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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

TO THE

REPUBLIC OF TURKEY

FOR A

BATI RAMAN ENHANCED OIL RECOVERY FIELD

DEMONSTRATION PROJECT

October 30, 1980

TURKEY

CURRENCY EQUIVALENTS

Currency Unit		Calendar 1978	July 1979	Jan. 1980 /1	October 1980
US Dollar 1	=	TL 24.28	TL 47.10 /2	TL 70.0 /3	TL 83.50 /3
TL 1	=	US$ 0.04	US$ 0.02	US$ 0.01	US$ 0.01

/1 Since January 1980 the rate is being adjusted for the differential inflation between Turkey and its major trading partners. TL 70/$1 was used for this report.

/2 Except for imports of crude oil, petroleum products and fertilizer raw materials, and exports of agricultural products benefitting from official price supports, for which it was TL 35 = US$1.00.

/3 Except for imports of fertilizers and insecticides/pesticides, as well as raw materials and inputs for their manufacture, for which the rate was TL 55 = US$1.00, and is TL 70.0 = US$1.00 as from October 1980.

WEIGHTS AND MEASURES

1 Barrel (Bbl)	=	0.159 cubic meters (m^3)
1 Cubic foot (CF)	=	0.028 m^3
1 British Thermal Unit (BTU)	=	0.252 kilocalories (Kcal)
1 Kilowatt hour (Kwh)	=	2.978 Kcal
1 Metric ton (mT) of oil, 35° API	=	7.3 Bbl
1 Kilometer (km)	=	0.621 miles

FISCAL YEAR

Republic of Turkey	:	March 1 to February 28
Turkiye Petrolleri Anonim Ortakligi (TPAO)	:	January 1 to December 31

ABBREVIATIONS AND ACRONYMS

Bbls	-	Barrels
BOTAS	-	Boru Hatilari ile Petrol Tasima A.S. (Petroleum Pipeline Corporation)
CO_2	-	Carbon dioxide
EOR	-	Enhanced Oil Recovery
GDPA	-	General Directorate of Petroleum Affairs
GOT	-	Government of Turkey
GWh	-	Gegawatt (1,000,000 kilowatts)
IPRAS	-	Istanbul Petrol Rafinerisi Anonim Sirketi
MCF/d	-	Thousand cubic feet per day
MENR	-	Ministry of Energy and Natural Resources
MMCF/d	-	Million cubic feet per day
MW	-	Megawatt (1,000 kilowatts)
SPO	-	State Planning Organization
TEK	-	Turkiye Elektrik Kuruma (Turkish Electricity Authority)
TKI	-	Turkiye Komur Isletmeleri Kurumu (Turkish Coal Enterprises)
TOE	-	Metric tons of oil equivalent in heating value
TPAO	-	Turkiye Petrolleri Anonim Ortakligi (Turkish Petroleum Corporation)
TPY	-	Tons per year
TSKB	-	Turkiye Sinai Kalkinma Bankasi (Industrial Development Bank of Turkey)
UNDP	-	United Nations Development Program

TURKEY

BATI RAMAN ENHANCED OIL RECOVERY FIELD DEMONSTRATION PROJECT

Loan and Project Summary

Borrower:	Republic of Turkey
Beneficiary:	Turkiye Petrolleri Anonim Ortakligi (TPAO)
Amount:	US$62 million equivalent
Terms:	Seventeen years including four years of grace, with interest at 9.25 percent per annum.
Relending Terms:	Seventeen years including four years of grace, at not less than 11.10 percent per annum. Beneficiary will bear the foreign exchange risk.

Project Description: The project includes: (i) The Bati Raman enhanced oil recovery field test - a field demonstration test of the carbon dioxide (CO_2) injection enhanced oil recovery (EOR) technology, on a limited area of the Bati Raman reservoir for evaluating its suitability and determining the data required for designing a full field project. It consists of drilling of additional five wells at the Dodan gas field to provide the CO_2 requirements, laying of a pipeline 75 km long to transport 55 million cft. per day of carbon dioxide gas from the Dodan gas field to the Bati Raman oil field, drilling of five additional wells and the preparation of 30 wells to handle CO_2 injection and oil production through the installation of associated surface and sub-surface equipment, and the testing and evaluation of the results.

(ii) the Raman oil field development - a production component covering the drilling and completion of 18 new production wells, along with provision of associated surface and sub-surface equipment in a newly discovered extension of the Raman oil field, and a reservoir analysis study to determine the optimum approach to an enhanced oil recovery program for the field.

(iii) the Thrace (Hamitabat) gas field - an evaluation of the production potential of the Thrace gas field to provide reliable estimates of gas reserves and productivity, through the stimulation of the gas field by fracturing six to ten wells and a study to determine the optimum use of the gas.

(iv) Management studies - to strengthen TPAO's operations and management capabilities through the review of organizational structure, systems of internal communication, financial planning and management systems.

The project will help to: (i) expand the recoverable reserves of Turkey's largest proven reservoir through the application of new enhanced oil recovery techniques, thereby improving its medium-term production capacity; (ii) increase Turkey's crude oil production in the short-term by developing the newly discovered oil reserves in the Raman oil field; and (iii) evaluate the gas reserves and production potential of a newly discovered gas field. The Bati Raman EOR sub-project is the first field application of carbon dioxide injection into a heavy oil reservoir. There is an inherent risk that it may prove less successful than projected. The risks are normal in other sub-projects.

Estimated Costs:

	Local	Foreign	Total
	------(US$ million)------		
1. Bati Raman EOR			
1.1 Wells drilling and workover	6.6	6.6	13.2
1.2 Surface field facilities	7.7	15.2	22.9
1.3 Gas pipeline	3.7	6.0	9.7
1.4 Prefeasibility, engineering /1	0.5	2.5	3.0
1.5 Design, supervision and training	1.0	2.5	3.5
1.6 Chemicals, monitoring and evaluation	2.2	2.6	4.8
	21.7	35.4	57.1
2. Raman Field Development			
2.1 Wells drilling and completion and general drilling equipment	4.8	5.4	10.2
2.2 Water disposal	1.0	0.4	1.4
2.3 Reservoir study	0.2	0.7	0.9
	6.0	6.5	12.5
3. Thrace (Hamitabat) Gas Field			
3.1 Wells' stimulation and equipment	0.7	2.2	2.9
3.2 Gas reserves and utilization study	0.1	0.4	0.5
	0.8	2.6	3.4

/1 Represents the refinancing of $2.5 million engineering loan (S-13-TU).

	Local	Foreign	Total
	------(US$ million)------		
4. Technical Assistance and Training	0.5	1.0	1.5
Sub-Total	29.0	45.5	74.5
Physical Contingency	5.5	8.9	14.4
Price Contingency	5.5	7.6	13.1
TOTAL	40.0	62.0	102.0

Financing Plan:

	Local	Foreign	Total
	------(US$ million)------		
Bank	-	62.0	62.0
TPAO	40.0	-	40.0
TOTAL	40.0	62.0	102.0

Estimated Disbursements:

FY	1981	1982	1983	1984
	---------(US$ million)-------			
Annual	12.0	40.0	5.5	4.5
Cumulative	12.0	52.0	57.5	62.0

Economic Rate of Return: 60 percent for the Raman field development component. ERR not applicable to other components.

Appraisal Report: No. 3093-TU dated October 17, 1980

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

REPORT AND RECOMMENDATION OF THE PRESIDENT OF THE IBRD TO THE EXECUTIVE DIRECTORS ON A PROPOSED LOAN TO THE REPUBLIC OF TURKEY FOR A BATI RAMAN ENHANCED OIL RECOVERY FIELD DEMONSTRATION PROJECT

1. I submit the following report and recommendation on a proposed loan to the Republic of Turkey for the equivalent of US$62 million to help finance the foreign exchange costs of a Bati Raman Enhanced Oil Recovery Field Demonstration Project. The loan would have a term of 17 years including 4 years of grace, with interest at 9.25 percent per annum. The proceeds of the loan will be on-lent to Turkiye Petrolleri Anonim Ortakligi (TPAO) for 17 years, including 4 years grace, at not less than 11.10 percent per annum.

PART I - THE ECONOMY 1/

2. A Special Economic Mission visited Turkey in April/May 1979 to evaluate the Fourth Five-Year Plan (1979-1983). Its report entitled "Turkey: Policies and Prospects for Growth" (No. 2657a-TU dated December 12, 1979) was distributed to the Executive Directors on December 26, 1979 and its Postscript on March 24, 1980. A small mission visited Turkey in May 1980 to update information and Bank analysis of the country's economic prospects. Its findings are reflected below. Annex I contains the Basic Country Data.

Development Trends and Policies

3. As the result of a strong commitment to rapid growth and modernization, GDP increased at an average annual rate of 6.4 percent, 6.7 percent and 7.2 percent respectively, during the First Plan (1963-67), Second Plan (1968-1972), and Third Plan (1973-1977) periods. This compares favorably with the experience of 55 "middle income" developing countries, whose GDP growth averaged a little under 6.0 percent per annum between 1960-1978. Moreover, the relatively high growth rate in Turkey was achieved without significant deposits of oil or other important natural resources.

4. Growth was accompanied by significant social changes. Although population grew annually at 2.5 percent, rapid GDP growth allowed substantial advances in per capita income. However, rising income levels were not accompanied by better income distribution. Although basic needs have been met, significant sectoral and regional inequalities in income continue.

5. The public sector has played a key role in Turkey's development. Between 1963-1977, its share in total fixed investment fluctuated around 50

1/ This Part is identical to Part I of the President's Reports on the Structural Adjustment Loan (Supplement) (P-2888-TU) expected to be considered by the Executive Directors in late November and the Petroleum Exploration Project (P-2887-TU) dated October 30, 1980.

percent, and its share of fixed investment in manufacturing increased from 21 to nearly 49 percent. The public sector dominates basic industries. Nevertheless, the private sector has emerged as an increasingly important and dynamic element in the economy and is beginning to shift its orientation from consumer goods to intermediate and investment goods, and from the domestic market to exports. Private sector investment increased at nearly 11.5 percent per year in real terms during 1967-1977 compared to an average annual increase of only 4.8 percent between 1963 and 1967.

6. Turkish development between 1963-1977, however, exhibited a number of structural characteristics which are of considerable relevance for future development policy. First, for a country of Turkey's size and per capita income, it has a very low level of exports relative to GDP--about 4 percent in 1977--as against a more or less "normal" import level of around 20 percent for middle income countries; this highlights the vulnerability of the balance of payments and the importance of export development to sustain the needed inflow of foreign exchange resources. Second, while the level of investment relative to GDP increased rapidly and compares favorably with other developing countries, mobilization of domestic savings has lagged; the ratio of domestic savings to GDP, is well below the average for middle income countries; the growing gap between domestic savings and investment led in the mid-1970s to a relatively high level of external borrowing, and domestic inflationary pressures emanating from excess demand and deficit financing. Third, a relatively high proportion of the labor force is still in agriculture, reflecting significant disguised unemployment and the need for accelerated job creation in non-agricultural activities; that in industry is low compared to other large middle income countries; furthermore, the relatively inadequate generation of additional employment has become more serious following the near cessation of workers' migration to Europe since 1974. Fourth, despite the growing dynamism of the private sector, the industrial scene is dominated by inefficient State Economic Enterprises (SEEs) which have not been exposed to market forces and serve not only economic but social goals; their growing deficits have imposed an inflationary burden on the budget, while their ambitious investment programs were financed through Central Bank borrowings, since their controlled prices have, until recently not enabled most of them to generate sufficient cash to cover costs or investment expenditures. Fifth, due to the successes achieved since the early sixties through economic planning, there has been an increasing tendency to plan to a micro-level and seek to achieve changes through administrative fiat; however, the economy has reached a stage where such excessive reliance on this becomes counter productive; planning needs to be increasingly geared towards setting a framework in which market forces could secure the desired economic results in both the public and private sectors.

The Economic Crisis and Stabilization Efforts

7. These institutional and structural characteristics of the economy made it particularly vulnerable to the sharp increase in import prices (including oil) in 1974 and the simultaneous occurence of recession, inflation and rising unemployment in the industrial countries. These factors played a key part in the deterioration of the economy. However, the politically weak governments,

their policies in response to these factors and their efforts to pursue a high growth policy despite the worsening international environment through increasing reliance on short-term external financing, together created forces that brought about the economic crisis in mid-1977 which is still continuing. The detailed analysis of this crisis, and of Turkey's attempts to stabilize the economy in the short-run up to late 1979, is provided in the above-mentioned Special Economic Report and Postscript, as well as in paras. 8 to 15 of the President's Report (dated February 29, 1980) for the Structural Adjustment Loan approved by the Board on March 25, 1980.

8. Despite domestic and international efforts, 1979 was another difficult year for the economy: production stagnated, unemployment increased, inflation accelerated, the balance of payments position remained tight, export performance was poor, severe import rationing continued and the external debt position remained precarious. Policy initiatives taken till then proved inadequate to reverse the tide, as political and economic uncertainties continued to erode the impact of the measures taken.

9. Compared to a growth of 3 percent in 1978, GDP stagnated in 1979. Value added in agriculture increased by 2.5 percent, and in services by about 1 percent, but in industry value added declined by about 2 percent. In agriculture, further growth was held back by a sizeable decline in production of industrial crops, mainly cotton, and a bad olive crop; the area cultivated declined, due to shortages of fuel and fertilizers. In industry, worsening shortages of imported raw materials and energy, especially oil, led to a decline in production of about 3.5 percent. Production of manufacturing SEEs declined by about 2 percent, and was manifested by decreases of 28 percent in cement production, 9 percent in steel production and 51 percent in certain petroleum production and processing operations. In contrast, the construction and transport sectors grew modestly, but insufficiently to overcome the decline in other sectors. This stagnation was accompanied by unprecedented inflation of about 65 percent in 1979.

10. The overall public sector deficit increased from TL 80 billion in 1978 to TL 132 billion in 1979. It was financed mainly by borrowing from the Central Bank (TL 70 billion). The consolidated budget and the operations of the SEEs were almost equally responsible for the enlarged deficit. The deterioration in the consolidated budget was caused mainly by a sharp increase in transfers to the SEEs, which in 1979 amounted to TL 89 billion.

11. On the external account, there was a marginal decline in the value of recorded exports of goods to $2.3 billion, although in volume terms, exports actually declined by an estimated 17 percent. The value of merchandise imports was about 10 percent higher than the previous year at $5.1 billion; but due to substantial price increases, the volume is estimated to have declined by 19 percent. The current account deficit in 1979 was the same as in 1978, i.e. around $1.7 billion.

12. Turkey achieved some success in diversifying the sources, and increasing the level, of M&LT commitments, including $250 million in project credits from the Saudi Fund. Perhaps the most important arrangement arrived

at was the May 1979 OECD sponsored pledging of $1.45 billion in special assistance, including about $900 million in M&LT bilateral credits and export credits, besides $407 million of medium-term credits from commercial banks (finalized in September 1979). However, actual capital inflows were about the same as the previous year.

