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REPORT AND RECOMMENDATION
OF THE
PRESIDENT OF THE
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
TO THE
EXECUTIVE DIRECTORS
ON A
PROPOSED LOAN
IN AN AMOUNT EQUIVALENT TO US\$51.5 MILLION
TO THE
ISLAMIC REPUBLIC OF PAKISTAN
FOR A
PETROLEUM EXPLORATION PROJECT

September 15, 1983

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CURRENCY EQUIVALENTS

Currency Unit = Pakistan Rupee (Rs)
US\$1 = Rs 12.50
Rs 1 = US\$ 0.080

Fiscal Year

Government of Pakistan and OGDC

July 1 - June 30

ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
CIDA	Canadian International Development Agency
DGER	Directorate General of Energy Resources
EEC	European Economic Community
GOP	Government of Pakistan
LPG	Liquidified Petroleum Gas
NGL	Natural Gas Liquids
OGDC	Oil and Gas Development Corporation
POL	Pakistan Oilfields Limited
PPL	Pakistan Petroleum Limited
SGTC	Sui Gas Transmission Company
SNGPL	Sui Northern Gas Pipelines Limited
USAID	United States Agency for International Development
WAPDA	Water and Power Development Authority

PAKISTAN

PETROLEUM EXPLORATION PROJECT

Loan and Project Summary

Borrower: Islamic Republic of Pakistan

Beneficiary: Oil and Gas Development Corporation of Pakistan (OGDC)

Amount: US\$51.5 million equivalent (including capitalized front-end fee).

Terms: Repayable in 20 years, including five years of grace, at the standard variable interest rate.

On-Lending Terms: The Government would pass the proceeds of the loan to OGDC as an exploration grant.

Project Description: The proposed project, which would support the Government's efforts to increase petroleum exploration, consists of (i) drilling of six exploratory wells on gas prospects; (ii) a program of regional seismic surveys and basin studies designed to identify new oil and gas prospects; and (iii) promotion of potentially oil-prone areas to the international oil industry. The project faces the normal risks associated with any petroleum exploration project. Appropriate measures to reduce these risks have been incorporated in the proposed project.

Estimated Costs

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	<u>US\$ million</u>		
Exploration Drilling	21.6	26.6	48.2
Regional Seismic Program	10.7	11.9	22.6
Exploration Promotion	<u>0.2</u>	<u>1.0</u>	<u>1.2</u>
Total Base Cost	32.5	39.5	72.0
Physical Contingencies	7.5	9.8	17.3
Price Contingencies	<u>7.6</u>	<u>10.1</u>	<u>17.7</u>
Total Project Cost	47.6	59.4	107.0
Front-End Fee	<u>-</u>	<u>0.1</u>	<u>0.1</u>
Total Financing Required	47.6	59.5	107.1
Duties and Taxes	<u>0.8</u>	<u>-</u>	<u>0.8</u>
Net Financing Required	46.8	59.5	106.3

Financing Plan

	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
	<u>US\$ million</u>		
IBRD	-	51.5	51.5
Bilateral Credits	-	8.0	8.0
GOP	<u>47.6</u>	<u>-</u>	<u>47.6</u>
Total	47.6	59.5	107.1

Estimated Disbursements:

	<u>US\$ million</u>			
IBRD FY	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
Annual	22.5	16.3	11.3	1.4
Cumulative	22.5	38.8	50.1	51.5

Rate of Return: Not applicableAppraisal Report: NoneMap: IBRD 17072R

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

REPORT AND RECOMMENDATION OF THE PRESIDENT TO
THE EXECUTIVE DIRECTORS ON A PROPOSED LOAN TO
THE ISLAMIC REPUBLIC OF PAKISTAN FOR A
PETROLEUM EXPLORATION PROJECT

1. I submit the following report and recommendation on a proposed Loan to the Islamic Republic of Pakistan for the equivalent of US\$51.5 million to help finance a Petroleum Exploration Project. The loan would have a term of 20 years, including five years of grace, at the standard variable interest rate. The Government intends co-financing \$8 million of the project costs from bilateral credits. The proceeds of the loan would be provided to the Oil and Gas Development Corporation of Pakistan (OGDC) as a grant.

PART I - THE ECONOMY 1/

2. The most recent economic report "Pakistan: Economic Developments and Prospects" (No. 4215-PAK, dated February 11, 1983) was distributed to the Executive Directors on February 11, 1983.

3. The past five years have witnessed a significant economic recovery in Pakistan. Between FY77 and FY82 GDP growth averaged over 6% p.a. This growth was accompanied by a recovery in agricultural and industrial production well above the rate of population growth, currently averaging about 2.8% p.a., and by a rapid growth in exports. Exports increased in real terms by 10% p.a. Value added in agriculture rose by an average of 3.8% p.a. and in industry by 9.3% p.a. This performance contrasts markedly with the economic stagnation of the early and mid-1970s, when the growth of GDP averaged only 3-4% and goods production 1.1% p.a., and export growth was negligible.

4. The recovery in the economy since 1977 has been aided by several factors, including favorable weather and higher domestic demand associated with better crops, rising rural incomes and workers' remittances from the Middle East. Various policy changes introduced by the Government have also contributed significantly to the recovery.

5. In recent years the Government has taken a number of initiatives to improve agricultural production. Particular attention has been given to improving farmer incentives and input supplies. Support prices for all major

1/ Parts I and II are substantially the same as Parts I and II of the President's Report P-3597-PAK (Fifth Sui Northern Gas Pipeline Project) dated May 24, 1983.

crops have been raised so that they are now closer to world prices. At the same time, steps have been taken to reduce the fertilizer subsidy (which has been creating budgetary problems) and to separate it from the development budget for agriculture in order to protect allocations for other priority agricultural projects and programs. An Agricultural Prices Commission has been set up to make recommendations on appropriate changes in crop support and input prices on a consistent and timely basis.

6. The Government has formulated and begun to implement a new agricultural policy based on the main recommendations of a UNDP study on irrigated agriculture which emphasizes the need to improve the efficiency of the water delivery system through the rehabilitation of distributaries and better scheduling of water deliveries to the farmer; and to expand the role of the private sector, for example, through the promotion of private tubewell development in sweet groundwater areas. Other programs--in pesticides, seeds, agricultural credit, extension, research and farm power--have also been strengthened. These initiatives are still at an early stage and a breakthrough from the problems of low productivity at the farm level is yet to take place.

7. Major changes have also been made during the past five years in government policies in the industrial sector. The policies pursued in the early and mid-1970s of extensive nationalizations, tight restrictions on the private sector, and rapid expansion of the public sector to spearhead industrial investment and growth have been gradually reversed. Most agricultural processing and some industrial units have been denationalized; constitutional safeguards have been provided to private industry against further arbitrary government acquisitions; and the areas open to the private sector have been widened. A wide range of incentives including tax holidays, excise and import duty concessions, concessionary credit and income tax provisions, and direct cash rebates have been granted to encourage private investment and exports. These have been supplemented by a partial liberalization of imports which has improved the availability of inputs. The investment sanctioning procedure has been streamlined. These measures have led to an improvement in private sector confidence and to a sharp increase in private investment, mainly in small and medium-scale projects.

8. At the same time, the Government has embarked on the difficult and inevitably long process of reforming the public industrial sector, which has been plagued by low efficiency and profits. Major studies have been completed of the management and organization of the public sector, and the performance of individual enterprises. In accordance with the recommendations of these studies, the Board of Industrial Management (BIM) has been abolished, the number of sector holding corporations has been reduced, and boards of directors have been established which have helped to increase autonomy at the enterprise level. Some public sector units which have little prospect of improved financial performance have been closed down. These measures, together with additions to capacity and steps to retain skilled technical personnel through salary adjustments, for example in the fertilizer

subsector, have helped to increase production and capacity utilization substantially in the public sector.

9. The higher level of economic activity during the past five years and the Government's efforts to raise existing tax rates, introduce new taxes and reduce tax evasion have helped to improve public revenues. The budgetary situation improved significantly during FY80 through FY82. Government revenues, following increases of 21% in FY78 and 16% in FY79, rose by an average of 18% p.a. during the next three years as a result of the continued growth of the economy, tax and tariff increases and intensified efforts to improve tax collections. Although political developments outside Pakistan's borders led to unplanned expenditures, tight restraints were maintained on total spending; the growth of public expenditures was limited to 13% p.a. The expansion of development and administrative expenditures were restrained, while subsidies were reduced by more than 25%. These restraints on expenditures, continued revenue growth and some improvement in surpluses generated by public sector agencies helped to increase the availability of non-inflationary domestic resources. During FY80 through FY82, the overall budget deficit averaged 5.7% of GNP and the bank-financed budget deficit 1.7% of GNP; both figures are well below those of the late 1970s. The Government's conservative fiscal and monetary policies have succeeded in dampening the rate of inflation despite external pressures and substantial increases in the prices of some consumer goods because of reductions in subsidies; prices rose by about 10% in FY82 (compared with 13% in FY81) and have been rising at an annual rate of around 5% in recent months.

10. Pakistan's export performance improved considerably between FY77 and FY81. Rapidly rising workers' remittances from abroad, from US\$578 million in FY77 to over US\$2.1 billion in FY81, also greatly assisted the external position. These increases, however, were partly offset by an increase in the value of imports, mainly petroleum, oil and lubricants, fertilizer, edible oil and capital goods. The current account deficit was US\$991 million or 3.3% of GNP in FY81, compared to US\$1,050 million or nearly 7% of GNP in FY77 in current prices.

11. A number of developments contributed favorably to Pakistan's ability to finance the FY81 current account deficit. These included the conclusion of an Extended Fund Facility arrangement with the IMF in November 1980; a positive response from aid donors to the country's improved economic performance resulting in increased aid commitments and inflows; and an agreement with bilateral creditors in the Pakistan Consortium for rescheduling of debt service payments on official concessional debt falling due over an 18-month period beginning mid-January 1981. As a consequence of improved performance on both current account and capital account, foreign exchange reserves increased from US\$748 million to US\$1,039 million during the year; the latter was the equivalent of about two months' worth of import of goods and services.

12. The balance of payments deteriorated somewhat during FY82. The principal reasons were a 17% decline in the value of exports coupled with relatively slow growth of migrant remittances (6%). For Pakistan's major exports, rice and cotton, the combination of deteriorating world economic conditions plus output expansion in other countries led to a decline in both unit values and volumes. For manufactured exports, the slowdown in the world economy, together with a deterioration in Pakistan's competitiveness resulting from the linkage of the rupee to the US dollar up to January 1982 (the currency is now being managed with reference to a weighted basket of currencies), led to a decline in value as compared with the previous year. Because of the decline in world petroleum prices and import substitution in some key sectors (most particularly, fertilizers), the volume of imports of essential raw materials and capital goods could still grow sufficiently to provide for a real GDP expansion of 6% while the total value of imports expanded by only 2%. Owing to the above factors, Pakistan's current account deficit rose from US\$991 million in FY81 to US\$1,530 million in FY82 (the latter being equivalent to 4.7% of GNP). Net inflows of official assistance, private capital and IMF resources were not sufficient to cover the increased deficit and there was a drawdown of about US\$200 million in reserves. At the end of FY82, reserves were US\$840 million, the equivalent of about 1.5 months of imports.

