MAJOR ZAMBIAN DEVELOPMENT PROBLEMS

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Nairobi, Kenya
April 1983

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I. Major Zambian Development Problems

I.A. Introduction

This analysis was undertaken in October 1982 by REDSO/ESA at the request of the A.I.D. Representative in Zambia to help elucidate the causes of the current economic crisis in that country, shedding further light upon : 1) the nature of the economic deterioration, 2) the main weaknesses in the macroeconomic policy framework, and 3) possible A.I.D. measures that could help improve the situation and policy framework. Part I looks at the general macroeconomic situation and attempts to place it in historical perspective, while Part II looks at the Agricultural Sector alone in more depth. Stu Callison and Brandon Robinson are responsible for Part I, Robinson doing Section I.F. on GRZ fiscal policies and Callison the rest; and Dirk Dijkerman concentrated on Part II. Many of the sources used are cited at least once in the footnotes, although some very helpful and more recent material was provided confidentially by sources who asked that it not be referenced.

I.B. Overview of Economic Structure and Performance

1. Prior to Independence[1/]

Many of Zambia's current problems date back to the British colonial period and the brief interlude of federation with Southern Rhodesia before Independence in 1964. The British needed cheap labor to work in the copper mines, so they imposed a Native Tax payable only in cash to force the Africans to work for pay. They reserved the best agricultural land for large-scale expatriate farmers and relied on them to produce cheap maize instead of developing the indigenous farming system. The European producer price for maize was higher than the African producer price, although both of them were kept below the import price and maize consumption was subsidized to keep the cost of labor down. Tax revenue, much of it coming from the mines, was spent on urban infrastructure and services for the chief benefit of the mostly European elite, while the rural areas and African agriculture and education were seriously neglected. Traditional systems of agriculture actually eroded due to the loss of labor from the rural areas, their exclusion from the main markets, and a deliberate policy not to develop a rural road network.

2. Overview of Performance: 1962-1979[2/]

For several years after independence rising copper prices kept government coffers well filled with revenue. Large amounts were invested in education, transportation and energy facilities and a variety of rural initiatives and projects. Despite the latter, the fundamental rural problems remained. Urban improvements were primarily focussed on large-scale projects and modern industry. The development program failed to achieve a solid base for expansion of employment and income-generating opportunities. In the words of President Kaunda himself,"... most of the industries set up.. are heavily dependent on imported raw materials and other essential production inputs; the technology imported has been capital intensive and least suited to the Zambian market. Above all, the planning process has

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1/ The following discussion is based on an excellent summary contained in ILO, Basic Needs in an Economy Under Pressure, ILO/JASPA, Addis Ababa, 1980 (Preliminary Draft), pp. 5-6.

2/ From ILO, op. cit., pp. 6-11.

remained weak, both in terms of its impact on decision-making and in terms of its ability to establish a system of monitoring progress of implementation of development projects and programmes."1/

Longstanding rural/urban disparities have persisted and increased enormously, as have the wage differentials between those employed in the so-called "formal sector" of the economy and in the informal sector. Government services have remained much less effective for low-income groups, particularly for the rural majority, than for high income groups, and have probably deteriorated since independence.

Despite the recent international shocks it has suffered, the basic weaknesses of the Zambian economy are internal and structural. This can be highlighted in terms of four critical trends:

1) The continuing adverse movement of the rural/urban terms of trade against the rural population. From 1965 to 1980 the prices of agricultural goods generating income for the rural population declined by around 65 percent relative to the prices they must pay for urban products they need.

2) The rise of average real urban wages in the formal sector by an average of 9 percent a year to a peak in 1973, thereafter falling by nearly 20 percent but remaining 40 percent above their 1965 level, has been matched by little or negative increase in labor productivity. Zambia became a high-wage economy as far as the "formal" sector was concerned, despite the rapidly growing numbers of unemployed and underemployed low-income workers accumulating in the urban and rural informal sectors.

3) The rapid expansion of industry has been based largely on large-scale capital-intensive techniques, depending heavily on imported inputs, thus providing little employment per unit of investment and resulting in a very small income multiplier effect from domestic sources of supply. Only 23,000 jobs were created in the manufacturing sector during the 14 years from 1965 to 1979, despite the huge sums invested initially in new enterprises and the continuing huge subsidies required to maintain production in some of them.

1/ Rep. of Zambia, Third National Development Plan, 1979, p. iii.

4) Government expenditure, both recurrent and capital, has remained heavily biased towards urban centers, with the proportion going to rural areas actually declining in many respects and the bulk of agricultural expenditures going for subsidies.

These four trends result not so much from impersonal market forces as from a series of political and administrative decisions. They refect the relative political weakness of the majority rural population vis-a-vis urban residents and the strength of the formal sector urban workers and their labor unions. They may also reflect a lack of an a priori understanding of the effects of economic policies, which have had results quite the contrary of the often-reiterated official goals of satisfying the basic human needs of all Zambians.

The high cost and capital intensity of modern industry have resulted from unbalanced development, creating few jobs and an increasing dependence on imports when the country needed more jobs and reduced imports. Yet the high level of domestic savings and investment achieved in the first decade after independence indicates that a substantial investible surplus was available to the country. The extent of this surplus has declined in more recent years and, unfortunately, much of it is now preempted by a steady growth of regular claimants, so that even when copper prices are reasonably high, little of the surplus remains for new development initiatives. Three groups account for the bulk of these preemptive claims:

1) Inefficient and/or inappropriate industries which require annual subsidies, often hidden, or sustained protection to remain in operation;

2) Urban consumers and those (mostly commercial and "emerging") farmers receiving subsidized agricultural commodities or fertilizer: and

3) The "social bureaucracy"--the growing numbers of government and parastatal employees receiving high wages and salaries but contributing little to production or to the effectiveness of essential government services.

Thus the large investible surplus, which was once thought to give Zambia high potential for fairly rapid economic development, has been largely pre-empted by the urban, industrial and mostly higher income sections of the Zambian economy, leaving the deprived rural and low income groups to subsist on what remains. Within the rural areas themselves, limited resources and inadequate market, transportation and other basic facilities interact to reinforce poverty and inhibit attempts to escape from it.

3. Overview of Performance: 1980 and 81.

The continuing decline in external terms of trade and the world-wide recessionary demand for exports have exacerbated the adverse trends summarized above during the last two years. GDP per capita declined another 5.5 percent while Gross Domestic Income, adjusted for the changing terms of trade, declined another 11.9 percent. Net national savings went sharply negative as recurrent expenditures created budgetary deficits and the level of private savings dropped below capital replacement requirements. Formal sector employment continued to decline as a proportion of the total labor force while the low-income urban informal sector employment and unemployment continued its dramatic increase. Productivity per worker continued its steady drop, particularly in the mining and quarrying sector. The external surplus on the merchandise trade account disappeared, with the dollar value of total exports declining and of imports rising with almost equal speed, leaving the U.S. $0.6-.7 billion deficit of the invisibles to dominate the current account balance. Mounting external deficits were financed by almost doubling outstanding foreign debt and its debt service payments, the latter reaching around 40 percent of export earnings in 1981, as total foreign debt almost equalled annual GNP. Meanwhile, the real, trade-weighted foreign exchange rate of the Zambian kwacha appreciated by 21 percent, moving in a direction that would normally tend to worsen a balance of payments deficit instead of correcting it.

I.C. The Problem of Growth

1. Performance

In constant 1970 prices Gross Domestic Product (GDP) grew by an average of 2.7 percent annually between 1965 and 1975, but then fell by 1.9 percent a year for the next few years. After rising 3 percent in 1980 the growth rate turned negative again (-1.8%) in 1981. Constant prices ignore changes in relative import and export prices, however, the effects of which have been almost overwhelming in Zambia's extremely open economy, where exports plus imports equalled about 90 percent of GDP in the late sixties and early seventies, and still came to 80 percent in 1981. The external terms of trade facing Zambia declined by a staggering 69% between 1970 and 1981. Real Gross Domestic Income (GDY), adjusted for changes in the terms of trade, fell at an average annual rate of 3.8 percent during these last eleven years, to a 1981 level 35 percent below that of 1970. Real GDY per capita has fallen by 60 percent since 1965, and 54 percent during the last eleven years alone. (See Tables 1 and 2).

As estimated in the GNP accounts, the contribution of the mining sector to GDP dropped from 41.0 percent in 1965 to 18.1 percent in 1979 and 7.6 percent in 1981. Construction activities, which had grown rapidly between 1965 and 75, fell by 1981 to only 55 percent of their 1975 level. Manufacturing, which grew by 11.5 percent a year in the late 60's and 4.1 percent through the early 70's, has also been declining since 1975. Agricultural output declined in the late 60's, expanded in the early 70's, levelled off in the late 70's and has finally begun to grow again in 1980 and 81 (mostly in the small "commercial" sector, with growth in the much larger subsistence sector remaining a very modest 1.2 percent per year). As a proportion of GDP, however, agricultural output rose from 10.7 percent in 1970 to 17.9 percent in 1981, due mostly to the decline of other economic sectors. (GNP estimates of agricultural output are of doubtful accuracy, however.) Electricity, gas and water is the only sector that grew consistently throughout this period. The services sector, though it also stagnated in the late 1970's, boosted its contribution to GDP from 25.4 percent in 1965 to 41.8 percent in 1981. (See Table 3).

This discouraging performance has occurred despite a rather high level of Gross Fixed Capital Formation throughout this period, averaging well above 20 percent of GDP. But after deducting the relatively high factor for replacement of fixed capital consumed (depreciation) of 15 or 16 percent (of GDP), a positive net investment level only around 5 percent of GDP was recorded which, even given much more efficient capital/output ratios than Zambia has achieved in recent years, was not enough to keep output growth ahead of population growth. The failure of such a high level of gross investment to generate a higher or even positive rate of GDP growth is indicative of Zambia's serious economic problems. (See Table 4.)

Gross National Savings were also very high in 1965 and 1970, reaching 33 and 34.5 percent of GDP, respectively. Between 13 and 14 percent was attributable to the central government (recurrent budget surpluses), while more than 20 percent of GDP was saved by the rest of the economy -- an unusually high savings rate. The large surplus of domestic savings over investment must have been due to the transfer of savings abroad, however, following independence.

This performance declined in the 1970's, with gross national savings reaching 17.5 percent of GDP in 1979, only slightly more than the 14.6 percent needed to replace fixed capital. Since the rest of the economy was still saving 25.1 percent of GDP, the national decline was due solely to the drop in central government savings from +13.9 percent in 1970 to -7.6 percent in 1979.

Government savings continued in the red through the next two years, as recurrent expenditures outpaced revenues, while savings in the rest of the economy also began to decline, reaching only 8.5 percent of GDP in 1981. After deducting depreciation allowances, this pushed net national savings into the red, -6.8 and -9.9 percent of GDP in 1980 and 81, respectively. A positive rate of net domestic investment depended solely on net borrowing, credits and increases in arrears from abroad. (See Table 5).

2. Major Constraints to Better Performance

a. Inappropriate Pricing Policies

Factor and commodity pricing policies since independence have resulted in a number of distortions in the allocation of productive resources that have reduced both the efficiency of investment and the rate of overall economic growth by a) increasing the capital intensity of production and reducing the rate of employment generation, b) increasing the import dependence of domestic industry and discouraging production of domestic inputs, c) discouraging agricultural production, d) protecting high-cost manufacturing production, e) discouraging production for export, f) resulting in a suboptimal mix of commodity production within agriculture, and g) perpetuating highly skewed distribution of income that results in higher demand for imported products than for lower-quality domestic goods. Producer prices for major agricultural commodities, with few exceptions, have been held significantly below world market price equivalents,[1/] even as viewed through the overvalued official exchange rate. This has reduced investment incentives to increase production in the agricultural sector and, by keeping farmer incomes low, has reduced farmer demand for (and therefore local investment in the manufacture of) farm implements, supplies and consumer goods, many of which can be produced locally. The main exceptions to this price policy have been for tobacco and wheat (1965-75) and for maize, wheat and rice (1975-79), with the recent increase in producer prices and fertilizer subsidies for maize production, the Zambian staple crop, being the most important. While corn production has grown rapidly in response to recent increases in price and subsidies, it has done so partly at the expense of production in other crops that have a higher net social value[1/] than maize, but which still suffer from artificially low official prices, since farmers are quick to switch crops to the higher income earner.

1/ See World Bank, Zambia Country Economic Memorandum, Report No. 3007-ZA, Feb. 27, 1981, pp. 22-3. The weighted average producer price for ten major crops was 25% below import/export parity prices from 1965/6-1974/5 and 16% below from 1975/6-1978/9.

Since the early 1970's the authorities have also followed a policy of uniform pricing throughout the country, for both commodity inputs like fertilizer and gasoline and the final product, ignoring sometimes large differentials in transport and handling costs. This has the effect of subsidizing most heavily those crops with the lowest value per ton and discouraging the production of crops with higher net social value as well as production for local markets within the more remote regions.

The overvalued foreign exchange rate and protective trade regime serve to dampen domestic investment and production further by artificially skewing prices in favor of final manufactured products, relative to agricultural products, and by lowering imported capital and intermediate input prices relative to the cost of using domestic labor and domestic sources of input supply. The high effective tariff rates on final goods, caused by the cascading tariff system of imposing higher nominal tariffs on final manufactured goods than on intermediate and capital inputs, together with quantitative licensing and other import restrictions, defend a significantly overvalued exchange rate, which makes agricultural parity prices cheaper in kwacha terms than their true world market value, while maintaining relatively higher prices on manufactured items. This artificially reduces the rural/urban terms of trade and further discourages investment in agricultural production in favor of often high-cost manufacturing products that have a lower net social value of output per unit of investment.

In addition, by making imported inputs look cheaper relative to potential domestic sources of supply, the overvalued exchange rate also discourages demand for locally produced inputs that could generate more domestic employment and raise the domestic value-added portion (and thus the contribution to GDP) of the final goods produced.

Interest rates represent the price of capital for new physical investment and for working capital needed by on-going activities. By maintaining ceilings on the interest rates paid on savings deposits below the rate of general price inflation, the banking system is providing negative real remuneration to savers, thus discouraging higher rates of savings that could be mobilized for investment purposes and resulting in higher levels of monetary demand for consumption goods, which, in the absence of higher production, is inflationary. By maintaining similar ceilings on interest rates for investment loans well below

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1/ "Social value" is said to differ from market value when significant externalities are present or, as in this case, when prices are controlled at levels which do not balance supply and demand.

market-clearing levels, and often negative in real terms as well, the authorities have created a situation where the demand for credit far exceeds its supply. This results in credit rationing to favored clients to whom the credit provided is heavily subsidized, thereby encouraging the purchase of more capital-intensive equipment and other inputs than is socially desirable and discouraging investment in more labor-intensive technologies and production activities that would generate more employment and higher incomes for larger numbers of people.

Other, less-favored loan applicants who are denied access to the limited supply of credit may have less collateral and somewhat more risky investment proposals, the expected economic returns on which, however, may be considerably higher than the projects funded and may be therefore well worth the investment at much higher rates of interest. Such investors also tend to be smaller firms, farmers or businessmen, as well, who normally pursue more employment-oriented activities and require less capital per job created. Thus, artificially low interest rates such as those found in Zambia distort savings and investment incentives away from socially optimum levels in several directions, much reducing the output efficiency of investment and the amount of employment generated.2/

In addition to the interest rate subsidy for capital investment, the use of capital equipment instead of more labor is also encouraged by fiscal incentives such as tax deductions, depreciation allowances and duty-free privileges on imports, all of which tend to lower the cost of capital-intensive technology relative to production processes that would employ more workers.

The price of labor is of course the prevailing wage rate(s). The wage level, compared with the relative costs of other factors of production, is important not only because it determines the level of income received by those households dependent on wage labor, but, even more importantly, it helps determine the relative attractiveness of more labor-intensive production activities and technology vs. those more capital- and/or land-intensive, and thus to a great degree it effects the rate of growth of paid employment in the economy. If, as in Zambia, wages are artificially maintained at too high a level (significantly higher than the market-clearing level in the "informal" or rural sectors, for example), the rate of employment growth in the modern sectors of the economy will be reduced and, despite the fact that those workers who are fortunate enough to have jobs in that sector are earning relatively high incomes, the total wage bill could very well be declining over time compared with what it

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2/ Prof. Michael J. Applegate has provided a good discussion of the social inefficiencies and misallocation of resources caused by current Zambian interest rate policies in "Restructuring of Interest Rates in the Republic of Zambia: Some Policy Proposals," USAID/Zambia, September 1982.

could have been with a higher rate of employment at somewhat lower wages. Aside from the inequities of the improverished (and in Zambia, growing) ranks of unemployed and underemployed workers seeking jobs closed to them by the high wage rates demanded by powerful labor unions, such a wage policy limits the overall growth of employment and income accruing to the masses of people, thereby limiting the growth of effective domestic demand for domestically produced goods and services of all kinds, and providing a strong disincentive to further investment and production. It also perpetuates and increases urban/rural disparities of income, especially in conjunction with low producer prices in agriculture, since the high-wage formal sector is predominantly an urban sector, and such disparities draw excessive labor migrants to the cities looking for highly paid jobs that don't exist, instead of encouraging more of them to stay on the farms to increase food production.

b. Production Inefficiency

Because of their importance in the Zambian economy, the efficiency with which the parastatals are run significantly effects the rate of growth of GDP. The parastatals employed 43 percent of the "formal" sector of the economy (although only 8.0 percent of the entire labor force) in 1979.[1/] Their efficiency has been less than desireable due to the scarcity of experienced management (which is discussed more below), to poor project choices, to lack of timely investment funds for improvement (often due to official pricing policies) and to under-capitalization together with weak debt managment capacity. In addition, their dependency on imported inputs and capital-intensive technology has limited their linkages with the rest of the economy and reduced their overall production efficiency, especially when faced with severe shortages of foreign exchange and the consequent import restrictions.

