K23 million.

Source: Various CSO Reports

202

TABLE 8

SECTORAL SHARES OF GROSS NATIONAL SAVINGS AND
GROSS DOMESTIC INVESTMENT, 1972 and 1977*

(percentage)

	Parastatal	Government	Private	Total
Gross National Savings				
1972	53	-13	60	100
1977 (Estimate)	37	-20	83 <u>a/</u>	100
Gross Domestic Investment <u>b/</u>				
1972	46	19	35	100
1977 (Estimate)	41	16	43	100

* Later figures are not available, although Bank of Zambia and GRZ officials predict no change in the trend.

a/ Includes residual which may be part of the parastatal savings

b/ Includes gross fixed capital formation plus changes in stocks

Source: IMF Report 3007-70, February 1981

TABLE 9

RECENT PRICE CHANGES, 1970-1981
(annual average — percentage changes)

	Average 1970-74	Average 1974-78	1977	1978	1979	1980	1981
Consumer Prices							
Low Income Group	6.1	16.2	19.8	16.4	9.7	11.8	13.0
High Income Group	7.0	13.6	17.2	12.1	11.1	11.7	0.0
Wholesale Prices							
ALL domestically used goods	8.6	19.5	24.6	19.6	15.7	9.2	6.0
Manufactured ^{a/}	9.4	19.0	24.6	20.5	19.5	N/A	N/A

a/ Excluding copper

Sources: GRZ, Economics Report 1981.

TABLE 10

CREDIT, SELECTED YEARS

	1965	1970	1972	1974	1975	1976	1977	1978	1979	1980
	(Million K. Outstanding End Period)									
Bank Credit to Public										
Sector ^{1/} ^{2/}	-88.7	163.8	147.2	78.1	373.0	571.0	791.0	1062.0	1122.0	1354.0
Bank Credit to Private										
Sector	42.3	136.9	165.0	335.8	393.0	399.0	470.0	462.0	483.0	505.0

^{1/} Figures do not differ significantly from "Central Government"

^{2/} Includes parastatal organization

Sources: IBRD, April 1982 Report

XCA

TABLE 11
AGGREGATE MONETARY RESOURCES AND FACTORS AFFECTING THESE RESOURCES, SELECTED YEARS

	1970	1977	1978	1979	1980	1981
I. Money Supply (M_1)	186.0	386.5	391.0	513.3	509.4	600.8*
II. Quasi Money (M_2)	<u>169.6</u>	<u>312.2</u>	<u>247.7</u>	<u>318.9</u>	<u>392.7</u>	<u>421.3*</u>
III. Aggregate Money (M_3)	355.6	698.7	638.7	832.2	902.1	1022.1*
Index of Money Resources (1970 = 100)	100.0	207.8	270.2	276.0	273.9	323.0*
Index of Real (1979 = 100)	<u>100.0</u>	<u>111.8</u>	<u>113.9</u>	<u>103.7</u>	<u>107.2</u>	<u>105.2</u>
Index of Money Resources per Unit (1970 = 100)	100.0	185.9	237.2	266.2	255.5	307.0*
Principal Factors affecting M_3						
1. Net Bank Credit to Government (cumulative)	-163.8	791.1	1061.8	1121.6	1536.4	1536.4*
2. Net Foreign Assets	381.6	-183.5	-311.6	-283.1	-387.9	-575.7*
3. Commercial Banks' Credit to Private Sector	134.9	346.7	307.7	402.1	443.4	697.4*

Source: Bank of Zambia

*November figures

Explanation:

M_1 : Money Supply in the narrow sense, i.e. currency outside the banks and demand deposits at banks.

M_3 : Money Supply in the wider sense, i.e. M_1 plus savings and time deposits

TABLE 12

MARKETED PRODUCTION FOR MAJOR AGRICULTURAL CROPS

1970-1981

Crop	Unit	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Maize	90kg bag (MT)	1,468,972	4,265,492	6,539,197	4,435,810	6,534,333	6,216,455 (6,144)	8,333,022 (8,072)	7,738,347 (6,97,148)	6,402,847 (5,82,238)	3,732,879 (3,38,236)	4,247,404 (3,82,499)	7,658, (6,33,
Faddy Rice	90kg bag (MT)	1,192	2,120	3,254	4,317	4,469	12,609 (10,087)	26,162 (2,092)	23,256 (1,860)	36,565 (2,825)	23,156 (1,842)	27,665 (2,215)	35, (2,85
Wheat	90kg bag (MT)	-	-	-	-	-	10,378 (933)	43,467 (3,948)	59,158 (5,324)	59,342 (5,250)	72,530 (6,527)	106,495 (9,584)	131, (11,79
Ground nuts	80kg bag (MT)	45,016	84,739	81,353	10,209	45,326	81,238 (6,489)	116,340 (9,467)	93,275 (7,462)	27,921 (2,233)	34,213 (2,737)	25,351 (2,028)	16, (1,3,
Sunflower	50kg bag (MT)	-	229	2,494	7,861	80,087	164,856 (8,247)	319,291 (15,964)	256,413 (13,320)	131,027 (7,551)	238,271 (11,918)	344,765 (17,228)	373, (18,6:
Cotton Seed	Kg (MT)	6,445,982	12,871,659	9,349,227	5,225,156	2,172,641	2,601,792	3,884,450	8,928,831	8,429,639	14916,211	22912,830	17,175, (17,176
Tobacco Virginia Burley	Kg (MT)	5,183,230	6,292,567	6,002,841	6,652,334	6,802,035	6,967,814	6,474,082	5,899,814	3,567,657	4,971,350	4,691,095	2,903, (2,98:

Source: Annual Agricultural Statistical Bulletin,

Central Statistical Office, Lusaka.

9/10

TABLE 13

BALANCE OF PAYMENTS - 1976-81

	1976	1977	1978	1979	1980	1981
1. Exports (f.o.b.)	742	706	674	1091	1002	870
2. Imports (f.o.b.)	482	539	496	598	883	937
I. Trade Balance	<u>260</u>	<u>168</u>	<u>178</u>	<u>493</u>	<u>119(-)</u>	<u>67</u>
<u>Invisibles:</u>						
3. Non factor Services (net)	-167	-170	-187	-288	-290	-165
4. Investment Income (net)	-109	-105	-110	+ 99	-167	-200
5. Unrequited Transfers (net)	- 80	- 65	- 65	= 60	- 70	- 40
6. Total Invisibles (net)	<u>(-)356</u>	<u>(-)340</u>	<u>(-)362</u>	<u>-447</u>	<u>-527</u>	<u>-411</u>
II. Current Account Balance	<u>(-) 96</u>	<u>(-)172</u>	<u>(-)184</u>	<u>+ 46</u>	<u>(-)408</u>	<u>(-)478</u>
III Capital A/C (Net) including error, and omissions	41	(-) 52	(-) 75	+122	+ 131	+ 208
IV Overall Balance	<u>(-) 55</u>	<u>(-)224</u>	<u>(-)259</u>	<u>+168</u>	<u>(-)270</u>	<u>(-)270</u>

Source: Bank of Zambia

TABLE 14

ZAMBIA'S TERMS OF TRADE

Index (1970 = 100).

<u>Year</u>	<u>Export Prices</u>	<u>Import Prices</u>	<u>Terms of Trade Index</u>
(1)	(2)	(3)	(4)
1970	100	100	100
1971	78	105	74
1972	80	111	72
1973	117	126	93
1974	134	157	85
1975	84	194	43
1976	100	217	46
1977	97	248	34
1978	103	299	35
1979	185	374	50
1980	201	486	42
1981	198	584	31

Source: C.S.O.

TABLE 15

REAL VALUE OF IMPORTS CLASSIFIED BY END USE, SELECTED YEARS a/

(in 1969 kwacha million with % of total in parenthesis)

	1969	1974	1977	1978 b/
Inputs	153 (49)	148 (51)	105 (55)	93 (56)
Capital Items	61 (21)	77 (25)	49 (26)	44 (26)
Consumer Goods	<u>82 (26)</u>	<u>82 (28)</u>	<u>38 (19)</u>	<u>32 (18)</u>
Total	296 (100)	307 (100)	192 (100)	169 (100)

a/ Deflated by CSO's Import Unit Valueb/ Based on first eight months imports and deflated by assumed import price increase of 8 percent over 1977.

Source: IMF Report 3007-ZA, February 1981.