13.- The developments in the Pakistan economy since 1977 represent welcome steps towards the solution of a set of problems which are essentially structural and long-term in nature. Notwithstanding these improvements, further wide-ranging measures to address the basic issues which are limiting economic growth in the longer term are necessary if Pakistan is to sustain its recently improved economic performance over the present decade and bring about a modest improvement in the living standards of its population. These issues include the farm-level factors affecting low productivity in agriculture; the structure and competitiveness of the industrial sector; the need to improve performance of public sector enterprises; the factors lying behind continued rapid growth in population; the need to redirect social service expenditures; and the problems of resource mobilization.

14. Agriculture remains the economy's mainstay, accounting directly for roughly a third of GDP, employing about 55% of the labor force and, directly or indirectly, providing nearly two thirds of total exports. Despite recent improvements in output and yields, a number of fundamental factors continue to limit agricultural productivity at levels well below the potential implied by the resources and technologies already available. Generally, output growth has not been commensurate with the substantial increases in available inputs, especially water and fertilizer. While considerable potential still exists for the additional use of fertilizer and other inputs, it appears essential to give greater priority to evolving complementary policies and programs which would have a direct impact on yields at the farm level. The importance of increasing farm productivity is recognized in the Government and a beginning has been made in addressing this problem. Nevertheless, support for programs to strengthen research, extension, water management and

other programs in the agricultural and water sectors needs to be intensified, while fertilizer subsidies must be further reduced, accompanied by necessary adjustments in output and consumer prices.

15. Manufacturing contributes about 15% of GDP and during much of the 1950s and 1960s provided a major stimulus to growth. Growth rates in manufacturing production, though recently better, remain below the levels attained in the 1960s. The textile industry, in particular, which accounts for nearly 40% of value added in large-scale industry, has suffered from problems of inefficiency, excess capacity and a lack of competitiveness in foreign markets. Although there have been some recent improvements in the output and profitability of public enterprises, these improvements need to be carried further through appropriate reforms to remove distortions in pricing and improve performance criteria and incentives to managers. To assist the recovery in private investment and to maintain the increased momentum in the industrial sector will require an adequate supply of local and foreign financing, both for investments and current inputs, and the more rapid provision of necessary utilities and other infrastructure requirements. At the same time, it is necessary to ensure that the Government's incentive system supports those industries in which Pakistan has a comparative advantage. Analysis is in progress to determine levels of effective protection in order to provide the basis for formulating an appropriate industrial development strategy for the 1980s.

16. The Government's efforts to deal with the energy situation by adjusting domestic oil prices, and by encouraging the substitution of other energy forms and the exploration and development of domestic oil resources, have met with some success. Growth of petroleum consumption has been restrained by the development of hydro electricity and natural gas resources as well as by petroleum price adjustments. At the same time, activity in the oil sector has been stepped up, in some instances through joint ventures with foreign private companies. Nevertheless, due to a variety of technical, geological and other reasons, progress on exploration of new fields as well as the development of existing fields has been slow and Pakistan's considerable potential in the oil and gas sector has yet to be realized. The Government has begun to implement a number of reforms relating to such matters as energy planning, pricing and organization in order to accelerate progress.

17. While it is clearly vital to sustain rapid growth in the commodity-producing sectors, it is also necessary to contain the rapid growth in population, currently running at about 2.8% p.a., which has seriously handicapped the country's ability to improve living standards. Family planning programs have so far had little effect and there have been few changes in the socio-economic environment of a type that usually accompany declines in fertility. Rapid population growth places severe burdens on government resources simply to maintain education and health programs at their current inadequate standards. However, without higher literacy rates, improved health facilities and a reduction in child mortality, it is doubtful that population growth rates can be much reduced. Expenditures on social services

have been low and undue emphasis has been given to higher education and urban health facilities. The Government has recently shown more awareness of this problem; a new and more promising population program is in the initial stages of implementation, and several special programs to improve basic health and education facilities were introduced in the FY83 budget, especially for rural areas.

18. Policies that face the longer-term issues in both the productive and the social sectors will take time to have an appreciable effect and will have to be implemented in the context of continued domestic and external resource constraints. To improve the budget and the balance of payments, a fundamental improvement is required in the overall savings levels in the economy, particularly in public savings. At 12% of GNP, national savings are substantially above the levels of the early and mid-1970s, but are still low for a country at Pakistan's per capita income level and stage of development. The continuation of the Government's recent efforts to restrain public spending, improve the performance of the public sector and encourage private investment will help to reduce present imbalances between investment and savings flows. At the same time, an increase in savings inevitably calls for restraining private consumption through further appropriate price adjustments and selective duty increases on non-essential imports. Continued restraints on spending and measures to further improve revenues through improvements in tax administration and tax and rate increases (for example, property taxes, domestic water rates and irrigation water charges) are also needed.

19. Increased agricultural production of major crops (particularly rice and cotton) will help directly to sustain export growth. Efforts are also necessary to stimulate the output of minor crops, for example, pulses, potatoes, onions and fruits, for which markets exist in neighboring countries. In addition, substantial scope exists for increasing Pakistan's exports of manufactured goods such as textiles and engineering products, as well as of a wide range of goods produced by the small-scale industrial sector. Increased domestic output of wheat, edible oil, sugar, mineral fuels and fertilizer would help to moderate import growth considerably.

20. Although, as described above, the Pakistan economy continues to face a number of difficulties, the improvements over the past few years in demand management and in planning, incentives and government programs in agriculture, industry and energy have helped to create a climate more conducive to rapid economic growth and better international trade performance, and have established an improved framework within which further reforms can be effectively pursued. The recent government policy initiatives, which have been formulated in close consultation with the Bank and Fund, have improved Pakistan's creditworthiness for commercial borrowing and for a blend of Bank and IDA borrowing.

21. At the end of calendar 1981, Pakistan's external public debt (excluding the undisbursed pipeline) stood at US\$8.8 billion, of which US\$4.6 billion was owed to bilateral members of the Pakistan Consortium, US\$1.2 billion

to OPEC and US\$1.9 billion to multilateral agencies and the balance to other bilateral and private lenders. In 1981, the Bank Group's share in Pakistan's external public indebtedness was 13.8% and in external debt service was 13.3%. According to Bank forecasts, provided recent policy improvements are sustained, Pakistan's debt service ratio (debt service divided by exports of goods and factor and non-factor services), which was about 12% in FY82, should rise slowly during the 1980s, even assuming substantial commercial borrowing, reaching 15% in FY85 and remaining in the 15-16% range through FY90.

PART II - BANK GROUP OPERATIONS IN PAKISTAN

22. The cumulative total of Bank/IDA commitments to Pakistan (exclusive of Loans and Credits or portions thereof which were disbursed in the former East Pakistan) now amounts to approximately US\$2.5 billion. During its long association with Pakistan, the Bank Group has been involved in almost all sectors of the economy. This has included its involvement with other donors, over a 20-year period, in the major program of works to develop the water resources of the Indus Basin. Approximately 38% of total Bank/IDA commitments to Pakistan have been for public utility services, 30% for agriculture, 31% for industry (of which 9% was for industrial imports) and 2% for education. Lending for public utility services has included loans and credits for railways, electric power, gas pipelines, ports, highways, telecommunications and water supply.

23. Lending operations in Pakistan have three main objectives: first, to support the directly productive sectors of the economy; secondly, to support the expansion of, and to improve the institutions which are responsible for, the principal public services supporting economic growth; and thirdly, to meet basic needs in the areas of rural and urban development.

24. In pursuit of these objectives, the Bank Group has placed special emphasis on lending for agriculture, which is the mainstay of the Pakistan economy. Projects in this sector are aimed at augmenting the supply of essential inputs, principally irrigation water, fertilizer, seeds and credit; strengthening research, extension and other agricultural supporting services; improving water management; reclaiming land by controlling salinity and waterlogging; and providing essential facilities including tubewells, livestock development and dairy processing. An important purpose of this lending is to assist the Government's program to increase the productivity of available land and water resources in the Indus Basin through quick-yielding investments, as recommended recently in a UNDP-financed study for which the Bank was executing agency.

25. In industry, most lending for the private sector has been through the DFCs, principally through eleven Loans/Credits amounting to US\$270 million for the Pakistan Industrial Credit and Investment Corporation (PICIC),

and two Credits to the Industrial Development Bank of Pakistan (IDBP), totaling US\$50 million. Direct lending for industry has also included assistance to three large fertilizer plants, as well as for small-scale industry. As of September 30, 1982, IFC had made investments in 16 Pakistan enterprises for a total of US\$183.1 million, of which US\$176.7 million was by way of loans and US\$11.4 million by equity participations (these are shown in Annex II). About US\$58.4 million of these investments remained outstanding. The enterprises assisted by IFC include three in the field of pulp and paper products, two each in textiles, food and food processing, and petrochemicals, and one each in cement, steel, fertilizers, plastics, and wood processing. IFC is also a shareholder in PICIC.

26. The focus of Bank Group lending for transport and communications has shifted increasingly towards assisting Pakistan to better utilize existing capacity by improving the efficiency of operations and strengthening the institutions responsible for these services, especially the Karachi Port Trust, Pakistan Railways, the Telephone and Telegraph Department, and federal and provincial highway agencies. In the power sector, the Bank Group has assisted the Karachi Electric Supply Corporation (KESC) and the Water and Power Development Authority (WAPDA) with four and three projects respectively; the sector has also been assisted by the construction under the Indus Basin Development Program of Mangla and Tarbela Dams.

27. In the oil and gas sector, the two Sui gas transmission companies have been assisted with five projects, while IDA has financed a petroleum development project and begun to play an important role in strengthening the public Oil and Gas Development Corporation. These efforts are assisting in the efficient development and utilization of Pakistan's domestic energy resources and in establishing a policy and institutional framework for increased private investment in the sector. A second water supply project in Lahore is currently under implementation. Five credits for education, totaling US\$62.5 million, have assisted in upgrading primary, post-secondary and higher technical and agricultural education, middle-level training of primary teachers and agricultural extension agents.

28. In addition to financing specific high-priority projects in key sectors of the economy, the Bank has from time to time supported Pakistan's development through program assistance. A first structural adjustment lending operation (SAL) was approved by the Executive Directors in June 1982. This SAL program consists of a number of significant reforms in government development planning and in policies and programs in the agriculture, energy and industrial sectors.

29. Annex II contains a summary statement of Bank Loans and IDA Credits as of March 31, 1983. Credit and loan disbursements have been generally satisfactory. Some projects have experienced initial delays due to protracted government procedures for project approval, which have now been streamlined, and to slowness in the procurement of goods and services. Rapid turnover of managerial and technical staff, in part due to migration to the

Middle East, and budgetary constraints have been problems in the case of some projects.

30. A number of further projects for Bank Group financing are currently under appraisal or being prepared in Pakistan. These include projects for power generation, industrial financing, oil and gas development, irrigation and agriculture. Pakistan continues to have domestic resource constraints for the reasons set out in Part I. To assist the Government to finance agricultural and other high-priority projects which have a low foreign exchange component, financing of some local expenditures in specific cases is justified.

31. In addition to lending, economic and sector work provides the basis for a continuing dialogue between the Bank Group and the Government of Pakistan on development strategy, and for the coordination of external assistance within the Pakistan Consortium.

PART III - THE ENERGY SECTOR AND PETROLEUM SUB-SECTOR

A. Energy Sector

Background

32. Over the past decade Pakistan has been active in developing its indigenous energy resources, particularly natural gas and hydro-electricity, and thereby limiting oil imports. Despite these efforts the country remains heavily dependent on imported oil to meet its primary energy needs. In 1980/81 oil imports totalled US\$1.6 billion, equivalent to 26% of total imports. In its dialogue with GOP, the Bank has stressed the critical importance of accelerating the exploration for, and development of, domestic energy resources to substitute for imported oil and the need to encourage greater private sector participation in the implementation and financing of energy investments. The Government recognizes the urgency of these measures and has instituted a range of policy reforms which should result in a considerable improvement in the energy situation over the medium term. These reforms are reflected in the understandings reached between the Bank and GOP under the first Structural Adjustment Loan and Credit (SAL I), as well as during the preparation of the proposed project.