13. Also, throughout 1979, Turkey made a major effort to alleviate the critical burden of external debt through: (a) slowing the growth of shortterm liabilities; (b) debt relief arrangements; and (c) efforts to pursue new sources of credits, especially M&LT credits. The first debt relief operation, arranged through the OECD Consortium for Turkey in May 1978, involved consolidation of $1.14 billion in arrears on guaranteed short-term and bilateral M&LT debt, as well as amounts due over the thirteen month period May 21, 1978 to June 30, 1979. A second major rescheduling took place in July 1979, involving payments of about $1.02 billion on official bilateral and private guaranteed credits due between July 1, 1979 and June 30, 1980. A third major arrangement, finalized in July and August 1979 with commercial banks, rescheduled convertible lira deposits ($2.3 billion), banker's credits ($429 million) and third party reimbursement credits ($300 million). About $317 million in oil debt was also rescheduled. The total amount thus rescheduled was about $5.5 billion. This was perhaps the largest debt rescheduling operation anywhere. Even so, net arrears of about $500 million emerged given the remaining high debt service burden in 1979.

January 1980 Structural Adjustment Program and Policy Objectives

14. Against this background, it was quite clear that drastic and painful stabilization measures were not enough to reverse the adverse economic tide. What was needed, was a major program of long-term structural adjustments, if the economy was first to be nursed back to normalcy and then to resume viable growth. Such a bold and far-reaching program of policies to effect structural adjustments in the economy over the medium term was announced on January 25, 1980, accompanied by initial measures to implement adjustments in certain critical areas. These were described and discussed in detail in the President's Report (No. P-2725-TU dated February 29, 1980) for the Structural Adjustment Loan. The policy objectives underlying, the program, and the measures it initiated, represent a basic departure from past planning objectives. Turkey has undertaken, through it, the essential first steps to foster major structural and institutional changes in the key economic areas.

15. The program's stated goal of "bringing about a major reorientation of the economy" calls for: (i) greater reliance on market mechanisms and forces, by both the public and private sectors; (ii) reduction in the rate of inflation; (iii) improved management of the balance of payments and external debts; (iv) policies to encourage the public and private sectors to be efficient and internationally competitive; (v) the implementation of rational exchange rate policies and of measures encouraging exports; (vi) domestic resource mobilization efforts to be substantially augmented through increased tax efforts, realistic SEE pricing, and increased private savings via the banking system and the development of financial markets; (vii) an investment policy aimed at

fuller utilization of existing productive capacity and completion of ongoing projects requiring modest inputs, and tailored to scarce resources; and (viii) conditions to stimulate foreign investments in oil, industry and agriculture.

16. Successful implementation of this program over the medium-term, will require persistence and courageous action on the part of the Government. It will also call for substantial support from the international community, without which it is unlikely to succeed. However, if Turkey implements it vigorously, and periodically makes critical in-depth reviews as to the impact of the measures and what further modifications and adjustments are needed to achieve the program's economic goals, it will strengthen the basis for Turkey's creditworthiness and re-establish a path of stable economic growth.

17. Following the announcement of this program, the IMF approved a modification of the terms of the July 1979 Standby Arrangement and the release of larger second and third tranches on February 21 and March 24, 1980. In addition, SDR 71.6 million ($93 million) in compensatory financing for export shortfalls was provided on February 21, 1980, together with the modification of the Standby. Together, this resulted in the provision of $301 million (SDR 231.6 million), with the remaining $26 million (SDR 20 million) to be provided in June. However, on June 18, this Standby was cancelled. Instead, the IMF Board approved a new three-year Standby Arrangement involving SDR 1.25 billion ($1.63 billion), with SDR 460 million ($600 million) in the first year, SDR 400 million ($522 million) in the second year and SDR 390 million ($509 million) in the third year. The key conditions of the new Standby are that: (i) exchange rate policy is to be kept more flexible; (ii) the financial position of the public sector is to be improved, mainly as a result of the restructuring of the operational policies of the SEEs; (iii) monetary conditions are to be kept extremely tight, as a result of the observance of limits on Central Bank lending; and (iv) interest rates are to be adjusted to reflect market conditions.

18. In addition, Germany took the lead in organizing the provision of sizeable external assistance, as well as a further debt relief operation. In meetings under OECD auspices in March and April, $1.16 billion of bilateral aid was pledged, with much more rapid disbursements than in 1979. The Bank also supported OECD's and IMF's efforts through a $200 million Structural Adjustment Loan in March 1980. Furthermore, about $2.5 billion in service payments to OECD countries on public and publicly-guaranteed debts falling due prior to June 1983 were rescheduled, again under OECD auspices, in July 1980. This included all arrears up to June 30, 1980, payments due prior to June 1983 on debt not previously rescheduled, and payments due up to June 1981 on debt already rescheduled in 1978 or 1979. Ninety percent of these sums were rescheduled over 8 to 10 years, including 4 to 5 years of grace. With these developments, Turkey secured debt relief estimated at $1.1 billion in 1980 and another $0.8 billion in 1981, with smaller amounts thereafter. The only sizeable new commitment in recent months has been a $250 million cash loan on 15 year low-interest terms from Saudi Arabia, of which $100 million has been disbursed, with another $100 million scheduled for December and the balance for March 1981. Turkey has approached leading commercial banks to secure a

softening of the terms of the August 1979 rescheduling agreement. After considerable delay due to wariness on the part of banks both of a new rescheduling and, to some extent, of extending new credit to Turkey, a modest syndicated loan is under discussion. The Government will try to reduce to the extent possible the current and prospective large net outflow of funds to the commercial banks.

Economic Developments in 1980 and Outlook for 1981

19. As expected, the initial impact of the January 1980 package has been to exacerbate many of the economic pressures. Uncertainty about the course of future policies and about the timing and pace of economic recovery, as well as tight monetary conditions aimed at reducing aggregate demand, have slowed investments and economic growth. Devaluation and the removal of price controls on both private business and SEEs, while necessary to alleviate allocative distortions in the economy, contributed to a large initial upsurge in the rate of inflation. Also as expected, the financial rehabilitation of the SEEs and their reorientation to market conditions has only begun, and will require more fundamental changes than price liberalization alone over the medium term. Budgetary transfers to the SEEs to cover remaining operating subsidies and investment expenditures have continued to rise. The budget position as a whole continues to be weak. It is still too early to say whether the initial adjustment phase is over. However, preliminary data suggest that the worst may be past. Inflation has come down sharply, and indeed more rapidly than expected (next paragraph); the impact of higher import prices (especially for oil) has been alleviated (though so far only for 1980) by a commensurate increase in capital inflows; and recent production figures suggest that 1980 may see a very modest resumption of economic growth.

20. For the full year, GDP growth is likely to be between zero and 2 percent, with growth in agriculture of about 2.5 percent, but stagnation in industry. Public investment has continued to fall in real terms for lack of financial resources, and private investment remains depressed. Unemployment is still rising, and real disposable incomes are falling. As mentioned above, inflation--which averaged over 100 percent on an annual basis in early 1980--has since slowed considerably, and expectations are that over the remainder of this year it will be about 2 percent per month. The fiscal and monetary situation remains difficult. There has been a substantial increase in Government expenditures over previous forecasts, in line with inflation. However, there is evidence of tax revenues lagging behind inflation, and substantial arrears have built up in tax collection. SEE operations will show a small profit this year after several years of mounting deficits. However, to finance their investments and debt repayments, budgetary transfers to SEEs will rise again to TL 138 billion. As a result, the budget deficit is likely to be TL 155 billion in spite of a further accumulation of Government arrears vis-a-vis the private sector. Pressures have therefore built up to expand Central Bank credit, which is strictly limited under the IMF Standby Arrangement. Nevertheless, the first discussions under the Standby were satisfactorily concluded at the end of August, and the second drawing was made available on schedule on September 29. However, a request is being made to the IMF Board shortly for a small increase in the ceilings on Central Bank net

domestic assets and credit to the public sector to accommodate crop purchases by the Soil Products Office (particularly of wheat) without impinging on the availability of financing for the private sector, especially for exports.

21. The balance of payments position remains quite tight. Over the first eight months of 1980, the value of merchandise exports was only 6 percent higher than in the corresponding period of 1979. However, taking into account the seasonal rise in agricultural exports, the end of various labor disputes in industry, and the rising trend in production, and provided markets recently established in the Middle East are not long disrupted by the Iran-Iraq war, the Government projects exports of $2.8 billion for the year as a whole, compared to $2.3 billion last year. While the value of merchandise imports is expected to be considerably higher than in 1979--$6.7 billion (including $3.2 billion for oil) as against $5.1 billion, the volume increase will be negligible due to increases in import prices, especially for oil. As a result, fairly severe import rationing continues. Workers' remittances have increased strongly this summer and should reach $1.8 billion for the year as a whole. Even so, it is estimated that the current account deficit will increase from $1.7 billion in 1978 and 1979 to $3.1 billion in 1980. Capital inflows will also be higher than last year, with gross public M&LT disbursements expected to be about $2.2 billion, given the Government's concerted effort to disburse the pipeline of OECD sponsored external assistance pledged in May 1979 and April 1980. Moreover, the massive July rescheduling (para. 18) has eased the external debt position considerably.

22. The outlook for 1981 is slightly more promising, although the balance of payments position is likely to remain extremely difficult. It is too early to predict the impact the Iran-Iraq war may have, given that these two countries normally provide nearly 55 percent of Turkey's oil imports on favorable terms. Assuming the impact can be mitigated, the growth rate of real GDP is projected to be about 3 percent, with value added in agriculture and industry growing on the order of 3 and 4 percent respectively. Investment is likely to grow only by about 1 percent, after real falls in recent years. The Government hopes to reduce the rate of inflation substantially again. The external position is expected to remain tight. Exports should grow by about 20 percent to $3.4 billion, and imports by about 16 percent to $7.8 billion, in nominal terms. As in 1980, the volume increase in imports is likely to be negligible due to increases in import prices, especially for oil, and hence import rationing will have to continue. With only a modest rise in service receipts and workers' remittances, the current account deficit in 1981 is expected to be $3.6 billion, or $500 million more than in 1980. Turkey has already begun to make preparations to meet the very large financing gap in 1981, and hopes to secure considerably higher capital inflows than in 1980, particularly gross public M&LT disbursements which need to be around $3.5 billion. Apart from the Bank, IMF and commercial bank loans arranged or being processed, the Government intends to seek further special aid from OECD members in 1981.

Turkey's Medium-Term Economic Prospects

23. The international oil situation, following the substantial end-1979 price increases, has a major impact on future prospects. Even if Turkey

allows only a marginal increase in oil imports during 1980-1985 to sustain a gradual resumption of growth, the oil import bill is estimated to increase from $3.2 billion in 1980 to $6.1 billion by 1985; as a percentage of merchandise exports and non-factor services, this is equivalent to about 83 percent in 1980 and is likely to remain at about 70 percent until 1985. The pressure this will exert on Turkey's already difficult balance of payments position is obvious. The projected current account deficit as a percent of GNP in current dollars increased from 3 percent in 1979 to about 8 percent in 1980 and is projected to remain at or above 5 percent until 1984. Considering the limitation on available external assistance and given the need for continued sound external debt management, Turkey can sustain the projected annual current account deficits of the order of $3-3.5 billion annually in the short run, given further quick-disbursing assistance in 1981; the deficits are projected to decline to a sustainable $2.5 billion annually in the next few years.

24. Taking into account international inflation and the substantial obligations for debt amortization, despite the July 80 debt rescheduling, this situation necessitates a large and sharply increasing annual average gross inflow of foreign capital, rising to $4 to 5 billion during the next five years. Such major inflows of foreign capital can only be sustained on the basis of prudent external debt management. In any case, debt service obligations are likely to remain high over the coming 5 years. In 1979, total debt service payments were 26 percent of exports of goods, non-factor services and workers' remittances after rescheduling payments. The ratio is projected to rise to around 45 percent in 1984, taking account of the July 1980 debt rescheduling. This, however, should represent the culmination of the financial consequences of the present crisis and the debt burden should remain manageable, provided the structural adjustment policies are successfully implemented and the export drive is sustained.

25. Given the accumulation of economic problems of the last three years, the political difficulties, the significantly increased cost of oil imports, and the difficulty of significantly increasing the net inflow of capital, Bank projections suggest that GDP growth in real terms may average around 4 percent p.a. with a real growth of exports about 9 percent p.a. during 1980-1985. These growth rates appear attainable, assuming continuation of appropriate economic measures (including those announced in January 1980), and taking into account the low export base and present underutilization of capacity.

26. The recent political changes do not change these expectations regarding economic developments. The military government which assumed power on September 12 is determined to pursue the program of structural adjustments announced in January 1980, as well as economic policies and commitments agreed with the Bank, IMF and members of the OECD Consortium for Turkey. Indeed, two days after the takeover, both the Bank and the IMF were officially informed of this decision. A civilian Cabinet, responsible to the military's new National Security Council, has been named, with the principal architect of the recent economic policy reforms, Mr. Ozal, assuming the position of Deputy Prime Minister for economic affairs. Its program confirms the commitment to

continue implementing the January 1980 program, and the intention to introduce those portions of it which have been blocked hitherto by deadlock in Parliament.

PART II - BANK GROUP OPERATIONS IN TURKEY 1/

27. A large lending program for Turkey began following the introduction of its 1970 Stabilization Program. To date, the Bank/IDA have lent $2,573 million, through 60 projects. Agriculture accounts for 23 percent of funds lent, industry and DFCs for 37 percent, power for 13 percent and urban development, transportation, education and tourism for the rest. Annex II contains a summary statement of Bank loans, IDA credits and IFC investments as of September 30, 1980, with notes on the execution of ongoing projects.

28. Since mid-1975 the implementation of private sector projects has been satisfactory. Political uncertainty, limited coordination amongst ministries and staffing problems resulted in uneven and delayed project implementation in the public sector. Therefore, a system of joint project reviews between Turkey and the Bank was instituted in June 1975. This resulted in distinct, but modest, improvements up to end 1977. The situation was again reviewed with the Government in March 1978, and further discussed with the then Prime Minister in April 1978. Subsequently, Turkey established a new high-level coordination team. This team set up procedures for monitoring and achieving realistic implementation and disbursement targets. As of June 1980, disbursements increased to 70 percent of appraisal estimates against 51 percent in June 1975. The encouraging progress allows cautious optimism that performance can be gradually improved further, provided it is not eroded by the new factors including shortages of resources.

29. Bank lending is aimed at supporting the economic policies initiated in January 1980, especially: (a) the pursuit of an export oriented development strategy; and (b) domestic economic policies aimed at establishing macro-economic balance, increasing domestic savings, restraining public investment and reorienting it to reflect the priorities implicit in the present situation--especially completion of ongoing projects, emphasis on quick-yielding new investments, and balance of payments impact. The Bank has discussed with the Government how its overall lending can best contribute to the latter's medium-term objectives, without projects being handicapped by past policy and institutional obstacles. A series of proposed structural adjustment loans are envisaged, at the Government's request, to support its program of structural adjustments to be implemented in the medium-term,

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1/ This part is identical to Part II of the President's Reports on the Structural Adjustment Loan (Supplement) (P-2888-TU) expected to be considered by the Executive Directors in late November and the Petroleum Exploration Project (P-2887-TU) dated October 30, 1980.

through specific detailed measures and policy actions under the period that may be covered by each such loan. Agriculture, industry and energy will be the key sectors for project lending. In agriculture, projects emphasize livestock, exports, and rural development; in industry (including DFCs), the emphasis is on promotion of exports and employment, as also the gradual strengthening of the SEEs. Energy projects underway are in power generation based on domestic hydro and lignite resources; future projects will emphasize the oil/gas sub-sector. Projects for urban development and public utilities supplement these efforts. We propose to maintain a close macroeconomic and sector dialogue with Turkey. The economic and sector work planned over the next several months includes special studies of the public investment program and of industrialization and foreign trade strategy, and completion of sector memoranda on agriculture and industry. In addition, the progress made in fostering structural adjustment will be monitored in the context of each future structural adjustment loan.