99

TABLE 16

FOREIGN EXCHANGE INFLOWS, 1969-1981

(current kwacha millions)

	1969	1981	change 1969-1981
External Debt	198	1,576*	1,378
Net Foreign Assets	268	-576.	-844**
Payment Arrears	0	573	573
Total Inflow	-	-	2,795

Sources: NCDP 1981 Economic Report and Bank of Zambia

* Figures on this account differ. The Bank of Zambia places this figure at K1,576 million, while the NCDP places this figure at K1,088 million. Based on the 1978 estimate of K1,265 million, the Bank of Zambia figures appear more realistic.

**Zambia's debt to the IMF appears here. Also, a negative means inflow.

x 100

TABLE 17

SUMMARY OF GOVERNMENT FINANCE, 1977-1981

	Unit	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	
1. <u>Current Account</u>														
a.	Revenue	K'M	432	309	315	385	668	448	443	499	550	593	768	80
b.	Expenditure	K'M	381	350	363	394	441	581	609	661	647	791	1,082	88
c.	Surplus (+) or Deficit (-)	K'M	+51	-41	-48	-9	+207	-133	-166	-162	-97	-198	-314	-7
2. <u>Capital Account</u>														
a.	Receipts	K'M	239	180	139	290	150	170	147	139	139	263	225 ⁽²⁾	20
b.	Expenditure	K'M	239	203	160	388	194	246	172	160	168	165	232 ⁽²⁾	20
c.	Surplus (+) or Deficit (-)	K'M	0	-23	-22	-98	-44	-76	-25	-21	-29	+98	+60	+
3. <u>Combined Surplus (+) or Deficit (-)</u>														
		K'M	+51	-64	-70	-107	+163	-208	-190	-183	-127	-100	-254	-7
4. <u>Total Public Debt of which</u>														
a.	Internal	K'M	177	196	230	264	282	306	344	361	379	396	438	601
b.	External	K'M	132	177	196	317	354	406	552	557	621	766	1,037	1,081

TABLE 18

GROWTH OF PUBLIC DEBT 1974-1981

<u>Year</u>	<u>Internal Debt</u>		<u>External Debt</u>		<u>Grand Total</u>
	<u>K' Million</u>	<u>% To Total</u>	<u>K' Million</u>	<u>% To Total</u>	
1974	282.1	44.3	354.4	55.7	636.5
1975	306.0	43.0	406.4	57.0	712.4
1976	343.9	38.4	551.7	61.6	895.6
1977	360.5	39.5	556.9	60.7	917.4
1978	378.5	37.9	621.0	62.1	999.5
1979	396.4	34.1	766.2	65.9	1,162.6
1980	438.1	29.7	1,336.1	70.3	1,474.8
1981	606.0	35.7	1,087.9	64.3	1,693.9

Source of Basic Data: Financial Reports, 1974-1980;
1981 Provisional Estimates.

x 102

TABLE 19
RECURRENT AND CAPITAL BUDGET EXPENDITURES, IN CURRENT AND
CONSTANT 1979-1981 PRICES
(AMOUNTS IN K'MILLION)

Year	Recurrent Budget		Capital Budget		GDP		Budget and GDP Comparison	
	(1) Current Prices	(2) Constant Prices	(3) Current Prices	(4) Constant Prices	(5) Current Prices	(6) Constant Prices	1 + 3 as % of 5	2 + 4 as % of 6
1974	440.9	319.0	193.8	138.4	1,872.6	1,473.9	33.8	31.0
1975	609.5	401.8	245.6	160.5	1,583.4	1,438.1	54.0	39.1
1976	608.9	354.6	172.0	94.9	1,892.2	1,500.1	41.3	30.0
1977	660.7	343.2	160.3	73.0	1,951.5	1,424.4	42.1	29.2
1978	647.1	279.9	168.3	64.6	2,202.6	1,458.8	37.0	23.6
1979	791.0	287.8	165.4	53.9	2,583.6	1,342.1	37.0	23.5
1980	1,082.0	334.1	231.7	63.0	2,986.3	1,365.8	44.0	29.1
1981 Budget	957.2	251.9	225.8	51.6	2,989.9	1,343.6	40.0	22.6
1981 Prov'l.	880.6	231.6	205.4	46.0	2,898.9	1,343.6	37.5	20.7

Source of Basic Data: Financial Reports, 1974-80; 1981 Budget Estimates; 1981 Provisional Ministry of Finance and NCDP; GDP, CSO National Accounts.

103

TABLE 20

RECURRENT AND CAPITAL BUDGET—COMPARATIVE FIGURES

	1964/1965 Actual K	1969 Actual K	1974 Actual K	1975 Actual K	1977 Actual K	1979 Actual K	1980 Actual K	1981 Budget K	1982 Budget K
RECURRENT BUDGET									
Personal Emoluments, ..	33,603,434	61,619,073	100,848,710	118,705,225	148,030,000	170,157,034	204,584,023	275,011,810	207,848,300
Wages	—	—	—	—	—	—	—	—	64,402,250
Recurrent Departmental Charges ..	20,540,010	65,010,035	99,501,735	112,864,003	120,037,350	100,711,153	103,420,683	217,053,385	159,223,353
Grants	15,547,824	31,007,700	15,237,803	31,413,503	34,023,248	32,320,504	40,153,500	80,202,460	83,032,400
Subs. Lic.		20,714,342	47,303,047	82,504,573	96,293,501	105,302,501	200,400,008	121,702,000	88,555,000
Other Payments ..		230,111	1,085,003	3,245,381	5,751,108	8,010,700	11,404,737	12,031,570	11,203,451
Special Expenditure ..	4,280,650	7,104,010	3,700,010	4,112,051	5,015,750	4,215,550	0,410,000	5,541,451	5,133,704
Pensions	8,718,014	4,375,338	5,418,510	4,773,719	17,503,584	20,408,300	19,975,010	20,100,200	25,230,000
Emergency Expenditure ..	—	—	2,000,750	14,005,703	35,250	250,000	—	—	1
Contingencies Fund ..	—	—	5,000,000	—	—	—	—	—	10,000,000
<i>Sub-Total</i>	88,000,028	160,007,080	277,005,203	305,004,203	398,750,807	501,484,250	685,438,017	748,242,480	744,403,404
Constitutional and Statutory Expenditure	22,047,700	54,830,020	103,533,031	243,507,308	201,038,104	335,581,005	300,527,775	325,577,000	425,000,000
<i>Total</i>	111,047,728	214,837,100	380,538,234	548,511,511	600,000,011	837,065,015	1,031,005,702	1,073,810,480	1,169,403,404
CAPITAL									
	28,077,487	101,000,718	103,772,115	245,500,804	100,301,383	105,300,575	575,000,850	320,543,500	331,034,000
<i>Grand Total</i>	140,201,821	327,108,327	484,310,349	794,012,315	700,301,394	942,365,590	1,657,500,012	1,403,363,070	1,501,037,464

X-104

TABLE 21

MACROECONOMIC INDICATORS, 1975-1981

	1976	1977	1978	1979	1980	1981
	(ratios; in percent change from previous years - all in 1970 Kwacha)				Preliminary	Provisio
Government final consumption	1.7	-5.1	-7.6	-3.1	10.5	-10.9
Private final consumption	-23.5	-5.6	16.7	10.1	11.2	-2.5
Gross fixed capital formation	-16.0	-8.2	-29.9	-27.7	31.6	-5.1
Exports of goods and services	21.5	-2.0	-8.0	-14.7	-13.7	-2.5
Imports of goods and services	-25.5	-6.5	-21.1	-4.0	2.1	-15.2
Gross domestic product (GDP)	4.3	-4.8	1.9	-8.6	3.0	-1.8
Gross domestic product (GDP) at current prices	18.2	4.2	12.8	17.9	15.0	0.1
	<u>(Ratios; in percent of GDP at current prices)</u>					
Government final consumption	26.8	28.4	26.9	25.9	28.3	27.9
Private final consumption	35.7	37.1	44.2	48.2	53.9	57.4
Gross fixed capital formation	33.0	34.2	25.2	20.0	21.6	24.2
Export of goods and services	44.5	40.4	34.0	45.0	37.8	35.6
Imports of goods and services	39.3	40.5	36.8	34.8	43.4	44.1

Source: Central Statistical Office

TABLE 22

BALANCE OF PAYMENTS PROJECTIONS - 1981-83

	Provisional 1981	Estimate 1982	Forecast 1983
1. Exports (f.o.b.)	870	936	983
2. Imports (f.o.b.)	<u>-937</u>	<u>-984</u>	<u>-1,023</u>
I. Trade Balance	= 67	= 48	= 40
<u>Invisibles:</u>			
3. Non factor Services (net)	=165	=170	=178
4. Investment Income (net)	=200	=204	=217
5. Unrequited Transfers (net)	= 46	= 50	= 54
6. Total Invisibles (net)	=411	=424	=449
II. Current Account Balance	=478	=472	=489
III. Capital A/c (net) including errors and omissions	208	182	=191
IV. Overall Balance	=270	=290	=298

Source: Ministry of Finance

x/10/0

APPENDIX C

CIP ATTRIBUTIONS OF LOCAL CURRENCY GENERATIONS



REPUBLIC OF ZAMBIA

MINISTRY OF FINANCE

P.O. BOX 50062
LUSAKA

15th June, 1982

The Resident Representative,
US Agency for International Development,
LUSAKA.