Pakistan's Energy Supply and Consumption

33. In 1981/82, commercial energy consumption in Pakistan was 13.7 million tons of oil equivalent (TOE), having increased at over 7% p.a. during the previous decade. Industry and transportation were the major energy consumers representing 31% and 21%, respectively, of total energy use. The transport sector accounted for over 60% of petroleum products consumption, while rural households consumed almost 90% of total kerosene consumption.

During the decade ending 1981/82 the share of domestically produced gas and hydel in total energy supply increased from 46% to 58% and the share of oil (90% of which is imported) dropped from 45% to 37%. Despite this, net oil imports increased from 3 million TOE in 1971/72 to over 4 million TOE in 1981/82.

The Energy Resource Base

34. Natural Gas. Pakistan has substantial proven gas reserves, recently estimated at 12.9 trillion cubic feet (TCF). Production in 1981/82 was 323 billion cubic feet (BCF) which accounted for 42% of commercial energy supply. Gas in Pakistan is a low cost source of energy and rapid growth in production over the past decade (averaging 9% p.a.) has made an important contribution to limiting oil imports. However, in recent years production has failed to keep pace with demand and Pakistan is experiencing increasing gas shortages, particularly in the winter months. The Government is conscious of the situation and has evolved, with the assistance of consultants financed by the Bank, a medium-term gas development plan. The plan, which will increase production by over 30% by 1986, will involve investments in field development and transmission exceeding \$730 million. Over 70% of the field development costs will be financed by private investors including IFC, which is supporting a project with PPL to develop the Sui field. Despite these investments, gas demand is expected to exceed supply by a wide margin for the foreseeable future unless major new gas discoveries are made.

35. Oil. Known domestic oil reserves are modest, with recoverable reserves estimated at about 90-100 million barrels. In 1981/82, production was about 10,800 barrels per day (BD), primarily from the Meyal and Toot fields in the northern Potwar basin. In the next few years production from existing fields is not expected to increase significantly. A large exploration effort is required over the next 10 years to assess the oil potential of Pakistan more thoroughly. Recent attempts to promote increased oil exploration by private companies, despite sound policies, have met only limited success. The Government and the Oil and Gas Development Corporation (OGDC), the national oil company, have decided to launch a new exploration promotion program, with the assistance of the Bank, to stimulate increased interest by private petroleum companies.

36. Electric Power. Power demand grew at about 9% p.a. in the decade to 1981/82 and is expected to increase at about 10% p.a. over the next ten years. Investments in the power sector in the Sixth Five Year Plan (FY84-88) are projected to exceed US\$8 billion or 80% of the total allocation to the energy sector. Installed hydel generating capacity is expected to increase from about 1,900 MW in 1981/82 to about 3,100 MW by 1987/88 while thermal capacity over the same period is expected to increase from about 2,100 MW to about 5,500 MW. Thermal generation until recently was based almost exclusively on gas-fired plants, but with increasing gas shortages most of the new thermal plants are to use more expensive fuel oil and/or coal.

37. Coal and Nuclear. Total recoverable reserves of coal are estimated at 640 million tons, of which only 20% are proven. Most of the proven coal reserves are of poor quality, and their economic potential is uncertain. Coal production of 1.65 million tons p.a. (90% of which is used for brick making) supplied only 5.4% of commercial energy in FY82. The share of coal in domestic commercial energy supply has declined continuously over the past 20 years because of an abundance of inexpensive natural gas. In view of the emerging gas shortages, GOP is now placing greater emphasis on the exploration and development of domestic coal. An IDA Credit in support of a Coal Engineering Project was recently approved. Pakistan has one operational nuclear power generation station (137 MW) which provided 0.3% of commercial energy supplies in FY82; a second 900 MW unit is planned to be commissioned in the early 1990s.

Institutional Framework

38. Operational responsibilities for the various energy sub-sectors in Pakistan are divided among several public and private entities. Oil and gas exploration and development is carried out by OGDC and a number of international oil companies under joint venture concession agreements with OGDC and/or GOP. Two predominantly private companies, Pakistan Petroleum Ltd. (PPL) and Pakistan Oilfields Limited (POL), account for most domestic oil and gas production; POL produces oil from Meyal and PPL gas from Sui. There are three oil refineries in Pakistan, two privately owned and one in the public sector. Two of the three oil distribution and marketing companies are also state-owned. Natural gas purification, transmission and distribution are largely in the public sector; the Sui Gas Transmission Company (SGTC) purifies Sui gas and transmits it to the south of the country while Sui Northern Gas Pipelines Ltd. (SNGPL) transmits and distributes gas in the north. Responsibility for power generation and distribution principally lies with two autonomous government organizations. Coal exploration and development are undertaken mainly through leases granted to private mining concerns and by a public sector mining agency.

39. The Ministry of Petroleum and Natural Resources is responsible for planning and policy making for oil, gas and coal. All matters relating to power generation and distribution are regulated by the Ministry of Water and Power. The role of coordinating energy planning is assigned to the Ministry of Planning and Development. Overall authority for national energy policy formulation and coordination is entrusted to the National Energy Policy Committee (NEPC), co-chaired by the Ministers of Finance and Petroleum. Energy pricing decisions are normally approved by the Ministry of Finance; however, major decisions are referred to the Economic Coordination Committee (ECC) of the Federal Cabinet.

Energy Strategy

40. Over the past decade Pakistan's energy strategy relied heavily on the rapid growth of domestic hydel and natural gas production to contain oil

imports. Very low gas prices encouraged substitution for alternative fuels but deterred exploration for new gas reserves, the development of other energy sources and energy conservation.

41. With the emergence of gas shortages and higher imported oil costs, GOP has recognized the need for new policy initiatives to improve the domestic energy balance. To achieve the needed improvements GOP has identified the following key objectives:

- (i) energy management and conservation programs to reduce the growth in demand through price and non-price policy instruments;
- (ii) accelerated development of proven oil and gas fields and intensified exploration for additional domestic energy reserves including oil, gas and coal; and
- (iii) increased participation of private companies in financing and implementation of energy investments.

42. As described in more detail below, several important policy measures designed to achieve these objectives have already been taken. A gas development plan has been approved and supporting measures have been initiated to ensure its successful implementation. The exploration for and development of domestic coal resources is being given higher priority. Measures to accelerate petroleum exploration and development have been taken. Consumer as well as producer pricing policies have been adjusted. A national energy plan now under preparation with the assistance of consultants is to serve as the focus for coordinating energy policy and planning in the future.

B. Petroleum Sub-Sector

Background

43. Pakistan is a small oil producer with production currently averaging about 12,000 BD, representing less than 10% of domestic oil requirements. Oil was first discovered in 1915 in the shallow Khaur field in the northern Potwar basin by POL. Prior to World War II several other small fields in the same area were brought into production but are now largely depleted.

44. Pakistan is a major gas producer with production in 1982 of 323 billion cubic feet (BCF), equivalent to about 50 million barrels of oil per annum. Gas was first discovered in the 1950s at Sui in Baluchistan by Burmah Oil.

Petroleum Production and Reserves

45. Proven remaining reserves of crude oil and condensate are estimated to be about 90-100 million barrels. Individual fields are small, with original reserves ranging from a high of 50 million barrels to only a few million barrels. The majority of the fields are located in the Potwar basin where the reservoirs are deep and of poor quality and drilling conditions are difficult. The largest field is Meyal with remaining reserves of 28 million barrels followed by Toot with 14 million barrels. The Meyal field now produces about 5,500 BD, down significantly from recent years due to reservoir problems. The Toot field, operated by OGDC, now produces about 2,600 BD. The Khaskeli field, discovered in 1981, produces about 4,000 BD but will have a short life since total reserves are only 10 million barrels.

46. Total original proven gas reserves in Pakistan are estimated at 16.4 trillion cubic feet (TCF), and remaining proven reserves are 12.9 TCF. Sui is the largest field, with remaining reserves of 8 TCF accounting for 62% of the country total. The second largest field, Mari, is estimated to contain remaining reserves of 4 TCF. These two fields combined account for over 90% of total proven reserves in Pakistan. During the 1950s, several smaller fields containing mostly poor-quality gas were discovered, none of which are presently producing. The Government intends carrying out a study to establish the feasibility of using this gas for such purposes as power generation. More recently, OGDC made one significant gas discovery at Pirkoh in 1977 and also discovered the Dhodak gas-condensate field in 1976. Field locations are indicated on the attached map (IBRD No. 17072R).

Petroleum Prospects

47. Pakistan has good prospects for the discovery of additional hydrocarbons, particularly natural gas. The geology is conducive to the generation and accumulation of hydrocarbons with suitable source rocks, reservoir rocks and traps throughout the country. More than a dozen prominent structures in the gas prone foothills belt are untested and six one-well gas discoveries have not been fully evaluated. The probability of discovering additional gas reserves is high.

48. Oil prospects in Pakistan are more elusive. The majority of known oil fields are in the Potwar basin which, because of the small field size and high cost of development, is of little interest to international oil companies. Outside the Potwar basin the geologic evidence suggests that oil as well as gas should be generated. The recent discovery of the small Khaskeli field by Union Texas was important because it confirmed that oil generation did take place in the south. However, the search for oil will require considerable additional seismic work and drilling to evaluate the potential properly. The Government plans to undertake a new exploration promotion program, with assistance from the Bank, designed to encourage increased exploration by international oil companies.

49. In the absence of new oil discoveries domestic oil production over the next decade is not expected to increase. Although accelerated development of proven fields may increase production somewhat over the next few years, the production decline from these fields in the late 1980s is expected to be rapid. Even if the Dhodak gas-condensate field is developed soon and condensate production reaches the expected 5,000-7,000 BD, Pakistan's total oil production in 1989/90 is expected to be no higher than at present.

50. A recent gas supply and demand study prepared for GOP with Bank assistance indicated that, in the absence of major discoveries, gas demand would exceed supply by a wide margin for the foreseeable future. On the basis of planned investments to increase production of proven fields, the reserves to production ratio in the 1990s will be reduced below 15 years, which is very low for Pakistan with its heavy dependence on gas. The supply-demand gap can be narrowed through the development of poor-quality gas reserves and better management of gas demand; however, major new gas discoveries are needed if the gap is to be eliminated and the reserves to production ratio kept at a reasonable level.

Role of Public and Private Sectors

51. The pace of petroleum exploration in Pakistan has generally been modest. Private oil companies have viewed the Potwar fields as too small and costly to warrant further exploration, and south of the Potwar the basins were judged gas-prone in a country where, following the discovery of the large Sui and Mari fields, there was surplus gas. In the early sixties, following the withdrawal of most foreign oil companies, GOP established OGDC to continue exploration with Soviet technical assistance. Drilling initially focussed on the oil-bearing Potwar basin, resulting in the discovery of Toot. Although OGDC's progress in drilling wells was slow, it met with some success, discovering Dhodak and Pirkoh as well as developing Toot.

52. Following the 1974 oil price increases, the Government sought to accelerate exploration by inviting foreign oil company participation on a joint venture basis. This new policy (described below) was successful in stimulating increased exploration activity. The Government strategy has been to focus OGDC activity on the gas-prone areas and the Potwar basin, of minimal interest to foreign oil companies, while making other areas readily available to foreign oil companies on reasonable terms.

