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CR 1561-UG

Report No. P-3919-

REPORT AND RECOMMENDATION

OF THE

PRESIDENT OF THE

INTERNATIONAL DEVELOPMEN ASSOCIATION

TO THE

EXECUTIVE DIRECTORS

ON A

PROPOSED DEVELOPMENT CREDIT

IN AN AMOUNT OF SDR 5.2 MILLION

TO

THE REPUBLIC OF UGANDA

FOR A

PETROLEUM EXPLORATION PROMOTION PROJECT

February 28, 1985

CURRENCY EQUIVALENTS
(January 1985)

Currency Unit = Uganda shilling (USh)
USh 1.00 = US$0.002
US$ 1.00 = USh 550 [1]
US$ 1.00 = SDR 1.026

ABBREVIATIONS AND ACRONYMS

CFTC	Commonwealth Fund for Technical Assistance
EAC	East African Community
ESMAP	Energy Sector Management Assistance Program (of United Nations Development Programme/World Bank)
GDP	Gross Domestic Product
GNP	Gross National Product
GSMD	Geological Survey and Mines Department in the Ministry of Lands, Mineral and Water Resources
ICA	International Coffee Agreement
ICB	International Competitive Bidding
IFC	International Finance Corporation
IMF	International Monetary Fund
LCB	Local Competitive Bidding
LIT	Limited International Tendering
MLMWR	Ministry of Lands, Mineral and Water Resources
MPED	Ministry of Planning and Economic Development
MPPT	Ministry of Power, Posts and Telecommunications
OPEC	Organization of Petroleum Exporting Countries
PU	Petroleum Unit
UNDP	United Nations Development Program
USAID	United States Agency for International Development

FISCAL YEAR

July 1 - June 30

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[1] The exchange rate of US$1 = USh 395, which was in force during appraisal in August 1984, has been used in the calculations for the proposed project.

UGANDA

PETROLEUM EXPLORATION PROMOTION PROJECT

Credit and Project Summary

Borrower: The Republic of Uganda

Beneficiary: Ministry of Lands, Mineral and Water Resources (MLMWR)

Amount: SDR 5.2 million (US$5.1 million equivalent)

Terms: Standard

Project Description: The project would support the Government's efforts to attract oil companies to explore for hydrocarbons. It also would strengthen the capability of the Geological Survey and Mines Department (GSMD) in the MLMWR to administer and supervise exploration promotion, exploration, and development of petroleum resources. The project includes two main components. The technical assistance component would support: (a) petroleum exploration consultants who would provide a wide range of services; (b) a report/meeting to promote prospective acreage to oil companies; (c) rehabilitation of the GSMD; (d) project administration, including auditing of project accounts and travel related to petroleum exploration promotion; and (e) training abroad of Ugandan staff in petroleum geology and interpretation of geophysical surveys. The survey component would include: (a) geophysical surveys; (b) geologic field work, as appropriate, as well as geochemical studies; and (c) photogeologic studies.

Project Benefits: The project would assist Uganda in attracting oil companies to take exploration permits in an area where there has been little exploration activity. If the search for hydrocarbons is successful, the project would contribute to meeting part of Uganda's petroleum needs from domestic sources and could generate export earnings.

Risks: The main risk is that the surveys might not attract widespread oil company interest. Given the favorable geological interpretations and the positive industry reactions at the first promotion meeting in November 1984, this risk is reasonable. In addition, there are risks that relations with neighboring countries could decline, thereby reducing the attractiveness of promoted border areas, and that security in the

project areas could deteriorate. Considering the present collaboration between Uganda and its neighbors and the improvements in security in the country, these risks also are reasonable.

Estimated Project Costs:

Component	Local	Foreign	Total
	(US$ million)		
Technical assistance			
Exploration consultants	.18	.89	1.07
Promotion report/meeting	.03	.30	.33
Rehabilitation of GSMD	.08	.40	.48
Project administration	.27	.12	.39
Training	.03	.30	.33
Subtotal	.59	2.01	2.60
Surveys			
Geophysical survey	.10	.50	.60
Geological data gathering	.10	.10	.20
Photogeology	.02	.10	.12
Subtotal	.22	.70	.92
Base Cost	.81	2.71	3.52
Contingencies			
Physical	.11	.40	.51
Price	1.18	.89	2.07
Total	2.10	4.00	6.10 /a

Financing Plan:

Source	Local	Foreign	Total
	(US$ million)		
IDA	1.10	4.00	5.10
Government	1.00	-	1.00
Total	2.10	4.00	6.10

Estimated Disbursements:

	IDA	FY86	FY87	FY88	FY89	FY90	FY91
	(US$ million)						
Annual		1.00	1.20	1.20	1.00	.50	.20
Cumulative		1.00	2.20	3.40	4.40	4.90	5.10

Rate of Return: Not applicable.

Staff Appraisal Report: None.

Map: IBRD 18617.

/a The project would be exempt from duties and taxes.

REPORT AND RECOMMENDATION OF THE PRESIDENT OF THE INTERNATIONAL DEVELOPMENT ASSOCIATION TO THE EXECUTIVE DIRECTORS ON A PROPOSED DEVELOPMENT CREDIT TO THE REPUBLIC OF UGANDA FOR A PETROLEUM EXPLORATION PROMOTION PROJECT

1. I submit the following report and recommendation on a proposed development credit to the Republic of Uganda for SDR 5.2 million (US$5.1 million equivalent) on standard IDA terms to help finance a petroleum exploration promotion project.

PART I - THE ECONOMY [1]

2. An economic mission visited Uganda in May-June 1983 and its report, entitled "Uganda - Country Economic Memorandum" (Report No. 4733-UG dated December 9, 1983), has been distributed to the Executive Directors. A summary of social and economic data is given in Annex I.

Background

3. Uganda achieved independence in 1962 with a number of important advantages:

(a) a favorable climate, fertile soils, and rich mineral base for economic development;

(b) an established indigenous smallholder sector providing a widening range of export crops and an ample domestic food supply;

(c) a small but rapidly growing industrial sector, contributing exports of copper and textiles;

(d) a well-developed transport system, including facilities shared with Kenya and Tanzania under the East African Community (EAC);

(e) an exportable surplus of hydroelectricity, with substantial scope for further development on the Victoria Nile; and

(f) one of the most advanced education systems in Eastern Africa.

The initial years after independence clearly demonstrated the economic potential of the country. Real Gross Domestic Product (GDP) grew by 4.8% per annum from 1963 to 1970, implying an increase in per capita terms of at least 2% per annum. The country also was able to maintain a reasonable savings rate (averaging 13%), which permitted implementation of an ambitious investment program without undue pressure on domestic prices or the balance of payments. Although Uganda's export volumes grew slowly, export earnings were more than adequate to cover import requirements and the country maintained a current account surplus in most years. The

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1/ Part I is essentially the same as the one included in the President's Report for the Agricultural Development Project (P-3912-UG) of December 11, 1984.

Government's budgetary position also was sound. Revenue increased faster than recurrent expenditure during the latter half of the 1960s and, together with non-bank domestic borrowing, helped finance a significant proportion of development outlays.

4. However, after the coup in 1971, the situation quickly deteriorated. Under the military regime, many skilled personnel left the country, the parastatal sector became bloated with the addition of many abandoned or confiscated industries, and professional standards within the administration eroded. On top of these largely self-imposed problems, the Ugandan economy was shaken by a series of external shocks: the sharp rise in petroleum prices after 1973, the breakup of the EAC in 1977, and the damage and looting which occurred during the 1978-79 war. As a result of these developments, real GDP stagnated through 1977 and then fell over the next three years. Import levels had to be cut by 50% from 1970 to 1979 due to lower export volumes, worsening terms of trade (except during the coffee boom years of 1977-79), and dwindling aid receipts. The Government's budgetary position also became increasingly untenable as the revenue base was undermined and expenditure control collapsed. The resultant deficit was financed increasingly by bank borrowing, leading to monetary expansion and price inflation (averaging 74% per annum from 1977 to 1979). Not surprisingly, critical shortages developed and a large share of economic activity was diverted to the pervasive parallel market system called "magendo".

Recent Developments

5. By April 1979, when the military regime was overthrown, the Ugandan economy was in ruins. Initial efforts to promote recovery were constrained by an unstable political situation, administrative weaknesses, and a severe shortage of foreign exchange. As a result, many of the adverse trends evident during the 1970s continued through 1980. In particular, real GDP continued to decline while the inflation rate rose above 100% per annum. Then, in mid-1981, the Government made a dramatic break with the past by announcing a major devaluation of the Uganda shilling and related price adjustments. Through a series of financial programs, supported by assistance from the International Monetary Fund (IMF) and other donors, further policy reforms have been introduced over the past three years (see paragraphs 7-9). As a result, economic performance has shown a marked improvement, despite the negative impact of internal security problems and adverse world economic conditions. The difficult security situation is explained by the disintegration of law and order during the 1970s and the need to discipline the security forces after the 1978-79 war. Although most of the country is now at peace, periodic incidents continue to occur, especially around Kampala, disrupting production and transport activities and diverting budgetary resources to security-related activities. As regards the world economy, although Uganda's terms of trade improved after 1981, the index remains at less than half the peaks achieved during the coffee boom years of 1977-79 and only 65% of the level in 1970. Equally important, Uganda's export earnings are constrained by quotas on coffee sales imposed under the International Coffee Agreement (ICA). Uganda's coffee production substantially exceeds its quota limit, and stocks equivalent to 70% of quota exports have currently accumulated. The

combination of economic recession and tighter fiscal policies in developed countries also has affected the availability of external assistance. For Uganda, aid mobilization has been made particularly difficult by the legacy of international isolation imposed during the 1970s and continuing concern overseas about the security situation.

6. Economic recovery is evident in a number of indicators:

(a) Since 1980, GDP has grown on average by 6% per annum. Recovery was initially concentrated in subsistence agriculture, but growth has subsequently been particularly strong in monetary agriculture (12% average annual growth 1982-84). Industry has been slower to recover.

(b) Export volumes have risen by an estimated 41% from 1980 to 1983, and would have recovered even more without the coffee quota constraint. This export growth, together with better utilization of aid, has helped to finance a much-needed expansion of import volumes since 1981.

(c) Significant budgetary improvements, including the establishment by FY 1982/83 of a healthy recurrent surplus, a major reduction in the dependence of budgetary financing on bank borrowing, and no less than a fiftyfold increase in recurrent revenues since FY 1980/81. These improvements have been absolutely central to bringing down the rate of inflation from over 100% in 1981 to about 30% in 1983. Recent developments indicate, however, some acceleration of inflation due to weakening of fiscal and monetary discipline.

Despite this progress, overall levels of economic activity and trade remain substantially below peak levels achieved in the early 1970s. As a result, per capita Gross National Product (GNP) still is only two-thirds of the 1970 level.

The Government's Policies and Programs

7. The Government's primary goal is to restore law and order, a basic prerequisite for future economic progress. Second to this is the goal of rehabilitating the productive sectors. The first step toward rehabilitation was the introduction of the financial program for FY 1981/82, which has been followed by similar programs for FY 1982/83 and FY 1983/84. These programs have been supported by three stand-by arrangements with the IMF (for a total of SDR 320 million), drawings from the First and Second Reconstruction Credits (providing US$145 million after June 1981) made available by the Association, and assistance from other donors. Major actions taken by the Government are summarized below:

(a) The official exchange rate was devalued from under USh 8 to USh 78 per US dollar in June 1981, and subsequently steadily depreciated to about USh 500 per US dollar in November 1984. In August 1982, the Government opened a second window

where foreign exchange was more freely traded in an auction system. After the introduction of this dual exchange rate system, the two rates steadily depreciated (although the Window II rate appreciated for a while) and the differential between them narrowed. These adjustments led to a substantial reduction in the premium and importance of the unofficial market for foreign exchange. In June 1984, the two windows were merged. Foreign exchange now is made available through a weekly auction, with the rate determined by the marginal bid.

(b) The initial devaluation in June 1981 was accompanied by the removal of most price controls. The major exceptions were for producer prices of traditional export crops, retail prices of petroleum products, and utility tariffs. For these controlled items, significant price increases were introduced. Petroleum prices were increased by more than twentyfold after December 1980 to reflect fully the impact of window-one exchange rate changes. Producer price adjustments were more moderate, with increases of about tenfold for most major export crops. However, these increases are still higher than general inflation and net returns from the production of all major export crops are now positive. Producer prices are adjusted on a regular basis to ensure that net returns to the farmer remain positive.

(c) Various measures have been introduced to improve monetary and fiscal discipline. To help control the demand for money and to allocate credit, most interest rates were nearly doubled over the past two years (although they remain negative in real terms). As part of its obligations under the IMF stand-by arrangements, the Government agreed to and met ceilings on the growth of net domestic credit and net credit to the Government. On the fiscal side, a number of measures were taken in mid-1981 to streamline and improve the elasticity of the taxation structure. Strict control also has been maintained over cash releases to ministries, although this has sometimes been at the cost of underfunding critical functions and accumulating domestic arrears.

8. The Government's original Recovery Programme, which included proposals for policy and institutional reform as well as a project-specific investment plan for FY 1982/83 and FY 1983/84, was presented to the meeting of the Consultative Group in May 1982. All participants at the meeting commended the Government's commitment, as reflected in the Recovery Programme, to prioritize rehabilitation activities and to restrict overall resource allocations to realistic levels. Following a progress review, the Government published a Revised Recovery Programme in October 1983. This updated document takes account of resource constraints and implementation problems encountered over FY 1983/84 and incorporates FY 1984/85 fully into the investment plan. However, the broad objectives and strategy remain the same, focusing on short-term revival of the productive sectors. Priority

in all sectors is given to rehabilitation and improved utilization of existing capacity. Although provision has now been made for preparatory work on a number of new projects, most projects do not involve large expenditures through FY 1984/85 and are essential to maintain momentum in later years. The Revised Recovery Programme also includes a number of innovations and changes designed to make it more effective for decision making and to facilitate project implementation. This Programme was discussed at a further meeting of the Consultative Group in January 1984, at which participants again welcomed the strategy and priorities as well as the implied level and composition of Uganda's aid requirements for 1984 and 1985 (see paragraph 16).

