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FOOD FOR DEVELOPMENT

PROGRAM ASSISTANCE APPROVAL DOCUMENT (PAAD)

Agricultural Development for Food Security and
Drought Rehabilitation

SUDAN TITLE III
FY 86 - 88

USAID/Sudan

January 1986

Foreword

Concerns over political and economic transitions in Sudan have raised questions about the efficacy of a multi-year commitment under Title III. On the surface, such skepticism seems prudent. Yet in the practical context of implementing a development program, promoting economic growth, and maintaining leverage for policy dialogue, the multiyear nature of Title III, with its dimensions of policy reform and local currency, makes it vital to the Mission's rainfed strategy.

Title III represents a stable source of local currency for investments in agricultural production. Currently, even these local costs are beyond the Government's financial means. The 1985/86 budget deficit may exceed one third of the national money supply, even after debt rescheduling and "selective defaults." At present, the easiest financing option is to print more money. By giving the GOS a revenue-raising alternative, the Title III program provides an incentive for dialogue on issues related to the rainfed sector, which consistently accounts for two-thirds of Sudan's net foreign exchange earnings. Without the type of investment agreement made under Title III to program counterpart funds, local currency generations would be targets for general budget support.

Title III also elicits a three-year commitment to policy reform. Under current political and economic conditions, such continuity is critical. Political pressures associated with Sudan's new venture into democracy will contravene against short-run macroeconomic austerity measures. The prospect of Sudan's first elections in 16 years has brought macroeconomic policy dialogue to a stalemate. Whether justified or not, worries over devaluation's impact on urban consumers and domestic budgets have made exchange rate control politically sacrosanct. Fortunately, Sudan has a sufficient advantage in most of its rainfed exports to remain competitive even with an overvalued exchange rate. Domestic needs -- for consumption and foreign exchange -- make a rainfed focus relatively immune to political change.

USAID's best option is to work on sectoral issues close to the producer. There are opportunities for sectoral reforms that can lead to and facilitate long-term structural adjustments. Recent producer price increases for gum arabic and sesame already demonstrate a commitment to rainfed agriculture. After the ravages of drought, the GOS must continue to give its attention to rehabilitating the country's most productive sector. Accordingly, the proposed Title III initiative is a supply side program. Both policy measures and project investments are focused on agricultural production incentives. If successful, agricultural growth can lead to long-term economic stabilization.

Sudan's grain requirements, global trends in foodgrain production, and U.S. farm conditions all suggest that Sudan will continue to receive PL 480 wheat and wheat flour over the next three years. If so, these resources should be used to complement U.S. investments in the best way possible. USAID/Sudan suggests that at least half of all PL 480 assistance be channelled through Title III since it offers a complete package for agricultural reform and development. The impact begins with American wheat sales, but it extends to all investments in rainfed agriculture and, hence, to Sudan's most dynamic economic sector.

FOOD FOR DEVELOPMENT PROGRAM

FACESHEET

1. COUNTRY: Sudan
2. PROGRAM TITLE: Agricultural Development for Food Security and Drought Rehabilitation

3. ESTIMATED DURATION: Initial FY: 86
Final FY: 88

4. ESTIMATED COST: (Dollars million)

	<u>Fiscal Year</u>			Total
	FY 1986	FY 1987	FY 1988	
Total \$ Value	30.0	36.0	36.0	102.0
Commodities	(25.0)	(30.0)	(30.0)	(85.0)
Ocean Freight	(5.0)	(6.0)	(6.0)	(17.0)

5. PL 480 Title III Annual Commodity Input:

<u>Year</u>	<u>Commodities</u>	<u>Estimated Tonnage (000's MT)</u>	<u>Estimated Value (\$US Million)**</u>
1986	Wheat	167.0	\$ 22.5
	Wheat Flour	17.4*	2.5
	Total	184.4	25.0
1987	Wheat	200.0	\$ 27.0
	Wheat Flour	20.8*	3.0
	Total	220.8	30.0
1988	Wheat	200.0	\$ 27.0
	Wheat Flour	20.8*	3.0
	Total	220.8	30.0

* Wheat flour tonnage stated in wheat grain equivalent.

** While only 10% of the value of the Title III program is proposed for wheat flour, USAID proposes to use 32% of the value of Title I requested for this period for wheat flour purchases. The total wheat flour component over both programs is 21%. The greater emphasis on wheat flour in Title I allows additional flexibility to respond to fluctuating Sudanese market conditions.

6. Program Purpose:

a. Short-Term Objectives

- (1) Finance urgent import needs through balance of payments support.
- (2) Invest local currency resources and establish a policy framework to promote local development and decentralized decision-making.
- (3) Establish constructive land and water use policies that promote efficient resource allocation, provide for their long-term productivity, and help control environmental degradation, particularly as it has affected rural women.

b. Long-Term Objectives

- (1) Support the GOS policy shift toward new investments in rainfed over irrigated agriculture given the rainfed sector's higher and more consistent contribution to export revenues.
- (2) Continue to increase productivity and efficiency in the rainfed sector, while reducing marketing costs and constraints.
- (3) Strengthen existing and develop new market linkages in Sudan's rural economy in order to create the interdependencies necessary for self-sustaining growth.

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EXECUTIVE SUMMARY

Economic Considerations and Needs

Sudan's sheer need, U.S. strategic interests and shared objectives for economic growth underlie our largest economic assistance program in the Africa Bureau. Sudan's per capita income of \$370 makes it one of the world's poorest and least developed countries. Life expectancy is less than 50 years; only one-fifth of the population is literate; health services are grossly inadequate or nonexistent for the majority of the population; and virtually 80 percent of the population lives at subsistence level.

Despite considerable unexploited agricultural potential, Sudan has -- often through its own mismanagement and ill-advised policies -- experienced an ever-worsening chain of economic crises since the mid-1970's. These resulted in a surge of expensive and sometimes unnecessary, imported production inputs and in escalating consumption. In 1984/85, Sudan's import bill of \$1.46 billion outstripped export receipts of \$350 million by more than \$ 1.1 billion. Sudan's budget deficit is LS 1 billion (33 percent of the entire budget). Borrowing to bridge these trade and budgetary imbalances has run up a debt of \$ 10 billion when GNP is only \$6 billion.

The coup de grace was delivered by the worst drought in memory, hitting hardest the rainfed agricultural sector which had hitherto shown vitality and resiliency and which had singularly held promise to reverse the spiral of economic crisis and poverty. In one year, grain production fell from the 1984 level of 2.3 million metric tons (already a bad year) to 1.4 million metric tons. Donor relief only partially made up the deficit. Export crops such as groundnuts, gum arabic and sesame produced virtually no foreign exchange. In the irrigated sector, no wheat was planted in 1985 due to water shortages. Livestock herds throughout much of the country have been decimated. And major population shifts have taken place within Sudan as people abandoned farms and villages to escape starvation widespread throughout parts of the country. Even though Sudan harvested a record crop in 1985, the surplus came from the mechanized rainfed sector in the east. Sporadic rains have left a 400,000 MT shortfall in western Sudan.

On April 6, 1985, a military council took control of the government in what was clearly a popular revolution. This interim government, and what is planned to be a democratically elected successor must rehabilitate the ravages of drought and establish a modicum of food security. It must also rebuild an economy crushed by mismanagement in order to put Sudan on a sounder footing for economic development. Title III, through balance of payments assistance, policy reform and local currency investments, gives the GOS a mechanism to work toward these short and long-term goals. Imported wheat and wheat flour will supply urban needs without exacerbating trade imbalances. Local currencies, generated through urban sales and invested in rural development, should help turn the course from crisis management to self-sustaining growth. Policy reforms will reinforce the investment program with production incentives. Indeed, though the program's proposed rainfed agricultural focus is apolitical, program outputs should address Sudan's most urgent political and economic needs, without sacrificing a rational framework for long-term growth.

Objectives

Successive evaluations of the original Title III program, conducted in October 1982, November 1983 and March 1985 concluded that, overall, the program had successfully achieved its goals despite severe drought and political transition. The principal objectives were balance of payments support, local currency financing for activities designed to assist the rural poor, and support for economic stabilization and reform efforts. The evaluations placed considerable emphasis on the degree to which our policy reform efforts had already taken root and our dialogue with the GOS on allocative efficiency and private sector development had been undertaken and sustained. Of particular importance were the introduction of import parity bread prices, export parity prices for domestic wheat producers, higher floor prices for gum arabic and oilseed producers, and a first attempt to privatize wheat procurement and distribution.

Many of the objectives of the original Title III program remain valid, despite its successful conclusion. For three years drought curtailed rainfed production and exports while increasing import requirements. The drain on foreign exchange has eclipsed Sudan's capacity for commercial imports. Policy reforms often had a significant and immediate impact, but rarely did they lead to institutional changes that replaced government controls with market allocation mechanisms.

As a result, the proposed Title III initiative will continue to address several of the original program's objectives, while also building on its policy achievements and development investments. The program objectives have both short and long-term components that reflect Sudan's short and long-term needs. The following short-term objectives should be met during the life of the program:

1. finance urgent import needs through balance of payments support;
2. invest local currency resources and establish a policy framework to promote local development and decentralized decision-making; and
3. establish constructive land and water use policies that promote efficient resource allocation, provide for their long-term productivity, and help control environmental degradation, particularly as it has affected rural women.

The following long-term objectives will be facilitated through the program, but will require additional investments and policy support in subsequent years:

1. support the GOS policy shift toward new investments in rainfed over irrigated agriculture given the rainfed sector's higher and more consistent contribution to export revenues;
2. continue to increase productivity and efficiency in the rainfed sector, while reducing marketing costs and constraints; and
3. strengthen existing and develop new market linkages in Sudan's rural economy in order to create the inter-dependencies necessary for self sustaining growth.

Policy Agenda

With a new Government in place, establishing its goals and priorities and considering its options, a well defined PL 480 Title III Program will provide considerable insights, guidance and a basis for dialogue in the three years to come. The previous Title III program, in conjunction with other USAID policy efforts, established the importance of formulating government policies that support rather than curtail production incentives. The proposed Title III policy agenda is targeted specifically at such production-oriented reforms in the rainfed sector. These policies have minimal political overtones but major implications for providing incentives, capital and marketing channels for rainfed producers. The proposed reforms focus on restructuring:

- tax regimes and government marketing policies that affect producer profits and, hence, the export potential of specific commodities such as gum arabic, and oilseeds;
- agricultural credit policies to put credit programs on a self-sustaining basis and make their expansion to small-scale farmers financially viable;
- road maintenance policies to assure the upkeep of infrastructure investments;
- land and water use policies to redress current incentives for short-term exploitation, extensive cultivation in lieu of productive long-term investment, and environmental degradation around water points; and
- local and regional government revenue raising measures to retain resources at the level of project implementation and thereby support local initiative and self interest in development.

To the extent that loan forgiveness is tied to policy issues, the implications for national debt relief should enhance the incentives for reforms and bring them into an immediate and negotiable context. The multiyear nature of the program also facilitates a GOS commitment to a policy dialogue that might not be possible, politically or technically, on a one-year or short-term basis. From a U.S. perspective, the opportunity to negotiate a multiyear program provides additional policy leverage, while retaining flexibility through annually negotiated subagreements for each tranche of the program. Moreover, as local currency investments instigate a productive response to reforms, they will reinforce the efficacy of difficult policy decisions and possibly facilitate the Mission's overall dialogue with the GOS.

Food Requirements

The foodgrain supply/demand analysis presented in the text indicates that Sudan will have a consistent shortfall of 450,000-500,000 MT of wheat during the life of the program. This document proposes that part of this shortfall be financed through PL 480 assistance, both Titles I and III. The table on the following page indicates specific wheat and wheat flour requirements.

Table 1 : Proposed PL 480 Program, 1986-88

	Fiscal Years			<u>Total</u>
	<u>1986</u>	<u>1987</u>	<u>1988</u>	
1. Estimated Production/ Consumption Gap (Mid-Range Estimate; 000's MT) ^{a/}	606.0	572.0	583.0	1,761.0
2. Proposed PL 480 Commodity Value (\$ Millions)				
a) Title III	30.0	36.0	36.0	102.0
- Wheat	(22.5)	(27.0)	(27.0)	(76.5)
- Wheat Flour	(2.5)	(3.0)	(3.0)	(8.5)
- Ocean Freight	(5.0)	(6.0)	(6.0)	(17.0)
b) Title I	25.0	30.0	30.0	85.0
- Wheat	(17.0)	(20.4)	(20.4)	(57.8)
- Wheat Flour	(8.0)	(9.6)	(9.6)	(27.2)
c) Total	55.0	66.0	66.0	187.0
- Wheat	(39.5)	(47.4)	(47.4)	(134.3)
- Wheat Flour	(10.5)	(12.6)	(12.6)	(35.7)
- Ocean Freight	(5.0)	(6.0)	(6.0)	(17.0)
3. Estimated PL 480 Commodity Volume (000's MT)				
a) Title III	184.4	220.8	220.8	626.0
- Wheat	(167.0)	(200.0)	(200.0)	(567.0)
- Wheat Flour ^{b/}	(17.4)	(20.8)	(20.8)	(59.0)
b) Title I	181.6	217.7	217.7	617.0
- Wheat	(126.0)	(151.0)	(151.0)	(428.0)
- Wheat Flour ^{b/}	(55.6)	(66.7)	(66.7)	(189.0)
c) Total	366.0	438.5	438.5	1,243.0
- Wheat	(293.0)	(351.0)	(351.0)	(995.0)
- Wheat Flour ^{b/}	(73.0)	(87.5)	(87.5)	(248.0)
4. Usual Marketing Requirements (000's MT) ^{c/}	65.0	100.0	100.0	265.0
5. Other Concessional Aid	175.0	33.5	44.5	53.0

^{a/} Low, mid, and high range production and consumption estimates, with explanations, are provided in Foodgrain Supply/Demand Analysis.

^{b/} Wheat flour volumes stated in wheat grain equivalents.

^{c/} Due to foreign exchange constraints, the GOS will be unable to import a larger amount commercially.

Twenty-one percent of the financing for both programs is requested as wheat flour, with a split of 32 percent versus 10 percent between Titles I and III. The higher wheat flour content of Title I will allow additional flexibility to adapt to fluctuations in Sudanese market conditions. Proposed financing for Titles I and III is split evenly between the programs (\$85 million each over FY 1986-88), although an additional \$17 million is requested for Title III ocean freight. These programming levels take into account domestic policies which may affect consumption and production, as well as foreign exchange availability and other donor commodity support.

Local Currency

Title III local currencies, generated largely from consumption-oriented urban areas, will support rural, private sector production and local self-help initiatives. In the short-term they will give the GOS flexibility to invest in critical economic areas (i.e. the rainfed sector) that may not hold political sway. In the long-term, these investments in the small-scale private sector will build up the tax base to rectify the chronic shortfall between government revenues and expenditures.

Local currency programming can be broken into two substantive areas, both of which contribute to rainfed agricultural development in western Sudan. The first promotes marketing improvements that are linked with DA projects. Specific interventions include a paved road from Kosti to El Obeid, feeder road improvements, storage facilities to facilitate crop marketing while providing mechanisms for food security, agricultural production and marketing credit, and agricultural research. The second area concentrates on support for self-help initiatives to be implemented through the Regional Finance and Planning Project. Counterpart funds will finance activities such as wateryard rehabilitation, tube wells with handpumps, supplementary small-scale irrigation for horticultural gardens and village nurseries, small-scale private sector projects like manufacturing of farm implements, and production-oriented projects targeted to redress the drought's hardships unduly born by women.

Since all local currencies, except for the equivalent of \$1 million reserved for program related studies and support, will be associated with DA projects, their technical, economic, social and environmental feasibility has already been thoroughly assessed in AID/Washington project reviews and subsequent quarterly implementation reports. The appropriateness of these projects as part of USAID/Sudan's rainfed strategy was assessed and confirmed through AID/Washington's review of the 1984 CDSS update. This strategy was recently reassessed and reconfirmed during a week-long program review in AID/Washington from January 13-17, 1986.

PAAD Overview

Part One of this document provides evidence of Sudan's eligibility for a Title III program. It establishes Sudan's economic needs, GOS willingness to adopt policy measures that create incentives to meet some of those needs domestically, the specific foodgrain requirements that will be met through this program, and GOS ability to handle wheat imports in accordance with Bellmon requirements. Taking these factors into account, Part One closes with a short statement of the problems that can be realistically addressed under this program.

Part Two summarizes the proposed Title III program. It begins with an overview of objectives and program components, followed by a discussion of commodity requirements and scheduled shipments. Other sections justify the program in light of U.S. interests and AID's development strategy in Sudan, outline a policy reform agenda, and describe the local currency program and the proposed allocation of funds. Part two ends with a discussion of administrative concerns as to commodity handling and local currency accounting.

Several annexes are presented in support of the text. Annex 1 is the GOS request for the proposed Title III program. Annex 2 gives a five-year historical overview of wheat supply and demand. Annex 3 explains the methodology followed and assumptions made in completing the food supply and demand analysis. Annex 4 is a draft of the GOS policy commitments, including an implementation schedule, that will form part of Annex B to the Title III agreement. Annex 5 is a draft of the local currency program and budget that will also form part of Annex B to the agreement.

Part One

Eligibility Evidence

I. Economic Context

A. Need

In 1984/85, Sudan's chronic economic crisis dating from the mid 1970's evolved into economic catastrophe. A third straight year of drought drastically reduced agricultural production, on which the economy is heavily dependent, and heightened the need for government assistance for an already poor, increasingly displaced, and hungry population. The enforcement of sharia law since September 1983 and the overthrow of the government in April of this year added to the economic dislocation. One major repercussion from political transition has been a disastrous marketing policy for cotton, Sudan's largest single export. Unrealistic price expectations and contract conditions have driven away most potential buyers and left a carryover stock of 1 million bales when oversupply on the world market has depressed prices. Total export revenues for 1984/85, at best, reached \$350 million - the lowest since the early 1970's. World Bank projections for exports in 1985/86 are estimated at \$605 million. This is one third less than in 1983/84 and not much different from 1975/76.

Fundamental imbalances which characterize the continuing crisis underly the symptoms of catastrophe. These imbalances -- between imports and exports, public revenues and expenditures, and savings and investment -- have been created by such policies as:

- 1) an overvalued foreign exchange rate, which has reduced export profitability while encouraging imports;
- 2) subsidies for basic commodities (such as bread and most petroleum products) and parastatals which have strained the government budget;
- 3) negative real interest rates, which have discouraged financial savings and prompted consumption; and
- 4) cost/price distortions stemming from price controls on key inputs, commodities and profit margins, which have misdirected investment and reduced the returns on production.

To finance these imbalances, Sudan has resorted to massive and uncoordinated external borrowing. The foreign debt is estimated at \$9.5 billion in 1985. Even after rescheduling, debt service alone is greater than export earnings. Misdirected investment, out-migration of skilled labor, shortages of essential inputs and a deteriorating infrastructure have in turn led to an economic depression that has exacerbated the strains on foreign exchange and caused per capita GNP, already below \$400 annually, to decline.

In this context, Sudan's worst drought in memory could not have been more poorly timed. It decimated the one sector which had hitherto shown vitality and resiliency: rainfed agriculture. Agricultural production for 1984/85 was at about half its pre-drought level, with the food grain deficit estimated at about 1.9 million MT. Over two thirds of the livestock herds throughout the country have died or been sold. The drought also led to major internal population shifts as people abandoned farms and villages in areas where water scarcity and ecological degradation made continued existence untenable. Now that the rains have returned and people have reinhabited their farms, there is a tremendous need for development activities focussed on rehabilitation and recovery, particularly in the rainfed agricultural subsector.

Agricultural production of grain for the 1985/86 period will show substantial improvement over the previous period. Early indications are that Sudan will experience a second harvest of over 4.5 million metric tons (MT) of sorghum and millet. This was due to the return of the rains and a substantial increase in cropped area. However, the drought continued in the northwest of the country and a grain deficit for that area is estimated at 400,000 MT.

B. Development of the Crisis

The economic outlook has not always been so dismal. The 1960's were financially stable, with a current account in balance or surplus, positive government savings, low inflation, low debt service, and 8 - 9 percent real GDP growth annually. A vision of Sudan as the breadbasket of the Arab world and a large increase in investment funds from oil-producing states spurred a major public investment program in the late 1960's and early 1970's. Unfortunately, the rapid expansion of the public sector's role in agriculture and industry suffered from inadequate planning and poor implementation and management. Investment decisions were based on undervalued foreign exchange, subsidized consumer prices, and artificially low interest rates and producer prices. These distorted prices gave the wrong signals to investors and policy makers. Investment (particularly foreign exchange) was not channelled to the most productive activities, and the accompanying lack of planning, analysis and management capability rendered much investment unproductive.

As the GOS attempted at the same time to subsidize consumption, public savings' rates declined and became negative. Budget imbalances triggered borrowing both domestically and abroad that fueled domestic money creation and inflation on the one hand, and a growing external debt on the other. Debt service became an increasing problem as payments were due before investments yielded output. In 1986 this still remains perhaps the single largest hurdle to restoring economic growth.

C. Trade Imbalances

Export earnings over the past two years have run at 40 - 60 percent of the annual import bill without factoring in debt service. The failure to market the 1984/85 cotton crop reduced anticipated export earnings by nearly

50 percent, with the resulting trade deficit estimated at \$1.25 billion. This deficit has been covered by official donor assistance, remittances from Sudanese workers abroad and foreign investment.

Export performance in Sudan relies almost exclusively on agriculture. Cotton, livestock, groundnuts, sesame, and gum arabic account for more than 95% of export earnings. Without sectoral diversification, Sudan is vulnerable to commodity price and weather fluctuations. Three years of drought have had a predictable effect on export earnings, but export production has failed to reach its potential for other reasons as well. For one, exporters have received an artificially low pound price for each dollar of exports. Numerous explicit taxes on selected crops such as gum arabic also dampen financial incentives. In addition, fuel shortages and a deteriorating transport infrastructure have contributed to general economic stagnation.

Demand for wheat and wheat flour (as well as petroleum) has strained the balance of trade equation from the import side. From 1979 to 1985, wheat consumption increased from 12 to 15 percent annually. At current consumption levels (873,000 MT) less domestic production (168,000 MT), Sudan would have to import 705,000 MT of wheat annually. At international prices, Sudan's 1984/85 wheat bill would have approximated \$155 million. Assuming no change in the world price and a 5 percent annual increase in demand, the wheat import bill in 1986 would be approximately \$170 million.

The shortage of foreign exchange, resulting from the export/import squeeze, has forced the GOS to ration import licenses. These are issued sporadically even for critical spare parts and pharmaceuticals. Import projections for 1985/86 are estimated at \$1.2 billion in comparison with total imports for 1984/85 of \$1.457 billion and over \$2 billion in 1981/82. Export projections for 1985/86 are still highly uncertain but are expected to be about \$600 million.

D. Budget Revenues vs. Expenditures

GOS tax revenues have remained at a stable low of about 13 percent of GDP and have declined in real terms. With revenues falling, official devaluations and inflation have been partly financed through additional monetary expansion. Over half of government revenues are raised through international trade taxes. In the recently approved budget, the GOS plans to draw yet additional revenues from this source through sizeable increases in customs duties and port fees. However, the weakness of export performance and the severe shortage of foreign exchange have contributed to decreases in both exports and imports, and thus a reduction in the base on which these taxes are levied.

While government expenditures (at 19% of GDP in 1982/83) are fairly moderate, they have grown much faster than GOS direct revenues. Sizeable deficits have persisted for several years. Heavy government borrowing in domestic and foreign markets and donor assistance have financed investment, and often current consumption. Such financing has aggravated Sudan's external debt and inflation problems. Sudan's failure to negotiate a standby

arrangement with the IMF since 1984 led to a moratorium on commodity assistance by most donors; such assistance has in the past financed a significant proportion of Sudan's budget.

In 1985/86 the World Bank projects a budget deficit of LS 2,605 million. However, this includes payments due or past due on foreign debt. By rescheduling those payments, the deficit would be about LS 1,000 million or about 40 percent of government expenditures. The deficit in the past has been financed mostly by donors.

E. Savings - Investment Disequilibrium

All estimates of fixed investment show that, as a percentage of GDP, Sudan's investment rate is lower than that of most developing countries. At about 12.5% of GDP in 1982/83 (IBRD estimate), it has even dropped from Sudan's own average over the last decade. Public fixed investment constitutes over half the total. Fragmented and heavily controlled capital markets, low domestic savings, policy disincentives and instability all discourage private investment.

The introduction of a state of emergency in 1984 and of sharia law in 1983 introduced new uncertainties and risk into the business climate in Sudan. In February 1984, the Civil Transactions Act was promulgated which eliminated some 20 laws governing contracts, property rights, companies and sales, including a threatened end to limited corporate liability. Trade regulations and license procedures have been reexamined. The former tax laws were completely revamped to allow for the enforcement of Zakat, an Islamic tax of 2.5% levied annually on gross assets. This tax eliminated many others, some of which have since been reintroduced, and additional changes in the tax structure as well as the legal structure are now under consideration by the transitional military government.

Government-controlled negative real bank interest rates, which existed until Islamic banking's recent implementation, discouraged savings and weakened the banking system. Savings were negative in 1981/82 and declined again by nearly one percent the following year. Government control of foreign exchange and implicit taxation of exporters has steered potential foreign exchange savings around official channels and sometimes even out of the country. The Sudanese government has made some attempts, with minor success, to encourage Sudanese working abroad to remit some of their substantial earnings. Rising from \$209 million in 1979/80 to \$450 million in 1984/85, remittances flowing through the banking system helped to finance essential imports and investment. However, much more comes in outside the banking system to finance consumption and real estate/housing investments. Remaining investments are financed by foreign donors and monetary expansion.

F. Agriculture and the Effect of the Drought

Agriculture dominates the Sudanese economy, accounting for 45% of gross national product, 95% of export earnings, and more than 80% of the total workforce. Within agriculture there are three principal subsectors:

- 1) the irrigated subsector, represented by the large Gezira and Rahad Schemes along the Niles,
- 2) the mechanized rainfed subsector, made up of large farms on land leased from the government, and
- 3) the traditional rainfed subsector, constituted of thousands of private smallholders throughout Sudan.

Despite the disproportionate investment and resources going to irrigated agriculture, the two rainfed subsectors continue to provide the predominant share of agricultural output. Rainfed agriculture produced 93% of sorghum (the staple crop), 95% of millet, 67% of groundnuts, and 100% of sesame on average from 1980/81 to 1983/84. Heavy taxation, exchange rate regime and price distortions, a lack of modern inputs, and an inadequate transport network have all acted as major constraints to rainfed agricultural production, yet this subsector has proved most resilient to adverse factors and thus remains the backbone of the economy.

In 1981/82, a bumper harvest, led by a 16% increase in the value of traditional rainfed outputs, stimulated a shortlived real GDP increase of 6.9%. However, the third straight year of drought in 1984/85 had a devastating effect on production in all sectors. Production of cereals fell from 2.3 million MT in 1983/84 to 1.4 million MT in 1984/85, causing a food gap (after commercial imports are added) of 1.9 million MT, most of which was covered by donations.