The high levels of effective tariffs together with quantitiative import controls on final goods have protected inefficient, high-cost production processes, since the costs could easily be passed on to consumers.

Some progress has been made recently in improving the productive technology of commercial agriculture, but in general agricultural productivity per hectare remains very low, particularly in the subsistence agricultural sector, for which applied research and extension efforts have so far been minimal. The informal urban sector has also been neglected and suffers from inefficient technology, lack of credit, lack of management and technical skills, and from a public policy bias favoring larger firms and the "formal" sector.

1/ Rep. of Zambia, Economic Report 1981, Jan. 1982, pp. 56-57.

c. Transportation Problems

For a landlocked county Zambia's high level of imports and imports compared to GDP is exceptional and magnifies the importance of any problem that may arise with its overland routes through neighboring counties to the sea. Such problems have abounded since 1965, when Zambia deliberately began to reduce its dependence on the route through Southern Rhodesia to Beira in Mozambique after the Unilateral Declaration of Independence by the white-dominated regime in Rhodesia. The border with Rhodesia was closed completely from 1973 until the political settlements of 1980. Subsequent port congestion in Lobito and the Angola War disrupted traffic in that direction until it stopped completely in 1975. The opening of the TAZARA railway through Tanzania to Dar es Salaam facilitated shipments through that port, but inadequate port handling capacity and inefficiency have been problems. The roadways to Malawi rail links with Beira and Nacala and to the Kenyan port of Mombasa have handled some of the traffic, but are less economical. Continuing unrest and insurgency in Angola, Mozambique and parts of Zimbabwe are still causing transportation difficulties. Domestic transport facilities are fairly well developed along the "line-of-rail" (the three major mining provinces), but roads in the more rural areas are much less adequate. This adds to the economic costs of agricultural production in the latter areas relative to the more central regions.

d. Political Turmoil in Neighboring States

By permitting Zimbabwe guerilla units to use Zambia as a sanctuary and openly supporting their struggle for majority rule in Southern Rhodesia, Zambia was drawn increasingly into the conflict until open warfare broke out in 1977, with Rhodesian ground units attacking and air raids pounding Zimbabwe guerilla bases deep inside Zambia. Mounting defense expendituures exacerbated mounting economic difficulties, as did the closure of the southern rail links with Mozambique and South Africa and the loss of export markets in those countries.

A somewhat less intensive, but similar involvement in support of independence struggles in Angola, which ended successfully for the Soviet and Cuban-backed faction in 1975, and in Namibia, as yet still unsettled, has imposed additional defense costs and trade losses on Zambia during the last decade and has impeded economic development. The insurgent movement in Mozambique affects trade routes through that country.

e. Scarcity of Foreign Exchange

The increasing scarcity of foreign exchange available to finance imported materials needed in domestic production activities, relative to the demand for such imports, has imposed

a serious constraint on the continued growth of the Zambian industrial sector, especially given its present highly import-dependent structure, and is even partially to blame for the reduced exportable production of the copper mines. Key manufacturing industries are reportedly operating at only 25 or 30 percent of capacity now, due to their inability to obtain foreign exchange allocations for needed inputs.

f. Public and Private Sector Management Constraints

One of the key problems facing government, the parastatals, and private sector organizations is the scarcity of technical and management expertise. While the country has been beset with serious changes in the world economy and costly political difficulties among its neighbors, it is also suffering from a set of economic polices that, while imposed to achieve legitimate social and political goals of equity and industrial development, have resulted in significantly undesirable side effects that are not well understood and are poorly articulated within high government circles. Since the impact of economic policies often pervades the entire country, Zambia could substantially improve its overall economic performance with a better designed and better integrated set of policies to achieve its stated objectives.

Although many expatriate managers and supervisors have remained on the job or have been recruited since independence, many others have left the country. The shortage of such expertise seriously hampers the efficiency with which the country's major industrial activities are run. Especially acute is the lack of Zambian supervisory and managerial talent, as well as other entrepreneurial skills required for the more rapid development of the more labor-intensive small and medium-scale industries all over the country, which cannot afford to hire expatriates (nor, indeed, should they, if the Zambians are to develop their own economy).

g. Rapid Population Growth

Underlying the urgency of achieving faster economic growth and employment generation is the high rate of population increase in Zambia, which averaged 3.1 percent annually between the census years of 1969 and 1980. As the denominator of per capita income and the engine behind the ever-increasing need for more productive jobs, the high rate of population growth makes satisfactory economic performance increasingly more difficult. The provision of basic food, clothing and shelter requirements, even more than the basic social services, requires ever more investment and productive effort, leaving less and less available for per capita income growth and improved social services.

Furthermore, as population pressure builds in the more volatile urban areas, social and political difficulties accompanying economic failure to perform satisfactorily become more intense. Rapid population growth intensifies economic failure and itself becomes a serious constraint to better performance.

3. GRZ Measures Required to Improve Performance

Probably the most important measure the government could undertake to improve the performance of the economy would be to adjust commodity, exchange rate and factor prices to more accurately reflect their true value to the society. Price signals to producers and consumers are most important determinants of the levels of both production and final demand for each commodity and also, with respect to factor prices (such as wages, interest rates and the kwacha cost of imported capital goods), of the labor-, import- or capital-intensity of the production function chosen. Aside from the proper adjustment of domestic prices in relation to each other to achieve a more efficient mix of domestic production, the more realistic alignment of the foreign exchange rate is doubly important to reduce demand for foreign goods and inputs and to substitute a higher demand for domestic products, as well as to encourage the development of more diversified production for export in order to earn more foreign exchange. Inattention to such implications permits the cumulative effects of distorted investment and consumption incentives to build into the very kinds of seemingly intractable difficulties presently faced in Zambia. Since the government will want to continue to exercise some degree of control over at least the key price variables in the economy, as all governments do, it urgently needs to develop better in-house capability to analyze and understand the underlying market trends and both the short and long-run economic implications of its price decisions.

Tariff reform should accompany the exchange rate adjustment in order to reduce the uneven levels of protection favoring imported over domestic capital and intermediate goods. Interest rates should be allowed to rise sufficiently to provide a real level of reward to savers and also to signal investors that capital goods involve a positive real cost to society. Tax incentives favoring capital investment should be reversed, and instead redesigned to favor the employment of Zambian labor. Rural incomes should be increased by allowing agricultural prices to rise relative to prices of manufactured goods. This will not only stimulate higher levels of agricultural production, but by raising farmer incomes it will also enhance their effective monetary demand for urban products. Further increases in urban wage rates should be

firmly resisted, however, in order to reduce the excessively attractive urban/rural wage differential, while at the same time encouraging more urban employment generation by reducing the financial cost of labor. Further increases in wage rates can quickly neutralize the beneficial effects of an exchange rate devaluation, as well, and for this reason a firm incomes policy should be a concomitant of exchange rate and tariff reforms.

More market-oriented price reforms are relatively easy to administer and can be expected to achieve significant gains in economic efficiency from better allocation of resources, although finding the right price levels and obtaining political acceptance of needed reforms can be difficult. Increased production and efficiency is more difficult to achieve and takes more long-term effort. While more market-oriented pricing policies and reduced subsidies will point incentives in the right direction, improved management and the technical efficiency of production will take more effort. By reducing the effective level of tariff protection on final commodities, domestic industries will be faced with healthy competition from abroad (assuming foreign exchange limitations are eventually overcome) and will be forced to become more cost-efficient or operate at a loss, but the adjustment process takes time. There appears to be good potential for increasing agricultural productivity, but this requires a substantial effort to improve Zambia's agricultural research and extension programs. Private sector manufacturing performance can be improved in many ways, but this also requires a concerted long-term effort on the part of government, particularly in trying to stimulate better performance in small-scale "informal" activities. This is not to say these measures should not be undertaken; indeed, they are important for successful long-run development, but they obviously require a substantially higher level of effort than simple price changes do and the response can be expected to be slower.

Zambia is proud of her record of support for majority rule in neighboring countries, at considerable sacrifice to her own economic interests. Unrest and insurgent movements continue to harass her transportation routes to the sea. Zambia must continue to use diplomacy wherever possible to seek solutions to these political problems so she can normalize relationships with neighboring states as quickly as possible, reestablish the alternate trade routes so vital to her economic health, and undertake to further improve the transportation facilities and arrangements upon which she depends.

The promotion of non-mineral exports should clearly receive high priority in view of the severity of the foreign exchange constraint and the declining earning performance of copper exports.

The GRZ should undertake a well-designed training program to improve both its own capacity and the capacity of the parastatals and private sector firms in financial and economic analysis,

policy determination and administration, and overall economic management. The resources required for such training are minor compared with the waste that could be avoided with better management and more timely and better designed policy reforms.

A reduction of the population growth rate would reduce the burden of providing for basic human needs and permit a higher rate of new investment in productive technology. The GRZ should continue to pursue its current population program and lay the informational basis for an expanded program in the near future.

I.D. The Problem of Employment and Productivity per Worker

1. Performance

Zambia's record in providing productive employment for its labor force has been pretty dismal over the last decade. Despite incessant pressure from powerful labor unions, real wages have declined in every sector. "Formal" sector employment has failed to keep pace with the growing labor force and actually declined in the late 1970's. As a result, it dropped from 27 percent of the labor force in 1970 to 21.5 percent in 1981, forcing 78.5 percent of all workers to remain unemployed or underemployed in the "informal sector" -- mostly subsistence farming, but with rapidly growing numbers in the urban "informal" sector. The informal sector has had to absorb more than 100 percent of the new entrants to the labor force since 1975. Of these, about 80 percent have been seeking work in the urban areas, indicating a failure of the rural informal sector, as well as the formal sectors, to provide sufficient employment. In fact, the proportion of new job seekers absorbed by the rural informal sector declined from around 30 percent between 1965-75 to only 20 percent between 1975 and 81. (See Table 6 and 7).

The effect of this failure on economic productivity and incomes has been drastic. In real terms, productivity (value-added) per worker for the whole economy has been dropping at steadily increasing rates since at least 1965 and reached an average rate of decline of -4.2% annually between 1975 and 81. Every "formal" sector of the economy, except the small transport, communication and storage sector, which employs only 1.2% of the labor force, and commercial agriculture, which employs only 1.9%, experienced negative rates of change in productivity per worker during the last 6 years. Productivity per worker in subsistence agriculture has remained at the same extremely low level during this peroid, after falling by 28 percent in the late 1960's. (See Table 8).

2. Major Constraints to Better Performance

a. High formal sector wage rates

In an attempt to reduce the gap between Zambian and expatriate wage rates, Zambia labor unions demanded and were granted large wage raises during the post-independence period. Although these have not kept up with the high rates of inflation experienced in the 1970's, thereby declining somewhat in real terms, "formal" sector wage rates remain well above average labor earnings in agriculture and the "informal" sectors of the economy, and they even differ significantly among themselves. In 1977, for example, Zambian workers in mining and quarrying earned 2.9 times as much as those in construction and 4.2 times as much as those in "formal" sector agriculture. Wages in "formal" manufacturing were 2.4 times those in "formal" agriculture. On the other hand, wages in "formal" agriculture were some 1.7 times higher than average productivity per worker in subsistence agriculture (roughly estimated from GNP and employment data).1/

The artificial enforcement of such comparatively high wages in the modern sectors of the economy operates to reduce the attractiveness to prospective employers of hiring wage labor so that far fewer jobs are offered than is socially desireable, and an increasingly large proportion of the labor force is left without productive employment. Employers consider the cost of labor so high that they avoid hiring more workers in order to keep costs as low as possible, and they tend to prefer more automated machinery over more workers.

It is particularly revealing that the average labor cost per unit of value-added increased by 362 percent between 1965 and 1977 in mining and quarrying, by from 44 to 56 percent in manufacturing, construction and services, and by up to 243 percent in transport and communications. 2/ Those Zambian workers fortunate enough to be employed at such high wages in the formal economic sectors have priced their less fortunate brethren out of the market.

b. Capital-intensive bias of investment incentives.

Investment in the formal sectors of the economy has been biased in the capital-intensive direction, thus generating much less employment than is socially desireable. This has resulted from a whole set of incentive factors, which have been working against the best interests of the Zambian workers. In addition to the relatively high cost of labor discussed above,

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1/ World Bank, Zambia Country Economic Memorandum, Report No. 3007-ZA, Feb. 27, 1981, p. 77, and Table 8.

2/ Ibid. p. 79. The time series data for transport and communications results in a biased estimate (too high).

interest rates on capital loans have been either negative in real terms or barely above the rate of inflation, in effect susidizing the use of capital equipment. In addition, such low interest rates require bankers to ration the limited credit available (relative to demand); and the larger, more "credit-worthy" firms, which also tend to be those that invest in more capital-intensive activities, are usually favored with credit approvals over the smaller, higher-risks (but often more profitable) firms that tend to employ more workers per unit of investment. The overvaluation of the foreign exchange rate together with low or zero duties on imports of capital goods further reduces the cost of capital equipment versus that of labor in the productive process. Tax deductions, depreciation allowances and other fiscal incentives have favored and encouraged investment in capital equipmentrather than in more labor-intensive modes of production. Parastatal investment policies, responding in part to the financial incentive structure facing them, have not often been very employment-oriented. Government-sponsored credit programs and incentive and promotion schemes have favored investors in the modern, "formal" sectors, to the virtual exclusion of the large and growing (and more labor-intensive) informal sectors, making it relatively more difficult for the latter to expand and improve their operations.

c. Import-intensive bias of industrial sector.

In addition to being too capital-intensive, Zambian industry is highly dependent on imported inputs of various kinds, to the virtual exclusion of domestic sources of supply that would provide more employment for Zambian workers. This bias toward imports has resulted from the overvaluation of the exchange rate, which has made imports cheaper in kwacha terms than they would normally be, together with a tariff and trade regime which favors imported inputs over final goods with lower duty rates and more liberal quantitative controls (import licenses, etc.). In addition, the parastatals have not gone out of their way to develop domestic sources of input supply, relying heavily on artificially cheap imports and on their ability to obtain favored treatment from the authorities approving import licenses and foreign exchange allocations.

The skewed distribution of income in Zambia, with urban and skilled workers earning so much more than the vast majority of people, also contributes to the import-intensive bias of production, as those with higher incomes tend to demand goods with a higher import component than low-income groups. In the case of Zambia, the income levels of the lower groups are so low they can't provide effective market demand for much more than the most essential basic commodities.

d. Lack of managment and technical skills in manufacturing.

As mentioned above, Zambia has suffered from the loss of management and technical skills since independence, at a time when her development goals required more of such expertise each year. This has tended to reduce the level of new investments below desireable levels and to render less efficient those investments that are undertaken as well as on-going activities, again reducing overall levels of employment and productivity.

e. Low productive technology in subsistence agriculture.

Despite a considerable potential for higher productivity per hectare in the subsistence agricultural sector, which may employ up to 54 percent of the labor force, at least on a part-time, seasonal basis, its productivity has remained at a very low level throughout the 1970's, after declining sharply in the late 60's. The total production of subsistence agriculture is estimated to have increased by about 1.3 percent annually during the last decade, while productivity per worker has remained flat. This sector has failed to provide more productive employment for its existing workforce, let alone for the new labor force entrants looking for work each year. It must be noted, however, that this analysis is based on published GNP and employment figures, which are little more than rough guesses with respect to the subsistence agricultural sector. (See Tables 1, 6, 7 and 8.) The agricultural sector is analyzed in some depth below.

f. Marketing constraints

Lack of storage, inadequate transportation and communication facilities (especially in the rural, subsistence agricultural areas), poor product quality, design and packaging, and other marketing deficiencies contribute to the poor employment and productivity performance record.

3. GRZ Measures Required to Improve Performance

The most promising corrective measures again seem to center around pricing policies--the need to achieve more appropriate price signals to potential investors in the economy, particularly with respect to the factors of production. The purchase price of labor, wage rates, must be held down to encourage more employment. Interest rates should be raised to provide positive real incentives to savers and to allow the marketplace to ration scarce capital to the most efficient users -- those willing to pay the true scarcity value of investment credit for the privilege of using it -- and to raise the cost of capital relative to labor so as to encourage greater use of the latter.

The kwacha cost of foreign exchange should be raised substantially to discourage the use of imported equipment and other inputs and encourage the development of employment-generating domestic sources of supply. For the same seasons, the tariff structure should be reformed to eliminate the preferential treatment of capital and intermediate goods. Tax incentives favoring capital investment should be reversed, and instead redesigned to favor the employment of Zambian labor.

In addition to restructuring the entire factor price matrix, the authorities should seek other ways to actively encourage investment in the more labor-intensive sectors of the economy, especially the so-called "informal" sectors, both urban and rural, heretofore so badly neglected, including rural industries and other off-farm employment activites. They should reorient the parastatals to an active policy of seeking domestic sources of supply and looking for more labor-intensive types of investment, and of avoiding the further waste of scarce capital resources on large projects that employ very few people.

Aside from factor pricing and investment policies, by raising agricultural producer prices enough to increase incomes at the lower end of the distribution scale, as suggested above to stimulate production, effective (as opposed to the present "latent") market demand will be increased for the goods and services produced by rural industries and other informal sector activities, which tend to employ more labor and to require fewer imported components per unit of output value.

Tax incentives can be designed to encourage the private sector and the parastatals to step up their training programs in technical and managerial fields, and efforts can be launched to improve relevant government and academic training programs.

In agriculture, improved basic and applied research capability and a more concerted effort to relate extension activities to improving the productivity of the small-farm and subsistence sector would have the potential of improving productive employment and income for far more people than the present system which benefits mostly the small number of workers and farmers in the commercial farm sector.