9. A decisive start in the process of economic recovery has now been made. The basic priority for further action is to strengthen the administrative framework for implementing the Government's programs, for carrying them forward, and for making them more effective. In some cases, strengthening means rebuilding what already existed in the early 1970s; in others, it means developing new institutions and policies relevant to today's realities. The administrative weaknesses faced by Uganda (and many other Sub-Saharan African countries) are inherently difficult to tackle and progress will be slow. However, the magnitude of the task ahead should not be allowed to undermine the commitment to much-needed economic reforms. The Government has already initiated action in this area. The Report of the Public Service Salaries Review Commission, which covers many issues relating to the organization and operation of the civil service besides salaries, was presented in November 1982 and is still under Government review. The FY 1984/85 budget introduced a quantum increase in civil service salaries, although there are indications that the Government is having to borrow excessively from the banking system to finance this salary increase. If inflation is to be kept under control, this borrowing will have to be restrained. To facilitate recovery in the industrial sector, the Government passed the Expropriated Properties Act in February 1983 to provide a legal basis for resolving ownership issues, and initiated a series of financial and accounting studies on major parastatal organizations. Various measures were introduced over the past two years to improve foreign exchange budgeting and import licensing procedures. Finally, the Agricultural Policy Committee has been established to advise the Government on prices, marketing, and resource allocations for the agricultural sector. The Secretariat of the Committee undertakes on a regular basis an analysis of the production costs of the major export crops, and makes recommendations to the Government on appropriate adjustments to producer prices. Not surprisingly, given the severe erosion of the country's productive base and infrastructure during the 1970s, much remains to be done before Uganda's recovery can be considered complete. However, the Government's Revised Recovery Programme and evolving policies are headed in the right direction and merit support from the international community.

Sectoral Priorities

10. Economic revival will depend on increasing production levels, especially of exports. This entails the highest priority initially being given to production of export crops, to rehabilitation of supporting

transport and communications infrastructure, and to production of basic consumer goods, building materials, and agricultural inputs by the industrial sector. Other sectors, especially the social sectors, also require urgent rehabilitation. But in the near future, rehabilitation of these sectors must be limited to the extent of their potential contribution to recovery. Improvements in medical services, repair of classrooms, and rehabilitation of urban water systems, for example, may be expected to provide an important, if unquantifiable, incentive to producers.

11. Agriculture dominates the Ugandan economy, providing the livelihood for about 90% of the population and supplying almost all Uganda's exports in recent years. Ugandan agriculture depends largely on small- and medium-scale peasant farms. No attempt was ever made to encourage expatriate settlements. Even today, large-scale estates are only significant in tea and sugar production. With its favorable natural conditions, Uganda produces an overall food surplus in most years, although areas like Karamoja in the northeast, which are vulnerable to drought and depend on traditional trade of cattle for grain, have suffered periodic food shortages as a result of low rainfall and insecurity. Rehabilitation of agriculture is the top priority for Uganda's economic recovery. Coffee, cotton, tea, and tobacco exports could all continue to grow rapidly over the next three years (although the previous peak levels are not likely to be reached until later in the 1980s and coffee exports will probably remain subject to ICA quota constraints). In addition, scope exists for expanding non-traditional exports (e.g., hides and skins, foodstuffs, and fertilizers) to neighboring countries. Revival of cotton and other agricultural production would also supply some domestic industrial needs. During the rehabilitation phase, the Government has given top priority to improving incentives, partly through adjustments in producer prices. Closely related is the supply of inputs, implements, spares for processing and transport, and consumer goods to stimulate the production of surpluses. Over the longer term, agricultural services, including research and extension, also will need more attention.

12. Although Uganda's industrial sector has always been relatively small, it did in the past make a valuable contribution towards supplying the domestic market with basic goods and, in some instances (e.g., textiles and copper), produced a surplus for export. However, the sector largely collapsed during the 1970s. Although industrial production began a modest recovery during 1982 and 1983, indications are that this recovery may have halted in 1984, with many enterprises still closed and average capacity utilization of only about 30%. Recovery in the industrial sector has been hampered by a number of constraints. The bulk of the sector has not yet made the investments necessary to put their equipment in working order, due primarily to the shortage of working capital to purchase spare parts and equipment, foreign exchange for imported inputs, and locally-available materials. Other constraints, such as unresolved ownership questions, creditworthiness problems of firms, unreliable infrastructure, and poor management also deter recovery in the sector. The Government has declared its intention to follow a "mixed economy" strategy, with only essential public services reserved exclusively for the public sector. In other areas, domestic and foreign private enterprise is encouraged, either wholly owned or in joint ventures with the Government. The Government expects to

close or sell a number of existing industrial enterprises, while the financial viability of the remaining parastatals is to be restored through increased tariffs, asset revaluation, and injections of new capital. Actions initiated by the Government in this area, including the Expropriated Properties Act and a program of financial and accounting studies, were noted in paragraph 9. However, the modalities for restructuring the parastatal sector are still to be worked out fully.

13. Uganda's transport system, formerly one of Africa's best, deteriorated rapidly during the 1970s for the same general reasons outlined earlier: departure of skilled personnel, political interference, and inadequate provision of resources for essential functions like maintenance. In addition, the breakup of the EAC in 1977 had a serious effect, especially on Uganda's access to international trade routes. As a result, Uganda lost virtually all railway rolling stock and aircraft and her part-ownership of railways and port facilities in Kenya and Tanzania. This necessitated heavy new investments by Uganda and seriously disrupted international traffic movements while increasing their cost. Transport was, moreover, the sector possibly most seriously affected by the war and the widespread subsequent looting. The vehicle fleet, in particular, was decimated. Rehabilitation of the transport system and sector institutions thus becomes a key requirement for economic recovery.

14. The Bank Group recently updated its earlier assessment of Uganda's energy sector. Energy use is primarily based on fuelwood, electricity, and petroleum. Fuelwood is estimated to account for about 91% of total energy and 48% of commercial energy consumption in Uganda. Concern is, therefore, mounting that uncontrolled cutting will eventually deplete the most accessible forest resources and lead to further soil erosion. Preparation to undertake a forest inventory is underway, as a precursor to rehabilitating the depleted forests. At present, Uganda's electric generating capacity is underutilized. However, the surplus could be quickly absorbed as the economy recovers, as substitution is made for more expensive fuels (such as petroleum products), and as long-term export agreements are concluded with neighboring countries. As regards petroleum, the Government has succeeded in reducing the cost of imports in recent years through the impact of higher retail prices on domestic consumption and smuggling as well as the improvement in supply arrangements. Promotion efforts for the exploration of petroleum resources in the Albert Rift are underway, although local oil production remains a longer-term and uncertain prospect.

15. The Government endorses the goals of the International Drinking, Water Supply and Sanitation Decade and is giving high priority to the water and sewerage sector. The main objective for this sector is to restore basic services through rehabilitation of existing water supply and sewerage facilities. In addition, with the assistance of the United Nations Development Programme (UNDP) and the Bank Group, an updated water sector study/action plan is underway using various studies previously prepared by the World Health Organization, Swedish International Development Association, and United Nations. This study will help to improve the Government's planning capacity in the water sector.

Aid and Debt

16. Under the base-case scenario presented in the last Country Economic Memorandum, Uganda's GDP is projected to grow by 4.7% per annum through 1985 and 3.6% per annum over the subsequent five years. These projections assume a steady improvement in the internal security situation and continued progress on economic reforms. The viability of this scenario is also critically dependent on the availability of foreign exchange to finance recurrent imports and priority rehabilitation projects. The recent recovery in export performance is expected to continue. However, an important factor in this assumption is that Uganda's coffee quota will be increased from 2.3 million bags in 1983 to 2.5 million bags in 1985. Although Uganda's case for a higher quota is strong and a small increase was granted recently, a further increase is not assured. The current account deficit, in real terms, is projected to rise in 1984 and then steadily decline over the remainder of the decade. This has major implications for external financing requirements:

(a) Commitment levels are required to increase by an average of 5% during 1984 and 1985 to US$444 million in 1985 and then to continue rising by about 4% per annum (below the projected rate of international inflation).

(b) The composition of commitments is as important as the levels themselves. Under Ugandan conditions, balance of payments support will continue to be essential for at least the next two to three years. However, project aid will become increasingly important during the second half of the decade and even has a role to play in the short term, provided it is consistent with the rehabilitation priorities in the Revised Recovery Programme. Technical assistance, while not as large in dollar terms, is important to improve public administration and to make other aid effective.

(c) The net benefit to Uganda of higher commitments could soon be eroded if they are not provided on concessional terms. This does not preclude the possibility of utilizing some commercial bank loans or suppliers' credits in association with concessional assistance, but only for selected projects that generate additional net foreign exchange earnings to cover fully the related debt obligations. However, arrangements which involve prior claims on foreign exchange, such as coffee barter deals, should be avoided.

17. On the Ugandan side, every effort must be made to strengthen aid coordination and administration. To this end, the Government has now reaffirmed that formal responsibility for aid management, including signing agreements and approving disbursements, lies with the Ministry of Finance. To facilitate this function, an aid coordinator has been appointed at the Permanent Secretary level and he is to be assisted by a staff of twelve. In addition, the Ministry of Planning and Economic Development (MPED) has a vital role to play in assuring that aid mobilized is in line with the priorities of the Revised Recovery Program and in monitoring aid

utilization and project implementation. Therefore, appropriate staff, facilities, and technical assistance should also be allocated to the MPED so that these functions can be performed effectively and working level contacts between MPED and the Ministry of Finance can be strengthened.

18. Uganda's external debt outstanding and disbursed had reached an estimated US$661 million by the end of 1983. Of this amount, 3.5% was due to the Bank/Association (for Uganda's notional share of EAC loans) and 13.5% to the Association alone. Fortunately for Uganda, the terms of new aid commitments since 1979 have been highly concessional, with about half being grants and the balance being loans with a grant element of 60%. However, other debt obligations, such as war-related assistance and IMF purchases, have helped to raise the overall debt service ratio to around 50% during 1981-83. Under the base-case scenario in the Country Economic Memorandum, the debt service ratio is projected to fall back to 46% in 1984 and 31% by 1990. This, however, is still cause for concern. The down-side risks are very real. Uganda's export structure still depends heavily on coffee earnings, which could be constrained by further quota restrictions and unfavorable price movements. Also, the Government may find reduction in import requirements for security-related activities difficult. Finally, adequate amounts of assistance on concessional terms may not be forthcoming to support recovery. This outlook reinforces the importance of external debt management. Progress has been made over the past year in improving debt recording and an External Debt Management Office has been established. The real priority now is to develop an appropriate borrowing program for Uganda.

PART II - BANK GROUP OPERATIONS2/

19. Uganda joined the Bank, the Association, and the International Finance Corporation (IFC) in 1963. Between 1967 and 1971, the Association provided seven credits to the country totalling US$48.0 million for projects in education, roads, and agriculture (tea, tobacco, and beef ranching). In addition, Uganda benefitted from 10 loans amounting to US$244.8 million for the development of common services of the East African Community and for the East African Development Bank. IFC's first investment in Uganda, in a textile company, was sold to the Government in 1970. The second, to help finance two lodges in the national parks, was cancelled in 1972 before construction began. IFC approved new investments in the Sugar Corporation of Uganda and in the Toro and Mityana Tea Company in FY84 and in the Development Finance Company of Uganda in FY85. Annex II gives further details about IFC investments in the country.

20. Operations of the Association in Uganda were interrupted because of the military regime from June 1971 until February 1980 (paragraphs 4 and 5). Since February 1980, the Association has provided 13 credits to Uganda

2/ Part II is essentially the same as the one included in the President's Report for the Agricultural Development Project (P-3912-UG) of December 11, 1984.

totalling US$473.5 million. The credits were based on a lending strategy consistent with priorities identified in the Government's Recovery Program and were designed to help restore the economy to a fully functioning level through: rehabilitation of basic infrastructure and productive capacity; strengthening of administrative, institutional, and technical capacity; and implementation of appropriate sector policies.

21. To meet urgent rehabilitation needs, the Association has been providing funds under three reconstruction credits. The first Reconstruction Program (Credit No. 983-UG of 1980 for US$72.5 million) included a participation of US$17.5 million by the Government of the Netherlands (Credit No. 983-1-UG). It also was complemented by a European Economic Community Special Action Credit (54-UG for US$20.0 million). In addition, the Government of Canada provided a grant of Can$3.0 million and the Organization of Petroleum Exporting Countries (OPEC) Fund made available a program loan of US$5.0 million. Although the Reconstruction Program originally experienced implementation delays and slow disbursements, it now is fully disbursed. A Program Performance Audit Report is under preparation. The Second Reconstruction Program (Credit No. 1252-UG of 1982 for US$70.0 million) is under implementation. The Governments of Canada and the Netherlands made grants in the amounts of Can$5.0 million and DFL 15.0 million, respectively, in supplementary financing for the Second Program. The Third Reconstruction Program (Credit No. 1474-UG of 1984 for US$50.0 million) became effective in November 1984. An amount of DFL 20.0 million is being provided as supplementary financing by the Government of the Netherlands.

22. The Association also has been supporting technical assistance to key institutions through the First Technical Assistance Project (Credit No. 1077-UG of 1981 for US$8.0 million) and the Second Technical Assistance Project (Credit No. 1434-UG of 1984 for US$15.0 million). Disbursements are nearly completed for the First Project. Commitments are being made more quickly for the Second Project. Although small in financial terms, technical assistance represents an essential component of the Association's lending strategy, both to strengthen the Government's administrative/institutional capacity as well as to facilitate project preparation and implementation. It also serves the vital objective of assisting training, both directly and through upgrading of facilities.

23. In addition, the Association has been providing rehabilitation credits, which total US$268.0 million, for engineering related to water supply and phosphate exploitation operations and for agricultural, education, highway, industry, telecommunications, and water supply and sanitation projects. These projects also include technical assistance components. Annex II gives further details about the projects. Implementation has been somewhat slower than expected, largely due to the shortage of Government counterpart funds (paragraph 25).

24. For the immediate future, operations of the Association will remain focussed on rehabilitation projects, including the proposed Second Power Project to be presented to the Executive Directors in FY85. In addition, this Petroleum Exploration Promotion Project is designed to help

relieve expected bottlenecks in energy supply in support of economic recovery as well as to provide a potential for foreign exchange earnings. Operations of the Association are expected to shift gradually into traditional projects in the agricultural, energy, industry, and transport sectors. This shift will help support the continued recovery of the economy and its further development. The Association intends to continue to provide technical assistance in these sectoral projects.

25. Disbursements from the Association to Uganda grew from US$1.2 million in FY80 to US$41.2 million in FY84. A comparison with other portfolios in the Eastern Africa Region indicates that the disbursement rate for Uganda was higher than the average for the Region, ranging as a proportion of outstanding commitments from 44.4% in FY80 to 30.3% in FY83 (compared with 20.4% and 27.2% in the same years for the Region as a whole). In FY84, the disbursement rate for Uganda declined to 17.7%, mostly because of lack of local funds to be provided by the Government, while that of the Region declined to 23.1%.

26. In addition to its own lending portfolio, the Bank Group is administering for the International Fund for Agricultural Development an Agriculture Reconstruction Program (Loan No. 80-UG for US$17.6 million and Grant No. 85-UG for US$0.94 million of 1982) and an Agricultural Development Project (Loan No. 159-UG for US$14.5 million of 1984; for the UNDP an Assistance in Economic Planning Project (No. UGA 79/011 of 1981 for US$3.3 million) and a Line of Credit to Assist the Uganda Development Bank (No. UGA 80/017 of 1983 for US$2.0 million) and for the OPEC Fund an Industrial Loan to the Uganda Development Bank (Loan No. 301-PG of 1983 for US$15.0 million).