Dear Sir,

COUNTERVALUE ATTRIBUTION:
PL 480 TITLE II AGREEMENT, 1979
GIE AGREEMENT, 1981
PL 480 TITLE I AGREEMENT, 1981

I regret the long delay on our part in giving you our reports on the use of the Local currency under the above agreements.

Following the various discussions we had with NAMBOARD and EAND and the data received from them, I am now in a position to report as follows:

I. 1979 AGREEMENT ON PL 480 TITLE II

There is an outstanding balance of K1,675,419 on which we are obliged to provide utilisation details. We had agreed to use part of the funds under this agreement to provide Local currency funding for expansion/construction of storage facilities for which major funding was expected from other donors.

The Canadian financed storage development programme which was discussed at this time got delayed for a variety of reasons but is gaining momentum from early this year.

NAMBOARD is maintaining a special bank account for this project which will inter alia account for both direct and indirect GIE fundings. A certificate on the utilisation of K1,675,419 will therefore be furnished by 1st June, 1983.

II. 1981 GIE AGREEMENT FOR US\$15 MILLION

Under the agreement, the Local currency equivalent (K1,502,500) was to be used to partially subsidise 1981 maize producer, consumer prices. The expenditure incurred by us in such subsidies in 1981 amounted to K39,914,000 as under:

Handling cost (producer) subsidy paid to NAMBOARD in 1981:		
	K	K
Cash	19,500,000	24,914,000
Book adjustments	5,414,000	
(IDP No.		

108

TOTAL 24,914,000

K

Price differential (consumer)
subsidy paid to NAMBOARD in
1981:

15,000,000

Cash K5,388,126
Book adjust-
ment (IDC No.9,614,874
135542)

15,000,000

Total

39,914,000

The ~~amount~~ amount of K11,802,000 under the CIP Agreement is therefore fully attributed in subsidies duly paid.

III. 1981 PL 480 AGREEMENT FOR US\$10 MILLION

The local currency equivalent (K7,868,000), was to be used to partially pay for increases in maize producer price effective in 1981. The producer price increase implemented by the Government in 1981 resulted in an investment of K13,840,285 in the economy as follows:

Unit price increase
(From K11.70 to K13.50)

K
K.50 per bag

No of bags procured

7,689,050

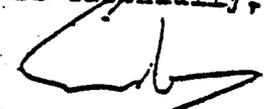
Total value
7,689,050 x K13.50

K13,840,285

The covenant under the subject agreement is therefore to be deemed to be fully met.

I trust the foregoing details will be acceptable to the US Government in full compliance to the 1981 (CIP and PL 480) Agreements. As regards the 1979 PL 430 Title II Agreement, I shall revert to you by mid-1983.

Yours faithfully,


K.R. SIVAPRAKASAM
For/Permanent Secretary
MINISTRY OF FINANCE

c.c. The Director-General,
National Commission for Development Planning,
LUSAKA.

c.c. The General Manager,
National Agricultural Marketing Board,
LUSAKA.

c.c. The Permanent Secretary,
Ministry of Agriculture and Water Development,
LUSAKA.

x 1009

APPENDIX D

AGRICULTURE TABLES

Table 1 ... : GROWTH, 1969-1980.

	1969	1980	Average Annual change in %
-----in 000-----			
Total Zambia	4057	5600	3.1%
Urban	1192	2440	6.7%
Rural	2865	3239	1.1%
-----in percent-----			
Total Zambia, of which			
Urban	29.4	43.0	
Rural	70.6	57.0	

Source: calculated from CS report on 1980 census.
REDSO/ESA, Ag. Div., DDijk man, 11/10/82.

Best Available Document

Table 2 .GROWTH OF AGRICULTURE COMPARED TO THE ECONOMY,
1973-81

	973-76	1976-79	1979-80	1980-81
----- annual percentage changes -----				
A. In Current Prices				
GDP	5.6	11.5	15.0	0.1
Agriculture	15.0	11.1	16.0	22.8
Commercial	15.3	3.3	32.2	48.4
Traditional	14.9	14.9	9.3	11.2
as percent of GDP				
----- period averages -----				
Agriculture	12.4	15.4	14.5	16.2
Commercial	4.1	4.9	4.4	5.8
Traditional	8.3	10.5	10.1	10.4
as percent of Agriculture				
Commercial	33.5	31.0	30.1	35.6
Traditional	66.5	69.0	69.9	64.4
B. In Constant Prices				
----- annual percentage changes -----				
GDP	2.8	-4.0	2.9	-1.8
Agriculture	5.1	-3.2	3.4	9.3
Commercial	10.8	-10.9	8.9	28.6
Traditional	2.1	0.9	1.1	1.2
as percent of GDP				
----- period averages -----				
Agriculture	10.6	11.5	11.4	12.1
Commercial	3.8	4.1	3.5	4.1
Traditional	6.8	7.4	7.9	8.0
as percent of Agriculture				
Commercial	35.5	34.1	30.6	34.1
Traditional	64.5	65.9	69.4	65.9
C. Change in the price per unit of value added.				
----- annual percentage changes -----				
GDP	2.7	16.1	11.5	2.0
Agriculture	9.4	14.9	12.3	11.4
Commercial	4.3	15.9	21.4	15.4
Traditional	12.5	13.3	8.1	9.8

Source: calculated from various Monthly Statistical Bulletins, C.S.O. REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

x 112

Table 3: C.F. MAINT MARKETED PRODUCTION OF SELECTED CROPS COMPARED TO
1979/80 - 1981/82 TREND 1/.

	1979/80	1980/81	1981/82
Actual as Percent of Trend	-----	in percent	-----
Maize	61	70	128
Wheat	95	118	125
Rice	72	76	98
Millet	140	- <u>2/</u>	-
Sorghum	29	16	88
Soyabeans	88	204	169
Groundnuts	61	47	36
Seed Cotton	149	208	139

1/ base period was 1972/73 -1979/80.

2/ data not collected, but believe volume dropped substantially. In terms of volume, millet marketed through official channels is very low, hence small changes cause large percentage changes.

Source: MAWD Agricultural Statistical Bulletin, 1980, and AID/Z records.

REDSO/ESA, Ag.Div., DDijkerman, 11/10/82.

Table ... OFFICIALLY MARKETED AGRICULTURAL PRODUCTION OF SELECTED CROPS, 1973/74 - 1981/82

	1973/74- 1976/77	1976/77- 1979/80	1979/80- 1980/81	1980/81- 1981/82	
Annual Percentage Changes	-----in percent-----				
Maize	23.4	-23.5	14.0	81.2	
Wheat	322.7 ^{1/}		18.2	46.7	23.2
Rice	82.4	-14.1	19.5	29.0	
Soyabeans	309.6 ^{2/}		28.9	173.6	74.7
Groundnuts	43.3	-33.9	-25.9	-35.0	
Sorghum	44.7	12.0	-40.0	244.4	
Millet	110.6	-58.5	132,000.0		N/A ^{3/}
Seed Cotton	-9.4	56.6	53.6	-25.0	

Crops as Percentage of
Total Officially Marketed
Production

	-----in percent, period average-----				
Maize	98.2	95.1	90.5	94.6	
Wheat	0.2	0.9	2.3	1.6	
Rice	0.2	0.3	0.5	0.4	
Soyabeans	+0.0	0.2	0.8	0.9	
Groundnuts	1.0	0.6	0.5	0.2	
Sorghum	+0.0	0.1	+0.0	+0.0	
Millet	+0.0	+0.0	+0.0	N/A	
Seed Cotton	0.4	2.7	5.4	2.3	

^{1/} 1975/76 - 1976/77

^{2/} 1974/75 - 1976/77

^{3/} N/A = not available. Also, since so little millet is marketed through official channels, small volume changes result in large percentage changes.