53. Over the next five years required investments in oil and gas are estimated at about \$2.2 billion including about \$400 million for exploration. Approximately 50% of the total expenditures would be by private companies and the remainder will be carried out by OGDC and the gas transmission companies.

54. Private Sector. In 1976 GOP revised the terms on which new foreign and domestic private oil companies could participate in petroleum exploration and development. An attractive package of incentives and assurances was designed for new exploration license holders. The basic framework provides

for investors to participate as joint venture partners with OGDC and/or GOP, who contribute a small portion of exploration costs (usually 2.5% to 10%) with an option to increase their participation (usually up to 50%) following commercial discovery. In the most recent agreements, there is also provision for a negotiable percentage of additional equity to be transferred to the State once an agreed risk-adjusted return on investment has been achieved.

55. The non-financial contract terms provide the investor with assurances concerning, inter alia, rights to export oil, foreign exchange convertibility, control of operations and dispute settlement procedures. The financial terms stipulate that crude oil be sold at world prices with a discount (usually 10-15%) on domestic sales. A 12.5% royalty and income tax apply, but there is a limit on total payments to the State of 55% of net income. To ensure flexibility of terms, the work commitments, domestic market discount and participation percentages are negotiated on a case-by-case basis.

56. The new policy, initiated in 1976, was successful in attracting about a dozen foreign oil companies. To encourage foreign investment the Bank has issued three "letters of co-operation" to oil companies designed to ensure Bank presence in the event of a commercial discovery and thereby limit "political risk". Although exploration activity did increase, the only success to date has been the Khaskeli discovery by Union Texas. At present, only four of the new entrants have active work programs, while the remainder are either inactive or have relinquished their licenses.

57. Over the past 18 months the Government and OGDC have made further attempts to stimulate greater private participation. Eleven blocks under license to OGDC were offered to private oil companies on attractive terms. To maintain maximum flexibility, work programs and financial terms were left open and companies were invited to submit proposals. Unfortunately, in the current depressed exploration environment the industry response was disappointing. Three blocks are expected to be awarded to the Kuwait Petroleum Corporation but no proposals were received for the remaining eight blocks.

58. Despite sound Government policies, the prospects for private exploration over the next few years are not good. The industry perception of Pakistan as "gas prone" remains very strong despite the Khaskeli discovery. Foreign oil companies are not interested in exploration for gas because of the unique marketing, institutional and financial problems associated with it. If private exploration is to increase over the next few years, active promotion efforts by the Government and OGDC designed to identify and market new oil-prospective areas will be required.

59. Public Sector. The Government intends that OGDC will continue to play an important role in the petroleum sub-sector, particularly since private exploration activity is unlikely to increase significantly in the near future. In the past OGDC's effectiveness was constrained by over-

commitment of technical and manpower resources to too many activities, resulting in a slow pace of exploration activity and long delays in developing its few known discoveries. Recently, however, decisions have been made to focus OGDC resources on a more limited number of high priority objectives. Development activity by OGDC will be confined to Toot and Pirkoh; the Dhodak discovery is to be developed by a private operator under contract to OGDC. In addition, OGDC will implement a limited exploration program focussing on gas prone areas and small structures in the Potwar basin, with all remaining areas open to foreign oil companies under joint venture agreements.

60. At the same time, increased efforts are being made to strengthen the management and technical capacity of OGDC as well as to improve its financial position and develop its access to commercial sources of financing. These objectives, which are central to the proposed project, are discussed below.

Oil and Gas Pricing

61. The main pricing issues confronting the Government in 1981 were very low gas consumer prices which encouraged excessive growth in demand, and low producer prices for oil and gas from producing fields which delayed development of proven fields and deterred exploration for new reserves. Over the past two years, significant progress has been made towards rationalizing the level and structure of oil and gas prices.

62. Most petroleum products are covered by Government price controls at ex-refinery and consumer levels. The average consumer price for oil products is above the import price, with local gasoline prices significantly higher than import parity (US\$1.80 per gallon) and kerosene prices lower (US\$0.83 per gallon).

63. As noted above, producer prices for newly discovered oil by oil companies operating under joint venture agreements are set equal to world prices with a negotiable, usually 10-15% domestic market discount. Producer prices for oil from existing producing fields are set on a cost-plus basis and are much lower. For Meyal, the main producing oil field, the producer price until 1981 was fixed at Rs 44/Bbl (i.e., about US\$3.50/Bbl). At such a price POL had neither the incentive to drill new wells nor the cash flow to finance them. In late 1981 the Government agreed to a price of US\$10 per barrel for new wells. While the substantial increase was a welcome indication of flexibility on producer pricing, the Bank has stressed the desirability of moving towards a more market oriented approach away from cost-plus pricing which involves continued price renegotiations with delays in investment.

64. In 1981, the average gas consumer price was US\$1.10/MCF which was about 25% of the fuel oil equivalent price. Since then, the average price has been increased by over 80% in three steps to a current level of US\$2.00/MCF which is about 50% of fuel oil parity. The Government intends progressively to adjust gas consumer prices with a view to increasing the

average price to no less than two-thirds of fuel oil parity (about US\$2.60/MCF at current prices) by 1988.

65. Historically, gas producer prices have been set on a cost plus guaranteed rate of return basis. In 1981 the Sui price was US\$0.07/MCF. In 1982, in response to the need to finance major new field compression facilities, a revised formula was agreed under which the Sui price was set at about US\$0.33/MCF in 1982 and is expected to increase to about US\$0.84/MCF by 1984. While the revised price has secured the needed investments at Sui, it does not provide incentives to minimize costs or optimize the rate of production.

66. The Government has adopted a new price formula applicable to all new gas supplies, including gas discovered by companies operating under joint venture agreements. The new formula will establish a "base price" at the level, based on expected costs, required to generate an agreed discounted cash flow rate of return; this base price will be indexed to movements in international oil prices. The new formula will encourage cost efficiency, provide greater incentives to increase production and provide a link to international energy prices. The acceptability of the formula to investors will depend on flexibility by the Government with respect to both the rate of return and the costs which can be included in determining the base price.

Role of the Bank

67. The Toot Oil and Gas Project (Cr. 867-PAK), approved in December 1978, was the first Bank Group lending operation to OGDC. The US\$30 million IDA Credit and parallel EEC Special Action Credit of \$12 million were fully disbursed in 1982; assistance for the project has also been provided by the Canadian International Development Agency (CIDA). The project was designed to increase Toot oil production and to strengthen the implementation capacity of OGDC. Despite drilling difficulties and lower-than-expected recoveries, incremental production from the project now represents more than 75% of total field production and the economic rate of return of the project is high. After initial implementation difficulties, the past 18 months have seen a sharp improvement in OGDC's performance, with reduced drilling time and three consecutive successful well completions.

68. The objective of the Bank in the petroleum sub-sector is to assist OGDC and GOP in developing and implementing a sound petroleum exploration and development strategy; to continue supporting institution building measures already achieved by OGDC; and to facilitate the flow of private capital. In the course of initial discussions on the possible scope for Bank assistance, it emerged that GOP did not have a clear petroleum sector strategy and that a number of policy reforms were required. A reasonable framework for private sector exploration was in place but was marred by lack of access to inactive acreage held by OGDC. The development of proven oil and gas fields operated in the private sector was being delayed partly because of low oil and gas producer prices. At the same time, OGDC was over-extended, resulting in

large areas under license to the corporation remaining unexplored and in delays in developing discoveries such as Pirkoh and Dhodak. Perhaps most importantly, the extent of emerging gas shortages was not fully appreciated within GOP, with the result that inadequate attention was being given to maximizing the exploration for and development of gas.

69. Over a period of more than two years, in the context of discussions on structural adjustment lending and specific project operations, the Bank has carried on a detailed dialogue with GOP and OGDC on the development of an appropriate energy sector strategy. GOP has taken a number of important decisions over this period which have strengthened its strategy considerably and will facilitate a more active role by the private sector. The adoption of a more flexible approach to oil and gas producer pricing has resulted in agreement with domestic private companies (PPL and POL) to accelerate investment at Sui, Meyal and Khandkhot. The intention of GOP to increase gas consumer prices to not less than two-thirds of fuel oil parity by 1988 is an important step towards rationalizing domestic energy prices and will contribute significantly to mobilizing budgetary resources. The decision to involve private oil companies more actively in the sector is being implemented through the soliciting of proposals to develop the Dhodak field and through the recent offering of 11 blocks under license to OGDC to private oil companies. Despite these efforts, however, GOP has been unable to attract foreign oil company interest in gas exploration and the response to the recent offering of exploration acreage has been disappointing. At the same time, while important steps have been implemented to strengthen OGDC, further measures are necessary to establish it as a technically and financially strong organization with access to commercial financing.

70. The proposed project will support the revised Government energy strategy and continue the important institution building efforts initiated under the first Toot project. More specifically the proposed project will assist OGDC in preparing a new exploration promotion program to stimulate greater interest by private oil companies in exploration in Pakistan as well as in continuing exploration in gas prone areas of no interest to private oil companies.

PART IV - THE PROJECT

71. The proposed project was prepared by OGDC with assistance from consultants and Bank staff. It was appraised in January 1983. Negotiations took place in Washington from May 10 to May 13, 1983; the delegation from Pakistan was led by Mr. Mukhtar Masood, Secretary, Ministry of Petroleum and Natural Resources. No separate appraisal report has been prepared for the proposed exploration loan. Supplementary project data are contained in Annex III.

Project Objectives

72. The proposed project has two main objectives: (i) to accelerate the exploration of natural gas in Pakistan; and (ii) to enhance the chances of joint-venture exploration by both foreign and domestic private oil companies. Despite good prospects for new gas discoveries, a well developed gas market and infrastructure, and severe emerging gas shortages, foreign oil companies have shown no interest in gas exploration in Pakistan. OGDC's exploration in the next few years will therefore focus on gas prone areas and the small oil fields in the Potwar basin of no interest to foreign oil companies. At the same time, vigorous promotion of the oil potential of Pakistan will be required if the participation of foreign oil companies is to be maintained or increased over the next few years.

Project Description

73. The three principal elements of the proposed project are: (i) the drilling by OGDC of about six exploratory wells on gas prospects; (ii) regional seismic profiles totaling about 3,000 kms to identify new exploration targets; and (iii) regional basin studies designed to identify petroleum prospects followed by promotion of these prospects to the international oil industry.

74. More than a dozen untested petroleum prospects have been identified by OGDC, and further prospects are expected to be identified as the seismic program proceeds. Two firm gas well locations, Loti and Afiband (IBRD Map No. 17072R), have been selected and the remainder would be selected as exploration proceeds. If the earlier wells prove to be discoveries, subsequent wells may be appraisal/delineation wells to ensure rapid follow-up.

75. Because of the need to remain flexible to permit selection of well locations on the basis of new geological information to be obtained from future exploration, (i) OGDC and the Bank would undertake a joint semi-annual review of OGDC's exploration program and priorities as well as progress in project implementation; (ii) OGDC would submit the proposed location, depth and drilling program (including casing, cementing, coring, logging and testing) for Bank-financed wells to the Bank for approval; and (iii) Bank-financed wells would not be abandoned until the Bank has had an opportunity to comment (Section 2.07 of the draft Project Agreement).