Finally, recognizing the importance of improved marketing arrangements, services, and activities, the government could sponsor a detailed study of the present marketing conditions in the country, particularly in the rural and "informal" sectors where the entrepreneurs are typically too small in scale and resources to be able to do much along these lines for themselves, in order to identify the opportunities for government assistance and improvement.

I.E. The Problem of Balance of Payments

1. Performance

Except for a temporary improvement in 1979 thanks to higher copper export prices, the Zambian balance on current account has steadily deteriorated since 1974, despite strict controls on consumer goods imports and administrative rationing of foreign exchange for intermediate inputs and capital goods. The deficit rose to U.S.$567 million in 1980 and $686 million in 1981, or 43 and 65 percent of exports, respectively. (See Table 9). During this same two-year period the real purchasing power parity of the kwacha foreign exchange rate increased by from 21 to 26%, depending whether one looks at a trade-weighted basket of currencies through U.S. dollars or SDR'S. (See Tables 10, 11 and 12. This is accepting the kwacha consumer price index as reported. If the actual inflation rate in Zambia has been higher than reported, as some believe, these figures must be adjusted upwards.) While the real value of the Kwacha was being revalued upwards, the dollar value of exports declined by 25 percent and that of imports rose by 33 percent. At the same time the Zambia terms of trade declined by another 38 percent, after falling by 50 percent between 1970 and 79. 1/

The actual movement of the real, trade-weighted foreign exchange rate has differed substantially from the apparent nominal rates. While the nominal SDR value of the Kwacha declined by 30 percent from 1970 to 1978, and then levelled off at its present official value of .9763 SDR per kwacha, its real, trade-weighted value, in terms of the relationships of its trading partner currencies to the SDR, deflated for their relative (also trade-weighted) rates of inflation, decline by 42.5% from 1970 to 1980, before jumping back up by 26.5% in 1981. (See Table 11).

If looked at through the U.S. dollar, the nominal value of the kwacha appreciated in the early 1970's (by 11 percent between 1970 and 1975) and depreciated in the late 1970's (by 26.8 percent from 1975 and 1979), before bouncing up (by 11.5 percent) in 1980 and back down again (by 9.6 percent) in 1981. Its real,

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1/ National Commission for Development Planning (NCDP), Economic Report 1981, Republic of Zambia, Lusaka, Jan. 1982, p. 14.

trade-weighted foreign currency value, however, denominated in dollars and adjusted for relative inflation rates, declined by 19.4 percent from 1970 to 79 and then rose by 20.6 percent in 1980 and 81, finishing only 2.9 percent below its 1970 level (See Table 10).1/

Thus, while the kwacha depreciated slowly (by an average of 2.4% a year) from 1970 to '79, it regained most of its lost value in 1980 and 1981, moving up sharply in the latter two years in a direction contrary to that required for satisfactory adjustment to Zambia's mounting balance of payments problems.

Various restrictions had reduced the volume of consumer goods imports by 61% between 1974 and 78, to only 18% of total imports, while capital goods and intermediate inputs were cut back by only 39% and comprised 82% of total imports in 1978. The Zambian authorities had little room left for further cuts without reducing capacity utilization of existing capital stock and/or slowing the growth of additional capital investment. Yet, despite the obvious need, there has been little improvement in export performance, and this country still relies almost exclusively (95%) on the volatile copper export market for its earnings of foreign exchange. With the real value of the kwacha increasing, imports are looking even cheaper than before and kwacha export earnings are further depressed, discouraging any new investment in potential export crops or manufacturing.

In order to finance its growing current account deficits Zambia has borrowed heavily from foreign sources and accumulated a sizeable arrears in external payments. Arrears, IMF drawings, publicly guaranteed and government medium- and long-term, disbursed, outstanding debt totalled US$3.17 billion in 1981, according to a reliable source, which was equal to 94 percent of GDP at the official exchange rate. (This would be much more than GDP if the kwacha were more realistically valued.) The ratio of public external debt to GDP has increased rapidly from 17 percent in 1965 and 34 percent in 1970 to its present alarming level.2/

1/ This is probably the most appropriate indicator of the purchasing power parity of the kwacha, since the IMF calculates the SDR value of most member-country currencies from their relationship to the US dollar and its current value in SDR's, and also since not many international transactions are denominated in SDR's.

2/ World Bank, Zambia Country Economic Memorandum, February 27, 1981, pp. 103-5.

Debt service payments (ammortizations and interest) have likewise risen rapidly from only 2.5 percent of export earnings in 1965 and 11 percent in 1975 to an estimated 21 percent in 1979[27] and 40 percent in 1982. In view of Zambia's dire need for more intermediate commodity imports to keep its industrial sector functioning, the high debt service ratio itself seriously reduces the availability of foreign exchange for other purposes.

E.2. Major Constraints to Better Performance

The basic causes of Zambia's balance of payments difficulties and the constraints impeding improved performance are well known and need only be summarized here. The country still depends too heavily on one commodity for export earnings, with copper comprising 95 percent of commodity export value in 1981. This places Zambia in a very vulnerable situation as world market prices for copper fluctuate and as the more easily exploited reserves of copper are depleted. The steady decline in Zambia's terms of trade--by 69% between 1970 and 1981--has been noted above. This has been due to rising dollar prices of Zambia's imports, such as petroleum, manufacturing inputs and fertilizer, and the relative decline in the dollar prices of her major mineral exports--trends which are not expected to reverse themselves significantly in the near future. The current recessionary demand situation in major world markets has depressed export prices still further, but hopefully on a more temporary basis.

The excessive import dependence of the industrial sector has also been noted, itself due in large part to 1) the import-substitution policies which have resulted in a cascading tariff structure protecting domestic industry against imports of final goods, but favoring imports of intermediate and capital goods, and which have protected an overvalued foreign exchange rate, 2) subsidized (via artificially low interest rates) capital investment financing imported machinery and intermediate inputs, and 3) a fiscal incentive structure promoting capital investment which largely finances imported machinery.

In addition, while its import requirements are less than those of the industrial sector as a proportion of final output, the agricultural sector needs a certain amount of imported machinery, fertilizer, insecticide and petroleum to keep its production of food at desired levels, and these cannot be delayed without undesireable results.

Adding to these difficulties and constraints, the disruption of trade with and transportation difficulties through neighboring countries deprived Zambia of some export earnings and cheaper sources of import supplies, as well as increasing the cost of trade with other countries.

Finally, the extraordinarily high level of accumulated foreign debt and its required debt service payments, reaching 40 percent of export earnings in 1982, has itself become a major constraint to reducing the overall balance of payments deficit and even to financing further deficits on current account.

E.3. GRZ Measures Required for Better Performance

There is not much Zambia can do about the decline in its terms of trade but adjust to it. This means it must develop other exports to earn foreign exchange and conserve its use of imported items as much as possible. Likewise, like most other countries it must wait out the recession and hope the business upturn comes sooner rather than later. It can, however, take several steps now to position itself to ride the next upturn higher on the export side by reforming its domestic policies so that they will promote, rather than discourage, export diversification; and it can take steps to discourage further investment in industrial and agricultural activities with a high import demand and to actively encourage the development and use of domestic sources of supply and factor inputs.

The first step, and administratively (though not necessarily politically) the easiest one to undertake is to straighten out the price structure to reflect more accurately domestic costs and relative scarcities and to give the appropriate signals to investors and consumers. The kwacha exchange rate badly needs to be reduced to a more realistic level in order to encourage export development and domestic import substitution of production inputs[3/] and to discourage imports, and it needs to be placed on a more flexible or floating regime to keep it properly in line in the future and to avoid the need for further large, traumatic devaluations after a crisis has already developed. At the same time a thorough tariff reform should reduce the favored treatment of imported capital and intermediate goods and subject high-cost domestic producers to more competitive pressure from abroad, in order to direct new investment into more efficient areas wherein Zambia has a comparative advantage. The cost of capital utilization relative to labor should be raised by increasing

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3/ As noted above, these are now so cheap in kwacha terms to import that there is little incentive to develop domestic sources of input supply.

interest rates, reducing tax deductions and credits for capital investment, and by holding the line on demands for further wage increases. Positive inducements could be provided for projects which generate more employment per unit of investment. In the agricultural sector, an exchange rate devaluation accompanied by the appropriate upward price adjustments for both farm products and imported supplies, such as machinery, petroleum and fertilizer, would improve the relative profitability of production in the much larger small and subsistence farm sector, which is more labor-intensive, as compared with the commercial sector, which relies more heavily on imported machinery and other foreign-made inputs.

Such an overhaul of the price matrix should be accompanied by an energetic program of export promotion and diversification to encourage and assist potential exporters, both large and small, to better identify market demand, design and package and advertise their products, and finance their operations. The list of policy and administrative reforms and active forms of possible assistance has been discussed at length in recent World Bank papers and need not be repeated here.

Zambia should continue to use diplomatice means to seek more political stability in the region, so she can reestablish and promote more trade with her southern neighbors and improve her more economical lines of transportation to the ports of Mozambique and Angola.

Regarding the mounting debt service problem, in addition to greater efforts to reduce import demand and increase export earnings to help free more foreign exchange for the required payments, as discussed above, it seems at this point that Zambia has no choice, other than outright default, but to seek debt rescheduling and still more concessionary loans from official donors. This will be much easier to negotiate if the GRZ is seen to be "biting the bullet" and launching the politically difficult, but economically essential, reforms outlined above. By labelling the reforms "politically difficult" reference is made to the temporarily adverse affects that some of the reforms mentioned, such as a significant devaluation and tariff restructuring, will have on segments of urban workers and on consumers of imported products. In the longer run, if current policies are not changed, it would seem that the continuation of the current downward spiral in per capita income and the increasingly restricted import availability for either consumption or production would have an even greater and more permanent adverse effect on the entire population, the dire political consequences of which and their precise timing can be better predicted by Zambian politicians themselves.

F. The Problem of GRZ Fiscal Policies and Operations

1. Central Government Finances

a. Performance

A general insufficiency of information, and uncertainties about the accuracy of the available data, place obstacles in the way of an analysis of GRZ fiscal policies. Resolution of the conflicts among quantities reported in different data sources would require substantial research. Improvement of the fiscal data base at numerous levels is needed, and this need should be kept in mind when assessing the 1970-1980 estimates that follow. Much of the preliminary 1981 data appears to be too rough and tentative to be usefully included. The basic data reported is sufficiently robust, however, to allow confidence in the overall trends and problems discussed below.

The year 1975 can be viewed as a watershed within the 1970-1980 period. Total central government expenditures as a percentage of GDP peaked in 1975 at 51.1%. In real terms GDP in 1975 was slightly inferior to 1974 and 1975 was the year in which a general economic decline began. The average annual GDP growth rate was +2.9% for 1970-74 and -1.0% for 1975-80. The depressed world market prices for copper and the related Zambian economic depression was bound to have a powerful effect on total revenues which declined in real terms during this latter period.

Many, if not most, of Zambian fiscal problems are deep-rooted and rather complex. Nevertheless, they have been aggravated by the recent economic decline and can therefore be examined in terms of a comparatively prosperious 1970-74 period and a distinctly recessional 1975-81 period.

The total domestic budgetary deficit will be considered first. Prior to the seventies, large domestic deficits did not characterize the Zambian economy. For the 1970-74 period, current account revenues were 2,089 million kwacha (MK) and capital receipts were 99.8 MK for a total of 3,087 MK. Recurrent expenditures were 1,929 MK and capital expenditures 1184 MK for a total of 3,113 MK. The total deficit of 26 MK for the period represented only 0.4% of the sum of the yearly 1970-74 GDPs.

For the 1975-80 period, current account revenues were 3,301 MK and capital receipts 1,113 MK for a total of 4,414 MK. Recurrent expenditures were 4,371 MK and capital expenditures were 1143 MK for a total of 5,514 MK. The 1975-80 deficits totalled 1,100 MK.

In absolute and comparative terms the 1975-80 deficit reveals that a serious fiscal deterioration followed the 1970-74 period. The 5 year total gap betwen expenditures and revenues

increased from K26 million to K1.1 billion and rose from 0.4% to 8.3% of corresponding GDPs. The GRZ now has a major fiscal problem on its hands.

The precipitous expansion of the deficit from 1975 through 1980 can be attributed to the fact that, in real terms, the expenditure level was sustained as the level of revenue dropped. For the 1970-74 period, the total expenditures of 3,113 MK represented 43,3% of GDP. The expenditure decline, in relative terms, for the 1975-80 period was surprisingly slight. The total expenditure of 5,514 MK represented 41.8% of GDP -- a reduction of only 1.5%.

The increase in the deficit during the latter period was due to the relative decline in revenues. The total receipts of 3,087 MK in 1970-74 represented 42.9% of GDP. The total receipts of 4,414 MK in 1975-80 represented 33.5% of GDP - a drop of 9.4%.

It may be useful at this point to underline the distinction between short-range fluctuations, insufficiencies and problems, and those defects and deficiencies which are more structural and enduring. For example, it would be a mistake to select the 1975-80 relative drop in receipts as the main indicator of poor management and performance.

The drop in world market prices for copper, which was the consequence of external factors, resulted in a steady decline in mineral revenues: 251 MK in 1970; 59 in 1975; 42 MK in 1980; an estimated 2 MK in 1981. There has been a substantial Zambian effort to compensate fo this loss by raising other taxes. As a percentage of GDP, the Income Tax rose from 5.4% in 1970 to 9.1% in 1980; Excise and Sales Taxes and Customs Duties climbed from 5.3% to 12.3%; and other non-mineral revenues increased from 3.4% to 4.3%. The total non-mineral revenue increase from 14.1% of GDP in 1970 to 25.7% in 1980 reflects a commendable effort on the part of the GRZ to compensate for the losses in mineral revenue.

The highly centralized nature of the Zambian economy has permitted the collection of revenue to support public spending that from certain perspectives could be considered excessive. In 1977 the share of government recurrent expenditures in GDP was 30.5% for Zambia as compared to 16.5% for Sub-Sahara Africa, 15.8% for middle-income oil-importing Africa, 15.2% for Kenya and 18.5% for Tanzania. If the official statistics for subsequent years are correct, this percentage was 26.8% for the 1970-74 period and as much as 33.1% for the 1975-80 period. Helping to finance this spending effort has been the sharp increase in the external public debt from 10% of the GDP in 1970, to 26% in 1975, and to 35% in 1980. The internal public debt during this period has been rather stable. It was 14% of GDP in 1970 and 15% in 1980.

The most significant weaknesses in Zambia fiscal policies and operations do not pertain to the overall fiscal effort. They pertain to the allocations and utilizations of this huge, possibly excessive, amount of public resources. The distribution and inter-relations of capital and recurrent expenditures in each sector, the economic and social consequences of specific expenditures, and estimates of the cost and benefits of actual and potential expenditures, whether recurrent or capital, require much more comprehensive and detailed analyses than can be provided here. Such analyses are urgently needed.

It is, nevertheless, significant that the share of total recurrent expenditures provided to economic services (agricultural and rural development, land, mining and natural resources, trade and industry, transport, communication and power) declined from 30% in 1970 to 22% in 1979, whereas the expenditure share of general services rose from 37% to 48%. Recent trends within the economic classisification of net recurrent expenditures are equally or more disturbing. From 1970 to 1979, personal emoluments declined from 28% to 22%; recurrent departmental charges (goods and services used to operate and maintain the government's capital stock and permanent labor force) dropped from 30% to 20%; and constitutional statutory expenditures (this includes expenditure for defense and certain salaries and interest payments on the public debt, but is net of amortization and sinking fund payments on internal and external debt) rose from 20% to 36%. The full significance of these variations cannot be determined without a major accounting and analytical effort that overcomes current data limitations, including inter alia, the lack of cash flow infomation on the parastatals.

b. Constraints to Better Performance

The major weaknesses in Zambia's overall fiscal performance lie in the kinds and composition of expenditures. The revenue effort is satisfactory. The excess of certain kinds of expenditures are wasteful not only in that they are not available for more productive purposes, but also in that they have a depressing effect on Zambia growth and employment.

Many of Zambia's fiscal problems are indistinguishable from the problem of growth, employment and external balance, dealt with the previous sections. Were the funds that are used to cover the losses of inefficient capital-intensive parastatals otherwise employed, they would be making greater contributions to income and employment. Similarly, the chronic failure to balance external accounts leads to new external debts, an increasing debt service burden, and the consequent loss of resources for productive investment. In sum, most of the macroeconomic policies that work against growth, employment and an adequate balance of payments have fiscal symptoms, if not origins.

The key constraints to better macroeconomic and fiscal performance fall into three main groups: (1) informational constraints; (2) institutional and procedural constraints: and (3) vested interests in the major ongoing misallocations of resources.

These three kinds of constraints, although conceptually distinguishable, do not reside in separate, watertight compartments. Some of the existing institutional and procedural arrangements can have the effect of widening information gaps. An example of this is the discontinuity between capital or investment budgeting and budgeting for recurrent expenditures. Selecting the capital and recurrent expenditure items, and reconciling and balancing these two kinds of expenditures, in order to achieve the highest possible overall cost/benefit ratio is an extremely difficult art to practice under the best of circumstances. In Zambia the complexities and difficulties would appear to be compounded by an institutional arrangement under which the two budgeting functions are rather sharply divorced. The Ministries make out their recurrent cost budget requests and the National Commission for Development Programs (NCDP) apparently has considerable autonomy in the preparation of the capital budgets. Consequently, both the institutional and informational constraints need to be addressed in order to bring about better internal selection and a better external fit between the capital and recurrent expenditure budgets of the various ministries.

