RESTRICTED

Report No. PTR-121

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

INTERNATIONAL DEVELOPMENT ASSOCIATION

APPRAISAL OF PORT PROJECT

IRAN

June 5, 1972

Transportation Projects Department

Currency Equivalents

Currency	=	Rials (Rls)
US$1.00	=	Rials 75.0
US$0.013	=	Rials 1.00
US$13,333.33	=	Rials 1,000,000

Iran Fiscal Year

March 21 to March 20

Weights and Measures: Metric

Metric: British/US Equivalents

1 kilometer (km)	=	0.62 mile (mi)
1 meter (m)	=	3.28 feet (ft)
1 hectare (ha)	=	2.47 acres (ac)
1 metric ton (m ton)	=	1.10 short ton (sh ton)
		0.985 long ton (lg ton)

Abbreviations

ADL	=	Arthur D. Little Inc. (USA)
dwt	=	deadweight tons
Government	=	Imperial Government of Iran
ISR	=	Iranian State Railways
LWOST	=	Low Water Ordinary Spring Tide
Ministry	=	Ministry of Finance
NIOC	=	National Iranian Oil Company
PNO	=	Port and Navigation Organization
PO	=	Plan Organization
PSO	=	Ports and Shipping Organization

IRAN

APPRAISAL OF PORT PROJECT

TABLE OF CONTENTS

This report was prepared by Messrs. J. Grosdidier de Matons (Port Specialist), H. O. Schulte (Economist), A. Chandler (Financial Analyst/Consultant), R. Y. Scheiner (Engineer/Consultant) and J. P. Zedalis (Technical Editor).

ANNEXES

TABLES

MAPS

IRAN

APPRAISAL OF PORT PROJECT

SUMMARY AND CONCLUSIONS

i. This report appraises a project to increase capacity and efficiency at Iranian ports, especially at the port of Bandar Shahpur on the Persian Gulf. This port and the neighboring port of Khorramshahr, 100 km east, are operated as a single unit. Present capacity of these ports is estimated at 2.5 million tons; their traffic was 2.4 million tons in 1970-71 and is forecast to double by 1980. The project is based on a feasibility study conducted by consultants Hamkar-Kampsax (Iran/Denmark) for the Plan Organization (PO) and the Ports and Shipping Organization (PSO) of Iran.

ii. Iran's economy and foreign trade has been growing at an annual rate of about 10% in recent years. The outlook for future economic growth is favorable. Inadequate port facilities and equipment, as well as poor administration and operations in past years, have resulted in congestion in Khorramshahr and Bandar Shahpur, the main Persian Gulf ports. Operations in the past two years have improved with the help of foreign technical assistance and organizational changes in PSO. Traffic forecasts indicate that unless ports are developed and operations further improved, Iran's development objectives may be jeopardized.

iii. The project consists of the construction of four deep-water berths at Bandar Shahpur, procurement of cargo-handling and floating equipment, technical assistance for PSO, training programs and port studies; the total cost is US$41.6 million, of which about US$29.0 million will be foreign exchange.

iv. Contracts will be awarded through international competitive bidding. To avoid delaying the project, the Bank has already approved bidding procedures for earthworks which will start immediately. Retroactive financing of part of the foreign exchange component of the earthworks (about US$0.20 million) is recommended.

v. The economic evaluation of the proposed project shows a first year benefit of 15%, and an economic return of the same order. Project execution is expected to take about four years and to be completed by early 1977.

vi. The project will relieve congestion in Persian Gulf ports by providing additional capacity and improve the productivity of port operations through additional equipment. Apart from this, an important reason for lending is to support the present efforts of PSO's staff to make this agency, recently given a reasonable degree of autonomy, able to maintain recently-acquired efficiency, even after the departure of PSO's consultants. To achieve this goal, the project provides for training and technical assistance by experts.

vii. Future management and operational difficulties should not be underestimated. These difficulties will originate mainly in the difficult living conditions in most ports, which make difficult the recruitment of officers and in the lack of experienced middle level staff. No change in basic legislation is necessary now, but a continuous effort to improve working procedures, closely supervised by PSO's headquarters and assisted by Bank supervisions.

viii. PSO's present financial situation is basically sound, partly because the Government did not pass on to PSO any debt incurred for the financing of existing assets and because PSO collects and retains dues on tankers which are far in excess of the costs of services provided. Generally, existing dues and charges are not related to costs, and PSO has no clearly defined financial policy. Agreement has been reached on appropriate financial objectives for PSO, and on the introduction of a cost accounting system and a revised tariff based on sound economic and financial principles. PSO has undertaken to earn an annual return of at least 7% which would correspond to a level of internal cash generation sufficient to enable PSO to service its debt, finance a reasonable portion of its capital expenditures, and pay to the Government a return on its investment.

ix. The Bank loan would be to the Government of Iran represented by the Plan Organization, as present legislation, which is being revised, prohibits direct external borrowing by Government agencies. The beneficiary would be PSO.

x. The project is suitable for a loan of US$29.0 million for a term of 25 years including a five-year grace period. The loan will be relent by the borrower to the beneficiary on the same terms and conditions under a subsidiary Loan Agreement.

IRAN

APPRAISAL OF PORT PROJECT

I. INTRODUCTION

1.01 Control of ports by Customs has been the rule in Iran up to 1960 when the Ports and Navigation Organization (PNO) was established. Customs remained responsible for cargo-handling and storage, which it did not perform satisfactorily. As a result, the Bank made a technical assistance grant in 1965 to recommend the best organization for the ports and the transfer of the function of cargo-handling and storage to PNO. This was carried out by consultants Arthur D. Little Inc. (USA) (ADL) and following the consultant's recommendations PNO took over port operations in 1968. In 1969, the Ports and Shipping Organization (PSO), an autonomous entity under the Ministry of Finance, was made responsible for ports (Chapter III). The Bank Transport Sector Mission of November 1969, recommended improvements in planning and administration in PSO and indicated that the Persian Gulf port of Bandar Shahpur might need two additional general cargo berths by 1974-75. Bank reconnaissance missions visited Iran in 1970, and noted some manegerial and operational improvements in PSO. The project was pre-appraised in November 1971 and appraised in January 1972.

1.02 The proposed project, as pre-appraised in 1971, provided mainly for the acquisition of port equipment to increase the operational efficiency of the Iranian ports. During project preparation, the Plan Organization (PO) and PSO sought Bank assistance for the construction of four new berths in Bandar Shahpur, for which a detailed engineering study had been prepared by consultants Hamkar-Kampsax (Iran/Denmark). At the same time, PSO decided to finance from its own resources the most urgently required port equipment in order to immediately relieve port congestion.

1.03 The estimated cost of the entire project is about US$42.0 million. The proposed loan of US$29.0 million would meet the estimated foreign exchange requirements and would be the first to Iran for ports.

1.04 To date the Bank has made five loans to Iran for road projects, for a total amount of US$167.2 million. The execution of these loans has encountered many problems and remains difficult. Typical problems have been slowness to award contracts, bidding procedures, shortage of local funds to pay contractors, and inadequate coordination of transport agencies within the Government. On the whole the experience has been disappointing. No experience has been gained so far from the pipeline project, for which a loan of US$32.0 million was signed in March 1972. Details of Bank transport projects in Iran are given in Annex 1.

1.05 This report is based on: (a) the study prepared by Messrs. Hamkar-Kampsax (Iran/Denmark); (b) the findings and recommendations of Messrs. Arthur D. Little Inc. (USA); and (c) the findings of a Bank appraisal mission in January/February 1972, composed of Messrs. J. Grosdidier de Matons (Port Specialist), H. O. Schulte (Economist), R. Y. Scheiner (Engineer/Consultant) A. Chandler (Financial Analyst/Consultant), assisted by S. Aiyer (Loan Officer) and J. Zedalis (Technical Editor).

II. BACKGROUND

A. The Transport Sector (Map 3907)

2.01 Iran has two sea outlets, the Caspian Sea in the north with connections through river and canal systems to the USSR and Eastern Europe, and the Persian Gulf in the south with access to all ocean routes.

2.02 Internal road and rail transport basically follows a "Y-shaped" movement pattern, with Teheran at the junction. The northwest arm runs to the fast-growing industrial town of Tabriz and the densely populated Azerbaidjan areas and then on to the Turkish and Soviet borders with links to the European land transport networks. The northeast arm runs through the growing agricultural and tourist areas along the Caspian Sea to Mashhad and on to the Afghan border. The vertical leg, which links Teheran's three million people with the ports of Khorramshahr, Abadan and Bandar Shahpur on the Persian Gulf, is the most important transport corridor in the country. About 50% of all road traffic and 75% of all rail traffic in Iran uses this route. However, with the closure of the Suez Canal, and the increased competitiveness of land and water routes through Turkey and the Soviet Union to Europe, non-oil external trade movements via the Gulf ports have been reduced from about 80% to about 75% of all external trade.

2.03 A factor important to an appreciation of the changing transport scene is the Government's recent policy decision that new industrial plants must be located more than 120 km from Teheran. Tax reductions and other incentives have been introduced to encourage decentralization. New "poles of development" are being created, e.g. Esfahan (steel mill), Tabriz (machine tools and engineering products), Arak (aluminum products), Ahwaz (pipe-making for the oil and gas industries) and in the southwest (petrochemicals). These and other industrial developments, some of which are import substituting and others, export oriented, will modify the direction of traffic flows and require new transport and equipment investments.