76. To facilitate the promotion of Pakistan's petroleum prospects and investment by the international petroleum industry, the proposed project would include both regional basin studies and a program of regional seismic surveys. The basin studies would be designed to provide a basis for predicting and evaluating oil and gas "plays," i.e., prospective geological areas. The project would include the acquisition of about 3,000 km of largely regional reconnaissance seismic profiles as well as the purchase of new, more sophisticated computer processing equipment suited to the needs of OGDC.

77. A central objective of the exploration program would be to increase private sector investment to complement OGDC's efforts. Following the recent unsuccessful offering of acreage, and given the depressed exploration environment worldwide, an immediate further attempt to promote investment is not warranted. However, OGDC and GOP intend to develop and implement a detailed plan for a promotional campaign designed to attract private sector exploration based on preliminary results of the proposed basin studies by July 31, 1984 (Section 3.04(a) and (b) of the draft Loan Agreement). They have also indicated that they would consider proposals by private oil companies to carry out exploration on any open areas prior to that date. If during project implementation a private oil company is granted a license to carry out exploration within any area selected for exploration under the project, GOP would reallocate the unused proceeds of the loan to carry out a substitute program satisfactory to the Bank with comparable objectives (Section 3.04(c) of the draft Loan Agreement).

Project Implementation

78. The General Manager of Exploration of OGDC would manage the exploration program, with assistance from seven senior technical personnel. This team, to be advised on an as-required basis by an experienced exploration consulting firm, would be responsible for: selecting new locations and formulating the drilling program for exploratory wells; design and implementation of the regional seismic program; and implementation of the basin studies and promotion efforts.

79. Exploration consultants would be provided to assist OGDC in comprehensive exploration studies and promotion of the petroleum potential. The consultants would provide services over a three-year period and would supervise and carry out parts of the regional basin studies which are to form the basis of renewed promotion efforts. They would also advise OGDC in the implementation and interpretation of the exploration activities of the project; and assist OGDC in the formulation and implementation of its promotional campaign. OGDC would employ by December 31, 1983, qualified consultants on terms and conditions satisfactory to the Bank to carry out these tasks (Section 2.02 of the draft Project Agreement). Terms of reference for the consultants were agreed with OGDC at negotiations.

80. The drilling of three of the exploration wells would be undertaken by OGDC Drilling Department. Qualified expatriate drilling services contractors would manage OGDC rigs and would supply the skilled personnel needed for drilling operations. International drilling contractors with their own rigs would drill the three remaining wells as well as perform special operations such as well logging, testing, cementing, perforating and tubular goods inspection.

81. The seismic program would be undertaken by two OGDC crews over a three-year period. OGDC's data processing unit would process the seismic data, and the exploration project management team would supervise the seismic

program. OGDC, with the assistance of local contractors, would install necessary surface facilities and prepare well locations.

Project Costs and Financing

82. The project, which would be implemented over a period of about three years, is estimated to cost US\$107.1 million equivalent, including the capitalized front-end fee, duty and taxes. The foreign exchange component of the project is estimated at US\$59.5 million, or 56% of the total cost.

83. The drilling and equipment costs are based on detailed lists of materials and services prepared by OGDC from recent experience; a physical contingency of 30% has been applied to the base cost of well drilling and completion and 10% on all other cost items. These rates are based on recent experience in similar areas. Costs have been calculated in 1983 prices, with price contingencies on foreign costs of 7.5% for 1984 and 7.0% per annum thereafter and 8% per annum on local costs. The expected average cost per man-month for the various foreign engineering and consultancy services required (24 man-months) is US\$18,500 including foreign travel and subsistence.

84. The proposed Bank loan of US\$51.5 million would cover about 48% of the total net project cost and about 87% of the foreign exchange cost; it represents less than 10% of OGDC's total investment program for the period FY83-86.

85. The foreign exchange costs of oil field services, oil field and geophysical equipment and materials, engineering and consultancy for the project estimated at US\$51.5 million would be financed from the proceeds of the Bank loan. A contribution by OGDC corresponding to the costs assigned to the use of OGDC's rigs is estimated at US\$1.8 million equivalent, this contribution is not included in the cost estimates for the purpose of the proposed project, as no cash expenditures are involved. In addition, materials and equipment, mostly tubular goods such as casing, amounting in value to \$8 million would be co-financed by the Government using bilateral lines of credit. The proposed Bank loan would be made to GOP who would provide the loan proceeds to OGDC as an exploration grant.

Procurement and Disbursements

86. Procurement of items proposed for Bank financing would be through international competitive bidding (ICB) according to Bank guidelines, with the exception of up to US\$2.0 million of goods and services which would be procured through limited international tendering because of the highly-specialized nature of the items and the small number of available suppliers. Specialized consulting services estimated to cost US\$0.5 million would be obtained in accordance with the Bank's Guidelines for the Use of Consultants.

87. Disbursements from the proposed loan would be made for the front-end fee and against 100% of foreign expenditures for (a) oil field services, engineering and consultants, (b) equipment, materials and spare parts; and (c) seismic data processing system. For locally manufactured equipment, disbursements would be made against 100% of the ex-factory cost. Disbursements against all items would be fully documented. The proposed loan is expected to be fully disbursed by the end of FY87.

Oil and Gas Development Corporation

88. Management and Organization. OGDC's management is vested in a Board of five directors appointed by the Government, including a Chairman who is Chief Executive. OGDC employs about 3,500 staff, including 600 skilled workers. Over the last 10 years it has suffered from a number of managerial and financial weaknesses which have hampered its efficiency. Under the first Toot Project GOP undertook a comprehensive management study of OGDC with assistance of consultants financed by the U.K. The main recommendations of the study were the need to simplify the management structure, increase substantially the delegation of authority to operational units and strengthen the financial and control systems. The Bank was directly involved with OGDC/GOP in the review of the findings of the study. As a result of this review, the Government has initiated measures to reform managerial deficiencies in OGDC and is following up on suggestions for streamlining OGDC's financial systems. Greater autonomy has been delegated to OGDC's field operations at Toot; a separate holding company has been established for the development of the Pirkoh field; and initial steps have been taken to adjust compensation levels to retain and attract technical personnel. In addition, a specific financial management action program to continue improvements in the accounting, management information and materials control functions has been agreed with the Bank and implementation of the program has started (Section 4.03 of the draft Project Agreement). The proposed project provides for continuing support to the program.

89. Financial Position. OGDC's activities have so far been financed almost exclusively from GOP budget transfers, with a negligible contribution from internal cash generation. In part this resulted from large exploration and development expenditures which have not yet been matched by corresponding increases in production. OGDC's present financial position is therefore weak. Production is low and prices, which are set by the Government, have been inadequate to cover costs. The Government has agreed to various actions which will correct this situation.

90. Until recently the Toot oil price was Rs 44 per barrel (US\$3.50) and for associated gas Rs 2 per MCF (US\$0.16). In April 1983, GOP increased the Toot oil price to the same level as Meyal oil (US\$10 per barrel) for all wells drilled since the award of the higher price to new wells at Meyal, i.e., December 1981, which accounts for about 75% of current production. The Government is now negotiating a further price increase for Meyal oil and is expected to maintain parity between Mayal oil prices and Toot oil prices,

which would involve a further increase in the price of Toot oil. GOP has also agreed that OGDC will be permitted to retain its earnings until it is able to meet its operating costs and debt service related to development operations, and contribute a reasonable share of its exploration and development requirements from internal cash generation (Section 3.07 of the draft Loan Agreement).

91. For newly-discovered oil, private oil companies operating under joint venture concession agreements are paid the world market price less a domestic market discount. GOP has agreed that, for oil fields discovered as a result of the proposed project, the oil price would be set at the world market price less an appropriate domestic market discount (Section 3.05 of the draft Loan Agreement), the same principle now applied to private oil companies in Pakistan. Adoption of this principle is an important step away from the previous cost-plus approach and holds promise, in the event of discovery, of medium term financial viability for OGDC.

92. For newly-discovered gas, under GOP's new producer pricing formula, private oil companies are to be paid a "base price" set to earn a negotiated real discounted cash flow rate of return and the base price would be indexed to changes in world oil prices. GOP has agreed that, for gas fields discovered as a result of the proposed project, the gas price paid to OGDC would be established according to this same price formula (Section 3.06 of the draft Loan Agreement).

93. The pricing strategy outlined above is aimed at making each of OGDC's development projects profitable so that, when a sufficient production level is reached, it should achieve an acceptable position on its revenue account and meet a portion of its ongoing exploration and development expenditures from internal cash generation. Over time it should move to a position where it can substantially reduce its present reliance on budget transfers and gradually increase its access to commercial borrowing.

Project Benefits and Risks

94. There is no doubt that Pakistan has a number of undrilled gas prospects. The proposed project would be an initial step in reviving gas exploration which virtually ceased in the fifties. As with most exploration projects, not enough is known at this stage to quantify the economic benefits. The justification for this component rests on a qualitative assessment of three types of risks: geological, technical and economic.

95. The geological risk is that no significant reserves of gas would be found. This risk is lower than exploration in non-producing areas since all exploratory wells would be drilled on confirmed structures near established reservoirs and would have as their targets geologic formations known to be productive in adjacent areas. Good source and reservoir rocks are abundant and (except at Afiband where terrain makes it impossible) sub-surface structure would be delineated prior to drilling through detailed seismic programs.

The geologic risk would be minimized through flexible design of the drilling program so that additional well locations are selected only after reviewing the most current exploration results.

96. The technical risk is that the project may not be completed efficiently due to difficulty in drilling and testing the wells. The risk is not high since no abnormal formation pressure or lost circulation zones have been encountered in wells near the proposed locations. Experienced contract drilling crews would operate the rigs, and the exploration consultants would be available to advise on the design and implementation of drilling programs. A substantial contingency has been included in drilling costs to provide for unexpected drilling problems or delays.

97. The economic risk is that discoveries would be too small or too low quality to justify development. In the area to be explored, terrain is rough and access difficult, reservoir quality and formation pressures are often below average, and low BTU gas has been encountered. For the Loti prospect, because the Pirkoh pipeline passes close by, the minimum economic reserve size is only 100 BCF compared to "expected" (i.e., probability weighted) reserves of 1,400 BCF. The expected net present value of Loti is positive even with a 90% dry hole risk. For Afiband, because of costlier access and the need for a long pipeline, the minimum economic reserve size is about 400 BCF, although this would be reduced significantly if jointly developed with the adjacent Dhodak and Rhodo discoveries. This compares with "expected" reserves of 900 BCF. For both prospects the probability of encountering reserves greater than the minimum economic size is high and the risks are considered acceptable. A similar analysis of future potential locations would be undertaken to minimize the risks and to maximize the total benefits of the exploration program.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

98. The draft Loan Agreement between the Islamic Republic of Pakistan and the Bank, the draft Project Agreement between the Bank and Oil and Gas Development Corporation (OGDC) and the Report of the Committee provided for in Article III, Section 4(iii) of the Articles of Agreement, are being distributed to the Executive Directors separately. Special conditions of the project are listed in Schedule III of Annex III. Approval by ECNEC of the PC-1 documents for the project would be an additional condition of effectiveness.

99. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Bank.

PART VI - RECOMMENDATION

100. I recommend that the Executive Directors approve the proposed loan.

A.W. Clausen
President

Attachments

September 15, 1983
Washington, D.C.