30. A supplement to the Structural Adjustment Loan is expected to be considered by the Executive Directors in November 1980. Besides this, and the oil exploration project being concurrently presented to the Executive Directors, other projects likely to be presented this fiscal year include loans for a second fruits and vegetables project, urban employment generation in selected cities, industrial finance, fertilizer industry rehabilitation, besides a second structural adjustment loan. Projects being processed for later consideration include: rural development, seed production, sewerage development in Istanbul, paper or cement modernization and promotion of export oriented industries.

31. The Bank Group's share of the estimated total external debt (including short-term obligations) was 8.0 percent in 1979, and is expected to grow to 10.0 percent by 1981 and 12.5 percent by 1985. Its share of service payments is projected to fall slightly from 8.8 percent in 1979 to 6.4 percent in 1981, thereafter increasing to 7.6 percent by 1985.

32. IFC has invested in synthetic yarns, pulp and paper, glass, aluminum, iron and steel products, motor bicycle engines, piston rings and cylinder liners, and tourism. It has also invested in TSKB. As of September 30, 1980, gross IFC commitments totalled about $212 million, of which $94 million were still held by IFC. New investment opportunities are being pursued.

PART III - THE ENERGY SECTOR AND OIL SUB-SECTOR 1/

Background

33. Petroleum supply has become the focal point of the economic problems that Turkey faces today. Indeed, it would be difficult to overemphasize the critical nature of the problem. The share of crude oil in Turkey's overall

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1/ This part is identical to Part III of the President's Report on the Petroleum Exploration Project (P-2887-TU) dated October 30, 1980.

energy requirements has increased sharply over the last two decades, from 20 percent in 1960 to 54 percent in 1979. Domestic oil production, which declined slowly through most of the 1970's in the absence of significant new oil discoveries, currently accounts for only about 17 percent of Turkey's overall oil requirements of about 17 million tons per annum. While petroleum imports of $1.4 billion in 1978 absorbed 60 percent of merchandise exports earnings, they were about $2.4 billion in 1979, consuming all merchandise export earnings, and are likely to total about $3.2 billion in 1980.

Energy Resources

34. Although coal was Turkey's most important energy source in the immediate post-war period, its production has been decreasing for the past 20 years. In 1978, estimated recoverable reserves of hard coal were about 120 million tons of oil equivalent (TOE), while production was about 2.7 million TOE, i.e., 16 percent of total energy production. Lignite reserves are extensive, with proven reserves estimated at 1.1 billion TOE; however lignite is by and large of poor quality and its production in 1978 was about 4.6 million TOE.

35. Hydro potential is estimated at 145,000 GWh (35 million TOE), of which about half was considered to be economically usable in 1976. Considering the increase in energy prices since, the proportion would be even higher today. In 1978, the generation of 9,400 GWh (2.3 million TOE) of hydro electricity accounted for 14 percent of all energy produced, but only 7 percent of total consumption. Installed capacity is planned to grow from 2,100 MW in 1979 to 8,100 MW in 1986. Animal and vegetable wastes and wood continue to be important fuel sources. However, their production has not grown significantly in the past two decades and their contribution to total energy consumption has declined from over 50 percent in 1960 to less than 20 percent in 1978.

36. The most recent estimates put Turkey's proven petroleum reserves recoverable by primary techniques at about 17 million tons. This represents barely one year's consumption. Potential reserves from known oil reservoirs using new enhanced oil recovery methods could, if proven successful, multiply this by more than five. There are also a few potentially economical small gas fields. Petroleum production reached a peak of 3.6 million tons in 1969 and then declined slowly to about 2.7 million tons in 1978. Domestic petroleum production is principally in the hands of three companies: two foreign oil companies, Shell and Mobil, which together account for about 65 percent, and the Turkish Petroleum Corporation (TPAO) which accounts for a third.

Patterns of Energy Consumption

37. Per capita energy consumption in Turkey increased during 1960-77 at an average annual rate of 6.7 percent (12.8 percent in 1974-76), compared to an average annual growth rate of GNP per capita of 4.1 percent. However, per capita consumption of 495 kg of oil equivalent in 1976 remained below the average of 611 kg for 55 middle income countries. Energy consumption per

dollar of GDP rose from 0.3 kg in 1960 to 0.5 kg in 1976, but again was below average for middle income countries.

38. The most important trends in the energy use pattern since 1960 have been the increasing share of petroleum, which now accounts for over half of total energy consumption, and the decreasing share of hard coal and non-commercial fuels. With a high GNP growth and domestic petroleum prices controlled at levels well below international levels until late 1977, the volume of petroleum imports grew rapidly; from 1973 to 1977 the average increase was 13 percent per annum, well above real growth rate of GDP of 7.2 percent per annum. Sharp increases in petroleum product prices since late 1977 and a scarcity of foreign exchange resulted in the containment of oil imports to around 14 million tons in 1978 through 1980. The financial crises of late 1979 and early 1980 caused the Government to end its policy of large scale subsidies for petroleum and petroleum products. Consumer prices in Turkey, up to mid 1980, are shown below.

CONSUMER PRICES FOR PETROLEUM PRODUCTS
(in dollars per gallon)

	Turkey				France	USA
	1971 July	1974 Feb.	1977 Sept.	1980 June	1980 June	1980 June
Premium gasoline	0.49	0.90	1.44	2.45	3.12	1.29
Regular gasoline	0.38	0.72	1.22	2.19	2.93	1.21
Kerosene	0.38	0.63	0.76	1.33	NA	1.25
Diesel fuel	0.32	0.64	0.89	1.33	2.19	1.17
Residual heating fuel No. 6	NA	NA	0.46	0.94	1.45	0.71

It should be noted that since mid 1980, in line with its policy of raising these prices to levels in Europe, the Government further raised consumer prices at the end of September 1980, on an average by about 20 cents/gallon.

Energy Policy and Planning

39. The Fourth Five Year Plan 1978-83 anticipated a 9.6 percent growth in energy consumption, based on an 8 percent annual GDP growth. However, given Turkey's current severe economic difficulties, the Government is reviewing the Fourth Plan targets and priorities. Its GDP growth prospects are much more modest; correspondingly, the growth in energy consumption will be lower.

40. Recognizing the heavy burden oil imports impose on its balance of payments, the Government's energy policy is to develop indigenous alternative energy resources of coal/lignite and hydropower, as well as to intensify exploration for and production of oil. The Government is also trying to restrain oil demand through the price mechanism, and is reviewing measures to substitute lignite for oil in residential and industrial heating uses.

41. While energy investments are being given high priority within limited financial resources now available, the Government has yet to establish proper priorities amongst the various ongoing and proposed investments in the power and coal sub-sectors. However, it is beginning to address power sub-sector planning, coordination, financing and pricing issues, in the context of the Bank-assisted Karakaya Hydropower Project. Moreover, TKI, the SEE responsible for coal/lignite development, will have to substantially increase its productivity, if the increased coal and lignite needs are to be met. Given the high capital costs and long implementation periods required for these large-scale projects, even a limited level of substitution will take place only gradually. As a result, unless major new discoveries of petroleum are made, Turkey will remain heavily dependent on imported oil in the foreseeable future. The Government is basically adopting two approaches to augment domestic oil production: (i) introduction of enhanced oil recovery (EOR) technology for existing oil fields and (ii) intensification of exploration and development of new fields by the Turkish Petroleum Corporation and by foreign oil companies. The heavy oil technology being tested in the present project could, according to consultants, triple current overall recoverable reserves.

Petroleum Exploration

42. Petroleum exploration activity in recent years has been undertaken almost exclusively by TPAO. While seventy foreign companies had taken exploration concessions and 512 exploration wells were drilled through 1978, the late 1960's and early 1970's saw a sharp drop in foreign interest as only a few relatively small discoveries were made. The foreign oil companies were further discouraged by the Government fixing the wellhead price in March 1974, substantially below import parity at the December 31, 1973 level of $5.21 per barrel plus verifiable production cost increases. However, recognizing the need to attract foreign capital and technology to supplement its domestic efforts, the Government modified its policy to make petroleum exploration and production more attractive to foreign companies. Under this new policy, announced as one of the measures accompanying the Government's far-reaching January 1980 program of structural adjustments, new oil discoveries and production from enhanced oil recovery projects will now receive a wellhead price about equal to the CIF price of imported oil; in addition, the companies can export up to 35 percent of their newly discovered oil to cover foreign currency costs and repatriation of profits. The Government has further announced the principle that if foreign exchange costs were above the 35 percent level, as they most probably would be for offshore projects, it would be prepared to negotiate higher repatriation allowances on a case by case basis. These new initiatives have elicited a favorable response, and between February and May 1980, eight foreign oil companies visited Turkey to reassess the possibility of initiating exploration activities once again in that country. Following discussions with the Bank, the Government has recently taken a major initiative to establish a new Exploration Fund to mobilize domestic resources needed for an expanded exploration program. This Fund will be financed by a tax on the sale of petroleum products at the rate of one lira

per liter of gasoline and one half lira per liter of other petroleum products. Since this is expected to generate about US$80 million equivalent annually, the Exploration Fund is an important institutional development to finance the expansion of Turkish oil exploration activities.

Organization of the Petroleum Sub-Sector

43. The Ministry of Energy and Natural Resources was established in 1964 to coordinate all energy-related agencies; the most important of these for the petroleum sector, are TPAO (para. 44), the General Directorate of Petroleum Affairs (GDPA) and Petrol Offisi. The main responsibilities of the GDPA are to approve and register petroleum concessions, to collect information on concessions that are returned to the State, to ensure that operating companies conform to good petroleum industry practices, to set crude oil prices, help set refinery margins and ex-refinery prices, and in general, to implement the articles of the Petroleum Law. Petrol Offisi is the SEE that distributes and retails most of the products refined and imported by TPAO. The Petroleum Law of 1954, modelled closely after the then prevailing United States petroleum legislation, provides the basic legal framework for all petroleum-related activities. Under this law, the wellhead price of domestically produced crude and the price of refined products were regulated on the basis of import parity.

TPAO - The Beneficiary

44. Established in 1954 by the Government under the Commercial Law, TPAO is involved in all aspects of the oil business; exploration, production, refining and, through its ten subsidiaries, refining, transportation, distribution and marketing of liquid petroleum products, petrochemicals, and fertilizers. However, the financial accounts of TPAO's subsidiaries are never consolidated with TPAO's. Even TPAO's wholly-owned subsidiaries manage their affairs almost entirely independently of TPAO's management. Structured as a private joint stock company, TPAO is 93 percent owned by Government; its operations are subject to close regulation by the Government under the Petroleum Law. The Council of Ministers controls the majority of appointments to its Board. Although its investment program has to be approved by the State Planning Organization, TPAO has autonomy in its day-to-day operations.

45. TPAO directly employs approximately 7,000 people, almost 60 percent of whom are located in the Batman district, the principal oil producing area in Turkey. In general, its professional staff is experienced and capable, having extensive experience in all aspects of the oil industry. Though it can set its own personnel regulations, and its salaries are higher than for the SEEs, in recent years salary differentials have been eroded as a result of the collective bargaining agreements reached with the Oil Workers' Union which includes all but the top 190 managerial positions in TPAO. As a result, with petroleum-related skills in large demand internationally, TPAO has also had difficulty retaining its middle management personnel. While well-qualified senior staff still remain, about half of the technical staff has less than five years experience. TPAO's Board of Directors is currently reviewing possible solutions to improve this situation. TPAO will furnish to the Bank by December 31, 1981 its recommendations to enable it to attract and retain qualified technical personnel and to improve the operational efficiency of its

staff. After exchanging views with the Bank on such recommendations, it will take steps within its power to implement these recommendations (Project Agreement, Section 3.04 (a)). Meanwhile, adequate precautions are being built in to ensure that project implementation will not suffer due to staffing difficulties (para. 62).

46. TPAO produced about 21,500 barrels per day of crude oil in 1979 (1.1 million tons) from its operations in the southeastern region of Turkey near the Syrian border and processed it in the local refinery in Batman which was designed to handle the heavy oil found in the region. It is also directly responsible for the operation of the Izmir refinery with a current capacity of 3.3 million tons and an expansion program for doubling that in the next few years. This refinery processes imported crude. TPAO's other important activities are a pipeline operation that transports crude produced in the southeast to the coast for processing in other refineries. Its marketing department is responsible for coordinating the purchase, import, and distribution of all of Turkey's petroleum and petro-products imports. In 1978 it imported 10 million tons of crude oil and 2.7 million tons of products.

47. TPAO is currently responsible for arranging for the import of, and the payment for, all of Turkey's petroleum products and crude oil requirements, for refining a third of the imported crude, and for implementing a $1,300 million refinery expansion program to increase its annual refining capacity from about 5 million tons to about 15 million tons by 1984. In addition, it is responsible for a rapidly expanding exploration and domestic oil production program, aimed at decreasing the country's dependence on petroleum imports. The rapid growth of these two distinct activities within the same management control system has tended to reduce the efficient utilization of the management resources available to the company.

48. Recognizing the advantages of separation of the domestic oil and import-related activities, the Government plans to have TPAO transfer its Izmir refinery and its mid-Anatolia refinery under construction to Istanbul Petrol Refinerisi Anonim Sirketi (IPRAS). This is a wholly-owned subsidiary of TPAO, that itself runs another refinery with a 5 million ton per annum capacity. TPAO will also transfer its current responsibilities for importing of crude and products to IPRAS, to be carried out on IPRAS's account. This reorganization is an important step for increasing management efficiency and rationalizing Government policy towards the sector. It will: (i) permit greater clarity in the formulation of objectives for each activity; (ii) facilitate the adoption of more rational financial and pricing policies for each activity; (iii) focus more clearly on the separate results of each activity; and (iv) help avoid cross-subsidization of one activity by the other. When its marketing department and refinery operations based on imported crude are transferred to IPRAS, TPAO would remain solely responsible for exploration, exploitation and processing of domestic petroleum resources.

49. Therefore, with a view to initiating the proposed reorganization, TPAO has agreed to: (a) transfer all responsibility for importing and marketing petroleum and imported petroleum products to IPRAS from January 1, 1981, (b) transfer its facilities for refining imported oil by July 1, 1981 to

IPRAS, and (c) take all necessary actions to completely separate its domestic oil operations from its import-related operations by December 31, 1981 (Project Agreement, Section 3.03). The Government and TPAO have provided a timetable for the actions necessary to fully implement the separation before the end of 1981. The proposed timetable should allow adequate time to value the assets to be transferred and to negotiate the necessary financial, legal and personnel action that will be required. To facilitate the eventual separation, including the division of its assets and liabilities, TPAO will by April 1, 1981, maintain separate accounts and financial statements as of January 1, 1981 with respect to the importing of petroleum and petroleum products and activities for refining and distributing imported oil on the one hand, and exploring, producing, refining and distributing of domestic oil on the other (Project Agreement, Section 4.02).