2.04 Iran's transport sector is expected to grow correspondingly in relation to the average growth of: the gross national product - 10% to 14% annually in recent years; imports - 23% annually over the last six years; and, to non-oil exports - 11% annually.

B. Transport Modes

2.05 Internal land movement of freight is estimated to have been 18.0 billion ton/km in 1970 (63% by road, 15% by rail, 21% by pipeline and 1% by airfreight). Road traffic has been steadily increasing by more than 10% annually for the last five years, while rail traffic has been increasing by 11% annually over the last two years, reversing an earlier declining trend. Pipelines transport about 75% of oil products.

2.06 There are 35,000 km of roads, of which about 30% are paved. The Fourth Development Plan (1968-72) aimed at constructing 4,660 km of paved roads and about 12,500 km of unpaved feeder roads, but only about half the planned feeder road program was completed by the end of the Plan Period.

Maintenance has not kept pace with traffic growth and maintenance expenditure was very inadequate up to 1970-71; efforts are being made with Bank assistance to correct this situation.

2.07 The Iranian State Railway (ISR) has about 4,500 km of track, including the recent additions of a 140 km link between Teheran and Turkey and a 650 km link between Esfahan and Zarand - part of the 850 km line from the iron-ore and coal deposits in the Kerman area to the steel mill in Esfahan. ISR's management and performance has been poor, and it has relied mainly on government traffic for the bulk of its freight. However, as mentioned above traffic has increased recently and reached some 4.0 million tons of freight and 3.7 million passengers during 1969-70.

2.08 Iran Air, a state corporation, operates international and all regular domestic services in a satisfactory manner. It is considered as the best managed of all branches of the transport system. Passenger traffic, at 622,000 in 1970, has increased 10% annually between 1958 and 1968 and continues to increase

2.09 Iranian ports are mainly used either for petroleum products or general cargo. The main oil ports - privately owned and operated - are at Khark Island, Mashahr and some installations at Bandar Shahpur (for petrochemicals) in the Persian Gulf and Abadan in the Arvan Rud (Shatt el Arab). General cargo ports are operated by PSO in Pahlavi and Nowshahr on the Caspian Sea, and at Khorramshahr, Bandar Shahpur and Bandar Abbas on the Persian Gulf. Of the total 1970-71 general cargo traffic (3.3 million tons) 2.9 million tons (87%) was handled through the Persian Gulf ports. There are also some 15 small fishing ports.

2.10 Navigation in the Persian Gulf necessitates international cooperation. A number of navigational aids are still controlled by the Middle East Navigation Aids Service, an international trust established in London which raises its own charges. Also, access to Khorramshahr and Abadan, in the Arvan Rud (Shatt el Arab) is controlled by Iraq because the international boundary between Iran and Iraq largely follows the Iranian shore of the inlet. The Basrah Port Authority of Iraq is responsible for pilotage (except of Iranian ships which use Iran Navy pilots) and dredging and raises charges on all ships for these services. The charges are considered excessive by Iran and by shipping lines, and their high level influences freight rates in the Persian Gulf.

2.11 In 1970, Iran produced approximately 190 million tons of crude oil, of which about 140 million was transported by the pipeline system, which extends over about 4,000 km. Transport by pipeline is expected to increase in the future, although no figure is available.

C. Transport Coordination and Planning

2.12 The 1969 Bank Transport Sector Mission considered that the Fourth Plan's allocation for transport (about 17%) was reasonably distributed among the various modes but that transport planning and coordination should be improved. Inadequacy of statistical and financial information on the various modes was among the chief causes cited for the lack of an explicit and coherent transport policy. Other causes were the lack of a central agency responsible for all transport, and the limited influence of the existing PO over the various transport agencies.

2.13 Loan 697-IRN (Fifth Road Project), signed in June 1970, made provision for a study of transport coordination and the possible establishment of a central transport agency within the Government. The Bank attaches high importance to this study, which is essential to identify the necessary improvements in the organization of the sector and in transport policies and planning. However, there have been considerable problems in execution, due to the Government's delays in finalizing the consultants' contracts and to discussions on the scope, timing and sequence of the study. A two-phase approach has been recently proposed to the Government: (1) a general review of Iran's transport sector as Phase I of the study, followed by; (2) detailed studies of the organizations involved in transportation as identified and agreed to in the first phase study.

2.14 The use of civilian installations in ports and airports by the military, with priority given to the Army, Air Force and Navy needs, is another cause of weak transport coordination. Also, the National Iranian Oil Company (NIOC) and related Government and affiliated commercial agencies, such as the National Petrochemical Corporation, develop their own transport installations, which are eventually underutilized, and resist coordination by or consultation with Government departments, such as PSO.

III. PORT INSTALLATIONS, ORGANIZATION AND OPERATIONS

A. Port Installations

3.01 Iran's main Persian Gulf ports are described below (Map 3907).

(i) The Port of Khorramshahr

3.02 With a cargo traffic of 1.8 million tons in 1971-72, Khorramshahr is Iran's most important port with good road, rail and air connections; all shipping lines maintain agencies there. It is located 90 km upstream on the Arvan Rud (Shatt el Arab). Depth at the outer bar is 8.5 m at LWOST with 3 m maximum tidal range. This makes the port accessible for vessels up to about 14,000 dwt. The port has a 1,350 m marginal wharf providing nine berths, connected to the shore by approach bridges. Seven of the berths, built during 1941-45, are of timber construction, and are in poor condition. They cannot be economically improved to the standard required to support modern cargo-handling equipment and heavy loads; their remaining effective life is estimated at eight to 10 years. Two berths, built of concrete in 1955-61 are in good condition and have an effective remaining life of about 18 years.

(ii) The Port of Bandar Shahpur

3.03 The existing port is located on the Khor Musa, some 65 km inland. It has good rail and road connections to Teheran and the northern part of the country. The installations (Map 3908) comprise two narrow jetties, 520 m and 540 m in length, each providing three berths. Depth alongside berths is 10.5 m, which, with the local tidal range of 3.0 m makes them accessible to ships of 18,000 dwt. The jetties are timber decked and founded on steel piles which are severely corroded due to lack of maintenance. The piles are estimated to have an effective remaining life of some 10 years. Annex 2 gives further details. Traffic in 1970-71 was 1.1 million tons.

(iii) The Port of Bandar Bushehr

3.04 Bandar Bushehr is situated 220 km southeast of Bandar Shahpur. It has two berths totalling 375 m and is connected to Esfahan (860 km) and Teheran (1,200 km) by road. The entrance channel is presently only 5.5 m deep at LWOST and suitable for vessels up to 3,000 dwt but may be deepened during 1972-73 to 8.5 m for vessels up to about 14,000 dwt. Tidal range is about 2 m. Traffic in 1971-72 was 0.1 million tons.

(iv) The Port of Bandar Abbas

3.05 Bandar Abbas is situated at the mouth of the Persian Gulf, 1,500 km from Teheran by road. It has one wharf built in 1963-66, 1,050 m in length, providing six berths; tidal range is about 4 m. One berth is equipped for bulk ore loading, the others for general cargo. Traffic in 1971-72 was 0.4 million tons.

B. Port Organization

(i) The Present Organization

3.06 PSO, with headquarters in Teheran, is an agency of the Ministry of Finance and possesses legal entity. It was established by Acts of 1969 and 1970 to succeed the PNO (Annex 3).

3.07 PSO has regulatory and operational functions for shipping, maritime affairs, and as the national port authority, for planning, constructing and operating general cargo ports. PSO has no authority over oil ports but provides services such as pilotage, dredging and navigation aids.

3.08 Like several other Government agencies in Iran, PSO is headed by a High Council and administered by a Board of Management and Managing Director. The High Council consists of three Ministers and two Government officials. It determines PSO's general policy and decides on major matters, such as tariffs, budget and borrowing. The Board of Management consists of the Managing Director and four Deputies. It prepares all drafts for the High Council's decision and also has some financial powers (para. 3.15). The Managing Director has the rank of a Deputy Minister. He is its legal representative and the chief executive responsible for the administration and performance of PSO.

3.09 The 1969-70 legislation was aimed at giving port administration more autonomy, and PSO is subject neither to rules governing the civil service, nor regulations for Government contracts and accounting; it prepares its own internal regulations which the High Council approves as by-laws. PSO has made considerable progress in the past two years and new regulations on finances, labor, contracting and procurement are now in force. Operational regulations have been drafted by ADL and are being reviewed by PSO (para. 3.29).

3.10 In short, port affairs are not constrained by the present organization. Although it is young, and consequently inexperienced, it would appear to have the necessary powers and independence to provide a satisfactory medium for port administration in Iran. Close ties with PO and other Government agencies in Teheran are presently essential for PSO's consolidation. Employment conditions, both in Teheran and in the ports, can now be set to attract and retain suitable staff.