TABLE 3a
PAKISTAN - SOCIAL INDICATORS DATA SHEET

AREA (THOUSAND SQ. KM.)	PAKISTAN			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE) ^{1/2}	
	1960	MOST RECENT		LOW INCOME ASIA & PACIFIC	MIDDLE INCOME ASIA & PACIFIC
		/b	1970 /b			ESTIMATE /b
TOTAL	803.9				
AGRICULTURAL	249.9				
GDP PER CAPITA (US\$)	70.0	130.0	300.0	261.4	890.1
ENERGY CONSUMPTION PER CAPITA (KILOGRAMS OF COAL EQUIVALENT)	132.4	190.6	209.2	448.7	701.7
POPULATION AND VITAL STATISTICS					
POPULATION, MID-YEAR (THOUSANDS)	45851.0	60449.0	82153.0	-	-
URBAN POPULATION (PERCENT OF TOTAL)	22.1	24.9	28.2	17.3	32.4
POPULATION PROJECTIONS					
POPULATION IN YEAR 2000 (MILLIONS)			134.5	-	-
STATIONARY POPULATION (' LLIONS)			308.0	-	-
YEAR STATIONARY POPULATION IS REACHED			2125	-	-
POPULATION DENSITY					
PER SQ. KM.	57.0	75.2	99.2	158.1	255.9
PER SQ. KM. AGRICULTURAL LAND	200.4	248.9	316.9	355.9	1748.0
POPULATION AGE STRUCTURE (PERCENT)					
0-14 YRS.	43.8	46.3	46.5	36.8	39.9
15-64 YRS.	51.8	50.5	50.7	59.7	56.8
65 YRS. AND ABOVE	4.4	3.2	2.8	3.5	3.3
POPULATION GROWTH RATE (PERCENT)					
TOTAL	2.3	2.8	3.1	2.0	2.3
URBAN	4.6	4.0	4.3	3.3	3.9
CRUDE BIRTH RATE (PER THOUSAND)					
	51.3	47.4	43.6	29.3	31.8
CRUDE DEATH RATE (PER THOUSAND)					
	24.3	19.9	16.0	11.0	9.8
GROSS REPRODUCTION RATE					
	3.7	3.5	3.0	2.0	2.0
FAMILY PLANNING					
ACCEPTORS, ANNUAL (THOUSANDS)	--	1908.1	2085.0/c	-	-
USERS (PERCENT OF MARRIED WOMEN)	--	--	6.0/c	19.3	36.3
FOOD AND NUTRITION					
INDEX OF FOOD PRODUCTION					
PER CAPITA (1969=71=100)	89.0	102.0	101.0	108.1	115.6
PER CAPITA SUPPLY OF CALORIES (PERCENT OF REQUIREMENTS)					
	87.8	97.1	98.8/d	97.3	106.4
PROTEINS (GRAMS PER DAY)					
OF WHICH ANIMAL AND PULSE	58.1	59.8	62.8/d	56.9	54.4
	23.3	20.1	19.9/d	20.0	13.9
CHILD (AGES 1-4) MORTALITY RATE					
	25.4	21.5	17.8	10.9	6.7
HEALTH					
LIFE EXPECTANCY AT BIRTH (YEARS)					
	43.3	46.2	49.8	57.8	59.8
INFANT MORTALITY RATE (PER THOUSAND)					
	161.5	143.0	125.5	89.1	63.7
ACCESS TO SAFE WATER (PERCENT OF POPULATION)					
TOTAL	--	21.0	29.0	32.9	32.0
URBAN	--	77.0	60.0	70.7	51.9
RURAL	--	4.0	17.0	22.2	20.5
ACCESS TO EXCRETA DISPOSAL (PERCENT OF POPULATION)					
TOTAL	--	3.0	6.0	18.1	37.7
URBAN	--	12.0	21.0	72.7	65.7
RURAL	--	--	--	4.7	24.0
POPULATION PER PHYSICIAN					
	5396.8	4299.1/e	3775.1/e, f	3297.8	8540.4
POPULATION PER NURSING PERSON					
	16961.8	13306.0/f	10030.3/e, f	4929.3	4829.4
POPULATION PER HOSPITAL BED					
TOTAL	1794.5	1860.1	1903.4/e, f	1100.4	1047.5
URBAN	506.8	648.1	712.9/e, f	301.3	651.6
RURAL	--	12478.5	11870.1/e, f	5815.7	2597.6
ADMISSIONS PER HOSPITAL BED					
	--	--	--	--	27.0
HOUSING					
AVERAGE SIZE OF HOUSEHOLD					
TOTAL	5.4	5.3	--	--	--
URBAN	5.6	5.5	--	--	--
RURAL	5.4	5.2	--	--	--
AVERAGE NUMBER OF PERSONS PER ROOM					
TOTAL	3.1	2.8/g	--	--	--
URBAN	3.1	2.7/g	--	--	--
RURAL	3.1	2.8/g	--	--	--
ACCESS TO ELECTRICITY (PERCENT OF DWELLINGS)					
TOTAL	--	17.9/h	--	--	--
URBAN	--	54.4/h	--	--	--
RURAL	--	4.9/h	--	--	--

TABLE 3A
PAKISTAN - SOCIAL INDICATORS DATA SHEET

	PAKISTAN			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE) ^a	
	1960 /b	1970 /b	MOST RECENT ESTIMATE /b	LOW INCOME ASIA & PACIFIC	MIDDLE INCOME ASIA & PACIFIC
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	30.0	44.0	56.0	97.4	96.2
MALE	46.0	62.0	81.0	101.0	99.8
FEMALE	13.0	24.0	31.0	87.8	92.1
SECONDARY: TOTAL	11.0	14.0	16.0	53.0	37.6
MALE	18.0	22.0	24.0	63.8	41.1
FEMALE	3.0	6.0	8.0	41.3	34.1
VOCATIONAL ENROL. (% OF SECONDARY)	1.0	1.5	1.4	1.7	20.8
PUPIL-TEACHER RATIO					
PRIMARY	38.6	41.5	40.1	37.7	35.5
SECONDARY	26.0	19.8	18.7	20.2	25.0
ADULT LITERACY RATE (PERCENT)	15.0/h	20.7/i	24.0	52.1	73.1
CONSUMPTION					
PASSENGER CARS PER THOUSAND POPULATION					
	1.5	2.6	2.8/c	1.5	9.8
RADIO RECEIVERS PER THOUSAND POPULATION					
	6.0	17.1	65.8	35.4	118.5
TV RECEIVERS PER THOUSAND POPULATION					
	..	1.6	9.4	3.2	37.6
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION					
	13.2	..	13.7	16.4	53.7
CINEMA ANNUAL ATTENDANCE PER CAPITA					
	0.8	3.0/j	2.4	3.6	2.8
LABOR FORCE					
TOTAL LABOR FORCE (THOUSANDS)					
	14447.7	17364.1	22717.1	-	-
FEMALE (PERCENT)					
	8.6	9.3	10.2	29.5	33.6
AGRICULTURE (PERCENT)					
	61.0	59.0	57.0	70.0	52.2
INDUSTRY (PERCENT)					
	18.0	19.0	20.0	15.0	17.9
PARTICIPATION RATE (PERCENT)					
TOTAL	31.5	28.7	27.7	40.0	38.5
MALE	55.2	50.4	47.2	51.8	50.5
FEMALE	5.7	5.5	5.9	23.8	26.6
ECONOMIC DEPENDENCY RATIO	1.5	1.7	1.8	1.0	1.1
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5 PERCENT OF HOUSEHOLDS	20.3/h	17.8	..	..	..
HIGHEST 20 PERCENT OF HOUSEHOLDS	45.3/i	41.8	..	..	..
LOWEST 20 PERCENT OF HOUSEHOLDS	6.47E	8.0	..	..	..
LOWEST 40 PERCENT OF HOUSEHOLDS	17.57E	20.2	..	..	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US\$ PER CAPITA)					
URBAN	..	68.0/i	176.0	133.8	194.7
RURAL	..	47.07/i	122.0	111.5	155.1
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US\$ PER CAPITA)					
URBAN	..	34.0/i	88.0	..	178.2
RURAL	..	22.07/i	58.0	..	164.9
ESTIMATED POPULATION BELOW ABSOLUTE POVERTY INCOME LEVEL (PERCENT)					
URBAN	..	42.0/i	32.0	43.8	24.4
RURAL	..	43.07/i	29.0	51.7	41.1

.. 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; for 1970, between 1969 and 1971; and for Most Recent Estimate, between 1978 and 1980.

/c 1975; /d 1977; /e 1976; /f Registered, not all practicing in the country; /g 1973; /h 1962; /i 1972; /j 1968; /k 1964.

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 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 when only one 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 among the country and reference groups.

AREA (thousand sq.km.)

Total - Total exclusive areas comprising land area and inland waters; 1979 data.
Agricultural - Estimate of agricultural areas used temporarily or permanently for crops, pastures, market and kitchen gardens or to life fallow; 1979 data.

GDP PER CAPITA (US\$)

- GDP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1978-80 basis); 1960, 1970, and 1980 data.

ENERGY CONSUMPTION PER CAPITA

- Annual consumption of commercial energy (coal and lignite, petroleum, natural gas and hydro-, nuclear and geothermal electricity) in kilograms of coal equivalent per capita; 1960, 1970, and 1979 data.

POPULATION AND VITAL STATISTICS

Total Population, Mid-Year (thousands) - As of July 1; 1960, 1970, and 1980 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 1980 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 three combinations of mortality and fertility trends for projection purposes.

Stationary population - In a stationary population there is no growth since the birth rate is equal to the death rate, and since the age structure remains constant, the birth rate must equal the death rate. The stationary population size is 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.

Year stationary population is reached - The year when stationary population size will be reached.

Population Density

Per sq. km. - Mid-year population per square kilometer (100 hectares) of total area; 1960, 1970 and 1979 data.
Per sq. km. agricultural land - Computed as above for agricultural land only; 1960, 1970 and 1979 data.

Population Age Structure (percent) - Children (0-14 years), working-age (15-64 years), and retired (65 years and over) as percentages of mid-year population; 1960, 1970, and 1980 data.

Population Growth Rate (percent) - Total - Annual growth rates of total mid-year population for 1950-60, 1960-70, and 1970-80.

Population Growth Rate (percent) - urban - Annual growth rates of urban populations for 1950-60, 1960-70, and 1970-80.

Crude Birth Rate (per thousand) - Annual live births per thousand of mid-year population; 1960, 1970, and 1980 data.

Crude Death Rate (per thousand) - Annual deaths per thousand of mid-year population; 1960, 1970, and 1980 data.

Crude 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 1980.

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 (15-49 years) who use birth-control devices to all married women in same age group.

FOOD AND NUTRITION

Index of Food Production per Capita (1969-71=100) - Index of per capita annual production of all food commodities. Production includes seed and food 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 1980 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 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 1977 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 proteins, 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 Survey; 1961-65, 1970 and 1977 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, in children in this age group, for most developing countries data derived from life tables; 1960, 1970 and 1980 data.

HEALTH

Life Expectancy at Birth (years) - Average number of years of life remaining at birth; 1960, 1970 and 1980 data.

Infant Mortality Rate (per thousand) - Annual deaths of infants under one year of age per thousand live births; 1960, 1970 and 1980 data.

Access to 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 percentage of their respective populations. In an urban area a public fountain or standpipe located not more than 200 meters from a house may be considered as having reasonable access to that house. In rural areas reasonable access would imply that the households 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 Sewerage Disposal (percent of population) - total, urban, and rural - Number of people (total, urban, and rural) served by sewerage disposal as percentage of their respective populations. Sewerage 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 latrines 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 curative 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. For statistical purposes urban hospitals include WHO principal/general hospitals, and rural hospitals, local or rural hospitals and medical and maternity centers. Specialized hospitals are included only under total.