Beneficiary's Financial Performance and Prospects

50. After several years of profitable operations, TPAO's earnings deteriorated in the mid-1970s. In 1976, profits disappeared. In the following two years, increasingly large losses were incurred. The two principal reasons for its deteriorated performance were: (i) lower refinery margins, and (ii) substantial foreign exchange losses from frequent devaluations on its short-term and medium-term debts secured to finance crude imports. Despite heavy exchange losses and higher interest charges, profitability returned in 1979, partly due to the higher profits on the production and refining of domestic oil as a result of the change in Government's pricing policy and partly due to improved results from its imported oil refining activities. With a view to relieving TPAO of the burden of exchange losses, the Government has agreed to carry out a plan of action for offsetting, or eliminating foreign exchange losses of TPAO incurred from January 1, 1981, due to its outstanding foreign debts from its importing and petroleum products (Loan Agreement, Section 3.03). The Government plans to transfer to IPRAS the responsibility for servicing of TPAO's outstanding foreign debts for importing petroleum and its products. The Government plans to review IPRAS's financial situation and to take measures to ensure that IPRAS remains a financially sound enterprise. TPAO had a high debt equity ratio (70:30) at the end of 1979, partly because its assets, valued at historical cost, understated the real value of the equity component. To reflect its financial position on a realistic basis, and as Turkish law does not provide a mechanism for revaluing its assets, beginning with its fiscal year 1981, TPAO will revalue its assets annually for a memorandum account in accordance with principles satisfactory to the Bank, and furnish pro-forma accounts and financial statements for each fiscal year on such a basis (Project Agreement, Section 4.11).

51. The abovementioned restructuring of TPAO is expected to have a far-reaching beneficial impact on TPAO's financial situation and performance. It will eliminate the major source of TPAO's financial problems, particularly the low refinery margins and the exchange losses that arose from its import related activities. Second, by eliminating the effects of the changes in profitability of imported oil refining activities from its financial decision making, TPAO will be able to link the financial requirements for its exploration and production program more closely to its profits from the development

of oil fields discovered during previous exploration activities. Therefore, while it may be difficult to foresee the actual financial outcome of the restructured TPAO pending the division of its assets and liabilities, the financial conditions outlined below should allow the restructured TPAO to start on a sound financial basis and ensure that it would be able to maintain a reasonable balance between its high-risk exploration activities and its low-risk production investment.

52. To ensure that TPAO has a sound financial basis, particularly since it would be primarily concerned with risky exploration activities, TPAO would be required to have an initial debt equity ratio of one (Project Agreement, Section 4.06 (a)). As TPAO had negative working capital in the recent past, it would also be required to have a current ratio of one and adequate liquid working capital equal to two months cash operating expenses (Project Agreement, Section 4.06 (b) and (c)). Further, to ensure that TPAO does not encounter new problems of excessive accounts receivables from other Government-owned companies, if accounts receivable exceed its sales for the previous two months, the Government will advance an amount equal to the receivables in excess of two months sales at an interest rate not greater than the average rate TPAO receives on its outstanding receivables (Loan Agreement, Section 3.02). To ensure its long-term financial viability, TPAO must maintain a reasonable balance between its production and exploration investments. Given the high degree of uncertainty as to the outcome of its exploration investments and the long gestation period even if its exploration is successful, it is prudent for TPAO to limit its debt to a level it can service while allowing it a reasonable latitude to continue its exploration activities with internally generated funds. To meet this objective, TPAO will not incur any long-term debt unless its projected net revenues in each year during the terms of the debt is at least two times the aggregate debt service on all long-term debt (Project Agreement, Section 4.07). TPAO would also be required to use its internally generated funds for its own requirements, and not for the requirements of its subsidiaries and other companies in which it has an interest, unless its own requirements have been met (Project Agreement, Section 4.09). TPAO would furnish the Bank for its review annually in October of each year its proposed investment program and related financing arrangements for the coming year (Project Agreement, Section 4.10).

Bank Lending to the Energy Sector

53. Bank Group lending in the energy sector had so far been concentrated on the power sub-sector and related lignite mining development, except for the engineering loan (No. S-13-TU, dated November 1978) provided to prepare the proposed project. Since 1952 the Bank has made ten loans and a technical assistance grant (total US$476.65 million) and IDA has extended three credits (total US$55.7 million) for the development of the power sub-sector. The said engineering loan of US$2.5 million, was to help TPAO evaluate alternative enhanced recovery techniques applicable to the Bati Raman oil field, which offered the best prospects for increasing Turkey's oil production in the medium-term. In view of the heavy burden of oil imports on Turkey's balance of payments, which is expected to continue despite Turkey maintaining the volume of its imports at close to its present levels, the Bank's future

involvement in the oil and gas sub-sector is intended to help Turkey increase its domestic oil production from proven fields and to support an exploration program to find more oil.

PART IV - THE PROJECT

Project History and Background

54. In early 1978, TPAO requested Bank assistance in developing a program to increase the ultimate recovery of the Bati Raman oil field through the use of enhanced oil recovery (EOR) technology. This field is the largest oil field in Turkey with proven reserves of 1.8 billion barrels (280 million tons), of which only 1.5 percent is recoverable by primary means, due to the highly viscous asphaltic character of the oil. Using financing provided by an engineering loan (S-13-TU) for US$2.5 million, a group of consultants undertook a comparative evaluation of alternative enhanced recovery technologies applicable to heavy oil to determine the optimal enhanced recovery method.

55. After examining in detail three prospective methods, namely in situ combustion, steam flooding and carbon dioxide (CO_2) injection, the results of the laboratory and computer simulation studies indicated that CO_2 injection in the oil reservoir is the recommended EOR method. This confirmed the results of previous studies undertaken by TPAO. The consultants have projected the ultimate recovery factor from CO_2 injection could range from 17 to 30 percent depending on the reservoir behavior. However, because the basic data for a simulation model came from the limited production performance data of the field, there is always a large uncertainty regarding recoveries projected by a model of this kind. Nevertheless, two independent consultants reviewed the proposals and agreed with the recommendation of proceeding with the CO_2 injection pilot project, although they considered the higher recovery projections overly optimistic. Furthermore, unlike the other technologies evaluated, the CO_2 method has the advantage that even it if failed to increase the oil recovery as expected, it would leave the reservoir unaltered. Thus, the oil could still be recovered by another method at a later date.

56. During the final stage of the EOR study financed under the aforementioned engineering Loan, the Government also requested Bank assistance in: (a) the development of the newly discovered extension of the established Raman oil field, and (b) the assessment of the production potential of the Hamitabat gas field in Thrace in northwestern Turkey. The project was appraised in February 1980, and the loan was negotiated in Washington in September 1980 with a delegation which was led by the Chief Economic Counselor of the Turkish Embassy and included representatives of the Treasury and TPAO. A staff appraisal report entitled "Bati Raman Enhanced Oil Recovery Field Demonstration Project" (No. 3093-TU), dated October 17, 1980, is being distributed separately to the Executive Directors.

Objectives and Description

57. The proposed project has two main objectives: (i) to expand Turkey's recoverable reserves through the introduction of enhanced oil recovery methods and to enhance its medium-term petroleum production capacity; and (ii) to increase Turkey's crude oil production in the short-term by developing newly discovered oil reserves. It includes the following four components :

(a) The Bati Raman Field Test - Following completion of the comparative evaluation study, which recommended the application of carbon dioxide (CO_2) technology, it is proposed that a demonstration test be undertaken to determine whether the process will in fact produce the expected results. Such an approach is standard practice in the industry for EOR projects. If successful, the results of this two-year demonstration test will provide TPAO with the basic operating data required for it to design an efficient full field development project. The field demonstration test of the chosen carbon dioxide EOR technology will be carried out on 10 percent of the reservoir. It will require the drilling of wells at the Dodan Gas field to produce carbon dioxide gas, the removal of sulphur from the gas, the laying of a 75 km pipeline to transport 55 million cubic feet per day of carbon dioxide gas from the Dodan gas field to the Bati Raman oil field at a pressure of 2000 psi, the drilling of an additional 5 wells in Bati Raman, the preparation of a total 30 wells to handle CO_2 injection and oil production, and the installation of associated equipment in Dodan and Bati Raman. Workover rigs, a cementing truck, specialized laboratory equipment, and equipment and services comprising technical assistance for testing, monitoring and evaluating the results, are also included.

(b) The Raman Field Development - This component will assist in the expansion of production from the newly discovered northern extension of the Raman oil field, through the drilling and completion of 18 new production wells and the installation of associated surface and subsurface equipment. In addition, technical assistance for a reservoir study is proposed in order to determine the optimum approach to a secondary recovery program for the entire field.

(c) Thrace (Hamitabat) Gas Field - The production potential of the Hamitabat gas field will be evaluated by fracturing and testing six to ten wells to provide reliable estimates of gas reserves and field productivity and to determine the optimum utilization of its gas. Although seven wells have been drilled and three are currently producing a total of five million cu.ft. per day of gas, neither the reserve estimates nor the production forecasts give sufficient confidence to permit the implementation of projects designed to consume the gas over an extended period of time. Technical assistance for a study of gas reserves and optimum utilization of the gas is also included.

(d) Technical Assistance - To strengthen TPAO's management and organization, TPAO will be provided with specialized assistance for improving its operational productivity and its management organization. At present, TPAO is running a huge operation with little of the work contracted out. The organizational structure, systems of internal communication, control of operations, warehousing, accounting and financial management, financial planning systems and management of its subsidiaries would be carefully reviewed with a view to improving TPAO's performance within set policy objectives.

Project Costs and Financing Plan

58. The total cost of the proposed project is estimated at US$102.0 million equivalent, including US$62.0 million in foreign exchange. This estimate includes physical and price contingencies, all based on 1980 prices; physical contingencies are estimated at 20 percent and price contingencies estimated in dollar terms at 10.5 percent for 1981, 9 percent for 1982 and 8 percent for 1983. Consultant services of 180 man-months included in the project costs have been estimated at an average rate of $15,000 per man-month, including local travel and subsistence. These rates are in line with current rates prevailing in the industry and are reasonable. The project cost estimates do not include taxes and duties on imported material, equipment and services required for the Project, as they are exempt from taxes and duties.

59. The proposed Bank loan of US$62 million will finance 100 percent of the estimated foreign costs, or about 62 percent of the total project costs. The US$40.0 million equivalent of local costs is expected to be met by TPAO from internally generated resources. In the unlikely event TPAO's own cash flow is inadequate, the Government would make good the shortfall in the form of equity investment in TPAO (Loan Agreement, Section 3.01 (b)). It is proposed that the Bank loan be made to Turkey at the prevailing interest rate for 17 years including 4 years grace, and relent to TPAO for seventeen years, including 4 years grace, at 11.10 percent interest per annum. TPAO will bear the foreign exchange risk. The execution of a satisfactory Subsidiary Loan Agreement between the Government and TPAO is a condition of effectiveness (Loan Agreement, Section 3.01 (c) and 6.01).

Project Implementation

60. The project will be implemented over a three-year period. While TPAO will have overall responsibility for the implementation, it will be assisted by consultants, whose qualifications, experience and conditions of employment are satisfactory to the Bank, for the Project's various components.

61. For the Bati Raman EOR Field Demonstration Project, TPAO has already engaged consultants whose qualifications, experience and conditions of employment are satisfactory to the Bank for detailed engineering design, and is in the process of choosing consultants for supervision and start-up of the Project. It will also engage consultants for monitoring and evaluating the results of the field tests. For the Raman field, where production potential could be further increased by application of EOR methods, TPAO will engage

consultants to carry out a reservoir study to help determine the optimal EOR program for this field. TPAO will engage specialized service companies for fracturing and testing of the gas wells in the Thrace (Hamitabat) gas field to help evaluate its production potential and to provide reliable estimates of its gas reserves, and will engage consultants to undertake a study of the technically and economically optimum utilization of the gas reserves, once the gas field's production potential is established.

62. TPAO will create, for each project component, special project implementation groups, with qualified and experienced staff (Project Agreement, Section 3.02). Furthermore, an understanding was reached during negotiations that if the capabilities of these project implementation units fall below acceptable levels as a result of the loss of qualified technical personnel, TPAO would secure adequate outside technical assistance, so that project implementation is fully safeguarded.

63. As the carbon dioxide injection enhanced recovery method is being applied to heavy oil for the first time under the conditions obtaining at Bati Raman, TPAO will implement the field demonstration project in phases. TPAO will present a phased implementation program before October 1981 for the Bank's approval, to ensure that each phase is satisfactorily implemented and its progress reviewed before the initial testing phase is gradually extended to the entire 30-well program of the field test (Project Agreement, Section 3.05 (a)). In addition, in order to ensure that its limited technical resources are concentrated on the proposed field tests, TPAO has agreed not to undertake field tests of the carbon dioxide injection in the central section of the reservoir, as proposed by its consultants, until Bank and TPAO agree that the results of the field test justify extending it to the central section of the reservoir (Project Agreement, Section 3.05 (b)). Further, to benefit from the experience of foreign companies and agencies, TPAO has agreed to establish by October 1, 1981, an advisory panel (independent of its consultants), comprising of at least three experts experienced in heavy oil recovery or carbon dioxide injection, to review the progress of the tests and resolve unforeseen problems (Project Agreement, Section 3.06). Several foreign companies have offered to provide these experts on a voluntary basis. To ensure that the 35 km power transmission lines, which are needed to connect the Dodan gas facilities with Turkey's national power grid, but not part of the proposed project, are completed prior to the commissioning of the Dodan gas fields and the gas pipeline to Bati Raman, TPAO has concluded arrangements with the Turkish Electricity Authority (TEK), including a detailed implementation program, satisfactory to the Bank for securing a timely electricity supply at Dodan (Project Agreement, Section 3.07).

64. With a view to strengthening its management, TPAO will also initiate by April 1, 1981 and complete by September 1, 1982, a management study, whose terms of reference has been agreed with the Bank, by qualified management and financial consultants well versed in petroleum industry, to suggest measures to improve its technical and financial management. TPAO will then exchange views with the Bank thereon no later than December 31, 1982 and thereafter take steps to implement the study's recommendations (Project Agreement, Section 3.04 (b)).

Procurement and Disbursement

65. The proposed Bank loan of US$62 million would be disbursed against:

(i) 100 percent of foreign expenditure for the imported materials, equipment, spares, logging services and stimulation work;

(ii) 100 percent of the foreign expenditure for the consultancy services covering design, supervision of implementation, monitoring of operations, studies, technical assistance and training, and

(iii) 50 percent of the construction costs (representing estimated foreign cost component) of the gas pipeline from Dodan to Bati Raman.

It would also refinance the $2.5 million engineering loan (Loan S-13-TU) for a comparative evaluation of various EOR technologies (Loan Agreement, Section 2.02 (b)). To ensure that an appropriate environmental control system is developed to deal with the increasing quantity of water produced along with oil in the Raman field, and currently being discharged into ravines, and through them into nearby rivers, the design of a water disposal system satisfactory to the Bank is a condition of disbursement for the Raman field development sub-project (Loan Agreement, Schedule 1, para. 5).