PART III - THE ENERGY SECTOR

The Energy Sector

A. Resources

27. Uganda has sufficient water and forestry resources for development as energy resources. No petroleum or gas has been discovered, but the Government is supporting the identification of prospective areas and promotion to oil companies for exploration. While no coal exists in the country, peat is available although not in sufficient quantity to justify exploitation. Geothermal sources and uranium prospects have been identified. Development of geothermal sources is considered a low priority in view of other less expensive energy sources, such as the considerable hydroelectric potential. Assessment of uranium prospects is currently underway.

28. Fuelwood. In Uganda, as in many African countries, fuelwood constitutes the main source of energy for the population. Forests and woodlands are estimated to cover 2.76 million ha, or 12% of the country's total area. Preliminary estimates indicate that the sustainable annual yield of fuelwood of about 10.9 million tons was exceeded in 1983 by consumption of 13.6 million tons (excluding non-energy sources). This represents a consumption increase of 4% over 1982, which is explained by

the increasing conversion to fuelwood by households because of the high prices of kerosene as well as of electrical cookers and their spares. As a result, a serious shortage of fuelwood is developing particularly in urban areas.

29. Hydroelectric Power. Uganda is well-endowed with hydroelectric potential. The country's main potential is concentrated on the Albert Nile with its unlimited storage provided by Lake Victoria. The Albert Nile falls into three sections in Uganda, namely Lake Victoria to Lake Kyoga, Lake Kyoga to Lake Albert, and Lake Albert to the Sudanese border. The last section is remote from the load centers and has the least power potential. The difference in elevation between Lakes Victoria and Albert is about 516 m, of which 103 m lie between Lakes Victoria and Kyoga, and 413 m between Lakes Kyoga and Albert. The available head is concentrated in seven locations, with a total potential capacity of about 1,745 MW and an annual firm generation capability of about 10,200 GWh. Although the hydroelectric potential is substantial and relatively low-cost by world standards, the potential can be developed only in increments that are large relative to the size of the Ugandan demand. Therefore, the potential for substantial exports to neighboring countries is a significant factor in determining the economics of development.

30. Petroleum. Uganda imports all of its petroleum requirements in the form of finished products because the country has no refinery. Some products are imported directly from the Middle East and some after refining at the Mombasa, Kenya refinery. Petroleum products are transported from Mombasa to Nairobi by pipeline and on to Kampala by rail or road (more than 90% were transported by road in 1982 compared to only 20% in the early 1970s). The six oil companies operating in Uganda (paragraph 44) maintain their own storage facilities as well as retail outlets. In line with the pattern of economic activity, distribution and consumption of petroleum products is concentrated around Kampala (which accounts for 60% of all gasoline and auto diesel sales) and Jinja (which accounts for 80% of fuel oil sales). In 1983, the transport sector accounted for about 74% of consumption of petroleum products while the industrial and domestic sectors consumed 15% and 11%, respectively.

B. Energy Consumption

31. Per capita energy consumption in Uganda is estimated to have been 0.35 toe in 1980, of which only 0.06 toe was commercial energy, i.e. marketed fuelwood exclusive of fuelwood gathered as a free good, electricity, and petroleum products. This level of commercial energy consumption, while exceptionally low by world standards, is comparable to estimates for some other low-income countries in Sub-Saharan Africa. In Uganda, the low level of commercial energy consumption reflects not only the country's low per capita income but also the dominance of the subsistence sector and the significant decline in the industrial and transport sectors during the 1970s. For the same reasons, energy consumption is concentrated in the household sector and supplied primarily from fuelwood. In 1980, non-commercial usage represented 82% and commercial usage 18% of total energy consumption. Of the energy consumed, 90.7% was fuelwood, 4.0% charcoal, 4.8% petroleum, and 0.5% electricity.

32. Since 1980, the level of consumption of commercial energy has remained low due to continued low levels of capacity utilization in the industrial sector. The trend of commercial energy consumption, which was declining during the 1970s, is now reversing. Statistics show that sales of petroleum products increased by 15% between 1981 and 1983. In addition, domestic power consumption (billings) increased by 5% between 1980 and 1983.

C. Main Issues

33. The UNDP/World Bank Energy Sector Assessment Program completed a report entitled Uganda: Issues and Options in the Energy Sector (No. 4453-UG) in July 1983. This Energy Sector Assessment identified the following main sectoral issues: (a) high cost of petroleum imports; (b) distortions in retail prices of petroleum products and shortcomings in the retail pricing formula; (c) relatively low efficiency in the use of petroleum products and fuelwoods; (d) insufficient supply of fuelwood, especially in the Kampala/Entebbe area; (e) inadequate level of stumpage fees; (f) unreliability of power supply and high power system losses; (g) shortfall in power generation capacity to meet forecast demand beyond the mid-1980s; (h) low level of power tariffs and inappropriate tariff structure; and (i) lack of sectorwide coordination and planning.

34. The Government has taken important initiatives to address these issues, as discussed in the Uganda Energy Assessment Status Report (No. 020/84) prepared by the UNDP/World Bank Energy Sector Management Assistance Program (ESMAP) in August 1984. In the case of petroleum, the Government has diversified supply sources, confirmed the viability of a supplementary supply route through Tanzania, begun to switch to the railway as a less expensive means to transport petroleum products, and introduced a new pricing formula in an effort to reflect the economic costs of premium and regular gasoline, kerosene, and diesel. For these petroleum products, retail prices were adjusted several times to keep them close to world market levels (paragraph 38). With respect to energy efficiency, the Government has initiated studies to introduce efficiency measures in a number of industries and initiated efforts in the transport sector, such as road rehabilitation and railway track repair and regrading, which would yield a reduction in fuel consumption.

35. In the case of fuelwood, the Government was able to attract assistance from a number of international donors for rural social forestry projects to expand plantations on the basis of supply and demand. The Government is considering an increase in the stumpage fee in order to reflect economic costs more closely (paragraph 36). In addition, the Bank's proposed Second Power Project (paragraph 24) would finance a forestry and plantation inventory in main population and industrial areas together with fuel marketing and household energy surveys in major towns. The Government also has proposed a Forestry Project, emphasizing fuelwood, to the Bank. As far as power is concerned, the Government has obtained assistance from the Overseas Development Administration (United Kingdom) for a Power Development Study, which is intended to prepare the least cost

development plan for the subsector. The proposed Second Power Project will support, inter alia, rehabilitation of Owen Falls Power Station and of transmission and distribution networks, and a study of the tariff structure and level. While the Government has increased tariffs, further increases are needed to bring rates more into line with economic costs. Finally, with respect to institutional arrangements in the energy sector, the Government has decided to establish an Energy Department within the Ministry of Power, Posts and Telecommunications (MPPT) to facilitate energy policy coordination and integrated sector planning. Upon the Government's request, technical assistance was provided under ESMAP to design an investment and technical assistance package for the establishment of the Department (paragraph 39). A provision for this package is included in the proposed Second Power Project.

D. Energy Pricing

36. Fuelwood. In the fuelwood subsector, the high level of retail prices of fuelwood for households, especially in Kampala, is a matter of concern to the Government. The most effective way to reduce retail prices for fuelwood would be to improve supply, and efforts are underway in this regard (paragraph 28). To allow fuelwood prices to reflect the economic value of wood as a fuel, the Government has been taking first steps and is considering a proposal to raise the stumpage fee from a USh 200/m^3 to USh 500/m^3.

37. Electricity. Until mid-1984, tariffs were among the lowest in the world and far below the long run marginal costs of supply despite three increases each of 50% since early 1982. The average sales to resident consumers in 1983 was equivalent to USh 1.0/kWH (US$.03/kWh). On August 1, 1984, tariffs were increased to a level sufficient to meet operating costs and to service debts. The tariff rate still remains low by world standards, yielding an average revenue from residential consumers of about USh 8.0/kWh (US$.02/kWh) in late 1984. Preliminary estimates of the long-run marginal cost amount to roughly US$.05/kWh. A firm estimate of the long-run marginal cost will be made under the Power Development Study (paragraph 35) and a tariff study to be included in the proposed Second Power Project. The bulk tariffs for exports to Kenya are also far below the economic costs of supply. However, the Government intends to renegotiate the existing export contract.

38. Petroleum Products. Retail prices for all energy sources in Uganda declined in real terms during the 1970s. This decline contributed to a general deterioration of efficiency in the energy sector, and escalated the smuggling of petroleum products to neighboring countries. The Government, which sets the prices of the four major petroleum products, has increased petroleum product prices to reflect their economic value since 1982, and has succeeded in keeping retail prices in line with economic costs, despite the high devaluation of the exchange rate during the period. As of December 1984, prices for gasoline were set slightly above their respective economic costs while prices for kerosene and automotive diesel were set marginally below, as shown in the following table which also includes Bahrain spot market prices:

Petroleum Product	Uganda Retail	Economic Cost	Bahrain Spot Market
	(US$/liter)		
Premium gasoline	.53	.47	.23
Regular gasoline	.49	.46	.23
Kerosene	.44	.46	.22
Diesel	.44	.45	.21

Source: Bank of Uganda and World Bank.

E. Institutions

39. Many Government institutions are involved in the energy sector. Among the sectoral ministries, the MPPT has been given the lead coordinating role for energy matters. To facilitate energy policy coordination and integrated sector planning, the Government decided to establish an Energy Department in the MPPT and this has been reflected in the Revised Recovery Programme. Sufficient staff positions to allow the start of operations have been approved, and recruitment of staff has been initiated. In the interim, energy policy is being coordinated by a nucleus staff within MPPT, the MPED, and the subsector institutions. To assist in putting the Department on a sound footing, the Government requested technical assistance from ESMAP for an Energy Sector Institutional Review focussing primarily on the formation and operation of the Department. An ESMAP mission visited Uganda in June 1984 and prepared a report outlining the technical assistance required, which is to be provided under the proposed Second Power Project. Other ministries have substantial and well established interests in particular aspects of the energy sector, either operationally as in the case of the Forestry Department under the Ministry of Agriculture and Forestry or representing major consumer interests such as Housing, Industry, and Transport.

40. In addition to the sectoral ministries, the Ministries of Finance and of Regional Cooperation include the energy sector under their purview. In particular, the Ministry of Finance determines the prices and taxes for petroleum products imported and marketed by oil companies. Closely associated with the ministries is the Bank of Uganda, which, in addition to its general monetary responsibilities, has a Petroleum Desk that plays a special role in energy matters through its control of the foreign exchange required for imported fuel. The Ministry of Foreign Affairs plays an important role where energy matters involve interaction with other countries, e.g., the export of power or import of petroleum products. The Geological Survey and Mines Department (GSMD) in the Ministry of Lands, Mineral, and Water Resources (MLMWR) is charged with setting up and implementing policies for exploration and development of petroleum and geothermal resources. Finally, the Uganda Electricity Board is responsible for power generation and transmission.

F. Government Strategy for the Sector

41. The Government's Recovery Programme, which was prepared in 1982 and updated in 1983, presents a coherent strategy for the rehabilitation of the economy and embraces macroeconomic and sectoral policies as well as individual projects. The basic objective of the program is to revive the productive sectors through rehabilitation and improved utilization of existing capacity. The total cost of the program was US$1,722 million, of which US$70.7 million was for the energy sector. Energy projects include: uprating of Owen Falls Power Station (US$24.0 million); rural power distribution (US$17.5 million); geophysical surveys and petroleum exploration (US$16.2 million); power line rehabilitation (US$9.0 million); and power demand and expansion studies (US$4.0 million). To reduce Government expenditures for the geophysical surveys and petroleum exploration, the Bank Group suggested that an aeromagnetic (airmag) survey should be carried out jointly with neighboring countries and efforts made to attract oil companies for exploration.

42. The main objective of the Government is to increase the supply of energy to help sustain economic recovery. Another objective is to curb excessive demands on scarce foreign exchange resources for energy purchases. This strategy dictates the following policies, which are specified in the Revised Recovery Programme: (a) control of fuel consumption through the price mechanism; (b) promotion of the conversion of industry to electricity and discouragement of the use of oil; (c) transfer of the bulk of freight transport to rail; (d) connection of remote areas served by diesel stations to the national electricity grid; (e) development of additional hydroelectric capacity; (f) implementation of fuelwood management measures; and (g) initiation of the development of new and renewable sources of energy. The Government is addressing these issues, as discussed in paragraphs 34-35.

43. The basic challenge facing the Government in the energy sector today is to ensure adequate supply and to meet future increases in demand required to sustain the country's economic recovery. The Government intends to use Uganda's abundant hydroelectric potential to continue to export electricity to neighboring countries, notably Kenya, and possibly to Tanzania, thereby earning foreign exchange. It also is dealing with the heavy burden of the oil import bill through pricing, energy conservation and, with a long term view, promotion of prospective acreage for exploration.

The Petroleum Subsector

A. Organization

44. The organization of the petroleum subsector is geared to the marketing of imported products because Uganda has no oil production and no refinery. Six oil companies are operating in Uganda. They are (with their respective market shares): Shell (30%), Total (18%), Caltex (15%), Esso (15%), Agip (14%), and Mobil (8%). Since 1970, the Uganda Government has had a 51% share in the capital of Shell, Total, and Agip.

B. Institutions

45. The MLMWR is responsible for supervising exploration and development of petroleum resources (paragraph 40). The Permanent Secretary of the MLMWR oversees the GSMD, which is charged with regulating petroleum exploration and development. The GSMD is headed by a Commissioner and his Deputy. The department has two sections, one headed by the Assistant Commissioner Geology and one by the Chief Inspector of Mines. The GSMD has about 40 professionals, including geologists, geophysicists, chemists, and mining engineers, as well as about 50 support staff, such as typists, drivers, and mechanics. The staff is well motivated, but the turmoil of the 1970s made it difficult for the professionals to keep in touch with developments in science and technology worldwide. In addition, much of the physical infrastructure, including vehicles, laboratory, and office equipment, was destroyed. The Association has provided some emergency assistance to restore GSMD's infrastructure (paragraph 62). The proposed Petroleum Exploration Promotion Project would focus on the strengthening of the GSMD through its new Petroleum Unit (PU), which was established by Presidential Decree on October 26, 1984 (paragraph 68). This would enable the Government to deal competently with oil companies that are being attracted to investing risk capital into petroleum exploration.

C. Imports

46. In volume terms, Uganda's imports of petroleum products peaked at about 450,000 tons in 1970 and declined during the 1970s until they reached 189,600 in 1983. However, in value terms increasing oil prices pushed the country's oil import bill up by 680% from US$14.3 million in 1970 to US$97.2 million in 1983, while exports of goods and services grew by about 40% from US$261.6 million in 1970 to US$367.6 million in 1983. Therefore, petroleum imports have absorbed an increasing share of export revenues, growing from about 5% in 1970 to about 26% in 1983.