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 include 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 percentage of respective primary school-age population; 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, hearse and military vehicles.

Radio Receivers (per thousand population) - All types of receivers for radio broadcasts to general public per thousand of population; includes 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; includes 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 and 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 1980 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 1980 data.

Industry (percent) - Labor force in mining, construction, manufacturing and electricity, water and gas as percentage of total labor force; 1960, 1970 and 1980 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 1980 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 total labor force.

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 in 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".

ECONOMIC DEVELOPMENT DATA

	<u>GROSS NATIONAL PRODUCT IN 1981/82</u>		<u>ANNUAL RATE OF GROWTH (% constant prices)</u>		
	US\$ billion	%	1969/70-1974/75	1975/76-1980/81	1981/82
GNP at Market Prices	31.68	100.0	3.5	6.3	5.0
Gross Domestic Investment	5.14	16.2	-5.5	5.4	11.9
Gross National Saving	3.70	11.7	-2.1	8.2	8.0
Current Account Balance	-1.53	-4.8			
Resource Gap	-3.48	-11.0			

OUTPUT, LABOR FORCE AND PRODUCTIVITY IN 1980/81 /a

	<u>Value Added</u>		<u>Labor Force</u>		<u>V.A. Per Worker</u>	
	US\$ million	%	US\$ million	%	US\$ million	%
Agriculture	7,825	29	13.5	51	580	58
Industry	6,827	26	5.2	20	1,313	131
Services	12,053	45	7.9	29	1,526	152
Total/Average	26,705	100	26.6	100	1,004	100

GOVERNMENT FINANCE

	<u>General Government</u>			<u>Central Government</u>		
	(Rs billion)	% of GDP		(Rs billion)	% of GDP	
	1981/82	1981/82	1977/78-1981-82	1981/82	1981/82	1977/78-1981/82
Current Receipts	51.2	15.9	15.8	39.0	12.1	12.4
Current Expenditures	44.4	13.8	14.1	34.1	10.6	10.6
Current Surplus/Deficit	6.8	2.1	1.7	4.9	1.5	1.8
Capital Expenditures	27.0	8.4	9.3	21.2	6.6	7.4
External Assistance (net)	6.3	2.0	2.8	6.3	2.0	2.8

MONEY, CREDIT AND PRICES

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82 b/
Money and Quasi Money	33.1	41.6	51.7	63.7	76.5	90.7	103.5	114.4
Bank Credit to Public Sector (net)	17.5	22.7	29.5	34.3	43.1	48.1	54.1	59.9
Bank Credit to Private Sector (gross)	19.7	23.1	30.1	35.7	42.7	50.6	58.7	70.7
Money and Quasi Money as % GDP	29.5	31.5	34.6	36.7	39.0	38.3	37.0	35.5
Wholesale Price Index (1969/70=100)	211.3	229.4	255.3	271.4	289.7	316.7	358.8	398.6
Annual Percentage Change in:								
Wholesale Price Index	23.6	8.6	11.3	6.3	6.7	9.3	13.3	11.1
Bank Credit to Public Sector (net)	21.2	29.4	18.8	16.6	25.6	11.6	12.5	10.7

BALANCE OF PAYMENTS

	(US\$ million)					
	1976/77	1977/78	1978/79	1979/80	1980/81 /a	1981/82
Exports of Goods, NFS	1,404	1,651	2,107	2,955	3,461	2,966
Imports of Goods, NFS	2,877	3,297	4,485	5,709	6,466	5,613
Resource Gap (deficit = -)	-1,673	-1,646	-2,378	-2,754	-3,005	-3,847
Interest Payments	-172	-183	-261	-285	-357	-453
Workers' Remittances	578	1,166	1,395	1,748	2,097	2,225
Other Factor Payments (net)	15	62	134	151	274	365
Net Transfers	..	..	..	..	..	..
Balance on Current Account	-1,052	-601	-1,110	-1,140	-991	-1,530
Direct Foreign Investment	..	..	..	..	..	..
Net MLT Borrowing	..	..	..	..	..	..
Disbursements	961	841	813	1,134	956	1,102
Amortization	-175	-122	-235	-310	-516	-492
Sub-Total	786	719	578	824	440	610
Transactions with IMF/b	44	41	-14	78	315	358
Other Items n.e.i. /c	24	163	238	600	527	764
Increase in Reserves (-)	198	-322	308	-362	-291	198
Gross Reserves (year end)/d	372	694	386	748	1,039	841
Official Gold (year end; million ounces)	1.6	1.7	1.8	1.8	1.8	1.8

Fuel and Related Materials

Petroleum Imports	413	497	539	1,237	1,602	1,683
Petroleum Exports	27	63	61	178	160	185

Rate of Exchange

Through May 11, 1972	May 11, 1972-Feb. 15, 1973	Feb. 15, 1973-Jan. 7, 1982	January 8-Aug. 31, 1982 Average
US\$ = Rs 4.7619	US\$ = Rs 11.00	US\$ = Rs 9.90	US\$ = Rs 11.46
Rs1 = US\$0.2100	Rs1 = US\$0.0909	Rs1 = US\$0.1010	Rs = 0.087

/a Government estimate.
/b Includes Trust Fund

MERCHANDISE EXPORTS (AVERAGING 1978/79-1981/82)

	US\$ million	%
Raw Cotton	260.5	11.5
Cotton Yarn	181.3	8.0
Cotton Cloth	230.4	10.2
Rice	382.7	17.4
All Other Commodities	1,196.9	52.9
Total	2,261.8	100.0

EXTERNAL DEBT, DECEMBER 31, 1981

	US\$ million
Public Debt, Including Guaranteed	8,813.9
Non-guaranteed Private Debt /a	..
Total Outstanding and Disbursed	8,813.9

DEBT SERVICE RATIO FOR 1981/82 /e

	Percentage
Public Debt, Including Guaranteed	12.2
Non-guaranteed Private Debt	..
Total	12.2

INRD/IDA LENDING (DECEMBER 1981) (US\$ million)

	INRD	IDA
Outstanding and Disbursed	310.1	908.8
Undisbursed	32.1	505.3
Outstanding, Including Undisbursed	342.2	1,414.1

STATUS OF BANK GROUP OPERATIONS IN PAKISTAN

A. STATEMENT OF BANK LOANS AND IDA CREDITS (as of March 31, 1983)

Loan/ Credit Number	Fiscal Year	Purpose	(US\$ million)			
			(Amount net of cancellations)			Undis- bursed
			Bank	TW	IDA	
Eighty-eight loans and credits fully disbursed /a			686.7	32.0	851.3/e	
620	1976	Seed Project	—		23.0	6.2
630	1976	Second Lahore Water Supply	—		26.6	3.3
648	1976	Irrigation & Drainage (Khairpur)	—		14.0	6.7
1366T	1977	Punjab Livestock Development	—	10.0	—	8.1
1372)	1977	Railways	35.0		—	0.4
684)	1977	Railways	—		25.0	0.2
678	1977	Third Education	—		15.0	5.8
751	1977	Hill Farming Tech. Development	—		3.0	1.2
754	1978	Salinity Control & Reclamation	—		70.0	68.4
755	1978	Hazara Forestry	—		1.7	1.4
813	1978	Punjab Ext. & Agric. Dev.	—		12.5	6.9
867	1979	Toot Oil & Gas Development	—		30.0	0.2
877	1979	Salinity Control & Recl. (Mardan)	—		60.0	57.9
892	1979	Primary Education	—		10.0	7.6
922	1979	Sind Agricultural Extension	—		9.0	9.0
957	1979	Agricultural Development (ADBP IV)	—		30.0	3.7
968	1980	Third WAPDA Power	—		45.0	30.5
974	1980	Third Highway	—		50.0	35.8
1019	1980	PICIC Industrial Development	—		40.0	10.1
1109/d	1981	Vocational Training	—		25.0	24.6
1113/d	1981	Small Industries	—		30.0	29.2
1157/d	1981	Grain Storage	—		32.0	31.7
1158/d	1981	Agricultural Research	—		24.0	24.0
1163/d	1981	On-Farm Water Management	—		41.0	36.2
1186/d	1982	Industrial Development (IDBP II)	—		30.0	27.5
2122	1982	Fourth Telecommunication	40.0		—	40.0
2166	1982	Structural Adjustment	60.0		—	2.1
2172	1982	Fertilizer Industry Rehabilitation	38.5		—	37.7
1239/b /a	1982	Irrigation Systems Rehabilitation	—		40.0	40.0
1243/b /d	1982	Baluchistan Minor Irrig. & Agr.	—		14.0	14.0
1256/d	1982	Technical Assistance	—		7.0	6.4
1278/d	1982	Eleventh Railway Project	—		50.0	49.9
2218/b	1983	Refinery Engineering Project	12.0		—	12.0
Total			872.2	42.0	1,609.1	638.7
of which has been repaid			461.8	0.6	32.8	
Total now outstanding			410.4	41.4	1,576.3	
Amount sold			23.9			
of which has been repaid			23.9			
Total now held by Bank and IDA/c			410.4	41.4	1,576.3	
Total undisbursed			92.3	8.1	538.3	638.7

/a Excludes the disbursed portion of loans and credits wholly or partly for projects in the former East Pakistan which have now been taken over by Bangladesh.

/b Not yet effective.

/c Prior to exchange adjustment.

/d IDA Credits under the 6th Replenishment denominated in SDRs. The principal is shown in US\$ equivalent at the time of negotiation. Disbursed amounts are computed at the market rate on dates of disbursements.

/e By using the market rate on dates of disbursements, the current principal for Credit 1066-PAK and Credit 1255-PAK (both fully disbursed) is \$42.5 and \$77.5, respectively.

B. STATEMENT OF IFC INVESTMENTS (as of March 31, 1983)

<u>Fiscal Year</u>	<u>Obligor</u>	<u>Type of Business</u>	<u>Amount Loan</u>	<u>In US\$ Equity</u>	<u>Million Total</u>
1958	Steel Corp of Pakistan Ltd.	Rolled Steel Products	0.63	--	0.63
1959	Adamjee Industries Ltd.	Textiles	0.75	--	0.75
1962-1965	Gharibwal Cement Industries Ltd.	Cement	5.25	0.42	5.67
1963-1969-1975	PICIC	Development Financing	--	0.52	0.52
1965	Crescent Jute Products	Textiles	1.84	0.11	1.95
1965-1980	Packages Ltd.	Paper Products	19.58	0.84	20.42
1967-1976	Pakistan Paper Corp Ltd.	Paper	5.38	2.02	7.40
1969	Dawood Hercules Chemicals Ltd.	Fertilizers	1.00	2.92	3.92
1969	Karnaphuli Paper Mills Ltd.	Pulp and Paper	5.60	0.63	6.23
1979	Milkpak Ltd.	Food and Food Processing	2.40	0.38	2.78
1979	Pakistan Oilfields Ltd. and Attock Refinery Ltd.	Chemicals and Petrochemicals	29.00	1.82	30.82
1980	Fauji Foundation	Woven Polypropylene bags	1.78	--	1.78
1980	Premier Board Mills Ltd.	Particle Board	2.70	--	2.70
1981	Habib Arkady	Food and Food Processing	3.15	0.17	3.32
1982	Asbestos	Cement	4.05	--	4.05
1983	Pakistan Petroleum Ltd.	Chemical and Petrochemicals	<u>88.65</u>	<u>1.55</u>	<u>90.20</u>
	Total Gross Commitments		171.76	11.38	183.14
	Less: Cancellations, Terminations, Repayments and Sales		<u>123.72</u>	<u>1.02</u>	<u>124.74</u>
	Total Commitments Now Held by IFC		<u>48.04</u>	<u>10.36</u>	<u>58.40</u>
	Undisbursed (including participants)		<u>103.43</u>	<u>0.34</u>	<u>103.77</u>