In the future, Sudan's economic health, political stability and in particular its ability to feed itself, will remain heavily dependent upon the output of the traditional rainfed agricultural subsector. For this reason, activities aimed at the recovery and rehabilitation of this subsector assume the highest priority. USAID/Sudan intends to participate in this rehabilitation effort through projects funded with the local currency generated by the sale of Title III commodities.

II. GOS Policy Commitment

The GOS has in recent years made significant attempts to redress shortsighted policies that led to the basic imbalances described above. Whilst many policy reforms remain to be institutionalized or have been overtaken by accelerated economic decay that seems to render them meaningless, it should be acknowledged that chronic drought has taken normal revenue measures and incentive policies out of government hands. The recent transition toward democracy has also slowed the implementation of some reforms made under the previous government, and has shifted the emphasis from macro prices to sectoral policies. However, the new government's commitment to rehabilitation from drought, particularly rainfed agriculture, is solidly reflected in GOS investment policy, and these types of reforms have evoked interest in our ongoing dialogue.

Indeed, the GOS's most important recent contribution to agriculture has been its policy reforms. From early 1981 to March 1985, the GOS devalued its commercial foreign exchange rate by 375 percent. It also dropped a foreign exchange formula for export receipts that imposed a heavy implicit tax on private exporters. Before October 1984, exporters were paid in pounds at LS 1.42/\$1.00, based on 75 percent at the old commercial rate of LS 1.8/\$1.00 and 25 percent at the old official rate of LS 1.25/\$1.00. Exports, except gum arabic and cotton, are now fully priced at a new official rate averaging LS 2.5/\$1.00, which represents a 76 percent price increase. These changes kept incentives to exporters and, in cases where the marketing system is favorable, to producers, constant in real terms.* In recent Title I negotiations the GOS agreed soon to announce additional producer incentives by increasing price floors by 80 percent for sesame and gum arabic. Such reforms affecting producer incentives are expected to set the tone for the GOS policy agenda in the next few years.

To be sure, the exchange rate regime remains complex and distorted despite the efforts at reform. After the GOS increased its official rate of LS 1.3/\$1.00 in February 1985, exporters were able to convert their foreign exchange at the new rate of LS 2.5/\$1.00, but only the public sector could buy foreign exchange at this rate. At the same time, commercial banks opened "free" foreign exchange windows at a government-controlled rate of LS 3/\$1.00, but this term was really a misnomer. Individuals could sell foreign exchange at the "free" rate, but there were (and still are) few opportunities to buy it, except in the black market. The Bank rate has crept up to LS 3.3/\$1 where it has stalled since May 1985. While the new government has not reinstated a free foreign exchange market due to concerns over import controls on consumption, it did allow, in response to IMF conditionality, commercial banks to vary their rates, but the banks have hesitated to deviate significantly from the previously controlled price and a black market (now at about LS 4.7/\$1.00) still flourishes. In the currently tentative economic and political environment, the GOS found itself unable to tie the official rate to a "basket of currencies" as was previously planned for August, 1985.

* Clearly, there is still a heavy implicit foreign exchange tax on exports.

Producers for domestic markets have also benefited from small portholes in the facade of centralized control. Wheat growers now receive close to an import parity price (based on the commercial rate), announced before the growing season, rather than a low administered price which the GOS has previously determined annually after harvest. The price change and its early announcement had three effects:

- they gave security and provided incentives to domestic wheat producers;
- they lifted the domestic wheat producer's burden of supporting government subsidies for urban bread consumption; and
- they reinforced USAID efforts to eliminate implicit producer taxes and consumer subsidies.

As the Sudanese pound deteriorates in value, prices paid to domestic wheat producers slip away from import parity, but they still receive a higher real price than before our policy dialogue on wheat pricing started. The GOS has also maintained the practice of announcing producer prices before cultivation.

On the consumption side, the GOS has made several attempts under the impetus of PL 480 programs to remove both explicit budget subsidies and implicit foreign exchange subsidies on bread. The budget subsidies were removed under Title III in mid-1983. The foreign exchange subsidy was first dropped in mid-1984, but reemerged as the Sudanese pound depreciated. In recent Title I negotiations the GOS agreed to allow a portion of flour to be retailed at non-subsidized prices and to increase the amount of domestically milled flour used in the standard 160 gram bread loaf. At a time of financial and economic crisis, even such minor changes have significantly reduced budgetary gaps. In addition, wheat use efficiency will be increased by allowing adequate spares for existing mills and bakeries and working to eliminate excess bakery capacity by ceasing to issue licenses for 1 year. The GOS agrees to give private wheat importers priority in times of wheat supply shortage.

These reforms illustrate the potential for PL 480 policy measures to dismantle specific market controls and eventually to reach market determined prices for different quality bread products. As current drought conditions recede, these reforms will also create conditions for a more self-reliant food grain economy. Falling real consumer prices should encourage sorghum consumption over wheat, thus supporting Sudan's comparative advantage in sorghum production. Producer prices for wheat should continue to encourage more efficient wheat production to minimize the import requirement from the supply side.

The Title III program should also reinforce GOS investment decisions to support rainfed agriculture. Sudan's fifth (and most recent) Three Year Public Investment Program (TYPIP) restricts all new agricultural projects to the rainfed subsector. Two thirds of the agricultural budget still goes to irrigated agriculture, but only to complete ongoing infrastructure rehabilitation. Transport and communication investments, behind agriculture the second largest budget category, will also benefit the rainfed subsector by

creating access to production and marketing centers through road and rail improvements. New rainfed project priorities include multipurpose storage, livestock routes, and reforestation. New road construction will primarily affect rainfed areas since the existing transport network already connects the principal irrigated schemes with domestic and international markets.

In response to planned public investments and export policy incentives described earlier, it will be the private sector that sparks Sudan's recovery from drought. The TYPIP estimates that the private sector's share of GDP will grow from 70% in 1983/84 to 72% in 1986/87. Private rainfed agriculture is given a leading role: over the same period its respective shares of GDP and total agricultural production are planned to increase from 20% to 23% and from 69% to 73%. These projections are only planning estimates, but the expected trends suggest growing reliance on the private sector and rainfed agriculture. Implicitly, the GOS has traded off the risk inherent in rainfed cultivation with the known responsiveness of private producers to policy and infrastructure incentives. These decisions, combined with the policy reforms undertaken in an adverse political and economic climate, more than establish GOS commitment to sectoral policy reform and certainly create opportunities for initiating a multiyear policy and investment program under Title III.

III. Food Supply and Demand

A. Analytic Parameters

It is difficult to consider the market for a significant foodgrain like wheat in the aftermath of the recent drought and emergency situation. Certainly record low water flow levels in the Blue Nile in 1984/85 which led to a GOS decision not to plant any wheat in the Gezira, and a general drought which reduced sorghum production by nearly 50%, are not normal conditions under which to analyze the wheat market in Sudan.* Nonetheless the drought and other related economic problems represent part of the reality from which the future market for wheat will emerge. Thus, this analysis takes historical reality as given,** and further assumes that the weather in Sudan will return to more "normal" conditions than in the past several years.

In spite of the drought which destabilized the market for food grains, it is important to identify the market and other important forces which define the demand for and supply of wheat in Sudan and, thus, the role of any food aid. An analysis of these supply and demand factors and the potential role of decision makers in altering these via programs or policy reform can provide further information about the potential short and long-term roles of a food aid program.

The domestic demand for any food grain is defined by the following factors:

- a) its own price;
- b) the relative price of substitutes;
- c) the time and monetary cost to the household of complementary items in preparing the grain (e.g., energy for cooking and/or baking);
- d) the relative time, money and complementary prices of substitutes;
- e) income;
- f) family size and structure, and
- g) competing tastes and preferences influenced by education, traditional diet patterns and regularity of supply.

Quantitative data on the relationship between these factors and wheat consumption are summarized in the 1983 PL 480 Title III Program evaluation***,

* Ministry of Agriculture and Natural Resources, Sudan, Situation and Outlook: Annual Report, 1984/1985, (Khartoum, Sudan; Department of Agricultural Economics, Ministry of Agriculture, August 3, 1985).

** See Annex 2 for the historical supply and distribution of wheat.

*** David W. Dunlop and Nancy Metcalf, FY 1984 PL 480 Title III Sudan Program Evaluation, (Khartoum, Sudan: USAID/Sudan, November 1983)

and some additional information is provided in Salih (1985).^{*} This information provides the basis for the set of market scenarios presented in Table 2 below, and is discussed in greater detail in the notes presented in Annex 3.

The domestic supply and mix of foodgrains (for practical analytic purposes sorghum and wheat) are similarly defined by a number of factors. For wheat, domestic production is a function of:

- a) the producer price of wheat;
- b) the relative return to producing alternative crops, including their prices and imported input costs and availability; and
- c) other technical factors such as:
 - i) water availability,
 - ii) seed technology,
 - iii) farming practices and
 - iv) crop rotation schedules, particularly in the irrigated agricultural areas.

As in the case for domestic demand, the information available on these factors is presented in Annex 3.

Some analysts have suggested that wheat should not be grown in Sudan because it does not have a comparative advantage (e.g., Shankar Acharja 1978).^{**} For this argument to hold, other crops must be economically feasible substitutes, not just technical ones. In addition, previous calculations of comparative advantage have left open critical questions as to: a) reporting of actual yields (at least some portion of the wheat crop is marketed through unofficial channels) and b) calculation of costs and benefits. For example, on the cost side, the amount of labor time counted is subject to many reporting and recall difficulties. Further, there is no common agreement on the opportunity cost of land and water under alternative crop rotation scenarios. On the benefit side, wheat straw is greatly undervalued given

^{*} Siddig Abdel Mageed Salih, "Consumption Effects of Eliminating Bread Subsidies in Sudan" Preliminary Draft Report, Report for USAID/Sudan, Khartoum, Sudan, May 1985.

^{**} Acharja, Shankar, Incentives for Resource Allocation: A Case Study of Sudan, Working paper #367, (Washington D.C.; World Bank, December 1979). The Bank no longer holds this view.

the many uses ascribed to it by households.* Thus, it is unclear whether there are technical (i.e., crop rotation decisions) or behavioral reasons to limit domestic wheat production to a 300,000 feddan maximum on the Gezira. Historical evidence from the mid 1970's does not support such a constraint, but existing technical studies are conflicting.

B. Issues

Historical estimates of the wheat "import gap" vary widely, as shown in the following estimates made in the last three years. The extent of these variations suggests that great caution should be exercised in their analysis. Without a fully articulated analytical system, in which all the important demand and supply factors defined above are considered, analyses of the wheat market will continue to be fraught with conceptual problems. This should be kept in mind when reviewing this and preceding analyses, since a general simulation model of Sudan's food grain sector is still being developed.

Study	Date of Study	Import Gap in (000 MT)
- Youngblood et.al,	1983	46.5
- The Sudanese Consultation Bureau	1982	404.3
- Mid-term PL 480 Title III Program Evaluation	1982	298 - 415
- Dunlop and Metcalf FY 1984 Evaluation	1983	154 - 508

Moreover, the market for food grains has undergone major shocks during the last five years which make it precarious to extrapolate from historical demand to future trends. These include:

- (a) at least a 120% real bread price increase since FY 1982,
- (b) a 60% real international price decline for sorghum through 1984, combined with a nearly three fold increase in domestic sorghum prices during the 1982-84 drought,

* Richard Blue, David Dunlop, et.al, PL 480 Title I: The Egyptian Case Impact Evaluation #45 (Washington D.C.: AID, June 1983).

- (c) potential for a 20% sorghum composite flour being introduced as relative prices stabilize,
- (d) the possibility of a longer shelf-life Kisra (traditional sorghum bread) being produced,
- (e) potential for a significant increase in sorghum yields (at least 300% in rainfed areas) given new high yielding sorghum varieties and cultivation practices, and
- (f) potential for increasing wheat yields by at least 80% and possibly more, given technical changes in planting and field levelling on the large irrigated schemes.

Finally, it is unclear what is happening over time to foodgrain demand. Certainly convenience and preparation costs (usually borne by women) have encouraged wheat bread consumption over sorghum, especially in the urban areas of the country, and may lead to long-term revision of past preferences. Ideally, it would be useful to incorporate time/price elasticities of demand explicitly into the analysis of the market for wheat and foodgrains, but reliable time series data are not available.

C. The Analysis

In spite of the many problems and issues involved, an effort has been made to develop alternative scenarios for both the demand and supply of wheat to ascertain the potential role for a Title III program over the next three to five years. Historical supply and demand figures (from the past five years) are found in Annex 2. They do not factor directly into the analysis since, as is argued above, the domestic foodgrain market is too unstable to use past trends as the basis for future projections.

The following scenarios take current wheat supply and demand as a baseline. The various demand projections have taken into consideration population growth in both rural and urban markets, income changes, own and substitute (sorghum) price changes, and the introduction of composite sorghum/wheat flour. The supply side projections include area restrictions and expansions, water availability, and yield increases due to both technological innovations and domestic producer price increases. Unfortunately, these projections are not analytically inter-connected via a fully articulated model. However, the analysis provides useful insights about the possible impact of certain changes which may occur in key economic and technical variables. The analysis is presented in Table 2 (immediately following) and the detailed assumptions underlying each scenario are presented in the notes and comments in Annex 3.

All of the import gap projections in the analysis support the conclusion that significant wheat imports will be required over the life of the program. Under the most optimistic scenario, which is not considered realistic given the recent devastation of the foodgrain market, Sudan's

Table 2

Alternative Projections of the Wheat Demand, Domestic Supply,
and Import Requirements in the Sudan, FY 1984/85-1989/90
(in 000's MT)

	Base Year	Begin PL 480, Title III #2		End PL 480, Title III		
	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
<u>Demand: Base Year 1984/85</u>						
1. Wheat consumption no price or income changes. ^{1/2/}	873	911	951	993	1,036	1,081
2. #1 adjusted for per capita income changes. ^{3/}	873	911	951	993	1,036	1,081
3. #2 adjusted for real bread price increases. ^{4/}	873	911	799	834	870	908
4. #3 adjusted for real sorghum price decreases. ^{5/}	873	667	696	726	758	792
5. #4 adjusted for introduction of 15% sorghum composite flour in FY 1987. ^{6/}	873	662	665	661	644	673
<u>Supply: Domestic Production</u> <u>Base Year 1983/84</u>						
1. Baseline production: no price, area or yield changes. Based on avg. pdtn., FY 1980 - FY 1984.	168	168	168	168	168	168
2. Maintenance of 1985/86 production levels. ^{7/}	N/A	194	194	194	194	194

	Base Year	Begin PL 480, Title III #2		End PL 480, Title III		
		1985/86	1986/87	1987/88	1988/89	1989/90
3. #1 plus yield increases. Assume water and area constraints. No price changes. ^{8/}	168	194	204	214	225	236
4. #3 adjusted for real producer price increases. Extend Gezira to 500,000 feddans. ^{9/}	168	194	305	320	336	353
<u>Supply: Import Requirements</u>						
1. High Range (D1-S1)	705	743	783	825	868	913
2. Low Range (D5-S4)	705	468	360	341	308	320
3. Mid Point Between Extremes	705	606	572	583	588	617
<u>Commercial Capacity to Import</u> ^{10/}	65	65	100	100	180	180
<u>Need for Concessionary Imports - (Import Requirements - Commercial Capacity)</u>						
High Range	640	678	683	675	688	733
Low Range	640	403	260	191	128	140
Mid Point	640	541	472	483	408	437

Methodological notes and assumptions are presented in Annex 1.

concessionary import requirements will remain at the very least around 200,000 MT through FY 1990. Mid-range estimates, which are more reasonable, suggest that such requirements will be much larger, probably 450,000-500,000 MT for each year through FY 1990. The most pessimistic scenario suggests an annual 700,000 MT concessional aid requirement through 1990. The mid-point gap estimates of about 450,000 MT will be used as the most practical and probable planning figures for this document.

IV. Bellmon Determination Data

This section presents a description of port, storage, transport and milling facilities and an assessment of likely price and market impacts. Based on our ongoing assessment of the foodgrain economy, USAID/Sudan certifies that the port/handling/distribution systems for wheat and wheat flour are adequate to prevent spoilage or loss of PL 480 commodities, and that the importation of wheat and wheat flour under the Title III program will not result in a substantial disincentive to domestic production or interference in marketing.

A. Port Facilities

(1) All PL 480 commodities enter Sudan via Port Sudan, the country's only major port. Over the last five years of PL 480 programs the facilities at Port Sudan have proven more than adequate for handling the volumes of cereals that are expected to be imported under the proposed program. The Sea Ports Corporation has always given top priority for berthing and discharge to food commodities and this policy is not expected to change.

(2) A detailed description of port facilities at Port Sudan was provided in Khartoum 3289 of February 1984 and in the Bellmon update in December 1984. Much of the information contained in these reports remains valid. The major renovation work to improve through-put capacity at the port has proceeded slowly and is now scheduled for completion by the end of 1986. This project will affect the capacity at Port Sudan silos, container handling operations, communication systems within the port, and the power supply system at the port.

(3) A recent assessment of port capacity concluded that approximately two million metric tons of bulk grain and one million metric tons of bagged grain could be handled each year at the port. The acquisition of additional portable hoppers/baggers/stitchers (6 units by USAID and 2 units by Sudan Shipping Lines) have increased this capacity well above projected needs. With this equipment in place, the Port operated remarkably well throughout the emergency in 1985, handling in excess of one million MT of food grains.

(4) Bulk wheat shipments under this Title III Program will continue to be off-loaded at Port Sudan silos (quay 15).

B. Transport

(1) Most of the wheat and wheat flour imported in Sudan is transported by truck from the port directly to the flour mills. The private trucking companies at Port Sudan have nearly 400 vehicles in total, with a effective capacity of 16,600 MT. One trip from Port Sudan to Khartoum to Port Sudan takes approximately 5 days. Other private transport companies based elsewhere in the Sudan also transport grain from the port. With the increase

in demand for transport services resulting from the need to transport hundreds of thousands of tons of relief commodities, new trucking companies were started and existing firms expanded their fleets, thus augmenting considerably the national truck transport capacity. In addition, there are two parastatal trucking companies that are actively involved in transporting commodities. The cost of transporting one metric ton of wheat/wheat flour from the port to Khartoum increased in CY 1985 from the range of LS 55-70 to LS 100-160 due to the heavy demand for emergency food aid transport.

(2) Sudan Railways Corporation (SRC) is also engaged in moving wheat and wheat flour from the port. SRC can provide forty railcars per day for bagged grain, each with a capacity of 30 MT, totalling 1,200 MT. In addition, fifty railcars for bulk grain are being used to transport grain from Port Sudan to the Khartoum mills. Travel time by rail can be slow: approximately 7 days from Port Sudan to Khartoum to Port Sudan due to frequent stops and the need for track repairs. The FY 1985 cost to transport grain from Port Sudan to Khartoum by railway was LS 95 per metric ton.

C. Storage and Milling Capacity

(1) Sudan's storage and milling capacities are more than adequate to handle proposed PL 480 commodities. They are shown in the tables on the following pages.

(2) As shown in Table 4, Sudan's installed milling capacity now exceeds 2,100 MT/Day. Actual capacity utilization over the past two years has been less than 80 percent due to prolonged power outages, mechanical breakdowns, and insufficient supplies of wheat to be milled. The estimated wheat requirements for the proposed Title III program will require that mills operate 265 days annually, the average for the past two years.

D. Price and Market Disincentives

(1) Domestic production of wheat was minimal in FY 1985 and the upcoming spring harvest is not expected to cover even one third of requirements in FY 1986. PL 480 wheat and wheat flour assist the government in covering the continuing gap between the supply -- constituted by domestic production and commercial imports, which are limited by critical foreign exchange shortages -- and the demand for these products. Wheat and wheat flour are consumed primarily in urban areas. Sorghum and millet are the cereals consumed in rural areas. Despite an above-average harvest of sorghum in some of the main producing areas of Sudan in November/December, nation-wide demand remains high due to regional and local shortages and a desire to reconstitute stocks depleted during the previous year of drought. Thus, USAID foresees no disincentive effects on prices of substitute crops by the importation of PL 480 commodities in FY 1986.

Table 3

SUDAN: WHEAT STORAGE CAPACITY

(IN MT)

Location	Storage at Mills	Silos	Warehouses	Total Storage Capacity
Khartoum	39,000	-	-	39,000
Wad Medani	15,000	-	10,000	25,000
Gezira	15,000	-	-	15,000
Hassaheisa	25,000	-	-	25,000
Kosti	15,000	-	20,000	35,000
Port Sudan	9,000	50,000	796,000	855,000
Atbara	10,000	-	-	10,000
New Halfa	10,000	-	-	10,000
El Gedaref	<u> </u>	<u>100,000</u>	<u>10,000</u>	<u>110,000</u>
Total	138,000 ^{1/} =====	150,000 =====	836,000 =====	1,124,000 =====

1/ Warehouses and fenced areas at mills.

Table 4

SUDAN: WHEAT MILLING CAPACITY 1985

<u>City</u>	<u>Mill</u>	<u>Milling Capacity</u>	
		<u>Per day (MT)</u>	<u>(Actual)</u>
		<u>(Installed)</u>	
1. Khartoum	Ahleya	240	220
	Flour Mill	600	550
	El Arabeya	70	30
2. Wad Medani	Blue Nile	300	150
3. Gezira	Gezira	200	120
4. Hassaheisa	Koz Kabra	240	200
5. Kosti	White Nile	120	120
6. Port Sudan	Abdu Rabu	240	220
7. Atbara	Atbara	80	60
8. New Halfa	New Halfa	<u>80</u>	<u>70</u>
Total		2,170	1,740
		=====	=====

(2) Wheat and wheat flour imported under the PL 480 program will continue to be marketed using the same channels that have been used in past years. However, beginning with the FY 1985 PL 480 Title I program, the importation and internal transportation of PL 480 commodities is now the responsibility of a new private sector millers company (the Cereals Investment and Development Company Limited, CIDCO). The company is responsible for the distribution of wheat for milling among the flour mills. The Ministry of Cooperation, Commerce and Supply (MCCS) will continue to allocate flour to the regions. Most bakeries provide their own transport from the mills and to retail outlets.

(3) USAID has taken, and will continue to take, steps to minimize the possible disincentive effects of the PL 480 Program. Agricultural projects in the USAID portfolio are intended to increase domestic production of food grains, particularly sorghum, for which hybrid seeds that have shown exceptionally promising results in field tests have been developed. Self-help measures incorporated in previous Title I and Title III programs have focused on maintaining producer prices at incentive levels, increasing the price of bread to levels that cover costs, and encouraging the use of sorghum in composite flour for bread. These efforts will be continued and should serve to minimize disincentives.

V. Problem Definition

The preceding sections on economic considerations, GOS policy commitment and food requirements point to six problems that can realistically be affected through a Title III Program. These are outlined below and form the basis for structuring the program presented in Part Two.

A. Structural Imbalances

Misdirected macroeconomic policies have created fundamental imbalances in the economy, particularly between exports and imports, between government revenues and expenditures, and between irrigated and rainfed agriculture investments. The most critical policy reforms affecting these imbalances all relate to the exchange rate regime, but it is unrealistic to assume that a Title III program is an appropriate vehicle to address such macroeconomic concerns. The program, however, can help rectify, or at least ease, some of the problems symptomatic of the fundamental policy flaws. Such relief can provide additional flexibility in addressing the root causes of the imbalances, particularly through balance-of-payments support and rehabilitation of the rainfed sector. These issues are considered below.

B. Debt

Servicing requirements on the \$10 billion debt present such a drain on the economy that Sudan cannot afford to incur additional debt and should explore all options to reschedule pending payments. Since wheat and wheat flour imports entail political sensitivities, it is inevitable that they will continue even if they require incurring additional debt and using foreign exchange needed for rehabilitation and development expenditures. Under such

circumstances, Title III offers the advantage of providing wheat on a grant basis, including the option of forgiveness on currently pending Title I loan repayments.

C. Balance-of-Payments Deficit

Between the drought and a disastrous cotton marketing policy, Sudan's export earnings are at an all time low. A quick reconciliation between exports and imports is not promising given the likelihood of the slow recovery of cash crop exports and a continuing oversupply of cotton on the world market. The Title III program will provide a \$102 million infusion of foreign exchange over three years, for commodities and ocean freight, and will help guarantee that the GOS does not use its scarce foreign exchange for wheat imports in lieu of productive imported inputs.

D. Stagnation of Rainfed Agriculture

Two factors have constrained rainfed agriculture's continued growth. The more pressing has been three years of drought. Even after a record 1985 foodgrain harvest, 400,000 MT will have to be transferred to deficit areas in western Sudan. The second has been a GOS investment policy focused on public sector irrigated agriculture. The GOS, in its two most recent Three Year Public Investment Programs, has begun to redress its bias against rainfed agriculture, but with the prevailing economic devastation has inadequate resources to do so. Title III local currencies can reinforce the GOS's changing investment policies by infusing capital directly into the rainfed sector.

E. Sectoral Policy Distortions

Macroeconomic policy problems have created unfortunate incentives to implement distortionary sectoral policies, particularly in agriculture. These policy distortions generally fall under two rubrics:

- 1) prices of tradeable commodities, and sometimes even land, do not reflect their true value to users since the government sanctions an implicit foreign exchange subsidy; and
- 2) poor tax policies and other market distortions are imposed on specific commodities to compensate for GOS revenue losses due to an overvalued exchange rate.

Reforms in production input prices and marketing structures for rainfed sector commodities define a realistic policy agenda for Title III.

F. Public Sector Market Interventions

Central to the problems of efficiency in Sudan are the predominance of public ownership and government control over economic factors. Publicly administered procurement, marketing, distribution and pricing have created dramatic distortions and bottlenecks. In cases where government services are justified, the GOS often does not have the resources to meet its prescribed mandate. Hence, policy measures must be developed to encourage private initiative and to promote market linkages and interdependencies that facilitate self-sustaining growth.

Part Two

Program Description and Justification

I. Overview: Objectives and Components

The new Title III program will continue to expand USAID's policy emphasis on efficient resource allocation and use. Its long-term goals, like those of our DA program, are to promote economic stability and growth while ameliorating food shortages and promoting food self-reliance. The program's operational objective is to create incentives for economic efficiency and equity by facilitating private sector participation in the economy. It will also devolve project activities to regional and local entities to gain the efficiency of self-interest in project implementation. To meet these ends the program's policy and local currency components are targeted to support rainfed agriculture. This subsector encompasses the majority of the Sudanese private sector and, therefore, has the basic incentive mechanisms in place to link economic policy reforms with farmer production decisions in order to realize the intended producer response underlying policy reforms and capital investment. Rainfed agriculture also supplies the majority of foodgrains in Sudan and thus serves as the centerpiece of a food security program.