47. The availability of foreign exchange to pay for imported petroleum products is ensured through an agreement between the Government and the oil companies. According to this Agreement, the Government commits itself to making available foreign exchange as required to meet the cost of importation of bulk liquid products and other petroleum related commodities, oil company services in Uganda, and repatriation of dividends.

D. Legislation

48. In 1982, the Commonwealth Fund for Technical Assistance (CFTC) agreed to the Government of Uganda's request for assistance in drafting petroleum legislation and model exploration/production agreements. The Government published a Petroleum (Exploration and Production) Bill in 1984, which would govern petroleum activities under a specific framework separate from the Mining Act. The Association reviewed the draft of the Bill and recommended that, before enactment, the Government invite comments from oil companies interested in exploration in Uganda. However, oil companies did not express any objections about the Bill, which they consider clears the way toward concluding exploration agreements. The National Assembly passed the Bill in mid-January 1985.

49. The Bill vests the property of petroleum in its natural condition in the state and provides general guidelines and principles to follow in contracting petroleum operations with oil companies. Exploration periods will be four years, with two possible extensions of two years each, and production contracts will cover 25 years. Contractors will be subject to annual rental charges and royalty payments in case of production. The rest of the terms and conditions and contractor obligations will be negotiated with the companies by the Minister of the MLMWR, on the basis of a model Petroleum Agreement which is being prepared by CFTC for the Government. Although the Bill provides for a possible national oil company, the Government has confirmed its intention to exercise a policy determination and supervisory function and to promote acreage for exploration by private oil companies interested in investing risk capital. The Government has the option to participate in the development of a commercial discovery.

E. Geology and Exploration

50. The most promising areas in Uganda from the viewpoint of petroleum exploration are located in the Western Rift Valley, which includes Lake Albert, Lake Edward, and the Rhino Camp area (Map IBRD 18617). Around Lake Albert, a sedimentary section, including oil shales and several oil seeps, has been identified. Adjacent to Lake Albert are the sedimentary basins of Lake Edward to the south and Rhino Camp to the north, altogether forming the Albert Rift. Lake Victoria is an area of modest interest for petroleum exploration. The rest of the country appears to have no oil potential. Uganda's petroleum geology is explained in Annex IV.

51. Oil seeps identified in the 1920s led to the drilling of about 30 exploratory wells near Lake Albert with an average depth of approximately 350 ft, although one well reached 4,043 ft. One of the shallower wells had oil shows, while the deep well had oil sands and numerous black shales. Thereafter, interest in petroleum exploration in Uganda was minimal until the oil discovery in Southern Sudan in 1979 sparked interest in exploring adjacent areas.[3/] When the liberation war ended in 1979, stability began to return, and a constitutional Government took office, Uganda became a better country risk.

F. Government Strategy for Petroleum Exploration Promotion

52. Although keen to attract oil companies into exploration, the Government of Uganda was uncertain about how to pursue the matter in view of its lack of exposure to the oil industry, of man-power trained and experienced in petroleum geology and exploration, and of petroleum legislation. The Government, therefore, established that a high priority was to obtain technical assistance for the identification and promotion of prospective areas. This was confirmed in the Recovery Programme. The

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3/ The sedimentary basins of Sudan and Uganda are adjacent, although they are separated by a major geological fault (the Aswa Shear Zone). The possibility that the formations in both basins may be related has enhanced the attractiveness of Uganda's Albert Rift basin.

Government further decided that a definition of the legal framework would assist in the execution of exploration agreements, and it obtained the necessary support from CFTC (paragraph 48). During preparation of the Energy Sector Assessment, the Government and the Bank concluded that specific promotion efforts were justified to attract major oil companies, none of which had by then shown interest. In 1982, the Government asked the Bank for assistance in the promotion efforts.

53. Efforts to promote prospective acreage for exploration by oil companies were to include technical assistance and additional geophysical work to enhance Uganda's prospectiveness. At the request of the Government, the Bank briefed local representatives of oil companies on the objectives and scope of the planned promotion efforts. Because prospective areas extend beyond Uganda's borders, the Government decided, on the advice of the Bank, to promote these areas in cooperation with its neighbors. Therefore, Uganda invited Kenya, Tanzania, and Zaire to participate in an airmag (aeromagnetic) survey over the Albert Rift and Lake Victoria. Uganda's share in the cost was financed as part of the Uganda Technical Assistance Project (Credit No. 1077-UG of 1981 for US$8.0 million)[4]. The regional airmag survey was completed in November 1983. It identified thickness and structure of sedimentary basins as indicators of oil prospectiveness. Preliminary interpretations were reviewed in August 1984. Thereafter, the Governments of Uganda, Tanzania, and Zaire decided to promote jointly the areas surveyed, except Lake Victoria.

54. During mobilization of the airmag survey, two major oil companies, followed soon by others, had indicated interest in the Albert Rift area. Because draft petroleum legislation was not yet available and because open promotion seemed likely to improve competition and be more efficient politically, the Government of Uganda suggested that the three countries should invite oil companies to participate in a promotion round. On November 29, 1984, the countries sponsored a meeting in London to offer promotion reports for sale and acreage for exploration to interested oil companies. Response from the oil industry was quite good—23 oil companies attended the meeting. Interested companies have until April 15, 1985 to submit bids for the acreage offered.

55. Over Lake Victoria, the regional airmag survey had included only some reconnaissance lines to test the possible presence of sediments under the lake. The reconnaissance survey was successful in detecting sediments of 1,500 m thickness, apparently getting deeper toward the areas not covered by the airmag survey. The airmag review meeting in August 1984 (paragraph 53), therefore, concluded that additional geophysical work would be justified and necessary to promote Lake Victoria.

4/ The shares of the other countries were financed under the Kenya Petroleum Exploration Promotion Project (Credit No. 2065-KE of 1982 for US$4.0 million); the Tanzania Second Technical Assistance Project (Credit No. 1060-TA of 1980 for US$11.0 million); and the Zaire Petroleum Sector Technical Assistance Project (Credit No. 1409-ZR of 1983 for US$4.5 million).

56. This work on Lake Victoria could be coordinated with Project Probe, which is a seismic survey over Lakes Malawi, Tanganyika, Turkana, and Victoria sponsored by a dozen oil companies and the Bank Group and carried out by Duke University of Durham, North Carolina. Project Probe is planning a few reconnaisance seismic lines over Lake Victoria in 1985, which should expand on the preliminary results of the airmag survey and confirm the presence or absence of a relatively thick sedimentary section. If these reconnaisance lines are promising, the Governments of Kenya, Tanzania, and Uganda consider that Project Probe should carry out a seismic survey. This survey would cover about 5,000 line-kms at a cost of about US$1.3 million. The cost would be shared in proportions of about 45% each for Uganda and Tanzania and about 10% for Kenya. Because the oil companies have not manifested any direct interest in Lake Victoria, Duke University is polling the Project Probe sponsors to maximize private sector participation in the possible extension of the survey over Lake Victoria. Contingent upon encouraging results from the reconnaisance, a decision is expected to be taken by May 1985 as to whether the Lake Victoria survey would be financed by the original Project Probe sponsors alone and/or the Governments (paragraph 72).

Bank Group Support for the Energy Sector

57. The Bank initiated its support for the energy sector through the Energy Sector Assessment Mission of October/November 1982 (paragraph 33). A subsequent mission of June 1984 reviewed the progress being made by the Government in addressing the energy sector issues. The Bank is currently assisting the energy sector through project lending and through technical assistance under ESMAP. With respect to project lending, the overall upgrading of the country's infrastructure, including airfields and roads, through the Second Reconstruction Program (Credit No. 1252-UG of 1982 for US$70 million), the Third Reconstruction Program (Credit No. 1474-UG of 1984 for US$50 million), and the Third Highway Project (Credit No. 1445-UG of 1984 for US$58 million), will facilitate petroleum exploration. The proposed Second Power Project (paragraph 24) will assist the electric power and forestry subsectors. Other support to rehabilitate Uganda's power generation and distribution system and to increase the supply of fuelwood through production incentives is under consideration.

58. As a follow-up to the Energy Sector Assessment, ESMAP completed an Energy Assessment Status Report and prepared a proposal for strengthening the country's energy sector focussing on the establishment of the Energy Department. ESMAP is also providing technical assistance for improving energy efficiency in selected rural industries, for a preliminary industrial energy audit, and for a power loss reduction study. In addition, the Government is considering ESMAP support for the preparation of a forestry/fuelwood project (paragraph 35).

59. In the petroleum subsector, the Bank identified the Petroleum Exploration Promotion Project in August/September 1982. Since then, the Bank has been providing a wide range of assistance, in particular to encourage the Government to limit public sector investments in high risk activities. During preparation of the Petroleum Exploration Promotion

Project, the Bank encouraged the Government to scale down the geophysical surveys, to maximize the role of the private sector, and to collaborate with Kenya, Tanzania, and Zaire in the preparation and implementation of the regional airmag survey. The Bank's main contribution was to assist in bringing together the Governments of the four countries, in preparation of specifications, and in procurement of consultant and contractor services. This opened better possibilities for geologic interpretation and exploration promotion because structural features may extend across political boundaries. The Bank also assisted in the preparation and organization of the promotion meeting of November 1984. According to various oil company representatives, the strength of their response was partly due to the involvement of the Bank. The companies see the Bank as instrumental in enhancing the attractiveness of areas shared among several countries, which would present difficult issues of unitization if commercial discoveries were made that straddle borders.

60. Because the most prospective sedimentary basins in Uganda (Lakes Edward and Albert) are relatively narrow (about 40 km across) and are shared with Zaire, the Bank assisted in the promotion of communications between the two countries. These communications included, in particular, exchange of information and views on the prospects of the shared area as well as consultation on the coordination of promotion efforts and on terms proposed for exploration concessions. As a result, regular consultations are being held now between the two countries with a view to interesting oil companies to apply for licenses in adjoining areas on both sides of the border. Continued assistance in this respect would be given by consultants under the proposed project (paragraph 68).

61. The Bank's efforts to assist in the promotion of areas on a coordinated regional basis have been generally appreciated by the oil industry because, otherwise, only very narrow strips of acreage would have been offered separately by each country. The companies also have been impressed that the entire promotion effort came to fruition in only about 18 months and with rather different countries. Several companies indicated that they would not have responded to promotion efforts if just one of the involved countries had presented its share of the basins. They also suggested that the Bank should continue to work jointly with the participating countries to address the problems inherent to exploration in and across border zones and particularly the potentially serious issues that could arise in the case of a commercial discovery straddling boundary lines. These issues were addressed at the airmag review meeting in August 1984. The consulting services included in the proposed project (paragraph 69) also would cover these issues.

PART IV - THE PROJECT

Background

62. This proposed project, which is intended to promote Uganda for exploration by oil companies, was identified by the Energy Sector Assessment (paragraph 33). To help finance the cost of initiating

petroleum exploration promotion, including the airmag survey (paragraph 53) and equipment for GSMD (paragraph 45), the Association agreed to the Government's request to provide US$385,000 in 1983 under the First Technical Assistance Project (Credit 1077-UG of 1981 for US$8.0 million). The Association also agreed to provide a further US$141,000 under the Second Technical Assistance Project (Credit 1434-UG of 1984 for US$15.0 million) to finance continued efforts. These efforts include the Government's cost of the promotion meeting and consultants' services for evaluation of bids, preparation of a strategy proposal and position papers in preparation for discussions with oil companies, until the present project becomes effective in mid-1985. Consultants were appointed in December 1984.

63. The GSMD prepared this proposed project, with the assistance of consultants and in consultation with the Association. Appraisal took place in August 1984. Negotiations were held in London from February 7 to 8, 1985. The Government of Uganda was represented by a delegation led by His Excellency E.R. Kamuntu, Ambassador Extraordinary and Plenipotentiary. A Credit and Project Summary is at the beginning of this Report, and a Supplementary Project Data Sheet is attached as Annex III.

Rationale for the Involvement of the Association in the Project

64. The Association's support for this project is in the context of its broader support for exploration promotion in the East African Rift System,5/ through which oil companies have already concluded exploration agreements with Burundi and Kenya. For an area like the East African Rift System, which is landlocked, logistically difficult, and spread over many countries, an international organization like the Bank Group can play an important role in facilitating promotion programs in individual countries which in turn coordinate their mutual efforts.

65. This project, in particular, would allow the Association to continue its support for the Government of Uganda's efforts to promote prospective areas for exploration by oil companies as the followup to an airmag survey. The importance of developing new energy sources in the country was identified by the Energy Sector Assessment and confirmed in the Revised Recovery Programme (paragraph 42). The support from the Association would assist the Government in building up its capabilities for the promotion of virgin areas with hydrocarbon potential and in continuing its cooperation with neighboring countries in exploration and development of prospective areas.

Project Objectives

66. The project would continue promotion efforts to attract oil companies which have appropriate technology and sufficient capital to carry

5/ Includes the following countries: Burundi, Ethiopia, Kenya, Somalia, Tanzania, Uganda, Zaire, and Zambia.

out hydrocarbon exploration in Uganda. It also would strengthen the capability of the GSMD (the project implementation agency) in the administration and supervision of exploration promotion, exploration, and development of petroleum resources.

Description of Components

A. Technical Assistance

67. This component would comprise:

(a) consulting services by a petroleum exploration consulting firm (64 man-months);

(b) a second promotion meeting, as appropriate, upon completion of the geophysical survey to promote prospective acreage to oil companies;

(c) rehabilitation of the GSMD;

(d) project administration; and

(e) training abroad.

68. The petroleum exploration consulting firm would assist in coordinating the implementation of the project components. It also would assist in the setting up and strengthening of the new PU in the GSMD (paragraph 45), including the design and implementation of a training program. This program would be submitted to the Association for review by September 30, 1985 (Schedule 4 of the draft Development Credit Agreement). The consulting firm also would assist the PU in all matters of procurement related to the project. In addition, it would assist and advise the PU on the design, implementation, and interpretation of geophysical surveys and other data gathering to be conducted (paragraph 71). Moreover, the firms would advise the Government on the preparation of a promotion strategy report on Uganda's geological prospects, assist in the preparation of a second promotion meeting (September 1986), as appropriate, and advise on petroleum exploration matters, in particular exploration agreements with oil companies. If this second promotion meeting is required, the Government's cost of the meeting would be financed under the project. Finally, the firm would review progress reports from companies exploring for oil in Uganda; monitor exploration activities in the region; liaise with neighboring countries, in particular Zaire, for coordination and execution of exploration programs; and maintain contact with the oil industry.

69. The consulting firm would provide for a team leader (about 28 man-months) and specialized services (another 36 man-months). The team leader would spend about 6 months each at both the beginning of the project (to assist the PU, advise the Government on preparing a promotion strategy, and agree on arrangements with neighboring countries to assist in exploration efforts across national boundaries) and toward the end of the

project (to assist the Government in interpretation and evaluation of exploration results, drafting a further promotion strategy). In between, the team leader would spend about four months per year in Uganda on the balance of the project related activities. The 36 man-months for specialized services would be for geophysicists, other geoscientists, and petroleum accountants, and for assistance in design and coordination of exploration in areas of interest, especially near national boundaries.