3.11 The present PSO management at top level is good, but middle level is inadequate both as to quality and quantity so that the organization concentrates authority in headquarters and delegates little responsibility to local port directors. It presently benefits from assistance by consultants (para. 3.20). There is no users' representation and such representation is not presently being considered. However, informal exchanges with users are increasing. An organization chart is given in Annex 4. Technical assistance by port experts and training of PSO's staff are essential if it is to operate the ports efficiently in the future, especially as the consultant's staff has left (para. 3.20), and considering the projected traffic development. PSO's present organization chart is given in Annex 4.

(ii) Accounting, Auditing and Insurance

3.12 Up to 1970, PSO prepared accounts as a Government department and all records were merged into the Government accounts. It has therefore not been possible to obtain reliable information on past port finances. However, PSO appears to have operated at a surplus; this is confirmed by the results obtained in 1970-71 and 1971-72. Cargo-handling charges are still collected by Customs Department which transfers them promptly to PSO's accounts.

3.13 PSO is now in a transition period. A new commercial accounting system was introduced in 1970-71 and a system of property and cost control is being established. This will lead to setting up accounts for fixed assets valuation and depreciation. During negotiations it has been agreed that these accounts will be set up, the valuation completed and the fixed assets brought up to date by March 20, 1974.

3.14 PSO's budget is prepared on an annual basis, and during the present transition period, still included in the national budget. However, once the financial reorganization is complete, it will be published simultaneously with, but separate from, the national budget. However, the dual role of PSO as a regulatory and operational agency makes a total separation difficult and no date can be fixed for it now. PSO's accounts are, however, clearly individualized and the present system is acceptable for controlling and auditing purposes. It has been agreed during negotiations that PSO shall have separate accounts for each of the ports under its jurisdiction and for its regulatory and operational functions.

3.15 Both PSO's Managing Director and the Board of Management can approve variations in the operating budget allocations up to 10% provided the total budget is not increased. Any overall increase requires the approval of the High Council as does any increase or transfer of funds within the capital budget.

3.16 Prior to the 1969-70 legislation, PSO's accounts were audited by the Government Auditor; since then there has been no external independent audit. A satisfactory internal audit section was recently established, and PSO intends to appoint an independent external auditor once the new accounting system is functioning. Recent financial data, processed by ADL, is believed to be reasonably accurate and complete, and provide an adequate and reasonable basis for judging the financial position. It would not serve any essential purpose

to delay the proposed loan until an external audit could be made, but it has been agreed during negotiations that an independent external auditor, acceptable to the Bank, will be appointed as soon as possible, and that accounts and financial statements will be audited in accordance with sound auditing practices, commencing with the fiscal year 1973-74.

3.17 In 1971, PSO started a comprehensive property insurance program and it provided Rls 12.0 million for insurance premiums in the 1972-73 budget. There is no public liability coverage for cargo and, according to PSO's regulations, PSO is not responsible for cargo in sheds. It was agreed during negotiations that PSO, shall promptly prepare and implement an insurance program consistent with sound port management practices.

C. Port Operations

3.18 PSO employs all labor for shore handling but stevedores are engaged by the shipping companies. The labor supply is short due to lack of adequate living accommodations everywhere except at Khorramshahr. All ports, therefore, work a single 10-12-hour shift, seven days a week, 360 days a year, plus occasional night work. The single shift system is also partly due to the need for a long midday break in summer. Nevertheless, labor works efficiently.

3.19 With the introduction of cargo-handling equipment in the ports and the rescheduling of ships between Bandar Shahpur and Khorramshahr to make the best use of available berths, an average throughput of 150-175,000 tons of general cargo per berth per annum has been achieved at these ports in 1970-72. These are very good results. The total excludes about 300,000 tons of lightered traffic concentrated mainly at Khorramshahr.

3.20 However, it should be noted that in addition to the work carried out under the Bank's technical assistance grant (para. 1.01) the consultant's (ADL) contract was extended by the Government in 1968 to provide assistance to PSO in management and port operations, and following the advice of a Bank mission in 1970, the contract was then further extended to April 1972. PSO has, therefore benefitted from the assistance of specialist consultants both at headquarters and in its shore cargo-handling and storage functions in the ports since its inception; further, in the ports, consultants' staff occupied what are effectively executive positions.

3.21 There are other constraints affecting port operations including poor postal service, customs procedures, the difficult living conditions already mentioned, and unsound practices (Annex 5). Customs will not accept payments to clear goods from the ports except in Teheran, and with postal service taking up to 14 days between Teheran and the ports, transit sheds and warehouses are frequently full. Indeed, if climatic conditions and land availability did not permit open storage, this would be a severe constraint on throughput. Goods are kept as much as two months on average in the port areas. PSO has the above constraints under consideration but, until it has a more experienced staff capable of reviewing and making proposals that are likely to lead to effective action, with the various Government departments involved, progress will be slow. The matter was discussed during negotiations and periodic reviews of these constraints will be made during supervision missions.

3.22 Traffic in general cargo through Khorramshahr and Bandar Shahpur amounted to 2,440,000 tons in 1970-71 over the equivalent of 12 to 13 berths (after allowing for berths under repair and in use by the Navy). The ports are operating at their practical limit and congestion is increasing. The main general cargo commodities were industrial equipment, fertilizers, pipe and other equipment for the oil industry. During 1971, 280 ships were delayed an average of 92 hours each in Bandar Shahpur and in Khorramshahr, 590 ships an average of 63 hours. Bandar Abbas is underutilized because of its distance from Iran's economic centers.

3.23 The marine section of PSO is responsible for all navigation aspects including pilotage and towage, buoying of channels, communication and other navigation aids. Existing floating equipment is deficient in quantity and largely obsolete.

3.24 Container traffic is not likely to develop rapidly due to the imbalance between imports and exports and the distance of Persian Gulf ports from the main Europe-Far East container route. Bandar Abbas (Map 3907) would be the best port for full container ships providing road and rail links are developed. Meanwhile, combination ships carrying both ordinary cargo and containers and equipped with their own handling equipment seems most likely. One of the new berths at Bandar Shahpur has been designed to handle containers, although equipment will be provided by PSO only when there is a need for it.

3.25 The proposed project (Chapter IV) will fulfill the present physical requirements of Iran's ports and will also finance the provision of experts to fill about 12 advisory or executive positions and a number of training programs and staff to man them. Recommended changes in organization and operation are discussed below.

D. Proposed Improvements

3.26 Consultants, ADL, in 1972 proposed a reorganization of PSO, recommending: (a) to separate PSO's regulatory shipping functions from its port operational functions, with separate officers in headquarters and in the field; (b) to make PSO responsible to a comprehensive transportation policy-making body and not to the Ministry of Finance; (c) to establish a Board of Directors composed of the members of the existing Board of Management and of Government and users' representatives; and (d) to decentralize PSO, with headquarters being concerned only with policy and overall control. According to this scheme, local Port Directors would be assisted by local advisory councils and executive committees. The consultants drafted a new organization chart (Annex 6). PSO is presently reviewing these proposals; it agrees in principle with future decentralization, when staff of suitable quality and in sufficient numbers is available.

3.27 The Bank agrees with the consultant's proposals, but the present system in which the same officers perform port and shipping duties makes the best use of the limited number of available specialists. Decentralization can be achieved only by recruiting and training additional experienced officers. Also, the establishment of local advisory boards, on a formal basis, is contingent on the development of port towns which are presently embryonic in isolated areas like Bandar Shahpur. As a consequence, implementation of the consultant's proposals is dependent upon further training, which in turn will

lead to better staffing, and is supported by PSO's management. Present legislation is satisfactory and permits PSO to perform its duties adequately; the organizational improvements thus far achieved are sufficient to justify lending. Progress over the next few years can best be assured by providing expert assistance and training, as included in the proposed project, and by regular review of the position through project supervision. However, it has been agreed during negotiations that by a date not later than March 20, 1974, PSO shall prepare and promptly thereafter implement a plan for its reorganization.

3.28 As regards operational matters, if PSO is to be able to handle future traffic through the ports without assistance from consultants, on-the-job training of all ranks is essential, and experts are provided under the technical assistance and training programs for this purpose. Progress will have to be reviewed periodically by Bank supervision missions and it has been agreed during negotiations that PSO shall prepare and implement a three-year training program satisfactory to the Bank in its scope and content.

3.29 The problem of clearance of goods from the port is more complex as it involves the collection of customs dues which are presently made in Teheran, and the implementation of various regulations which date back from the period when Customs was responsible for port operations. These regulations are Treasury-oriented. It has been agreed during negotiations that the new operational regulations, as prepared by ADL, will be reviewed in consultation with the Bank and that PSO will, by March 20, 1974, promulgate port requirements satisfactory to the Bank in their scope and content. They will include a provision to reduce the number of days of free storage from 30 to 10.

IV. THE PROJECT

A. PSO's Investment Program

4.01 PSO's investment program for the Fifth Plan Period (1973-77) amounts to Rls 5,175.0 million (US$69.0 million equivalent) of which Rls 4,870.0 million (US$65.0 million equivalent) are for capital works (Table 1), including the proposed project. Rls 730.0 million are allocated mainly for dredging at Bandar Bushehr and Rls 66.0 million to Bandar Abbas. This program seems smaller than required and will have to be reviewed and be integrated into a long-range investment program following a study to be undertaken by consultants (the Iran Ports Study) and for which provision is made in the project (para. 4.02 and Annex 7). The proposed project should not be delayed pending completion of the Iran Ports Study since the items to be furnished will not be contrary to the Study's findings (Chapter V).