The insufficiency of the presently available information for policy making purposes is another key constraint. As noted in the previous section, the share of total recurrent expenditures provided to economic services declined from 30% in 1970 to 22% in 1979, whereas the expenditure share of general services rose from 37% to 48%. Although these major shifts may be indicative of basic misallocations, much more information is required before the desirable policy changes can be identified. The general paucity of detailed data and insufficient analysis of the implication of the available data for policy are serious constraints to improved Zambian macroeconomic and fiscal performance.

Although the provision of certain subsidies may constitute impediments to general growth and employment, they also benefit special interests. This is another major constraint to better macroeconomic and fiscal performance that must be carefully examined to determine where and when it can be eased, and where and when it cannot be eased.

c. Measures to Improve Performance

In the attempt to deal with these constraints priority should be given to an easing of the information constraint. There are two main reasons for assigning priority to the information constraint. First, insufficient knowledge of the

relevant economic facts and principles and the consequent failure of the Zambian policymakers to fully understand their problems are serious obstacles to better macroeconomic and fiscl performance. Second, information about the institutional obstacles and vested interests are needed for the easing of those constraints. General confusion about what is happening, and why, often contributes to the strengthening of vested interests and the consolidation of institutional obstacles.

The improvement of macroeconomic and fiscal policy is a complex and politically delicate task. This is one of the reasons that donors should not attempt to carry out this task for Zambia. The donor task should be a different one: to help Zambia establish the process of data collection, tabulation and analysis required to improve its macroeconomic and fiscal management.

2. Ministry of Agriculture and Water Development (MAWD) Finances

a. Performance

There is a tendency among donors to make judgements about the adequacy of the host country agricultural effort on the basis of agricutlural's share of central government expenditures.

This informational item is only one of of the many statistics needed to obtain a picture of the agricultural effort. Using it in isolation to arrive at a judgement is a simplistic and misguided approach to the problem. Detailed knowledge about the nature of these expenditures can have the effect of completely altering previous judgements concerning the adequacy of the level.

In the case of MAWD, the average annual growth rate in real terms for recurrent budgeted expenditures was +19.6% for 1970-75, and -11.3% for 1975-80. The corresponding rates for budgeted capital outlays were 17.7% and 5.6%. During 1970-74 average recurrent budgeted expenditures were 9.5% of total government recurrent budgeted expenditures. In 1980 they were 15.0%.

Since there appears to be considerable discrepancies between budgeted and actual expenditures for agriculture, these budgetary aggregates may not be very meaningful. Even if they were actual expenditures, or approximated actual, taking them as indicators of effort would be a mistake. An enormous portion of MAWD's recurrent expenditure is constituted by subsidies and grants that cover operating losses of parastatals and cooperatives handling agricultural products, inputs and finances. Estimates from the published data indicate that in 1980 these subsidies represented 91% of MAWD's actual recurrent expenditures; in 1981 they represented 83%. (See the agricultural sections below for an analysis of the subsidies.) Since the time available for the preparation of this document was not sufficient to examine prior

year publications and make the corresponding percentage estimates of actual expenditures, and since the GRZ publications do not specifiy these sub-totals and shares, review of MAWD expenditure performance will be limited to the years 1980 and 1981 (as presented in Tables 13 and 14).

It would be useful if the GRZ "Final Report" on central government expenditures were to total and summarize the year's distribution of expenditures for each ministry or agency along the line of Tables 13 and 14. Nevertheless, the value of this data is limiited; and it should not be assumed that detailed information on distributions is sufficient to arrive at final judgements concerning the adequacy of the level and the appropriateness of its distribution. For example, some donor reports refer to the relation of personal emoluments (PE) to recurrent departmental charges (RDC) as if there were a fixed proportion to which every ministry and agency should conform. It should be obvious that the proper amounts and proportions should vary according to each ministry's specific functions and tasks. For example, RDC sub-item "travelling on duty" should be greater in absolute and relative terms in a ministry with a national extension service, such as MAWD, than in the Treasury.

Again, the most significant fact revealed by the tables is that the bulk of MAWD's recurrent expenditures were spent for subsidies: 91% in 1980, and 82.6% in 1981. The issue of the relations between PE and RCD shrinks to insignificance in view of the magnitude of the subsidies. The frequently mentioned fact that PE and RCD were both greatly under-funded takes on a new meaning when viewed in the light of the subsidy. The fact that the bulk of the expenditures was for subsidies is largely responsible for key positions in the field and MAWD headquarters not being filled and for extension agents and other agricultural officers not being able to travel as much as needed to provide planned assistance to farmers. The main judgement concerning total central government expenditures also applies to MAWD: the basic problems reside in the kinds and distributions of expenditures, not in the overall level. For example, in 1980 the K19,761,100 spent on both PE and RDC represented only 9.7% of the K204,643,400 spent on subsidies. IN 1981 the K22,186,900 spent on PE and RDC was 20.4% of the K108,419,900 spent on subsidies. Had there been no subsidies in 1981, PE and RDC expenditures could have been almost 500% greater. Had the subsidies been halved, PE and RDC expenditures could have been increased by about 250%.

b. Constraints to Better Performance

The many constraints to better performance at the sectoral level can be grouped as they were at the overall macroeconomic and fiscal levels. These are informational constraints, institutional and procedural constraints, and vested interests.

At the sectoral level the informational constraints are more numerous and in certain respects more complex than at the overall level. In part because more sustained analytical attention has been given to general macroeconomic and fiscal phenomena, the major errors in overall policy that LDCs are prone to commit are easier to identify. In LDCs the predominance of a smallholder subsector with a rapidly growing population that is dedicated in great part to subsistence farming poses complex problems, the solutions of which have been eluding many LDCs. The tendency of each donor to propose its activities as the solutions has often led to an excess of uncoordinated projects.

Like any other country, Zambia, by default or intent, has an agricultural "policy" -- which, like all policies, is a mixture of two kinds of elements: the results of inquiry and reflection, and the consequences of the pressures of interests and circumstance. Increasing the first element at the expense of the second to make agricultural policy more coherent and effective may depend in great part on an analytical process which identifies and quantifies the constraints to increased agricultural production and smallholder income.

Once again, the institutional and procedural constraints are in part reflections of the information constraints and vice-versa. First, it seems clear that the large supplemental budget provided to MAWD is a last-minute decision that depends on the amount of the subsidy required to cover the producer-consumer price tag for domestic and imported maize and fertilizer.

Second, since capital revenues and expenditures depend so greatly on donors, adequate planning for their use may be difficult under the present circumstances of insufficient donor coordination. Third, the large role played by donors in the agricultural sector may have the effect of generating demand for recurrent expenditures greater than availabilities. As the AID-supported Zambian Agricultural Training, Planning and Institutional Development (ZATPID) Project begins making estimates of total MAWD availabilities and needs, it should contribute to an easing of these institutional and procedural constraints to a better planning and budgeting process.

The most important vested interests in the present allocation of resources are those that enjoy short-run benefits from the fertilizer subsidy and the maize consumer subsidy. A complete and precise identification of the beneficiaries of the fertilizer subsidy is impeded by the lack of adequate information concerning the purchasers and recipients of the fertilizer. It is widely believed, however, that these are primarily commercial farmers. If this is correct, then the recurrent expenditure in question subsidizes a rather small group, the members of which are comparatively wealthy. The lack of political or economic rationale for this arrangement should be obvious.

The vested interest constraint associated with the maize consumer subsidy is deeper and broader. This makes it particularly important to estimate the full consequences of the subsidy and to specify as precisely as possible the groups that are affected positively (the "beneficiaries") and the groups that are affected negatively (the "taxed") in the short, medium and long run. It is naive to presume that these estimates have been made carefully and correctly by shrewd policymakers. "Political" decisions can be -- but are not invariably nor even usually -- at odds with "economic" decisions that favor growth with equity. When so-called economic and so-called political choices are far apart, fuller information tends to bring them closer together. Consequently, analysis of the magnitude and locus of the production and transfer effects of the maize consumer and other subsidies should be carried out under the ZATPID project as soon as possible.

c. Measures to Improve Performance

As already suggested, improving MAWD fiscal performance is tantamount to making Zambia agricultural policies more effective. Greater coherence among policies is a sine qua non. Policies which prima facie are unrelated to central government resource allocations can have major effects on these allocations, the most obvious example being the subsidies engendered by current consumer and producer prices.

It would be a grave mistake to underestimate the difficulties and complexities involved in improving agricultural policies. This will require a substantial increase in the present stock of agricultural, economic and social information, major institutional developments, and new patterns of official support for smallholder activitites. Despite the present importance of the subsidy issue, a resolution of it should be viewed as no more than a needed first step in the establishment of a continuous Zambian process of experimentation, research, data collection, processing, analysis, policy formulation and implementation. AID/Zambia's two projects are aimed at the establishment of such problem-solving processes: one in the area of agricultural research and extension; the other in the area of agricultural policy.

II. MAJOR ZAMBIAN AGRICULTURAL DEVELOPMENT PROBLEMS*

The purpose of this part of the paper is to provide an update of the events and trends in the Zambian agricultural sector; to analyze their impact, and to identify areas where the performance of the sector could be significantly improved in the short run.

After a brief review of the structural characteristics of the sector, the sector's performance against the goals of increased production and increased incomes is reviewed. Next, constraints to improving the sector's performance are delineated. Reviewed are both the long run and short run problems facing agriculture in Zambia. Lastly, measures to improve agriculture's performance are identified and impact explained. The identified measures are those short run measures believed to hold the greatest potential for rapidly improving the sector's performance.

A. STRUCTURAL CHARACTERISTICS

1. Land Use

Roughly one third of Zambia's surface area is well suited to agriculture.[1/] The other two thirds of the country is either infested with tsetse fly, is devoted to forests or game reserves, is permanently under water, or is excessively rocky. Of the roughly 25 million hectares presently suited to agriculture, 12 million hectares are cropped intermittently and 2 million hectares are cropped continuously. The amount of land used for agriculture varys greatly between different agro-ecological zones. Overall, land use relative to potential remains low as evidenced by the fact that only 8 percent of the land presently suited for agriculture is continuously cultivated. In major part, this reflects the production technologies presently available; the skills of most of the rural producers; the economics of location, and the government's policies with respect to agriculture.

2. Agro-ecological Zones

Zambia can be easily divided into four major agro-ecological zones.(See map 1)[2/] The Northern zone has high rainfall, low soil fertility, limited sunshine, and tsetse fly throughout the region. Shifting cultivation is the predominate form of agriculture. In the Western zone, low rainfall, low soil fertility, wide temperature variations and

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*Prepared by Dirk Dijkerman, Agricultural Economist, Agricultural Division, REDSO/ESA, AID, November, 1982 at the request of AID/Zambia.

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

2/ IBRD report 841a - ZA (October 20, 1975).

little tsetse fly are the best descriptors. A livestock based economy has developed in this region. The Central, Southern, and Eastern provinces form a zone which is by far the most ecologically favored in Zambia. It has relatively good soils, rainfall, and sunshine. Also as a result of containing the major urban areas, it has developed into the most important agricultural region in the country. The last zone, formed by the Luangwa-Zambezi Rift Valley along the Southern East border contains extensive broken escarpments. This region is of marginal significance agriculturally.

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.[3/] 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[4/], 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 potatoe, and cotton. The conditions for growing rainfed rice and wheat are not suitable (the lowest rating) in most of Zambia.

3. 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 one time. Only 40 percent of these farms sold or bartered any part of their produce in the early 1970'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.

3/ J.K. McPhillips, "Fertilizer Recommendations and Crop Yields in Zambia," MAWD (undated, late-1970's).
4/ "Report on the Agro-ecological Zones Project, Volume I," FAO (Rome, 1978).

At the other extreme are 600-800 capital intensive commercial farmers including about 100-200 non-Zambians. Their high technology operations account for roughly 5% of the total cultivated land area. They grow maize, wheat, soyabeans, 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 for 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 60,000-120,000 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 now (1982) divides the producers into two categories: subsistence and commercial producers. Under this classification system, a commercial farm is any operation that cultivates 5 hectares or more, or earns K1,000 or more annually from crop sales.5/

The distribution of the rural population reflects the relative production capabilities of Zambia's agricultural zones. The highest density is in the relatively fertile central, southern, and eastern province zone, followed by the northern zone, the western zone and lastly the Luangwa-Zambezi Rift Valley zones.

Rural Population Densities by Agro-Ecological Zone6/

	area in Sq.Km.	'000 rural Population	Population per Sq.Km
Central, Southern and Eastern	94	810	8.6
Northern	350	1,220	3.4
Western	308	500	2.4
Luangwa-Zambezi Rift Valley	101	230	2.3

5/ "Final Crop Forecasting Report: 1981/82 Crop Season," MAWD (June 7, 1982).
6/ Data from 1969 Census. The 1980 census data has not yet been processed.

The growth of the rual labor force has been low relative to the country's population growth rate of 3.1%. During the 1960s, the annual rural growth rate was about 0.5%, while it increased to just over 1% during the 1970s and early 1980s (See Table 1). This reflects the relative attractiveness which urban areas have. Rural areas have higher infant mortality rates and possibly lower birth rates due to the relative scarcity of young males who have migrated to urban centers. 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 labor between rural areas which would alleviate the problem.

There remains a need for additional information concerning the precise nature of the rural labor supply, not only because they produce the majority of the country's food, but also because they are the majority of the population in Zambia.

4. 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. 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. This point is discussed in considerable detail later in the paper.

The most visable agricultural produce marketing organization is the GRZ. Working through parastatals and their appointed agents (i.e., cooperatives) and via legislated uniform national prices, the system tries to control the marketing of major crops, with particular attention to maize which is the country's single largest food crop. Uniform national pricing and controlled marketing is not universal in Zambia. The GRZ does not set the prices of vegetables, nor does it control its marketing. The marketing of vegetables is left to the private sector, including cooperatives.

The marketing of sorghum, millets, beans, and other food crops apart from maize, also 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 officials channels have not been enforced. Hence, the official marketing agencies become buyers of last resort for many of the other major food crops, such as sorghum, millets, etc. Even though this

arrangement allows some room for the small private trader to operate, the environment, on the whole, does not appear to be very supportive of their activities. Again, this point is discussed in considerable detail later in the paper.

5. Location.

A significant characteristic of Zambian agriculture, as well as the overall economy, is its concentration in one agro-ecological zone: the central, southern, and eastern province zone. This area accounts for over 50% of officially marketed production, only 16% of the land, 29% of the rural population, most of the urban population and jobs, and contains the majority of the major transportation arteries. This implies that there is not much out in the rest of Zambia of service to over 70% of the rural population.

This distribution of the majority of the rural population (about half of the total population) has significant implications regarding the development prospects of these people. The transportation cost is a significant element of the total cost of undertaking any activity which links or tries to link the rural areas with the present center of Zambia's economic activity. This fact is particularly important since Zambia is totally dependent on imports of petrol, oil, and lubricants (POL).

Even though the land to population ratio appears favorable, the generally weak soil structure, the current cultivation practices of the majority of Zambia's agricultural families, and the availability of agricultural laborers are factors working such that any significant and sustained increase in production and or acreage in most of Zambia will require more complex farm management techniques and increased inputs (i.e. fertilizer, improved seeds, etc.) in order to assure that the productivity of the resource base does not deteriorate.

Thus, while some studies have estimated that 90% of Zambia is potentially arable, there are serious questions about the economic costs and returns from bringing these lands into production.

Given these characteristics of Zambia's agricultural sector, it becomes relevant to assess how the sector has performed, particularly since 1979/80 when AID/Zambia changed its development focus from one of strictly balance-of-payments support to a development oriented strategy in support of the agricultural sector.

B. AGRICULTURAL SECTOR'S PERFORMANCE

Accurate data about total agricultural activity in Zambia is not available. However, the available estimates are believed to be sufficiently accurate to indicate trends. Comprehensive

analysis of the sector remain suspect unless improvements are made in the quality of data and information.7/ Among the significant unknowns are: the importance of non-official marketing channels; the importance of unregistered border trade in major crops; the impact of official producer prices on producers' marketing decisions, particularly with respect to the level marketed through official channels.

Although over 60 percent of Zambia's population is dependent on agriculture for its livelihood, the contribution of the sector to GDP has been low since Independence, annually accounting for only an estimated 12 to 14 percent. Since mid-1970s, agriculture's contribution to GDP has increased slightly from 12.4% during 1973-76 to 15.4% during 1976-79. The drought and other factors in 1979 and 1980 caused a slight decline, but the normal to good weather in 1980 and 1981 along with increased producer prices resulted in a rebounding to 16.2 percent of GDP. The relative increase of agriculture's contribution to GDP must be kept in perspective with the relative decline of the other sectors of the economy, particularly mining, manufacturing and construction, which have all declined in importance during the 1975-81 period. To determine what actually has happened in agriculture, the sector's performance is compared against two goals: increased agricultural production and increased agricultural incomes. These goals are also the GRZ's and AID/Zambia's sector goals.

1. 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 are much less than that of the commercial farm sector's. The traditional sector's change in output usually is around 1-2% per year. This partially reflects the sector's relative lack of dependence on the modern sector and partially reflects a lack of knowledge about this group's behavior (hence, small stable changes are assumed).

7/ 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).

Estimates of officially marketed production are more reliable than total production estimates which often vary by 100+% between the various services in the GRZ. In 1980/81 and 1981/82[8/] 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 5% of the total volume of crops marketed officially, while most average less than one percent.[9/] 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 case remains for most crops, that the level of officially marketed production has increased significantly since 1979/80 (See Table 4).

The difference 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 makes public any estimates it might make. Observers 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. For other crops, such as rice, groundnuts, sorghum, millets, 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, millets, and cassva, which are an important part of the diet in many parts of the country, (i.e., in the northern and western agro-ecological zones).

8/ The crop season runs from October 1 through September 30 (MAWD report, June 1982).
9/ Seed Cotton is the exception.