70. Rehabilitation of the GSMD would include restoration of physical infrastructure (transport vehicles and office and laboratory equipment) to enable the Department to provide necessary support to exploration companies and to carry on its own work. Project administration would comprise consulting services to audit the project accounts (six man-months) and related overseas travel for Government officials in relation to petroleum promotion. Training abroad would cover approximately two staff years for key local staff in petroleum related matters, including petroleum geology and interpretation of geophysical surveys, through attendance at seminars and special training with petroleum engineering or exploration firms.

B. Surveys

71. To facilitate the gathering of additional information on prospective areas, this component would provide for:

(a) geophysical surveys;

(b) geologic field work, as appropriate, as well as geochemical studies; and

(c) photogeologic studies.

72. The component would be targeted at areas identified in the airmag survey as sufficiently prospective to justify further work in order to attract oil companies' investment in exploration activities. The focus of the component would be on the Ugandan part of Lake Victoria, where an offshore seismic reflection survey of about 2,000 line-km would be carried out by September 1985 if the Project Probe sponsors decide not to pursue a larger seismic survey (paragraph 56). There is the possibility that the focus of the survey component could be shifted to the Albert Rift area, which was the subject of a promotion meeting in November 1984. This would happen only if oil companies do not target blocks by the bidding deadline of April 15, 1985. In this case, the component would be adjusted accordingly i.e., the geophysical survey would consist of a gravity survey. Depending on the availability of financial resources, the Lake Victoria survey would then be reduced in size or postponed until alternative financing could be obtained from other (private) sources. In addition to the geophysical survey, detailed field work and geochemical studies would be carried out at the same time as photogeologic studies.

Costs and Financing

73. The total project cost, net of duties and taxes (from which the project would be exempt), is estimated at about US$6.1 million equivalent

(see Credit and Project Summary). The cost estimate for the consulting services reflects the recently signed contract between Uganda and the exploration consultants, while the costs of the remaining project elements are based on data obtained from recent similar projects. Physical contingencies total about US$0.5 million, which is about 15% of the base cost. Price contingencies amount to about US$2.1 million, or about 59% of the base cost. This assumes price escalation of 3.5% for 1984, 8% for 1985, 9% for 1986-88, and 7.5% thereafter for foreign expenditures and 35% for 1984, 40% for 1985, 30% for 1986, 20% for 1987, 15% for 1988, and 10% for 1989 and 1990 for local expenditures. Cost estimates are expressed in US$ of September 1984.

74. The IDA credit would finance the foreign exchange component of the project, which is US$4.0 million equivalent, and US$1.1 million of the local cost component, or 84% of the total cost. The Government would cover the US$1.0 million balance of the local costs.

Project Implementation

75. The project would be implemented over about five years by the PU in the GSMD. The PU would be maintained at least until completion of the project, and would be headed by the Commissioner of Geological Surveys and Mines. He would be assisted by a Project Coordinator, geophysicists, geologists, an accountant, and an administrative officer whose qualifications and experience would be satisfactory to the Association and with an adequate number of support staff (Schedule 4 of the draft Development Credit Agreement). The GSMD would employ consultants and survey contractors, who would report to the project coordinator.

76. Implementation of the technical assistance component of the project is tailored to overlap the first 4-years of an exploration license under agreements expected to be signed in 1985. The assistance would be provided under a 2.5 year contract renewable for another period. It would help the Government evaluate the results of the exploration program and help plan the next phase of exploration promotion. Because there are no oil production activities going on, full-time assistance may not be required once the PU is operating and exploration activities are underway. Therefore, it is considered more efficient and cost-effective that the exploration consultant (assisted by experts in other fields as required) would not be a full-time resident adviser.

77. The GSMD is expected to sell some of the reports or information produced or obtained during the project, including the results of the geophysical surveys, to interested oil companies. A separate account for all proceeds from the sales would be maintained. The proceeds would be made available for further studies, surveys, or petroleum exploration promotion in Uganda or for strengthening the GSMD up to an amount at least equivalent to the aggregate sale proceeds (Section 4.02 (a) and (b) of the draft Development Credit Agreement).

Procurement and Disbursement

78. Procurement arrangements are summarized in the table below:

Project Element	Procurement Method: International Competitive Bidding (ICB)	Local Competitive Bidding (LCB)	Consultants	Total
	(US$ million)			
Exploration consultants	-	-	1.9	1.9
Rehabilitation of GSML	-	.9	-	.9
Project administration	-	-	.7	.7
Training	-	-	.5	.5
Geophysical survey	1.1	-	-	1.1
Geological data gathering	-	-	.3	.3
Photogeology	-	-	.2	.2
Promotion	-	-	.5	.5
Total	1.1	.9	4.1	6.1
Of which Association financed	(1.1)	(.9)	(3.1)	(5.1)

79. Goods under the project would be procured through local competitive bidding (LCB) procedures acceptable to the Association because they are estimated to cost less than US$100,000 equivalent and are not attractive for ICB, even after bulking of orders. The geophysical survey would be procured under ICB.[6/] Consultants would be selected in accordance with the guidelines of the Association. All bidding packages

6/ If, however, a seismic survey is carried out over Lake Victoria (paragraph 72), the survey would be carried out by Project Probe without bidding as the crew is on site and its costs have proved very competitive.

goods and services estimated to cost over US$100,000 equivalent would be subject to the Bank's prior review of procurement documentation, resulting in a coverage of about 80% of the total estimated value of contracts for goods and services.

80. Disbursements (Annex VI) for consultants' services and for geophysical surveys would be made against 100% of expenditures. For goods, disbursements would be made against 100% of foreign expenditures, 100% of local expenditures (ex-factory cost), and 80% of local expenditures for other items procured locally. Disbursements for training and project administration would cover 100% of foreign expenditures. To expedite the flow of funds for disbursements, a Special Account would be established in the Bank of Uganda. The total value of the Account would be US$310,000 equivalent. Expenditures under all categories would be eligible for disbursement from the Special Account. However, the ceiling on contract value to be financed under the Special Account would be US$150,000.

Accounting, Auditing, and Reporting

81. The GSMD would keep separate project accounts. These accounts would be audited by external auditors acceptable to the Government and the Association. The GSMD would submit audited accounts to the Association within five months after the end of each financial year, beginning with 1985. It also would submit quarterly and annual reports on project implementation in a format acceptable to the Association.

Environmental Impact

82. Although an exploration promotion project as such has no measurable environmental impact, successful promotion would lead to exploration and possibly to developmental activities potentially disruptive to the environment. However, satisfactory environmental safeguards are included in the Petroleum Bill (paragraphs 48 and 49) and would be enforced by the PU assisted by consultants.

Project Benefits and Risks

83. The main benefit of the project would be to attract oil companies to invest risk capital for exploration in the areas surveyed. In case of successful exploration, the project would have helped to initiate hydrocarbon production domestically, to replace expensive imports, and/or to generate new export revenues.

84. The main risk associated with the project is that the results of the surveys might be insufficiently attractive to spur widespread industry interest. Uganda is addressing this risk by (a) moving in steps that incur expenditures only after a previous step is successfully completed, and (b) maximizing the involvement of the private sector and minimizing cash outlays on behalf of the Government. While promotion, and not cost recovery, is the main project objective, the sale of airmag reports (totalling US$120,000 as of February 8, 1985 for Uganda alone) would help recoup part or all of the survey cost. In addition, local expenditures by oil companies during exploration would offset some of the project cost.

85. Some political risks could be involved in the project. First, relations with neighboring countries, which are very good, could change thereby diminishing, although by no means eliminating, the attraction of promoted border areas. The countries are collaborating at present and recognize the mutual benefits from continuing such collaboration. Second, security in some parts of Uganda is still an issue. However, the acreage promoted is free of banditry, although isolated incidents have been reported in the nearby towns of Hoima and Masindi. Local representatives of oil companies have been closely following the situation, and they do not feel that security is an impediment to exploration activities.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

86. The draft Development Credit Agreement between The Republic of Uganda and the Association and the Report of the Committee provided for in Article V, Section 1(d) of the Articles of Agreement of the Association are being distributed to the Executive Directors separately.

87. Special conditions of the project are listed in Section III of Annex III to this report.

88. I am satisfied that the proposed development credit would comply with the Articles of Agreement of the Association.

PART VI - RECOMMENDATION

89. I recommend that the Executive Directors approve the proposed credit.

A.W. Clausen
President
By
Ernest Stern

Attachments

Washington, D.C.
February 28, 1985

UGANDA - SOCIAL INDICATORS DATA SHEET

	UGANDA 1960/b	UGANDA 1970/b	UGANDA MOST RECENT ESTIMATE/b	REFERENCE GROUPS (WEIGHTED AVERAGES) /a (MOST RECENT ESTIMATE) /b LOW INCOME AFRICA SOUTH OF SAHARA	MIDDLE INCOME AFRICA S. OF SAHARA
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	49.0	39.0	54.0	69.2	91.0
MALE	65.0	48.0	62.0	78.8	90.5
FEMALE	32.0	31.0	46.0	57.6	73.6
SECONDARY: TOTAL	3.0	4.0	5.0	13.1	17.4
MALE	4.0	6.0	7.0	17.6	23.7
FEMALE	1.0	2.0	3.0	8.3	14.8
VOCATIONAL (% OF SECONDARY)	11.6	7.4	3.7	7.2	5.3
PUPIL-TEACHER RATIO					
PRIMARY	31.0	34.0	34.0	46.1	38.6
SECONDARY	18.0	20.0	21.0 /g	25.9	24.3
ADULT LITERACY RATE (%)	25.1 /f	..	52.3	44.3	35.6
CONSUMPTION					
PASSENGER CARS/THOUSAND POP	3.5	3.0	..	3.8	20.7
RADIO RECEIVERS/THOUSAND POP	12.4	23.6	21.8	41.9	100.8
TV RECEIVERS/THOUSAND POP	0.1	1.4	5.8 /g	2.0	18.5
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION	7.3	8.5	1.6 /g	5.4	17.2
CINEMA ANNUAL ATTENDANCE/CAPITA	0.3	..	0.1 /d	1.4	0.3
LABOR FORCE					
TOTAL LABOR FORCE (THOUS)	3255.0	4187.0	5427.0	.	.
FEMALE (PERCENT)	35.1	34.6	33.6	36.5	33.8
AGRICULTURE (PERCENT)	89.0	86.0	83.0	77.4	57.1
INDUSTRY (PERCENT)	4.0	5.0	6.0	9.8	17.4
PARTICIPATION RATE (PERCENT)					
TOTAL	44.7	42.9	40.3	41.0	36.3
MALE	58.8	56.8	54.1	52.1	47.6
FEMALE	31.0	29.3	26.9	30.2	25.1
ECONOMIC DEPENDENCY RATIO	1.0	1.1	1.2	1.2	1.4
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5% OF HOUSEHOLDS	..	20.0 /h	..	..	..
HIGHEST 20% OF HOUSEHOLDS	..	46.6 /h	..	..	..
LOWEST 20% OF HOUSEHOLDS	..	6.2 /h	..	..	..
LOWEST 40% OF HOUSEHOLDS	..	16.6 /h	..	..	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	..	168.3	525.3
RURAL	..	..	..	90.8	249.0
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	..	107.7	477.4
RURAL	..	..	87.0 /d	65.0	186.0
ESTIMATED POP. BELOW ABSOLUTE POVERTY INCOME LEVEL (%)					
URBAN	..	..	..	34.7	..
RURAL	..	..	..	65.4	..

.. NOT AVAILABLE
. NOT APPLICABLE

NOTES

/a The group averages for each indicator are population-weighted arithmetic means. Coverage of countries among the indicators depends on availability of data and is not uniform.

/b Unless otherwise noted, "Data for 1960" refer to any year between 1959 and 1961; "Date for 1970" between 1969 and 1971; and data for "Most Recent Estimate" between 1979 and 1981.

/c 1975; /d 1977; /e Registered, not all practicing in the country; /f Ages 16 and over; /g 1979; /h African population only.

UGANDA - SOCIAL INDICATORS DATA SHEET

	UGANDA 1960/b	UGANDA 1970/b	UGANDA MOST RECENT ESTIMATE/b	REFERENCE GROUPS (WEIGHTED AVERAGES) /a (MOST RECENT ESTIMATE) /b LOW INCOME AFRICA SOUTH OF SAHARA	MIDDLE INCOME AFRICA S. OF SAHARA
AREA (THOUSAND SQ. KM)					
TOTAL	236.0	236.0	236.0	..	..
AGRICULTURAL	89.3	99.8	107.6	..	..
GNP PER CAPITA (US$)	100.0	160.0	230.0	249.1	1112.9
ENERGY CONSUMPTION PER CAPITA (KILOGRAMS OF OIL EQUIVALENT)	27.0	58.0	23.0	62.8	529.0
POPULATION AND VITAL STATISTICS					
POPULATION, MID-YEAR (THOUSANDS)	7286.0	9758.0	13451.0	..	..
URBAN POPULATION (% OF TOTAL)	5.2	8.0	8.7	19.2	29.7
POPULATION PROJECTIONS					
POPULATION IN YEAR 2000 (MILL)	..	..	24.7	..	..
STATIONARY POPULATION (MILL)	..	..	88.5	..	..
POPULATION MOMENTUM	..	..	2.0	..	..
POPULATION DENSITY					
PER SQ. KM.	30.9	41.3	55.2	32.5	55.8
PER SQ. KM. AGRI. LAND	81.6	97.8	121.1	119.2	111.5
POPULATION AGE STRUCTURE (%)					
0-14 YRS	43.3	44.4	45.0	45.6	45.4
15-64 YRS	53.6	52.6	51.6	51.5	51.7
65 AND ABOVE	3.1	3.1	3.3	2.9	2.9
POPULATION GROWTH RATE (%)					
TOTAL	2.8	2.9	2.7	2.8	2.8
URBAN	7.1	7.1	3.4	6.2	5.2
CRUDE BIRTH RATE (PER THOUS)	49.4	49.9	50.1	48.6	47.0
CRUDE DEATH RATE (PER THOUS)	21.2	18.4	18.7	17.7	15.2
GROSS REPRODUCTION RATE	3.4	3.4	3.0	3.2	3.2
FAMILY PLANNING					
ACCEPTORS, ANNUAL (THOUS)	..	3.8	16.1 /c	.	.
USERS (% OF MARRIED WOMEN)	..	..	..	..	..
FOOD AND NUTRITION					
INDEX OF FOOD PROD. PER CAPITA (1969-71=100)	107.0	99.0	86.0	85.8	91.6
PER CAPITA SUPPLY OF					
CALORIES (% OF REQUIREMENTS)	96.0	98.0	80.0	86.4	98.2
PROTEINS (GRAMS PER DAY)	51.0	55.0	50.0	49.9	56.7
OF WHICH ANIMAL AND PULSE	21.0	24.0	27.0 /d	18.3	17.0
CHILD (AGES 1-4) DEATH RATE	28.0	17.0	22.0	23.8	18.7
HEALTH					
LIFE EXPECT. AT BIRTH (YEARS)	43.0	46.8	46.6	48.4	51.7
INFANT MORT. RATE (PER THOUS)	138.9	113.2	120.0	117.5	102.7
ACCESS TO SAFE WATER (%POP)					
TOTAL	..	22.0	35.0 /c	21.8	35.6
URBAN	..	88.0	100.0 /c	61.5	54.1
RURAL	..	17.0	29.0 /c	14.2 /c	27.3
ACCESS TO EXCRETA DISPOSAL (% OF POPULATION)					
TOTAL	..	76.0	94.0 /c	32.0	..
URBAN	..	84.0	82.0 /c	69.2	..
RURAL	..	76.0	95.0 /c	24.8	..
POPULATION PER PHYSICIAN	15050.0	9160.0 /e	26810.0 /d	27477.8	11948.3
POP. PER NURSING PERSON	10030.0	5120.0 /e	4180.0 /d	3396.2	2248.9
POP. PER HOSPITAL BED					
TOTAL	750.0	640.0	610.0 /c	1089.0	986.9
URBAN	80.0	80.0	100.0 /c	395.2	368.7
RURAL	1710.0	1820.0	1600.0 /c	3094.0	4012.1
ADMISSIONS PER HOSPITAL BED	..	154.1	..	..	..
HOUSING					
AVERAGE SIZE OF HOUSEHOLD					
TOTAL	..	4.8	..	..	..
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..
AVERAGE NO. OF PERSONS/ROOM					
TOTAL	..	..	..	..	..
URBAN	..	..	..	..	..
RURAL	..	..	..	..	
ACCESS TO ELECT. (% OF DWELLINGS)					
TOTAL	..	..	..	..	..
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..