B. Project Description

4.02 The project, details of which are given in Annex 8, will: (1) provide additional capacity in Bandar Shahpur; (2) improve conservancy and marine operations in the Persian Gulf; (3) improve planning and management in headquarters and in ports; and (4) provide Iran with a long-range plan for port development. It includes:

(a) construction of four deep-water berths at Bandar Shahpur (as an extension of the existing port) with transit sheds and open storage areas. These berths will be capable of accommodating ships of about 16,000 dwt, with a draft of 9.5 m; one berth will be for ships of about 18,000 dwt with a draft of 10.5 m;

(b) procurement of floating craft for dredging and marine operations, i.e., one cutter-suction dredger and two hopper barges, one buoy vessel for the Persian Gulf, one pilot vessel and three pilot launches, and six tugboats for the Persian Gulf ports;

(c) the procurement of a floating crane and of a heavy lift mobile crane and of light, cargo-handling equipment for the new berths at Bandar Shahpur;

(d) technical assistance in management and training by (i) provision of experts for PSO, and (ii) financing training officers to prepare and implement appropriate programs; and

(e) consulting services for: (i) completion of final design and supervision of construction; (ii) procurement and design of floating craft; (iii) studies of siltation problems at Bandar Shahpur; and (iv) preparation of a Master Plan for Iran port development (the Iran Ports Study).

4.03 The layout of the proposed berths at Bandar Shahpur is in accord with the port's logical development and will permit further expansion which is expected to be required after 1978. The floating equipment is essential to permit adequate marine and conservancy services for Iranian Persian Gulf ports. There is also a need for heavy-lift equipment and further cargo-handling equipment in addition to that already obtained by PSO (Annex 9). The technical assistance proposed has been agreed with PSO and will provide a total of 12 experts in port operations, maintenance, and administration to assist PSO's staff in achieving the required standards of expertise in port and marine operations and provide specialist staff to prepare and run training programs for supervisors, equipment operators and cargo handlers; details of the training programs for port operations are in Annex 10.

C. Consulting Services

4.04 PSO will execute the project, assisted by consultants Messrs. Hamkar-Kampsax (Iran/Denmark) who prepared the feasibility study and detailed engineering for the berth construction and have been engaged to finalize the design (para. 4.08), prepare tender documents and to conduct additional hydrographic measurements. They will also supervise construction. These arrangements are acceptable to the Bank.

4.05 In consultation with the Bank, PSO has retained the services of Frederic R. Harris Engineering Corp. (USA) to conduct the Iran Ports Study. They intend to retain the services of the same consultants to prepare documents and supervise the procurement of floating craft. Other consultants, who have

not been designated, will be necessary to prepare training programs and to perhaps assist PSO in selecting technical assistants. It was agreed during negotiations that consultants should be acceptable to the Bank and engaged on terms and conditions satisfactory to the Bank.

D. Subsoil Conditions at Bandar Shahpur

4.06 Borings on the site of the planned installations indicate that soil conditions are not favorable and that the subsoil cannot support earthfill. Wharves will therefore be founded on friction piles. Soil conditions are somewhat better inshore; reclamation there will be by fill surcharged to eliminate future settlement.

E. Cost Estimates

4.07 The total estimated cost of the project is Rls 3,122.0 million (US$41.60 million) with a foreign exchange component of US$29.0 million equivalent. A summary follows and details are given in Table 2.

	Local	Foreign	Total	Local	Foreign	Total	% of Total Expenditure
	(Rls '000,000)			(US$'000,000 Equiv.)			
1. Civil Works	626.3	727.3	1,353.6	8.35	9.69	18.04	43.3
2. Floating Craft	1.1	795.0	796.1	0.01	10.60	10.61	25.5
3. Cargo-Handling Equipment	16.9	112.5	129.4	0.23	1.50	1.73	4.2
4. Technical Assistance:							
(a) Experts	30.0	60.0	90.0	0.40	0.80	1.20	2.9
(b) Training	30.0	45.0	75.0	0.40	0.60	1.00	2.4
5. Consulting Services:							
(a) Engineering	46.8	35.9	102.7	0.62	0.75	1.37	3.3
(b) Iran Ports Study	30.0	60.0	90.0	0.40	0.80	1.20	2.9
Sub-total	781.1	1,855.7	2,636.8	10.41	24.74	35.15	84.5
Contingencies:							
Physical (10% on 1)	62.6	72.7	135.4	0.82	0.98	1.80	4.3
Price (15% on 1, 2, & 3; 10% on 5 (a))	100.5	249.4	349.8	1.36	3.28	4.64	11.2
Total	944.2	2,177.8	3,122.0	12.59	29.00	41.59	100.0

4.08 The cost of the civil engineering works is based on known costs of labor and materials for recent port construction works in Iran. A physical contingency of 10% is included for construction as the detailed engineering, and tender documents, though completed, are being slightly amended in accordance with Bank comments agreed with PSO and the consultants (Annex 11). The cost estimates for floating craft and equipment are based upon recent quotations, but a price contingency of 15% has been added. Cost estimates for the Iran Ports Study and technical assistants' services are based on current average man-month rates.

4.09 Most construction materials are available in Iran but timber, high tensile steel, special materials and construction equipment must be imported. Construction materials which are imported are subject to normal import duties. The import of construction equipment is duty free provided it is re-exported upon completion of the project. Floating craft to be procured under the project can also be imported duty free, but imported cargo-handling equipment is taxed at 15%. These duties are included in the local cost components.

F. Finance

4.10 A Bank loan of US$29.0 million is proposed to finance the estimated foreign exchange component of the proposed project. PSO will provide the local currency, estimated at US$12.6 million equivalent, from internal resources. Retroactive financing from March 1, 1972 may be required for about US$200,000 for the foreign exchange component of the mobilization cost of the earthwork contract.

G. Procurement

4.11 Contracts for construction and for supply of equipment will be awarded on the basis of international competitive bidding and will be subject to Bank approval. Whenever practicable, items will be grouped together to form packages of appropriate size for competitive bidding. It has been agreed during negotiations that, for small contracts for equipment and for the remaining contracts for earthworks, utility works and rail connections on land, as the local industry is proficient and foreign firms unlikely to bid, contracts will be awarded after local competitive bidding. In all such cases the contracts let will not be of such import as to delay progress of the main contractor. No international preferential tariffs or treaties apply to any items of the proposed project. A contract for phase one of the construction - earthworks - has already been awarded. As the bidding procedures and the contract award were in accordance with the Bank Guidelines, it is recommended that the earthworks be financed under this loan. An amount of US$200,000 would be required as retroactive financing.

H. Disbursement

4.12 Based on plant and imported materials requirements, disbursement from the loan account for foreign exchange components will be for (i) 54% of civil works costs representing the foreign exchange component; (ii) the foreign exchange cost of imported floating craft and equipment; and (iii) the foreign exchange cost of technical assistance, of the Iran Ports Study, and of consultants' services.

4.13 Berth construction is scheduled to start by March 1973 and be completed by early 1977 (Annex 12). Assuming loan effectiveness on September 1, 1972, project expenditure and disbursement could be expected to be as summarized below and detailed in Tables 3 and 4:

(US$'000)

IBRD Fiscal Year	1972	1973	1974	1975	1976	1977	Total
Project Expenditure	400	4,820	9,870	13,090	10,280	3,160	41,620
Loan Disbursement	-	3,030	6,700	9,400	4,870	5,000	29,000

I. Land Acquisition

4.14 Title to land at the site in Bandar Shahpur is vested in PSO. Some large parcels of land have been leased to private companies but PSO has informed the Bank that these leases will be reviewed. During negotiations it was agreed that PSO shall take such action as shall be necessary on its part to acquire all such land and rights in respect of land as shall be required for the construction and operation of the ports and related facilities included in the project and shall furnish to the Bank evidence that such land or rights in respect of land are vested in PSO.

J. Ecology

4.15 The proposed project will not cause any ecological disturbances in the ports of Bandar Shahpur or its environment. No commercial fishing is carried out near Bandar Shahpur.

V. ECONOMIC EVALUATION

A. The Present Situation of the Persian Gulf Ports

5.01 Iran's rapidly growing economy is generating increasing volumes of imports and exports. During the past decade, non-oil foreign trade volumes grew at an average rate of over 11% from a level of about two million tons in the early sixties to about 4.5 million tons by 1970. Most of this trade is channelled through the country's ports. However, the share of port traffic has been decreasing from close to 90% of total trade in 1961/62, to about 75% during the last few years (Table 5), reflecting the growing importance of land transport. Total port traffic still increased annually by more than 9% during this period with traffic more than tripling in the Caspian Sea ports and at Bandar Abbas on the Persian Gulf (Table 6).