Source: MAWD Agricultural Statistics Bulletin 1980, plus AID/Z records. REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

2114

Table 5 : COMPARISON OF TOTAL PRODUCTION AND OFFICIALLY MARKETED PRODUCTION,
1981/82.

		Production	Officially Marketed	% Officially Marketed
Maize	90 Kg bag	8,159,000	5,109,000	62.6
Wheat	90 Kg bag	157,000	157,000	100.0
Rice (Paddy)	80 kg bag	66,000	41,000	62.1
Soya Beans	90 Kg bag	74,000	71,000	95.9
Groundnuts	80 Kg bag	117,000	19,000	16.2
Sorghum	90 Kg bag	155,000	3,400	2.2
Miller ^{1/}	90 Kg bag	-	-	-
Seed Cotton	MT	14,800	14,800	100.0
Cassava ^{1/}		-	-	-

^{1/} not monitored by MAWD.

Source: Calculated from "Final Crop Forecasting Report: 1981/82 (op Season,"
MAWD, June, 1982.
REDSO/ESA, Ag. Div., D. Dijkerman, 11/10/82.

Table 6. PRODUCTIVITY (ADDED) PER WORKER IN AGRICULTURE, 1965-1981.

	1965	1970	1975	1979	1980	1981
-----in 1970 Kwacha-----						
GDP total	1038	1004	954	783	778	737
Agriculture, total	186	156	166	153	157	169
(Commercial)	(878)	(1199)	(1560)	(1503)	(1503)	(1842)
(Subsistence)	(156)	(112)	(110)	(111)	(111)	(111)
Index (GDP/Worker)	100.0	96.7	91.9	75.4	75.0	71.0
Agriculture/worker	100.0	83.9	89.2	82.3	84.4	90.9
Commercial	100.0	136.6	177.7	148.2	171.2	209.8
Subsistence	100.0	71.8	70.5	71.2	71.2	71.2
	1965-70	1970-75	1975-79	1979-80	1980-81	
-----average annual percentage change-----						
GDP, total	- 0.7	- 1.0	-4.8	-0.6	-5.3	
Agriculture, total	- 3.5	1.3	-2.0	2.6	7.6	
(Commercial)	(6.4)	(5.4)	(-4.4)	(15.5)	(22.6)	
(Subsistence)	(-6.4)	(-0.4)	(0.2)	(0.0)	(0.0)	

Source: Calculated from various Monthly Statistical Bulletins, C.S.O. (See Stewart Callison's report on macro-economic situation).
 REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

x115

Table 7 :CHANGES IN AGRICULTURAL PRODUCER PRICES,
1973/74-1983/84.

	1973/74- 1976/77	1976/77- 1979/80	1979/80- 1981/82	1981/82- 1982/84
In current prices ----- annual percentage changes-----				
Maize	20.8	12.6	22.5	16.3
Maize, adjusted ^{1/}	13.0	22.1	9.0	30.5 ^{3/}
Wheat	0.0 ^{2/}	7.6	14.1	5.6
Rice	19.8 ^{2/}	3.7	7.7	46.6
Soyabeans	26.7	13.7	20.4	11.7
Groundnuts	25.6	8.5	15.5	13.5
Sorghum	8.8	0.0	22.2	33.4
Miller	- ^{4/}	0.0 ^{5/}	0.0	0.0
Seed Cotton	30.5	4.8	0.0	6.3
In Constant prices ^{6/}				
Maize	- 4.4	- 0.0	8.8	3.4
Maize, adjusted	- 4.4	0.0	- 3.9	16.4 ^{3/}
Wheat	-17.2 ^{2/}	- 4.5	-4.2	4.4
Rice	- 0.5 ^{2/}	- 8.0	- 4.8	30.8
Soyabeans	7.5	1.0	8.7	- 0.3
Groundnuts	6.3	- 3.6	2.3	1.4
Sorghum	- 7.8	-11.1	2.7	18.8
Miller	- ^{4/}	-10.8 ^{5/}	-16.2	-10.1
Seed Cotton	10.4	- 6.9	-16.4	- 4.9

^{1/} adjusted for fertilizer subsidy.

^{2/} 1975/76-1976/77.

^{3/} 1981/82-1982/83.

^{4/} No official prices offered.

^{5/} 1978/79 - 1979/80.

^{6/} for constant price calculations beyond 1980/81, inflation extrapolated at 1980/81 rate. Inflation rate calculated from IMF "International Financial Statistics" by calculating GDP deflator.

Source: calculated from MAWD Agricultural Statistical Bulletin, 1980, and supplementary reports.

REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

TABLE 10. FERTILIZER SALES AND CERTIFIED SEED PRODUCTION,
1972-1981.

	1972- 1973	1973- 1977	1977- 1980	1980- 1981	1972/73- 1981
	average in MT	-----percentage change-----			
Fertilizers, total	98,971	14.1	5.4	-11.7	7.3
Maize mixture and others	93,695	14.8	5.2	-12.2	7.4
Tobacco mixtures	5,276	-1.5	12.2	0.1	3.6
	average in 50 Kg. bags				
Seed Production	64,892	17.5	12.7 ^{1/}	N/A	
SR-52	53,942	18.5	10.6	N/A	
ZH-1	10,950	12.4	24.9	N/A	

^{1/} data available till 1979/80 only.

Source: MAWD Agricultural Statistics Bulletin, and 1980, various AID/2
CIP PAAD's.
REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

x/18

Table 9 .SELECTED OFFICIAL AGRICULTURAL COMMODITY PRICE CHANGES RELATIVE TO OFFICIAL MAIZE PRICES, 1973/74-1983/84.

	1973/74- 1976/77	1976/77- 1979/80	1979/80- 1981/82	1981/82- 1983/84	1973/74- 1983/84
-----annual percentage changes-----					
Changes Relative to the Maize Price					
Wheat	-19.9	-4.4	- 7.0	1.0	- 5.8
Rice	- 4.2	-7.9	-12.0	26.0	- 1.1
Soyabean	11.6	1.0	-1.8	- 4.0	2.4
Groundnut	10.8	-3.6	- 5.7	- 2.4	0.3
Sorghum	- 5.9	-11.3	- 0.0	14.6	- 2.0
Millet	1/	-23.9	-18.0	-14.4	-17.8
Seed Cotton	15.0	- 7.0	-18.4	- 8.5	- 3.7
Average (annual)	1.2	- 8.2	- 9.0	1.8	- 4.0
Changes Relative to the Maize Price, adjusted for fertilizer subsidy					
Wheat	- 9.4	-11.7	4.6	-5.3	- 6.1
Rice	8.9	-15.1	-1.2	15.7	- 4.0
Soyabean	12.9	-6.8	10.4	-10.8	2.5
Groundnut	11.2	-11.1	6.0	-13.9	- 0.8
Sorghum	0.4	-17.9	12.3	-24.5	- 8.0
Millet	1/	-35.4	-8.7	-22.9	-19.7
Seed Cotton	5.5	-14.1	-8.3	-21.5	- 4.8
Average (annual)	6.5	-16.0	2.2	-11.9	- 5.8

1/ no official millet price offered.

Source: calculated from MAWD Agricultural Statistical Bulletin, 1980 and subsequent announcements.

REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

1/19

Table 10 .ZAMBIA'S AGRICULTURAL COMMODITY PRICES COMPARED TO WORLD PRICE EQUIVALENTS, 1973/74-1981/82.