DEFINITIONS OF SOCIAL INDICATORS

Notes: Although the data are drawn from sources generally judged the most authoritative and reliable, it should also be noted that they may not be internationally comparable because of the lack of standardized definitions and concepts used by different countries in collecting the data. The data are, nonetheless, useful to describe orders of magnitude, indicate trends, and characterize certain major differences between countries.

The reference groups are (1) the same country group of the subject country and (2) a country group with somewhat higher average income than the country group of the subject country (except for "High Income Oil Exporters" group where "Middle Income North Africa and Middle East" is chosen because of stronger socio-cultural affinities). In the reference group data the averages are population weighted arithmetic means for each indicator and shown only when majority of the countries in a group has data for that indicator. Since the coverage of countries among the indicators depends on the availability of data and is not uniform, caution must be exercised in relating averages of one indicator to another. These averages are only useful in comparing the value of one indicator at a time amount the country and

AREA (thousand sq.km.)
- Total - Total surface area comprising land area and inland waters; 1960, 1970 and 1981 data.
- Agricultural - Estimate of agricultural area used temporarily or permanently for crops, pastures, market and kitchen gardens or to lie fallow; 1960, 1970 and 1981 data.

GNP PER CAPITA (US$) - GNP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1980-82 basis); 1960, 1970, and 1982 data.

ENERGY CONSUMPTION PER CAPITA - Annual apparent consumption of commercial primary energy (coal and lignite, petroleum, natural gas and hydro-, nuclear and geothermal electricity) in kilograms of oil equivalent per capita; 1960, 1970, and 1981 data.

POPULATION AND VITAL STATISTICS
- Total Population, Mid-Year (thousands) - As of July 1; 1960, 1970, and 1982 data.
- Urban Population (percent of total) - Ratio of urban to total population; different definitions of urban areas may affect comparability of data among countries; 1960, 1970, and 1982 data.
- Population Projections
  - Population in year 2000 - Current population projections are based on 1980 total population by age and sex and their mortality and fertility rates. Projection parameters for mortality rates comprise of three levels assuming life expectancy at birth increasing with country's per capita income level, and female life expectancy stabilizing at 77.5 years. The parameters for fertility rate also have three levels assuming decline in fertility according to income level and past family planning performance. Each country is then assigned one of these nine combinations of mortality and fertility trends for projection purposes.
  - Stationary population - In one in which age- and sex-specific mortality rates have not changed over a long period, while age-specific fertility rates have simultaneously remained at replacement level (net reproduction rate=1). In such a population, the birth rate is constant and equal to the death rate, the age structure is also constant, and the growth rate is zero. The stationary population size was estimated on the basis of the projected characteristics of the population in the year 2000, and the rate of decline of fertility rate to replacement level.
  - Population Momentum - Is the tendency for population growth to continue beyond the time that replacement-level fertility has been achieved; that is, even after the net reproduction rate has reached unity. The momentum of a population in the year t is measured as a ratio of the ultimate stationary population to the population in the year t, given the assumption that fertility remains at replacement level from year t onward, 1980 data.
- Population Density
  - Per sq. km. - Mid-year population per square kilometer (100 hectares) of total area; 1960, 1970, and 1981 data.
  - Per sq. km. agricultural land - Computed as above for agricultural land only; 1960, 1970 and 1981 data.
- Population Age Structure (percent) - Children (0-14 years), working-age (15-64 years), and retired (65 years and over) as percentage of mid-year population; 1960, 1970, and 1982 data.
- Population Growth Rate (percent) - total - Annual growth rates of total mid-year population for 1950-60, 1960-70, and 1970-82.
- Population Growth Rate (percent) - urban - Annual growth rates of urban populations for 1950-60, 1960-70, and 1970-82.
- Crude Birth Rate (per thousand) - Annual live births per thousand of mid-year population; 1960, 1970, and 1982 data.
- Crude Death Rate (per thousand) - Annual deaths per thousand of mid-year population; 1960, 1970, and 1982 data.
- Gross Reproduction Rate - Average number of daughters a woman will bear in her normal reproductive period if she experiences present age-specific fertility rates; usually five-year averages ending in 1960, 1970, and 1982.
- Family Planning - Acceptors, Annual (thousands) - Annual number of acceptors of birth-control devices under auspices of national family planning program.
- Family Planning - Users (percent of married women) - Percentage of married women of child-bearing age who are practicing or whose husbands are practicing any form of contraception to all married women. Women of child-bearing age are generally women aged 15-49, although for some countries contraceptive usage is measured for other age groups.

FOOD AND NUTRITION
- Index of Food Production per Capita (1969-71=100) - Index of per capita annual production of all food commodities. Production excludes seed and feed and is on calendar year basis. Commodities cover primary goods (e.g. sugarcane instead of sugar) which are edible and contain nutrients (e.g. coffee and tea are excluded). Aggregate production of each country is based on national average producer price weights; 1961-65, 1970, and 1982 data.
- Per capita supply of calories (percent of requirements) - Computed from energy equivalent of net food supplies available in country per capita per day. Available supplies comprise domestic production, imports less exports, and changes in stock. Net supplies exclude animal feed, seeds, quantities used in food processing, and losses in distribution. Requirements were estimated by FAO based on physiological needs for normal activity and health considering environmental temperature, body weights, age and sex distribution of population and allowing 10 percent for waste at household level; 1961-65, 1970 and 1980 data.
- Per capita supply of protein (grams per day) - Protein content of per capita net supply of food per day. Net supply of food is defined as above. Requirements for all countries established by USDA provide for minimum allowances of 60 grams of total protein per day and 20 grams of animal and pulse protein, of which 10 grams should be animal protein. These standards are lower than those of 75 grams of total protein and 23 grams of animal protein as an average for the world, proposed by FAO in the Third World Food Supply; 1961-65, 1970 and 1980 data.
- Per Capita protein supply from animal and pulse - Protein supply of food derived from animals and pulses in grams per day; 1961-65, 1970 and 1977 data.
- Child (ages 1-4) Death Rate (per thousand) - Annual deaths per thousand in age group 1-4 years, to children in this age group; for most developing countries data derived from life tables; 1960, 1970 and 1981 data.

HEALTH
- Life Expectancy at Birth (years) - Average number of years of life remaining at birth; 1960, 1970 and 1982 data.
- Infant Mortality Rate (per thousand) - Annual deaths of infants under one year of age per thousand live births; 1960, 1970 and 1981 data.
- Access of Safe Water (percent of population) - total, urban, and rural - Number of people (total, urban, and rural) with reasonable access to safe water supply (includes treated surface waters or untreated but uncontaminated water such as that from protected boreholes, springs, and sanitary wells) as percentages of their respective populations. In an urban area a public fountain or standpost located not more than 200 meters from a house may be considered as being within reasonable access of that house. In rural areas reasonable access would imply that the housewife or members of the household do not have to spend a disproportionate part of the day in fetching the family's water needs.
- Access to Excreta Disposal (percent of population) - total, urban, and rural - Number of people (total, urban, and rural) served by excreta disposal as percentages of their respective populations. Excreta disposal may include the collection and disposal, with or without treatment, of human excreta and waste-water by water-borne systems or the use of pit privies and similar installations.
- Population per Physician - Population divided by number of practicing physicians qualified from a medical school at university level.
- Population per Nursing Person - Population divided by number of practicing male and female graduate nurses, assistant nurses, practical nurses and nursing auxiliaries.
- Population per Hospital Bed - total, urban, and rural - Population (total, urban, and rural) divided by their respective number of hospital beds available in public and private general and specialized hospital and rehabilitation centers. Hospitals are establishments permanently staffed by at least one physician. Establishments providing principally custodial care are not included. Rural hospitals, however, include health and medical centers not permanently staffed by a physician (but by a medical assistant, nurse, midwife, etc.) which offer in-patient accommodation and provide a limited range of medical facilities.
- Admissions per Hospital Bed - Total number of admissions to or discharges from hospitals divided by the number of beds.

HOUSING
- Average Size of Household (persons per household) - total, urban, and rural - A household consists of a group of individuals who share living quarters and their main meals. A boarder or lodger may or may not be included in the household for statistical purposes.
- Average number of persons per room - total, urban, and rural average number of persons per room in all urban, and rural occupied conventional dwellings, respectively. Dwellings exclude non-permanent structures and unoccupied parts.
- Access to Electricity (percent of dwellings) - total, urban, and rural - Conventional dwellings with electricity in living quarters as percentage of total, urban, and rural dwellings respectively.

EDUCATION
- Adjusted Enrollment Ratios
  - Primary school - total, male and female - Gross total, male and female enrollment of all ages at the primary level as percentages of respective primary school-age populations; normally includes children aged 6-11 years but adjusted for different lengths of primary education; for countries with universal education enrollment may exceed 100 percent since some pupils are below or above the official school age.
  - Secondary school - total, male and female - Computed as above; secondary education requires at least four years of approved primary instruction; provides general, vocational, or teacher training instructions for pupils usually of 12 to 17 years of age; correspondence courses are generally excluded.
- Vocational enrollment (percent of secondary) - Vocational institutions include technical, industrial, or other programs which operate independently or as departments of secondary institutions.
- Pupil-teacher ratio - primary, and secondary - Total students enrolled in primary and secondary levels divided by numbers of teachers in the corresponding levels.
- Adult literacy rate (percent) - Literate adults (able to read and write) as a percentage of total adult population aged 15 years and over.

CONSUMPTION
- Passenger Cars (per thousand population) - Passenger cars comprise motor cars seating less than eight persons; excludes ambulances, hearses, and military vehicles.
- Radio Receivers (per thousand population) - All types of receivers for radio broadcasts to general public per thousand of population; excludes unlicensed receivers in countries and in years when registration of radio sets was in effect; data for recent years may not be comparable since most countries abolished licensing.
- TV Receivers (per thousand population) - TV receivers for broadcast to general public per thousand population; excludes unlicensed TV receivers in countries and in years when registration of TV sets was in effect.
- Newspaper Circulation (per thousand population) - Shows the average circulation of "daily general interest newspaper," defined as a periodical publication devoted primarily to recording general news. It is considered to be "daily" if it appears at least four times a week.
- Cinema Annual Attendance per Capita per Year - Based on the number of tickets sold during the year, including admissions to drive-in cinemas on mobile units.

LABOR FORCE
- Total Labor Force (thousands) - Economically active persons, including armed forces and unemployed but excluding housewives, students, etc., covering population of all ages. Definitions in various countries are not comparable; 1960, 1970 and 1982 data.
- Female (percent) - Female labor force as percentage of total labor force.
- Agriculture (percent) - Labor force in farming, forestry, hunting and fishing as percentage of total labor force; 1960, 1970 and 1981 data
- Industry (percent) - Labor force in mining, construction, manufacturing and electricity, water and gas as percentage of total labor force; 1960, 1970 and 1981 data.
- Participation Rate (percent) - total, male, and female - Participation or activity rates are computed as total, male, and female labor force as percentages of total, male and female population of all ages respectively; 1960, 1970, and 1981 data. These are based on ILO's participation rates reflecting age-sex structure of the population, and long time trend. A few estimates are from national sources.
- Economic Dependency Ratio - Ratio of population under 15 and 65 and over to the working age population (those aged 15-64).

INCOME DISTRIBUTION
- Percentage of Private Income (both in cash and kind) - Received by richest 5 percent, richest 20 percent, poorest 20 percent, and poorest 40 percent of households.

POVERTY TARGET GROUPS

The following estimates are very approximate measures of poverty levels, and should be interpreted with considerable caution.
- Estimated Absolute Poverty Income Level (US$ per capita) - urban and rural - Absolute poverty income level is that income level below which a minimal nutritionally adequate diet plus essential non-food requirements is not affordable.
- Estimated Relative Poverty Income Level (US$ per capita) - urban and rural - Rural relative poverty income level is one-third of average per capita personal income of the country. Urban level is derived from the rural level with adjustment for higher cost of living in urban areas.
- Estimated Population Below Absolute Poverty Income Level (percent) - urban and rural - Percent of population (urban and rural) who are "absolute poor."