66. Goods and services financed under the proposed Bank loan would be procured by international competitive bidding in accordance with Bank guidelines except that equipment, material or services estimated to cost less than US$100,000 and not exceeding the aggregate of US$3.0 million, and specialized services such as well-logging and stimulation available only from a limited number of sources may be procured in accordance with limited international tendering. In view of the long delivery time (estimated between 9-12 months) of the carbon dioxide compressor, the workover rigs and certain drilling materials and spares, TPAO has taken action to invite bids. Retroactive financing of US$1.5 million for expenditures after October 1, 1980 has been proposed to cover partial downpayment on the above equipment, and a part of the cost of detailed engineering design of the Bati Raman Project.

Project Benefits and Risks

67. The Bati Raman Field Demonstration Test will use a technology chosen on the basis of an extensive study. Laboratory and computer simulation work suggest recovery factors in excess of 17 percent for the field, which could increase the additional reserves of the field by 270 million barrels (about 42 million tons), more than twice the presently recoverable reserves. Peak production from this field could reach as high as 55,000 barrels per day (3 million tons p.a.) within four years after the start of the full field development program, matching Turkey's current production. It should be emphasized, however, that there is no field operational data to substantiate these forecasts. The data available on reservoir characteristics is insufficient to eliminate the possibility that the carbon dioxide gas could bypass most of the heavy oil through large fractures and exit from wells in other

sections of the field, thereby greatly reducing the efficiency of the process. At the same time, the consultant's recommendations have been independently reviewed by two other consulting firms experienced in enhanced recovery of heavy oils, and all have concurred that carbon dioxide injection is the appropriate EOR technology to apply to Bati Raman, and have recommended procedures with a field demonstration test. Nevertheless this is an inherently risky project, since to date there has been no application on a commercial scale of carbon dioxide enhanced recovery methods to relatively deep, heavy oil reservoirs. The important benefit of this field test will be the technical information generated which will determine whether, and with what modification, TPAO can proceed with the full-scale field development of the carbon dioxide injection technology, or whether TPAO must abandon this technology and consider other ways to fully exploit the Bati Raman field. If the oil recovery reaches 17 percent of the oil in place as projected, the internal rate of return for the full field application of this EOR technology, with an estimated capital cost of $320 million, would be about 70 percent. Moreover the process requires an incremental oil production of only three percent of the oil in place to allow the full-scale project to earn a ten percent real return, and the chances of recovering this much oil are regarded as being high. However, should the field test results be so poor as to lead to abandonment of the carbon dioxide EOR method, it would still be possible to test the steam injection recovery method since the carbon dioxide injection would not harm the oil reservoir.

68. The Raman Oil Field Project will generate an immediate increase in crude oil production from new areas of the field and will provide the information necessary to maintain a high level of production from the older producing areas of the field, which currently accounts for 40 percent of TPAO's total output. The project will also provide a water disposal system which will effectively eliminate the environmental pollution caused by the drainage of oil-contaminated salt water into the Tigris river. Of these two benefits, only the increase in production from the new wells is quantifiable in the economic rate of return calculation. With the increased production valued at the equivalent import price and with the conservative but reasonable assumption of an average initial production of 100 barrels per day per new well and a rate of decline of 15 percent per year, the incremental oil recovered in the first year of operation will be about 490,000 barrels, and the total oil recovered over the project's life of twenty years will be 3.9 million barrels. As should be expected from an oil field development project which does not include the exploration costs for discovering the field, the rate of return is high, over 60 percent.

69. The Thrace Gas Field Engineering Project will provide the technical basis for developing this field and using the gas as a substitute for imported oil. The output of the project will be the results of the tests to determine the potential production rates for gas wells in the field, the delineation of the field, a more accurate estimate of the field's recoverable reserves, and an evaluation of the alternative uses for the gas. If the study confirms TPAO's estimates of 400 billion cu.ft. of recoverable reserves, the present value of the field's output (discounted at 15 percent) would be over US$400

million even if the gas was priced at about 65 percent of the energy equivalent price of imported fuel oil. While the reserve estimates provided by TPAO may prove to be on the high side, even the most conservative estimates of one fourth the amount of recoverable reserves would be adequate to justify the investment.

Environmental Considerations

70. The Raman field is producing at present about 6,300 barrels of salt water per day. This water, which is normally contaminated with oil, is dumped into ravines and eventually flows into nearby rivers. Water production from the Raman field will increase as the field ages. The project includes a water treatment and disposal system in the Raman field, and the completion of a design satisfactory to the Bank is a condition of disbursement of the loan for the Raman field development sub-project. A similar but smaller system is also provided for Bati Raman.

PART V - LEGAL INSTRUMENTS AND AUTHORITY

71. The draft Loan Agreement between the Republic of Turkey and the Bank, the draft Project Agreement between the Bank and TPAO and the report of the Committee provided for in Article II, Section 4 (iii) of Articles of Agreement are being distributed to the Executive Directors separately. The special features of the Loan and Project Agreements are referred to in paragraphs 45, 49-52, 59 and 62-65 and listed in Section III of Annex III.

72. A special condition of loan effectiveness is the execution of the Subsidiary Loan Agreement between the Republic of Turkey and TPAO (Loan Agreement, Section 6.01). A special condition of disbursement for the Raman field development sub-project is the provision by TPAO of design for the water disposal system for the Raman oil field satisfactory to the Bank (Loan Agreement, Schedule 1, para. 5).

73. I am satisifed that the proposed loan would comply with the Articles of Agreement of Bank.

PART VI - RECOMMENDATION

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

Robert S. McNamara
President

Attachment
October 30, 1980
Washington, D.C.

TABLE 3A
TURKEY - SOCIAL INDICATORS DATA SHEET

	TURKEY			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE)/a	
	1960 /b	1970 /b	MOST RECENT ESTIMATE /b	MIDDLE INCOME EUROPE	INDUSTRIALIZED COUNTRIES
LAND AREA (THOUSAND SQ. KM.)					
TOTAL 780.6					
AGRICULTURAL 553.8					
GNP PER CAPITA (US$)	290.0	520.0	1200.0	2381.1	8104.2
ENERGY CONSUMPTION PER CAPITA (KILOGRAMS OF COAL EQUIVALENT)	245.0	479.0	798.0	1641.4	7021.1
POPULATION AND VITAL STATISTICS					
POPULATION, MID-YEAR (MILLIONS)	27.5	35.3	43.1	.	.
URBAN POPULATION (PERCENT OF TOTAL)	29.7	38.4	45.6	53.9	76.0
POPULATION PROJECTIONS					
POPULATION IN YEAR 2000 (MILLIONS)			65.0	.	.
STATIONARY POPULATION (MILLIONS)			100.0	.	.
YEAR STATIONARY POPULATION IS REACHED			2075	.	.
POPULATION DENSITY					
PER SQ. KM.	35.0	45.0	55.0	77.2	142.8
PER SQ. KM. AGRICULTURAL LAND	51.0	64.0	78.0	129.5	523.3
POPULATION AGE STRUCTURE (PERCENT)					
0-14 YRS.	41.3	41.7	39.1	30.6	23.5
15-64 YRS.	55.2	54.0	56.4	61.1	65.1
65 YRS. AND ABOVE	3.5	4.3	4.5	8.2	11.4
POPULATION GROWTH RATE (PERCENT)					
TOTAL	2.8	2.5	2.5	1.6	0.7
URBAN	5.1/c	5.1	4.8	3.3	1.3
CRUDE BIRTH RATE (PER THOUSAND)	44.0	38.0	32.0	22.8	13.8
CRUDE DEATH RATE (PER THOUSAND)	17.0	12.0	10.0	8.9	9.1
GROSS REPRODUCTION RATE	2.9	2.6	2.1	1.5	0.9
FAMILY PLANNING					
ACCEPTORS, ANNUAL (THOUSANDS)	..	65.6	66.6	.	.
USERS (PERCENT OF MARRIED WOMEN)	5.3	8.2	38.0	..	..
FOOD AND NUTRITION					
INDEX OF FOOD PRODUCTION PER CAPITA (1969-71=100)	96.0	100.0	110.0	113.1	110.8
PER CAPITA SUPPLY OF					
CALORIES (PERCENT OF REQUIREMENTS)	110.0	110.0	115.0	125.3	131.6
PROTEINS (GRAMS PER DAY)	81.0	80.0	82.0	91.0	98.0
OF WHICH ANIMAL AND PULSE	24.0	26.0	24.0	39.6	62.1
CHILD (AGES 1-4) MORTALITY RATE	24.0	16.0	10.0	4.3	0.8
HEALTH					
LIFE EXPECTANCY AT BIRTH (YEARS)	51.0	57.0	61.0	67.8	73.5
INFANT MORTALITY RATE (PER THOUSAND)	187.0/c	153.0/d	118.0	55.9	13.2
ACCESS TO SAFE WATER (PERCENT OF POPULATION)					
TOTAL	..	52.0	75.0	..	..
URBAN	..	51.0	70.0	..	..
RURAL	..	53.0	80.0	..	..
ACCESS TO EXCRETA DISPOSAL (PERCENT OF POPULATION)					
TOTAL	..	..	..	..	..
URBAN	..	..	19.5	..	..
RURAL	..	..	..	..	..
POPULATION PER PHYSICIAN	3000.0/e	2250.0	1772.0	1030.1	624.8
POPULATION PER NURSING PERSON	..	1880.0	1403.0	929.4	218.9
POPULATION PER HOSPITAL BED					
TOTAL	590.0/e	490.0	506.0	289.7	121.2
URBAN	190.0/e	200.0	..	..	..
RURAL	..	5890.0	..	..	..
ADMISSIONS PER HOSPITAL BED	..	20.0	20.0	17.0	17.0
HOUSING					
AVERAGE SIZE OF HOUSEHOLD					
TOTAL	5.7	5.9	..	..	..
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..
AVERAGE NUMBER OF PERSONS PER ROOM					
TOTAL	..	2.2	..	..	..
URBAN	2.0	1.9	..	..	..
RURAL	..	..	..	..	..
ACCESS TO ELECTRICITY (PERCENT OF DWELLINGS)					
TOTAL	29.0	40.0	57.0	..	..
URBAN	..	..	..	..	..
RURAL	2.0	18.0	..	..	..

TABLE 3A
TURKEY - SOCIAL INDICATORS DATA SHEET

	TURKEY			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE)/a	
	1960 /b	1970 /b	MOST RECENT ESTIMATE /b	MIDDLE INCOME EUROPE	INDUSTRIALIZED COUNTRIES
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	75.0	109.0	98.0	105.9	100.1
MALE	90.0	124.0	106.0	109.3	102.2
FEMALE	58.0	94.0	90.0	103.0	102.3
SECONDARY: TOTAL	14.0	28.0	43.0	64.0	87.1
MALE	20.0	39.0	59.0	71.1	84.4
FEMALE	8.0	16.0	27.0	56.9	84.3
VOCATIONAL ENROL. (% OF SECONDARY)	18.0	14.0	15.0	28.8	19.0
PUPIL-TEACHER RATIO					
PRIMARY	46.0	38.0	34.0	29.4	21.3
SECONDARY	19.0	28.0	27.0	26.1	16.4
ADULT LITERACY RATE (PERCENT)	38.0	55.5/f	60.0	..	98.9
CONSUMPTION					
PASSENGER CARS PER THOUSAND POPULATION	2.0	4.0	11.5	84.6	339.9
RADIO RECEIVERS PER THOUSAND POPULATION	49.0	89.0	103.0	192.2	932.9
TV RECEIVERS PER THOUSAND POPULATION	..	1.8	43.0	118.5	354.8
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION	51.0	..	..	93.0	327.4
CINEMA ANNUAL ATTENDANCE PER CAPITA	1.1	6.7	..	5.7	3.3
LABOR FORCE					
TOTAL LABOR FORCE (THOUSANDS)	13782.1	15829.6	18858.8	.	.
FEMALE (PERCENT)	40.2	37.2	36.0	30.4	36.1
AGRICULTURE (PERCENT)	78.5	67.7	60.0	37.0	7.6
INDUSTRY (PERCENT)	10.5	12.1	14.0	29.3	38.8
PARTICIPATION RATE (PERCENT)					
TOTAL	50.1	44.3	42.8	40.9	44.6
MALE	58.7	54.9	53.2	55.9	58.1
FEMALE	41.2	33.4	32.1	26.2	31.7
ECONOMIC DEPENDENCY RATIO	0.9	1.0	1.0	1.0	0.8
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5 PERCENT OF HOUSEHOLDS	33.0/g	32.8/h	..	..	..
HIGHEST 20 PERCENT OF HOUSEHOLDS	61.0/g	60.6/h	..	..	..
LOWEST 20 PERCENT OF HOUSEHOLDS	4.2/g	2.9/h	..	..	..
LOWEST 40 PERCENT OF HOUSEHOLDS	10.6/g	9.4/h	..	..	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	342.0	..	..
RURAL	..	..	270.0	..	..
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	..	..	..
RURAL	..	..	220.0	385.8	..
ESTIMATED POPULATION BELOW ABSOLUTE POVERTY INCOME LEVEL (PERCENT)					
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..

.. 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 1974 and 1978.

/c 1955-60; /d 1967; /e 1962; /f Six years and over; /g 1963, /h 1968.

DEFINITIONS OF SOCIAL INDICATORS

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

The reference groups are (1) the same country group of the subject country and (2) a country group with somewhat higher average income than the country group of the subject country (except for "Capital Surplus Oil Exporters" group where "Middle Income North Africa and Middle East" is chosen because of stronger socio-cultural affinities). In the reference group data the averages are population weighted arithmetic means for each indicator and shown only when at least half 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.

LAND AREA (thousand sq.km.)
- Total - Total surface area comprising land area and inland waters.
- Agricultural - Estimate of agricultural area used temporarily or permanently for crops, pastures, market and kitchen gardens or to lie fallow; 1977 data.

GNP PER CAPITA (US$) - GNP per capita estimates at current market prices, calculated by same conversion method as World Bank Atlas (1976-78 basis); 1960, 1970, and 1978 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 1978 data.