Period Averages (Domestic Price as Percent World Price)	1973/74-	1076/77-	1079/80-	1980/81-	1973/74-	1980/81-	1973/74-
	1976/77	1979/80	1980/81	1981/82	1981/82	1981/82	3/1981/82
	In percent						
Maize	59	76	95	119		83	
Maize, adjusted ^{1/}	80	106	166	151		106	
Wheat	123 ^{2/}	149	159	161		113	
Rice	113 ^{2/}	92	72	107		75	
Soyabeans	69	82	118	141		97	
Groundnuts	53	67	67	118		83	
Sorghum	62	59	60	65		45	
Millet	N/A ^{4/}	N/A	N/A	N/A		N/A	
Seed Cotton	23	27	24	26		18	
Average Annual Change of Domestic Price against the World Prices.	annual percentage changes						
Maize	20.3	2.0	11.8	25.3	12.6	4.2	10.1
Maize, adjusted ^{1/}	19.9	10.8	22.1	-9.0	12.7	-24.1	10.2
Wheat	9.1	-9.1	17.8	1.3	-0.4	-14.5	-3.2
Rice	3.6	-11.8	-8.9	48.6	-0.6	25.0	-3.4
Soyabean	19.3	10.7	19.2	19.5	16.0	+0.0	13.4
Groundnuts	31.9	12.0	23.0	76.1	20.2	47.8	17.6
Sorghum	16.3	-16.6	39.5	8.3	4.1	8.3	2.0
Millet	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Seed Cotton	20.5	-5.0	+0.0	8.3	6.3	-15.4	4.1

^{1/} adjusted for fertilizer subsidy.

^{2/} 1975/76-1976/77 only.

^{3/} calculated using a shadow exchange rate which is equivalent to a 30% devaluation of the Zambia Kwacha.

^{4/} N/A=not available.

NB: World price equivalent was calculated by using IFS world commodity prices and multiplying them by Zambia's CIF factors, also reported by IFS. Because agricultural products tend to be of higher bulk and lower value than the average commodity mix (e.g., IFS's C.I.F. factor), the actual import parity or world equivalent prices are probably slightly higher than calculated in this table.

Source: calculated IMF International Financial Statistics, various months and year book, and MAWD reports.

REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

X12

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT SUBSIDY
 EXPENDITURES FOR NAMBOARD AND OFFICIAL GRZ MARKETING
 AGENCIES, 1972-1981.

	1972	1976	1980	1981
NAMBOARD Subsidies -----in millions of Kwacha-----				
Maize Price Differential	-	-	66.3	15.0
Maize Handling Differential	-	-	30.9	24.9
Subtotal	8.4	22.0	97.2	39.9
Fertilizer Price Differential	-	-	36.2	27.5
Fertilizer Handling Differential	-	-	13.8	10.4
Subtotal	3.7	21.1	50.0	37.9
Marketing Agencies (Cooperatives)^{1/}				
NCU ^{2/}	-	-	1.5	2.0
ECU	-	-	2.8	3.2
SCU	-	-	7.0	5.2
LCU	-	-	0.2	0.4
K-ECU	-	-	0.1	+0.0
New CU	-	-	-	0.8
Subtotal	9.9	9.5	11.6	11.6
Total Subsidy Expenditures	22.0	52.6	158.8	89.4
N.B.: Annual percentage changes				
	1972-76	+24.4		
	1976-80	+31.8		
	1980-81	-43.7		

^{1/} Covers subsidies on a variety of minor crops and agricultural inputs, mostly channeled through rural cooperatives.

^{2/} Northern Province Cooperative Union.

Source: various GRZ budgetary expenditure reports.
 REDSO/ESA, Ag.Div., DDijkerman, 11/10/82.

121

TABLE 12
FERTILIZER SUPPLY AND DEMAND
(in 000's metric tons, 7/82-6/83)

Compounds	Requirements FY81-82 Usage + 10%	In Stock NAMBoard + ZCF	On order (NAMBoard)	In Production (NCZ)	Supply over Requirements
X and R	84	58	36	57	67
D	42	64	35	22	79
C and V	9	16	-	3	10
Ammonium Nitrate	29	9	-	59	39
Urea	71	8	62	-	-1
Potash and Phosphates	3	6	-	-	3
	238,000 tons	161,000	133,000	141,000	197,000

SUPPLY AND DEMAND
(7/83 - 6/84)

Compound	FY82-83 Projection + 10%	FY82-83 Surplus	NCZ Production	Orders (NAMBoard)	Surplus (Shortage)
X and R	92	67	93	6	74
D	47	79	-	3	35
C and V	10	10	-	-	-
Ammonium Nitrate	32	39	67	-	74
Urea	78	-1	-	14	(65)*
Potash and Phosphates	3	3	-	-	-
	262,000 tons	197,000	180,000	23,000	118,000

* AN is a substitute for Urea

x 122

TABLE 13

COMMON FERTILIZER PRODUCTS USED IN ZAMBIA

Fertilizer Type	Specification					1982-83 Estimated Consumption in M.T.	General Use
	N	P ₂ O ₅	K ₂ O	Sulphur	Boron		
<u>Compound Fertilizer</u>							
C	6	18	12	10	0.1	6,800	Tobacco Cotton
A*	2	18	15	10	0.1	2,100	Tobacco
V	4	18	15	10	0.1	3,000	Tobacco
R	20	20	0	10		42,000	Small Farm
X	20	10	5	10		30,000	Small Farm
D	10	20	10	10		45,300	Comm. Farm
<u>Straight Fertilizer</u>							
Ammonium Nitrate	34	-	-	-		25,000	Comm. Farm
Sodium Nitrate	16	-	-	-		300	NCZ
Ammonium Sulphate	21	-	-	-		2,000/9,700	Comm. Farm NCZ
Urea	46	-	-	-		70,000	Comm. Farm
Diammonium Phosphate	18	46	-	-		15,800	NCZ
Single super-phosphate **	-	19	-	-		11,500 900	Comm. Farm NCZ
Triple super-phosphate	-	44	-	-		300 13,800	Comm. Farm NCZ
Potassium Chloride**	-	-	60	-		140 155	Comm. Farm NCZ
Potassium Sulphate	-	-	50	-		200 8,500	Comm. Farm NCZ
Borax**	-	-	-	-	100	30	NCZ

* Discontinued production and importation

** Component of C Compound Fertilizer

Source: NAMBOARD July 1982
NCZ

123

Table 14

Compound Fertilizer Imports

(in 000's metric tons, from NAMBoard Statistics)

<u>Commodity</u>	<u>Year</u>	<u>USAID</u>	<u>Other Source</u>
UREA	1978/79	39.0	33.3
	1979/80		30
	1980/81		54
	1981/82		15
	1982/83	14.0*	70
	1983/84 (1)	?	65
COMPOUND D	1978/79	40.2	17.2
	1979/80		-0-
	1980/81		45
	1981/82		45
	1982/83	3*	57.3
	1983/84	-0-	-0-
COMPOUND B	1978/79	12	12
	1979/80	10.5	25.9
	1980/81	40.6	-0-
	1981/82		40.6
	1982/83	3*	53.3
	1983/84	-0-	-0-
COMPOUND X	1978/79	10	10
	1979/80	20	-0-
	1980/81	10	67.5
	1981/82		45
	1982/83	3*	27.3
	1983/84	-0-	-0-

* Estimated order by GRZ for 1982 CIP

(1) Stocks and manufactures should meet all demands except Urea.

X 129

TABLE 15

ZAMBIA AGRICULTURAL PRODUCER PRICES, SELECTED CROPS, 1973/74 - 1983/84

Commodity	Units	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84
maize	K/MT	48	48	56	70	70	76	100	130	150	178	203
wheat	K/MT	-	-	178	178	222	222	222	289	289	356	375
rice	K/MT	-	-	242	290	290	290	323	363	375	565	806
soyabeans	K/MT	93	147	147	189	189	239	278	356	403	170	503
groundnuts	K/MT	158	213	213	313	313	358	400	438	534	500	688
sorghum	K/MT	52	56	67	67	67	67	67	100	100	100	178
millet	K/MT	-	-	-	-	-	67	67	67	67	67	67
seed cotton	K/MT	180	250	300	100	400	460	460	160	460	170	520

Source: GRZ/CSO, "Annual Agricultural Statistics Bulletin, 1980, (November 1981) AHO

Silinda Matala, FFP assistant, USAID/Zambia

TABLE 16

REAL PRODUCER PRICES, SELECTED AGRICULTURAL COMMODITIES, 1973/74 - 1982/83

	Unit	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84
CPI	1975=100	0.862	1.000	1.180	1.423	1.656	1.817	2.029	2.313	2.591	2.902	3.250
Producer Prices												
maize w/fert.	K/MT	71	64	68	62	55	57	79	99	73	85	N/A
maize w/o fert.	K/MT	56	48	47	49	42	42	49	56	58	61	62
wheat	K/MT	-	-	151	125	107	122	109	125	112	123	123
rice	K/MT	-	-	205	204	175	160	159	157	145	195	248
soybean	K/MT	107	147	125	133	114	132	137	154	156	162	155
groundnuts	K/MT	183	213	181	220	189	197	197	189	206	207	212
sorghum	K/MT	60	56	57	47	40	37	33	43	39	34	55
millet	K/MT	-	-	-	-	-	37	33	29	26	23	21
seed cotton	K/MT	209	250	254	281	242	253	227	199	177	162	160

Source: Table 15 and CPI calculated from IMF/IFS.