Comparative Analysis and Data Division
Economic Analysis and Projections Department
June 1984

ECONOMIC DEVELOPMENT DATA - UGANDA

GNP PER CAPITA IN 1983 a/ = US$220

GROSS NATIONAL PRODUCT IN 1983 b/ d/

	US$ Million	%
GNP at Market Prices	8,058	100.0
Gross Domestic Investment	689	8.6
Gross National Savings	433	5.4
Current Account Balance	-151	-1.9
Export of Goods, NFS	379	4.7
Import of Goods, NFS	509	6.3

ANNUAL RATE OF GROWTH (%, Constant Prices)

	1970-75	1975-81	1982 d/	1983 d/
GNP at Market Prices	-	-3.2	8.2	5.8
Gross Domestic Investment	-11.9	-4.7	27.1	-
Gross National Savings	-16.9	-10.4	44.7	-
Current Account Balance	.	.	.	.
Export of Goods, NFS	-11.3	-7.3	36.0	3.9
Import of Goods, NFS	-9.2	-5.9	3.1	5.0

VALUE ADDED IN 1983 (At 1983 Prices) b/ c/ d/

	US$ Million	%
Agriculture	5,853	76.0
Industry	307	4.0
Services	1,539	20.0
Total	7,699	100.0

GOVERNMENT FINANCE

	Central Government (USh Million) 1982/83 d/	Central Government (% of GDP) 1983 d/	Central Government (% of GDP) 1971/72
Current Receipts	52,822	4.2	13.5
Current Expenditure	43,871	3.4	13.5
Current Surplus	8,954	0.7	-
Capital Expenditure	8,817	0.7	8.6

MONEY, CREDIT AND PRICES

	1979	1980	1981	1982 d/	1983 d/
	(USh Million Outstanding End Period)				
Money Supply	13,166	17,435	30,849	38,512	54,422
Bank Credit to Government	9,485	14,848	29,332	34,111	40,868
Bank Credit to Other Sectors	3,371	5,951	11,459	21,371	35,186
	(Percentage or Index Numbers)				
Money as % of GDP	11.9	8.0	6.9	4.1	4.3
General Price Index (1966 = 100) e/	1,702	3,527	6,800	13,104	16,616
Annual percentage changes in General Price Index	85.6	107.2	92.8	92.5	26.8
Bank Credit to Public Sector	30.1	56.5	97.5	16.3	19.8
Bank Credit to Private Sector	4.7	76.5	92.6	86.5	64.6

a/ Calculated by the same conversion technique as the World Bank Atlas (adjusting for the overvalued exchange rate but not for any underrecording of "magendo" transactions).
b/ GNP, Investment and Savings calculated at the official window-one exchange rate. The estimates of GNP at market prices are therefore higher than the per capita GNP estimate (which is adjusted for the overvalued exchange rate) times population.
c/ Up-to-date figures on employment and productivity are unavailable.
d/ Estimates.
e/ GDP deflator.
. Not applicable.

December 11, 1984

ECONOMIC DEVELOPMENT DATA - UGANDA

BALANCE OF PAYMENTS

	1980	1981	1982a/	1983a/
		(US$ Million)		
Exports of Goods, NFS	332	250	354	379
Imports of Goods, NFS	-572	-508	-512	-509
Resource Gap (deficit = -)	-240	-258	-158	-130
Factor Services and Transfers (net) b/	-9	3	-20	-21
Balance on Current Account	-248	-256	-160	-151
Official Grants	93	106	91	79
Public M&LT Loans (net)	83	8	64	27
Disbursements	(135)	100	(121)	(94)
Amortization	(-52)	(-92)	(-57)	(-67)
Use of Fund Credit	27	125	92	101
Other Items n.e.i. (net)	-107	85	-66	-22
Overall Balance of Payments	-154	61	12	20
Reserves (end year)	4	25	60	88
Payment Arrears (end year)	257	217	-	-
Petroleum Imports	124	116	101	105
Petroleum Exports	-	-	-	

RATE OF EXCHANGE c/

	Annual Averages			
	1980	1981	1982	1983
US$1.00 = U.Sh.	7.4	50.0	94.0	156.9
USh 1.00 = US cents	13.5	2.0	1.1	0.6

MERCHANDISE EXPORTS (Average 1980-83)

	US$ Million	% d/
Coffee	315	96.4
Cotton	5	1.5
Tea	1	0.3
Other Exports	6	1.8
Sub-Total	327	100.0
Adjustments e/	-14	-4.3
Total	313	95.7

EXTERNAL DEBT, DECEMBER 31, 1983

	US$ Million
Public Debt, incl. Guaranteed	661 a/ f/
Non-Guaranteed Private Debt	..
Total Outstanding and Disbursed	661

NET DEBT SERVICE RATIO FOR 1983 g/

	%
Public Debt, incl. Guaranteed	38.7
Non-Guaranteed Private Debt	..
Total Outstanding and Disbursed	38.7

IBRD/IDA LENDING (Dec. 1, 1983) (US$ Million)

	IBRD f/	IDA
Outstanding and Disbursed	37.5	123
Undisbursed	-	212
Outstanding, incl. Undisbursed	37.5	335

a/ Estimates.
b/ Excludes official grants.
c/ At window one. The window-two exchange rate was USh 270 = US$1 at the end of April 1983.
d/ % of unadjusted merchandise exports.
e/ Includes errors and omissions, and adjustments for valuation, coverage and timing for 1980-82.
f/ Includes Uganda's notional share (26%) of EAC loans, but excludes IMF.
g/ Debt service payments (including IMF obligations) as a percentage of exports of goods and services.
.. Not available.

December 11, 1984

STATUS OF BANK GROUP OPERATIONS IN UGANDA

A. STATEMENT OF BANK LOANS AND IDA CREDITS IN UGANDA AS OF SEPTEMBER 30, 1984

				(US$ million) Amount less cancellation		
No.	Year	Borrower	Purpose	Bank	IDA	Undisbursed
One loan and eight credits fully disbursed				8.40	120.53 1/	
1077-UG	1981	Uganda	Technical Assistance		8.00	2.44
1110-UG	1981	Uganda	Water Supply Engineering		9.00	2.99
1228-UG	1982	Uganda	Phosphate Engineering		4.00	.53
1248-UG	1982	Uganda	Industrial Rehabilitation		35.00	31.40
1252-UG	1982	Uganda	Second Reconstruction Program		70.00	21.57
1328-UG	1983	Uganda	Agricultural Rehabilitation		70.00	60.59
1329-UG	1983	Uganda	Third Education		32.00	27.66
1367-UG	1983	Uganda	Posts and Telecommunications Rehabilitation		22.00	10.47
1434-UG	1984	Uganda	Second Technical Assistance		15.00	14.06
1445-UG	1984	Uganda	Third Highway		58.00	58.00
1474-UG	1984	Uganda	Third Reconstruction Program		50.00	50.00
	Total			8.40	493.53	279.71
	of which has been repaid			8.40	2.77	
	Total now outstanding			0.00	490.76	
	Amount sold:		17.50			
	of which has been repaid		17.50			
	Total now held by Bank and IDA			0.00	490.76 1/	
	Total undisbursed					279.71

1/ Includes exchange adjustment.

Note: Two further credits have been provided. The Water Supply and Sanitation Project (Credit No. 1510-UG for US$28.0 million) was approved by the Executive Directors on June 19, 1984 and was signed on November 28, 1984. The Agricultural Development Project (Credit No. 1539-UG for US$10.0 million) was approved by the Executive Directors on January 8, 1985 and was signed on February 12, 1985.

B. STATEMENT OF IFC INVESTMENTS

AS OF SEPTEMBER 30, 1984

Fiscal Year	Obligor	Type of Business	Amount in US$ million Loan	Equity	Total
1965	Mulco Textiles, Ltd.	Textiles and Fibers	2.80	0.71	3.51
1972	Tourism Promotion Services (Uganda) Ltd.	Tourism	1.11	-	1.11
1984	Sugar Corp. of Uganda	Food and Food Processing	8.00	-	8.00
1984	Toro and Mityana Tea Co., Ltd. (TAMTECO)	Food and Food Processing	1.53	-	1.53
1985	Development Finance Company of Uganda	Development Finance	-	0.37	0.37
	Total gross commitments		13.44	1.08	14.52
	Less cancellation, termination, repayments and sales		4.41	0.71	5.12
	Total commitments now held by IFC		9.03	0.37	9.40
	Total undisbursed (including participants portion)		9.53	0.37	9.90

Source: IFC Disbursements Section.

UGANDA

PETROLEUM EXPLORATION PROMOTION PROJECT

SUPPLEMENTARY PROJECT DATA SHEET

Section I. Timetable of Key Events

(a) Time taken by the country to prepare the project:	24 months
(b) Agency which prepared the project:	GSMD
(c) Date of first presentation to the Association and first mission:	August 1982
(d) Date of departure of Appraisal Mission:	August 1984
(e) Date of completion of negotiations:	February 1985
(f) Planned date of effectiveness:	May 1985

Section II. Special Bank Group Implementation Action

None

Section III. Special Conditions of the Project

(a) preparation by September 30, 1985 of a training program for review by the Association and subsequent implementation of the program (paragraph 68 and Schedule 4 of the draft Development Credit Agreement).

(b) maintenance, at least until completion of the project, of the PU in the GSMD headed by the Commissioner of Geological Surveys and Mines and assisted by a Project Coordinator, geophysicists, geologists, an accountant, and an administrative officer whose qualifications and experience would be satisfactory to the Association and with an adequate number of support staff (paragraph 75 and Schedule 4 of the draft Development Credit Agreement).

(c) maintenance of separate accounts for the proceeds from sales of project generated data to oil companies and provision of the proceeds for further studies, surveys, or exploration for hydrocarbons in Uganda or for strengthening the GSMD up to an amount equivalent to the aggregate sales proceeds (paragraph 77, Section 4.02 (a) and (b) of the draft Development Credit Agreement).

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PETROLEUM EXPLORATION PROMOTION PROJECT

Summary of Petroleum Geology

General Geology

1. Uganda is a landlocked country of about 235,036 km2. Approximately 85% of the territory is made up of Basement rocks of Precambrian Age, such as granites and metamorphics.

2. Sedimentary basins are known to exist in two areas: the first is the Semliki River/Lake Albert/Albert Nile River Valley area, and the second is the area around and south of Entebbe extending into Lake Victoria. The first basin is the elongated northern part of the Tanganyika Graben, also called the Western Branch of the East African Rift System, and the second one is the Kampala - Lake Victoria basin.

Stratigraphy

3. The northern end of the Tanganyika Graben, which is known as the Albert Rift, runs the length of Uganda on the west. It constitutes the Semliki River Valley, Lake Albert, and the Albert Nile River segment, as well as the Ruwenzori Mountains (5,120 m) horst block. The graben ends sharply to the north against the Aswa Shear Zone where the north-east flowing Albert Nile River detours abruptly to the north-west. This is at Nimule on the border with Sudan where the river becomes known as the White Nile (Bahr el Jebel). To the south, the graben extends into Zaire and Rwanda where it is filled by a chain of active volcanoes, the Virungas.

4. The outcrops within the entire graben are of Recent to Pleistocence age with deposition continuing at this time around and in the lakes. Away from the lakes at higher elevations, rocks of Pleistocene age crop out. The sediments of Recent age in the Lake Albert area are gravels, sands, and lake terraces. They may be as thick as 200 m and have been named the Epi-Kaiso or Semliki Formation.

5. Underlying the Epi-Kaiso is the Kaiso Formation of Plio-Pleistocene age with the rocks of the Pliocene age seen in the subsurface only. The section is made up of silts, sands, gravels, and muds, all of which are very soft. Approximately 503 m of these sediments are present in the B-1 well near Butiaba.

6. The Kisegi Formation is seen only in the subsurface below the Kaiso and in the B1 well, where it is 488 m thick. The upper 778 ft (237 m) is made up of alternating sands and gray-brown to gray-green shales. The lower 820 ft (250 m), which begin at 2,500 ft (762 m) in the B1 borehole, is composed of alternating sands, clays, and oil shales. The age is thought to still be Pliocene. If buried deep enough to generate petroleum, this section could be both a source and reservoir.

7. In the B1 well, the section below the Kisegi Formation, which is thought to be of Miocene age, consists of blue-green shales and oil shales with subordinate sandstones. It has a basal conglomerate resting upon basement. This section, which was encountered at 3,333 ft (1013 m) and is 698 ft (210 m) thick, appears to be an excellent potential source rock.

8. It is assumed that the above formations will all thicken to some degree westward into the depocenter in the Semliki River-Lake Albert sub-basin, where gravity maps have been interpreted to show a total sedimentary column of more than 3,000 m over a rather large area.

9. There is no information on the nature of the stratigraphy of the Lakes Edward and George sub-basin. But to the north in the Albert Nile sub-basin, records demonstrate that a well located 8 mi west of Rhino Camp was drilled to a total depth of 500 m without reaching basement. To this depth, the section is made up of sands and clays, oil shales have not yet been encountered.

10. The total known sedimentary section in the entire graben is of continental, fluvial (river), and lacustrine (lake) origin.

11. Karroo Series are reported from some scattered down-faulted outliers in the Entebbe area and on Dagusi Island in Lake Victoria. Black shales on the basis of their Glossopteris flora content, are attributed to the Ecca Shale Formation of Carboniferous age. Some oil and/or gas indications were reported from shallow drilling in these outliers. Though Karroo sediments are not mentioned as possible occurences in the graben, nevertheless they could well be preserved in the depths of the depocenters, together with Upper Jurassic shales as the Kisangani (Stanleyville) equivalents.

12. The total sediment thickness is expected to reach more than 3,000 m in the graben depocenters, ample to create adequate conditions for hydrocarbons generation.

Oil Shows

13. There are two oil seeps at Kibiro, on the eastern shore of Lake Mobutu at about 100 m from a fault separating the eastern edge of the graben from the crystalline basement. Shallow wells drilled near the seeps encountered some heavy asphaltic oil shows (about 15 API). An oil and gas seep has also been reported from the Kibuku area south of Lake Albert n the northern flank of the Ruwenzori faulted basement fold. An analysis shows a 25° API gravity oil. Shallow wells were not successful for discovering additional shows. Farther to the north, along the lake near Butiaba, a borehole has encountered oil shales with some petroleum indications in sand lenses. Oil seepages about 8 km and 22 km south of Aswa on the Zairian shore of Lake Albert (across Butiaba) have been known since the first foreigners visited the region and were the reason for the initial steps to explore the graben that took place in Uganda around the early 1920s. No geochemical analyses are yet available, they will be carried out under the proposed project.

Source and Reservoir Rocks

14. Source Rocks are known to occur in the formation below the Kisegi Formation (paragraph 7) and are referred to as "oil shales". These dark shales are assumed to have generated the oil and gas shows encountered in the thin sand streaks scattered through the section. If a Miocene, rather than an older age is confirmed, it is quite possible that older source rocks exist at greater depths, such as the equivalent of the Kisangani shales of Late Jurassic age. Similar shales of approximately the same age are commonly mentioned as sources of the large hydrocarbon reserves in the Coastal Basin (Angola, Zaire, Cabinda, etc.)

15. Still older and deeper shales, equivalent to the Karroo Ecca with remains of a Glossopteris flora, could well be preserved in the depths of the graben. These shales could have generated gas and possibly some oil. Ecca Shales are reported in Uganda from the Kampala area (paragraph 11).

16. In the absence of a deep well through the entire graben rock section, the presence of locally well developed reservoir rocks can only be surmised. It is quite conceivable that some of the sands which are thinly developed near the eastern edges of the graben for instance near Butiaba, can increase considerably in thickness in the depocenters which seem to exist basinward within the graben.