5.02 Khorramshahr and Bandar Shahpur are the country's two major ports, handling together 75-80% of Iran's total port traffic (other than oil) and close to 90% of traffic through the Persian Gulf Ports. Economically, both ports can be considered as a unit serving the same industrial and population centers in Western Iran (Map 3907) with a total combined capacity of 2.4 million tons. Both are well connected by road and rail to their hinterland and they are equidistant from Teheran (about 1,050 km by road and 930 km by rail) and other major centers. Shippers use either port for import and export cargo depending on berth availability, waiting time, etc.

5.03 Access at Bandar Bushehr is presently limited, by the shallow draft available, to vessels of 3,000 dwt. In 1970-71, 70,000 tons of cargo were handled at this port. A dredging program is under way to provide access to ships up to 14,000 dwt. Since there are serious doubts as to the practicality of maintaining the new access channel, it is assumed that this port would continue to handle only its normal traffic and will not attract any traffic from Khorramshahr/Bandar Shahpur, that might divert to other ports.

5.04 Bandar Abbas is presently only operating at 15% to 20% of its estimated general cargo-handling capacity which is about 1.2 million tons a year. This is mainly due to its distance from the economic centers of Western and Northern Iran, the absence of a railway connection (the closest railhead is 560 km away) and the poor condition of the road links.

B. Traffic Forecast

5.05 The following assumptions have been used in forecasting port traffic at the Persian Gulf Ports: (i) Iran's economic growth during the present decade will continue at about the same rate as in the past 10 years (para. 2.04); (ii) practically all the Middle and Far East, African and American trade will have to use the Gulf ports, there being no other feasible alternative; (iii) USSR and Eastern Europe trade is assumed to use either the Caspian Sea ports or land transport routes; and (iv) Western European trade will still mainly use Gulf ports, but it is estimated that the share of sea transport will decline from an estimated 75% at present to 50% by 1980, the remainder using land routes through Turkey or the USSR.

5.06 Traffic projections cover general cargo imports and exports only, since bulk cargo such as petrochemical products, ore and grain will be handled at specialized berths which are outside the scope of this project. The Government's plans to expand domestic steel production to about 3.5 million tons, will have a significant impact on trade and have been taken into account. General cargo exports are estimated to grow at an annual rate of about 11% until 1980/81 (instead of 9.5% as in the past), and imports at about 5% (instead of 7.5% as in the past). Total general cargo traffic would increase at a rate of about 6.5% per annum (Table 7).

5.07 The regional pattern of Iran's foreign trade is undergoing significant changes. As Table 8 shows, trade with Asia, the Middle East and Africa is expected to continue increasing while trade with Western Europe, the country's main trading partner in the early sixties, will decline. According to present Government forecasts, imports from the USSR and Eastern European countries are expected to increase while exports will decrease. The estimated regional distribution of foreign trade in 1980-81 has been used for determining future general cargo traffic demand in the Persian Gulf ports which is shown in Table 9. It is assumed that, as in the past, 90% of this traffic would use Khorramshahr/Bandar Shahpur reflecting the concentration of most of Iran's economic activity in the West and North of the country - the natural hinterland of these two ports.

C. Project Benefits and Rate of Return

5.08 Traffic growth at the ports of Khorramshahr/Bandar Shahpur has led to increasing congestion. Berth occupancy is about 90%, indicating that the ports are now operating beyond maximum economic capacity (para. 3.22). Ship-waiting time averaged more than 30% of berth service time in both Khorramshahr and Bandar Shahpur in 1971; towards the end of the year it was even higher, resulting in the introduction of freight surcharges.

5.09 Traffic demand will continue to exceed present port capacity in Khorramshahr/Bandar Shahpur from 1972-73 and by 1973-74 there will be a very long queue of ships waiting for berths. The following table shows traffic demand in relation to port capacity available without the project:

	1972-73	1976-77	1977-78	1978-79	1980-81
			('000 tons)		
Forecast general cargo traffic at Khorramshahr/ Bandar Shahpur	2,760	3,480	3,900	4,370	4,900
Available capacity without project	2,420	2,600	2,600	2,600	2,340
Excess Demand	340	880	1,300	1,770	2,560
Spare capacity in Bandar Abbas	980	910	890	860	880

The estimate of general cargo capacity is based on the excellent berth productivity of 175,000 tons per year presently achieved at Khorramshahr and 160,000 tons per year at Bandar Shahpur. It takes into account the fact that certain berths at both ports will be taken out of service for certain periods for necessary repair work through 1975-76 and again in 1970-80 (Table 10). It has also been assumed that one berth at Bandar Shahpur will, as in the past, continue to be used by the Navy for military traffic.

5.10 The project will increase port capacity at Khorramshahr/Bandar Shahpur by:

(a) increasing the efficiency of the existing facilities by about 15% or some 400,000 tons annually (para. 3.23) as a result of better and additional port equipment, training and technical assistance programs; and

(b) the provision of four new berths, each with an estimated capacity of about 200,000 tons annually, two to be commissioned in 1976-77 and the other two in 1977-78.

In the analysis of benefits flowing from the new berths, it is assumed that the increase in the efficiency of existing facilities is fully realized before any new berths are commissioned. If the project is not implemented the increase in efficiency would not be realized and 400,000 tons of cargo would either have to divert or cause further congestion at Khorramshahr/ Bandar Shahpur.

5.11 As stated above, by 1973-74 there will be a large queue of ships waiting for berths. In this situation, ships will naturally divert to the other deep-water port in the Persian Gulf at Bandar Abbas where spare capacity is available.

5.12 Bandar Abbas is some 500 km further than Khorramshar/Bandar Shahpur from Western Iran, the major production and consumption area in Iran. In order, therefore, to establish the amount of traffic that would divert, it is assumed that ships with a prospective waiting-time cost exceeding the additional cost of land transport for their cargo, would divert. Using a simple mathematical model, it was found that in 1976-77 and 1977-78, the years when the project berths could first be in full use, much more traffic than that which could be handled at four new berths, would divert should the project not be built, and still leave a queue of ships waiting for berths. Project benefits can thus be measured by the additional inland transport costs that would be avoided by the construction of the project. This additional cost is conservatively estimated at US$6.50 per ton; it is assumed that Bandar Abbas (presently not served by rail) would be served by an efficient railway with no capital costs charged against the port. If comparison is with the combination of rail and improved road transport, the additional land transport cost would be US$7.60 per ton. These savings on inland transport cost would accrue directly to the economy of Iran.

5.13 Projected over a period of 30 years, the assumed economic life of the project, the proposed investments yield an economic return of about 15%. The first-year return is also about 15%.

5.14 To demonstrate the urgent need for the project, an analysis was conducted to determine the first-year benefits on a fifth berth if one were to be completed together with the third and fourth berths included in the project. In 1977-78, even with the project, ships would have to divert to Bandar Abbas. A fifth berth could handle 200,000 tons of cargo and, by eliminating diversion, avoid a minimum of US$1.3 million in added land transport costs. Assuming an economic cost of US$6.25 million for the fifth berth, (which is below the average costs of the first four berths), first-year benefits would yield a return of about 20%. This domonstrates not only that the project is long overdue, but in addition, as presently conceived, is too small to handle forecasted traffic in the Persian Gulf in the mid and late seventies (Table 9).

5.15 Nevertheless, preparation of a project of adequate size would take a minimum of one year, and additional berth construction at Bandar Shahpur would, for technical reasons, only be possible after completion of the present project, at the end of 1976. PSO therefore desires, and the Bank agrees, to proceed with the proposed project, for which detailed engineering has been completed, and to decide on further investments once the Iran Ports Study to be financed under this project (para. 4.02) has established overall investment priorities in all of the country's ports. It has been agreed during negotiations that, upon completion of the Iran Ports Study, PSO shall review its recommendations and prepare, in consultation with the Bank and thereafter implement an investment plan up to 1978.

D. Sensitivity Tests

5.16 Conservative assumptions on future traffic have been used throughout the analysis. For example, if the Suez Canal were reopened during the period considered in the traffic forecasts, traffic with Western Europe through the Persian Gulf ports would increase, making the proposed investments even more urgent. Also, should domestic steel production not develop as presently planned, steel imports and consequently port traffic, would be higher than forecast. On the other hand, if traffic demand were 15% or 20% less than forecast, this would have little effect on the rate of return of the project due to the high congestion and traffic diversions which would occur even with a somewhat lower traffic volume. Even with a 15% increase in the total cost of the project, the first-year return would still be about 13% and the economic return about 12%.

VI. FINANCIAL EVALUATION

A. General

6.01 During the last two years, PSO has taken steps to improve its financial management and accounting system, but much remains to be done. In the immediate future, priority should be given to the implementation of a cost accounting system and the introduction of a new tariff based on approriate financial and pricing policies. PSO's present financial picture is distorted by substantial dues on tankers which are far in excess of the cost of services provided. With the introduction of a cost-based tariff, dues on tankers retained by PSO will be sharply reduced, and other dues and charges will have to be increased to enable PSO to achieve its financial objectives, including the payment of a return to the Government on its investment.