TABLE 1

WORLD AGRICULTURAL PRICES, SELECTED COMMODITIES, 1974 - 1982

Commodity	Unit	1973/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82 1st and 2nd quarters
maize (USGulf)	\$/MT	132	119	112	95	101	116	126	131	115
wheat (Austr.)	\$/MT	195	148	126	107	136	158	175	174	163
rice (Thail.)	\$/MT	542	363	255	272	367	334	434	483	317
soyabeans	\$/MT	277	220	231	279	268	297	297	288	260
groundnuts (oil)	\$/MT	739	433	423	547	631	563	486	623	411
sorghum	\$/MT	140	124	116	98	107	130	164	160	140
millet	N/A *	-	-	-	-	-	-	-	-	-
cotton (Liverpool)	\$/MT	1433	1167	1705	1568	583	1697	2062	1847	1591
FOB/CIF factor**		1.229	1.225	1.205	1.173	1.199	1.208	1.200	1.200	1.200

*N/A = Not available

** FOB/CIF Factor from IMF/IFS. 1981/82 extrapolated at 1980/81 rate.

APPENDIX E

NCZ FERTILIZER PRODUCTION AND REQUIREMENTS

NCZ RAW MATERIALS REQUIREMENTS

(in 000's metric tons for Compound Fertilizers)

Materials	Reqmts for FY 82-83	Stock at NCZ (7/1/82)	Ordered 6/82	To order 8/82	Plant Manufacture	Surplus or required	Reqmts for FY 83-84	Estimated Stock	Required
AMMONIUM NITRATE	16	?	-0-	-0-	16	-0-	20.5	-0-	20.5
AMMONIUM SULPHATE	28	1	3	-0-	24	-0-	36.5	-0-	36.5
DI-AMMONIUM PHOSPHATE	15	7.3	8	11.5	-0-	12	23	12	11
SINGLE SUPER PHOSPHATE	1	-0-	-0-	-0-	-0-	(1)	-0-	-0-	-0-
TRIPLE SUPER PHOSPHATE	13	1.8	6.5	4.2	-0-	(.5)	7.5	-0-	7.5
POTASSIUM SULPHATE	8	2.6	4.4	4.7	-0-	3.7	4.5	3.7	1
POTASSIUM CHLORIDE	.1	.2	-0-	-0-	-0-	.1	-0-	-0-	-0-
BORAX	.03	.05	-0-	-0-	-0-	.02	-0-	-0-	-0-
COATING AGENTS	1	?	-0-	.6	-0-	(.4)	1	-0-	1
	82.13	12.95	22	21	16	(10)	93	15.5	77.5

129

INPUTS IN COMPOUND FERTILIZERS

(Rounded, using U.S. or European Input Costs. in U.S.\$)

Materials	D (70-20-10)		R (20-20-10)		C (6-18-12)		X (20-10-5)	
AMMONIUM NITRATE 1.	\$76	13%	\$117	20%	\$53	9%	\$140	24%
AMMONIUM SULPHATE 2.	101	22%	161	33%	60	13%	202	44%
DI-AMMON. PHOSPHATE 3.	33	7%	155	33%	-	-	75	16%
SINGLE SUPER PHOSPH. 4.	-	-	-	-	91	23%	-	-
TRIPLE SUPER PHOSPH. 5.	165	37%	49	11%	134	30%	22	5%
POTASSIUM SULPHATE 6.	98	20%	-	-	88	18%	49	10%
POTASSIUM CHLORIDE 7.	-	-	-	-	21	5%	-	-
BORAX 8.	-	-	-	-	6	1%	-	-
COATING AGENT 9.	5	1%	5	1%	5	1%	5	1%
TOTAL RAW MATERIALS	\$478	100%	\$486	100%	\$458	100%	\$493	100%

1. Ammonium Nitrate - shown is the NCZ price (K.531), adjusted to U.S. dollars (Kw1 = U.S.\$1.10)
2. Ammonium Sulphate - The 1981 U.S. price of \$420 is increased 10% or \$460. This price includes \$200 in transport costs.
3. DAP - The 1981 U.S. price of \$420 is increased 10% or \$460. This price includes \$200 in transport costs.
4. SSP - Estimated as above at \$395 per ton
5. TSP - " " " " \$445 " "
6. SOP - " " " " \$490 " "
7. MOP - " " " " \$420 " "
8. Borax - " " " " \$565 " "
9. Coating Agents - Estimated as above at \$540 per ton.

X 120

NITROGEN CHEMICALS OF ZAMBIA LTD
NEW FERTILIZER PLANT
PROJECTED PROFIT AND LOSS ACCOUNT

Description	Financial Years				
	1982/83	1983/84	1984/85	1985/86	1986/87
Sales Revenue					
AN Fertilizer	23,077	27,240	29,443	29,443	29,443
Amm Sulphate	-	-	800	800	800
Compound D	13,250	-	12,240	12,240	12,240
R	16,252	30,132	30,132	30,132	30,132
C	1,859	-	-	-	-
X	20,518	29,621	29,621	29,621	29,621
Others	50	50	50	50	50
Total Sales Rev	75,006	87,043	102,286	102,286	102,286
Direct Cost					
Raw Materials	28,376	28,875	35,760	35,760	35,760
Fuel	2,306	2,437	1,038	1,038	1,038
Chemicals + catah	1,233	1,415	1,605	1,605	1,605
Electricity	2,120	2,230	2,300	2,300	2,300
Packing Materials	2,205	2,539	3,000	3,000	3,000
Repaid Maintenance	3,624	5,800	5,940	5,940	5,940
Others	200	200	200	200	200
Total Direct Cost	40,064	43,496	49,843	49,843	49,843
Fixed Cost					
Salaries and Wages:					
- Admin	355	355	355	355	355
- Mtg	4,521	4,521	4,521	4,521	4,521
Admin OH	406	406	406	406	406
Capital Levy	1,769	1,769	1,769	1,769	1,769
Import Licence	1,187	1,024	1,263	1,263	1,263
Insurance	2,600	2,620	2,640	2,640	2,640
Depreciation	18,023	18,193	18,350	18,508	18,667
Finance Charges					
- GRZ	9,219	9,219	9,219	9,219	9,218
- Con.Banks	4,116	3,111	2,290	1,569	927
- Fin Ins	4,048	3,957	3,695	3,343	2,973
- Others	352	352	352	352	352
Guarantee fees	110	100	90	80	70
O/D Interest	110	440	220	-	-
Preproduction Exp.	1,636	1,636	1,636	1,635	-
Total Fixed Cost	48,451	47,703	46,806	45,660	43,161
Net Profit/Loss	(13,509)	(4,156)	5,637	6,783	9,292

131

NITROGEN CHEMICALS OF ZAMBIA LTD
NEW FERTILIZER PLANT
PROJECTED BALANCE SHEET

Assets Employed

Amounts K'000

	As of				
	31.3.82	31.3.82	31.3.84	31.3.85	31.3.8
<u>Fixed Assets</u>					
Costs	277,554	281,554	283,554	285,554	287,554
Comm. Depreciation	-	18,022	36,215	54,565	73,073
	277,554	263,532	247,339	230,989	214,481
<u>Current Assets</u>					
Stocks	11,975	19,090	22,025	22,025	22,025
Debtors	3,342	10,225	11,869	13,948	13,948
Funds on Deposit	3,500	-	-	-	-
Cash and Bank Balance	1,799	1,577	322	8,880	24,517
	20,616	30,895	34,216	44,853	60,490
<u>Less Current Liabilities</u>					
Creditors	4,650	3,341	3,537	3,537	3,537
Short term Indebt	400	13,548	8,986	9,289	9,107
Bank overdraft	380	1,000	4,000	-	-
	5,430	17,889	16,523	12,826	12,644
Net Current Assets/ Liabilities	15,188	13,006	17,693	32,027	47,846
Pre Prod + Def. Exp.	6,543	4,906	3,270	1,634	-
Total	299,283	281,444	268,302	264,630	262,327
<u>Financed by:</u>					
Share Capital	103,800	117,954	117,954	117,954	117,954
Cumulative Profit/Loss	-	(13,509)	(17,665)	(12,028)	(5,245)
Shareholders funds	103,800	104,445	100,289	105,926	112,709
Long term indebt	195,483	176,999	168,013	158,724	149,618
Total	299,283	281,444	268,302	264,650	262,327