POPULATION AND VITAL STATISTICS
- Total Population, Mid-Year (millions) - As of July 1; 1960, 1970, and 1978 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 1978 data.
- Population Projections
  - Population in year 2000 - Current population projections are based on 1980 total population by age and sex and their mortality and fertility rates. Projection parameters for mortality rates comprise of three levels assuming life expectancy at birth increasing with country's per capita income level, and female life expectancy stabilizing at 77.5 years. The parameters for fertility rate also have three levels assuming decline in fertility according to income level and past family planning performance. Each country is then assigned one of these nine combinations of mortality and fertility trends for projection purposes.
  - Stationary population - In a stationary population there is no growth since the birth rate is equal to the death rate, and also the age structure remains constant. This is achieved only after fertility rates decline to the replacement level of unit net reproduction rate, when each generation of women replaces itself exactly. The stationary population size was estimated on the basis of the projected characteristics of the population in the year 2000, and the rate of decline of fertility rate to replacement level.
  - Year stationary population is reached - The year when stationary population size has been reached.
- Population Density
  - Per sq. km. - Mid-year population per square kilometer (100 hectares) of total area.
  - Per sq. km. agricultural land - Computed as above for agricultural land only.
- 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 1978 data.
- Population Growth Rate (percent) - total - Annual growth rates of total mid-year populations for 1950-60, 1960-70, and 1970-78.
- Population Growth Rate (percent) - urban - Annual growth rates of urban populations for 1950-60, 1960-70, and 1970-78.
- Crude Birth Rate (per thousand) - Annual live births per thousand of mid-year population; 1960, 1970, and 1978 data.
- Crude Death Rate (per thousand) - Annual deaths per thousand of mid-year population; 1960, 1970, and 1978 data.
- Gross Reproduction Rate - Average number of daughters a woman will bear in her normal reproductive period if she experiences present age-specific fertility rates; usually five-year averages ending in 1960, 1970, and 1977.
- 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 (15-44 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 excludes seed and feed and is on calendar year basis. Commodities cover primary goods (e.g. sugarcane instead of sugar) which are edible and contain nutrients (e.g. coffee and tea are excluded). Aggregate production of each country is based on national average producer price weights; 1961-65, 1970, and 1978 data.
- Per capita supply of calories (percent of requirements) - Computed from energy equivalent of net food supplies available in country per capita per day. Available supplies comprise domestic production, imports less exports, and changes in stock. Net supplies exclude animal feed, seeds, quantities used in food processing, and losses in distribution. Requirements were estimated by FAO based on physiological needs for normal activity and health considering environmental temperature, body weights, age and sex distribution of population, and allowing 10 percent for waste at household level; 1961-65, 1970, and 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 allowance of 60 grams of total protein per day and 20 grams of animal and pulse protein, of which 10 grams should be animal protein. These standards are lower than those of 75 grams of total protein and 23 grams of animal protein as an average for the world, proposed by FAO in the Third World Food 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) Mortality Rate (per thousand) - Annual deaths per thousand in age group 1-4 years, to children in this age group; for most developing countries data derived from life tables; 1960, 1970 and 1977 data.

HEALTH
- Life Expectancy at Birth (years) - Average number of years of life remaining at birth; 1960, 1970 and 1978 data.
- Infant Mortality Rate (per thousand) - Annual deaths of infants under one year of age per thousand live births.
- 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 percentages of their respective populations. In an urban area a public fountain or standpost located not more than 200 meters from a house may be considered as being within reasonable access of that house. In rural areas reasonable access would imply that the housewife or members of the household do not have to spend a disproportionate part of the day in fetching the family's water needs.
- Access to Excreta Disposal (percent of population - total, urban, and rural - Number of people (total, urban, and rural) served by excreta disposal as percentages of their respective populations. Excreta disposal may include the collection and disposal, with or without treatment of human excreta and waste-water by water-borne systems or the use of pit privies and similar installations.
- Population per Physician - Population divided by number of practicing physicians qualified from a medical school at university level.
- Population per Nursing Person - Population divided by number of practicing male and female graduate nurses, practical nurses, and assistant nurses.
- Population per Hospital Bed - total, urban, a rural - Population (total, urban, and rural) divided by their respectiv number of hospital beds available in public and private general and specialized hospital and rehabilitation centers. Hospitals are establishments permanently staffed by at least one physician. Establishments providing principally custodial care are not included. Rural hospitals, however, include health and medical centers not permanently staffed by a physician (but by a medical assistant, nurse, midwife, etc.) which offer in-patient accommodation and provide a limited range of medical facilities. For statistical purposes urban hospitals include WHOs principal general and specialized hospitals, and rural hospitals local or rural hospitals and medical and maternity centers.
- Admissions per Hospital Bed - Total number of admissions to or discharges from hospitals divided by the number of beds.

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

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

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

LABOR FORCE
- Total Labor Force (thousands) - Economically active persons, including armed forces and unemployed but excluding housewives, students, etc. Definitions in various countries are not comparable; 1960, 1970 and 1978 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 1978 data.
- Industry (percent) - Labor force in mining, construction, manufacturing and electricity, water and gas as percentage of total labor force; 1960, 1970 and 1978 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 1975 data. These are 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
- Estimated Absolute Poverty Income Level (US$ per capita) - urban and rural - Absolute poverty income level is that income level below which a minimal nutritionally adequate diet plus essential non-food requirements is not affordable.
- Estimated Relative Poverty Income Level (US$ per capita) - urban and rural - Rural relative poverty income level is one-third of average per capita personal income of the country. Urban level is derived from the rural level with adjustment for higher cost of living in urban areas.
- Estimated Population Below Absolute Poverty Income Level (percent) - urban and rural - Percent of population (urban and rural) who are "absolute poor".

Economic and Social Data Division
Economic Analysis and Projections Department
April, 1980

TURKEY - ECONOMIC DEVELOPMENT DATA SHEET 1/

	Actual 1970	1973	1975	1977	1978	Provisional 1979	Est. 1980	PROJECTED 1982	1983	1985	1990	Growth Rates 70-78	79-85	85-90	Share of GDP 1978
A. NATIONAL ACCOUNTS (TL Billion, 1978 Prices)															
1. Gross domestic product	720.3	876.1	1034.2	1234.5	1272.7	1269.2	1288.2	1386.6	1449.0	1582.3	1971.9	7.4	3.8	4.5	100.0
2. Gain from terms of trade	-6.0	3.8	-0.2	-10.1	0.0	-20.0	-15.9	-20.3	-21.7	-24.0	-41.7	-	-	-	0.0
3. Gross domestic income	714.3	879.9	1034.0	1224.4	1272.7	1249.2	1272.3	1366.3	1427.3	1558.3	1930.1	7.5	3.8	4.4	100.0
4. Exports (G + NFS)	42.7	66.3	50.8	62.0	74.0	71.2	77.0	92.1	100.4	119.2	183.5	7.1	8.9	8.9	5.8
5. Imports (G + NFS)	60.0	93.9	140.4	167.4	113.8	112.0	117.3	127.6	132.2	141.2	172.3	8.9	3.9	4.1	9.2
6. Investment	130.0	158.1	245.0	273.2	248.4	263.7	263.7	280.2	294.8	326.2	420.3	8.4	3.5	5.2	19.5
7. Consumption	590.4	723.7	846.5	1036.8	1075.9	1053.5	1064.9	1142.0	1186.1	1278.1	1540.4	7.8	3.3	3.8	84.5
8. Domestic savings	129.9	152.4	187.7	197.7	196.8	212.8	207.5	224.4	241.2	280.2	389.8	5.3	4.7	6.8	15.5
9. National savings	143.3	191.3	214.2	213.0	212.7	236.0	216.2	237.5	260.8	304.0	423.6	5.1	4.3	6.9	16.7
B. SECTOR OUTPUT	Share of Total Output (Percent)														
1. Agriculture	29.6	27.9	29.5	28.1	27.0	23.4	26.7	26.2	25.9	29.0	24.2				
2. Industry	27.2	26.5	26.1	26.1	27.7	30.0	27.4	27.8	28.2	25.4	31.0				
3. Other	43.2	45.6	44.4	45.8	45.4	46.6	45.9	46.0	45.9	45.6	44.8				
C. PRICES (1978 = 100)															
1. Export prices	43.7	63.8	84.0	95.6	100.0	105.6	119.8	144.0	156.6	185.5	254.7				
2. Import prices	47.7	61.8	84.2	96.0	100.0	125.6	151.1	184.8	200.0	232.4	329.8				
3. Terms of trade	91.6	103.2	99.7	99.6	100.0	84.1	79.3	77.9	78.4	79.8	77.2				
4. GDP deflator 2/	20.2	33.7	50.2	73.4	100.0	160.0	320.0	922.0	1198.0	2025.0	5039.0				
5. Average exchange rate ($1.00 = TL)	11.0	14.2	14.4	18.0	24.3	36.4									
D. PUBLIC FINANCE	Percent of GDP														
1. Central government revenue	22.6	20.9	23.1	24.2	24.2	22.8									
2. Central government expenditure	24.9	22.0	23.7	27.9	28.5	25.9									
3. Public sector deficit 3/	-	2.1	6.1	9.0	3.7	6.2									

E. SELECTED INDICATORS	1970-78
ICOR	3.0
Import elasticity	2.4 4/
Average domestic saving rate	16.9
Marginal domestic saving rate	13.6
Investment/GDP	20.2
Imports/GDP	11.4

F. LABOR FORCE	1970	1975	1977	1978
Civilian labor force (million)	13.6	15.8	16.0	16.4
Unemployment and underemployment (%)	11.0	12.3	13.1	13.5
Civilian employment (million)	13.1	14.7	14.7	14.8
of which (%)				
Agriculture	67.1	64.5	61.9	61.3
Industry	13.3	14.9	16.3	16.6
Other	19.6	20.6	21.8	22.2

1/ Totals may not add up because of rounding errors.
2/ Projected rates of inflation are highly speculative and subject to change.
3/ Borrowing requirement of central government, State Economic Enterprises, and other public authorities.
4/ For 1970-77 period.

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TURKEY - BALANCE OF PAYMENTS
(Million US Dollars)

	Actual					Provisional	Projected						
	1970	1973	1975	1977	1978	1979	1980	1981	1982	1983	1984	1985	1990
A. SUMMARY OF BALANCE OF PAYMENTS													
1. Exports of goods and NFS	754	1799	2152	2556	3108	3257	3800	4500	5462	6473	7680	9114	19254
2. Imports of goods and NFS	-1096	-2391	-5219	-6436	-5059	-5699	-7300	-8400	-9714	-10877	-12162	-13524	-23405
3. Resource balance	- 342	- 592	-3067	-3880	-1953	-2442	-3500	-3900	-4252	- 4404	- 4482	- 4410	- 4151
4. Interest (net) 1/	-- 47	- 59	- 124	- 570	- 680	-930	-1350	-1670	-1500	- 1619	- 1749	- 1924	- 2309
5. Profits	- 33	- 35	- 36	- 116	- 60	-50	-	-	- 103	- 108	- 114	- 120	- 150
6. Workers' remittances	273	1183	1312	982	983	1694	1800	2000	2400	3000	3400	3800	5800
7. Net factor service income	193	1089	1152	366	243	714	450	330	797	1273	1537	1756	3341
8. Transfers	91	18	23	12	-	-	-	-	-	-	-	-	-
9. Current account balance	- 58	515	-1892	-3572	-1710	-1728	-3050	-3570	-3475	- 3131	- 2945	- 2653	- 810
10. Private foreign capital	92	77	251	169	147	209	175	200	220	244	273	299	500
11. Public medium & long-term (M&LT)(gross) 2/	271	376	386	502	530	1434	2175	3540	3135	3540	3826	4233	4423
12. Amortization of public M&LT 1/ 2/	- 146	- 72	- 117	- 214	- 380	-365	-1240	-1400	-1474	- 2176	- 2692	- 2897	- 3729
13. Public M&LT (Net)	125	304	269	288	150	1069	935	2140	1661	1364	1134	1336	694
14. Short-term (net) 3/	66	-235	1159	1807	1097	582	850	220	- 172	-179	-94	-58	-
15. Capital not included elsewhere 4/	- 39	67	- 204	742	464	-206	1060	1010	2168	1827	1832	1288	-
16. Change in reserves (- = increase)	- 186	- 728	417	566	- 148	74	30	-	- 402	-181	-200	-212	-384
B. M&LT LOAN COMMITMENTS 5/	506	547	755	1205	1407	1896							
Public Sector	487	491	649	1105	1307	1796							
1. Bank group	40	135	158	144	358	306							
2. Other multilateral	1132	100	40	6	54	123							
3. Governments: market economies	1154	718	197	282	288	805							
4. Governments: centrally planned economies	114	3	3	150	204	35							
5. Suppliers	47	4	79	260	123	} 527							
6. Financial institutions	-	32	172	263	281								
7. Other	-	-	-										
Private sector	19	56	106	100	100	100							
C. AVERAGE TERMS OF M&LT LOAN COMMITMENTS 5/													
1. Grant element (%)	37.4	39.2	15.6	11.4	14.2	14.7							
2. Interest (%)	3.6	4.7	7.2	7.6	7.2	7.0							
3. Maturity (years)	18.8	25.7	13.5	11.6	10.8	11.9							
4. Grace (years)	4.6	7.1	3.8	4.2	3.1	5.0							

1/ Does not include 1980 debt relief which are included under "capital not elsewhere included". The figures are: interest relief 1980 $329 million, 1981 $259 million, 1982 $173 million and 1983 $142 million; and principal relief 1980 $733 million, 1981 $518 million, 1982 $387 million and 1983 $386 million.
2/ Up to and including 1978 these figures are government estimates, which are not consistent with Bank DRS data.
3/ Mainly convertible Turkish lira deposits, acceptance credits, commercial and oil arrears, bankers' credits, reimbursement credits, overdrafts, Dresdner Bank scheme deposits, and IMF.
4/ Including errors and omissions up to 1979; for projected years it includes gapfill, private M&LT borrowings on a net basis and total debt relief ($1062 million in 1980, $777 million in 1981, $560 million in 1982, and $528 million in 1983).
5/ Public and publicly guaranteed external debt only.

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TURKEY - EXTERNAL DEBT AND CREDITWORTHINESS

	Actual						Provisional
	1970	1973	1975	1976	1977	1978	1979
A. OUTSTANDING DEBT (Million US Dollars)							
1. Public Medium and Long Term (M and LT)(Disbursed) 1/	1854	2869	3176	3519	4326	6100	10452
2. Private M and LT (disbursed) 1/	42	115	160	253	479	557	650
3. Short Term 2/	..	279	1398	3441	6600	7469	4823
4. Total Outstanding Disbursed Debt	1896	3263	4734	7313	11405	14126	15925
5. Undisbursed Public M and LT 1/	840	1101	1641	2393	2804	3500	3775
B. DEBT SERVICE (Million US Dollars)							
1. Interest on all Debt (net of relief) 3/	-47	-59	-150	-300	-570	-710	-930
2. Amortization of M and LT Debt (net of relief)	-146	-72	-117	-119	-214	-380	-365
3. Total Debt Service Payments	-193	-131	-267	-419	-784	-1090	-1295
C. DEBT BURDEN							
1. Debt Service Ratio 4/	18.8	4.4	7.7	11.2	22.2	26.7	26.2
2. Total Outstanding Disbursed Debt/GDP 5/	15.0	15.7	13.1	17.9	23.9	28.3	26.5
D. EXPOSURE							
1. Bank Group DOD/Total Outstanding Disbursed Debt	7.2	7.8	9.1	7.6	6.1	6.0	8.0
2. Bank Group Debt Service/Total Debt Service	3.2	14.9	12.2	10.8	8.3	7.7	8.8

E. COMPOSITION OF TOTAL OUTSTANDING DISBURSED DEBT (Million US Dollars)	1979 6/ (Amount)	1979 6/ (As % of Total)
1. Medium & Long-Term Debt	11102	69.7
a. Public Medium and Long-Term	10452	65.6
(i) Bank Group	1080	6.8
(ii) Other Multilateral	639	4.0
(iii) Governments	4692	29.5
(iv) Suppliers	352	2.2
(v) Financial Institutions	3654	22.9
(vi) Bonds	35	0.2
b. Private Medium and Long-Term (Total)	650	4.1
2. Short Term	4823	30.3
(i) Convertible Turkish Lira Deposits	642	4.0
(ii) Suppliers' Credits/Commercial and Oil Arrears	1516	9.5
(iii) Acceptance Credits	634	4.0
(iv) Bankers Credits, Reimbursement Credits, Overdrafts	244	1.5
(v) Dresdner Bank	344	2.2
(vi) IMF	623	3.9
(vii) Oil Credits	408	2.6
(viii) Other	412	2.6
3. Total Outstanding Disbursed Debt	15925	100.0

1/ Bank DRS data.
2/ Based on Turkish Central Bank estimates.
3/ Based on Turkish Balance of Payments data, except for 1979.
4/ Total debt service (line B3) divided by exports of goods and non-factor services plus workers' remittances.
5/ At market prices.
6/ Bank DRS data, Turkish Central Bank and Treasury estimates.