B. Present Financial Situation

6.02 Table 11 shows PSO's detailed income statements. Operating revenues for 1971-72 are estimated at about Rls 2.2 billion (US$29.3 million equivalent); revenues from cargo-handling and storage accounted for nearly 50% of total revenues, marine and terminal for about 15%, and the recently introduced dues on tankers for about 35%. Operating expenditures for 1971-72 (which do not include any provision for depreciation) are estimated at about Rls 1.0 billion, leaving a net cash surplus of about Rls 1.2 billion. This substantial cash surplus, however, gives a misleading picture of PSO's earning capacity, because it includes dues on tankers which, to a great extent, are not legitimate operating revenues (para. 6.06). If dues on tankers had been related to costs, the net cash surplus would have been about equal to the estimated normal provision for depreciation.

6.03 A statement of the estimated value of fixed assets and pro forma balance sheets are shown in Tables 12 and 13. PSO's present financial position is very sound. As of March 20, 1972, net fixed assets, including work in progress, are estimated at about Rls 5.1 billion (US$67.4 million equivalent); net current assets are negligible. Capitalization is 100% government equity,

since the Government did not pass on any debt incurred for the financing of existing assets taken over by PSO. The estimates will have to be adjusted upon completion of the inventory and valuation of fixed assets now in progress (para. 3.11) and expected to be completed before the end of 1972. It has been agreed during negotiations that the balance sheet as of March 20, 1974 will be based on the new values of assets, and that thereafter assets will be revalued from time to time in accordance with sound accounting principles.

C. Financial and Tariff Policy

6.04 The financial regulations, which became effective in 1970 (para. 3.05) do not define clearly the financial policy of PSO. They emphasize the need for providing adequate depreciation and for setting aside, if necessary, an asset renewal reserve; they also stipulate that the net surplus will be transferred to a special fund to be used for the financing of capital expenditures. Such guidelines are insufficient. They should be supplemented by a statement of PSO's financial objectives, along the following lines: PSO shall operate the ports efficiently, exercise proper control over costs and adopt an appropriate pricing policy, so that revenues will be sufficient to: (i) cover operating expenses excluding depreciation but including adequate maintenance and taxes, if any; (ii) meet debt service requirements; (iii) finance a reasonable portion of capital expenditures, including replacements and renewals; and (iv) provide PSO with a rate of return (para. 6.11) such as to give the Government a reasonable return on its investments in PSO.

6.05 Port tariffs are enacted by Act of Parliament, except some cargo-handling charges, included in the Customs Regulations, which are fixed by a Joint Committee of Parliament. A bill is presently under consideration to give authority to PSO's High Council to set or alter all tariffs. There is no reason to believe that the Bill will not go through, but the procedure will require some time for its enactment. During negotiations, it has been agreed that the Government shall take all such steps as necessary to transfer to the High Council of PSO full responsibility and powers to set or amend port tariffs.

6.06 The tariff schedule, the major part of which has not been revised since its issue in 1960, is not cost-based, partly because of the absence of cost data and partly as deliberate policy; for example, cargo charges are considerably lower for exports than for imports in accordance with the Government's policy of encouraging exports. The existing tariff calls for the following major comments:

(a) No charges are presently made against the Government for the import and handling of official cargo, which was 215,000 tons in 1970-71.

(b) Official vessels (Imperial Court, Navy, etc.) are exempt from port dues and charges, which is in line with normal practice for relatively short visits. The Navy, however, maintains full occupancy of at least one berth at Bandar Shahpur.

(c) Within the framework of the 1971 agreement between the Government and the oil companies, the latter agreed to pay dues, effective August 1, 1971, in respect of any tanker entering Iranian waters. Revenues from this source are very substantial, and far in excess of the costs of the services presently provided by PSO, such as navigational aids, channel dredging, etc. (Annex 13). Without prejudice to the right of the Government to continue to receive from the oil companies the amounts that they agreed to pay, dues on tankers collected and retained by PSO as operating revenues should be related to the costs of services provided.

6.07 The consultants (ADL) have already submitted preliminary proposals for a new simplified and cost-based tariff which PSO does not consider satisfactory. Since there is no need for an adjustment in tariffs to finance the proposed project as long as PSO retains the existing dues on tankers, the introduction of new tariffs should allow sufficient time for the gathering of adequate information on actual operating costs and the assessment of future costs. It has therefore been agreed during negotiations that: (a) PSO shall take all steps to ensure that its tariffs make it possible for it to reach its financial objectives (para. 6.04); (b) PSO will, as soon as possible, but not later than March 21, 1974, introduce a cost accounting system to determine the relevant costs of the various services and facilities which it provides; and (c) PSO will, by March 21, 1975, introduce new tariffs, on the following basis:

(i) dues and rates will be set as far as practicable for each port individually;

(ii) dues and rates will be levied for all ships and goods using PSO's ports' facilities and services; and

(iii) dues and rates for services and facilities will be based on, and be not less than, the economic costs of those services and facilities.

D. Future Earnings

6.08 A detailed income forecast up to 1980-81 is given in Table 11 and summarized below:

			Rls ('000,000)				
Year	Operating Revenues	Operating Expenditures	Depreciation	Net Operating Revenue	Net Surplus	Operating Ratio %	Rate of Return %
1972/73	2,872	1,722	476	674	669	77	14.1
1973/74	3,133	1,754	495	884	851	71	17.3
1974/75	2,792	1,681	540	571	502	80	10.5
1975/76	2,648	1,703	555	390	276	83	7.1
1976/77	2,946	1,862	599	485	336	84	7.9
1977/78	3,206	1,863	660	683	525	79	9.9
1978/79	3,600	2,007	689	904	749	75	12.7
1979/80	3,620	2,061	717	842	688	77	11.5
1980/81	4,233	2,268	759	1,206	1,053	72	15.7

6.09 The forecast of operating revenues is based on the traffic forecasts discussed in Chapter V. Up to and including 1973/74, they are assessed on the basis of the existing tariff. Thereafter, assumptions based to a large extent on the consultants' preliminary proposals (Annex 13) had to be made on the most likely tariff to be introduced by PSO in early 1974, in accordance with the recommended pricing policy. As a result of the introduction of the new tariff, PSO's total operating revenues in 1974/75 are 11% less than those of 1973/74; this is mainly because of the assumed adjustment of dues on tankers retained by PSO, whereas other revenues increase by about 50%. Such an increase should be feasible. Expenditure forecasts are also on the basis of assumptions given in Annex 13, which include an allowance for increases in prices of 2% to 3% a year, whereas in the past few years the rate of inflation was less than 1-1/2% a year. Depreciation rates are those used in the port industry in general; they are lower than rates presently proposed by PSO (Annex 13). It has been agreed during negotiations that depreciation will be valued in accordance with sound methods acceptable to the Bank.

6.10 The projections show substantial operating and net surpluses, subject to variations anticipated in traffic volumes. PSO would achieve satisfactory operating ratios, earn adequate returns on average net fixed assets in use and generate internally sufficient funds to make a substantial contribution to its investment program and pay a dividend to the Government. Since adequate provisions have been made for increases in expenditures, actual results will depend mostly on traffic volume and the level of tariffs, forecasts of which are based on the mission's best judgment and are considered reasonable. However, as discussed in para. 6.14, earnings smaller than forecast would not necessarily jeopardize PSO's financing plan during the construction period of the proposed project.

6.11 In order to ensure that PSO will maintain in the future an adequate level of cash generation, it has been agreed during negotiations that PSO will earn an annual rate of return of at least 7% on the average value of net fixed assets in use for cargo-handling and services to commercial shipping. Present forecasts indicate that compliance with this financial target would enable PSO to achieve the financial objectives listed in para. 6.04. The target, however, should be reviewed, and a higher percentage may have to be specified as a test of minimum financial performance, upon completion of the Iran Ports Study which will identify future investment requirements. By that time, more accurate information will also be available on operating costs and the value of assets, and the Government policy regarding the dividend to be paid by PSO will have been established.

E. Financing Plan and Future Cash Flow

6.12 A detailed cash flow forecast up to 1980/81 is given in Table 14. During the construction period of the project (1972/73 to 1976/77), funds required by PSO and the sources thereof may be summarized as follows:

	Million Rials	Million US$	Percentage
Funds Required			
Capital expenditures - Proposed project	2,867[1/]	38.2	58
Other Capital Expenditures	2,003	26.7	40
Increase in working capital	96	1.3	2
Total	4,966	66.2	100
Sources of Funds			
Internally generated funds	5,669	75.6	
Less: debt service	371	4.9	
dividends	2,074	27.7	
Net internally generated funds	3,224	43.0	65
Less: increase in cash	435	5.8	9
Net internally generated funds applied to investments	2,789	37.2	56
Borrowings-Proposed IBRD loan	2,177	29.0	44
Total	4,966	66.2	100

6.13 The proposed project represents 58% of PSO's investment requirements during the construction period. Other capital expenditures are described in para. 4.01 and Table 1. The financing Plan shows that PSO would be able to finance 56% of its investment requirements with internally generated funds and build cash reserves of more than Rls 400 million, which gives a margin to cover some increases in investment costs or shortfalls in internal cash generation. The proposed Bank loan would be made to the PO for 25 years, including five years of grace, and relent to PSO on the same terms and conditions. The proposed repayment period of 20 years is based on the average life of the assets to be financed. Agreement on the recommended relending terms has been reached during negotiations.