X133

NITROGEN CHEMICALS OF ZAMBIA LTD
 NEW FERTILIZER PLANT
 PROJECTED CASH FLOW
 (in Kw ccc's)

Financial Years

	1982/83	1983/84	1984/85	1985/86	1986/87
Receipts					
Sales	68,120	85,402	100,207	102,286	102,286
Withdrawn from St. Dep.	3,500	-	-	-	-
Increase in overdraft	620	3,000			
Payments					
Materials and stores	46,168	43,805	47,343	47,343	47,343
Electricity	2,120	2,230	2,300	2,300	2,300
Salaries/wages - Admin	355	355	355	355	355
- Mtg	4,521	4,521	4,521	4,521	4,521
Capital Ley	1,769	1,769	1,769	1,769	1,769
Import Licence	1,187	1,024	1,263	1,263	1,263
Admin O.H.	406	406	406	406	406
Insurance	2,600	2,620	2,640	2,640	2,640
Financing Charges					
- GRZ		9,219	9,219	9,219	9,219
- Comm. Banks	4,116	3,111	2,290	1,569	927
- Fin Inst.	4,048	3,957	3,695	3,343	2,973
- Others	352	352	352	352	352
Guarantee Fees	110	100	90	80	70
Cap. Expenditure	4,000	2,000	2,000	2,000	2,000
Others	200	200	200	200	200
Loans/OD Repayments	400--	13,548	12,986	9,289	9,106
O/D interest	110	440	220		
Total Payments	72,462	89,657	91,649	86,649	85,441
Net Receipts (Payments)	(222)	(1,255)	8,558	15,637	16,842
Cash Balance - OPG	1,799	1,577	322	8,880	24,517
Cash Balance - CLG	1,577	322	8,880	24,517	41,359

133

NITROGEN CHEMICALS OF ZAMBIA LTD.
 NEW FERTILIZER PLANT
PRODUCTS AVAILABLE FOR SALE - QTY AND VALUE

Product	SP/ MT K	1982/83		1983/84		1984/85	
		QTY MT	Value K'000	QTY MT	Value K'000	QTY MT	Value K'000
.N. Fertilizer	531	43,460	23,077	51,300	27,240	55,450	29,443
mm. Sulphate	400	-	-	-	-	2,000	800
Compounds							
D	612	21,650	13,250	-	-	20,000	12,240
R	648	25,080	16,252	46,500	30,132	46,500	30,132
C	641	2,900	1,859	-	-	-	-
X	637	32,210	20,518	46,500	29,621	46,500	29,621
Others	-	-	50	-	50	-	50
Total		125,300	75,006	144,300	87,043	170,450	102,236

1134

NITROGEN CHEMICALS OF ZAMBIA LTD.
 NEW FERTILIZER PLANT
 COMPOUND FOR PRODUCTION + MATERIAL CONSUMPTION

	1982/83	1983/84	1984/85
Production:			
Compound C	2,900	-	-
R	25,080	46,500	46,500
D	21,050	-	20,000
X	32,210	46,500	46,500
Total	81,840	93,000	113,000
Imported Material Consumption:			
DAP	15,820	23,920	25,560
SSP	906	-	-
TSP	13,800	8,060	15,600
SOP	8,490	4,850	9,100
MCP	154	-	-
Borax	30	-	-
Coal Agent	990	1,020	1,240
Ammonium Sulphate	9,700	-	-
Total Imported Materials	49,890	37,850	51,500
Local Materials Added	31,950	55,150	61,500

Locally Produced Material Added:

Ammonium Nitrate	16,562
Ammonium Sulphate	19,083

135

APPENDIX F

NCZ EQUITY ASSUMPTION PROPOSAL

APPENDIX F

NCZ EQUITY ASSUMPTION PROPOSAL TO GRZ
(Impact of measures on production costs)

NCZ is making the following proposal to the GRZ. This proposal has been approved by the Board of Directors, ZIMCO, and should be forwarded to the GRZ shortly.

GRZ equity increase and debt assumption

1. Capital grant by way of waiver of GRZ loans principal	Kw. 92,200,000
Interest (accrued to 31/3/82)	11,500,000
2. Assumption of consortium loans	
Medium term	23,000,000
Short term	8,500,000
ZCNB loan	5,700,000
3. Commercial bank loans	
Standard	800,000
Barclays	11,500,000
ZNCB	8,500,000
4. Capital grant in cash	13,700,000
	<u>Total Kw. 175,400,000</u>

The total plant construction charges to date total Kw.285.5 million. NCZ considers 61% of this total to be attributable to the following causes: cost over-runs, delays in finalizing financing arrangements, costs of preservations, and additional interest from the prolongation/rescheduling of loans. These costs, totalling Kw.175 million, NCZ feels should be absorbed by the GRZ and should not be included in the asset value of the plant.

If the GRZ was to make the requested capital grant, the annual cost savings to NCZ would be about Kw.26,300,000. This is based on reducing the following:

1137

1.	Interest charges GRZ	9,219,000
	Commercial banks	2,400,000
	Other loans	3,720,000
2.	Reduction in Asset values	
	61% reduction in depreciation	<u>10,993,000</u>
	1982/83 Total Reduction Kw.	<u>26,332,000</u>
3.	Reduction in cash outflow - interest	15,339,000
	- principal payments	<u>400,000</u>
	- accrued charges	11,500,000
	1982/83 Total Cash Outflow Reduction Kw.	<u>27,239,000</u>

Using the reduction in direct and fixed costs and assuming the production rates and prices as given by NCZ, the average cost per ton of fertilizer (compounds and ammonium nitrate) would be reduced to Kw.496 in 1982/83 and Kw.450 in 1983/84.

APPENDIX G

INITIAL ENVIRONMENTAL EXAMINATION

APPENDIX G

Initial Environmental Examination

On October 23, 1980, amendments to AID Regulation 16 became effective and were published in the Federal Register on the same date. As amended, Section 216.3(a)(2) provides that the IEE will include a Threshold Decision made by the officer in the originating office who signs the PID. If the IEE is completed prior to or at the same time as the PID, the Threshold Decision will be reviewed by the Bureau Environmental Officer concurrently with approval of the PID. The Bureau Environmental Officer will either concur in the Threshold Decision or request reconsideration by the officer who made the Threshold Decision, stating the reasons for the request. Differences of opinion between these officers shall be submitted to the Assistant Administrator at the same time that the PID is submitted for approval.

In accordance with the revised procedures, the recommended Negative Determination of the Design Officer is treated as the Threshold Decision, and upon concurrence of the Africa Bureau Environmental Officer, the regulatory requirements of Regulation 16 will have been met.

Description of Project

Zambia is currently facing serious balance of payments deficits as a result of overdependence on copper mining. Depressed copper prices plus declining production volumes have eroded Zambia's historically favorable current account position and led to extensive external borrowing, a decline in foreign reserve holdings and a large accumulation of payments arrears on imports. The GRZ is undertaking appropriate economic and financial measures to ameliorate the current crisis.

The proposed \$20,000,000 commodity import loan will provide the GRZ with needed foreign exchange for essential public and private sector imports and will contribute to the GRZ's development program by generating counterpart funds. Commodities financed under the loan will be inputs required by the agricultural sector (excluding pesticides).

Recommended Environmental Action

In accordance with AID Regulation 16, paragraph 216-2(f), it has been determined that a negative determination is appropriate regarding the environmental impact of this activity. As the proceeds of the loan will not be used for the purpose of carrying out a specifically identifiable project or projects, an Environmental Assessment or Environmental Impact Statement is not required.