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STATUS OF BANK GROUP OPERATIONS IN TURKEY

STATEMENT OF BANK LOANS AND IDA CREDIT
(As of September 30,1980)

Loan and Credit Number	Year	Borrower	Purpose	(Less Cancellations US$M) Bank	IDA	Undisbursed
Twenty-two loans and fourteen credits fully disbursed				600.5	177.8	
748-TU	1971	Republic of Turkey	Education	13.5		2.6
844-TU	1972	Republic of Turkey	Istanbul Water Supply	37.0		9.3
883-TU	1973	Republic of Turkey	Ceyhan Aslantas	44.0		18.9
892-TU	1973	Republic of Turkey	Istanbul Power Distribution	14.0		0.1
893-TU	1973	Turkish State Railway	Railway Project	46.7		1.7
957-TU	1974	Republic of Turkey	Antalya Forestry	40.0		0.3
1023-TU	1974	TEK/TKI	Elbistan Power	148.0		53.3
1024-TU	1974	DYB	Industry	40.0		0.7
1130-TU	1975	Republic of Turkey	Rural Development	75.0		44.5
1248-TU	1976	Agriculture Bank of Turkey (TCZB)	Agriculture Credit	54.3		31.3
1258-TU	1976	State Pulp and Paper Industry (SEKA)	Newsprint	70.0		11.2
1265-TU	1976	Republic of Turkey	Livestock III	21.5		12.0
1194-TU	1976	TEK	Power Transmission II	56.0		12.8
1310-TU	1976	Republic of Turkey	Tourism	26.0		23.1
1379-TU	1977	DYB	Industry	70.0		35.8
1430-TU	1977	TSKB	Industry	74.0		15.7
1585-TU	1978	Republic of Turkey	Northern Forestry	86.0		67.7
1586-TU	1978	Republic of Turkey	Livestock IV	24.0		22.6
1606-TU	1978	Republic of Turkey	Erdemir Steel Stage II	95.0		89.8
1741-TU	1979	Republic of Turkey	Ports Rehabilitation	75.0		75.0
1742-TU	1979	Republic of Turkey	Grain Storage	85.0		85.0
1748-TU	1979	TSKB	Industry	60.0		59.3
1754-TU	1979	TSKB	Private Sector Textiles	65.0		64.9
1755-TU	1979	SYKB	Private Sector Textiles	15.0		15.0
S-15-TU	1979	Republic of Turkey	Ankara Air Pollution Control	6.0		5.8
1818-TU	1980	Republic of Turkey	Structural Adjustment	200.0		90.6
1844-TU	1980	Republic of Turkey	Karakaya Hydropower	120.0		120.0
1847-TU	1980	Republic of Turkey	Sumerbank Cotton Textiles /a	83.0		83.0
1862-TU	1980	Republic of Turkey	Livestock V /a	51.0		51.0
		Total		2395.5	177.8	1103.0
		of which has been repaid		206.0	6.3	
		Total now outstanding		2189.5	171.5	
		Amount sold	3.6			
		of which has been repaid	3.6	- 0 -	- 0 -	
		Total now held by Bank and IDA /b		2189.5	171.5	
		Total undisbursed		1103.0	0	1103.0

/a Not yet effective.
/b Prior to exchange adjustments.

STATUS OF BANK GROUP OPERATIONS IN TURKEY

STATEMENT OF IFC INVESTMENTS
(As of September 30, 1980)

Fiscal Year	Obligor	Type of Business	Amount in US$ Million Loan	Equity	Total
1964	TSKB	DFC	-	0.92	0.92
1966	SIFAS I	Nylon Yarn	0.90	0.47	1.37
1967	TSKB II	DFC	-	0.34	0.34
1969	TSKB III	DFC	-	0.41	0.41
1969	SIFAS II	Nylon Yarn	1.50	0.43	1.93
1970	Viking I	Pulp and Paper	2.50	0.62	3.12
1970	ACS	Glass	10.00	1.58	11.58
1971	NASAS	Aluminum	7.00	1.37	8.37
1971	SIFAS III	Nylon Yarn	0.75	-	0.75
1971	Viking II	Pulp and Paper	-	0.05	0.05
1972	SIFAS IV	Nylon Yarn	-	0.52	0.52
1972	TSKB IV	DFC	-	0.43	0.43
1973	TSKB V	DFC	10.00	-	10.00
1973	Akdeniz	Tourism	0.33	0.27	0.60
1974	Borusan	Steel Pipes	3.60	0.44	4.04
1974	AKSA	Textiles	10.00	-	10.00
1975	Kartaltepe	Textiles	1.30	-	1.30
1975	Sasa	Nylon Yarn	15.00	-	15.00
1975	Aslan	Cement	10.60	-	10.60
1975	DOKTAS	Steel	7.50	1.37	8.87
1975	TSKB	DFC	25.00	1.22	26.22
1976	NASAS	Aluminum	1.58	-	1.58
1976	TSKB	DFC	25.00	-	25.00
1976	Asil Celik	Steel	12.00	2.20	14.20
1977	Borusan	Steel Pipes	-	0.06	0.06
1978	DOKTAS	Steel	-	0.09	0.09
1979	Ege Mosan	Engines for Mopeds	2.15	-	2.15
1979	ISAS	Motor Vehicles & Accessories	8.62	0.78	9.40
1979	Asil Celik	Steel	-	1.80	1.80
1979	Trakya Cam	Glass	31.51	4.00	35.51
1980	TSKB	DFC	-	1.09	1.09
1980	ISAS	Motor Vehicles & Accessories	-	0.50	0.50
1980	MENSA	Textile and Fibers	4.00	-	4.00
	Total Gross Commitments		190.84	20.96	211.80
	Less Cancellations, Terminations, Exchange Adjustments, Repayments and Sales		113.88	3.49	117.37
	Total Commitments now held by IFC		76.96	17.47	94.43
	Total Undisbursed		4.73	3.54	8.27

C. PROJECTS IN EXECUTION 1/

Ln. No. 748 Education Project: US$13.5 million loan of June 9, 1971. Effective Date: September 29, 1971. Closing Date: March 31, 1981.

The project was substantially delayed due mainly to initial difficulties in providing the project unit with adequate qualified staff and authority commensurate with its responsibilities. Implementation is now proceeding satisfactorily, with equipment procurement progressing smoothly. Completion of some training institutions, including the Management Training Institute, has been delayed by contract disputes. However 90 percent are now complete or almost complete, and remedial actions are being taken by Government to accelerate completion of the remaining schools. The Government is also considering alternative steps to formally establish the Management Training Institute without need for parliamentary action. Training of teachers for technician schools, adult training centers and practical trade schools has made considerable progress. Sixty-seven local advisory committees for vocational and technical education have been established, one in each province.

Ln. No. 844 Istanbul Water Supply Project: US$37 million loan of June 30, 1972. Effective Date: January 4, 1973. Closing Date: June 30, 1981.

Project construction was delayed about 2-1/2 years due mainly to problems in the use of ICB procurement procedures and inefficient management. However, construction moved swiftly in 1977 and the two major water resources development programs were completed in early 1979. Substantial improvements to the distribution system required, to enable full utilization to be made of the new water sources are under implementation. Tariff increases have been implemented recently, and a reorganization of the management, accounting and financial systems is under consideration.

Ln. and Cr. Nos. 883/360, Ceyhan Aslantas Multipurpose Project: US$44 million loan and US$30 million credit of March 22, 1973. Effective Date: March 20, 1974. Closing Date: December 31, 1981.

Following delays due to difficult rock conditions and inappropriate tunnelling methods, two diversion tunnels have been completed, about two years behind appraisal estimate. The upstream coffer dam has also been completed. Progress in 1979 was disappointing because of the difficulties that the

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1/ These notes are designed to inform the Executive Directors regarding the progress of projects in execution, and in particular to report any problems which are being encountered and the action being taken to remedy them. They should be read in this sense, and with the understanding that they do not purport to present a balanced evaluation of strengths and weaknesses in project execution.

contractors encountered in obtaining sufficient fuel, construction steel and cement; the supply situation has eased recently. The construction of the irrigation system is progressing, with the system now ready to transport irrigation water to about 40,000 ha, one third of the target. On-farm works are progressing slowly, with about 40 percent of the land leveling, 25 percent of the surface drainage, and 35 percent of the feeder roads completed. Tile drainage is being delayed until the main drains are located. Staffing of the extension service is satisfactory except as regards consultants; the Government is taking steps to hire the latter.

Ln. No. 892 Istanbul Power Distribution Project: US$14.0 million loan of May 25, 1973. Effective Date: September 28, 1973. Closing Date: October 31, 1980.

The project has been delayed by about four years mainly by slow procurement action and inefficient management; however, this is now almost completed. Both local and foreign costs have increased substantially over appraisal estimates. Consultant studies of the Istanbul power market and of the proposed reorganization of the company's electricity, transport and gas services have been completed. IETT's tariffs have been raised substantially in the recent past, and additional increases as a result of the Government's January 1980 economic package should help cover the increased project costs and revitalize the company's finances.

Ln. No. 893 Turkish State Railways: US$47 million loan of May 25, 1973. Effective Date: August 28, 1973. Closing Date: June 30, 1981.

After initial delays, physical progress, including track renewals, rolling stock, an locomotive production, the latter financed by the European Investment Bank, is satisfactory. Over 90 percent of the loan has been disbursed and procurement action has been completed for use of the remaining loan funds. Despite several tariff increases since the loan was made, the Railways have continue to fall short of the financial targets in the revised Plan of Action agreed with the Bank in mid-1975. However, it is hoped that further increases in passenger fares and freight tariffs averaging 70 to 170 percent, which became effective in January 1980, will improve the Railways' financial situation. While the dieselization program is making satisfactory progress, other measures to improve operational efficiency, such as appropriate manpower planning, have not been given sufficient attention.

Ln. No. 957 Antalya/Akdeniz Forest Utilization Project: US$40 million loan of January 28, 1974. Effective Date: May 26, 1976. Closing Date: June 30, 1982.

Following the approval by the Executive Directors of needed changes in the agreements arising from relocation of the pulp and paper mill, the loan was declared effective. Construction at the new site is underway with the installation of equipment proceeding process satisfactorily, and the project is expected to be completed by end-1981, two and a half years behind the revised schedule. Some cases of sub-standard civil works construction have occurred, but a corrective program and strengthened supervision by SEKA have produced some improvement. Arrangements have been made to complete the foreign exchange financing plan, and procurement for the industrial part of the project is well advanced. Local currency payments for the Akdeniz establishment are also now being made. Price increases of 127-345 percent in January 1980 should enable the company to meet part of the local currency requirements.

Ln. No. 1023 Elbistan Lignite Mine and Power Project: US$148 million loan of June 28, 1974. Effective Date: June 1, 1976. Closing Date: July 30, 1982.

Project implementation had been delayed by critical problems, including insufficient staff, inefficient management, inadequate coordination among various agencies and unsatisfactory performance of civil contractors. Following continuous Bank and co-lender reviews of the situation with the Turkish authorities from early 1977, the remedial measures initiated by Turkey resulted in some improvement of project execution, until mid-1979. However, continuing and serious shortage of local funds has affected project progress, which has been aggravated by staff and management deficiencies. The Government's expected timely provision of adequate local funds for this high priority project from the Structural Adjustment Loan Counterpart Funds is likely to help resume momentum in future. The colenders and the Government met in October 1980 to discuss a detailed program of action to overcome remaining implementation problems; this program is expected to be finalized and implemented before the next construction season.

Ln. No. 1024 DYB (State Investment Bank of Turkey): US$40 million loan of June 28, 1974. Effective Date: September 30, 1974. Closing Date: December 31, 1980.

The loan was fully committed in February 1977, with eleven subprojects approved by the Bank. Project implementation is satisfactory and disbursements are nearly complete.

Ln. No. 1130 Corum-Cankiri Rural Development: US$75 million loan of June 23, 1975. Effective Date: January 22, 1976. Closing Date: December 31, 1981.

The project is progressing satisfactorily. Corum dam has been completed and the works to divert run-off from 5 nearby watersheds have been completed. Kumbaba pumping station is ready. Diversion tunnels for Alaca and Guldercek dams are more than 90 percent completed. Designs for the irrigation systems of the Guldercek and Alaca areas have been completed and bids have been initiated. The project extension service and credit components are operating successfully. The Government is taking steps to replace two of the three extension consultants who resigned for personal reasons. Further construction of village centers is being delayed until agreement is reached on satisfactory plan for using and maintaining existing centers and plans for additional centers are revised.

Ln. No. 1194 Second TEK Power Transmission Project: US$56 million loan of June 14, 1976. Effective Date: April, 21, 1978. Closing Date: December 31, 1980.

Procurement action is complete, somewhat behind schedule, and almost the entire loan is committed. Some deliveries have also been delayed because of foreign exchange shortages. Improvements are expected to continue in overall project implementation and the rate of disbursement.

Ln. No. 1248 Agricultural Credit and Agroindustries: US$54.2 million loan of May 5, 1976. Effective Date: May 11, 1977. Closing Date: September 30, 1981.

The ferryship component has been implemented, and the two roll-on and roll-off ships purchased under this project and the Fruit and Vegetable Export project are now operating a regularly schedule service between ports in Turkey and two ports in Italy. Selection of agro-industries and sub-loans has been delayed, but some have recently been approved. The Agricultural Bank (TCZB) has introduced improved lending procedures for its ongoing supervised credit program, and this component is being implemented satisfactorily. After considerable delay, consultants have begun the study of TCZB's structure and procedures. At the Borrower's request, a cattle-fattening component of the Project, and US$7.7 million of the original Loan amount of $63 million allocated for this purpose, were cancelled on May 5, 1977. Also, as provided for in the Loan Agreement, $1.04 million for training was cancelled on December 22, 1977, following approval of UNDP funds for this purpose.

Ln. No. 1258 Balikesir Newsprint: US$70 million loan of May 21, 1976. Effective Date: October 15, 1976. Closing Date: December 31, 1980.

The project had faced delays in civil works and procurement caused by insufficient local funds. Recent price increases of 130-340 percent have helped to correct this situation and the project is expected to start production in early 1981, 2 years behind the appraisal schedule. Erection of machinery and equipment begun in early 1979 is almost complete and trial runs of the saw mill component have already begun.

Ln. No. 1265 Livestock III: US$21.5 million loan of May 26, 1976. Effective Date: February 25, 1977. Closing Date: March 31, 1982.

After a slower than anticipated start-up, project implementation improved but has recently deteriorated due to resource constraints affecting field staff travel. This has adversely affected the preparation of farm development plans. Though project area offices have been established, they are not fully staffed. Government is reviewing possible measures to correct the situation. A higher than expected proportion of sub-loans has been made to small farmers.