Together with increasing efficiency, any program directed toward the rainfed sector (indeed, virtually any program in Sudan because of its dependence on rainfed production) must also address rehabilitation from drought. The levels of need are basic and extensive. Overloaded trucks carrying emergency food supplies have eroded the road network from Port Sudan. Likewise, the railway in the Kosti/Nyala corridor has been overstressed, further weakening an already marginal operation. Feeder roads within the regions are still just dirt tracks. Deforestation and desertification have accelerated due to grazing livestock on marginal grasslands or from cutting trees to earn cash from sale of charcoal. New or improved water sources are necessary to attract migrant populations from oversettling the Nile corridor while keeping them off lands too fragile to sustain life. Credit will help farmers invest again in production and recover from virtually 100 percent losses in 1984/85 and 50 percent losses the previous year.

Quite understandably, Sudanese and donor views in the past year have been short-term. By necessity, this perspective must give way to broader vision if current investments are to have any meaning five years hence. As in any developing country, financing recurrent costs is a dilemma. The need for projects is so extreme that the country cannot wait until long-term financing provisions are in place. Title III local currencies introduced at the local level can shorten the time for realizing results in development and rehabilitation. They can also be a catalyst to extensive or penetrating policy reform. For example, offers of loan forgiveness under Title III, made contingent upon both programming of local currencies and GOS policy measures to finance recurrent project costs, may bring long-term fiscal issues into an immediate and negotiable context. When so few other incentives have worked on recurrent costs, this is a new measure worth exploring.

Overall, then, the basic components of Title III are food assistance, policy reform, and local currency investment at the local level. Their combined impact is directed primarily toward rehabilitation and development of the rainfed sector through private sector and self-help initiatives. The expected production response from the rainfed sector should ease Sudan's balance-of-payments problems and stabilize domestic food production. Given the rainfed sector's critical role in the overall economy, its stabilization and growth should help ameliorate the past years of economic depression.

II. Commodity Requirements

A. Program Size

The demand and supply analysis presented in Part One indicates that a PL 480 program is justifiable on economic grounds over the next three years at the levels shown in Table 5. The financing split between wheat and wheat flour for the entire PL 480 program is proposed as 79 percent wheat versus 21 percent wheat flour over the three-year period. Title I would finance 32 percent wheat flour and Title III would finance 10 percent. The wheat/wheat flour split is explained in section C below.

B. Shipping Schedule

The proposed shipping schedules for Titles I and III are presented together to illustrate the annual flow of U.S. wheat and wheat flour into Sudan. The following points have been taken into account in developing the schedules: early fiscal year programming of Title I commodities; a two-month time requirement for procurement and shipping of commodities; availability of Sudanese wheat in domestic markets from May through July; the advisability of negotiating Title III subagreements during the summer months, which are traditionally low points in political activity that allow the GOS additional flexibility in its policy decisions.

Table 5

Proposed PL 480 Commodity Mix
Titles I and III

	1986	Fiscal Year 1987	1988
<u>Title III</u>			
1. Commodity Value <u>a/</u>	25.0	30.0	30.0
a. Wheat	(22.5)	(27.0)	(27.0)
b. Wheat Flour	(2.5)	(3.0)	(3.0)
2. Expected Volume <u>b/</u>	184.4	220.8	220.8
a. Wheat	(167.0)	(200.0)	(200.0)
b. Wheat Flour	(17.4)	(20.8)	(20.8)
<u>Title I</u>			
1. Commodity Value <u>a/</u>	25.0	30.0	30.0
a. Wheat	(17.0)	(20.4)	(20.4)
b. Wheat Flour	(8.0)	(9.6)	(9.6)
2. Expected Volume <u>b/</u>	181.6	217.7	217.7
a. Wheat	(126.0)	(151.0)	(151.0)
b. Wheat Flour	(55.6)	(66.7)	(66.7)
<u>Total PL 480</u>			
1. Commodity Value <u>a/</u>	50.0	60.0	60.0
a. Wheat	(39.5)	(47.4)	(47.4)
b. Wheat Flour	(10.5)	(12.6)	(12.6)
2. Expected Volume <u>b/</u>	366.0	438.5	438.5
a. Wheat	(293.0)	(351.0)	(351.0)
b. Wheat Flour	(73.0)	(87.5)	(87.5)
<u>Additional GOS Requirements <u>c/</u></u>			
1. Commodity Value	32.9	18.2	19.7
2. Expected Volume	240.0	133.5	144.5

a/ Commodity Values are in millions of dollars.

b/ Expected volumes are in thousands of metric tons in wheat grain equivalents.

c/ To be met through commercial purchases and other concessional aid.

Accordingly, it is proposed that annual Title I agreements be signed by November to allow shipments to arrive from February through April in the following year. Title III subagreements would be negotiated in June of 1987 and 1988 to allow shipments to arrive in September through November. It is proposed that the general Title III agreement for FY 1986-88 be signed in May or June, 1986. Accounting for procurement and shipping lags, these signing dates should allow commodities to arrive in Port Sudan according to the schedule shown in Table 6 on the following page. The schedule would be repeated annually in 1986-88.

C. Commodity Mix : Wheat -vs- Wheat Flour

USAID proposes to allocate 10 percent of the commodity financing for the Title III program to wheat flour and 90 percent to wheat. Justification for this modification is based on the following points.

1. Sudan has sufficient milling capacity to handle the 90 percent wheat allocation (see Bellmon requirements). The installed milling capacity of Sudan's flour mills exceeds 780,000 metric tons per year (2,170 MT per day). Actual capacity utilization has averaged less than 80 percent over the past several years, due in part to power shortages and mechanized failures, but also to inadequate supplies of wheat. Few power shortages occurred during FY 1984 and FY 1985, but due to the critical foreign exchange shortage in Sudan, few spare parts have been imported by the millers. Providing continuous supplies of wheat to the mills will create the incentive for the millers to maintain the milling equipment to obtain a high utilization rate.
2. Supplying wheat to private millers rather than wheat flour to bakeries gives additional business to the Sudanese private sector and reinforces our PL 480 policy objectives of privatizing the wheat distribution and handling system. Beginning in FY 1985 the private sector, through a company made up of the ten private flour mills in Sudan, assumed responsibility for the importation, clearance, inland transport and distribution of PL 480 commodities. It is in our best interest to provide a large portion of wheat in the PL 480 program to continue our good working relationship with this company and to foster its development to assume a greater role in the importation of wheat.

Table 6

Shipment Schedule*
Annual Arrivals of PL 480 Commodities at Port Sudan
1986 - 1988

<u>Timing</u>	<u>Title I</u> (000's MT)		<u>Title III</u>	
	<u>Wheat</u>	<u>Wheat Flour</u>	<u>Wheat</u>	<u>Wheat Flour</u>
January	Shipping			
February	42,000	18,500		
March	42,000	18,500		
April	42,000	18,600		
May				
June				Subagreement Signed
July				Procurement/Shipping
August				
September			55,700	5,800
October			55,700	5,800
November	Agreement Signed		55,600	5,800
December	Procurement/Shipping			

* The proposed volume of individual shipments is, of course, only illustrative. Shipment may vary according to availability of commodities, carrier availability and other factors.

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3. Currently, imported wheat flour is being limited to confectionary and other non-bread production. Bakers and possibly millers are reaping a greater return on selling their flour allotments to these producers rather than using it for bread. To offset this trend, a self-help measure was included in the FY 1986 Title I program which allows at least 5 percent of the imported wheat flour and 5 percent of the composite wheat/sorghum and bran flours to be sold at full cost. A 10 percent allocation of wheat flour in the Title III program will more than adequately supply the requirements for this self-help measure.
4. The high quality of imported wheat flour is a documented growth area of the wheat market and increasing its supply would counteract our policy efforts to control the growth of wheat demand and to promote food self-reliance. The current subsidy on bread does not warrant the high quality product that is obtained using imported flour. To align the cost of bread production with the price of bread, it is important to maximize the use of domestically milled flour, which has a higher bran content (80-90 percent extraction rate) but is considered to be of poorer quality in Sudan. Imported flour would then be allocated to supply the confectionary and non-bread producers, as well as the non-subsidized bread producers.

Under such conditions, then, Title III should be limited to 10 percent financing for wheat flour and 90 percent for wheat imports over the life of the program. The wheat flour component of Title I should remain flexible to assure an adequate supply of bread; we have proposed a baseline figure of 32% financing for wheat flour under Title I. Financing for the wheat flour component of the overall PL 480 program for any given year should be limited to approximately 20 percent of the total commodity costs. The commodity mix outlined above allocates 21 percent of PL 480 commodity financing to wheat flour from 1986-88. However, the wheat flour component on future Title I shipments can be adjusted to match policy changes that may have curtailed the present demand surge for confectionary products.

D. Title I Role

Title I is proposed as the principal vehicle for policy dialogue on wheat pricing, allocations and distribution, with the goals of reducing overall subsidies for bread and eventually replacing GOS bread pricing and allocation controls with market competition. Given the high consumption of bread in politically volatile urban areas, such pricing issues must be handled sensitively and with maximum flexibility. Since Title I is negotiated on an annual basis, with annual reconsideration of the appropriate commodity split, USAID/Sudan and the GOS believe it is a more appropriate instrument than Title

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III to handle issues subject to technical, political and economic variation. This split of policy issues between the two programs also has the advantage of allowing Title III to focus on rainfed agricultural production.

Controlling the majority of PL 480 wheat flour under Title I complements the approach USAID and the GOS have taken to reduce bread subsidies. Two key considerations in the strategy are 1) product and price differentiation, and 2) the technical feasibility of reducing the overall content of expensive wheat products in selected types of bread.

Through product differentiation, USAID and the GOS have identified specialized commodities that can bear a higher price than the "traditional" Sudanese loaf. This would allow the GOS to cross-subsidize across commodities, thereby keeping politically sensitive items (namely, the traditional loaf) at a stable price, while reducing the overall subsidy for bread products. To date, the most successful experience has been with a 72 percent extraction wheat loaf made with imported flour. The GOS currently controls the price of this "high quality" loaf at 50 pt per 390 grams (.128 pt per gram) and has allowed it to capture 5 percent of the bread market to determine its acceptability. The traditional loaf is priced at 14 pt per 160 grams (.0875 pt/gram). Despite the 46 percent higher price than the traditional loaf, current demand suggests that the high quality loaf could either bear a higher price, capture a greater share of the market, or both. The latter two scenarios could require additional wheat flour through Title I. However, the decision on wheat flour allocations should be delayed until there is greater assurance of the high quality loaf's market. Otherwise, wheat flour would be diverted to confectionaries or other, possibly counterproductive, uses.

Three measures have been taken to adapt the composition of bread so that the prices of these products reflect their full cost. One approach has been to mix wheat flour with less expensive sorghum flour, resulting in a 20 percent sorghum blend. While the cost of this "composite" loaf remains at 14 pt, input costs are about 16 percent less than in the traditional loaf. A second approach is to increase the bran content of bread, resulting in a more nutritious yet less expensive product that may bear a premium price as a "health loaf." Thirdly, taste tests conducted with the Ministry of Cooperation, Commerce and Supply have shown that the imported wheat flour content of the traditional loaf can be reduced from 40 percent to 30 percent. This allows bakers to produce the traditional loaf more cheaply with domestically milled flour while reserving a larger portion of imported wheat flour for "high quality" bread.

As with pricing measures, the acceptability of these technical alternatives, as manifested in the marketplace, will require adjustments in wheat and wheat flour inputs. The net breakdown will depend on the shares of the bread market which each product can capture. Given that a base supply of wheat flour would be financed by Title III, the GOS and USAID suggest that annual Title I agreements be used to handle the requisite adjustments.

III. Program Justification

A. U.S. Interests in Sudan

Basic economics -- the supply and prices of fuel, bread, sugar and other commodities -- influence Sudan's political stability and our realization of U.S. objectives throughout northeast Africa and the Middle East. Frustration with the Nimeri regime's economic policies eventually released harbored political disillusionment with dictatorial rule. Reincarnated political activism continues to check the temporary military government's commitment to democracy. Inevitably it has made Sudan's political environment increasingly sensitive to economic hardships that persist from historical mismanagement and drought. More than ever, sound policies for economic stability and growth are needed to nurture the democratic process. Within this context the proposed Title III program provides a long-term agenda for policy reform and supplements it with local currency for development investments and short-term balance of payments assistance for critical commodities.

U.S. interests in Sudan derive from its strategic location, its historically constructive approach to Middle East politics, its political and diplomatic influence in the Arab and African worlds, and its potential as a food exporter to the Middle East. The protection of U.S. interests in the Horn of Africa and the Nile Valley depend upon a friendly government. Certainly, constructive relations with Egypt are a prime concern. Even a simple shift in policies on control of the Nile waters could prove disastrous to the Egyptian economy. A friendly and stable government in Sudan also affects the outlook of governments in the Arabian Peninsula, and ultimately, U.S. influence in the Persian Gulf. Similarly, as our largest aid program in Africa, our actions and their success attract attention and influence perceptions throughout the region. The change in government and its pledges to democracy have increased attention on both the Sudan and its donors.

The recent drought, which affected the entire Sahel as well as other areas in Africa, reinforced the importance of U.S. economic assistance to support strategic geopolitical interests. Drought-induced famine ignited cross border and internal population shifts that have forced people from different nationalities, tribes and economic traditions into concentrated land areas around the Blue and White Niles and along the Ethiopian and Chadian borders. The refugee population in Sudan may have exceeded one million people in 1985. Domestic population shifts, although difficult to enumerate, affected an estimated four to five million people, approximately one quarter of Sudan's population. Worsened conflicts over land rights have resulted in deaths in southern Darfur and Kordofan. Water is either unavailable in areas historically inhabited or scarce and expensive. Until the record harvest in November 1985, the price of sorghum, Sudan's staple grain, had tripled since 1983. The number who suffered severely from famine and famine-related disease has been estimated at three million people.* Relief agencies operating in

* Based on monitoring reports from organizations handling food distribution programs as well as information provided by regional government sources. Target populations for food distribution are 5.1 million in Kordofan and Darfur, 0.2 million in the Northern Region, 1.5 million in the Eastern Region, and 1.8 million in Central Region.

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northern Kordofan and Darfur indicate that, even in 1986, approximately 400,000 MT of grain must be transferred to western Sudan to compensate for production shortfalls where rains ended early, leaving many crops to shrivel in the fields.

In urban areas the drought's pressures were less dramatic but politically important. Reduced exports curtailed transport services (due to lack of fuel and diversion to food relief), and overall food shortages markedly lowered urban living standards and triggered political demonstrations. Per capita GDP has declined three years in a row. With the new government in Khartoum seeking to establish a transitional phase to civilian rule, economic and political volatility has become particularly apparent.

If U.S. assistance to Sudan is to complement our regional strategies and interests, it must promote general economic stability and growth. It must specifically ameliorate food shortages and promote agricultural self-reliance. Our strategy has encompassed three complementary approaches. First, in order to help the economy survive the immediate crisis, the largest share of our assistance finances essential imports, including food grains. Second, to promote long-term economic recovery and growth, we have used the leverage of our assistance levels and the influence of our advisors in institution-building projects to promote economic policy reform. Third, our development assistance and local currency projects help relieve critical infrastructure and institutional constraints to increased growth. The Title III program subsumes all three components of our strategy as we help the GOS grapple with the immense task of trying to restore the viability of Sudan's economy.

AID's experience in Sudan since 1977 has demonstrated that it is not a simple task to formulate and implement a strategy likely to have a meaningful impact on the root causes of Sudan's economic development problems. But the program has been in place long enough to assess the results, both positive and negative, and enable us to gauge the type of program which could be effective. We know, for example, that channelling program funds through government institutions is unlikely to stimulate production, and that aid granted in a climate of negative policy incentives is as likely to aggravate Sudan's precarious financial condition as to alleviate it. We have also learned that government agencies have neither the trained manpower nor the incentives to absorb the amounts of technical assistance previously thought possible.

The period of this Title III program will encompass considerable changes and uncertainties. Under such conditions, the multi-year nature of Title III will give the GOS a framework for agricultural development and also provide a stable context for the U.S. program. Title III represents a dependable source of local currency for investments in agricultural production. It also elicits a three-year commitment to policy reforms targeted to rainfed production and local initiative.

The elections scheduled for April 1986 should strengthen rather than diminish GOS commitment to agricultural development. After the ravages of drought, the GOS must continue to rehabilitate the country's most productive sector. By contrast, the prospect of Sudan's first election in 16 years has brought macroeconomic policy dialogue to a stalemate. Concerns over devaluation's possible impact on urban consumers and domestic budgets, for example, has made exchange rate control politically sacrosanct. Currently, our best option is to work on sectoral issues close to the producer. If we can engender a supply-side response, Sudan will have additional flexibility to undertake meaningful structural change as immediate political constraints are relaxed over the next two years.

Operationally, we see our support targeted to four basic areas highlighted in the 1984 CDSS Update: (1) agricultural policy reform; (2) promotion of a market economy; (3) decentralization and devolution of government services; and (4) support for rainfed agricultural production. The remainder of this section describes USAID program involvement in each of these areas and outlines the importance of Title III in supporting their development.

B. Policy Reform

In the agricultural sector, USAID has led donor efforts in policy dialogue; the PL 480 Title III program has been a catalyst for reform. USAID's Agricultural Planning and Statistics Project and the Mission's own analyses have supported the process. Import parity pricing of domestic wheat production (corrected for estimated input subsidies), reduction of explicit and implicit subsidies for bread, and increased floor prices for gum arabic, sesame and groundnuts were Title III self-help measures. The Mission's internal analysis of the 75/25 exchange rate formula, previously used to remunerate exports, was the key analytic piece that led to its abolition. In a technical effort to reduce the imported wheat content of bread, commercial trials are currently underway, initiated by the previous Title III program, to blend wheat with sorghum flour. It now appears technically and financially feasible to substitute in the range of 15 to 20 percent sorghum flour for wheat flour in bread making.

In addition, the Mission-sponsored Petroleum Initiative has catalyzed major reforms in the energy sector that have a direct impact on rainfed production. In fulfillment of a condition precedent to initial AID disbursement, the GOS raised all petroleum product prices, which will supplement budget revenues and help close the gap with expenditures. Once the Petroleum Initiative takes full effect, rural areas should receive more consistent allocations of diesel fuel at prices which cover all costs. For producers, this will reduce dependence on black markets, with their high prices, to keep water pumps and tractors running and to transport commodities to market. Even with official price increases, rural areas have already seen a de facto price decrease as increased official supplies displace the black market. In fact, throughout Sudan, benzene and diesel prices fell by over 30 and 50 percent respectively following the inception of the Petroleum initiative. This has a tremendous effect on production and marketing costs, in rainfed agricultural areas.

With these wide-ranging policy reforms, the pressing question, of course, is why the Sudanese economy remains in such disarray. Sudanese policymakers and intellectuals frequently express their disillusionment, usually concluding that austerity measures are simply policies for disaster. The situation is much more complex.

Drought is certainly a factor but only a partial explanation. Policy reforms thus far have served largely to keep the Sudanese economy from further deterioration. Inflation alone, now averaging over 50 percent per year, almost negates the entire impact of exchange rate reforms over the past two years.* For cotton producers on public schemes, for example, the real value of the implicit foreign exchange subsidy on inputs has actually increased. Moreover, GOS production and marketing policies on irrigated schemes preclude spontaneous producer responses to potential macro incentives such as exchange rate reforms. In short, parastatal boards, not farmers, decide what and how much is planted in the irrigated sector. The irrigated farmer's only rational response is to divert inputs to the black market or clandestinely violate scheme regulations on input use. Added to these factors are tax structures which allow government to siphon off large percentages of individual crop revenues. Gum arabic, traditionally accounting for over 10 percent of export earnings, was, until recently, worst hit. Before a producer price increase in October 1985, the GOS took 41 percent of gum export revenues through 7 taxes and shareholder dividends for the public Gum Arabic Corporation.

Lessons learned from the continuing economic regression are twofold: policy reform can mitigate further disaster, but the reform process is incomplete until the market plays a greater allocative role in the economy. Central to the Title III program will be policies to support agricultural reforms and assure that market controls and tax regimes do not mitigate their impact. The medium-term objective is to influence private sector and rural producers with a structure of incentives in the form of reliable markets, prices and inputs that will enhance production and income. Producers themselves must take long-term responsibility for creating a dynamic economy. Inevitably, the government must play a role in planning and policy making, but that too should devolve so that beneficiaries, with the self-interest of seeing projects succeed, participate in their implementation. USAID policies for market development and decentralization are discussed further in the following sections.

*Admittedly, drought is a factor in high inflation rates since food shortages have meant that too many pounds are chasing scarce supplies. Rising food prices are not directly linked to the rising cost of imported inputs (due to devaluation) since most food crops have relatively small import contents. Unchecked money supply growth often in the form of credit to public agencies and parastatals, subvention of payments between those agencies, and the production of additional bank notes appears to be the worst culprit behind Sudan's sustained high inflation.

C. Market Economy

The concept of the "market place" is the antithesis of GOS organizational practice today -- the tendency is to control rather than facilitate the flow of economic activity. Heavily subsidized parastatals constitute a severe drain on the economy. Publicly administered procurement, marketing, distribution and pricing have created distortions and bottlenecks. Under these conditions, funnelling economic assistance to or through such control mechanisms can seriously dilute or distort the intended aims.

However, the problems of market development are more complex than controlling parastatals and the drain they create on the domestic budget. In many cases, government intervention can be justified on the basis of market failures, limited consumer market power, or the need to control a public good. Yet resource scarcities often keep government agencies from providing their mandated services, such as education, even when they are needed and justified.

Public sector finance constraints include a poor revenue base, lack of clearly defined tax policies with which to tap it, and misallocation of those scarce resources available to non-productive sectors. In practical terms, these constraints affect the usefulness and availability of personnel and equipment, particularly in the regions. Most government professional salaries in Sudan are a fraction of what the private sector pays, and often less than a tenth of what an individual can earn in a comparable job in the Gulf States. Naturally, those who can market their skills tend to migrate -- either to Khartoum or abroad. And for those skilled staff ready to stay in rural areas, their competence may simply lead to promotion to Khartoum. When chance keeps skilled officials in the field, they usually are without the resources to do their jobs and end up demoralized and frustrated. Ninety percent of all civil servants are concentrated around urban centers, and even agricultural extension agents and rural health workers may not have the means to assist those who need their help.

At times, government services reach the intended beneficiaries through informal channels or a community's self-initiative, particularly in cases of dire need. Provision of water services is a good example. The National Water Corporation and its subsidiaries often cannot service village water systems outside the vicinity of an urban center due to lack of spare parts and finances to keep people and machines working. Some villages have responded by collecting fees for water, setting up maintenance funds, and unofficially hiring NWC staff to repair broken equipment during off hours. If required, a village may even hire a truck to transport engines and pumps into town so that NWC staff can identify needed repairs and have the parts made in the local market.

Scarcity of GOS resources inevitably creates a catch 22. Without the prospect of getting regular public services, rural populations will not comply with government tax policy. For years their contributions have been virtually uncompensated. Yet it is obvious that without an increase in resources the GOS cannot provide the services necessary to elicit financial support. Donor contributions of equipment and materials have touched on the fringe of the problem but, without addressing organizational requirements for maintenance, industrial, power and farm equipment sites soon assume the appearance of junk yards.

Greater dependence on a market economy has the obvious advantage of encouraging linkages across individuals, businesses and organizations that can generate and sustain growth after an initial capital investment. Greater involvement of private businesses should reduce public waste and replication that often divert funds from their intended purposes. By definition, private profit incentives engender a tendency toward efficiency and productivity as long as remuneration is based on output. Sudan also benefits from a self-help tradition throughout rural areas that stems from a longstanding realization that isolation and poverty will mitigate against provision of services to those who may need them most. However, as in any developing country plagued with market distortions, we must avoid relying on the private sector as a panacea for development. Even here there are constraints that must be addressed rationally rather than on the basis of rhetoric.

Businesses and government alike have a tendency toward vertical integration and thus pyramiding one institutional innovation atop another. No one wants to depend on an outsider. Examples of the practice abound. Even with numerous trucking companies in the country, a new manufacturing plant will often purchase its own set of vehicles to assure that everything is "under control". Businesses will invest hundreds of thousands of dollars in generator systems to regularize power supply when less money, collectively spent, could meet commercial and non-commercial demand. And to assure that fuel and other inputs are available, businesses will initiate international trade operations when local dealers might be starved for sufficient business to justify their stocks of equipment and spare parts. The reason for the practice is understandable -- the sense of a need for buffers in a hostile environment. Yet some of the buffers must be broken to foster market linkages.

If our analysis of the underlying problems has validity, then our strategy should be one of encouraging interdependence -- literally contributing to the creation of an economic commonwealth. This was clearly set forth in the 1984 CDSS update. Through selective investments in market components (roads, storage facilities, credit, village-level infrastructure), Title III local currencies will try to encourage a market place mentality to further the sense of contract and mutuality that it conveys. These investments must be accompanied by policy measures that free people from the great number of public structures that enmesh the economy. Individuals must be allowed incentives to achieve, but in an environment in which achievement can only come from working with others.

The market strategy can be most productively carried to rural areas. Economic actors are familiar with one another. Tendencies toward self-help and mutual trust already exist within traditional organizational structures and village groups. Self-interests and family or tribal preferences are well known. People can benefit directly from their actions. These conditions fulfill three of the basic prerequisites for a market economy: shared information, a basis for trust, and the potential for gain. They all factor directly into the Mission's Title III investments and strategy for decentralization.

D. Decentralization and Local Development

The dynamic that gives impetus to decentralization in Sudan is size. The country is too big, too diverse, and its physical environment too severe to allow effective management from Khartoum. Pressures arising from the complexities of trying to administer the regions from a highly centralized bureaucracy have pushed the country toward a devolution of authority, but with the resistance of a central bureaucracy that hesitates to relinquish control.

Decentralization has been official government policy since the People's Local Government Act of 1971 which granted greater autonomy to each of Sudan's regions. In practice, lack of resources has kept the regions dependent on central government financing for major shares of their budgets (e.g., approximately 80 percent in Kordofan and Darfur). Regions can raise their own revenues, but must remit large percentages to Khartoum and await budgetary grants. Never has a regional budget request been fully met, and in most cases actual allocations run at 40 to 50 percent of proposals and barely cover recurring salary costs. Lingering uncertainty over taxing authority, particularly application of the Islamic tax, Zakat, has further thwarted regional fiscal measures.

These financial constraints have turned regional planning into a paper process. Projects are included in the development budget and then forwarded with all other budget requests to the central government. The process usually stops there. Requests are rarely met. Regional governments resist devolving project activities to the village level when they themselves have no funds. The planning dialogue lodges itself between regional and central officials, usually without resolution, and then it begins anew the following fiscal year.