6.14 PSO's contribution to its investment requirements is dependent upon the achievement of the level of earnings discussed in paras. 6.08 to 6.10; it also assumes that starting in 1973/74 PSO will pay a 10% dividend to the Government on its original equity. Smaller earnings, however, would not necessarily jeopardize the financing plan; if the net surplus during the period were to be 95% less than forecast (as a result, for example, a shortfall of about

1/ The difference between this figure and the project cost estimate of Rls 3,122 million given in para. 4.05 represents the costs of studies and training, which are included under operating expenditures in the financial projections.

17% in operating revenues), PSO could still make the same net internal contribution by eliminating dividend payments altogether and not building cash reserves. The principle of a dividend payment, which has been discussed during negotiations, appears reasonable since the Government will remain responsible for servicing the debt incurred for the financing of PSO's existing assets. In practice, a dividend payment will have to be balanced against the cost of regulatory functions performed by PSO (para. 3.07). The principle of a return on Government's investments has been agreed upon (para. 6.04). Its application will be possible only when accounts have been clearly separated (para. 3.14).

6.15 Estimated capital expenditures beyond the project period (Table 13) are very tentative, and will have to be reviewed on conclusion of the Master Plan Study. The projections show that PSO should be able to finance the amounts presently estimated without additional long-term borrowings, which indicates that PSO would most likely be able to mobilize the financial resources necessary to undertake a larger investment program if needed. It was agreed during negotiations that, during the period 1972-78, PSO will limit its investments to the proposed project or to projects in accordance with the investment plan referred to in para. 4.01, nor make any other investment relating to its port activities, which would result in aggregate capital expenditures exceeding US$500,000 equivalent in any fiscal year, except in consultation with the Bank.

F. Future Financial Position

6.16 Forecast balance sheets are shown in Table 12. They indicate that PSO should be able to maintain a strong financial position with scope for additional borrowing. However, to ensure that in the future PSO will limit its borrowing to reasonable amounts on reasonable terms, it has been agreed during negotiations that PSO will not, without the prior approval of the Bank, incur any long-term debt unless its net cash revenue is at least 1-1/2 times its maximum future debt service requirements.

VII. RECOMMENDATIONS

7.01 During negotiations, agreement was reached on the following principal points:

(a) improvements in the accounting system of PSO (paras. 3.13, 3.14, 6.07 (b) and 6.09);

(b) auditing of PSO's account (para. 3.16);

(c) preparation and implementation of an insurance program for PSO (para. 3.17);

(d) preparation and implementation of a plan to reorganize PSO (para. 3.27);

(e) preparation and implementation of a training program (para. 3.28);

(f) review and promulgation of new operational regulations (para. 3.29);

(g) acquisition by PSO of land or rights in respect of land as required for port operations and development (para. 4.14);

(h) preparation and implementation of an investment plan for port development (para. 5.16);

(i) achievement of sound financial objectives (para. 6.04);

(j) transfer the power to alter port tariffs from the Government to the High Council of PSO (para. 6.05);

(k) introduction of a new tariff based on sound management and economic principles (para. 6.07);

(l) limitation of PSO's investments (para. 6.15); and

(m) achievement of an adequate financial rate of return (para. 6.11) and limitation of debt service commitments (para. 6.16).

7.02 The project is suitable for a Bank loan of US$29.0 million to the Government for a term of 25 years, including five years of grace, to be relent to PSO at the same terms and conditions.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Previous Bank Transport Projects

1. General

The Bank's experience in transport projects in Iran has been disappointing so far, for the following reasons:

(a) disbursements have been slow due to the Government's excessive delays in awarding contracts and in paying of contractors;

(b) contractors, because of lack of money, had to cease work until payments in arrears due to them have been made; some have been forced into liquidation;

(c) the shortage of local funds which has delayed payments, was brought about by cost overruns on other economically important and politically significant projects and defense expenditure; and

(d) poor organization and coordination of transport agencies within the Government.

2. First Highway Project

Loan 227-IRN for US$72 million, which was signed in May 1959, financed the foreign exchange costs of:

(a) constructing and improving about 2,910 km of main roads in the southern and western parts of Iran;

(b) the engineering and supervising of the construction project by foreign consultants; and

(c) surveying and studying a second main road program and of a feeder road program.

This project has been completed satisfactorily, and the loan fully disbursed.

3. Second Highway Project

Loan 381-IRN for US$16.7 million was signed in June 1964 and financed the foreign exchange costs of:

(a) constructing and improving about 680 km of main roads;

(b) consulting services for the supervision of construction; and

(c) engineering of future road program of about 3,000 km of main roads.

The work has now been completed satisfactorily, and the loan fully disbursed.

4. Third Highway Project

Loan 410-IRN for US$28 million was signed in April 1965 and finances the foreign exchange costs of:

(a) constructing and improving about 1,680 km of main roads;

(b) engineering of some of these roads; and

(c) consulting services for supervision.

On December 1, 1971, when the last supervision was made, this project was 93% completed. The Closing Date of the loan has been postponed from September 1, 1969 to December 31, 1972, by which time it is anticipated that all project elements should be completed. Final costs are the same as the appraisal estimates.

5. First Feeder Road Project

Loan 411-IRN for US$8.5 million was signed in April 1965 and finances the foreign exchange costs of constructing about 1,565 km of feeder roads. On December 1, 1971, when the last supervision was made, this project was 97% completed. The Closing Date of the loan has been postponed from April 1, 1970 to September 30, 1972 when all work should be completed. Final costs are about 30% higher than the original estimates, this being caused by unforeseen additional works needed to accommodate irrigation schemes and the high costs of building roads in mountainous terrains.

6. Fifth Road Project

Loan 697-IRN for US$42.0 million was signed on June 21, 1970 and finances the foreign exchange costs of:

(a) constructing and improving 550 km of main road;

(b) road maintenance equipment; and

(c) consulting services to: (i) advise on organizational changes needed for effective transport coordination and an improved highway authority; (ii) recommend and implement improvements in the road maintenance organization

and its operations; (iii) make a comprehensive transportation study for the Teheran Metropolitan Area; and (iv) conduct feasibility studies and detailed engineering of a further road program.

As for item (a) above, there were delays in awarding contracts. By May 1972, contractors were mobilizing but no construction work had started. As for item c(i) and (ii) above, there were lengthy discussions and delays which are referred to in the report (para. 2.13). The Bank agreed that the study be undertaken in two phases:

(a) The first phase would involve a broad conceptual study of the organization and issues affecting transportation in Iran and would also include comprehensive inventories of roads and maintenance equipment to provide essential data for further study of road maintenance under the second phase.

(b) The second phase would involve detailed studies of the organizations involved in transportation as identified and agreed in the first phase study and also the detailed study of road maintenance organization and operations which necessarily must be carried out concurrently with the detailed study of the parent roads organization.

Agreement has been reached on the scope of work and terms of reference of the first phase and start of work is expected by August 1972. The consultants are a group led by BCEOM (France).

As for item c(iii) above, work was started by SOFRETU (France). As for item c(iv) above, the roads to be included in the feasibility studies have been agreed upon with the Bank and, in June 1972, the Government was to send proposals to consultants.

7. National Iranian Oil Company Pipeline Project

Loan 805-IRN for US$32.0 million was signed on March 3, 1972, and finances the cost of expanding part of the National Iranian Oil Company's (NIOC) pipeline system.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Port Facilities in Bandar Shahpur

1. Port Approaches

The present port is approached through a 60 km channel (Khor Musa) which gives access across the bar at its mouth. The channel, which is about 2 km wide with tidal currents reaching a velocity of 5 km/hour, is well marked. Depth over the bar is 9.5 m at LWOST. Tides of 3.0 m permit ships with a draft of 10 m to pass the bar even in bad weather. A pilot vessel is stationed outside the bar.

2. Description of the Present Port

There are two jetties - an eastern jetty 520 m long, and the western jetty 540 m long each providing three berths with an alongside draft of about 10.5 m at LWOST, suitable for vessels of 20,000 dwt. The first two berths were built in 1938-39, three more during 1942-43 and one in 1957. The two jetties are connected to the port area by three approach bridges; both jetties are provided with a combined road/railway access bridge.

The port is located on land reclaimed from the tidal flats of the Khor Musa. The total available covered storage area is 26,000 m^3 and the net total open storage area is 62,000 m^3. During peak traffic some further 60,000 m^3 within the port area can be made available for open storage. Other buildings include: administrative building, canteen, medical station and doctor's house.

An ore-loading plant comprising an ore-storage yard, conveying system, loading pier with ship loader and repair workshops was recently constructed but is not yet in use. The ore-loading pier is located between the two jetties with an access gangway bridge connecting to the approach bridge of the eastern jetty. Ore-loading operations are independent from the other port operations. The plant's capacity is about 2,500 tons per day, or some 500-600,000 tons per year and it is assumed that most of the ore presently exported from Khorramshahr will in future be shipped from Bandar Shahpur.

3. Conditions of Present Facilities

Both jetties are timber-decked and founded on steel piles which are in medium to poor condition because of corrosion and lack of maintenance, and have an effective life of eight to 12 years. Major repair works will continuously be required thus putting almost one berth permanently out of service for the remaining effective life. Neither jetty will be able to be repaired economically beyond 1982 nor will they, some years before that time, be able to support modern cargo-handling equipment or heavy loads.