Ln. No. 1310 South Antalya Tourism Infrastructure: US$26 million loan of July 9, 1976. Effective Date: March 1, 1978. Closing Date: December 31, 1982.

Implementation of most project components is satisfactory, with progress being made in preparation of specifications and project design work, although the pace of overall project implementation is somewhat slower than expected due to staffing constraints and difficulties in ensuring adequate inter-ministerial and inter-agency coordination. However, measures to strengthen the Project Unit and its consultants, the Tourism Bank, are being taken, and the project is still expected to be completed without major delays.

Ln. No. 1379 DYB (State Investment Bank of Turkey): US$70 million loan of March 23, 1977. Effective Date: July 21, 1977. Closing Date: March 31, 1981.

The loan has been fully committed. DYB still has severe staff constraints, which it has in part overcome by recruitment of additional junior staff. It hopes improved contract terms will enable it to fill more senior positions as needed.

Ln. No. 1430 TSKB XII (Industrial Development Bank of Turkey): US$74.0 million loan of June 3, 1977. Effective Date: August 29, 1977. Closing Date: June 30, 1981.

Progress is satisfactory and 93 percent of the loan has been committed. TSKB has essentially reached its agreed targets for allocation of its resources to projects in less developed regions and export-oriented

industries. It has so far been unable to raise resources in international capital markets as expected because of Turkey's economic difficulties, but the interest of several financing sources is anticipated once conditions permit renewed efforts.

Ln. No. 1585 Northern Forestry: US$86.0 million loan of June 5, 1978. Effective Date: October 30, 1978. Closing Date: March 31, 1986.

Industrial wood production for 1979 was close to forecasts but there were significant shortfalls in some other targets, principally as a result of Government budget cuts. Continuing local resource constraints have adversely affected all targets during 1980, causing delays in preparation of forest management plans over about 22 percent of the project area and timely payment by SEEs' for timber delivery.. Foreign procurement is effectively up to date but local state enterprises have been unable to supply much of the locally produced equipment (principally vehicles to replace existing stocks). Consideration is being given to procuring internationally.

Ln. No. 1586 Livestock IV: US$24.0 million loan of June 5, 1978. Effective Date: October 31, 1978. Closing Date: June 30, 1985.

The supervised credit program for farm development has not yet been initiated, mainly because of difficulties being encountered in recruiting veterinarians and agronomists to serve in eastern Turkey and by resource constraints adversely affecting field staff travel. Government is reviewing measures to overcome them. The milk industry study has been satisfactorily completed. International recruitment of technical specialists, considerably delayed, is underway.

Ln. No. 1606 Erdemir Stage II Steel: US$95.0 million loan of June 30, 1978. Effective Date: July 30, 1979. Closing Date: June 30, 1983.

Procurement for the phenol treatment plant, the raw material handling system and the hot rolled shear line are completed. Following technical review by the company's consultants, the fourth blast stove and the third down coiler have been deferred until a later date. Product selling prices have been substantially increased in January 1980. Production from existing facilities however, have been severely restricted because of the lack of raw materials due to the limited availability of foreign exchange.

Ln. No. 1741 Ports Rehabilitation: US$75 million of July 2, 1979. Effective Date: January 22, 1980. Closing Date: June 30, 1983.

The project coordinating committee is in place and functioning effectively. Preparation of equipment specifications, tender documents and procurement is making good progress. UNDP has appointed a project manager to implement the project related training programs. The port sector planning studies have been delayed by lack of staff, but steps are being taken to correct this.

Ln. No. 1742 Grain Storage: US$85 million of July 2, 1979. Effective Date: January 21, 1980. Closing Date: June 30, 1985.

Project implementation has begun. A short list of prequalified consultants have been invited to submit proposals by end October 1980 for engineering design and supervision of continuation.

Ln. No. 1748 TSKB XIII (Industrial Development Bank of Turkey): US$60 million of July 12, 1979. Effective Date: October 25, 1979. Closing Date: December 31, 1982.

After initial delays, the progress is now satisfactory with over 30 percent of the loan committed. TSKB and ITC finalized in November the technical assistance program for training and export development is under implementation.

Lns. Nos. 1754 TSKB (US$65 million) and 1755 SYKB (US$15 million) Private Sector Textiles loans of September 17, 1979. Effective Date: February 29, 1980. Closing Date: December 31, 1984.

Consultants have prepared the preliminary program for local training. The additional consultants for technical services and for the extension services are being recruited. Revised Action Plans are being prepared. Approval of sub-projects has begun, and about 15 percent of the loan has been committed.

Ln. No. S-15 Ankara Air Pollution Engineering: US$6 million loan of December 12, 1979. Effective Date: April 4, 1980. Closing Date: December 31, 1983.

Consultants being selected for project studies.

Ln. No. 1818 Structural Adjustment Loan: US$200 million loan of March 26, 1980. Effective Date: April 1, 1980. Closing Date: September 30, 1981.

The loan is fully committed and disbursements were $128 million as of October 21, 1980. Progress has been satisfactory, and the second tranche was released on July 30, 1980 and the final one on October 23, 1980.

Ln. No. 1844 Karakaya Hydropower: US$120 million loan of May 21, 1980. Effective Date: August 15, 1980. Closing Date: December 31, 1988.

Project implementation is making progress.

Ln. No. 1847 Sumerbank Textiles Modernization and Rationalization: US$83 million of May 28, 1980. Effective Date: January 1, 1981. Closing Date: June 30, 1984.

The loan is not yet effective. Project implementation has begun.

Ln. No. 1862 Livestock V: US$51 million of June 6, 1980. Effective Date: November 6, 1980. Closing Date: June 30, 1987.

The loan is not yet effective.

TURKEY - BATI RAMAN ENHANCED OIL RECOVERY PROJECT

SUPPLEMENTARY PROJECT DATA SHEET

Section I: Timetable of Key Events

(a)	Time taken by Turkiye Petrolleri Anonim Ortakligi (TPAO) to prepare Project:	1 year and five months
(b)	Agency which prepared Project:	TPAO assisted by Godsey Earlougher Consultants financed by S-13-TU Loan.
(c)	First presentation to the Bank:	January 1980
(d)	Departure of pre-appraisal mission:	November 1979
(e)	Departure of appraisal mission:	February 1980
(f)	Negotiations completed:	September 1980
(g)	Planned date of effectiveness:	March 1981

Section II: Special Bank Implementation Actions

None.

Section III: Special Conditions

A. Special Condition of Effectiveness:

(i) Execution of a Subsidiary Loan Agreement between the Republic of Turkey and TPAO (para. 59).

B. Special Condition of Disbursement:

(i) TPAO will provide the Bank a satisfactory design of the water disposal system for the Raman field (para. 65).

C. Other Main Conditions:

(i) Government will carry out a plan of action acceptable to the Bank for offsetting or eliminating foreign exchange losses of TPAO incurred from January 1, 1981 due to its outstanding foreign debts from its importing petroleum and petroleum products (para. 50);

(ii) Government would make available as equity contribution funds for the local currency cost of the project in the event that sufficient resources were not available from TPAO's own cash flow (para. 59);

(iii) By July 1, 1981 that TPAO would have a long-term debt equity ratio of one and would thereafter maintain liquid resources equal to at least two months cash operating expenses, and have a current ratio of one (para 52);

(iv) Government will provide or cause TPAO to be provided with an amount equal to the accounts receivable in excess of TPAO's sales for the previous two months at an interest rate no greater than the average rate TPAO receives on its outstanding accounts receivables (para. 52);

(v) TPAO will by January 1, 1981, transfer all responsibility for importing petroleum and petroleum products, and by July 1, 1981, transfer all its facilities for refining imported oil, and make all other arrangements by December 1981, to completely separate its import-related activities from its domestic oil activities (para. 49);

(vi) TPAO will establish by April 1, 1981, and thereafter maintain separate accounts as of January 1, 1981 between its two divisions (para. 49);

(vii) TPAO would furnish annually in October of each year for review by the Bank its proposed investment program for the following fiscal year and its related financing arrangements. TPAO shall maintain a minimum debt service coverage ratio of 2.0 (para. 52);

(viii) Beginning January 1, 1981 TPAO would not use its internally generated funds for its subsidiaries unless its own requirements have been met (para. 52);

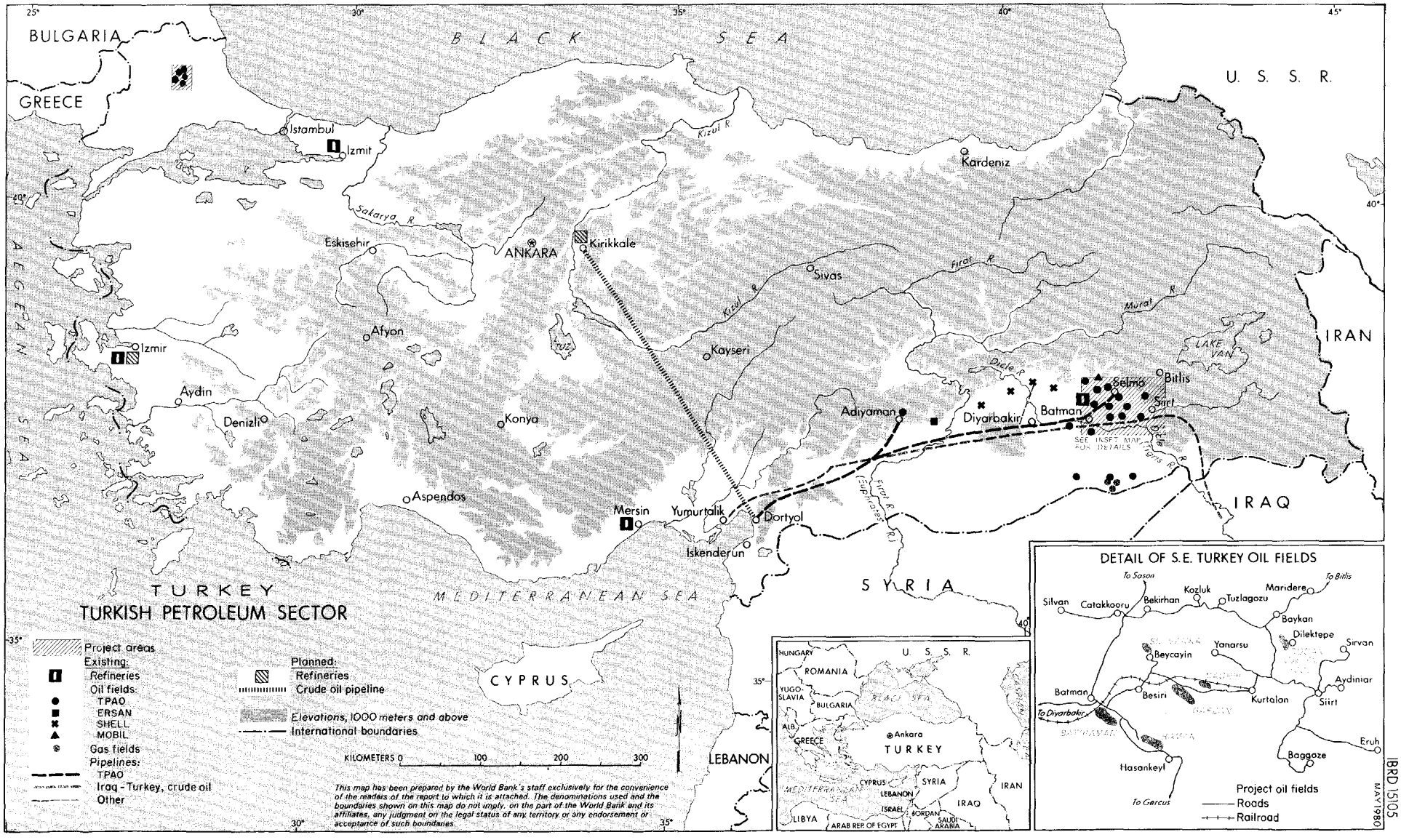
(ix) Beginning with its fiscal year 1981, TPAO would revalue its assets annually for a memorandum account in accordance with principles satisfactory to the Bank and furnish the Bank pro-forma accounts on such basis (para. 50);

(x) TPAO will, by October 1, 1981, present to the Bank, an acceptable phased implementation program for the Bati Raman CO_2 enhanced oil recovery field test, and will begin each subsequent phase only after the earlier phase has been satisfactorily completed the initial testing phase to the full 30 well area. TPAO will not begin the field test in the central section of Bati Raman until the Bank agrees that the results of the tests in the western area justify beginning such tests (para. 63);

(xi) TPAO will, by April 1, 1981, with the assistance of consultants initiate a management study on terms of reference satisfactory to the Bank, complete the study by September 1, 1982 and, after exchanging views with the Bank by December 31, 1982, take steps to implement the study's recommendations (para. 64);

(xii) TPAO will furnish to the Bank by December 31, 1981 recommendations designed to enable it to attract and retain qualified technical personnel and to improve the operational efficiency of its staff, exchange views with the Bank on the recommendations and thereafter take steps within its power to implement them (para. 45); and

(xiii) TPAO will, by October 1, 1981, establish a Project Advisory Panel of experts in enhanced oil recovery, including at least three foreign experts (para. 63).


TURKEY
TURKISH PETROLEUM SECTOR
BULGARIA
GREECE
BLACK SEA
U. S. S. R.
IRAN
IRAQ
SYRIA
LEBANON
CYPRUS
MEDITERRANEAN SEA
AEGEAN SEA
Istambul
Izmit
Kardeniz
Sakarya R.
Eskisehir
ANKARA
Kirikkale
Sivas
Firat R.
Kizil R.
Murat R.
Afyon
Izmir
Kayseri
LAKE VAN
Dicle R.
Aydin
Denizli
Konya
Adiyaman
Diyarbakir
Batman
Selmo
Bitlis
Siirt
SEE INSET MAP FOR DETAILS
Aspendos
Mersin
Yumurtalik
Dortyol
Iskenderun
Firat R. (Euphrates R.)
Tigris R.
Project areas
Existing:
Refineries
Oil fields:
TPAO
ERSAN
SHELL
MOBIL
Gas fields
Pipelines:
TPAO
Iraq - Turkey, crude oil
Other
Planned:
Refineries
Crude oil pipeline
Elevations, 1000 meters and above
International boundaries
KILOMETERS 0 100 200 300
This map has been prepared by the World Bank's staff exclusively for the convenience of the readers of the report to which it is attached. The denominations used and the boundaries shown on this map do not imply, on the part of the World Bank and its affiliates, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.
DETAIL OF S.E. TURKEY OIL FIELDS
To Sason
To Bitlis
Silvan
Catakkoru
Bekirhan
Kozluk
Tuzlagozu
Maridere
Baykan
Dilektepe
Sirvan
Beycayin
Yanarsu
Aydiniar
Batman
Besiri
Kurtalan
Siirt
To Diyarbakir
Eruh
Baggoze
Hasankeyl
To Gercus
Project oil fields
Roads
Railroad
HUNGARY
ROMANIA
U. S. S. R.
YUGO-SLAVIA
BULGARIA
ALB.
GREECE
Ankara
TURKEY
CYPRUS
SYRIA
LEBANON
ISRAEL
JORDAN
SAUDI ARABIA
IRAN
IRAQ
LIBYA
ARAB REP. OF EGYPT
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MAY 1980