In part, the problem is policy-oriented. USAID has agreed to provide assistance in clarifying the legal and financial relationships between regions and Khartoum through the Regional Finance and Planning Project and the Policy Analysis and Implementation Program. But resolution of regional/central conflicts is ultimately a Sudanese issue. It involves basic biases against regional abilities that are more fundamental than questions of skill or training. Both sides lack trust. Each side always second guesses the other's competence. And, for the central government, the second guessing is always easier since it controls the purse strings.

The role of Title III will be to move local currencies directly to communities with a stake in their investment. Funds will be channelled through regionally based secondary institutions such as village councils, PVOs, cooperatives, or regional offices of the Agricultural Bank of Sudan.*

* Any credit through the Agricultural Bank of Sudan will be contingent upon performance on policy reforms on agricultural credit described in the Policy Agenda (section IV).

Inevitably, part of the regions' planning education will have to come with practice. Under the Regional Finance and Planning Project USAID has already determined that on-the-job administrative training, without accompanying financial resources, does not work. RFP will continue to provide short-term technical resources, but the emphasis will be on matching local currencies with productive activities that local groups, institutions, villages and possibly individuals wish to support.

The concept of decentralization has been incorporated into USAID's Development Assistance, Commodity Import and local currency programs. The Mission's newest project, Kordofan Rainfed Agriculture (KORAG), focuses all of its activities within the Kordofan or western region. Regional government staff will collaborate with a decentralized unit of Roads and Bridges Public Corporation and expatriate consultants in contracting for and supervising project services. KORAG will provide a regional network of feeder roads and storage facilities, but it will also train regional officials in basic contracting practices. This will be critical in effectively utilizing local currencies for civil work projects.

In addition, the FY 1984 CIP sets aside \$4 million for regional activities. Local currency loans through institutions like the Agricultural Bank of Sudan may be required to finance the counterpart requirement on the CIP. The ABS and the Kordofan regional government are also requesting local currencies to finance agricultural cooperatives in Sudan's highest producing groundnut area, En Nahud. These initiatives are only illustrative of the growing trend in the Mission's portfolio.

With adequate funds, prospects for effective decentralization are high. If Historically, Sudan has had a high degree of experience in local decision making. If resources are channelled to a local level, potential beneficiaries have a stake at making them work. They, more than any donor, realize that regional development has previously focused on talk and paperwork rather than action. When offered financing through cooperatives, villages have grouped readily and exceeded the capacity of cooperative officials to register and finance them. Before the drought, their repayment rates on loans were high (above 90%). Even now, cooperatives readily suggest new activities, such as water harvesting or village tree nurseries, that they could undertake with minimal resources. To be effective, however, resources must be geographically concentrated and not exceed the capacity of institutions and technical assistance. This, among other factors, explains our concentration on rainfed agricultural production centers within the Kordofan and Darfur Regions of western Sudan.

E. Rainfed Agriculture Focus

The risks inherent in rainfed cultivation require a brief revalidation of the Mission's agricultural strategy. The 1985 CDSS update argued for a western rainfed focus because of the subsector's contribution to both domestic and export markets and its potential for growth. Given a resumption of normal rainfall patterns, the growth potential still exists. Even with the past three years of drought, the percentage of land lost permanently to desert will be small. One study on the impact of the 1964-1974 Sahelian drought on Kordofan concluded that "there was no creation of long lasting desert-like

conditions...There was however a severe drought impact on crop yield."* Desertification due to poor land management is still a serious concern, but potential yield increases of 300-500% from field-tested hybrid sorghum** and a new short-maturing variety of millet could balance the loss of cultivable land. In terms of rainfed agriculture's continuing contribution to Gross National Product and more specifically to net foreign exchange earnings, the key question is whether the subsector will retain sufficient impact on the domestic and export economies to merit the focus of an agricultural strategy. Three important considerations are population concentrations, responsiveness to production incentives, and the comparative advantage of rainfed versus irrigated crops.

Until the drought forced major population shifts throughout the rainfed areas, the rainfed zone employed two-thirds of Sudan's rural population in private traditional and mechanized agriculture. Although difficult to predict the extent of permanent relocation outside the rainfed subsector, observed migration patterns to higher rainfall zones and the lack of alternatives outside of rainfed cultivation suggest that the rainfed subsector will continue to employ the major share of the rural population. Permanent population shifts do not seriously threaten the major mechanized grain production areas in eastern Sudan. In Darfur, drought-affected populations have tended to move south to better climates rather than migrate to urban areas or the irrigated subsector. Migration from and within Kordofan has been more diverse. Displaced people congregated in camps outside of Omdurman and along the irrigated schemes on the Nile; most stayed in camps outside the region's major towns or moved directly south. Some displaced groups found temporary employment on the irrigation schemes but were left unemployed after the cotton harvest. No opportunities exist for obtaining plots within the schemes. Those displaced to urban areas have not even had a temporary reprieve from unemployment. When the rains resumed in June 1985, a majority of displaced people found their best option was to return to their villages and farms or relocate in other rainfed areas.***

* The report was completed in 1984 by Lunds University, Sweden, and the Institute of Environmental Studies at the University of Khartoum. It also concluded that "the impact of the Sahelian drought was short lasting followed by a fast land production recovery.....Its major impact is assumed to be a slow expansion of unpalatable species and annuals....accompanied by a reduction of fuelwood resources available." The study analyzed aerial photography beginning in 1962 and satellite data from later periods for 77 villages in Kordofan.

** Hybrid sorghum has been field tested in rainfed areas for only two years, but the results are promising. In areas with at least 350 mm rainfall, yields were triple those of traditional varieties. In El Obeid, where rainfall was less than 150 mm in 1984, the hybrid sorghum was the only variety to produce a head due to its relatively short growing season.

*** The most reliable reports on internal migration come from monitors on the emergency food distribution program. Information to date indicates that most traditionally cultivated areas with agricultural potential have again been cultivated. Some marginal lands have been abandoned, which should prove beneficial in the long term.

Regardless of population shifts, mechanized and traditional farmers in the rainfed subsector will continue to account for virtually all private sector agriculture in Sudan. Both cultivation methods have their limitations, but private farmers have shown a responsiveness to changing incentives that the public irrigated schemes have not permitted. Most irrigated schemes, except small private pump operations on the Nile, dictate each farmer's acreage and how much will be planted to each crop. Crop allocations typically do not change to reflect changing international and domestic prices or technology improvements that affect relative crop profitability. Input prices receive an implicit foreign exchange subsidy that often leads to their inefficient use or resale on the black market. The public marketing board for cotton, the major cash crop, further isolates cotton farmers from international prices. Given such a distorted incentive structure, it is to be expected that farmers will participate in non-official markets.

The government's lack of resources to finance the irrigated schemes' heavy foreign exchange component lends additional support to a private sector, rainfed focus. By 1985 the GOS had accumulated a debt estimated at \$10 billion with annual debt service obligations almost equalling export earnings. Increased assistance to irrigated agriculture implies further dependence on a steady flow of foreign exchange for fertilizer, pesticides, fuel and spare parts to keep the irrigated schemes functioning. This level of capital investment per feddan does not reflect the scarcity of capital versus labor in the Sudanese economy. Moreover, the schemes' heavy dependence on imported inputs, diverts scarce foreign exchange to the public sector, causing an inefficient market allocation of hard currency that squeezes the dollar supply available to the private sector.

Given the economic distortions in the irrigated sector, selected investments in rainfed agriculture will generate higher net foreign exchange earnings than equal investments in the irrigated schemes. The World Bank concluded in November 1983 that Sudan has a clear comparative advantage in producing nearly all crops for export and that most crops grown under rainfed conditions, particularly sorghum, show a higher comparative advantage than their counterparts grown on irrigated land. A USAID analysis of Sudan's exchange rate conversion formula for exports, completed in October 1984, reconfirmed the Bank's conclusions on both the general competitiveness of Sudan's export crops (at a LS 2.2/\$1.00 exchange rate) and mechanized rainfed sorghum's edge over its irrigated counterpart. It also showed that irrigated cotton generates the least foreign exchange, per unit of foreign exchange invested in traded inputs, of all of Sudan's major agricultural exports.

If such potential exists for rainfed cultivation, what types of initiatives are most appropriate? Continued policy dialogue, as already indicated, is critical until the market plays a greater allocative role in the economy. Our initial capital investments in the west are laying a technical and infrastructural base to complement policy reforms. The Western Agricultural Marketing Road from Kosti to El Obeid will give the west its first reliable transport link to domestic and international markets. Research under the Western Sudan Agricultural Research Project is targeted towards increasing crop and livestock productivity. Improved yields will give farmers and nomads greater flexibility to respond to market incentives.

Our newest initiatives, including this Title III program, will extend the market's reach into isolated areas and continue to complement incentives with regional and village-based activities. The Kordofan Rainfed Agriculture Project, authorized in 1985, addresses three interrelated, agricultural problems: farm-to-market transport, access to crop storage, and seasonal cash flow constraints. The feeder roads and storage facilities extend a marketing and transport network to Kordofan. Roads link production areas to transportation arteries. Storage sites provide a holding point between producer and consumers, allowing higher marketing profits from seasonal price increases. The third component, credit, gives farmers the financial flexibility to store their crops. Of the project's \$50 million budget, \$32 million is in local currency to be financed largely through Title III generations.

Even with their regional focus, all of these activities remain one step above the village and producer: they alter the structure of incentives but are not local initiatives. To fill this gap, USAID and the GOS will use Title III local currencies to finance a series of "bottom up" sub-projects, as part of the Regional Finance and Planning Project, in which beneficiaries rather than government are the major catalysts. Private Voluntary Organizations will be used to channel funds to the local level and to assist communities with project design and implementation. The emphasis is on revenue raising activities (nurseries, fuelwood) and supporting rural infrastructure on a village basis (water yard rehabilitation, water catchments, pilot tube well irrigation) within a range of geologically and environmentally sound interventions. Such local currency programming is discussed in detail in Section V.

The rainfed sector gives a geographic and substantive focus to Title III. As in the overall Mission program, local currency projects are targeted on the west. They also address the need for immediate drought rehabilitation. Users and beneficiaries of local currency are private entrepreneurs or community groups capable of responding to incentives. The private sector's prevalence in the rainfed sector gives meaning to policy reforms that presuppose a producer responsiveness not evident in Sudan's public sector. Although numerous market distortions must still be addressed through self-help measures, the means of production give a realistic chance to foster a market economy, linked to international prices, that engenders efficiency and productivity.

F. Rationale for Title III

Title III initiated USAID/Sudan's efforts in policy reform and introduced the concepts of allocative efficiency and private sector initiative into our dialogue with the GOS. The results include import parity bread prices, export parity prices for domestic wheat producers, higher floor prices for gum arabic and oilseed producers, and a first attempt at privatizing wheat procurement and distribution. However, as the foreign exchange rate continues to deteriorate, additional and probably frequent adjustments in producer prices and the export exchange rate will be required if previously eradicated subsidies are not to reemerge. This, of course, points to the need for

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institutional or market mechanisms for such changes that will avoid the necessity for gruelling and painful decisions by policy makers.

Our policy dialogue's extension into decentralization and the rainfed sector, as well as the need to institutionalize policy reform, make continuation of Title III critical to USAID's overall program. Continuing reforms and economic rehabilitation will require many tools and vehicles of assistance. Many donors will have to participate and their efforts must be coordinated. From the U.S. perspective, Title III is not a panacea for stabilization or economic restructuring, but it is the best instrument we have for a long-term impact on both policy and project issues in the agricultural sector.

The role of Title III is best seen if we examine various types of policy reform and distinguish among the potential roles for U.S. assistance. The macroeconomy will continue out of balance for at least the next ten years and will require consistent adjustment. For most monetary issues the IMF has the lead role in policy dialogue and stabilization. In Sudan, AID has supplemented this role with its ESF programs: Commodity Imports and the Petroleum Initiative. As with PL 480, the short-term impact of ESF is balance of payments support, except that commodities are generally production rather than consumer-oriented. Its long-term importance is its leverage for policy reform. By virtue of the annual nature of ESF programs, these reforms have been incremental. For many issues, such incrementalism may be most appropriate in Sudan given the volatility of the macroeconomy, the uncertainty inherent in policy change, and ESF goals and funding levels.

Our project assistance allows us to address basic factors of production and marketing: agricultural technology, roads, storage and water. By influencing physical production capability, each of these factors affects producer incentives. Most importantly, an improved physical environment alters production possibilities and the implications for financial remuneration.

Two areas remain unaddressed that are the domain of Title III. The first is between the macroeconomy and the agricultural producer. Linking the two are resource policies, marketing networks and tax regimes that have a direct impact on producer profits (the motivating factor for production) and government revenues (critical to finance essential services and project activities). Obviously, streamlining taxes may benefit producers but reduce government revenues and vice versa. Reforms in these areas often require long-term analysis and are best suited to step-wise changes that dismantle complicated structures and allow more efficient mechanisms or market forces to replace them. Although not as fundamental to the economy as, say, a devaluation, new marketing policies for commodities such as wheat or gum arabic may be subtler and more complex. One time actions through CIPs or Title I may not be appropriate since some changes, if left on their own, could simply transfer government corporations or allocation systems into private monopolies. Whenever possible we should assure, right from the start, that institutional mechanisms are available or can be created to get where we want to go.

The second unaddressed area is support for local institutions, organizations and villages which utilize the outputs of our project activities and which must serve as catalysts in drought rehabilitation. For the most part, these groups constitute the local private sector and are the targets of our decentralization policies. Once provided with a basic infrastructure and technology base, their requirements can usually be met with local currency. The needs, however, are long-term. The drought has extended the period of required assistance, as well as the urgency, for village nurseries, water and range management, and energy plantations. When the geographic breadth of need is considered, even within the west, the financial and time requirements are staggering.

IV. Policy Agenda

A. Sources of Growth

The fundamental objective of any development program is to stimulate the sources of growth within the economy. In Sudan, an obvious target is the agricultural sector since it accounts for most exports and has linkages to transport and manufacturing. Figure I on the following page illustrates the repercussions of previous investment policies in agriculture focused solely on the irrigated subsector. The diagram traces linkages from the macroeconomy to producer incentives. Although it oversimplifies the complexities in macro/micro relationships, it illustrates several important points: a) cumulatively, public investments in a poor policy environment have had a negative impact on the economy; b) drought erased, for three years, the rainfed subsector's mitigating effect on economic deterioration; and c) critical areas for policy reform should be determined in light of these and other dynamic effects.

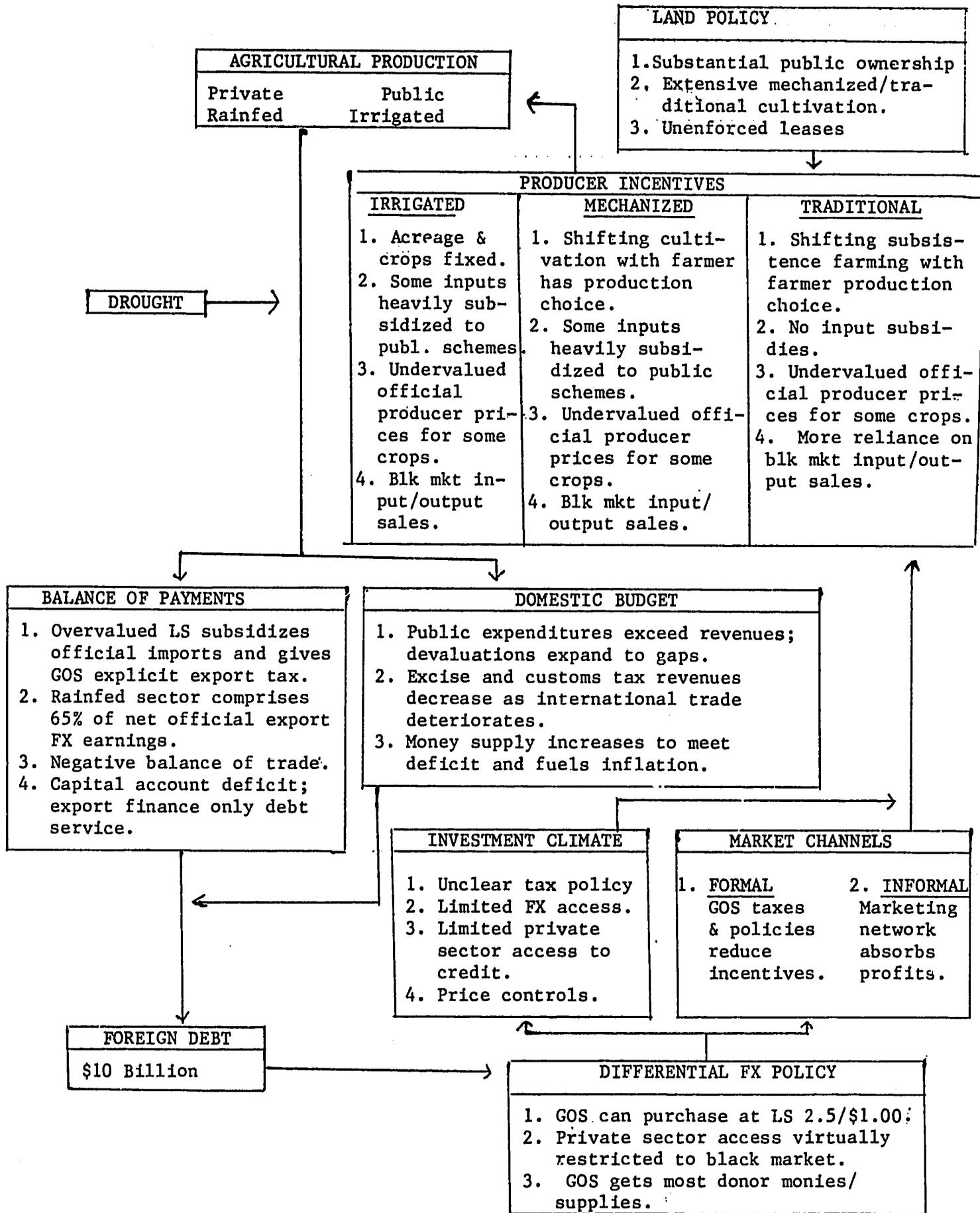
For planning purposes, the latter point is most important and can be expanded into three criteria for focusing our policy dialogue. First, policy targets should be focused, timed and able to be tracked in relative isolation from other economic variables. For example, currency devaluation is a more effective and practical target for reform than is closing the trade deficit. Second, policy reforms should target issues that are necessary and sufficient to encourage other changes rather than those which are contributory but peripheral to real reform. Issues affecting the investment climate provide good examples. While various factors such as clear official explanations of the tax code may encourage investment, no issue would boost investor confidence faster than rationalization of exchange rate policy. Lastly, reform measures should also encompass sectoral policies, such as crop-specific market and tax structures, that allow macroeconomic policy changes to influence producers. Otherwise, macroeconomic reforms will not affect production in the desired fashion.

Based on these criteria USAID has identified five broad areas of reform that should remain in the forefront of economic policy dialogue with the GOS. Most fundamental of the five are 1) rationalization of exchange rate policy and 2) budgetary reforms that put public expenditures and revenues within the means of GOS resources. Together these measures will improve the investment climate, and over the long-term both are preconditions to increasing the economy's productive capacity and reducing the \$10 billion debt. Realistically, they are also beyond the scope of Title III. Exchange rate policies have entered CIP negotiations and are often an ongoing dimension of policy dialogue with the GOS. In most countries they are also issues under IMF purview, although AID's resident economic capability has allowed us to contribute to macroeconomic policy reform in the Sudan.

The remaining three areas, land and water use policies, local fiscal authority and agricultural marketing channels are viable reform topics under Title III and can be further disaggregated into five subtopics, discussed throughout this section. They form the core of the Title III agricultural reform agenda.

FIGURE I

Repercussions of Investment Policy



The first involves problems with formal marketing channels that are specific to individual crops and commodities. In cases such as gum arabic, production disincentives are well documented and can be readily addressed through self-help measures. Other crops may require a more comprehensive process of analysis and incremental reform. Informal market channels can also absorb large percentages of crop revenues when producers have little financial leverage to exercise control over marketing decisions. In this regard, two additional areas of reform are agricultural credit and transport, basic components of the marketing system that affect producer incentives.

A more direct incentive from the production side, and the fourth reform issue, is land and water use policy. Public or unrecorded land ownership and minimal land charges, if any, encourage extensive, unplanned and sometimes inappropriate mechanized cultivation that spreads deforestation and leads to quickly declining yields and loss of soil fertility. Location of water points is usually the critical factor in where people settle and, hence, the long-term productivity of the land. The fifth reform area, local initiative and finance, relates directly to the upkeep and development of land, water and other resources, as well as to development of market linkages that will promote self-sustaining growth. In recent years, both regional governments and officials of smaller administrative units have been hard pressed to find legitimate sources of revenue and skill for ongoing provision of public services. Given the size and diversity of Sudan, the necessary reliance on central government resources (or none at all) has hindered targeted development efforts.

The reform elements of this program contribute in a coordinated fashion to alleviating some of these problems. As such, it is designed to stimulate rainfed production directly, as well as clear the way for incentive signals from any forthcoming macroeconomic reforms. The remainder of this section discusses each of the proposed reform areas in greater detail. It closes with an overview of the implementation framework for specific policy measures, including a proposed implementation schedule. These reforms are presented in the form of self-help measures, as would be required for Annex B of the Title III agreement, in Annex 4 to this document.

B. Market Channels and Tax Distortions

Pricing reforms are always predicated on stimulating a producer or consumer response. For export commodities, taxes and poor marketing channels (in addition to the exchange rate) mitigate producer responsiveness by affecting how prices are translated from port to the farmgate. In Sudan, most agricultural commodities are potential exports and could thus be affected. Even sorghum was a significant export before the drought. Critical cash commodities in the rainfed sector are sorghum, gum arabic, groundnuts, sesame and livestock.

Gum arabic marketing is a good (although possibly extreme) example of tax distortions and production disincentives created by government marketing channels. In the past two years production dropped from the 30,000 MT range to 25,000 MT in 1983/84 and to approximately 13,000 MT in 1984/85. While environmental conditions were a factor in 1985, low producer prices have been an underlying cause of the production decline. Gum and cotton were the only two crops excluded from the 75/25 export exchange rate reform described earlier.* In 1985 a farmer could earn up to four times more per feddan from charcoal production than from collecting gum; it took three years of tapping a gum tree to equal the income from using the tree for charcoal. Because of high water and food prices during the drought, farmers bypassed long-term remuneration for immediate income that could make the critical difference in surviving another year. Under such conditions, the environmental implications of using gum-producing acacia for firewood were lost on producers.

Low producer prices and continued production declines could, in the long term, collapse Sudan's role in the international gum market. World demand has remained stable at around 40,000 MT, of which Sudan traditionally supplied 80 percent. In 1983/84 Sudan sold 41,000 MT and virtually captured the entire world market by depleting its stocks to 4,000 MT. This year's production figure is estimated at 13,000 MT. GAC's 1984/85 exports were about 17,000 MT, and stocks were severely, if not completely depleted. Unless Sudan's supplies become more reliable, gum consumers will switch to other producer countries (e.g., Nigeria, Senegal, Ivory Coast, Mali) or permanently switch to lower-cost and more reliable substitutes such as maize starch and synthetics. Major changes in producer incentives were obviously necessary for the 1984/85 season. The GOS announced increases in gum producer prices of over 80% in late fall 1985. It is too soon to tell the effects, on the 1985/86 harvest, but clearly the price incentive to the supplier is now much improved.

We intend to see real gum arabic producer prices maintained at levels needed to stimulate production. Given Sudan's annual inflation levels, the marketing system itself will need added efficiency. The necessity, as well as the requirement, that Sudan's gum be competitively

* The previous government agreed that this position would hold only for the 1984/85 crop and, starting in 1985/86, cotton and gum arabic would follow suit.

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marketed internationally, will be aided by Title III policy measures. A program of self-help measures and collaborative studies with the GOS, for gum arabic and other rainfed products, has been outlined to strengthen the linkages between economic reform and producer incentives.

C. Informal Markets and Agricultural Credit

For most small-scale producers in western Sudan, cash requirements usually determine when they sell their crops. Usually it is at harvest when they need money, not when prices are highest 4 to 6 months later. The resulting profits to the marketing system obstruct both price and income incentives for production.

Throughout large portions of western Sudan, as in much of Africa, producers find themselves locked into an informal credit and marketing structure called the "sheil system". Merchants supply cash and food needs before cultivation in return for in-kind repayment at harvest. For "sheiled" crops, the farmers' price and quantities sold are determined either before or after planting, but always before harvest. (The merchant earns two sources of profit: from interest on the loan itself and later from reselling the commodities at a higher price after peak harvest supplies thin out.) Since the marketing system captures a large percentage of agricultural profits, part of the production impact of price increases is lost to merchant and trader profits. Year-to-year, farmers will still adjust acreage and commodities according to price expectations, though adjustments are restrained by marketing system profit shares. Yet within a crop year they have little financial flexibility to hold onto crops for maximum prices.

The Agricultural Bank of Sudan (ABS) has responded to the sheil system by providing production and marketing credit to traditional farmers through cooperatives or farmers unions. The credit has two effects. First, it competes with the sheil system and drives down overall interest rates in rural areas, even though it cannot completely supplant all rural cash requirements. Secondly, formal credit reduces the size of the sheil loan and gives farmers control over a larger share of their crops. Thus far, farmers have responded positively. When credit has been offered in northern Kordofan, cooperatives grouped faster than they could be registered and demand exceeded the volume of loanable funds. Functioning cooperatives in these areas have grown sufficiently sophisticated and shown enough interest to request ABS financing for other productive activities such as village water supplies.

The policy constraint in extending agricultural credit is not so much GOS willingness but the financial viability of credit systems in Sudan. Repayment rates for small farmer projects exceeded 90 percent until the current drought but have dropped to 70 percent in recent years. Overall repayment rates on ABS credit have averaged 80 to 85 percent, which is not unusual in Africa. Interest rates have been another distorted or undervalued macro price in the economy. Until 1985 they were limited by decree to 14 percent when national inflation rates were 40 percent and more. The advent of Islamic banking in Sudan added some flexibility since the principle of cost recovery through "service fees" for capital and operational costs is well established. But the financial viability of the system is still uncertain. Assuming a minimal 14

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percent interest rate, an 80 percent repayment rate on ABS loans, and a 10 percent discount rate, the real value of funds, after adjusting for rural inflation* decreases 50 percent every three years. Islamic banks do not appear to suffer such severe capital depreciation.

Policy reform on agricultural credit will be a two-step process involving reform measures and collaborative analysis with the GOS. As a starting point, the ABS could begin by raising its service fees to approximate the old commercial bank interest rate of 21.5 percent. The form of other self-help measures must await additional analysis on a series of complex questions: Should agricultural credit fees cover national inflation costs or do agricultural objectives justify matching only increasing rural production costs? Although fees should cover defaults, to what extent can the Sudanese economy afford to establish reserve funds that compensate for drought-induced default? Can service fees be tailored to match individual project activities, or should they be universal for all agricultural credit? Should savings windows also be incorporated into ABS and other commercial bank activities? What should be the role of development banks in providing agricultural credit? How can credit efficiently be provided to small farmers?