Productivity per worker in the agricultural sector provides another indicator of the efficiency of the sector. 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 has still declined about 9.1%, while for the economy as a whole, it declined by 29%.

Not unexpectedly, the gains in agriculture's productivity came from the commercial farm sector. Its productivity 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 1979. In fact, the commercial sector's productivity index has risen continuously since Independence except during the 1975-79 period.

The value of output per worker in the commercial sector has been above the average for the economy since around 1970. It now (1981) stands at K1,842 per worker, while it is 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. A preliminary analysis of weather in Zambia since 1976/77 reveals that rainfall patterns and officially marketed production are not closely correlated. In fact, the average rainfall was the lowest in 1976/77 when officially marketed maize was the highest ever at 750,000 MT. Weather cannot be blamed for the majority of the changes in the level of officially marketed maize.[10/] Other factors, such as the extent to which GRZ pricing policies act as a constraint to improved performance of the agricultural sector, will be examined in the next section (C).

2. 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 (e.g., increased per unit prices for that proportion of value added to the product by the agricultural sector).

Between 1973 and 1976, total agricultural production increased as well as the average per unit price for goods from the agricultural sector. 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).

10/See D. Dijkerman, "Major Factors Explaining the Level of Officially Marketed Maize in Zambia," (Forthcoming, December, 1982) for further details.

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 due to the relative decline in the value of the output of the agriculture sector.

By 1980 and 1981, the continued GRZ legislated producer price increases resulted in increases of the per unit value of production in the sector which were greater than in the economy as a whole. In 1980 and 1981, agriculture's average value added price increases 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, the price for that proportion of agricultural value added 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. The major reasons for the unequal distribution of the price gains are: (a) not all the country's farmers are able to capitalize equally on the higher producer prices because of differences in access to the GRZ's marketing facilities (e.g., most commercial farmers have better access than traditional farmers); (b) not all the price increases are on crops that the traditional farmer can grow effectively with his resources and capabilities (i.e., wheat, rice, etc.); and (c) many of the large price increases were not for major crops that the traditional sector grows (i.e., millets, cassava, sorghum, cotton, etc.).

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 did as a whole in 1981. That was the first time since the 1973-76 period, that the traditional sector did better than the economy.

3. 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 producer price increases for various crops, particularly maize, probably 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 deflatior 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 1981/82-1983/84.

The real price of maize has increased 8.8% per year during 1979/80-1981/82 and is projected to increase another 3.4% per year during 1981/1982-1983/84. This compares to the real decline of 4.4% per year experience during 1973/74-1979/80.

On average, the real producer price increases announced for the other crops have not been as large as those for maize. For the 1981/82-1983/84 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-1970s. These changes suggest that the GRZ's actions did not account for the relative price relations these crops had traditionally.

Analyzing past 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 are a major factor in explaining the changes in officially marketed production.[11/] Thus, the GRZ's continued efforts to supply fertilizer to farmers at subsidized prices has certainly helped increase agricultural production and incomes of those farmers that can obtain 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 acted as an impediment to revealing effective demand.

11/ D. Dijkerman. Ibid.

The effect of the GRZ fertilizer subsidy has been to increase the real price of maize to 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 have the impact of raising the real price of maize an average of 13% per year above the real price increase already legislated.

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 oficial purchasers of maize and other crops at the provincial level while NAMBOARD retains its national level responsibilities.

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 and cooperative union.

The benefits of this change were that 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 placing them into 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 to the above actions, 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 .

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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. However, there are areas where substantive changes could easily improve the performance of the sector. Considering the sector's large potential and the problems in the rest of the economy, it would be of considerable value for Zambia's leaders to re-examine the constraints to improving the performance of this sector.

C. CONSTRAINTS TO IMPROVING PERFORMANCE

The attempts to implement Zambia's humanist political philosophy has resulted in the development of a series of policies which have had the net effect of supressing agricultural production and incomes below what thay could be. Although many of the policies affecting this sector were designed specifically to alter an agricultural activity or practice, they have not always had their intended impact. Furthermore, there are other policies designed specifically for other sectors which have had negative effects on the agricultural sector.

1. Uneconomic Pricing

The altering of prices to achieve certain goals such as increased income equality has become an accepted role of government. In practice, all governments distort prices in one form or another to increase the total welfare of society. However, when the net effect of the governments actions are to frustrate the achievement of the very goals it sets for itself, then a reassessment of its actions is warranted.

Given Zambia's good agricultural potential, the fact that its agricultural output grew by about 1.5% per year during the 1970s, while its population grew by over 3% per year suggests that the GRZ has not been succeeding in fulfilling its role. The present package of agricultural and agriculturally related commodity prices fixed by the GRZ are providing incentives for the misallocation of the sector's resources.[12/]

(a). Uniform National Producer Pricing. Although adopted for reasons 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 estimated cost of production on large commercial farms. Transportation, handling and distribution

12/ Defined as an allocation of resources to sub-optimal uses.

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 return for maize are higher and farmers do not have to grow as much to achieve the same level of cash income. This becomes particularly important if there is little on which the farmer can spend his income (other than taxes, school fees, etc.)--something which seems to be the case in many areas.

A point frequently made is that domestic producer prices should at least approximate the import parity prices or world equivalent prices of those 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 effectively). The GRZ prices 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 118% 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 at least 30 percent. The extent to which this is true effects 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 30 percent devaluation of the Kwacha, then 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

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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[14/], 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 millets 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.[15/]

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 mono-culture crop economy. Although not discussed here, there are probably significant nutritional implications of this trend.

2. Uneconomic Markets

The GRZ's history of playing a major role in the marketing of agricultural products began at Independence. However, major involvement in the marketplace was a policy inherited from the previous government. After Independence, the GRZ's humanist philosophy and their desire to control the economy led to further increases in the involvement of government in marketing and distribution of outputs and inputs (fertilizer, credit, seeds, etc.). NAMBOARD became the largest marketing parastatal until the beginning of 1981. In addition to NAMBOARD and the provincial

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14/ See recent Food Strategy Study (1982) for more details.
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reimbursing the cooperatives for their expenses, hence placing them into severe cash flow problems.

The GRZ has publically 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.

(b). Constrained Marketing System. The result of the GRZ's uneconomic price structure for essential goods such as salt, soap, oils, as well as other goods is such that it has reduced the size and importance of the rural private marketing system. To make no allowance for distribution costs in Zambia where the population density, hence consumer density is low by most standards, is a very questionable policy. Without much to purchase with his cash, the rural traditional farmer cannot be expected to grow more. Money is only a medium by which things can be gotten.

3. The Lack of Agricultural Information

Every study of the agricultural sector has, without exception, called attention to the importance of improving the collection, processing and analysis of agricultural statistics. It is significant that every major study of agriculture has been done by foreign experts whom, in most cases, had to make special arrangements for collecting data. There is no doubt that improvements in agricultural data and analysis are among the necessary conditions for the development of sound agricultural strategies.

Since 1979 AID/Zambia has made the resolution of this problem one of its highest assistance priorities. The Agricultural Training and Planning Project (611-0075) directly addresses this problem. After various delays beyond AID/Zambia's control the project has finally begun to make headway in 1982.[17/]

17/ The expulsion of two U.S. Embassy diplomats in June, 1981, resulted in a temporary cooling off US-Zambia relations. However, relations have been progressing back toward the levels enjoyed prior to June 1981.

4. Lack of Appropriate Agricultural Research or Adequate Extension Services

The MAWD agricultural research division has its main center at Mount Makulu and has 23 other regional stations scattered throughout Zambia. Currently, there is a lack of continuity in the research program, owing in part to the large number of expatriate professional staff working on short-term contracts. Several other problems also have hampered research. Although capital funds are being approved for new schemes or buildings, the recurrent budget continues to be cut, and programs underway are seldom fully and effectively completed. Though this is a general trend in government financing, it has particularly serious effects on agricultural research. Furthermore, research is still primarily oriented toward the commercial sector. Research of value to the traditional farmers is sorely lacking. For example, there is almost no research on the intercropping that is practiced by a majority of the rural people, nor is there research on the problems confronted in operating a subsistence plot under sub-optional levels of inputs and management. Furthermore, there is a serious gap between the output of the research unit and extension service needs. Communication of usable advice is minimal and the connections or linkages of the extension branch with research are extremely weak. Very little is known about the environment in which the traditional farmer operates, though much of government policy hinges on assumptions made about their behaviour.

The MAWD extension infrastructure, located on over 450 locations called "village camps" throughout Zambia, has the potential of reaching a large proportion of the traditional sector. In 1975 there was an average of less than one field employer (excluding commodity demonstrators) per village camp resulting in an extension worker per farmer ratio of roughly 1:1380. The TNDP goal is to reduce that ratio to the order of 1:400 by 1983. Several problems confront the service in meeting its optimistic objective. It remains questionable whether the service can reach its goal, though they supposedly hire all agricultural college graduates (2 year) and their staffing calculations find the goal attainable. Also, operating funds for visits and transport for both central and provincial staff have been seriously curtailed. One report states that in 1964 the ratio of staff salaries to travel expenses was almost 1:1 and by 1974 it had passed 4:1. Low salaries, difficult living conditions, inadequate and inappropriate training, and lack of communications with the provincial leaders have contributed to lowering the service's morale (for further details see B. Robinson's Budget Paper).

Extension training problems stem from trainers not knowing much about the traditional farmers, thus not knowing what to teach. Though 70% of the food grown in the traditional sector

is raised by women and over 25% of the households in some areas are headed by women, there are very few women agents and the differential effects that could be had by women agents is not known.

AID/Zambia has begun an agricultural reserch and extension project (611-0202) to address the major problems of the present system: lack of appropriate technology for the majority of the producers, and lack of coordination between research, extension and small holder farmers. The project got underway in 1982, after a difficult period (See section 3 above).

5. Restrictive Land Tenure System

The implementation of the present land tenure system makes it difficult for many farmers, commercial as well as emergent, to obtain long term (20-99 years) rights to the land they are farming. The present trend of granting only 3-5 years leases reduces the incentive a farmer has for improving his farm with capital investments. This not only constrains a farmer's long term plans, but also contribute to the abuse of the natural resource base.18/

6. Lack of Credit19/

Adequacy of the supply the of agricultural credit was a concern mainly for small holders until 1979. Now it is a major concern for all producers. The GRZ's tendency has been to cite the IMF limitations on credit expansion as the cause of credit supply problems. While it is the case that GRZ adherence to the IMF ceilings hastened the problem, two interrelated problems are of more fundamental importance. The first is the poor debt servicing performance of borrowers. The second is the heavy dependency of NAMBOARD and the parastatal agricultural lending institutions 20/ on budgetary allocations from the Government. Poor debt servicing performance, exacerbated to some extent by unrealistically low on-lending rates charged by parastatal lending agencies, has resulted in both operating losses and significant decapitalization of parastatal lenders. As a result, between 1971 and 1978 ACF and CFC accumulated losses, including provisions for bad debts, totalling nearly K16 million.

18/ See Dutch Food Strategy for more details.

19/ Information from this section comes largely from, IBRD report 3007-ZA (February 17, 1981).

20/ About half of the total agricultural debt is owned by the Agricultural Finance Company (AFC), and another one-fourth by the Zambia State Insurance Company (ZSIC), the Development Bank of Zambia (DBZ), and the Cattle Finance Company (CFC), three more parastatals.

Decapitalization of agricultural parastatal lenders occurred steadily during the 1970s but was usually offset by additional loans and/or equity capital from Government. Beginning in late 1978, however, the GRZ, (its own response to the financial crisis) caused reductions in agricultural credit. Cash allocations and short-term lending to NAMBOARD were reduced, a move which severely delayed crop payments causing large numbers of farmers to default on loan repayments. The GRZ also restrained its own lending and equity participation to the agricultural parastatal credit institutions such that decapitalization was not offset, and increased its share of borrowing from the commercial banks, thus restricting another possible source of increased agricultural credit. As a result credit disbursements in 1979 fell drastically, perhaps by as much as 35 percent.

The GRZ's reaction to these problems has been to establish a new parastatal credit organization, the Agricultural Development Bank (ADB), which is expected to open up new sources of funds for agricultural credit and to expand lending activities so as to supply the neglected credit needs of smallholder and emergent farmers. Although the Bank is not yet functioning, legislation for its creation has been passed and it seems that it will soon be expected to take over most of the functions of existing parastatal credit institutions in the sector. If things are to improve, however, the Bank must succeed in opening up new sources of funds and in increasing efficiency and/or on-lending rates so as to cover the cost of operations.

Capital funds for the newly planned ADB will be sought from external agencies. At present, MAWD is specifying the needed tasks and preparing job descriptions. Other details of planned operations such as new operating procedures to assure ADB of reaching its target group, inter-agency coordination and responsibility, if specified, have not been made public. Past history suggests substantial improvements need to be forthcoming if there is to be any improvement in agricultural credit delivery to the traditional farmers.

7. Constrained Dairy, Livestock, and Fisheries Production

(a). Dairy and Livestock. There is a strong domestic demand for both dairy and beef products. In the case of milk, domestic supply is not satisfying the demand. Fresh whole milk sold to the Dairy Produce Board (DPB) has declined from some 18 million litres per year during the mid-sixties to some 12 million litres in 1975, and 7 million litres in 1979. Although demand for milk has increased from 20 million litres in 1966 to approximately 46 million litres in 1975, the gap is being filled by imports of milk powder and butter oil which are reconstituted into fortified milk products.

Of the approximately 2 million head of cattle in Zambia, traditional farmers raise some 1.7 million head. Indeed, it is within this group that the potential rests for increased beef and dairy production. The GRZ introduced the National Beef Scheme in 1967 to boost production from traditional farmers. It has some 2,500 farmers as members and involves about 100,000 head of cattle. The GRZ admits that the scheme has not been successful.

The GRZ also has a Rural Milk Production Scheme (some 100 small dairy farmers over the country) and tenant dairy schemes to encourage production and marketing from traditional producers--neither has been successful according to plans.

Both the National Beef Scheme and the Rural Milk Production Scheme will receive increased emphasis during the TNDP, with changes designed to improve performance. FAO, SIDA, IBRD, CIDA, the U.K. and the other institutions are assisting Zambia in different areas of the livestock sector particularly in technical areas like artificial insemination, cross-breeding, veterinary services, forage, production research and in other technical areas on the state cattle farming units. Pricing policy procedures for milk and beef are regulated, but are in reality different. Whereas government dairy prices are fixed and dairy products must be sold to the DPB, government beef prices are regulated, but there is a substantial quantity sold on the unofficial market.

(b). Fisheries. The FAO reports fish provides about half the animal protein in the diet of the population. Dried Kapenta fish are a popular dietary item, though both urban and rural dwellers enjoy fresh fish when it is available through

market channels. Unfortunately production is low and probably relatively stable. The major problem is low official fish prices which are enforced by the national party members and GRZ officials. Additional problems are the high cost and lack of availability of basic necessities such as nets, boat engines, etc.

8. Uneconomic Macro-Policies

In addition to the policies designed to impact directly on the agricultural sector there are policies which were designed for other purposes, but which impact the sector. These policies are discussed in greater detail elsewhere and thus only are briefly mentioned below.21/

(a). Overvalued Exchange Rate. The maintaining of an overvalued exchange rate discourages the development of alternative exports, as well as encourages imports. Agriculutral exports are a real posibility for Zambia. Cotton and groundnuts are among the several which have export potential, but are less favorable to outside markets (at least legally) due to the precent exchange system.

(b). Low Interest Rate Policies for Deposits and Loans. A recent paper 22/ summarizes the problems of this policy as:

"(i).Saving rates are depressed and consumption is encouraged. This results in a shortage of credit available for investment. Since 1975, the percentage of total credit utilized by the public sector including the parastatal organizations has increased from 49 percent to 73 percent in 1980. This increasing share of credit going to the public sector implies that the current interest rate policy works particularly hard against development of the private sector which includes agriculture.

21/ See Steward Callison's "Major Zambian Development Problems," (draft, November 1982).
22/ Michael Applegate, "Restricturing of Interest Rates in the Republic of Zambia: some Policy Proposals." USAID/Zambia (September 1982). pp.6-8.

"(ii). Current interest rate policy results in credit rationing which intensifies risk aversion and liquidity preference on the part of intermediaries. This places agriculture at a disadvantage because of risk associated with factors beyond the control of farmers. Also, credit rationing means that a high expected rate of return on a proposed investment project is not sufficient to attract the required financial resources to implement the project. Non-economic factors such as social influence can play as significant a role in the allocation of credit as economic rates of return. Also, lending institutions favor larger established borrowers (i.e. commercial farmers) which biases credit allocation against new and smaller borrowers. This retards the development of groups such as the operators of smaller commercial farms which includes the increasingly important group of "emergent" farmers. This bias towards larger established borrowers and, therefore, unequal access to credit and capital for smaller and more recently established investors results in a tendency for the distribution of income to become more unequal over time.

"(iii). Credit rationing also results in self financing of investment projects. Not all investment projects with high rates of return will receive financial backing from the financial sector. Therefore, only those enterprises which can generate internal financing will be assured of obtaining the necessary funds. Again, this results in a bias against smaller producers who may have a worthwhile project but insufficient funds to implement it in the absence of access to credit. This also contributes to a more unequal distribution of income. Also, some projects may have higher rates of return than those being financed but go unimplemented due to insufficient internal resources. This results in inefficiency in the allocation of resources which implies a real loss to the economy.

"(iv). Artificially low rates on borrowing make capital investment relatively more attractive because the price of capital is lower relative to the price of labor. Therefore, even though capital is scarce and labor is relativelly abundant, credit tends to flow to capital intensive production. Therefore, employment generation not only is retarded due to slower growth resulting from shortages of capital, but because of the resulting factor price distortions, growth that does take place tends to be more capital intensive. That is, because of artifically low interest rates, the price of capital tends to be lower relative to the price of labor so that on the margin capital intensive production is encouraged. In agriculture this means that these farmers who do get loans, usually commercial farmers, face an incentive system that favors heavy capitalization of their production operation."