KFO

APPENDIX H

STATUTORY CHECKLISTS

141

3A(2) - NONPROJECT ASSISTANCE CHECKLIST

A. GENERAL CRITERIA FOR NONPROJECT ASSISTANCE

1. App. Unnumbered; FAA Sec 653 (b)
 - (a) Through Congressional Presentation
 - (b) Yes
2. FAA Sec. 611(a)(2). - Not applicable
3. FAA Sec. 209, 619 - No
4. FAA Sec. 601(a); (and Sec.201(f) for development loans)
 - (a) to (e) - Yes
 - (f) - Not applicable
5. FAA Sec.601(b) - Commodities are purchased in U.S.A. from competitive bids.
6. FAA Sec. 612(b); Sec 636(h). - Full cost loan
7. FAA Sec. 612(d). - Not applicable

B. FUNDING CRITERIA FOR NONPROJECT ASSISTANCE

1. Nonproject Criteria for Security Supporting Assistance
 - (a) FAA Sec.531 - Not applicable
2. Nonproject Criteria for Development Assistance
 - (a) FAA Sec. 102(c); Sec.111; Sec.281a - Not applicable
 - (b) FAA Sec. 103, 103A, 104, 105, 106, 107 - Not applicable
 - (1) [103] - Not applicable
 - (2) [104] - Not applicable
 - (3) [105] - Not applicable
 - (4) [106] - Not applicable
 - (5) [107] - Not applicable

x 142

- (c) FAA Sec. 207; Sec.113 - Not applicable
- (d) FAA Sec. 281(b) - Not applicable
- (e) FAA Sec. 201(b)(2)-(4) and -(8);
Sec.201(e); Sec.211(a)(1)-(3) and -(8). - Not applicable
- (f) FAA Sec.201(b)(6); Sec.211(a)(5), (6). - Not applicable

5C(1) - COUNTRY CHECKLIST

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

- 1. FAA Sec. 116. - No
- 2. FAA Sec. 113. - Yes
- 3. FAA Sec. 481 - No
- 4. FAA Sec. 620(b). - Yes
- 5. FAA Sec. 620 (c). - We are not aware of any such case.
- 6. FAA Sec. 620 (e)(1). - No
- 7. FAA Sec. 620(a), 620(f), 620D; Continuing Resolution
Sec. 511, 512, and 513; ISDCA of 1980 Secs. 717 and 721 No
- 8. FAA Sec. 620 (i). - No
- 9. FAA Sec. 620 (j). - No
- 10. FAA Sec. 620 (k). - No
- 11. FAA Sec. 620 (l). - Not applicable
- 12. FAA Sec. 620 (m). - No
- 13. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as
amended, Sec. 5. - Not applicable
- 14. FAA Sec. 620(q); Continuing Resolution Sec. 518. - No
- 15. FAA Sec. 620(s).

16. FAA Sec. 620(t). - No
17. FAA Sec. 620(u). - Current
18. FAA Sec. 620A; Continuing Resolution Sec. 521 - No, not to our knowledge.
19. FAA Sec. 666. - No
20. FAA Sec. 669, 670. - No

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

Economic Support Fund Country Criteria

- a. FAA Sec. 502B. - No
- b. FAA Sec. 532(f) - Not applicable
- c. FAA Sec. 609. - Not applicable since this is a loan
- d. FAA Sec. 620B. - Not applicable

5C(3) STANDARD ITEM CHECKLIST

A. Procurement

1. FAA Sec. 602. - These arrangements will be made by the Office of Commodity Management, AID.
2. FAA Sec. 604(a). - Yes
3. FAA Sec. 604(d) - Yes.
4. FAA Sec. 604(e); ISDCA of 1980 Sec.705(a). - Not applicable
5. FAA Sec. 603. - No, provided that U.S. flag vessels are available and sufficient to carry the cargo at the time when shipping services are required.
7. FAA Sec. 621. - Not applicable
- 8: International Air Transport, Fair Competitive Practices Act, 1974
Not applicable.
9. Continuing Resolution Sec.505. - Yes.

x 194

B. Construction

1. FAA Sec. 601(d). - Not applicable
2. FAA Sec 611(c). - Not applicable
3. FAA Sec. 620(h). - Not applicable

C. Other Restrictions

1. FAA Sec. T22(b). - Yes
2. FAA Sec. 301(d). - Yes
3. FAA Sec. 620(k). - Not applicable
4. Continuing Resolution Sec. 514 - Not applicable
5. (a) FAA Sec. 104(f).
(b) FAA Sec. 620(g).
(c) FAA Sec. 660.
(d) FAA Sec. 662.
(e) FAA Sec. 636(i).
(f) Continuing Resolution Sec. 504
(g) Continuing Resolution Sec. 506
(h) Continuing Resolution Sec. 507
(i) Continuing Resolution Sec. 509
(j) Continuing Resolution Sec. 510
(k) Continuing Resolution Sec. 516

For questions 5(a) thru 5(k), the response is yes

APPENDIX I

OCEAN TRANSPORT WAIVER

APPENDIX I

WAIVER REQUEST FOR OCEAN TRANSPORT SERVICES

I. Waiver Required

Procurement source and original waiver from AID Geographic Code 000 (U.S. only) to Code 941 (Special Free World), or to Code 899 (Free World) to the extent that the freight tender demonstrates that U.S. or Code 941 flag vessels are unavailable for ocean transport services to ocean ports in east and southern Africa.

II. Summary Waiver Information

Cooperating Country:	Zambia
Authorizing Document:	PAAD
Project:	Zambia Commodity Import Loan
Nature of Funding:	Ocean transport services for fertilizer materials to east and southern Africa ports.
Approximate Total Value:	Up to \$5 million
Probable Source:	Code 899 (Free World) countries

III. Discussion

AID policy requires AID Geographic Code 000 (U.S. only) source and original procurement for Economic Support Fund (ESF) loans. This applies to the procurement of transport services as well as the commodities financed under the proposed loan. Because other heavy demands will be made upon the limited supply of suitable U.S. flag vessels during the time of shipping (December-January 1982/83) it is probable that either insufficient U.S. flag vessels or Code 941 flag vessels will be offered to transport the commodities during this required period. It is essential that the fertilizer materials be shipped at this time in order to arrive in Zambia for processing and distribution prior to the beginning of the growing season.

Handbook 1, Supp. B., Ch. 7B4b(1)(c), authorizes a waiver from Code 000 to Code 941 vessels when United States and cooperating country vessels are unavailable, and from Code 941 to Code 899 vessels when in addition Code 941 are unavailable and when the cargo is ready for shipment, and it is reasonably evident that delaying the shipment would subject either the supplier or cargo to additional costs, or the importer to significantly delayed receipt of cargo.

x/1A7

Because Zambia has no available foreign exchange to finance ocean freight on the commodities to be financed, all ocean freight must also be financed under this loan. From past experience it appears that there will not be sufficient U.S. or cooperating flag vessels to transport these commodities at the time they will be shipped. To the extent they are available, Code 941 flag vessels will be used, instead. However, it also appears that Code 941 flag vessels may not be available. Therefore at least some Code 899 flag vessels will have to be used to transport these commodities.

The total cost of non-U.S. flag freight to be financed for fertilizer under this waiver, if approved, cannot be known until freight offers are received and matched up with fertilizer bids. It is estimated that non-U.S. flag freight may cost about \$60 per ton. Thus, a single chartered non-U.S. flag ship of 15,000 tons would cost about \$900,000. If all shipments had to move on non-U.S. flag vessels, and if inland transport was not contracted for with a U.S. firm, the amount of the waiver could reach \$5 million or slightly more if relatively low fertilizer prices permit procuring somewhat more than 36,000 tons of fertilizer materials with available loan funds.

IV. Justification

The previously mentioned transport services are essential to the successful implementation of the proposed commodity import loan and are not available from the authorized source. Procurement from Code 941 and Code 899 countries is necessary to the attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

V. Recommendation

That to the extent it is necessary to move the fertilizer materials you a) authorize the financing of ocean transportation on vessels of any Code 941 flag if it is determined by AID that U.S. and cooperating country flag vessels are not available; and b) authorize the financing of ocean transportation on vessels of any Code 899 flag if its is determined by AID that Code 941 flag vessels are not available; and c) certify that the interests of the U.S. are best served by permitting financing of transportation services on ocean vessels under flag registry of free world countries other than the cooperating country and countries included in Code 941.

140
140