Resolution of these issues will help structure additional reform measures during the life of the program. Foreign exchange costs on studies may be financed through either the Agricultural Planning and Statistics Project (or done by the project itself), the Policy Analysis and Implementation Program, or possibly the Africa Bureau's Private Enterprise Fund.

D. Marketing and Transportation

Another aspect of the marketing system that affects farmer prices and income is the availability and cost of transportation. Throughout western Sudan road traffic moves on a series of non-permanent tracks created over the years by trucks. In Kordofan Region, an area the size of California, there is one paved road about 180 kilometers long and a 100 kilometer all-weather gravel road. There is only a slightly longer paved road from Nyala to Zalingei in Darfur, the westernmost region. The rough roads and, hence, slow travel have meant high transit costs to compensate for time, vehicle maintenance and repairs and fuel. These costs cut directly into farmers' returns on crops. They also take away from real income since farmers must in turn pay high prices for tea, sugar and other commodities brought to their villages. Between depressed farmgate prices and the prices of consumer goods rising faster than the value of farm outputs (not to mention the drought's severe impacts), the terms of trade between rural and urban areas have sharply turned against the producer in the rainfed sector.

Restricted access to production areas also contributes to pushing agricultural profits into the marketing sector. Most merchants

* The rural inflation rate for agricultural inputs, particularly labor, is taken as 35% rather than the national rate of 70%.

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from major market towns have little interest in confronting the direct transportation costs and difficulties inherent in rural travel. As a result, farmers usually deal with a single village merchant who then either goes directly to larger markets or negotiates with the few merchants who venture out. Improved transit and accessibility would give farmers the opportunity to get closer to the final point of sale, either by going to major markets directly or having an increased number of merchants pass through their villages. The fewer middle points, the less that filters out in the marketing process through multiple trading activities.

Road construction is already a major component of the USAID program. The Western Agricultural Marketing Road Project will construct an all-weather road from Kostî on the White Nile to El Obeid, the principal market center in Kordofan. From Kostî, road and rail transit connect the west with Khartoum and Port Sudan. The Kordofan Rainfed Agriculture Project will build feeder roads that connect the Kostî-El Obeid road with the region's central production belt. All construction and engineering work will be done by private Sudanese engineers and contractors, with some expatriate assistance. The newly trained contractors and engineers should, by the end of the project, be able to carry out similar civil works projects without foreign help. Such activities are clearly opportunities for local currency financing.

The critical unresolved policy issue with roads is their maintenance. Until recently, road maintenance was not a serious concern since most of the Sudanese modern road infrastructure was completed in the mid to late 1970s. With the dry climate, road life is extended. Yet by now most major roads have been so overused that they have begun to deteriorate. Transport of emergency food relief from Port Sudan has further stressed the only road to the port, exacerbating the lack of maintenance. In 1983/84 Roads and Bridges Public Corporation (RBPC) requested approximately LS 28 million from the Ministry of Finance and Economic Planning for routine and periodic maintenance, yet received just 11 percent of the request.

The World Bank, with its \$18 million Third Highway Project has taken a lead role among donors on road maintenance. The project will help finance equipment and technical assistance for maintenance and help RBPC establish realistic annual maintenance budgets and identify alternatives for financing maintenance costs. At USAID's suggestion, the Bank has also shown interest in convening annual donor meetings with RBPC and the Ministry of Finance and Economic Planning to review construction and maintenance plans.

Nonetheless, we should not be overly sanguine about the IBRD's impact or a GOS response. The Bank has refused to impose fiscal measures for road maintenance as a condition for its assistance and insists only that MFEP pledge sufficient funds to meet RBPC's budget. Its rationale is that MFEP should retain discretion over fiscal policy and allocate funds according to national priorities rather than project-specific concerns. The practical problem is that once priorities, such as road maintenance, are identified, MFEP does not have the resources to address them adequately. Even after adopting new revenue-raising measures, generated funds usually go into the general budget and do not have the desired impact unless tied to specific activities. MFEP may be genuine in its promises to meet recurrent maintenance costs, but there is a need to inculcate the connection between user fees and provision of services.

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Title III local currencies can provide short-term budgetary relief until such linkages develop and fiscal measures are in place. Opportunities for loan forgiveness on Title III commodities can create the leverage necessary for reform. Usually, recurrent cost issues are shunted until need presses. Offering loan forgiveness for policy reform could bring recurrent cost financing into an immediate context. Neither the World Bank nor USAID need insist on specific financing mechanisms (although technical assistance would be available to analyze options). However, the GOS would receive loan forgiveness for Title III local currency expenditures on transport only by putting such user fee mechanisms in place and meeting predetermined targets for road maintenance funds.

We will review prospective self-help measures with the IBRD Third Highway team, which will mobilize in Sudan in January/February 1986. Adoption of World Bank budgeting methods for road maintenance have been incorporated into our reform measures already. The timing will coincide well with the start of construction on the Western Agricultural Marketing Road in late 1986. KORAG construction will not begin until early 1987.

E. Land and Water Policies

Thus far we have considered production incentives from a marketing perspective, but policies also affect the cost and use of production inputs. In Sudan, two critical factors of production have been land and water. Both are obviously fundamental to agricultural production. When poor rains exacerbate their abuse, it can seriously constrain yields, cultivable acreage and production. For rainfed areas of western Sudan, land use has affected production more than water policy, since even supplemental irrigation with groundwater is insignificant in relation to area planted. But as water systems are being developed, policies on their use and maintenance are important and will clearly affect land use patterns as productivity and land values change.

The impacts of deficient land policy have been straightforward and negative: extensive and shifting cultivation, deforestation, reduced livestock grazing area, and declining yields. Declining land productivity has reinforced tendencies toward extensive cultivation, thereby creating a destructive cycle in which the land's abuse creates perverse short-term incentives to exploit it yet further to maintain or expand total production levels. Mechanized schemes have been the worst culprits of soil degradation, but problems also exist on traditional farm lands particularly in marginal rainfall areas.

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Mechanized schemes, administered by the Mechanized Farming Corporation, lease lands to farmers on 99-year contracts.* Charges are only LS 1 per feddan with no penalty for simply abandoning the lease. Outside of MFC's demarcated schemes, farmers have exploited lands at no cost other than variable inputs. Such loose policies have attracted investments from absentee landlords--merchants, military officers, Sudanese workers abroad--interested in short-term profits but unconcerned with future land productivity. The incentive structure has led them to clear-cut trees, literally mine the soil, and then move to new areas. They do not use fertilizers, plant shelterbelts, intercrop with nitrogen-fixing plants, or (despite official policy) always incorporate an optimal fallow rotation. This land-use pattern started in eastern Sudan. It extended to Habila in Kordofan Region in the west. As sorghum yields have declined at Habila from six to two sacks per feddan, the mechanized schemes have shifted to Talodi and Abyei in southern Kordofan.

Population growth more so than policy creates land pressures in the traditional sector, although gum arabic pricing may be the biggest recent incentive to cutting trees for cash gain. As on the mechanized schemes, virtually no one owns their land. With yields declining, population growing, and few technical improvements sufficiently disseminated to compensate, millet production has expanded northward onto marginal lands in the 150 mm isohyet. In the process of cultivation, farmers have denuded the land--often for short-sighted reasons like reducing crop losses to birds attracted by trees. The deforestation process has been accelerated by livestock held by sedentary farmers since the same marginal areas are continuously grazed while offtake rates have remained low. Those worst affected are women since they cultivate 90 percent of millet fields and must work harder each year to feed their families from increasingly marginal lands.

Reforms on mechanized schemes are more easily conceptualized and implemented than formulating land use policies for traditional agriculture. Initial steps will involve, but not be limited to, land charges, lessee selection, lease terms and their enforcement, and planting shelterbelts. The Mechanized Farming Corporation has already requested USAID's technical help in redressing soil degradation. We will provide an expert from the Bureau of Land Reclamation to assess the situation. The Mission is also finalizing an agreement with the Land Tenure Center at the University of Wisconsin to focus specifically on policy incentives. The GOS has agreed to local currency support for their efforts. These technical and policy inputs, expected to begin in April 1986, will allow us to structure self-help measures for the first tranche of Title III shipments. Policy changes could have their first impact during land preparation for next season in April through June 1986.

* Under the Unregistered Land Act of 1970, most land in Sudan (about 95 percent), was government-owned. The Civil Transactions Act of 1984 repealed the Unregistered Land Act, but many provisions are contradictory and its full impact is unknown. Government organizations in practice still follow the spirit of the Unregistered Land Act.

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The policy objective regarding marginal traditional lands is to reduce population pressure. Specific policy directions are still obscure. It would be hasty to move directly into land titling since administrative capabilities do not exist and the costs may be prohibitive. In the short-term, the most practical policy may be the location of water sites in ecologically viable areas since water affects both human and livestock concentrations.

The existence and use of forest resources clearly affect land productivity, in the medium and long term, throughout the rainfed agricultural area. Included in our policy program will be activities which verify the extent of Sudan's forest cover and determine how forests are being used. In addition, we will assist and encourage the development of environmentally beneficial agro-forestry practices, which also enhance productivity. Shelterbelts will be planted and demonstrated in key areas, and monitored throughout the Title III program duration to determine their effectiveness under farm conditions. Clearly, the elimination of tree cover reduces soil fertility and moisture holding capacity. Our efforts will determine to what extent and how quickly this process is reversible in Sudan.

Our program will also focus on the placement, rehabilitation and management of water resources. Water is at times a binding constraint on development in western Sudan, particularly in the northernmost sections of Darfur and Kordofan. Its availability and use determine where human and livestock populations concentrate, whether fragile environmental zones can be stabilized, and the feasibility of communal forestry and horticultural projects. In the past, boreholes were punched without regard to ecological consequences and at times with inadequate regard for subsurface geology and potential long-run water supply. Wateryards became very prevalent during a "freedom from thirst" campaign in the 1960s, but many have broken down as no provisions were made to finance maintenance. In Darfur over half the 245 wateryards are inoperative and all need repairs. In Kordofan, 80 percent of the 700 wateryards need some repair.

With hindsight, one of the reasons frequently cited for the disappointment of the freedom from thirst campaign was the failure to incorporate local initiative and interest into the program's design and implementation. As a result, water revenues were not collected or did not cover the cost of operations and routine and periodic maintenance. The Regional Administration for Water (RAW), responsible for operation and maintenance of wateryards, hafirs, shallow wells and boreholes with handpumps, is now so short of funds that it lacks spare parts for everything from its vehicle fleet to the diesel engines and pumps it is supposed to maintain. Expensive drilling rigs and earthmoving equipment often lay idle simply for lack of a part one-tenth the value of the machine. RAW workshops, at one time capable of repairing and maintaining virtually all water and transport related equipment, go unused and depreciate annually.

Evolving in place of RAW's maintenance program has been an informal system based on village initiative to keep water sources operating. Villages hire trucks to transport broken engines and pumps to one of the RAW maintenance centers. Maintenance personnel indicate what part needs to be replaced, and the villagers either find it or have it made in the local market. RAW staff are then sometimes hired to accompany villagers back to the water point and install the machinery.

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Suggested self-help measures are designed to reinvigorate local initiative in financing and maintaining water source points, and to formally recognize the informal ways they have already found to do so themselves. Villages will be allowed to set their own water fees, and may establish a paying client relationship with the National Water Corporation for any services it provides toward maintaining the water point. Technical assistance will be available to help establish water user fee systems, and operations and maintenance plans in 50 selected villages. In addition, a framework will be established using environmental assessment requirements to avoid the placement of boreholes in areas where they are insupportable over time. These efforts should result in a far more locally-tailored and self-sufficient water supply system in western Sudan.

F. Local Fiscal Authority and Development Initiative

The attempt at regionalization carried out during the last years of the Nimeiri regime was only the latest of several efforts made to decentralize government responsibility in Sudan. Soon after coming to power in May 1969, Nimeiri committed his government to devolve greater authority to the provinces. This led in 1971 to the Local Government Act, which concentrated local administrative and financial control in 18 newly created provinces. Four levels of local government units were established: village and residential area councils, town and rural councils, people's district councils, and people's provincial executive councils.

The people's provincial executive councils (PPECs) and the subordinate bodies were ostensibly responsible for the provision of all local services, including education, health, agriculture and transportation. In practice, however, the provinces were too small and lacked a sufficient revenue base and other authority to provide needed services effectively. Although provinces were granted certain taxing powers, they still received approximately 75 percent of their revenues from the central government. Their discretionary power over expenditures remained limited.

As part of the agreement ending the civil war in the South in 1972, six southern provinces were grouped together into the Southern Region by the Regional Self-Government Act of the Southern Sudan. In 1980, the Regional Government Act created five new regional governments in the north, each composed of two or more existing provinces. The new regions were headed by governors who were directly responsible to the President, not a central government ministry. At the same time, more authority was also granted to the sub-provincial level of government.

The Regional Government Act of 1980, in theory, gave considerable financial and implementing autonomy to the regions. Regional ministries were set up (with minor variations) for Finance and Economic Affairs (or Planning), Agriculture (including livestock and natural resources), Services (principally health and education), Public Utilities (housing, roads, transport, water and electricity), and Administration and Regional Affairs (local government).

These sweeping changes, however, were never fully implemented due to a lack of funds and to continued interference by the central government in regional affairs. Governors were politically appointed, their survival and resource flows depended on direct and constant intercession by the President. The powerless regional assemblies devoted much of their time to the acquisition of emoluments and sitting fees. Additional impediments to orderly public administration were the regional arms of the State Security Bureau, operating parallel to the police, and the regional and subregional branches of the Sudan Socialist Union (SSU), Sudan's only political party. In this confused and poorly structured situation, administrative arrangements were largely worked out on an ad hoc basis through bargaining.

The overthrow of the Nimeiri regime on April 6, 1985 led to the replacement of the politically appointed regional governors by military governors, seconded by the appointment of military provincial commissioners, and the disbanding of the regional assemblies. Also disbanded were the regional arms of the State Security Bureau and the branches of the Sudan Socialist Union. The change was most apparent in the regional ministries where politically appointed regional ministers and their deputies were all removed, to be replaced by civil service technocrats and administrators.

One of the initial perceptions in the regions was that these changes would release funds to the cash-starved Chapter II (Maintenance/Operating) and Chapter III (Development) Budgets. No funds, however, were forthcoming from the financially strapped central government, and the regional government continued to labor under severe financial, technical and managerial constraints. As in the past, most revenues obtained by the regional governments went to pay the Chapter I (Salaries) Budget.

The Regional Government Act of 1980 remains operable, as does the Local Government Act of 1971, as amended in 1981. Elected local councils, from which district councils are selected, are still largely in place. And civil service staff and commissioners continue to exist at both the local council and district council levels.

Title III program initiatives will help analyze and realize the financial means for local governments to actually begin providing services for which they are responsible. They need to have access to both funds and skills to do so. Local governments are to be allowed to institute and increase taxes and service fees and to retain and control them at the local level. The Title III program can also ensure financing of TA needed to identify these new opportunities for revenue raising and plan their efficient implementation. To ensure timely and adequate service provision, policy measures include allowing individuals and communities to contract directly, as paying clients, with public sector organizations, even central government organizations, for their services. Service providers will be free to determine appropriate rates with the client. Service revenues from such arrangements will not be remitted to the central government, but retained to improve and expand service delivery and to maintain competitive staff salaries. In the course of the program, these measures will be evaluated to determine whether they are achieving desired objectives of local service improvement and self-sufficiency.

G. Implementation Strategy and Schedule

Often times USAID/GOS policy measures and program activities have suffered from the failure to specify clearly where responsibility for implementation lies, failure to draw on available information and technical expertise for efficient implementation, failure to coordinate not only between the two governments, but between different levels of government and between different government agencies, and finally from GOS/USAID failure to provide resources to ensure they have a realistic chance of succeeding. Because of the joint GOS/USAID commitment to achieve the reforms in this program, a Title III Research and Implementation Committee will be created and co-chaired by the Undersecretary of Planning from the Ministry of Finance and Economic Planning and the Associate Director of Economic Policy and Programs, USAID. The Committee will include technical staff from all major GOS economic ministries and all technical divisions of the USAID mission. Subcommittees will be formed as needed to assist with the implementation and evaluation of the Title III program's specific policy measures. To assist with the early constitution of the committee, provision has been made for local currency funding of a standing administrative staff. In addition, we have worked out both the identity of the main implementing agents in the GOS and USAID, and the implementation schedule (shown in the following pages) for 24 suggested policy measures that respond to the issues raised in this section. In fact, some of the policy measures themselves create the authority needed to follow up with additional policy reforms. Finally, we have explicitly made funds available for either Sudanese or American expertise, or both, where it appeared necessary, as well as for operating expenses (in some cases) during initial implementation periods. These details may be found in Annex 4 to this main document.

We believe we have developed a coordinated approach to implementation that will satisfy GOS and USAID needs to be informed so as to better manage these changes. Moreover, it avoids the case of "doing development to people" and includes the active participation of intended beneficiaries. It therefore has strong potential for institutional development far broader than its individually defined objectives. It is an innovative approach, and one which seeks to greatly improve our success at implementing reform by avoiding problems of the past.

Self Help Measure	Year 1												Year 2												Year 3												
	Month	0	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11

10. Announcement of environ. assessment required for boreholes N. of lat. 12 TA avail.



11.a. Policy announcement- villages set own water charges



b. 50 villages identified for TA to do so. All visited and assisted by end year 1



c. Two village water yards run by women



12. GOS study in Kordofan/ Darfur of local revenue-raising measures initiated



13. Policy announcement of community taxation authority extension. TA available



14. Policy announcement: Individual community service contracts



15. Evaluation of services contracts effect on service providing organizations budgets



16. Implementation of public market info sytem. TA available

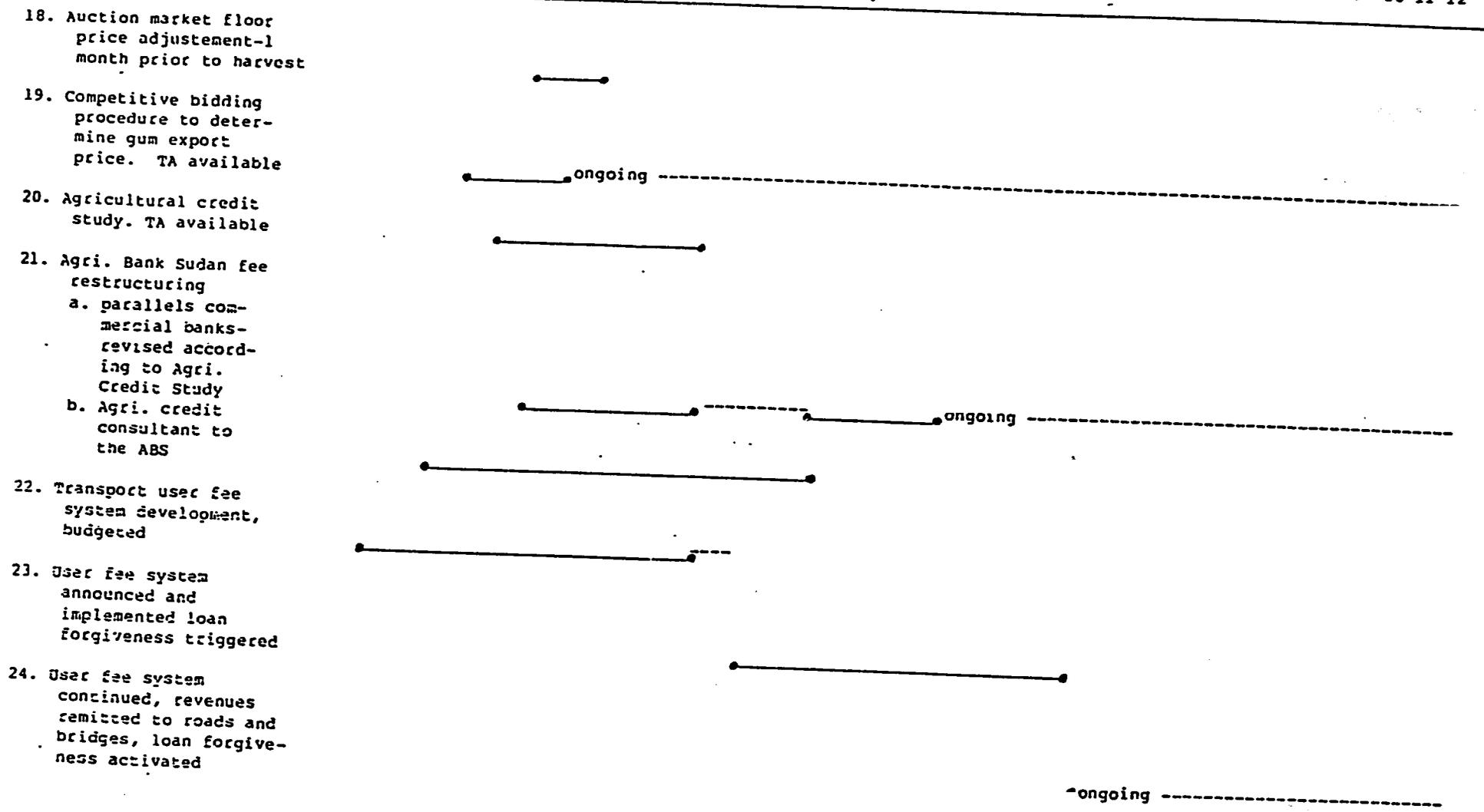


17. Gum arabic price Increase-1986-25% or more



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Self Help Measure Year
 Month 0 1 2 3 4 5 $\frac{1}{6}$ 7 8 9 10 11 12 1 2 3 4 5 $\frac{2}{6}$ 7 8 9 10 11 12 1 2 3 4 5 $\frac{3}{6}$ 7 8 9 10 11 12



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V. Local Currency Program

A. Objectives

Local currency investments made with Title III generations will complement our policy agenda by providing physical and capital resources to facilitate a producer response to improved incentives in the rainfed sector. Specifically, Title III local currencies will:

1. support AID's dollar investments in DA projects intended to develop competitive markets throughout rural areas, and
2. channel resources to local development activities to be initiated and maintained by potential beneficiaries who will incorporate the dynamism of self-interest into local development.

This emphasis on market development and village-level initiatives is the key theme of the Mission's rainfed strategy. It intended to minimize dependence on central and regional government budgets, and thus increase the potential for continuity and maintenance of the projects. In cases where government input is inevitable, such as financing of road maintenance, local currency investments will be coupled with policy measures to introduce user fees and other appropriate fiscal policies. Overall, the emphasis on market development will create interdependencies amongst actors in the rural economy and thus reduce tendencies toward vertical integration that result in unproductive and redundant investments.*

As indicated in the Program Justification (Section III), the Mission's rainfed strategy is focused on western Sudan. Four projects form the core of the strategy and would receive the bulk of all Title III local currencies generated under the program: the Western Agricultural Marketing Road, the Kordofan Rainfed Agricultural Project (KORAG), the Western Sudan Agricultural Research Project (and a possible follow-on activity), and the Regional Finance and Planning Project. In addition, the local currency equivalent of \$1 million would be set aside to finance studies and administrative costs related to implementation of Title III policy reforms. It should be noted that technical assistance is already being provided directly to the Ministry of Agriculture through the Agricultural Planning and Statistics Project.

* For example, many Sudanese businesses will prefer to purchase their own generators to have a secure electricity supply rather than pool their funds to develop a secure public supply at much lower cost.

Put together, the four core projects address the west's needs for infrastructure development, improved technologies, access to rural areas and markets, and resources to finance local initiatives. In 1984, the Western Agricultural Marketing Road was authorized to create an all-weather market link between Kordofan and national and international markets. KORAG, authorized in 1985, is intended to develop the intra-regional marketing and transport network through feeder roads, agricultural storage, and production and marketing credit. Since 1978, WSARP has worked on improving complementary farm technologies; although the project has evolved slowly, some project outputs should soon be ready for commercial use.

As these investments were made, the Regional Finance and Planning Project was to have supported decentralized local development activities that would complement infrastructural and technical developments. The project started through a standard approach of providing technical assistance to regional planning units in the Kordofan and Southern Regions. Due to a number of factors delineated in the Program Justification section on decentralization (Section III D), both resources and technical assistance were mixed in a web of regional bureaucracy. The project is therefore being amended to build on previous experience in order to channel funds directly to the community level in support of local development. Since this is a revised activity currently under review, it is described in greater detail later in this section. Also in this section are brief descriptions of the three other project activities at the core of the rainfed strategy (detailed Project Papers are on file with AFR/PD/EAP in AID/Washington), as well as a summary of the types of studies to be financed with Title III funds. Immediately following is the proposed local currency budget.

B. Local Currency Budget

The following budget summarizes all local currency expenditures planned over the life of the Food For Development Program. Total financing available for any one line activity may vary based upon annual reviews of program activities and subject to exchange of implementation letters between authorized representatives of USAID and the GOS. Once the annual allocation to a project has been approved, modification of budgeted amounts between line items may also be made through an exchange of implementation letters.

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Table 8

Local Currency Budget

<u>Projects</u>	<u>1987</u> <u>(LS)</u>	<u>1988</u> <u>(LS)</u>	<u>1989</u> <u>(LS)</u>	<u>1990</u> <u>(LS)</u>	<u>Total</u> <u>(LS)</u>	<u>\$ U.S.</u> <u>Offset*</u>
(m i l l i o n s)						
1. Western Agricultural Marketing Road	18.0	32.5	30.0	10.3	90.8	27.5
2. KORAG						
a) Feeder Roads	13.0	19.0	22.0	26.0	80.0	24.2
b) Storage	3.5	5.4	1.0	-	9.9	3.0
c) Credit	2.0	2.0	2.0	2.5	8.5	2.6
3. Agricultural Research	5.5	5.5	5.5	5.5	22.0	6.7
4. Regional Finance and Planning	30.0	26.0	10.0	-	66.0	20.0
5. Title III Studies and Support	.7	.8	.85	.95	3.3	1.0
6. Total	72.7	91.2	71.35	45.25	280.5	85.0

* Offset levels are based on the exchange rate of LS 3.3/\$1.00. It is assumed that local currency requirements will change in conjunction with any exchange rate movements that affect the level of generations, thereby allowing the corresponding offset to remain relatively constant.

C. Western Agricultural Marketing Road

Two types of linkages in the transport system are necessary to provide access to markets for selling crops and purchasing inputs:

1. linkages to major urban and international markets to absorb cash crops, livestock and surplus food crops; and,
2. intra-regional transport links between major production and marketing centers.

In the west, transport initiatives have focused on connecting Kordofan with major transportation arteries on the White Nile and then connecting this interregional marketing link to production areas and storage sites.