(c). General Bias Toward Urban Sector. Although not an explicity stated policy, the GRZ's actions since Independence reveal a clear bias towards the urban sector at the expense of the rural populance. The 1980 ILO report[23/] analyzed this tendency and found four trends:

"(i).The continuing movement of the rural - urban terms of trade against the rural population. From Independence to 1973 prices of agricultural goods generating incomes for the rural population declined by nearly 54 percent relative to the prices they had to pay for the urban produced goods they wanted to purchase...estimates of the changes since 1973 suggests that, with some fluctuations, the trend has continued, with a further deterioration of 23 percent - a total decline since 1965 of 65 percent.

"(ii).The rise in average real wages in the formal sector of the economy, by 9 per cent a year to a peak in 1973. Thereafter real wages fell by nearly 20 percent, though remaining 40 percent above the level of 1965. There is little to suggest that labour productivity has increased in line with these increases in real wages. The result is that Zambia compared with its neighbours and in spite of recent declines is a high wage economy.

"(iii).The rapid expansion of industry has in most cases used large-scale capital-intensive techniques, providing relatively little employment in relation to the capital investment required and depending heavily on imported inputs. The result is that from 1965 to 1979, only 28,000 jobs in manufacturing were created, yet huge sums have been invested and often are still required as subsidies to maintain production. Moreover, in some cases, the products being produced are primarily ones for the luxury end of the market, while production for Basic Needs is held back through lack of foreign exchange. As a long term trend this reflects the share of high income consumers in total national consumption as much as government policy. (In 1964, over half of the wage bill went to employees with average incomes at least 8 1/2 times those of low wage earners. By 1977, this proportion had fallen - but high income consumers still received incomes which were on average at least 4 1/2 times those of low income consumers and often much more. In total, the incomes of high wage and salary earners still accounted for over a quarter of the total wage bill and again, probably much more."

"(iv).Finally, government expenditure, both recurrent and capital, has remained heavily biased towards the urban centers. From the review of past government plans,

23/ "Basic Human Needs in An Economy Under Pressure," ILO (September 1980) pp.7-11.

including the TNDP, it is clear that intentions to achieve a better regional distribution of expenditure have been very far from achieved. In many respects there has been a deterioration in the proportion of total expenditure going to the rural areas, not merely a stagnation.

"Each of these factors reflects not so much impersonal forces as the results of a series of political and administrative decisions, heavily influenced by economic structures and pressures but in the last resort, not determined by them. Nevertheless, if the trends are long term, it tells something about the relative strength of the groups involved. The first of these factors is an indication of the relative weaknesses of the rural population; the second of the strength of the urban labour force, both in mining and elsewhere in the modern sector. The other two factors are more complicated. The high cost and capital intensity of modern industry, combined with its rapid growth following independence is clearly a sign of unbalanced development, creating few jobs and continuing dependence on imports, when the country's needs were for expanding employment and reducing imports. Yet more significantly, the larg-scale and capital-intensive pattern of Zambia's industrial development is an indication of the existence of a substantial investible surplus on which the country has been able to draw. Zambia, for all the difficulties following UDI was and, to a considerable extent, still remains a country of substantial resources, with an economic core in the mining industry which generates a surplus in a form on which the State can readily draw.

"The extent of this surplus is now, through a combination of both national and international factors, much smaller than it was ten years ago. Moreover, through a number of unfortunate tendencies, the greater part of this surplus has now been preemptive by a steady build up of regular claimants, so that even in a year of reasonable copper prices, little of the surplus remains for new development initiatives or for shifting prices and resources towards the vast mass of the rural population.

"Three groups account for the bulk of these preemptive claims:

- "that part of industry which is inefficient or inappropriate and which therefore requires annual subsidies, open or hidden, or sustained protection, in order to remain in production;

- direct subsidies to consumers and agricultural producers, mostly urban consumers and farmers using fertilizers;

- the 'social bureaucracy, - the growing numbers of government and parastatal employees receiving a regular wage or salary but contributing little if anything to the effectiveness of essential governments services...

"Such therefore are the long run tendencies and magnitudes by which surplus is being pre-empted by the urban, industrial and largely higher income sections of the Zambian economy, thereby leaving the rural and low income sections to exist and subsist on what remains."

9. Net Effect of the Present Constraints

The net effects of the GRZ policies on the agricultural sector have been to suppress total production and incomes, exacerbate the tendencies toward the development of a monoculture economy of maize, increase the differential between incomes in the low cost production areas and the more distant high cost products areas, stimulate a more capital import dependent commercial farm sector than is warranted on economic grounds, and above all, maintain the level of the urban populace's life style at the expense of the agricultural populace. It would appear that the results are not consistent with the intentions of the GRZ's Humanist philosophy.

The relatively dualistic economy inherited at Independence has been perpetuated and exacerbated by the GRZ's present policies. The dualism in the agricultural sector between commercial and traditional farmers also remains.

D. MEASURES TO IMPROVE PERFORMANCE

Although the constraints to improving the sector's performance appear to be large, in fact, they are not. Considerable opportunities for improvement exist. What is fortunate about the nature of many of the constraints facing the sector are that they were superimposed by the GRZ. By the same token, the GRZ can, with a concerted effort, alleviate many of these constraints and form a policy environment conducive to improving the sector's performance to be more in line with its potential.

Restructuring the specific policies of the agricultural sector will increase production and income. If a number of adjustments are made in the GRZ's macro-economic policies, in particular, exchange rate and interest rate policies, agricultural production and incomes would increase further.

By no means is it suggested that all the reforms will be politically easily in the short run. But, continuing its present policies is probably politically unsustainable in the long run. The choice, of course, remains with the GRZ's decision makers.

The major agricultural sector policy adjustments which would rapidly stimulate production and increase incomes are those dealing with pricing and marketing. The overall goal the GRZ should seek is to promote an efficient allocation of resources. To that end, the GRZ can work to have producer and consumer prices for basic commodities and crops, particularly maize, which reflect the economic costs of production, marketing, and processing. The implementation of policy adjustments to attain that goal can take various forms. The final form of the changes can include combinations or variations of the measures presented below. The measures listed are not all or nothing propositions. Different variations of the measures will yield different results whose impacts should be analyzed carefully.

1. Allow Regionally Differentiated Producer Pricing

By allowing regional producer price variations based on transportation and handling costs the GRZ will present farmers with a more accurate picture of what the value of their production is to the country. It will also reduce transport and handling subsidies to parastatals and their agents (i.e., cooperatives).

With this altered incentive structure, farmers will produce those crops in which they have a comparative advantage for producing. For example, in a rural area off the major transport arteries, this policy will result in a lower producer price of maize, because of the high transport and handling costs, thus reducing the profitability of maize production. Farmers might then decide to produce another crop for marketing which would be lower in bulk and higher in value, such as seed cotton, and which would be more suitable to the ecology of the land. One study, which took into account transportation costs, found that in some areas cassava production would be more profitable than maize production.[24/] Thus, it can be expected that a proportion of farmers would switch from maize production into other foodcrop production.

The preferred methodology of implementing this policy adjustment would be to let the producer prices for most crops such as sorghum, millets, beans, cassava, etc. be determined in the market place. In essence, this would give the unofficial markets, hence the private sector, a greater role. Because of the sensitivities regarding maize, the GRZ would probably retain control of the pricing of this crop, but would take into account the costs of transport and handling. The focusing of the GRZ's limited manpower the managing of information in order to set prices for only one crop would ease its administrative burdens considerably.

24/ Alan Marter, ibid.

2. Account for Relative Price Differences

By more accurately accounting for the relative price changes, the GRZ would help assure that the production of one crop is not undertaken at the expense of others because uneconomic policies.

The preferred method of implementing this policy measure would be to set a wholesale price of maize (before adjusting for internal transport and handling costs) at levels consistent with long term trends in world markets (e.g. world border price equivalents). This would do several things. First, it would protect Zambian farmers from sharp fluctuations in the international markets. Furthermore, the farm gate price offered to the farmer by traders and cooperatives would then reflect the transport, handling and distribution costs. Second, it would provide a proxy of the value of maize to the country, because if there was a domestic shortfall the price at which maize was imported would probably not be that significantly different from the domestic producer price. Third, if the GRZ had reduced its price setting responsibilities on most crops (as recommended in D.1.), it would be well within its capabilities to manage this system. Finally, the market place would determine the relative crop price relationships, thus relieving the GRZ of another major headache.

3. Reduce Subsidies on Inputs

By reducing subsidies on agricultural inputs, the GRZ will present the farmers with a more accurate picture of cost of using that input to the society as a whole. It might reduce, for example, fertilizer consumption somewhat, but the resulting allocation of resources would be more efficient for the country. The impact of reducing fertilizer subsidies on fertilizer sales, hence production, is not believed to be significant according to one study.25/ This further suggests that changing the policy will not have any immediate large negative impacts. Reduced subsidy outlays by the GRZ also means more resources are made available for potentially productive proposes.

4. Reduce Incentives for Consumption of Subsidized Foods

By reducing the incentives to consume those agricultural products that are heavily subsidized, the demand for substitutes will increase.

The effect of the GRZ decision to reduce subsidy payments and let the cost be borne by the consumers who elect to purchase those subsidized commodities is to alter the consumer's preference. Consumers' economic behaviour has shown that they respond to price increases by reducing purchases of that particular item and seeking increasing purchases of

25/ Doris Dodge, Ibid.

substitutes. Although this means an alteration in the consumption patterns for those Zambians living in areas where subsidies are important, this is not an unfamiliar event. Rural and urban Zambians regularly experience shortages ofcommodities such as cooking oil, sugar, salt, soap, food crops, etc. at official prices. These commodities, however, are sometimes obtainable at higher prices on the parallel market. Furthermore, in many areas alternatives to maize, wheat and rice, such as sorghum and millets already are a major element in their diet.[26/]

This altering of consumers preference (based on price) would be occuring at the same time that producers would be responding to alterred input costs (i.e., higher fertilizer prices) and product pricing (i.e., relatively lower maize prices and relatively higher prices for other crops) to varying degrees throughout the country. In the face of such changes, the country's marketing system would have to adapt.

5. Alter the Role of Parastatals and Increase the Role of Private Traders, Including Cooperatives

Zambia's present marketing system would constrain the parastatals and their agents (cooperatives) from responding to the above changes. Current regulations are such that they may only pay official prices for certain crops whether or not the price is realistic. In order to enable the present rural marketing system of cooperatives to adapt to the changing stituation, the GRZ will have to allow official marketing agencies (NAMBOARD and the cooperatives) to pay market prices for crops such as sorghum, millets, beans and cassava. The effect of this decision would be to immediately increase the size of the marketing system which could respond to the expected increased supply and demand for alternative food crops. This decision by the GRZ would further help "legitimize" the activities of the unofficial markets (see D.1.). The cooperatives and the remaining few NAMBOARD depots would be responsible for making the decisions regarding how much to pay producers for a particular crop in their respective regions. The marketing units working in a particular area can respond more quickly and accurately to market conditions than can the centralized pricing system currently in place. This, of course, is something Zambia's private traders and producers already do each crop season. By allowing official marketing agencies to freely interact in the marketplace the competition (demand) to purchase these commodities will increase. It is expected that the official marketing organizations will enter the market because in most regions, particularly in the northern and western parts of the country, the market determined producer prices are already above the official prices for sorghum, millets, beans, rice and cassava.

26/ Food Strategy Study, Ibid.

The GRZ would phase out subsidies to the cooperatives to cover the costs of these operations. Thus, the cooperative organizations will have to continue to assure that these added operations cover their costs and provide a return to the cooperative shareholders--the local farmers. This provides the necessary incentive to cooperative managers to maintain and improve the efficiency of their operations.

6. Deregulate Prices of Non-Agricultural Commodities

By allowing the prices of essential commodities such as soap, oil, salt, etc. to reflect the cost of transport and handling, traders (including cooperatives) will once again have an incentive to deliver the goods to rural areas and, just as important, the farmers will have something to spend their cash on.

7. Impact of Measures

Measurable impacts are expected as a result of the above measures. First, production and income in the rural areas will increase. Second, GRZ per unit budgetary subsidy outlays for commodities (agricultural inputs and food crops) would decline as the GRZ reduces such payments to organizations. Third, these changes would increase the production (supply) and sales (demand) of other crops, particularly sorghum, millets, beans and other crops which are presently significant alternatives to maize.

A fourth effect would be increased regional food self-sufficiency as would be evidenced by reduced interregional food transfers. The production of alternative crops would increase most where the maize price increases would be the largest--the northern and western parts of the country. These regions, which have been deficit maize producers, would become less dependent on maize imported into the region from surplus production regions. A fifth result would be the expected decline of the maize monoculture since maize would no longer be receiving the relatively high production and consumption incentives. This probably would also have positive dietary implications.

Sixth, the GRZ managerial and technical resources would have reduced responsibilities which would be more in line with their work load capabilities. Seventh, and lastly, the country probably would, once again, become self reliant in food consumption.

It is important to mention again that the extent to which these changes would actually occur would be determined to a significant degree by the other needed changes in the GRZ's macro-policies (e.g., interest rates, exchange rate, etc.) If these changes are made, one could expect, for example, an increase of agricultural exports.

In summary, the net effect of these pricing and marketing policy adjustments would be to reduce the attractiveness of maize consumption and production and allow the system (production and marketing) to respond to these changed incentives.

The focusing of this section on pricing and marketing policies is not meant to suggest that the other areas identified as constraints to improved performance are not important. It is just that the expected increase in production and income will be affected more by pricing and marketing policy changes in the short run than from changes in the other constraints. In the long run all of these factors are important to the improvement and maintenance the sector's performance.

Map 1. Zambia's Four Agro-ecological Zones

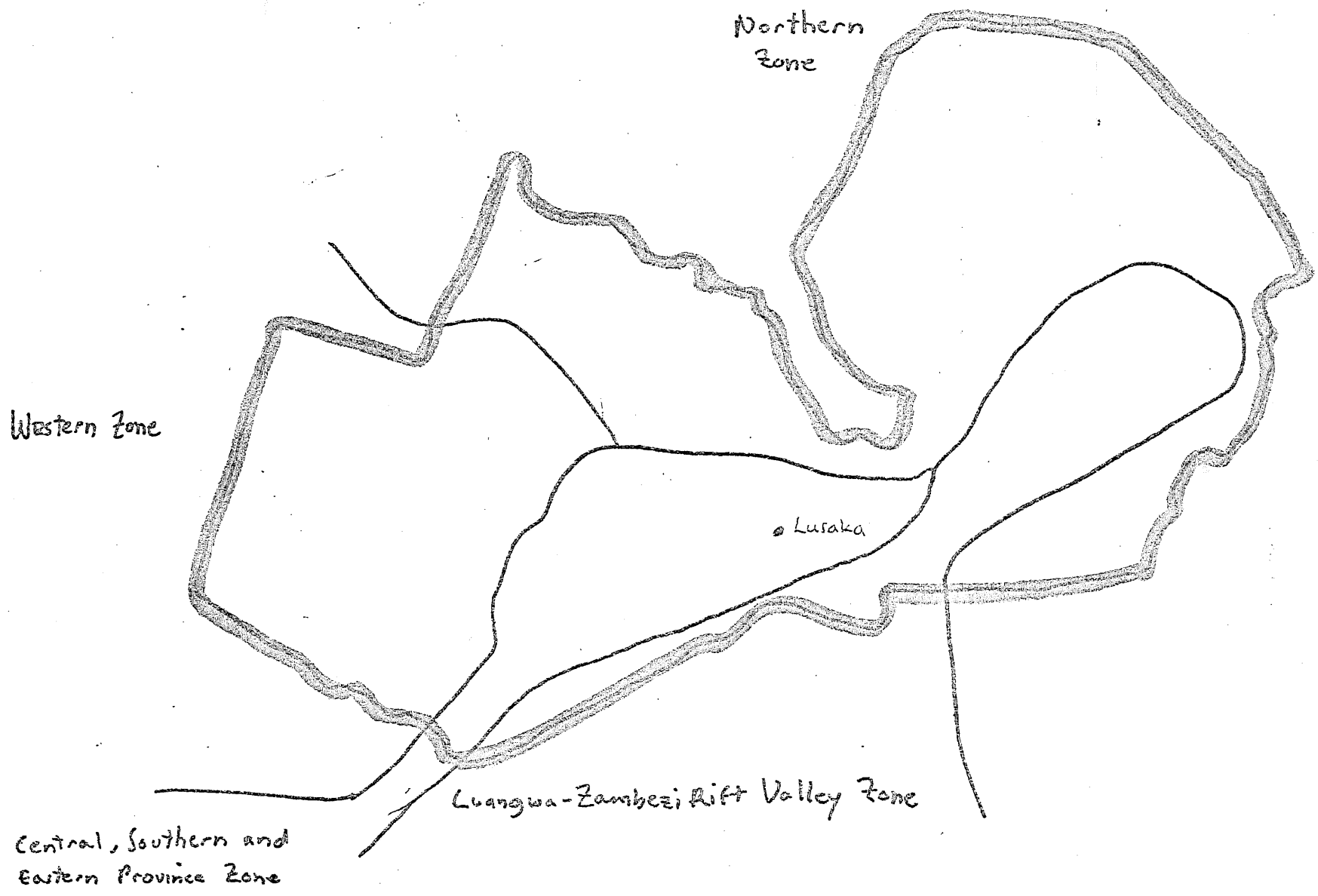

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Table 1. ZAMBIA - Real Gross Domestic Product (GDP) by Sector and Average Annual Rates of Growth, 1965-81 (in constant prices)