PAKISTAN

PETROLEUM EXPLORATION PROJECT

Supplementary Project Data Sheet

Section I: Timetable of Key Events

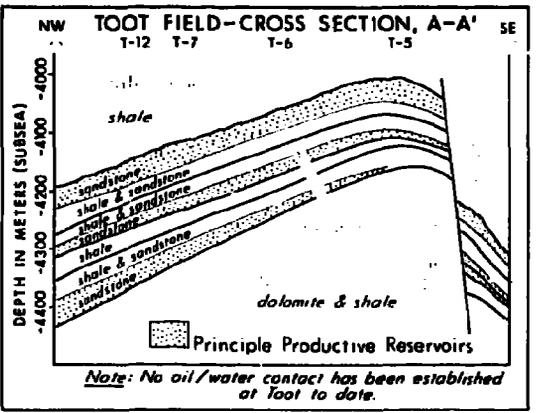
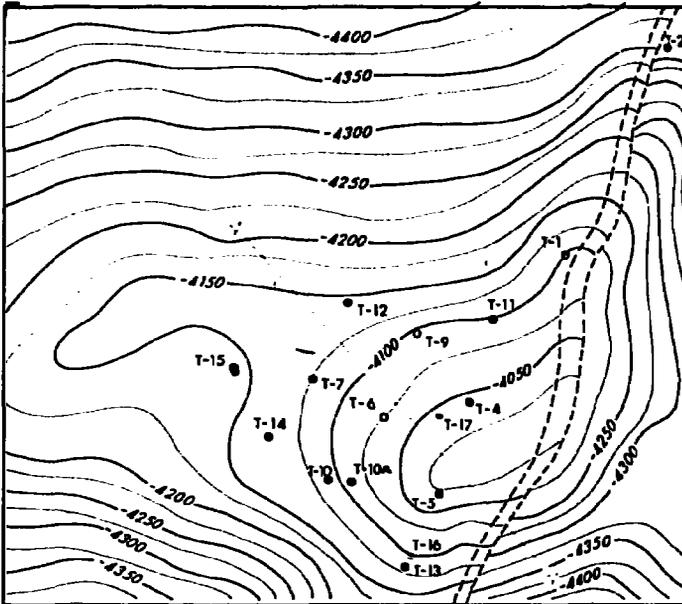
- (a) Time taken to prepare project:
30 months
- (b) Agency which prepared project:
Oil and Gas Development Corporation
- (c) Date of first presentation to the Bank, and date of first Bank Mission to consider project:
May 1980
- (d) Date of departure of appraisal mission:
January 22, 1983
- (e) Date of completion of negotiations:
May 13, 1983
- (f) Planned date of effectiveness:
February 1, 1984

Section II: Special Bank Implementation Actions

None

Section III: Special Conditions

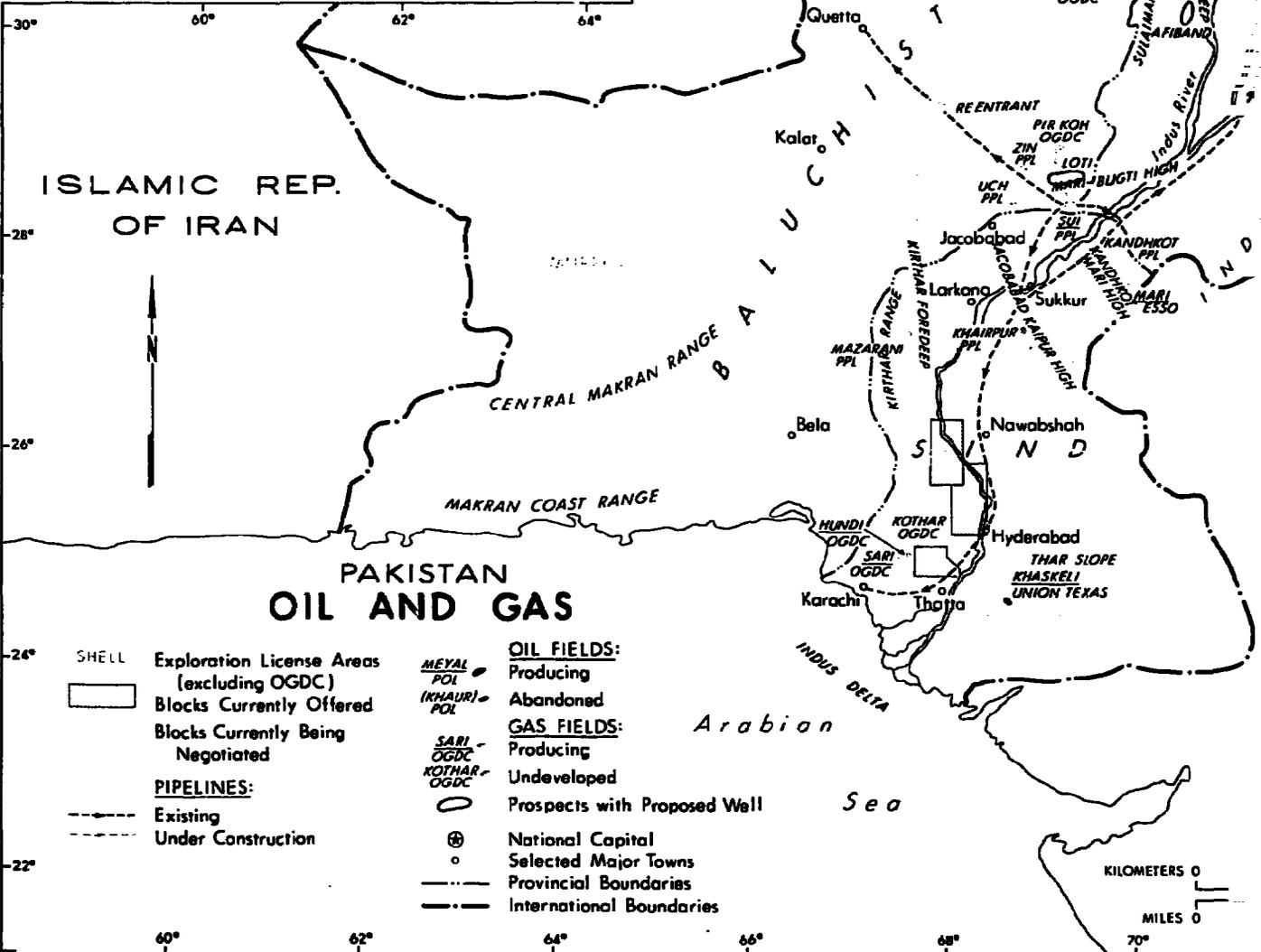
- (i) If during project implementation a private oil company proposes to carry out exploration within the project area, the proceeds of the loan which would otherwise have been spent in that area may be applied to a satisfactory substitute program with comparable objectives (paragraph 77).
- (ii) The prices for oil discovered as a result of the project shall be set at the world market price less an appropriate domestic market discount (paragraph 91).
- (iii) The prices for gas discovered as a result of the project shall be established in accordance with a base price formula satisfactory to the Bank (paragraph 92).

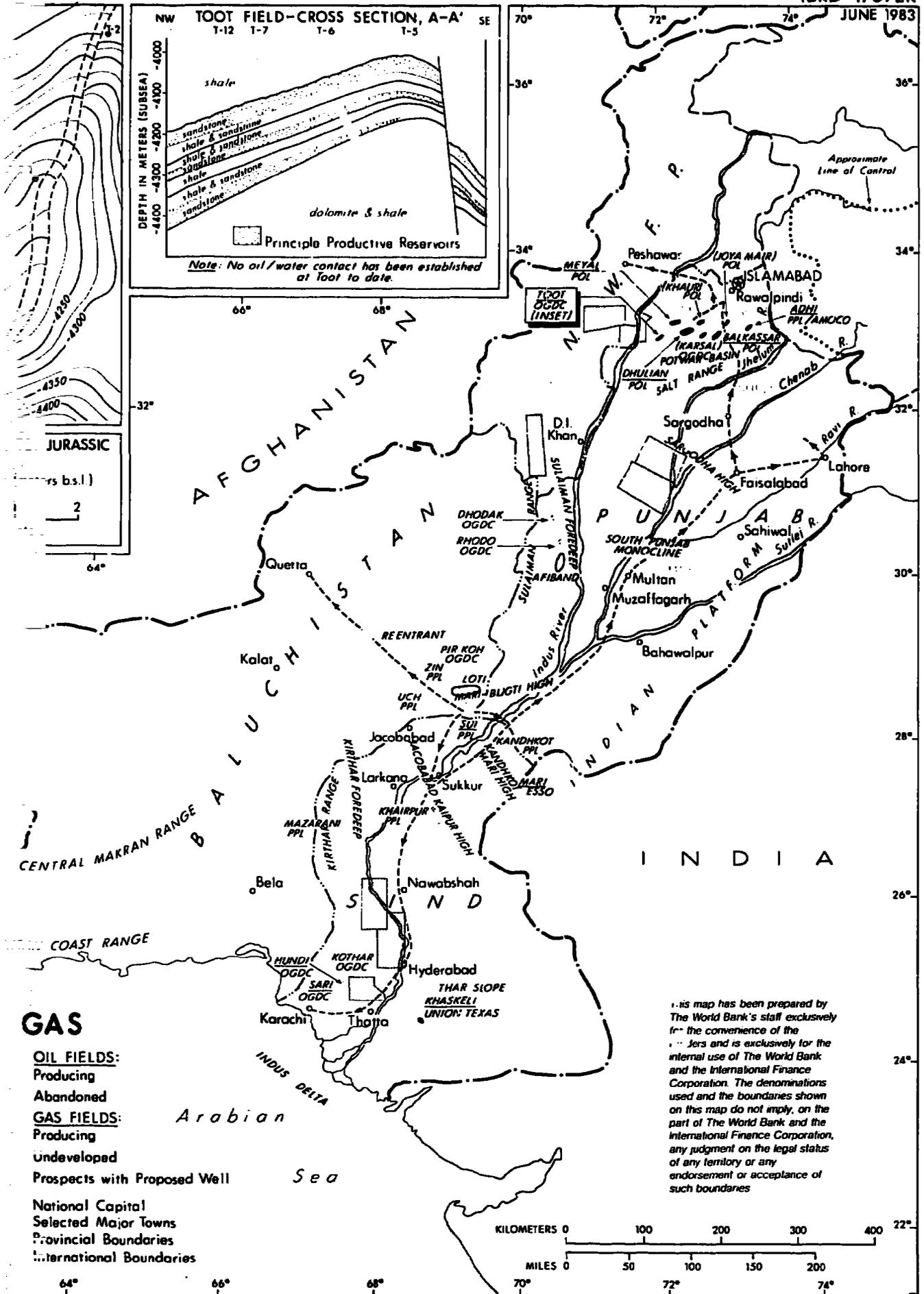


TOOT FIELD—STRUCTURE ON UNCONFORMITY AT TOP JURASSIC

- Producing Well
- Abandoned Producing Well
- Dry Hole
- Drilling Hole
- Proposed Well Location
- Fault Lines
- - - - -400- Contours (meters b.s.l.)

0 1 2
Kilometers





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