The Western Agricultural Marketing Road between Kostî and El Obeid is the principal component of the interregional transport strategy. The Kostî-El Obeid road, authorized in 1984, is being cofinanced with the African Development Bank and the Norwegian Government. Total AID funding for the project is \$60 million out of a total foreign exchange cost of \$102 million. The total local currency cost is the equivalent of \$41.5 million, of which Title III will finance \$27.5 million.

El Obeid is the capital of Kordofan Region and serves as an important marketing center for the entire west. Kostî, located 250 kilometers south of Khartoum (336 km by road), is served by all weather roads to Khartoum and Port Sudan. Kostî is also an important port on the White Nile River and is served by the national rail network. Once completed, the 300 kilometer road will provide all-weather transit on a paved surface that will significantly reduce marketing costs. The internal rate of return on the project has been conservatively estimated at 23 percent. The project also provides for developing basic road maintenance capabilities within Kordofan Region that will take into consideration World Bank investments in its Highway Three Project. Financing issues in regard to road maintenance have been outlined in the Policy Agenda (Section IV). The project will be implemented through host country contracts between Roads and Bridges Public Corporation and U.S. engineering and construction firms. De Leuw Cather, International was selected as the consulting engineer through competitive bidding. DCI and RBPC are currently finalizing the bidding documents for the construction contract, which should be executed in Fall 1986.

D. KORAG Feeder Roads

Farm-to-market road improvements under KORAG will bring production areas into contact with the interregional transportation network, thus maximizing the production impact of the Kostî-El Obeid road and other paved roads in the region. Total AID financing for the feeder roads is approximately \$12 million. Title III will finance the local currency cost, which is the equivalent of \$24.2 million. The improved feeder road network, encompassing a 900 square kilometer area in south central Kordofan, also complements other

USAID activities in the region, particularly the distribution of improved seeds and dissemination of new technologies developed through the Western Sudan Agricultural Research Project. With USAID extending its CIP to target agricultural inputs to the regions, improved transportation linkages will become even more important to our overall program's success. Our Petroleum Initiative CIP will provide an important backdrop to our transportation activities by helping secure fuel supplies for rural areas.

The project implementation strategy is to maximize the participation of Sudanese engineers and construction firms. Roads and Bridges Public Corporation and the Kordofan regional government will act as contract managers. To this end, the project design utilizes Sudanese engineering and construction firms with a minimum of expatriate technical assistance. The A&E functions of design and construction supervision will be carried out by a U.S. engineering firm in joint-venture with a Sudanese firm that will provide the predominate number of person months. Construction services will be performed by Sudanese contractors, to be paid entirely in local currency, with assistance and guidance from the expatriate and Sudanese engineers. In consideration of Sudan's fledgling construction industry, construction is scheduled in relatively short segments of 40-50 km over a 30-month period. The schedule is conservative and some contractors may be able to proceed at a faster pace. To allow time to evaluate contractor capabilities and to permit adjustments in the schedule, contracts for various road segments are staggered and potential awards to continue construction are used as performance incentives for contractors already on the job.

As in all road projects in Sudan, maintenance presents a variety of problems. While RBPC is responsible for maintenance of the national road network and regional governments, in theory, maintain local feeder roads, the financial resources of both entities are inadequate. The concern under KORAG is not only for project feeder roads, but also for the connecting road network. There are several factors that should have a beneficial impact on road maintenance in the future: growing GOS realization that road maintenance is a serious problem that must be addressed, the World Bank Third Highway Project for road maintenance is just beginning, and a Kordofan regional maintenance study is scheduled for October 1988 under the Western Agricultural Marketing Road Project. The following provisions have also been made under KORAG for project roads: the construction contractors will be responsible for maintenance on their respective segments during construction and for a maximum of six months afterwards; provisions are made in the KORAG budget to provide funds for maintenance of project roads after the contractor's responsibility ends and until completion of the project; the KORAG budget provides funds to expand the maintenance study under the WAMR project to recommend technical and financial solutions to maintenance on the KORAG roads; the GOS will covenant to meet with USAID, RBPC and the regional government prior to the completion of the project to work out a definite maintenance plan and identify funding for future maintenance of KORAG roads. Meanwhile, USAID is currently exploring with RBPC a plan to maintain the connecting road network from Kadugli to Dubeibat.

E. KORAG: Improved Storage

The KORAG project also provides for the design and construction of seven regionally based warehouses, six of 3,000 MT capacity and one of 6,000 MT capacity. The total foreign exchange cost of storage is \$3 million, with an equivalent local currency cost. Title III will finance the entire local currency budget. The purpose of improved storage is to increase farmers' profits on current production levels. This will be a function of obtaining peak seasonal prices and reducing storage losses (estimated at up to 25 percent annually in Kordofan Region).

The warehouses will be designed and constructed under the auspices of the Agricultural Bank of Sudan. ABS has experience implementing and administering similar projects with donor financing. For all seven warehouses, the ABS will contract with a Sudanese A&E firm for design and construction supervision. Construction will be done by Sudanese firms. ABS's purchasing department will procure the off-shore material and equipment. Except for material procurement, the warehouses will be financed solely with local currency.

Of the seven facilities, ABS will, after construction, own and operate four of the 3,000 MT warehouses under its ongoing storage activities in El Obeid and Dilling and its expanded program in Talodi and Abu Gubeiha. The El Obeid warehouse will serve the traditional sector and the Dilling warehouse will serve the mechanized sector. The Talodi and Abu Gubeiha facilities will store products from both the traditional and mechanized sectors.

In line with USAID's strategy of involving the private sector as much as possible, a pilot sub-project will be implemented to test private sector interest in owning and operating improved grain storage warehouses. If widely adapted, these warehouse improvements will begin introducing price differentials due to quality variation, as well as reduce losses in private sector marketing channels (which handle the majority of food grains and oilseeds). Through discussions with ABS, the El Obeid Chamber of Commerce, and private merchants, a plan was developed to offer three constructed warehouses to private merchants on a variety of lease/purchase options. El Obeid was chosen for the location of the pilot project because it is the major market center for agricultural commodities in Kordofan.

F. KORAG Production and Marketing Credit

Agricultural credit under KORAG will complement the feeder road and storage components by reducing cash flow constraints that mitigate responsiveness to price incentives.* AID will finance a total of about \$3 million in technical assistance and related costs for the credit component. The local equivalent of \$2.6 million will be made available through Title III as a baseline credit fund to the ABS.

* Refer to the discussion on agricultural credit and the shell system in section IV.

Under the credit program farmers will be offered both production loans before planting and inventory loans at harvest. The total value of the loans may equal 70% of the harvest value of their crops. Production loans will give farmers an alternative to informal credit arrangements that require farmers to pledge their crops well before harvest. Without a pre-commitment on crop sales, farmers will be able to take advantage of seasonal price fluctuations. Combining credit with storage facilities enhances the viability of small farmer lending since stored crops constitute repayment of production loans while providing collateral on inventory loans. Loans will be channelled through village-based farmers' cooperatives to minimize the number and cost of transactions.

ABS will administer the credit fund, but other lending mechanisms will be consistently evaluated during the life of the project. Currently ABS has credit and storage programs in western Sudan. KORAG will permit the expansion of the program and provide the technical assistance needed to improve operating procedures and policies and train additional personnel. The first input of technical assistance, to be provided under a PVO cooperative agreement, will be a two-person team to conduct a six-month review of current financial practices and cooperative organization. Their recommendations will form the framework for the credit program and set a scope of work to be implemented by long-term advisors planned for El Obeid, Talodi and Abu Gubeiha.

G. Agricultural Research

In 1978 AID joined with the World Bank and GOS to finance the Western Sudan Agricultural Research Project (WSARP). Total foreign exchange financing is \$42 million, \$26 million of which is contributed by AID. Title III will finance the equivalent of \$6.7 million in local costs.

The project was designed to develop four agricultural research centers in Kordofan and Darfur that would adapt research to traditional farming practices in distinct agro-climatic zones. The research station in Kadugli has been fully operational for four years and the El Obeid research program completed its second year. Construction delays have impeded research in Darfur. Over the past six months the project has had extensive internal reviews, and technical assistance will be limited for the time being to the Kadugli and possibly El Obeid stations. A research base now exists in Kordofan, and project staff have been instructed to focus their experiments on high-impact activities that can be readily extended to farmers.

WSARP represents the first research effort to be undertaken in western Sudan. By necessity, the lack of baseline data from which to start required the project to take a broad view of all possible research options. This approach was reinforced by the project's adherence to farming systems research which, by definition, requires consideration of prevailing social practices, farming techniques, marketing patterns and consumer preferences. The result after four full research seasons in Kadugli and two at El Obeid is a great deal of preliminary findings in many subjects, but few findings that can be considered conclusive.

The initial years of experimentation may have been an inevitable investment. In the coming years the project will concentrate on developing some of the more promising findings such as high-yielding sorghum varieties, short-maturing millet, water conservation techniques, crop responsiveness to fertilizer applications, and supplementary feeding options for livestock. The project will also consider examining the applicability of many research findings to the mechanized sector where farmers may have greater financial flexibility than in the traditional sector to adopt innovations.

Of particular concern to USAID is assuring that research findings be incorporated into standard farming practice and a commercial input distribution system. In this light, the project will be formally evaluated to examine ways to further operationalize research outputs. The evaluation will also consider the proposed expansion to mechanized rainfed agriculture and the viability of narrowing the research approach to a focus on primary commodities, particularly foodgrains. Recommendations, depending on their nature and scope, will be incorporated into either a redesign of WSARP or a new research activity based out of the already constructed facilities. In either case, local currency will be used to support the research program, particularly in facilitating the transition from research to commercial farming and marketing practices.

H. Regional Finance and Planning Project

The Regional Finance and Planning Project was designed to increase GOS capability to plan and implement local development activities. While some project activities showed small-scale success, these accomplishments were restricted by the financial and administrative limitations of the respective regional governments. Local initiative and external resources were never united to promote effective planning and project implementation. Recognizing these failures, the central government, though itself lacking financial resources and administrative skills, has begun to reclaim many regional activities for central management. Yet interest in supporting local initiative and decentralized development is high after the ravages of drought.

The Regional Finance and Planning Project is currently being amended to give the GOS a mechanism to promote local planning and development while maintaining central oversight. The amendment focuses on the local initiative component of the project purpose: "to support a continuing GOS effort to promote decentralized development." Project funds will be channelled through PVOs directly to communities in order to permit project planning to devolve to the level of project implementation where the benefactors make many of their own decisions. The project strategy is to tap the potential dynamism of the Sudanese tradition for self-help. Specific problems to be addressed are: helping potential beneficiaries to identify and plan the projects they wish to support, and capitalizing on their self-interest to operate and maintain these projects while minimizing the drain on government budgets.

If approved, total foreign exchange financing for the revised project would be \$8.3 million. The total local cost would be the equivalent of \$23.6 million, of which this Title III agreement would finance the equivalent of \$20 million. PVOs would receive cooperative agreements, denominated principally in Sudanese pounds, to cover 3-year programs.

1. Philosophy and Approach

Regional development has suffered from projects being conceptualized by central and regional planners without adequate awareness of local needs or use of local resources in project implementation. Whilst this has resulted in ineffective decentralization of public investment and limited progress in community development, there are administrative and capital resources, particularly at the regional level, which can be drawn upon in reconceiving a strategy for local development. Many regional staff have extensive technical training and can provide useful advice and input to complement local priorities and interests. Capital investments have also been made in machine workshops, owned by the National Water Corporation, which at one time were capable of repairing and maintaining vehicles and motors. Most of these workshops are currently unused due to lack of government funds, but can be rehabilitated. At present, virtually all maintenance capability rests with a thriving private sector which, in most major market towns, is capable of basic repairs on diesel and gasoline engines.

These factors must be kept in mind during design and implementation of village-level projects. They suggest, first of all, that a "bottom up" planning process, starting at the village, must be incorporated into the Sudanese concept of decentralization. Similarly, untapped local and private sector resources must be used in project implementation. Secondly, technical specialists at the regional level and in other Sudanese institutions can be used to establish project parameters for technically feasible and productive projects. These parameters may provide a mechanism to mesh expertise from the "top" with planning from the "bottom". Thirdly, community development programs should create a demand for existing public and private sector service capabilities and, to the extent possible, put them in competition with one another. Such competition, with prospects for remuneration, will promote an institutional self-interest to upgrade the quality and reliability of service. Fourthly, to secure institutionalization of service capability, capital investments must be channelled through Sudanese actors rather than Private Voluntary Organizations, contractors or other expatriate groups. Even though foreign advisors can provide critical technical and administrative support, long-term capital resources must remain in Sudan. Development along these principles may necessitate building human and capital infrastructures, but experience shows that the results will not last otherwise.

PVOs will be used as the principal administrative resource to implement the local development program. Four to six PVO's are expected to participate in Kordofan and Darfur. Each PVO will be asked to concentrate on a geographic area with a population of 100,000 -150,000 people. Within this zone it will serve as a managerial and organizational catalyst and provide on-the-job training to village and local leaders so that basic management skills are eventually transferred. The PVOs will help villages with subproject selection, implementation alternatives, and establishing monitoring and accounting systems. At the time PVOs mobilize in the field, USAID and the GOS will provide them with a design manual addressing technical, environmental and economic issues for the principal types of subprojects.

In their programs, PVOs will be encouraged to help villages identify projects oriented toward either community development or private entrepreneurial gain. For community-based projects, the PVOs will help institutionalize financial functions at the village level and monitor technical progress. Rather than performing public works themselves (e.g. rehabilitation of a wateryard), PVOs will help villages establish accounts in local banks which can be then used to contract for services, deposit user fees, purchase spare parts, and support maintenance. For its part, AID will provide CIP funds to the private sector and, when appropriate, grants to the public sector to assure that local institutions and businesses can provide basic services for civil works activities. USAID will also establish regional offices in Kordofan and Darfur, as well as a project office in Khartoum, to liaise with the GOS, private sector and the PVOs.

As PVOs acquire experience in the field, they will also encounter projects suited to individual investment and profit. Possible activities include small diesel pumps for supplementary irrigation, or camel-drawn plows that will reduce labor constraints to expanding cultivation. For such projects, local currency loans will be channelled through the Agricultural Bank of Sudan. PVOs will direct interested individuals to the ABS and should develop a system with the ABS and village leadership to guarantee loans. All credit activities would be subject to the policy conditions discussed in this document.

2. Sample Projects

This section describes the types of subprojects that will be implemented through the local development program. These projects fall into four categories: water resource development, community-based agriculture and forestry, small-scale private sector development, and income-generating projects targeted to women.

a. Water Resource Development

1) Water Yards

The 1960s saw an expansion of publicly financed water supply projects put in place just in time to see the collapse of public finance for the maintenance and managements of public facilities. A well-intentioned but often poorly planned "Freedom from Thirst Campaign" was launched. Bore holes were punched

without regard to ecological consequences and sometimes with little regard to sub-surface geology and potential water supply.* The "Water Yard"*** became the new, visible human element on the landscape of North Kordofan and Darfur, as the water tower and associated "Tank Town" was on America's Western Plains.

The system was simple and worked when there was a will to see it work and a maintenance system of spare parts, mechanics and fuel to supply it. While practices varied, experience indicates the best water yards might have operated in the following manner: clerks sold rolls of tickets; guards protected the yards against non-paying users; water meters allowed the amounts pumped to be compared with tickets sold; local mechanics performed routine maintenance; fuel was purchased on the black market; and preventive maintenance, repairs and parts supply were based upon a contract between villages and either the Rural Water Authority or a private organization.

Under the RFP project, PVOs will help rehabilitate existing wateryards that have fallen into disrepair. It was the collapse of such systems, combined with the drought and deterioration of public finance, which brought much of western Sudan to its acute water crisis. Fences were breached by goats and humans. Taps broke and either wasted water or whole distribution systems were closed off. Spare parts disappeared from the market, and roving maintenance and repair crews failed to show up or do their work. Experience has shown that such maintenance concerns can only be resolved by giving villages a direct management role in their water resources and by capitalizing on their self-interest to keep such projects going. Communities must also agree to limit grazing around the borehole to prevent further concentric degradation around the water point. Unless such land management and financial management/maintenance issues are addressed, the generally unfortunate consequences of the Freedom from Thirst campaign may be repeated.

2) Hafirs

Hafirs are artificially excavated basins in permeable clay, with manmade inlet and outlet facilities, to provide seasonal storage of water, principally for livestock use and sometimes for human consumption. In a normal rainy seasonal, hafirs can store water for several months after the rains. The problems in rehabilitating hafirs or maintaining existing ones are parallel to those of water yard rehabilitation, except that heavy earthmoving equipment is required instead of drilling rigs and machine expertise. As with the wateryards, villages should take a major role in hafir management, particularly to control livestock grazing in order to minimize degradation of adjacent pastures. Priority should be given, in selecting storage sites, to locations where naturally occurring pools could be deepened to increase their holding capacity. Appropriate local materials could be used to cover the hafirs to reduce evaporation and contamination.

* In examining bore hole records, it is possible to see a significant decline in the quality, thoroughness and storage of bore hole information throughout the sixties to late seventies when major intervention ceased.

** Drilled well with iron casing, Edico Pump and Lister Engine, (slow speed, simple, durable and well adapted in themselves), water stand pipes, a fence and a staff of three - mechanic, guard and clerk-ticket taker.

3) Domestic Water Supply

In a number of areas it would be possible to supply domestic water by sinking small tubewells operated by handpumps. These are particularly appropriate where insufficient groundwater exists for irrigation or livestock. Provision of a domestic water supply would permit agricultural activities such as the harvesting of gum arabic in areas which might otherwise be uninhabitable during the dry season.

UNICEF has drilling rigs for sinking small tubewells and has developed an organization which works well with the Rural Water Authority. Their conditions for the sinking of the well, such as the requirement that money be deposited at the time of application and used for training a mechanic and providing tools for maintenance, are well thought out and appropriate. This model could be expanded by either contracting directly with UNICEF or by incorporating the same principles into contracts with local institutions or businesses.

4) Improved Water Infiltration Areas

Reservoirs are built on seasonal creeks and filled with coarse sand, stones or loose rock. The water is stored in the pores of the accumulated bed of sand. This greatly reduces the evaporation losses of water. Water is drawn from the sand dam by a drain pipe or from a well dug into the sand bed near to the dam. The dams are constructed in stages to ensure that only coarse sand and gravel are deposited behind them. Depending on the permeability of the underlying formation, sand dams can be effective in recharging shallow aquifers as well as serving as a source of water for villages.

5) Reduced Evaporation Losses from Open Water Surfaces

Open bodies of water in Northern Kordofan lose over 2 meters of water annually due to evaporation. The El Obeid city reservoirs and Rahad Lake evaporate as much as 6 and 20 million cubic meters of water per year, respectively. Each of these has a mean depth of around 2 meters, when full. Thus, saving one half of the evaporated water would nearly double the water available. Hafirs evaporate at the same rate as reservoirs and lakes, and similar savings could be made by reducing the annual losses of evaporation. Two techniques to curtail evaporation are use of polystyrene rafts floated on reservoirs and compartmented reservoir management. Local materials have been found to substitute successfully for polystyrene rafts, and their financial viability is now being examined. A detailed report on reducing surface evaporation was completed by the University of Arizona in October 1985.

b. Community-Based Agriculture and Forestry Projects

1) Water Spreading

Water spreading is a technique in which flood water is diverted from a stream channel and allowed to flood over an adjacent land surface. It is an ancient method of irrigation that can be improved upon by applying hydrologic principles. The water can be used for crop production and recharging shallow aquifers.

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In many of the wadis throughout Kordofan and Darfur, there are clay soils which retain sufficient water to raise good crops if the water is impounded by embankments and allowed to percolate into the soil. In addition to their agricultural potential, such projects also have the benefit of moving cultivation off sandy goz soils which are shifting due to overcultivation. As sandy soils shift, they cover fertile lands which often have high water tables suitable for supplementary irrigation. In some cases, however, the shift to clay soil cultivation may require tractors to break the soil.

Water spreading and clay soil cultivation projects may involve at least two difficult problems: farmer organization and the management of tractor operations and maintenance. In one example of successful water spreading in Darfur, a single entrepreneur has built his original embankment by paid hand labor and strengthened it in the second year with a bulldozer hired from the Department of Soil Conservation. His soil allowed cultivation by hand rather than by tractor. Where a number of small farmers would cultivate the land behind the embankment, fairly tight organization is required to distribute the land equitably. Near the embankment the water will be slightly deeper, will remain on the land longer, and will retain more moisture than land further back. In addition, the farmers themselves will have to maintain the embankment or collect the funds necessary for maintenance.

2. Village Nurseries and Shelterbelts

Current levels of deforestation are not irreversible if rural populations can be motivated to plant and protect trees. Extensive field interviews by food monitors indicate a strong demand for trees, particularly acacia senegal (gum arabic), and a clear perception of their importance for preventing soil erosion, restoring fertility and thus sustaining agricultural production. A multi-donor forestry sector assessment, undertaken under the auspices of the World Bank in late 1984, concluded that the most cost-effective way to meet this rural demand was through village nurseries.

Village nurseries might have a capacity of 15,000 to 30,000 seedlings, depending on site conditions, water supplies and expected demand. Most nursery construction can be done on a self-help basis. When coupled with an existing wateryard, material inputs for nursery establishment include: a drainage/irrigation system to allow runoff of surplus water from the water yard to be used for raising seedlings (runoff can cover 50 percent of water needs); a low-cost water tank to facilitate nursery watering and provide a short-term supply in case of water pump failure; bricks and cement for seed-bed construction, or bamboo for raised beds; fencing of the nursery site from locally purchased materials; nursery tools; and a thatched hut to serve as a nursery office.

For 5 nurseries established in conjunction with the North Kordofan Rural Water Supply Project, villages provided the above materials and completed all the construction and operational activities at village expense. They requested only seeds, planting bags, training and technical advice. Seedlings are currently sold at a nominal price, but as farm incomes increase after the drought, revenues should exceed the cost of operations and can be invested in other community activities.

3) Village Woodlots

In 1981, Sudan's energy consumption totalled 6 million tons of oil equivalents, of which 82 percent was in the form of fuelwood, charcoal and biomass, and 18 percent was provided by imported oil and hydroelectricity. Field surveys done for the World Bank Forestry Sector Assessment indicated that 21-43 percent of total rural income is spent on energy, with poorer groups spending a larger percentage than more affluent ones.

In earlier years, when the Soil Conservation Department had the resources to remain active, part of the rural demand for fuelwood was met through "village perimeter planting." Village woodlots encompass the same idea, with the objective of meeting a village's energy requirements without random cutting of trees. The village first sets aside land to be protected from animal grazing. It then establishes a nursery following procedures similar to those outlined above. Planting is done on a communal basis or through hired labor, according to the village's preference. The benefits include both production of wood within reasonable walking distance of the village, and prevention of additional environmental degradation in areas nearby. In the best cases, woodlots will produce more wood than is required each year, and villagers will both protect their woodlots and limit animal grazing. While the project appears reasonably simple to implement, there are technical problems in knowing species and area required to achieve the environmental effects desired.

c. Small-Scale Private Sector Development

Part of the role PVOs are expected to play is to draw from their field experiences to identify small-scale projects that small groups or individuals can undertake for profit. The projects should have a productive orientation so that even though individuals may prosper, the general area may benefit from employment opportunities, increased production, lower consumer prices, or labor-saving devices. The following activities are intended to be illustrative. Final decisions on financing will be made with the ABS. General project types will be cleared with USAID's regionally based advisor.

1) Supplementary Irrigation

Along the wadi basins in parts of Kordofan and Darfur, the water table is often high (3 to 5 meters) and easily accessible with hand dug wells. Small water pumps, purchased locally for about LS 3,500, can adequately lift the water and irrigate a five-feddan field to produce three crops a year. In trials in Darfur, farmers have been able to net up to LS 10,000 annually. Pumps can be easily repaid and provide a profit in the first year, even when purchasing diesel on the black market.

2) Drip Irrigation

In cases where groundwater is limited, drip irrigation is an attractive alternative to supplementary irrigation by flooding, even though technically more complicated. With a drip system, both the water conveyance and application are highly controlled, resulting in almost 50 percent reduction in water usage. Pumping costs are reduced accordingly. Water is delivered to

the plants directly, and dissolved fertilizers can be fed via drip outlets. Between row spaces are always dry so that weed growth is minimal and farm operations such as staking, picking and pruning continue uninterrupted.

3) Animal Traction

In Darfur the ABS has provided loans to purchase camels and camel ploughs. Farmers have used the camels to expand acreage cultivated, to transport crops and other commodities, and to provide similar services to others for a rental fee. Revenues from camel and plough rentals alone have allowed borrowers to make their annual payments. Although the profitability of animal traction will decline as the number of animals in an area increases, there is still a wide margin for growth.

4) Farm Implement Manufacture

Camel ploughs in southern Darfur are manufactured locally in a small blacksmith's shop in Nyala. Facilities are crude, but have the advantage of requiring minimal investment. Currently the blacksmith cannot meet local demand. Similar cottage industries should be promoted and, when needed, training should be provided.

5) Solar Evaporation of Brine for Salt Production

In some villages a major economic activity is boiling brine from wells to produce salt. Firewood is used for heat, resulting in the devastation of the tree cover for many kilometers around the village. In these areas, individuals could be financed to shift from wood burning to solar evaporation. This is a known and reasonably cheap process, usually requiring little more than the purchase of some heavy black plastic and a few hours of instruction for the salt producer. The Sudanese climate should be perfect for this process, which should increase the income of the salt producers (though not of the wood gatherers) as well as prevent further devastation of trees.

d. Income-Generating Projects for Women

The present drought has worsened the situation of many women, increasing both their workload and onus of responsibility. It has also exacerbated their need to earn income. Traditionally women's responsibilities have encompassed collecting water and firewood, cultivating millet and sorghum, and providing the family food. As water has become scarcer, they have had to work longer and harder to get it. A similar situation exists with regard to fuelwood and has resulted in further environmental degradation. Male migration, often associated with the drought, has increased the number of female-headed households, with all the additional tasks which that implies. Where men have stayed, traditional eating patterns have worsened the nutritional status of women who, accustomed to eating last and least, now face chronic malnourishment. Consequently, there is a need for women to be helped, and projects can do this by either providing skills training to enable women to seek employment or adequately become self-employed, or by providing mechanisms such as credit and loans to enable them to maximize the return from their labor.

If projects for women are to be genuinely income generating and thus improve the economic status of women, they must afford the potential for women to compete adequately in a free market environment, and to earn equitable income from their labor. Frequently this has not happened in the past, and such programs have reinforced women's marginal position. Women as intended beneficiaries have not been consulted and so their actual needs and wants have not been fully recognized, and hence addressed. The following activities have been proposed with these concerns in mind and are intended to facilitate the participation of women in the mainstream of the rural economy.