Sector	In Millions of 1970 Kwacha: 1965 1/	1970	1975P/	1979P/	1980P/	1981P/
Agricult., Forestry, Fishing	151.1	136.1	157.0	151.2	156.4	171.7
(Commercial Sector)	(28.7)	(41.5)	(56.3)	(45.0)	(49.0)	(63.0)
(Subsistence Sector)	(122.4)	(94.6)	(100.7)	(106.2)	(107.4)	(108.7)
Mining and Quarrying	452.2	460.3	427.9	391.0	398.6	351.5
Manufacturing	75.0	129.2	157.6	151.9	154.4	153.1
Construction	64.0	90.3	138.5	69.3	79.1	76.7
Transport, Commun. & Storage	50.7	48.8	59.6	62.2	64.6	62.0
Electricity, Gas & Water	8.8	15.5	48.9	62.6	67.2	72.4
Services	279.1	372.9	439.4	435.7	442.1	452.8
(Community, Social & Personal) 2/	(99.3)	(151.7)	(180.6)	(192.3)	(199.1)	(201.1)
(Other Services) 3/	(179.8)	(221.2)	(258.8)	(243.4)	(243.0)	(251.7)
Other 4/	22.1	15.4	13.3	7.0	7.3	4.7
TOTAL GDP	1103.0	1268.9	1438.1	1329.2	1369.7	1344.9
Adjustment for Changes in Terms of Trade	+187.2	-	-387.2	-454.4	-432.0	-519.8
Gross Domestic Income	1290.2	1268.9	1050.9	874.8	937.7	825.1

	Average annual rates of change (%): 1965-70	1970-75	1975-79	1979-80	1980-81
Agricult., Forestry, Fishing	-2.1	2.9	-0.9	3.4	9.8
(Commercial Sector)	(7.7)	(6.3)	(-5.4)	(8.9)	(28.6)
(Subsistence Sector)	(-5.0)	(1.3)	(1.3)	(1.1)	(1.2)
Mining and Quarrying	0.4	-1.4	-2.2	1.9	-11.8
Manufacturing	11.5	4.1	-0.9	1.6	-0.8
Construction	7.1	8.9	-15.9	14.1	-3.0
Transport, Commun, & Storage	-0.8	4.1	1.1	3.9	-4.0
Electricity, Gas & Water	12.0	25.8	6.4	7.3	7.7
Services	6.0	3.3	-0.2	1.5	2.4
(Community, Social & Personal) 2/	(8.8)	(3.5)	(1.6)	(3.5)	(1.0)
(Other Services) 3/	(4.2)	(3.2)	(-1.5)	(-0.2)	(3.6)
Other 4/	-7.0	-2.9	-14.8	4.3	-35.6
TOTAL GDP	2.8	2.5	-1.9	3.0	-1.8
Gross Domestic Income	-3.0	-3.7	-4.5	7.2	-12.0

P - Provisional

1/ Former System of National Accounts

2/ Includes public administration, defense, sanitary services, educational, health, recreational and personal servies.

3/ Includes finance, real estate, commerce and trade

4/ Import duties less imputed band charges.

Sources: World Bank, Zambia Country Economic Memorandum, 2/27/81, pp. 55-6; Rep. of Zambia, Economic Report 1981, Jan. 1982, p. 17; and Central Statistical Office, Monthly Digest of Statistics, Luskaka, July/Dec., 1981

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Table 2. ZAMBIA - Estimated Urban and Rural Labor Force and Per Capita GDP and GDY, 1965-81

	1963	1965	1969	1970	1975	1979	1980	1981
1. Total Census Population (1000's)	3490.2		4057.0				5679.8	
2. Urban	715.0		1192.1				2440.4	
3. Rural	2774.5		2864.9				3239.4	
4. -- % Urban	20.5		29.4				43.0	
Inter-Census Ave. Annual Growth Rates (%):								
5. Total Population			2.540				3.106	
6. Urban			8.893				6.730	
7. Rural			0.536				1.123	
Estimated Inter-Census Population (1000's):								
8. Urban		847.8		1272.3	1762.1	2286.5		2604.6
9. Rural		2804.3		2897.1	3063.5	3203.5		3275.8
10. Total		3652.1		4169.4	4825.6	5489.9		5880.4
11. Total Labor Force (1000's)		1063.0		1264.0	1503.0	1698.3	1761.4	1824.2
12. Labor Force Participation Rate (%)		29.1		30.3	31.1	30.9	31.0	31.0
13. Estimated Urban Labor Force (1000's)		246.7		385.5	548.0	706.5	756.5	807.4
14. Estimated Rural Labor Force (1000's)		816.1		877.8	952.7	989.9	1004.2	1015.5
15. Total "Formal Sector" Employment (1000's)		216.1		343.0	393.5	372.0	389.0	391.8
16. "Formal" Agriculture, Forestry & Fishing		32.7		34.6	36.1	34.6	32.6	34.2
17. Est. Urban "Formal" Sector Employment		228.4		308.4	357.4	337.4	356.4	357.6
18. Total "Informal Sector" Employment & Unemployment (1000's)		801.9		921.0	1109.5	1326.3	1372.4	1432.4
19. Urban Informal Sector		18.3		77.1	190.6	369.1	400.1	449.8
20. Rural Informal Sector		783.4		843.2	916.6	955.3	971.6	981.3
21. Gross Domestic Product (GDP) (1970 Kw M)		1103.0		1268.9	1438.1	1329.2	1369.7	1344.9
22. Gross Domestic Income (GDY) (1970 Kw M)		1290.2		1268.9	1050.9	874.8	937.7	825.1
23. GDP per capita (1970 Kw)		302.0		304.3	298.0	242.1	241.2	228.7
24. GDY per capita (1970 Kw)		353.3		304.3	217.8	159.3	165.1	140.3

Notes to Table 2.

Line	Source and/or Derivation
1 - 4	CSO, 1980 Census of Population and Housing, Preliminary Report, Rep of Zambia, Jan. 1981 p. 8
5 - 6	Calculated from Lines 1-3
8	Calculated for Lines 2 and 6
9	Calculated from Lines 3 and 7
10	Line 8 + Line 9
11	World Bank, Zambia Country Economic Memorandum, Report No. 3007-ZA, 2/27/81, p.6, and NDCP, Economic Report 1981, Rep. of Zambia, Jan. 1982, p. 55. 1965, 1970 and 1975 figures are interpolations of 1969 and 1976 estimates reported in World Bank report.
12.	Line 11 divided by Line 10(x 100)
13.	Line 8 x Line 12/100
14.	Line 9 x Line 12/100
15 - 16	World Bank, op. cit., p. 75; NDCP, op. cit., p. 56, and CSO, Monthly Digest of Statistics, various issues.
17.	Line 15 - Line 16.
18.	Line 11 - Line 15.
19.	Line 13 - Line 17
20.	Line 14 - Line 16.
21 - 22	World Bank, op. cit., pp. 55-9; NDCP, op. cit., p. 19, and CSO, op. cit.
23.	Line 21 divided by Line 1 or 10.
24.	Line 22 divided by Line 1 or 10.

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Table 3. ZAMBIA - Gross Domestic Product (GDP) by Sector, and Percentage Contribution of Each Sector, 1965-81 (in current prices)

Sector	1965 1/	1970	1975P/	1979P/	1980P/	1981P/
	In Millions of Current Kwacha:					
Agricult., Forestry, Fishing	97.4	136.1	206.4	375.0	435.0	534.0
(Commercial Sector)	(18.3)	(41.5)	(62.9)	(105.0)	(138.8)	(206.0)
(Subsistence Sector)	(79.1)	(94.6)	(143.5)	(270.0)	(295.0)	(108.7)
Mining and Quarrying	291.8	460.3	215.2	469.7	483.7	226.3
Manufacturing	48.0	192.2	250.3	433.3	502.1	542.1
Construction	40.9	90.3	151.2	95.0	126.0	130.0
Transport, Commun. & Storage	32.8	48.8	88.5	162.8	193.0	196.0
Electricity, Gas & Water	5.4	15.5	43.0	51.8	54.4	58.6
Services	180.3	372.9	585.8	978.8	1136.9	1250.9
(Community, Social & Personal) 2/	(64.0)	(151.7)	(268.5)	(420.2)	(499.4)	(572.9)
(Other Services) 3/	(116.3)	(221.2)	(317.3)	(558.6)	(637.5)	(678.0)
Other 4/	14.5	15.4	43.0	31.2	54.5	52.0
TOTAL GDP	711.1	1268.5	1583.4	2597.6	2986.3	2989.9
	Percentage of Total:					
Agricult., Forestry & Fishing	13.7	10.7	13.0	14.4	14.6	17.9
(Commercial Sector)	(2.6)	(3.3)	(4.0)	(4.0)	(4.6)	(6.9)
(Subsistence Sector)	(11.1)	(7.5)	(9.1)	(10.4)	(9.9)	(11.0)
Mining and Quarrying	41.0	36.3	13.6	18.1	16.2	7.6
Manufacturing	6.8	15.2	15.8	16.7	16.8	18.1
Construction	5.8	7.1	9.5	3.7	4.2	4.3
Transport, Commun. & Storage	4.6	3.8	5.6	6.3	6.5	6.6
Electricity, Gas and Water	0.8	1.2	2.7	2.0	1.8	2.0
Services	25.4	29.4	37.0	37.7	38.1	41.8
(Community, Social & Personal) 2/	(9.0)	(12.0)	(17.0)	(16.2)	(16.7)	(19.2)
(Other Services) 3/	(16.4)	(17.4)	(20.0)	(21.5)	(21.3)	(22.7)
Other 4/	2.0	1.2	2.7	1.2	1.8	1.7
	100.0	100.0	100.0	100.0	100.0	100.0

P - Provisional
1/ Former System of National Accounts
2/ Includes public administration, defense. sanitary services, education, health, recreational and personal services
3/ Includes finance, real estate, commerce and trade
4/ Import duties less inputed bank charges.

Sources: World Bank, Zambia Country Economic Memorandum, 2/27/81, pp. 55-6; Rep of Zambia, Economic Report 1981, Jan. 1982, p. 17; and Central Statistical Office, Monthly Digest of Statistics, Lusaka, July/Dec. 1981.

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Table 4 . ZAMBIA Expenditure on Gross Domestic Product, 1965-81
(millions of current kwacha)

Expenditure at Current Prices:	1965 1/	1970	1975p/	1979p/	1980p/	1981p/
Government Consumption	83.2	198.5	435.7	680.8	844.0	833.0
Private Consumption	344.2	494.3	814.5	1308.8	1608.9	1717.1
Gross Domestic Investment	173.1	360.8	642.0	376.0	701.0	695.0
(Change in Stocks)	(35.5)	(-11.5)	(40.0)	(-74.0)	(55.0)	(-30.0)
(Fixed Capital Formation)	(137.6)	(372.3)	(602.0)	(450.0)	(646.0)	(725.0)
Exports of Goods and Services	373.3	685.4	575.0	1209.3	1129.2	1063.5
Less: Imports of G. & S.	-262.7	-470.5	-883.8	-977.3	-1296.8	-1318.7
TOTAL GDP	711.1	1268.5	1583.4	2597.6	2986.3	2989.9
Percentage Shares:						
Government Consumption	11.7	15.6	27.5	26.2	28.3	27.9
Private Consumption	48.4	39.0	51.4	50.4	53.9	57.4
Gross Domestic Investment	24.3	28.4	40.5	14.5	23.5	23.2
(Change in Stocks)	(5.0)	(-0.9)	(2.5)	(-2.8)	(1.8)	(-1.0)
(Fixed Capital Formation)	(19.4)	(29.3)	(38.0)	(17.3)	(21.6)	(24.2)
Exports of Goods and Services	52.5	54.0	36.3	46.6	37.8	35.6
Less: Imports of G. & S.	-36.9	-37.1	-55.8	-36.6	-43.4	-44.1
TOTAL GDP	100.0	100.0	100.0	100.0	100.0	100.0
Trade Balance:						
Exports minus Imports (MKw)	+110.6	+214.9	-308.8	+232.0	-167.6	-255.2
-- % of GDP	+15.6	+16.9	-19.5	+8.9	-5.6	-8.5

p Provisional and likely to be revised
1/ Former System of National Accounts
2/ Recurrent budget surpluses
3/ 1965-6 fiscal year

Sources: CSO, Monthly Digest of Statistics, Rep. of Zambia, July/Dec. 1981, pp. 50-51; World Bank, Zambia Country Economic Memorandum, Feb. 27, 1981, pp. 57-60; and NCDP, Economic Report 1981, Rep. of Zambia, Jan. 1982, p. 39.

REDSO/ESA, AID: CSCallison, 1/3/82

Table 5. ZAMBIA - Gross National Savings, 1965-81
(millions of current kwacha)

	1965[1]	1970	1975P	1979P	1980P	1981P
Gross National Savings (MKw)	234.7	437.8	179.8	453.7	232.2	180.6
Consumption of Fixed Capital			243.0	380.0	435.0	478.0
Net National Savings			-63.2	73.7	-202.8	-297.4
Central Govt.[2]	95.3[3]	176.3	-161.3	-198.3	-314.3	-73.8
Rest of Economy	171.0[3]	261.5	341.1	652.0	546.5	254.4
Gross Domestic Product	711.1	1268.5	1583.4	2597.6	2968.3	2989.9
Percentage of GDP:						
Gross National Savings	33.0	34.5	11.4	17.5	7.8	6.0
Consumption of Fixed Capital			15.3	14.6	14.6	16.0
Net National Savings			-4.0	2.8	-6.8	-9.9
Central Government[2]	13.4[3]	13.9	-10.2	-7.6	-10.5	-2.5
Rest of Economy	24.0[3]	20.6	21.5	25.1	18.3	8.5

P Provisional and likely to be revised
1/ Former System of National Accounts
2/ Recurrent budget surpluses
3/ 1965-6 fiscal year

Sources: CSO, Monthly Digest of Statistics, Rep. of Zambia, July/Dec., 1981, pp. 50-51; World Bank, Zambia Country Economic Memorandum, Feb. 27, 1981, pp. 57-60; and NCDP, Economic Report 1981, Rep. of Zambia, Jan. 1982, p. 39

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Table 6. ZAMBIA - Employment By Sector, 1965-81

Sector	1965	1970	1975	1979	1980	1981
		1000's of Workers Employed:				
(Formal) Agriculture, Forestry and Fishing	32.7	34.6	36.1	34.6	32.6	34.2
Mining and Quarrying	52.4	57.6	64.8	52.2	63.3	61.7
Manufacturing	27.8	38.2	44.3	50.7	46.8	48.7
Construction	45.3	68.7	71.8	40.1	43.2	45.2
Transport and Communications	14.6	22.3	22.1	21.9	24.2	22.3
Electricity and Water	2.7 2/	3.2	5.1	7.8	7.9	8.0
Services 1/	85.5	118.3	149.4	157.6	171.0	171.7
Total Formal Sector	261.1	343.0	393.5	372.0	389.0	391.8
Informal Sector & Unemployed	801.9	921.0	1109.5	1326.3	1372.4	1432.4
(Urban) 3/	(18.3)	(77.1)	(190.6)	(369.1)	(400.1)	(449.8)
(Rural) 3/	(783.4)	(843.2)	(916.6)	(955.3)	(971.6)	(981.3)
Total Labor Force	1063.0	1264.0	1503.0	1698.3	1761.4	1824.2
		Percentage of Total Labor Force Employed:				
(Formal) Agriculture, Forestry and Fishing	3.1	2.7	2.4	2.0	1.9	1.9
Mining and Quarrying	4.9	4.6	4.3	3.1	3.6	3.4
Manufacturing	2.6	3.0	2.9	3.0	2.7	2.7
Construction	4 3	5.4	4.8	2.4	2.5	2.5
Transport and Communications	1.4	1.8	1.5	1.3	1.4	1.2
Electricity and Water	0.3 2/	0.3	0.3	0.5	0.4	0.4
Services 1/	8.0	9.4	9.9	9.3	9.7	9.4
Total Formal Sector	24.6	27.1	26.2	21.9	22.1	21.5
Informal Sector & Unemployed	75.4	72.9	73.8	78.1	77.9	78.5
(Urban) 3/	(1.7)	(6.1)	(12.7)	(21.7)	(22.7)	(24.7)
(Rural) 3/	(73.7)	(66.7)	(61.0)	(56.3)	(55.2)	(53.8)
Total Labor Force	100.0	100.0	100.0	100.0	100.0	100.0

1/ Excluding domestic services, estimated to be 35,000 in 1965 or 3.3% of the total labor force

2/ Includes sanitary services

3/ As estimated on Table 2. Urban and Rural Components of Informal Sector and Unemployment do not add exactly to sector total due to rounding errors in estimation process.

Sources: World Bank, Zambia Country Economic Memorandum, 2/27/81, p. 75; NCDP, Economic Report 1981, Rep. of Zambia, Jan. 1982, pp. 53-8; and CSO, Monthly Digest of Statistics, Rep. of Zambia, various issues.