Structural Set-up

17. As already indicated (paragraph 3), the Western Rift Depression or Western Rift Valley corresponds to the northern portion of the Tanganyika Graben which abruptly ends at the Sudanese border against an important tectonic feature, the Aswa Lineament or Shear Zone. This Shear Zone can be traced along hundreds of kilometers up to the Indian Ocean near Malindi. The graben extends southward in a roughly north to south direction (180 km) before sharply turning into a northeast-southwest trend (450 km long) up to the border with Rwanda, where the Recent Virunga volcanic system takes over and hides the continuity between the northern portion (Lake Albert) and southern portion (Lake Tanganyika) of the Tanganyika Graben.

18. The graben, a typical pull-apart structural feature, is bound on each side by gravity faults. In a cross-profile, it is usually asymmetrical, in that the faulting is alternately more pronounced in one flank than in the opposite. The width of the graben at the surface varies from around 30 km to 50 km, and its depth can reach more than 3,500 m.

19. So far, the graben has been poorly studied and few structural details are known. The recently completed regional airmag survey indicates the occurrence of several depocenters, which may correspond to structural elements within the graben. The most important feature appears to be the Ruwenzori Mountains horst block, along the northern and western flanks of which oil seeps are reported. Only the results of a general reconnaissance seismic survey will unravel the various structural elements which can be expected along a major graben. The oil industry has clearly indicated its desire to undertake seismic surveys soon, as a first step for petroleum

exploration. Hopefully, the results will provide the information necessary to the understanding of the Western Rift Depression often referred to as the Lake Mobutu/Albert graben.

Previous Exploration Efforts

20. The Kiboro oil seeps were first visited in 1919 and reported in 1925. The Anglo-Persian Co. applied for a concession over the Lake Albert area in 1926, but as a result of a geological inspection in 1928, the concession was relinquished in 1930.

21. The African and European Investment Co. of Johannesburg was granted a concession in 1937 of approximately 1,384 sq mi of flats around Lake Albert and in 1938 an additional area of about 1,190 sq mi of the lake itself. Eleven structure tests were drilled near Butiaba, and later a deep test, the B1 well, went down to 4,043 ft. Finally, an additional string of nine wells was drilled before the core drill rig was moved southward of the lake near the oil sand outcrops. There another ten holes were drilled; the two deepest ones were K1 to 2,245 ft, and K2 to 855 ft. Only wells 4 and 4a located near the oil sand outcrop found hydrocarbon shows. Subsequent to this unsuccessful effort, the company relinquished its rights in 1940.

22. The Geological Survey of Uganda carried out an exploration program between 1948 and 1951, which consisted of field geology, gravity surveys, and drilling of 13 shallow stratigraphic tests averaging about 1,000 ft. This program was halted when it became clear that deeper drilling was necessary.

23. In 1971, Comoro Exploration Co. of New York signed an exploration agreement and carried out some work, but failed to live up to the work program and thus the concession expired.

24. Thus, the drilling of some 45 wells, most of which (95%) were shallow and only one of which went through perhaps the upper 15-20% of the expected stratigraphic section, has not tested the graben, particularly in its depocenters where appropriate structural features combined with adequate lithology can be expected.

Petroleum Potential

25. The occurrence of oil and gas seeps are a certain indication that thermodynamic conditions were favorable to the generation of hydrocarbons. An oil shale analysis which gives a total carbon content of 6.7% indicates the occurrence of an excellent source rock; also some free oil with a 0.7% content in sulfur was extracted from the same sample of the B1 well.

26. With a rather low thermal gradient (2.05 C or 1.125 F) for the B1 well, the top of the oil window (the interval in which oil is thought to be generated) is reached around 2,000 m or 6,560 ft. With expected depths in the graben greater than 4,000 m or 13,000 ft, there are indeed extensive areas with a large rock volume sufficient to have the capability of generating hydrocarbons in commercial quantities provided appropriate traps and reservoirs are available.

Summary

27. The five prerequisites for a sedimentary basin to be declared prospective are known to exist in the Western Rift Depression: (a) source rocks; (b) reservoir rocks, (c) protective rocks; (d) sedimentary thickness over 10,000 ft to ensure proper maturation conditions and sufficient volume of potential oil resources, and (e) appropriate structuration for trap development. Even if the big picture is still sketchy due to lack of detailed studies, the presence of the prerequisites in combination with the graben situation makes the Western Rift Depression a very attractive area and a prime prospective feature.

UGANDA

PETROLEUM EXPLORATION PROMOTION PROJECT

Implementation Schedule

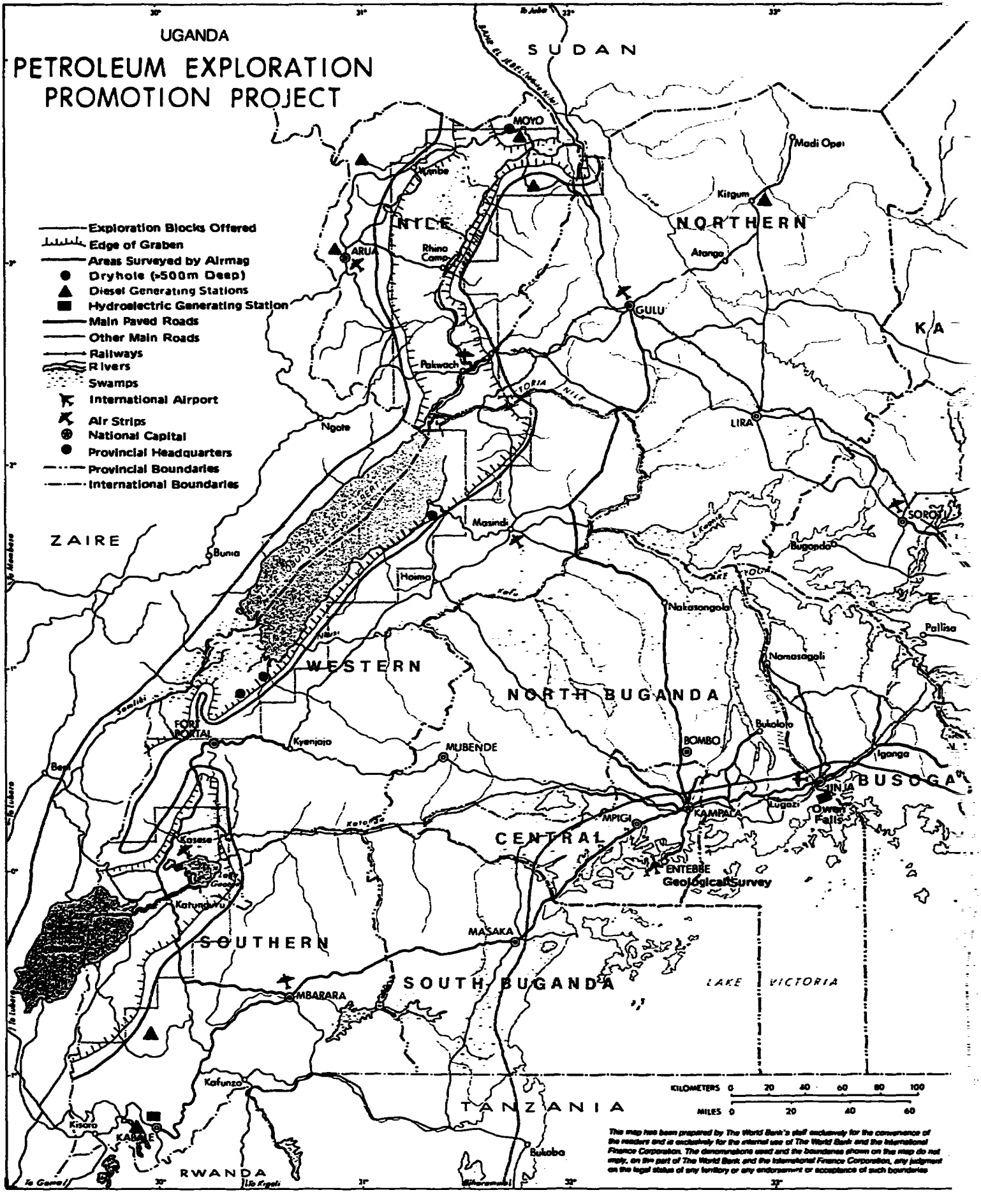
Provision of Exploration Licenses	
Closing Date, Submission of Bids for Licenses	April 15, 1985
Completion of Bid Evaluation	May 1, 1985
Signing of Licenses	September 1, 1985
Evaluation and Renegotiation of Licenses	September 1, 1989
Execution of Lake Victoria Survey	
Project Probe Decision on Seismic Survey	May 1985
Completion Seismic Survey	September 1985
Second Promotion Exploration Meeting	September 1986

UGANDA

PETROLEUM EXPLORATION PROMOTION PROJECT

Disbursement Schedule

IDA Fiscal Year	Quarter Ending	Quarterly Disbursements	Cumulative Disbursements
		US$ million	
1985/86	September 30, 1985	.2	.2
	December 31, 1985	.2	.4
	March 31, 1986	.3	.7
	June 30, 1986	.3	1.0
1986/87	September 30, 1986	.3	1.3
	December 31, 1986	.3	1.6
	March 31, 1987	.3	1.9
	June 30, 1987	.3	2.2
1987/88	September 30, 1987	.3	2.5
	December 31, 1987	.3	2.8
	March 31, 1988	.3	3.1
	June 30, 1988	.3	3.4
1988/89	September 30, 1988	.3	3.7
	December 31, 1988	.3	4.0
	March 31, 1989	.2	4.2
	June 30, 1989	.2	4.4
1989/90	September 30, 1989	.1	4.5
	December 31, 1989	.1	4.6
	March 31, 1990	.2	4.8
	June 30, 1990	.1	4.9
1990/91	September 30, 1990	.1	5.0
	December 31, 1990	.1	5.1


UGANDA
PETROLEUM EXPLORATION PROMOTION PROJECT
Exploration Blocks Offered
Edge of Graben
Areas Surveyed by Airmag
Dryhole (>500m Deep)
Diesel Generating Stations
Hydroelectric Generating Station
Main Paved Roads
Other Main Roads
Railways
Rivers
Swamps
International Airport
Air Strips
National Capital
Provincial Headquarters
Provincial Boundaries
International Boundaries
SUDAN
ZAIRE
KENYA
TANZANIA
RWANDA
NORTHERN
WESTERN
NORTH BUGANDA
CENTRAL
SOUTHERN
SOUTH BUGANDA
BUSOGA
LAKE VICTORIA
MOYO
Kumbe
Madi Opei
Kitgum
Atanga
ARUA
Rhino Camp
GULU
Pakwach
Ngote
LIRA
Masindi
Bunia
Hoima
Bugondo
Nakasongola
Pallisa
Namasagali
FORT PORTAL
Kyenjojo
MUBENDE
BOMBO
Bukoloto
Iganga
JINJA
Lugazi
Owen Falls
KAMPALA
MPIGI
Kasese
ENTEBBE
Geological Survey
Katunduru
MASAKA
MBARARA
Kafunzo
Kisoro
KABALE
Bukoba
KILOMETERS 0 20 40 60 80 100
MILES 0 20 40 60
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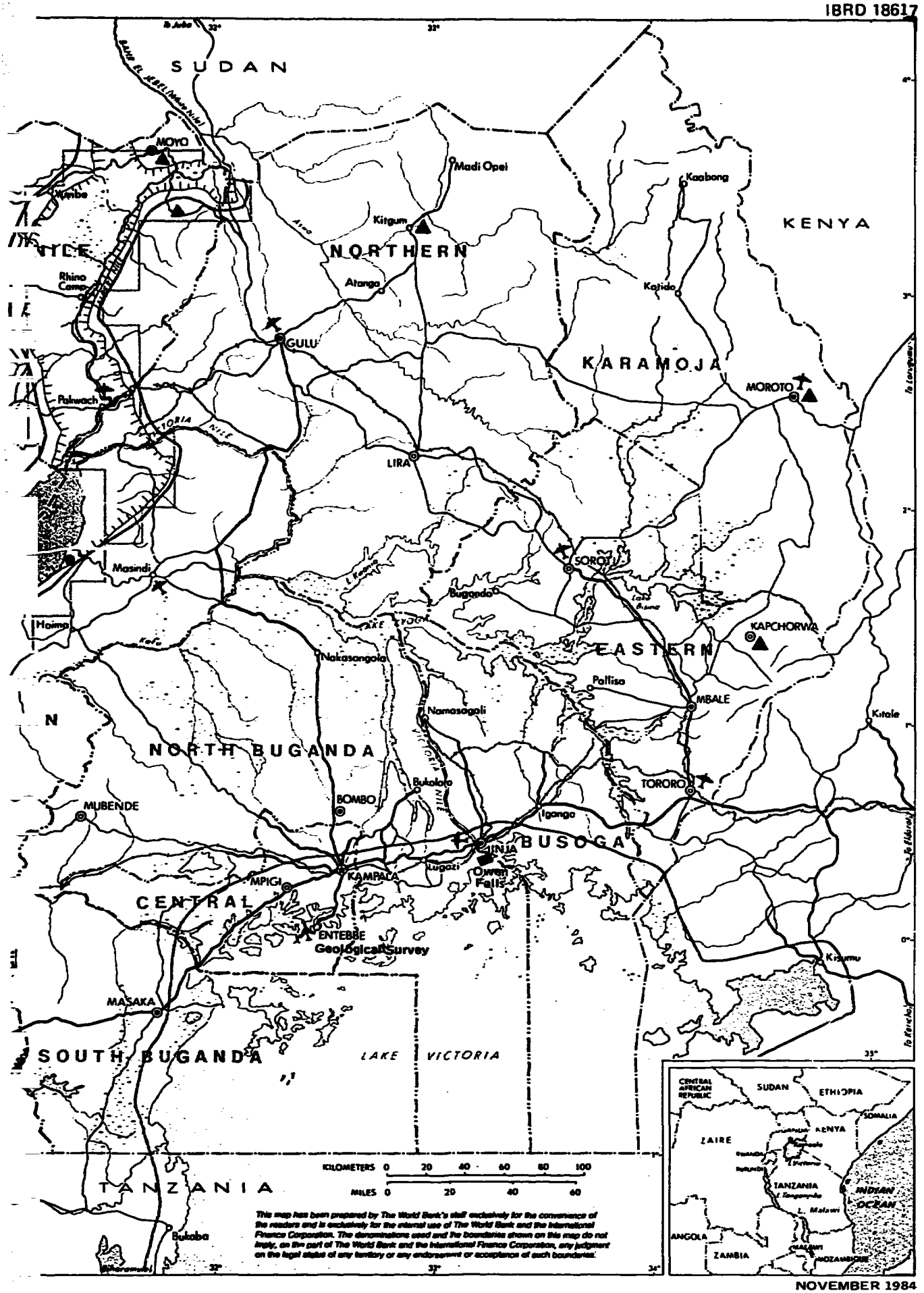

NOVEMBER 1984