- 1) Training in or upgrading of skills. Handicrafts and sewing are only useful if either: a) a level of professional competency can be achieved so that the commodities can be marketed, or b) they are to fulfill basic needs. In all cases there must be some provision after training so that the skills can be adequately utilised (eg. the provision of credit for the purchase of materials, access to necessary machinery, provision of workplace where required, etc.).
- 2) Animal husbandry. As environmental hardship has driven nomads to abandon traditional migratory patterns, responsibility for livestock has shifted from men to women. Such sedentarization can be environmentally beneficial if women are given credit to produce and, more importantly, market livestock more systematically.
- 3) Agricultural labor. Tasks which are performed by women such as weeding and horticulture can be accomplished more quickly and easily by the provision of tools. Yields can be increased if women have credit to buy fertilizer.
- 4) Water projects. Water schemes have both a social and productive function in that adequate water supply can encourage the participation in horticulture and increase the yield from such work. Possible projects include wells, pumps, actual running of the water supply project, responsibility for maintenance, distribution or sale of water, etc.
- 5) Seed banks and research. Access to new and/or improved varieties will allow women to expand their function as producers, to reduce their labor requirements by increasing yields, and to facilitate production of cash crops such as vegetables. Research on seeds and intercropping of varieties should be done with the dominant role of women in traditional agriculture in mind.
- 6) Horticultural production and marketing. Adequate mechanisms for the marketing of produce are generally denied to women.
- 7) Horticultural tool making. Skills could be taught and financing provided through rotating funds to both provide tools to facilitate horticultural production and to sell to other schemes.

- 8) Village bank systems a la the Grameen bank in Bangladesh to provide financing for either small scale productive projects or home improvements. Basic principles which appear to have contributed to its success are the flexibility of loan size, the grouping of creditors into sets of five, the re-cycling of profits and the principle of selling everything at minimal cost but providing nothing free of charge.

Projects such as these have been inaugurated in other parts of the world and have been seen to be effective. Women must be involved in the actual working of the projects, but they must be assisted so that they can gradually take responsibility and understand how to best maximize their potential. Cash earnings would help women gain the economic power to have some control over their environments. Potential welfare-oriented spin offs from reinvestment of profits could improve their quality of life and reduce the burden of care placed upon them.

I. Title III Studies and Support

The equivalent of \$1 million in local currency will be required to implement some of the policy measures identified in the policy agenda and further detailed in Annex 4. Allowable costs would include individual studies required as part of the agreement and related administrative costs. Not all studies specified in the agreement will require Title III financing; the expenditures specified below are only illustrative.

1. Title III Research Committee Staff and Expenses. To coordinate policy studies and disseminate findings, a research committee will be drawn from GOS and USAID staffs. Title III local currencies will finance up to two permanent administrative staff and associated committee expenses.
2. Crop Competitiveness Studies. To help allocate Sudan's scarce resources to their most productive uses and to promote exports to levels consistent with Sudan's potential, a study will be conducted on export competitiveness with follow-up studies on individual crops.
3. Land and Water Policies. To promote efficient use of land and water resources and to curtail the environmental degradation caused by land and water policies, local currency funds will be available to: study incentives and policies affecting land use in the mechanized sector; assess forestry resources; promote shelter-belts in the Habila mechanized scheme; establish guidelines for environmental assessments related to mechanized farming and boreholes; finance planning and technical assistance for village reforestation; and provide technical assistance on shifting management of wateryards to the village level.

4. Support for Local Initiative and Finances. To alleviate regional and local government financial constraints and possibly retain skilled staff in rural areas, funds will be reserved to examine new local level revenue raising measures; facilitate policy changes that allow communities to retain a greater share of the revenues they raise; and evaluate the effectiveness of allowing public sector entities to provide services on a contractual basis that will remunerate participating staff and help replace depreciated equipment.

5. Marketing. To promote increased producer prices through improved marketing efficiency, funds will be available to: publicize international and domestic market prices; finance credit studies focused on agriculture; provide technical assistance on management of credit activities; and develop an annual user fee plan to finance road maintenance.

VI. Program Management and Implementation Responsibilities

A. Implementation Overview

USAID learned a great deal about managing Title III and generated currencies over the five years of the previous Title III agreement. These lessons will be applied in the management of all PL 480 assistance. The principal management concerns are commodity tracking and financial accountability. The management systems put in place to address these concerns are illustrated in Figure II on the following page. The GOS now has experience in utilizing these procedures with both Titles I and III; the remainder of this section describes how they work. Details on implementation and monitoring of Title III policy reforms are described in section IV, the Policy Agenda.

At the outset, it may be helpful to specify the principal actors responsible for program management. Within USAID, the General Development Office (GDO) plays the lead role in tracking PL 480 commodities and local currencies. The office is staffed by five professionals, including one based in Port Sudan with direct access to shipping documents upon their arrival. All financial aspects of the program are closely coordinated with the Controller, who is responsible within USAID for verifying the accuracy of all GOS financial reports. Project managers throughout the Mission also play an important part. Since virtually all Title III local currencies are allocated to DA projects, individual project managers assume responsibility for monitoring the productive use of these funds.

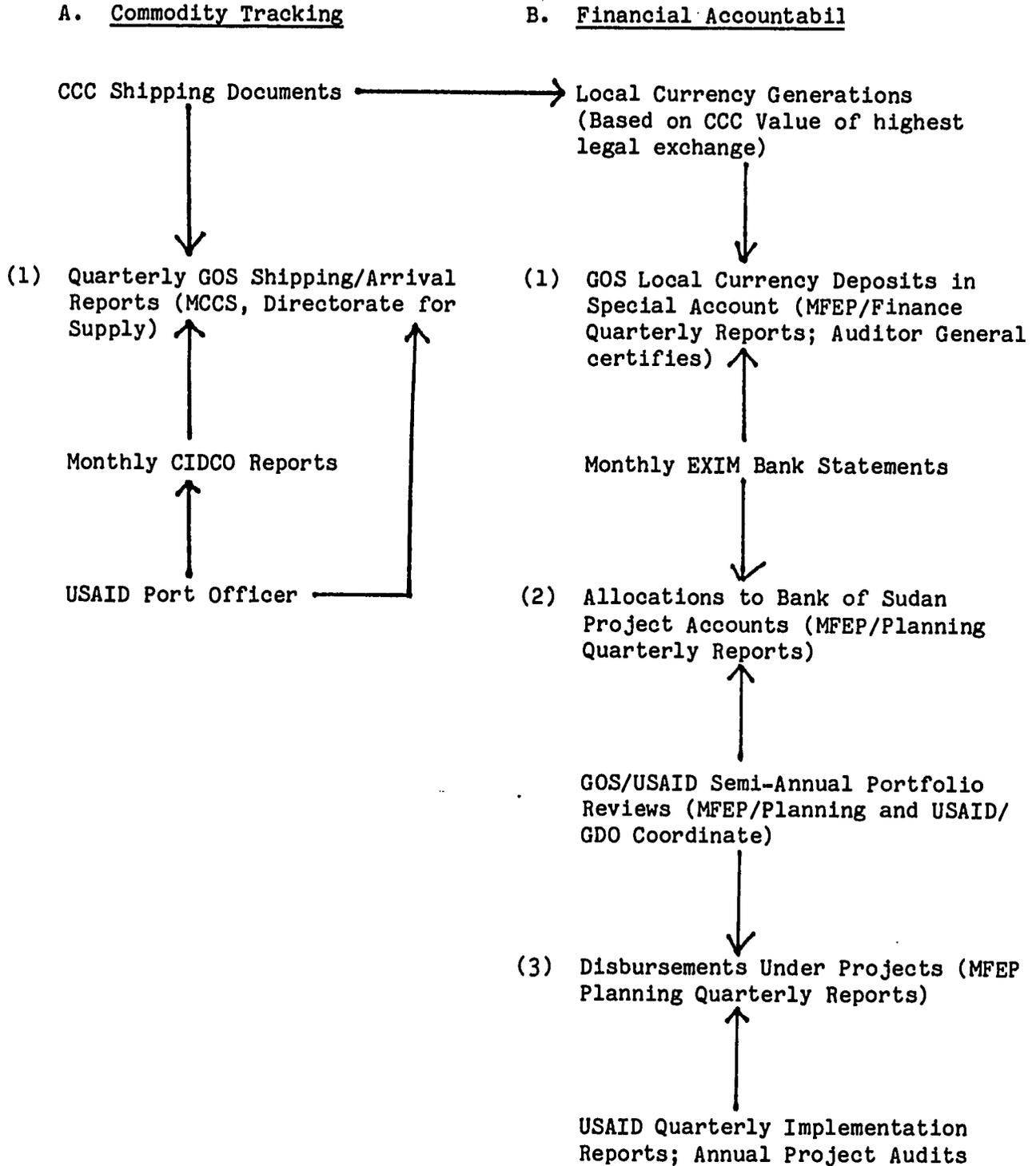
The GOS splits commodity tracking and financial accounting responsibilities between the Ministries of Cooperation, Commerce and Supply (MCCS) and Finance and Economic Planning (MFEP). The split has the advantage of a) inducing the GOS to institute its own mechanisms to assure consistency between the ministries, and b) offering USAID another mechanism to verify the accuracy of GOS reports. Within MCCS, the Directorate for Supply has the principal program responsibilities. Within MFEP, the Finance Department, the Export-Import (EXIM) Bank, and the Undersecretariat for Planning (Loan Section) all play important roles. These functions are described below.

B. Commodity Tracking

The first change from the prior Title III agreement will be the involvement of the private sector in the procurement and marketing of PL 480 wheat and wheat flour. The GOS has agreed that a private consortium of millers, Cereals Investment and Development Company Limited. (CIDCO), will be authorized to procure PL 480 wheat and wheat flour on their behalf. CIDCO is already importing PL 480 commodities under Title I. The Directorate for Supply in MCCS is responsible for making allocations to individual mills. The Finance Department in MFEP arranges the levels and schedules of payments and will provide financing through the EXIM Bank. The GOS provides representation on the CIDCO purchasing team which, along with the Sudanese Embassy in Washington, facilitates procurement. This procurement plan will continue under the Title III agreement until such time as alternative ways of involving the private sector are identified.

Figure II

Program Management Concerns



Current reporting practices under PL 480 programs in Sudan exceed the legislative requirement for annual reports on shipments and arrivals. The GOS submits quarterly reports, prepared by the Directorate for Supply, to USAID. An annual report, based on these quarterly submissions, is submitted by the GOS and USAID to Washington. Each report is double checked against CCC shipping documents and monthly reports from CIDCO. These are all verified through on-site checks by USAID staff at Port Sudan. (See A-I on Fig. II.)

C. Financial Accountability

Concerns over financial accountability cover three issues: 1) GOS certification of local currency deposits; 2) local currency allocations from EXIM Bank to project accounts; and 3) local currency disbursements under agreed upon projects. As illustrated in section B of Figure II, mechanisms have been instituted to double-check GOS reports on each of these items.

1. Local Currency Deposits

Requirements for deposit of currencies in the special account will also differ from the prior agreement, partly as a result of the inclusion of the private sector in purchasing and marketing. Whereas in the previous agreement the GOS had up to six months to deposit proceeds in the special account, under the new agreement deposits will have to be made within 60 days. Deposits will be made at the EXIM Bank based on the local currency equivalent of the CCC disbursement, calculated at the highest legal exchange rate available in Sudan at time of CCC disbursement. Local currency payments are made by CIDCO to the Undersecretary for Finance in MFEP, who deposits the currency in EXIM Bank. The EXIM Bank provides the USAID Controller with monthly bank statements of the account, detailing dates and amounts of deposits, and dates, amounts and details of transfer out of the special account. These statements will be transmitted to USAID no later than the tenth day of each month.

The Finance Department in MFEP submits to USAID the official GOS quarterly reports on deposits, certified by the Auditor General. The reports are verified against CCC shipping documents, which are the basis for how much local currency should be generated, and monthly bank statements from EXIM.

2. Allocation to Project Accounts

As in the past, USAID and the GOS will jointly program the development uses of currencies in the special account. The Planning Undersecretariat, particularly the loan section, of the Ministry of Finance and Economic Planning is delegated the responsibility for this programming as well as the authority to implement programs under the Title III agreement. Such authority will include, but not be limited to, any redelegations needed by Planning to release funds from the special account for agreed-upon purposes.

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Annex B to the Title III agreement (a the draft is provided in Annex 5) will detail annually the agreed-to allocations of currencies from the special account. Upon agreement of MFEP and USAID, funds will be transferred into project accounts in the Bank of Sudan in the name of individual project activities or into the USAID-administered Trust Fund account for project use. Such transfers will trigger offset credit (unless other policy conditions are stipulated). The Undersecretariat for Planning will submit quarterly reports on the status of the special and project accounts, including disbursements for which offset credit is being claimed. The USAID Controller will examine this report and verify it against monthly EXIM Bank statements and through GOS/USAID semi-annual projects reviews. These reviews cover both substantive and financial aspects of the projects being financed. Before the reviews, which are coordinated through USAID's General Development Office, individual project managers identify any concerns that must be addressed. After verification, the USAID Controller will submit an offset report and request to AID/W and USDA.

3. Disbursements From Project Accounts

As part of its program responsibilities, the Undersecretariat for Planning in MFEP will also track disbursements under each project and specify the status in its quarterly report to USAID. Each Planning report is based on submissions from the GOS Project Directors who are counterparts to USAID Project Managers. The submissions include a statement from the Bank of Sudan.

Since all of the Title III projects have DA foreign exchange financing, three checks have been easily institutionalized. The GOS/USAID semi-annual portfolio review, independent USAID quarterly reviews which are conducted for all DA projects, and annual audits which have been incorporated into the implementation schedules and budgets for all DA projects. All auditors must be approved by the Regional Inspector General in Nairobi.

D. Reporting

USAID believes that past difficulties in local currency administration which were highlighted in the 1984 PL 480 audit have been overcome and that future performance can be expected to proceed well. All compliance reports (shipping and arrival, marketing requirements, and publicity) are up to date. All Title III annual reports on progress toward policy and program objectives have been submitted, except for the 1983/84 report which has been delayed due to the exceptional workload in MFEP which has been faced with three new ministers in 10 months, four IMF missions, a new Three Year Public Investment Program, and the drafting of the FY 1986 budget.

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During implementation of a new Title III program, MFEP will submit annual reports on progress achieved under the program, including a comparison of results with projected targets, an accounting for funds generated and their uses, and the outstanding balances at the end of the year. USAID will also submit an annual review of the use of the proceeds and how well the GOS is performing. A major evaluation will be conducted at the mid-point of the Title III program's implementation to evaluate progress in reaching program objectives and to recommend future year mechanisms for providing food imports to Sudan.

GOS Letter of Intent

The following letter is the GOS request for initiating a new Title III program from FY 1986-88. As indicated in the text of the PAAD, GOS support for a Title III program is based on the importance of a multiyear commitment to development of the rainfed agricultural sector.

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The Democratic Republic of the Sudan

MINISTRY OF CO-OPERATION
COMMERCE & SUPPLY

P. O. Box 194, Khartoum, Sudan

Telex No. 329

Under-secretary's Office



التمرة :

التاريخ : ١٩ / ١ / ١٩٨٦

January 15, 1986

Dr. William R. Brown
Director
USAID
Khartoum

Dear Dr. Brown:

Over the past years, the Government of Sudan has been pleased to cooperate with USAID in various PL 480 programs. We view PL 480 as a development tool, with investment and policy dimensions, as well as a form of balance of payments assistance. Given the numerous economic challenges we currently face after three years of drought, there is a critical need for continuing PL 480 commodity support in the coming years. We believe the Title III program proposed for fiscal years 1986-88 should be the centerpiece of any PL 480 assistance.

The multiyear dimension of Title III is particularly attractive because it represents a source of stability and gives us a basis for planning. The program's focus on supporting rainfed agriculture is needed and appropriate. The rainfed sector is traditionally one of the most productive in our economy, and will be the critical determinant of the success of our rehabilitation efforts.

The GOS looks forward to continuing cooperation with USAID on PL 480 activities. We hope this can be done in the context of a multiyear Title III program.

Sincerely,

Omer El Mubark Abu Zeid
Under-Secretary Ministry of
Commerce, Cooperation and Supply

HistoricalSupply and Demand for Wheat, 1980/81-1984/85(Wheat Equivalent - '000 MT)

	1980/81	1981/82	1982/83	1983/84	1984/85
I. Stocks (Carry-In)	-	154.9	-	34.8	-
II. Production	228.0	163.0	150.0	169.0	79.0
III. Imports	<u>476.9</u>	<u>253.5</u>	<u>544.8</u>	<u>435.2</u>	<u>725.9</u>
PL 480	161.3	72.6	303.9	305.1	450.9
Commercial	291.3	135.2	191.8	19.4	191.3 <u>a/</u>
Other Donor	24.3	45.7	49.1	110.7	83.7
IV. Total Supply	704.9	571.4	694.8	639.0	804.9
V. Requirement	550.0	588.0	660.0	759.0 <u>b/</u>	873.0 <u>b/</u>

a/ Two factors explain the unexpectedly high level of commercial imports in 1984/85. First, foregone wheat production on the Gezira due to water shortages increased the need for wheat imports. Second, just prior to the change in government the GOS issued a large number of wheat import licenses which caused a surge in imports, but also helped the government quantify imports for non-bread products which had previously gone untraced.

b/ Demand for wheat increased due to drought-induced reduction in sorghum production.

NOTES TO TABLE 2: Alternative Projections of the Wheat Demand,
Domestic Supply, and Import Requirements in the Sudan,
FY 1984/85 - 1989/90

DEMAND

<u>Scenario</u>	<u>Footnote</u>
#1	<ol style="list-style-type: none">1. USAID/Sudan estimates that one-half of all wheat consumption occurs in Khartoum. Based on census data for 1973 and 1983, Khartoum's population grew at a rate of 5.38 percent whereas the rest of the population grew at a 3.37 percent rate. Using these growth rates as best estimates for the future, overall wheat consumption should grow at a 4.375 percent rate due to population growth and to present observed consumption patterns.2. The base year FY 1985 figure for wheat consumption is biased upwards due to the drought which adversely affected the normal supply of sorghum. If the average wheat consumption prevailing in FY 1983 of 31.0 kg/person continued to hold through FY 1985, the demand for wheat in Sudan in FY 1985 would have been 697,500 MT.
#2	<ol style="list-style-type: none">3. There have been several studies estimating the income elasticity of demand for wheat and the estimates range from 0.311 to 1.1. These are actually expenditure elasticities since the researchers had to base their estimates using total expenditures as a parity for income. From 1981 through the first half of 1985, real per capita income in Sudan declined and if we assume the trend will continue this would imply that expenditures should decline as well. However, expenditures are also influenced by remittance inflows. Since there is no real basis to judge, it will be assumed that remittances will grow by enough to offset any decline in real income so that real expenditures remain constant and will thus have no impact on wheat consumption. One might argue that real income and, therefore, expenditures should increase in the 1985/86 period because of the good harvest due to the ending of the drought. However, that will be offset by a decline in donor relief assistance. Again it is impossible to estimate relative magnitudes so it will be assumed that no real change takes place.

- #3 4. The price elasticity of demand for wheat has been estimated by Dunlop and Metcalf to be about -0.40 (see Table 6, Dunlop and Metcalf, 1983). A study by Siddig Abdel Mageed Salih (May 1985), estimated the price elasticity at -0.56 using cross sectional data for 1984. A third study (Youngblood, et.al., 1982) provided two estimates based on time series and cross sectional data of -0.392, and -0.394. In what follows the price elasticity figure used is -0.40.

The following table shows recent experience with bread prices in Khartoum. In the early period the GOS was committed to the gradual elimination of various cost and foreign exchange rate subsidies which had existed prior to 1985. Shortly before the coup in April 1985, however, bread prices were reduced which has reinstated significant subsidies.

Date	Price/ Loaf	Size of Loaf in gms.	Grms Purchased per pt.	Percentage change
July 1984	15.0 pt.	170	11.33	-
March 1985	18.7 pt.	170	9.09	19.8
Late March 1985 (before Coup)	16.0 pt.	170	10.63	-16.9
April 1985 (after coup)	14.0 pt.	160	10.67	- 0.4

The overall price decrease between July 1984 and the final after coup 1985 price is 5.8%. However, in order to reinstitute import parity bread prices, present prices would have to immediately increase to 20/21 pt. for a 160 gm loaf (33-40% increase). While bread prices will remain at present levels for the near term, for obvious political reasons, it is assumed that upward price adjustments will be made in FY 1987 to bring prices up to import parity. After that, the real price of bread is expected to be constant.

<u>Year</u>	<u>Nominal Assumed Bread Price Increase</u>
1985/86	0.0%
1986/87	40.0%
1987/88	0.0%
1988/89	0.0%
1989/90	0.0%

- #4 5. The only estimate of the cross price elasticity of bread with respect to sorghum is found in Youngblood, et. al (1982) and reported in Dunlop and Metcalf, Table 6 (1983). It was estimated using time series data and presumably using a linear in logarithm functional form. The figure which they estimated was 0.47 and is used in this projection.

The price trend for sorghum is again a difficulty. For example, during the latter half of 1984 the price of dura per sack in El Obeid rose from LS 37.88 in October to over LS 110 in July 1985, a three fold increase. The present crop is good and prices have fallen to under LS 40 per sack.

A reasonable scenario for sorghum prices between FY 1985 and 1990 appears to be as follows:

<u>Year</u>	<u>Price in LS/Sack (1985 LS.)</u>	<u>%Change from Previous Year</u>
FY 1984/85	83 LS/	-
1985/86	36	- 57.0%
1986/87	36	- 0.0%
1987/88	36	- 0.0%
1988/89	36	- 0.0%
1989/90	36	- 0.0%

- #5 6. Consumer acceptance tests have been performed on composite flour for up to 25% sorghum content and it has been found to have positive consumer reaction in Sudan. It will be assumed that a 15 percent sorghum content bread will be the standard and will be adopted according to the following schedule:

<u>Year</u>	<u>Percentage of all Bread Sales with 15% Sorghum Content</u>
1984/85	0
1985/86	5%
1986/87	30%
1987/88	60%
1988/89	100%
1989/90	100%

DOMESTIC PRODUCE

SUPPLY

Scenario

Footnote

- #2 7. This projection is based on FAO production estimates for 1985/86.

	<u>1985/86 Areas</u>	<u>1985/86 Yields</u>
Gezira	260,000 fed	400 kg/fed
Hew Halfa	45,000 fed	595 kg/fed
North	60,000 fed	750 kg/fed
White Nile	45,000 fed	400 kg/fed

- #3 8. A number of field research studies in all four major wheat growing regions have demonstrated the potential of doubling or nearly doubling yields over a five year period if certain production practices are implemented. They are described in the Sudanese Consultations Bureau Report (December 1982). These practices include improved field levelling via disc harrowing, deep plowing, field ditching, pre-watering fields before planting, and mechanizing the sowing and fertilizing to minimize the bunching of seed and fertilizer in some parts of fields relative to other parts. However, to accomplish these changes, considerable capital investments must be made. Thus, given the present economic problems facing the country it is uncertain whether these potential yields will in fact be realized prior to the end of the present planning horizon, FY 1990.

Since there have been upward nominal price adjustments in the domestic producer price of wheat since FY 1984 to help equate it with the international price of wheat, certain production efficiencies as noted above may additionally be forthcoming due to the relative profitability increase for wheat. However, it is unlikely that these price changes alone are sufficient to justify all the above mentioned large capital equipment investments. Some practices, such as ditching and prewatering fields, could be implemented to improve yields. It is assumed that the above changes can increase yields in all major growing aread by 5% per year, or a 20% increase by FY 1990. Thus, yields for each major growing area are expected to increase as follows:

<u>Year</u>	<u>Gezira/ White Nile</u>	<u>New Halfa</u>	<u>North</u>
1985/86	400	595	750
1986/87	420	625	787
1987/88	441	656	827
1988/89	463	689	868
1989/90	486	723	912

9. During the mid 1970's the Sudanese made a serious attempt to expand domestic food production. During the period FY 1975 - 1981, land planted to wheat in Gezira exceeded 300,000 feddans and for three years (FY 1976, 1977 and 1979) exceeded 500,000 feddans. Thus, the historical evidence suggests that with some rearrangements of cropping patterns and general re-assessments of the returns to cotton, increased land for wheat production is possible. This final projection is based on 500,000 feddan maximum with the yield increases defined in Note 8. It is assumed that area increases in New Halfa and the North are not feasible due to water constraints.
10. In previous years the Usual Marketing Requirement (UMR) for wheat has been 180,000 MT, but this is no longer considered realistic given the foreign exchange constraints facing the GOS. Not only did imports outstrip exports by \$1.25 billion in 1985, but the government faces mounting arrears on critical debt that must be paid to release additional donor assistance. Most important is over \$200 million in arrearages to the IMF which are blocking a Stand-By Agreement and could threaten other donor commitments if an agreement is not reached. Under such debt circumstances and continued poor export performance expected in 1986 and 1987, we have revised UMR expectations downwards as shown in tables.

Annex 4

Draft Section of Annex B
To the Title III Agreement

GOS Policy Commitments
Agricultural Sector Growth Program

Given the overwhelming importance of agriculture to the Sudanese economy and the vast unrealized potential of the rainfed agricultural sector in particular, the GOS and USAID agree to a focused effort to identify and remove existing constraints to production. The intent is to create a policy framework which provides incentives for local initiative and gives private producers the flexibility to control their own resources and apply them according to changing domestic and international conditions. Such freedom for localized decision-making is critical to successfully responding to the volatile variables of weather, input prices, international markets and domestic preferences that affect the viability and profitability of the agricultural sector.

Recent years are illustrative of the major exogenous changes that can affect farm-level decisions on what and how much to produce. Both the domestic and international markets of some of Sudan's major agricultural crops have undergone a number of major shifts. Prices of inputs and outputs have fluctuated widely. There has been no trend over the last decade of major efficiency and production gains in the sector. Agricultural export earnings have faltered at times and their sources shifted within the economy. Indeed, in some years drought threatened the very feasibility of production. The GOS can certainly help mitigate the extremity of change, but ultimately individuals and communities must cope with the conditions most profoundly affecting their livelihoods. They are most familiar with the appropriate preventive actions and how to respond to unforeseen circumstances once they occur.

The GOS and USAID are committed to undertaking analyses that will better enable Sudanese decision-makers to implement policies which maximize production incentives and public welfare, and which encourage export growth. USAID wishes to support GOS policy actions to achieve these ends. To undertake these growth-related changes, the GOS agrees that, during the course of the PL 480 Title III program, the specific efforts listed below will be completed.

I. Implementation Framework

The areas of concern related to agricultural growth cut across the responsibilities of several ministries and groups of economic actors. In the interest of a coordinated approach and full dissemination of the findings, and in recognition of the additional workload that achieving our joint objectives may place on staffs of involved ministries, the GOS and USAID have agreed to a specific implementation strategy for matters related to PL 480 Title III Program objectives.