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Table 7. ZAMBIA - Employment of New Job Seekers
By Sector, 1965-81

Sector	1965-70	1970-5	1975-80	1980-1
	1000's of Additional Workers Employed:			
(Formal) Agriculture, Forestry and Fishing	1.9	1.5	-3.5	1.6
Mining and Quarrying	5.2	7.2	-1.5	-1.6
Manufacturing	10.4	6.1	2.5	1.9
Construction	23.4	3.1	-28.6	2.0
Transport and Communications	7.7	-0.2	2.1	-1.9
Electricity and Water	0.5	1.9	2.8	0.1
Services 1/	32.8	31.1	21.6	0.7
Total Formal Sector	81.9	50.5	-4.5	2.8
Informal Sector & Unemployed	119.1	188.5	262.9	60.0
(Urban) 2/	(58.8)	(113.5)	(209.5)	(49.7)
(Rural) 2/	(59.8)	(73.4)	(55.0)	(9.7)
Total Labor Force Increment	201.0	239.0	258.4	62.8
	Percentage of Increment to Labor Force Employed:			
(Formal) Agriculture, Forestry and Fishing	0.9	0.6	-1.4	2.5
Mining and Quarrying	2.6	3.0	-0.6	-2.5
Manufacturing	5.2	2.6	1.0	3.0
Construction	11.6	1.3	-11.1	3.2
Transport and Communications	3.8	-0.1	0.8	-3.0
Electricity and Water	0.2	0.8	1.1	0.2
Services 1/	16.3	13.0	8.4	1.1
Total Formal Sector	40.7	21.1	-1.7	4.5
Informal Sector & Unemployed	59.3	78.9	101.7	95.5
(Urban) 2/	(29.3)	(47.5)	(81.1)	(79.1)
(Rural) 2/	(29.8)	(30.7)	(21.3)	(15.4)
Total Labor Force Increment	100.0	100.0	100.0	100.0

1/ Excluding domestic services
2/ Urban and rural components of informal sector and unemployed do not add exactly to sector total due to rounding errors of estimation.

Source: Calculated from Table 6.

REDSO/EAS, A.I.D.: CSCallison, 11/3/82

Table 8. ZAMBIA - Productivity (value-added) per Worker, By Sector, 1965-81 (in constant prices)

In 1970 Kwacha per worker:

Sector	1965	1970	1975	1979	1980	1981
Agricult., Forestry, Fishing	186	156	166	153	157	169
(Commercial)1/	(878)	(1199)	(1560)	(1301)	(1503)	(1842)
(Subsistence)2/	(156)	(112)	(110)	(111)	(111)	(111)
Mining and Quarrying	8630	7991	6603	7490	6303	5705
Manufacturing	2698	3382	3558	2996	3291	3142
Construction	1413	1314	1953	1728	1829	1704
Transport, Commun. & Storage	3473	2188	2697	2840	2686	2780
Electricity, Gas & Water	3259	4843	9588	8026	8506	9050
Services	3264	3152	2941	2765	2585	2637
TOTAL GDP/Worker3/	1038	1004	954	783	778	737
INDEX (GDP/Worker)	100	96.7	91.9	75.4	75.0	71.0

Average Annual Percentage Change:

	1965-70	1970-75	1975-79	1979-80	1980-81
Agricult., Forestry, Fishing	-3.5	1.3	-2.0	2.6	7.6
(Commercial)1/	(6.4)	(5.4)	(-4.4)	(15.5)	(22.6)
(Subsistence)2/	(-6.4)	(-0.4)	(0.2)	(0.0)	(0.0)
Mining and Quarrying	-1.5	-3.7	3.2	-15.8	-9.5
Manufacturing	4.6	1.0	-4.2	9.8	-4.5
Construction	-1.4	8.2	-3.0	5.8	-6.8
Transport, Commun, & Storage	-8.8	4.3	1.3	-5.4	3.5
Electricity, Gas & Water	8.2	14.6	-4.3	6.0	6.4
Services	-0.7	-1.4	-1.5	-6.5	2.0
TOTAL GDP/worker3/	-0.7	-1.0	-4.8	-0.6	-5.3

1/ Value-added of commercial agriculture divided by "formal" agricultural employment

2/ Value-added of subsistence agriculture divided by estimated rural labor force less those employed in the "formal" agricultural sector.

3/ GDP divided by the total labor force, which includes "informal" urban workers not otherwise accounted for above (and which comprised some 25% of the total labor force in 1981).

Source: Calculated from tables 1 and 6.

REDSO/ESA, A.I.D.; CSCallison, 11/3/82

Table 9. Zambia Summary Balance of Payments (million U.S.$)

	Average 1970-73	1974	1975	1976	1977	1978	1979	1980	1981
Merchandise Trade Balance, fob	337	605	-144	361	214	209	635	208	22
Exports, fob	876	1396	803	1029	897	817	1410	1329	1055
Imports, fob	-539	-791	-947	-668	-683	-608	-775	-1121	-1033
Other Goods, Services & Income, net	-253	-462	-449	-374	-349	-466	-559	-603	-591
Unrequited transfers, net	-140	-128	-127	-111	-82	-60	-105	-172	-117
Current Account Balance	-56	15	-720	-124	-217	-317	-29	-567	-686
Capital other than Reserves, nie	40	154	424	47	62	48	133	433	
Direct Investment		38	38	31	18	-	-	-	
Portfolio Investment		-6	-6	-5	-1	-2	-3	-3	
Other long-term capital		43	339	98	4	24	224	297	
Other short-term capital		79	53	-77	41	26	-88	139	
Net Errors & Ommissions	-57	-143	-47	-92	-99	-84	-20	-92	
Counterpart Items, net	10	-49	29	-18	7	-19	14	29	
Payment Arrears	-	-	159	143	198	179	-188	143	
Loans Received to finance BOP		-	115	-27	19	-24	-30	56	
Total Change in Reserves (-=increase)	62	23	41	71	31	217	72	-27	
Foreign Exchange Rate:									
SDR's per Kwacha, End of Period	1.3165	1.2693	1.3275	1.0848	1.0848	.9763	.9763	.9763	.9763
U.S. Dollars per Kwacha, period ave.		1.5541	1.5541	1.4019	1.2675	1.2307	1.2621	1.2682	1.1466

Source: International Financial Statistics, IMF

REDSO/ESA, Anal. Div., CSCallison, 10/12/82

Table 10. ZAMBIA - Foreign Exchange Rate Trends, 1970-81
Nominal vs. Real Indices (1975=100.00),
Converted in U.S. Dollars

Ratio	1970	1975	1979	1980	1981
1. Nominal Exchange Rate					
a. US$/Kw, period ave.	1.4000	1.5541	1.2621	1.2682	1.1466
b. Index	90.1	100.0	~~73.2~~ 81.2	81.6	73.8
(% change)		11.0	-26.8		
(ave. annual % change)		2.1	-7.5	11.5	-9.6
2. Foreign Currency/US$, trade-weighted, period ave.					
Index	107.6	100.0	102.7	106.4	127.9
(% change)		-7.1	2.7		
(ave. annual % change)		-1.5	0.7	3.6	20.2
3. Nominal Foreign Currency Kwacha Index (1b) x (2)	96.9	100.0	75.2	86.8	94.4
(% change)		3.2	-24.8		(+25.5 Since'79)
(Ave. annual % change)		0.6	6.9	15.4	8.8
4. Zambia CPI (period ave.)	70.6	100.0	181.7	202.9	231.3
(% change)		41.6	81.7		
(ave. annual % change)		7.2	16.1	11.7	14.0
5. Trade Partners' CPI, trade-weighted, period ave	61.0	100.0	151.1	174.2	200.3
(% change)		63.9	51.1		
(ave. annual % change)		10.4	10.9	15.3	15.0
6. Zambia CPI/Trade Partners' CPI (4)/(5)	115.8	100.0	120.2	116.5	115.5
(% change)		-13.6	20.2		
(ave. annual % change)		-2.9	4.7	-3.1	-0.9
7. Real Foreign Currency/ Kwacha Index (3) x (6)	112.2	100.0	90.4	101.2	109.0
(% change)		-10.9	-9.6		(+20.6 Since'79)
(ave. annual % change)		- 2.3	-2.5	11.9	7.7

SOURCE: IMF, International Financial Statistics and Direction of Trade Statistics
REDSO/ESA, Anal. Div., C.S.Callison, 10/12/82

Notes to Table 10:

(1) Although the kwacha is pegged to the SDR, and the Central Bank of Zambia calculates the U.S. dollar exchange rate based on the fluctuating dollar value of the SDR, there has in practice been some divergence between the official SDR/kw x US$/SDR relationships reported and used in Zambia and the actual US$/SDR ratios reported in IFS. The US$/Kw rates used here are those reported to the IFS by Zambia.

(2) Calculated as the weighted average index of the US dollar exchange rate of the currencies of 23 Zambian trading partners. The weights used are the percentage of each country's share of total Zambian exports and imports (fob) for the 3 years 1978-80. The 23 countries totalled 93.2% of all Zambian trade for those 3 years and included all countries with a 1% or larger share except the People's Republic of China (1.7%), for which price and exchange rate data was not available.

(3) 100 x Line (1b)/100 x Line (2)100, since FC/US$ x US$/KW = FC/KW

(4) Consumer Price Index (CPI) for lower income groups in Lusaka and other towns.

(5) Calculated as the trade-weighted average CPI for the same 23 trading partners used in Line (2), using the same weights.

(6) 100 x Line (3)/100 x Line (6)/100, thus deflating the nominal exchange rates of Line (3) with the comparative price index of Line (6) to obtain the real purchasing power parity of the kwacha with respect to her trading partners.

Table 11. ZAMBIA - Foreign Exchange Rate Trends, 1970-81
Nominal vs. Real Indices (1975=100.00),
Converted in SDR's

Ratio	1970	1975	1979	1980	1981
1. Nominal Exchange Rate					
a. SDR/Kw, period ave.	1.4000	1.2800	.9763	.9763	.9763
b. Index	109.4	100.0	76.3	76.3	76.3
(% change)		-8.6	-23.7	0.0	0.0
(ave. annual % change)		-1.8	-6.5	0.0	0.0
2. Foreign Currency/SDR, trade-weighted, period ave.					
Index	123.8	100.0	98.5	101.3	129.3
(% change)		-19.2	-1.5		
(ave. annual % change)		-4.2	-0.4	2.8	27.6
3. Nominal Foreign Currency/ Kwacha Index (1b) x (2)	135.4	100.0	75.2	77.3	98.7
(% change)		-26.1	-24.8		(+31.3 Since'79)
(Ave. annual % change)		-5.9	-6.9	2.8	27.7
4. Zambia CPI (period ave.)	70.6	100.0	181.7	202.9	231.3
(% change)		41.6	81.7		
(ave. annual % change)		7.2	16.1	11.7	14.0
5. Trade Partners' CPI, trade-weighted, period ave.	61.0	100.0	151.1	174.2	200.3
(% change)		63.9	51.5		
(ave. annual % change)		10.4	10.9	15.3	15.0
6. Zambia CPI/Trade Partners' CPI (4)/(5)	115.8	100.0	120.2	116.5	115.5
(% change)		-13.6	20.2		
(ave. annual % change)		-2.9	4.7	-3.1	-0.9
7. Real Foreign Currency/ Kwacha Index (3) x (6)	156.8	100.0	90.4	90.1	114.0
(% change)		-36.2	-9.6		(+26.1 Since'79)
(ave. annual % change)		- 8.6	-2.5	-0.3	+26.5

SOURCE: IMF, International Financial Statistics and Direction of Trade Statistics
REDSO/ESA, Anal. Div., C.S.Callison, 10/12/82

Notes to Table 11:

(1) The Kwacha has been officially pegged to the SDR at .9763 SDR per kwacha since 1978.

(2) Calculated as the weighted average index of the currencies of 23 Zambian trading partners in relationship to the SDR, as seen through the period averages of each country's currency exchange rate with US dollar and the US$/SDR ratios for the same periods. The weights used are the percentage of each country's share of total Zambian exports and imports (fob) for the 3 year 1978-80. The 23 countries totaled 93.2% of all Zambian trade for those three years and included all countries with a 1% or larger share except the People's Repubic of China (1.7%), for which price and exchange rate data was not available.

(3) 100 x Line (1b)/100 x Line (2)/100, since FC/SDR x SDR/KW = FC/KW

(4) Consumer Price Index (CPI) for lower income groups in Lusaka and other towns.

(5) Calculated as the trade-weighted average CIP for the same 23 trading partners used in Line (2), using the same weights.

(6) 100 x Line (4)/100 x Line (5)/100. This index measures the rate of Zambian price inflation relative to that of her trading partners.

(7) 100 x Line (3)/100 x Line (6)/100, thus deflating the nominal exchange rates of Line (3) with the comparative price index of Line (6) to obtain the real purchasing power parity of the kwacha with respect to her trading partners.

Table 12. ZAMBIA - Direction of Trade - Exports and Imports (f.o.b.) - 1978-80

(Millions of U.S.$)
Exports and Imports (fob)

Country[1/]	Total 1978 - 80	% of World Total
World	6085.3	100.0
Industrial Countries	4646.4	76.4
U.S.	613.6	10.1
Canada	26.7	0.4
Australia	28.5	0.5
Japan	834.3	13.7
Belgium	164.7	2.7
France	511.6	8.4
Germany	535.7	8.8
Italy	428.1	7.0
Netherlands	72.3	1.2
Sweden	158.2	2.6
Switzerland	56.9	0.9
U.K.	1103.9	18.1
Oil-Exporting Devel. Co.	292.2	4.8
Saudi Arabia	271.1	4.5
Non-Oil Devel. Co.	1117.9	18.4
Africa	259.4	4.3
Kenya	52.1	0.9
S. Africa	110.9	1.8
Zaire	30.8	0.5
Asia	465.0	7.6
China, People's Rep.	96.4	1.6
India	257.7	4.2
Korea	54.8	0.9
Europe	271.2	4.5
Greece	29.9	0.5
Portugal	102.0	1.7
Yugoslavia	135.8	2.2
Middle East	100.8	1.7
Bahrain	73.5	1.2
Western Hemisphere	21.7	0.4
Brazil	21.4	0.4
USSR, East Europe, etc.	26.3	0.4
USSR	14.8	0.2
Addendum: EEC	2870.5	47.2

1/ Most countries with less than 1% of world total are excluded.
Source: Calculated from Direction of Trade Statistics Yearbook 1981, IMF.
REDSO/ESA, A.I.D.: CSCallison, 11/4/82

Table 13

MAWD: Actual Recurrent Expenditures: 1980
(Thousand Kwacha)

	Personal Emoluments	Recurrent Department Charges	(Travelling or Duty[1])	Grants Subsidies & Other Payments	Totals
1. Headquarters	667.0	417.5	(147.6)	204,964.8 (Subsidies only) (204,643.4) (91.0%)	206,049.0 91.5%
2. Dept. of Agriculture	3,642.9	3,321.4	(764.2)	58.2	7,022.5 3%
3. Dept. of Veterinary & Tsetse Control	1,748.4	2,156.1	(297.9)	13.9	3,954.4 2%
4. Trng. Institutes	421.2	1,019.4	(40.6)	137	1,577.6 1%
5. Agriculture Research	702.7	1,178.0	(67.2)	15.5	1,896.1 1%
6. Dept. of Water Affairs	549.1	2,277.6	(241.6)	10.0	2,836.7 1%
7. Dept. of Coops & Marketing	966.2	413.6	(131.7)		1,437.5 1%
8. Nat Frming Info Service	165.7	114.3	(34.9)	15.0	295.0
Totals	8,863.2	10,897.9	(1,707.7)	205,213.7	225,001.5
Percentage	3.9%	4.8%	(0.7%)	91.2%	

[1] "Travelling or Duty" is a sub-total within "recurrent departmental charges"

Table 14

MAWD: Actual Recurrent Expenditures: 1981
(Thousand Kwacha)

	Personal Emoluments	Recurrent Department Charges	(Travelling on Duty[1])	Grants Subsidies & other payments	Totals
1. Headquarters	866.0	490.2	(302.4)	108,642.2 (Subsidies Only) (108,419.9) (82.6%)	109,998.3 84%
2. Dept. of Agriculture	4,181.5	3,565.6	(786.5)	199.6	7,746.6 6%
3. Dept. of Veterinary & Tsetse Control	2,035.0	2,278.7	(360.5)	10.0	4,323.7 3%
4. Trng. Institutes	506.3	1,298.4	(553)	55.0	1,859.8 1%
5. Agriculture Research	842.4	1,128.3	(91.9)	1.3	1,972.0 2%
6. Dept. of Water Affairs	617.7	2,549.5	(247.1)	6.0	3,174.0 2%
7. Dept. of Cops and Marketing	1,086.9	441.7	(125.0)		1,528.5 1%
8. Nat Farming Info Service	177.2	121.5	(36.5)	13.7	312.5
Totals	10,313.0	11,873.9	(2,006.2)	108,927.7	131,115.4
Percentage	7.9%	9.1%	(0.1.5%)	83.1%	

[1] "Travelling on Duty" is a sub-total within "recurrent departmental charges"

Table 15.POPULATION 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%
Total Zambia, of which	-----in percent----		
Urban	29.4	43.0	
Rural	70.6	57.0	

Source: calculated from CSO report on 1980 census.
REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

Table 16. GROWTH OF AGRICULTURE COMPARED TO THE ECONOMY, 1973-81

	1973-76	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	9.8
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.

Table 17: OFFICIALLY 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	- 2/	-
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 18 CHANGES IN 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.

Table 19: 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
Millet 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 Crop Season," MAWD, June, 1982.
REDSO/ESA, Ag. Div., D. Dijkerman, 11/10/82.

Table 20. PRODUCTIVITY (VALUE 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.

Table 21: 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
Millet	- 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
Millet	- 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 expapolated 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 22: 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/Z CIP PAAD's.
REDSO/ESA, Ag. Div., DDijkerman, 11/10/82.

Table 23 .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	15.5	-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.

Table 24 .ZAMBIA'S AGRICULTURAL COMMODITY PRICES COMPARED TO WORLD PRICE EQUIVALENTS, 1973/74-1981/82.

	1973/74-1976/77	1076/77-1979/80	1079/80-1980/81	1980/81-1981/82	1973/74-1981/82	1980/81-1981/82 3/	1973/74-1981/82 3/
Period Averages (Domestic Price as Percent World Price)	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.

Table 25 .MINISTRY OF AGRICULTURE AND WATER 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/					
NCU2/		-	-	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.