1. A joint GOS-USAID PL 480 Title III Research Committee shall be formed and co-chaired by the Undersecretary of Planning from the Ministry of Finance and Economic Planning and the Associate Director for Economic Policy and Program. The standing committee shall include GOS technical representatives from the Ministry of Finance and Economic Planning, and all other major economic ministries. USAID membership will be drawn from the various technical offices as well as the Economic Policy and Program, and Project Offices. Should an administrative staff be required, up to 2 persons shall be financed from PL 480 Title III generations. (The Committee's GOS members shall not be prohibited from reviewing other donors' work in the agricultural sector.)

2. The GOS agrees to undertake specific analyses through the Research Committee which will be used as input into self-help measures for the second and the third years of this PL 480 Title III agreement. Given GOS and USAID staff time limitations, the GOS agrees that Sudanese and U.S. consultants will provide the bulk of the analytical work. USAID will finance the foreign exchange costs of the studies through its Policy Analysis and Implementation Project, and the local currency costs will come from Title III grain sales proceeds.

3. The specific studies which follow will be discussed in policy reviews at least one month prior to the signing of each subagreement under this program, and shall be incorporated into the self-help measures in the subagreement most closely following each study's completion. The findings of each study shall be printed in full, in English and Arabic, in a final version mutually agreed upon by USAID and the GOS and made publically available.

II. Production Incentives in the Rainfed Sector

Due to changes over time in the input and sales markets for Sudan's agricultural produce, the GOS and USAID agree there is a need to institute new practices and gather new information. These shall aim at increasing productivity, and thus generating employment and income. Our mutual focus shall be on finding mechanisms which best allocate Sudan's scarce resources to their most productive uses, and which promote exports to levels consistent with Sudan's potential. To do so the GOS and USAID shall carry out the following specific efforts.

4. Both the GOS and USAID recognize the clear need to understand the basic structure of supply and demand for all major Sudanese exports. Such information improves GOS ability to make policy decisions that encourage beneficial export production patterns. In the course of this Title III program the GOS and USAID agree that an overall export promotion study must be conducted including each of Sudan's current major agricultural exports from the rainfed sector: sesame, groundnuts, gum arabic, sorghum, and livestock. The program studies are intended to determine the economic trade-offs over time among various production patterns involving these crops. The level of work required necessitates a phased approach.

- (a) As a foundation for all the in-depth individual export studies, the GOS and USAID will undertake a basic export competitiveness study. Its aim will be to measure relative marginal returns for each crop, having considered the full cost of all inputs and the full value of all output. It will serve as a preliminary guide for policy actions related to resource allocation in years two and three, and will provide a focus for the individual studies.
- (b) In addition to the general competitiveness study, two crops, sorghum and gum arabic, will be examined in depth during the first 12 months. Sudan faces the greatest challenge, and stands to gain the most by improving the efficiency of production and marketing of these two crops in the short-run. We agree there is an urgent need to do so given the competition these products face internationally. These studies shall examine Sudan's comparative advantage for each assuming alternative marketing margins, technologies and exchange rates. They will detail the current domestic production, marketing, transport and (where applicable) processing system. Farm-level interviews to cross-check expected patterns will be included. The precise constraints to production and sales expansion will be identified and recommendations made for their alleviation.

Main Implementing Agents: GOS - Min. of Agric/ Min. of Fin.,
USAID-Agriculture Office/EPP

III. Land and Water Use Policies

The GOS and USAID agree that it is necessary to formulate appropriate policies to ensure making the best use of these scarce and depletable resources. Particularly in traditional farming areas, land and water policies are intimately related since the availability of water determines how individuals and communities use their land. In that regard, the following specific measures shall be taken.

5. Within 10 months of the signing of this agreement the GOS and USAID will have completed a collaborative study of the present incentives and policies affecting land use in the mechanized agricultural sector. The study will contain recommendations for policy changes or improved implementation. Measures to be analyzed shall include, but not be limited to, land charges, leasee selection, lease terms, shelterbelt planting requirements, and the enforcement thereof.

Main Implementing Agents: GOS-Min. of Agriculture, USAID-Agricultural Office/EPP.

6. Given the critical impact of forests on agricultural productivity, and the accelerating rate of deforestation, the GOS and USAID agree to finance the cost, in local currency, of including forestry resource areas in remote sensing efforts already being undertaken by USAID. In addition, the Title III counterpart generations will also be used to finance local contracts for "ground truthing" efforts which are required to verify the location, extent, and degree of forest coverage and the uses they must serve in Sudan. This effort will provide baseline data for forestry intervention programs.

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Main Implementing Agents: GOS-Min. of Energy/Forestry Department,
USAID-Agriculture Office/FPP

7. The GOS agrees to use the Habila Scheme in Kordofan region to demonstrate the beneficial effects of implementing its policy of planting shelterbelts on mechanized schemes. The following measures will be taken:

(a) In the first year, the Mechanized Farming Corporation (MFC) will work with private farmers to plant shelterbelts on 10 percent of the scheme's plots. These shelterbelts will be used as demonstrations for other farmers in the scheme. Financing will be made available from Title III local currencies.

(b) During the first year, the GOS will also announce a policy that all farmers on the scheme must plant shelterbelts around their fields by the third year of the program. The MFC will announce a schedule for farmers who must establish their shelterbelts in years 2 and 3. Technical assistance will be made available as required.

(c) Farmers in the scheme will be required to organize themselves in groups of five to enforce within their groups compliance with shelterbelt regulations. Within 3 months of the MFC's announcement of the shelterbelt planting schedule, each group will advise the MFC of the member farmers. If shelterbelts are not planted within 12 months of the scheduled time, all 5 farmers within a delinquent group, regardless of how many are out of compliance, will have their leases rescinded and not be eligible for another lease on any MFC scheme.

Main Implementing Agents: GOS-MFC/Min Ag; USAID-Agr

8. The GOS agrees not to open any new areas for mechanized farming without conducting an environmental assessment of the scheme's impact beforehand. The GOS will also consider existing evidence on environmental degradation in undemarcated area and work with USAID to draft appropriate policy measures and enforcement mechanisms. USAID will provide technical assistance as required.

Main Implementing Agents: GOS-MFC/Min Ag; USAID-Agr, Regional
Environmental Officer

9. Due to the importance of reforestation at the village level, as well as on mechanized schemes, the GOS and USAID will collaborate on a program to use village-level water resources to facilitate development of village nurseries.

(a) In year 1 of the program, the GOS will develop a prioritized plan to establish village nurseries at all wateryards in Kordofan and Darfur north of latitude 12. This plan will specify the location of wateryards, the types of trees that might be feasible at each location, and technical guidelines for nursery establishment and management.

(b) In year 1 the GOS will also announce a general policy that will require all wateryard rehabilitation activities to be accompanied by nursery establishment if so desired by the local community. Communities will be responsible for managing these nurseries. Title III local currency generations will be made available to provide technical assistance to communities in nursery operations and management.

(c) In year 1, the GOS will pick two villages, one in Kordofan and one in Darfur, to establish demonstration nurseries run by women's associations or collectives. The women must indicate that they desire the nurseries before any attempt is made to establish them. Title III local currency generations will be made available to finance capital and technical assistance costs. Both nurseries must be established by the end of year 2. The women's collectives will retain any profits from the nursery and will have complete flexibility in reinvesting them. Title III local currency generations will be available to finance technical assistance for reinvestment in areas that will improve agricultural productivity or save women time in completing their household and agricultural responsibilities.

Main Implementing Agents: GOS-Min Agriculture, Forestry Dept.;
USAID-Agric.

10. To arrest the trend of environmental degradation around water points, the GOS will announce a policy in year 1 that, north of latitude 12, no new boreholes will be established prior to conducting an environmental assessment that covers the impact on: the water table, concentrations of human and livestock populations, agricultural potential to sustain these populations, and other factors to be agreed upon between the GOS and USAID. USAID agrees to make funds available to finance the foreign exchange cost of establishing guidelines for the environmental assessment.

Main Implementing Agents: GOS-Min. Agriculture/National Water Corporation; USAID:Agriculture/Engineering

11. Due to the poor-record on maintenance of village-level water facilities, the GOS agrees to allow villages to play a direct role in the establishment and collection of user fees, and to take responsibility for maintenance and spare parts.

(a) In year 1, the GOS will announce a policy that allows villages to set their own charges for water. In villages where the National Water Corporation or any of its divisions does not collect fees or provide services, the village will continue to have responsibility for financing operations and maintenance. In villages where NWC provides a service and charges a fee, villages may take responsibility for setting and collecting user fees at the water point. The village, or its representative(s), would then be responsible for paying NWC the required charge, and could use any surplus funds as it desires.

(b) Within 2 months of the agreement, the GOS will identify 50 villages, 25 in Kordofan and 25 in Darfur, which will receive technical assistance in setting their fees and devising plans to secure continuing operations and maintenance. By the end of year 1, all 50 of the villages will have been visited to assist them with their fee structures and operational plans. At least one spot visit will be conducted to each village during year 2. Midway in year 3, 25 villages receiving technical assistance and 25 others which have not, will be evaluated to determine the overall impact of the villages' role in managing their water resources. Title III local currency generations will be made available to assist the villages and to conduct the evaluation.

(c) In two of the above 50 villages, one in Kordofan and one in Darfur, the GOS will require that women's collectives or associations take responsibility for wateryard management. These two villages will help demonstrate the feasibility of women exercising control over the provision of services directly related to their traditional household responsibilities. Title III local currency will be made available for selection of the villages, technical assistance in setting fees and management plans, and other necessary expenses. The women's collectives will have complete flexibility in determining the use of water revenues once all operational and maintenance costs (including depreciation) are covered. These two villages will be covered in the evaluation planned for year 3.

Main Implementing Agents: GOS-National Water Corporation/Dept of Social Welfare; USAID-Engineer, Women in Development Offices

IV. Support for Local Initiative and Finances

A major problem confronting local and regional governments is securing sufficient revenues to provide the services which are written into their mandates. As a result, many resources and talents go underutilized, many skilled staff migrate to urban centers or the Gulf States, or initial investments in equipment are wasted since funds or skills may not be available to operate and maintain the investment. Some villages have circumvented these problems by hiring government staff in their off-hours to provide technical assistance. While this may prove partially effective for the village, the organization still does not receive the revenue that could be collected through service or user fees. To alleviate the situation and possibly retain skilled staff in rural areas, the following actions will be taken:

12. Within six months of the agreement, the GOS will initiate a study in Kordofan and Darfur examining local revenue-raising measures, potential new sources of revenue, and who controls the expenditures of revenue raised at the community level. The study will include recommendations on options for keeping additional revenues within the community that collects them. Recommendations from the study will result in policy measures to be incorporated into the subagreement most closely following the study's completion.

Main Implementing Agents: GOS-Min. of Finance, Directorate for Regional Development, USAID-Projects Office/EPP.

13. In year 2, the GOS will announce that individual communities may institute taxes outside of those statutorily designated to be collected by the GOS. Revenue from these taxes, whether a newly instituted tax or an increase in an existing one, will remain within the community and be controlled at its discretion. Title III local currency will be available to conduct a publicity campaign announcing the policy change, to assist the community in identifying new taxes or establish measures for financial control, and to evaluate the impact of the policy change in year 3.

Main Implementing Agents: GOS-Min. of Finance, USAID-EPP

14. In year 1 of the agreement, the GOS will announce a policy of allowing public sector organizations to enter into direct contracts to provide individuals and communities with specific services. Each service providing organization will be given the flexibility to set its rates on a case-by-case basis. All funds collected by organizations through such contracts are to remain within their organizational budget and are not to be transferred to the central budget. At least 20 percent of the collected revenues are to be used for salary supplements for staff directly involved in the provision of services. Organizations will determine how best to cover real equipment depreciation in their rate structure. They will also be encouraged to subcontract activities to the private sector. During the life of this agreement, the Central Ministry of Finance and Economic Planning will not reduce its customary budget support for any organization participating in such contracting activities unless otherwise agreed in writing with USAID.

Main Implementing Agents: GOS-Min. of Finance, USAID-EPP/Projects Office

15. Midway in year 2, the GOS and USAID will evaluate the impact of this new authority to collect user fees on the budgets of relevant public service providing organizations, on staff salaries, on their ability to maintain equipment, and on individual organizations' needs for central budget support. Recommendations may lead to adjustments in central government support for individual organizations after the end of the agreement.

Main Implementing Agents: GOS-Min. Finance, USAID-EPP

V. Marketing

The GOS and USAID agree that improved marketing efficiency allows for increased producer prices in many cases and, when combined with supply increases from producers whose returns have increased, will act to reduce pressure for consumer price increases in domestic markets. In addition, exportable supply increases may improve trade and ease the foreign exchange burden in Sudan. Given this potential for significant economic gains, the GOS and USAID agree to carry out the following specific efforts.

A. Crop Related Issues:

16. The GOS agrees to develop and implement a mechanism for publically transmitting international and domestic market prices (current and future) of major crops to each of 34 major market points. In year 1, staff and local expenses may be program financed; thereafter a self-financing method must be implemented. The purpose of this activity is (i) to alert producers and traders to national or spatially isolated crop shortages (usually marked by high prices) so they can undertake a supply response; (ii) to indicate financially viable cropping patterns, investment strategies, and input use, and (iii) to provide the available export options at a given time.

Main Implementing Agents: GOS-Min. of Agriculture, USAID-AGR/Projects Office

17. The GOS recognizes the need to encourage gum arabic production and replenishment of, and care for, acacia senegal trees. Thus, 1986 gum arabic prices will be increased by at least 25%, to ensure strong incentives for enhanced production and gum garden maintenance.

Main Implementing Agents: GOS - Min of Commerce, USAID-EPP/AGR

18. The GOS agrees to continue to maintain the level of the real gum arabic producer price via an auction market floor price adjustment, made at least 1 month prior to the main harvest season, in which movements in the value of foreign exchange are reflected.

Main Implementing Agents: GOS-Min. of Commerce/Gum Arabic Corporation, USAID-EPP

19. The GOS agrees that the dollar export price for gum arabic will be determined through competitive bidding procedures which take into consideration the full range of agreement terms, e.g. price, quantity, delivery dates, quality, reliability etc. The purpose shall be to maintain or increase Sudan's share of the world market for gum arabic, allow Sudanese gum to be competitive with gum substitutes, and to maintain effective customer relations. The GOS and USAID agree that a marketing consultant to help implement a more competitive marketing system may be financed out of PAIP foreign exchange funds.

Main Implementing Agents: GOS-Gum Arabic Corporation, USAID-EPP, AGR

B. Credit

20. Within 6 months of this agreement's signing, the GOS and USAID will undertake a collaborative analysis of the overall availability and structure of agricultural credit in Sudan. The analysis will evaluate the effects of current costs of administering credit, and their likely changes, on the solvency of financial institutions, on production costs and producer incomes, and on the rate of expansion of credit and financial services. It will consider whether there should be differing roles and procedures for commercial banks as opposed to development banks, including the Agricultural Bank of

Sudan. Fee structures will be analyzed on the basis of financial, economic, and administrative feasibility, and consideration will be given to how the financial system can cope with periodic drought-related defaults. Bank services will be examined similarly. The analysis will lead to recommendations for improving the ability of Sudan's financial sector to facilitate expanded production over time.

Main Implementing Agents: GOS-BOS/Min. of Fin, USAID-EPP/PO

21. The GOS agrees to implement any procedures required to allow the Agricultural Bank of Sudan to make a reasonable return on its agricultural financing costs.

(a) In year 1, the bank shall be allowed to implement a service fee structure that parallels that of the commercial banks. In year 2, the GOS will allow additional flexibility on ABS service fees in accordance with the recommendations of the above credit study. These policy adjustments are intended to allow the sustained growth of ABS financing resources and hence increased availability of capital to the agricultural sector.

(b) The GOS and USAID also agree that the ABS should expand the range of its lending services and the number of clients actually served. To this end, USAID agrees to finance the FX and local currency costs of bringing an agricultural credit consultant to Sudan for up to 1 year to assist the bank in credit management and advisement services. Should the Bank, the consultant, and the GOS/USAID Research Committee feel it warranted, USAID will consider financing through PAIP additional technical assistance particularly toward assisting small and medium farmers, and newly established enterprises related to agriculture, make efficient use of credit.

Main Implementing Agents: GOS -Min. of Fin./Ag Bank, USAID-EPP/PO

C. Transport

22. The GOS and USAID agree that increasing transport efficiency can play a key role in reducing marketing costs. Therefore, we mutually agree to develop a system of road maintenance financing based on user fees. The IBRD Highway III estimated road maintenance budget shall serve as a foundation for specifying a range of revenue level needs associated with different road maintenance objectives. In addition, the IBRD's budget methodology should be adopted for use by the GOS so that annual Roads and Bridges Public Corporation submissions to the Ministry of Finance are consistent and more easily evaluated as a result. Once the budgets for road maintenance objectives are specified, user fee plans will be developed which correlate with associated revenue needs. Once a road maintenance budget is developed by RBPC and reviewed and approved by the Ministry of Finance and USAID, Title III local currency expenditures for transport will be allowed to trigger loan forgiveness in year 1.

Main Implementing Agents: GOS-Roads and Bridges Public Corporation/Min. of Finance, USAID-Project Office/Engineering

23. In year 2, the GOS will announce a user fee plan as specified above and submit to USAID its plan for central budget support for road maintenance. Planned support must cover at least 60 percent of the maintenance budget specified according to item 22 above. At the end of year 2, the GOS will demonstrate in form and substance satisfactory to USAID, that the agreed upon total has been transferred to Roads and Bridges Public Corporation for road maintenance. Upon USAID's acceptance of GOS evidence of budget transfers for maintenance, Title III local currency expenditures for transport during year 2 will be allowed to trigger loan forgiveness.

Main Implementing Agents: GOS-Roads and Bridges Public Corporation/Min. of Finance, USAID-Project/Engineering

24. In year 3 and each additional year during the course of Title III local currency expenditures, the GOS and USAID will go through the same process as specified in 23 above for developing a maintenance budget, transferring funds to RBPC, obtaining USAID approval, and triggering loan forgiveness for Title III local currency expenditures made in that year.

Main Implementing Agents: GOS-Roads and Bridges Public Corporation/Min. of Finance, USAID-project Office/Engineering

PL 480 TITLE III SELF HELP MEASURE IMPLEMENTATION SCHEDULE

Self Help Measure Year
 Month 0 1 2 3 4 5 $\frac{1}{6}$ 7 8 9 10 11 12 1 2 3 4 5 $\frac{2}{6}$ 7 8 9 10 11 12 1 2 3 4 5 $\frac{3}{6}$ 7 8 9 10 11 12

- 1. Implementation Research Committee
- 2. Agree to undertake analysis
- 3. Specific studies discussed - 1 mo. prior to next sub-agreement
 variable, ongoing -----
- 4.a. Competitiveness study
- b. Sorghum and gum arabic studies
- 5. Mech. agric. land use study
- 6. Forestry remote sensing and ground truthing
- 7.a. Habila shelterbelts
- b. Shelterbelt Policy announcement and scheduling
- c. MFC, scheme farmer organizations established
- 8. Mech. expansion environ. assessment
 variable, ongoing-----
- 9.a. GOS undershed nursery plan: Darfur & Kord.
- b. Policy announcement: nurseries & watershed. Rehabilitation, TA avail.
- c. 2 women's assoc. nurseries established

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Self Help Measure Year
 Month 0 1 2 3 4 5 $\frac{1}{5}$ 7 8 9 10 11 12 1 2 3 4 5 $\frac{2}{6}$ 7 8 9 10 11 12 1 2 3 4 5 $\frac{3}{6}$ 7 8 9 10 11 12

- 10. Announcement of environ. assessment required for boreholes N. of Lat. 12 TA avail. ●—————ongoing—————
- 11.a. Policy announcement- villages set own water charges ●—————●
- b. 50 villages identified for TA to do so. All visited and assisted by end year 1 ●—————ongoing—————
- c. Two village water yards run by women ●—————ongoing—————
- 12. GOS study in Kordofan/ Darfur of local revenue-raising measures initiated ●—————●
- 13. Policy announcement of community taxation authority extension. TA available ●—————ongoing—————
- 14. Policy announcement: Individual community service contracts ●—————ongoing—————
- 15. Evaluation of services contracts effect on service providing organizations budgets ●—————●
- 16. Implementation of public market info sytem. TA available ●—————ongoing—————
- 17. Gum arabic price Increase-1986-25% or more ●—————●

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Annex 5

Draft Section of Annex B
To the Title III Agreement

Summary Program Description

A. Program Budget

The Summary Budget for the Food for Development program is presented at the end of this annex. The total financing available for any one line activity may be varied based upon annual reviews of program activities and by exchange of implementation letters between authorized representatives of the two Governments. Once the annual allocation to a project has been approved, modification of budgeted amounts between line items within any one activity may also be made through an exchange of implementation letters between the two Governments.

B. Specific Activity Descriptions

The GOS agrees to implement the following projects as part of the Food For Development program. These priority projects are intended to promote market development and village-level initiatives in the rainfed agricultural sector, particularly in western Sudan. The focus on rainfed, decentralized development is based on the need to promote self-sustaining growth with minimum dependence on central and regional government support. It is understood that requests for PL 480 Title III funds for these projects must be submitted each year according to implementation procedures set forth for the program.

1. Western Agricultural Marketing Road (\$27.5 million PL 480 Title III funding) will link Kordofan Region with major urban and international markets to absorb cash crops, livestock and surplus food crops. once completed, the 300 kilometer road will provide all-weather transit on a paved surface that will significantly reduce marketing costs. The project will also develop basic road maintenance capabilities within Kordofan Region.

2. Kordofan Rainfed Agriculture Project (KORAG)/Feeder Road Component (\$24.2 million PL 480 Title III funding) will finance farm-to-market road improvements in Kordofan Region that will bring production areas into contact with the interregional transport network. These feeder roads will enhance the production impact of the Western Agricultural Marketing Road and other paved roads in the region, as well as facilitate the dissemination of new technologies developed through the Western Sudan Agricultural Research Project. The project will maximize the participation and training of Sudanese engineers and construction firms, with guidance provided by an American consulting engineer.

3. KORAG/Storage Component (\$3 million PL 480 Title III funding) will construct storage facilities through the Agricultural Bank of Sudan to allow farmers to increase their profits on current production levels by obtaining peak seasonal prices and reducing storage losses. The project will also offer improved storage facilities to private merchants (who handle the majority of Sudan's oilseeds and food grains) to promote quality control, encourage price differentiation based on quality, and reduce storage losses. The APS will manage four storage facilities with a total 12,000 MT capacity. The private sector will own and manage three facilities, also with a total 12,000 MT capacity.

4. KORAG/Credit Component (\$2.6 million PL 480 Title III funding) will complement the feeder road and storage components by reducing cash flow constraints that mitigate responsiveness to price incentives. Title III local currencies will be used to establish a baseline credit fund that may be increased from other sources if justified by initial project results. Small-scale farmers in the El Obeid, Talodi and Abu Gubeiha areas of Kordofan will be offered both production loans before planting and inventory loans at harvest. Credit will be channelled through the Agricultural Bank of Sudan which will be receiving technical assistance during the course of the project.

5. Western Sudan Agricultural Research (\$6.7 million PL 480 Title III funding) will provide technical assistance to Sudan's Agricultural Research Corporation to support rainfed agricultural research. Research activities will concentrate on critical foodgrains (sorghum and millet), soil and water conservation, livestock production, and the economic implications of improved farming techniques and technologies. The project PACD is currently August 1987. An evaluation will be done in early 1986 to determine whether to extend the project or follow on with a new activity based out of existing research facilities.

6. Regional Finance and Planning Project (\$20 million PL 480 Title III funding) will support a continuing GOS effort to promote decentralized development. The project will address specific problems at the core of local development: helping potential beneficiaries to identify and plan the projects they wish to support, and capitalizing on their self interest to operate and maintain these projects while minimizing the drain on government budgets. Project funds will be channelled through PVOs directly to communities in order to permit project planning to devolve to the level of project implementation where benefactors make many of their own decisions. PVOs will serve as administrative and organizational catalysts and provide on-the-job training to local leaders so that basic management skills are eventually transferred. In implementing subprojects, PVOs will help villages draw upon, rather than displace, existing Sudanese private and public sector service capabilities.

The principal types of subprojects to be implemented through the project fall into four categories: water resource development, community-based

agriculture and forestry, small-scale private sector development, and income-generating projects for women. A small credit fund (the equivalent of \$ 1 million) will also be established, through the Agricultural Bank of Sudan, to finance small-scale private sector activities related to agriculture.

7. Title III Studies and Support Fund (\$ 1 million PL 480 Title III funding) will finance individual studies required as part of this agreement, as well as selected administrative costs related to their implementation. The expenditures specified below are illustrative of allowable costs.

- a. Title III Research Committee Staff and Expenses. To coordinate policy studies and disseminate findings, a research committee will be drawn from GOS and USAID staffs. Title III local currencies will finance up to two permanent administrative staff and associated committee expenses.
- b. Export Studies. To help allocate Sudan's scarce resources to their most productive uses and to promote exports to levels consistent with Sudan's potential, a study will be conducted on export competitiveness with follow-up studies on individual crops.
- c. Land and Water Policies. To promote efficient use of land and water resources and to curtail the environmental degradation caused by land and water policies, local currency funds will be available to: study incentives and policies affecting land use in the mechanized sector; assess forestry resources; promote shelterbelts in the Habila mechanized scheme; establish guidelines for environmental assessments related to mechanized farming and boreholes; finance planning and technical assistance for village reforestation; and provide technical assistance on shifting management of waterways to the village level.
- d. Support for Local Initiative and Finances. To alleviate regional and local government financial constraints and possibly retain skilled staff in rural areas, funds will be reserved to examine new local-level revenue raising measures; facilitate policy changes that allow communities to retain a greater share of the revenues they raise; and evaluate the effectiveness of allowing public sector entities to provide services on a contractual basis that will remunerate participating staff and help replace depreciated equipment.
- e. Marketing. To promote increased producer prices through improved marketing efficiency, funds will be available to: transmit international and domestic market prices; finance credit studies focused on agriculture; provide technical assistance on management of credit activities; and develop an annual user fee plan to finance road maintenance.

Budget For PL 480 Title III Counterpart Fund*

	<u>FY 87</u>	<u>FY 88</u>	<u>FY 89</u>	<u>FY 90</u>	<u>Total</u>
	(in millions of U.S. dollars)				
1. Western Agricultural Marketing Road	5.45	9.85	9.08	3.12	27.50
2. KORAG/Feeder Roads	3.94	5.70	6.67	7.89	24.20
3. KORAG/Storage	1.06	1.64	.30	--	3.00
4. KORAG/Credit	.60	.60	.60	.80	2.60
5. Western Sudan Agricultural Research	1.67	1.67	1.68	1.68	6.70
6. Regional Finance and Planning	9.09	7.88	3.03	--	20.00
7. Title III Studies and Support	.21	.24	.26	.29	1.00
8. Total	22.02	27.58	21.62	13.78	85.00

* The budget is based on local currency financing requirements converted to dollars at the rate of LS 3.3/\$1.00.