4. Roads and Railway Connections

The port area is well asphalted. Rail tracks serve the jetties as well as the covered and open storage area. The Iranian State Railway (ISR) maintains a shunting yard with about 6,000 m of track just outside the port area and provides all rail service within the port area. Shunting yard tracks will be extended to 12,000 m and will provide sufficient capacity for the new berths. The railway line is a branch of the Trans-Iranian Railway and connects the port with Teheran and many of Iran's major towns.

The township of Bandar Shahpur, with its port, is on an island within the tidal flats of the Khor and is connected to the mainland by an 11 km dike crossing the tidal areas and carrying a three-lane asphalted road and one railway track.

Bandar Shahpur's population is 10,000. The town of Sar Bandar, some 15 km away serves as the urban community for the port.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Ports and Shipping Organization Legislation

1. PNO was established by Act of June 8, 1960 as an agency of the Minister of Customs and Monopolies to manage the ports and maritime affairs of the country. It was subject to Civil Service Law and to financial and administrative regulations approved by the Council of Ministers. Its budget was included in the national budget.

2. The 1960 Act was superseded by Acts of June 23, 1969 and March 7, 1970 which establishes the PSO. As the national maritime agency, PSO's duties include: (i) drafting legislation, reviewing international maritime agreements and making proposals thereon to the Government; (ii) enforcing Iran's maritime law and related regulations; (iii) licensing seamen and registering ships; (iv) controlling sea navigation and safety at sea; and (v) establishing and maintaining navigation aids. As the national port authority, it is responsible for planning, constructing and operating general cargo ports. This includes (i) pilotage; (ii) communications; and (iii) cargo-handling, warehousing and storage. PSO is authorized to franchise qualified private companies to execute such part of the service as may be deemed advisable and economical.

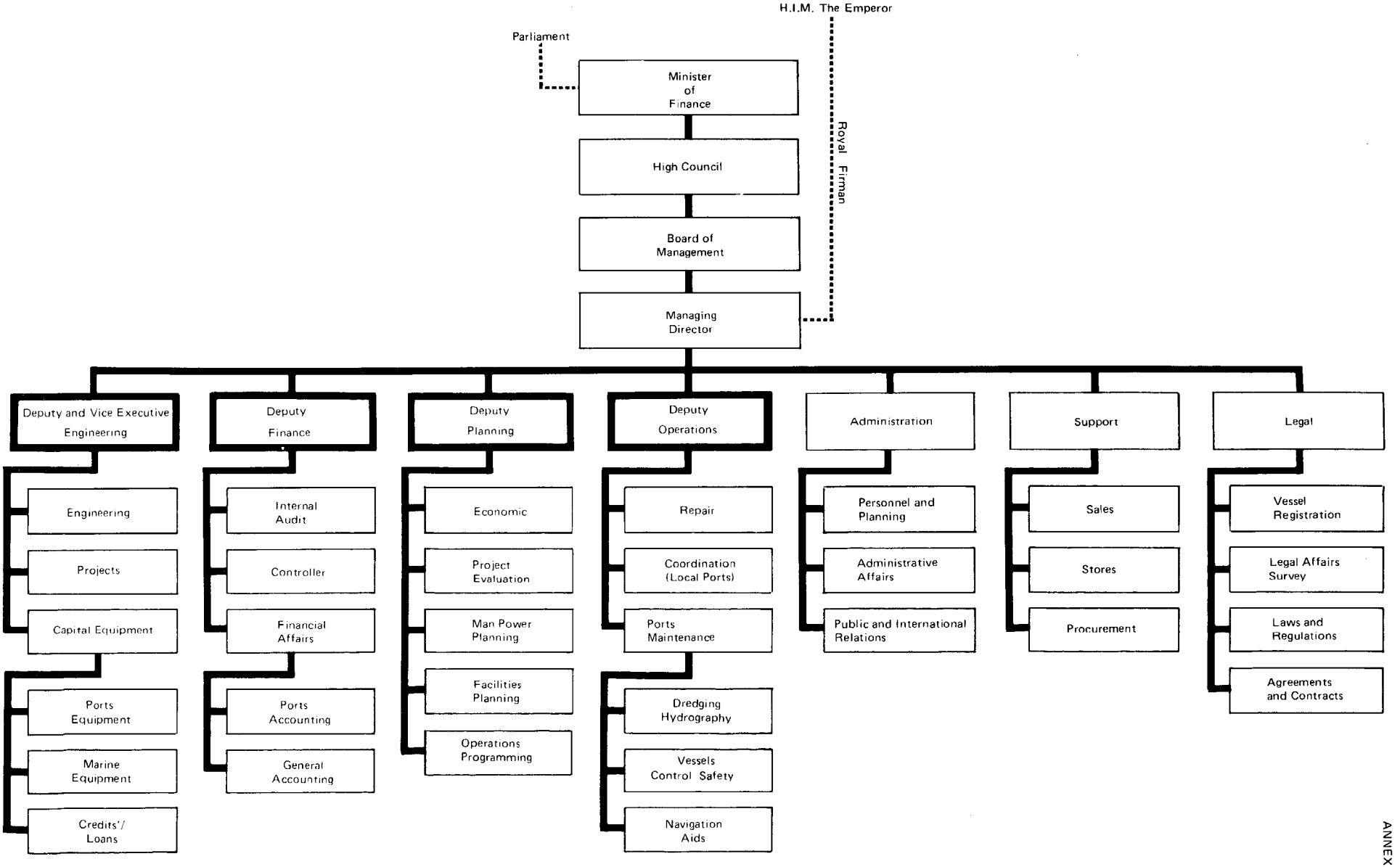
3. The High Council of PSO consists of the Ministers of Finance, Roads and Economy, the Commander of the Navy and the Managing Director of the Plan Organization. Its duties are (i) to determine PSO's general policy and approve organization charts; (ii) to decide on tariff proposals presented by management; (iii) to approve the yearly estimates, the financial statements and annual report; (iv) to decide on major issues such as referring disputes to arbitration or borrowing; (v) to approve internal regulations of the Organization; and (vi) to determine the compensation of the Managing Directors and members of the Board of Management.

4. The Board of Management has four members in addition to the Managing Director. Its members are appointed by the Minister of Finance, upon proposal by the Managing Director and with the High Council's approval. They are not allowed to own interests in shipping lines or in any company or organization carrying out port or marine services. Members of the Board are designated for a period of three years, which can be renewed. Decisions of the Board are taken by a majority vote.

5. The Managing Director is appointed by Royal Firman (Decree) upon proposal by the Minister of Finance and with the High Council's approval. He employs and dismisses employees, collects revenue through the Customs organization and authorizes expenses, carries out the High Council's decisions, and generally conducts all day-to-day operations of PSO. He may delegate his powers to deputies or other staff members. Ports Directors report to Headquarters through the Deputy Manager for operations.

June 5, 1972

IRAN
APPRAISAL OF PORT PROJECT
PORTS AND SHIPPING ORGANIZATION PRESENT ORGANIZATION CHART (1972)



April 28, 1972

ANNEX 4

World Bank - 6588(R)

IRAN

APPRAISAL OF PORT PROJECT

Operating Constraints in Iranian Ports

Constraints due to the Postal Service

1. One constraint to accelerating the movement of cargo through seaports is the poor postal service between Teheran and the ports. In spite of regular daily air service between Teheran and Abadan, the airport for Khorramshahr, it takes from five to seven days for a letter to travel in either direction. Assuming that no complications arise, 10 to 15 days is the minimum time required for a shipping agent to advise a consignee in Teheran that a shipment will arrive in Khorramshahr and to obtain the necessary documents to clear the goods from Customs. If there is any discrepancy between the documents or any need for an additional document from Teheran, at least another two weeks will elapse before clearance can be effected. For this reason importers have a free storage period of 30 days. However, private mail service exists, which enables importers to receive notice in time and importers can obtain the necessary information from the shippers when cargo leaves the port of departure. A reduction of the free storage time, presently under consideration by PSO, will act as an incentive to importers to organize their services so as to clear cargo more rapidly.

Constraints due to the Lack of Warehouses

2. Because importers had no incentive to clear transit sheds, they did not develop bonded warehouses, particularly because they objected (and still object) to the expense of double-handling of cargo from ship to transit shed and transit shed to warehouse. Importers are also wary of the additional risk of damage to cargo through double-handling, which they feel is not covered by PSO. This is one of the reasons why PSO is being required to improve its insurance system.

Constraints due to Living Conditions

4. Living conditions in the Persian Gulf are difficult, except in Khorramshahr. Bandar Shahpur is in a desert area with sand in summer, mud in winter and a local chemical plant. Bandar Abbas is not much better and only Bandar Bushehr is more pleasant. A town is now developing at Sar Bandar, 9 km from Bandar Shahpur, and is being built and planned in an attractive style. This should improve the situation, but attracting able officers to such places as Bandar Shahpur, is and will remain difficult for some time. Any judgment on the attitude of PSO's or Custom's officials or port users should take into consideration these living conditions. They hamper daily port operations and are a cause of high staff turnover which is detrimental to good management.

Conclusions

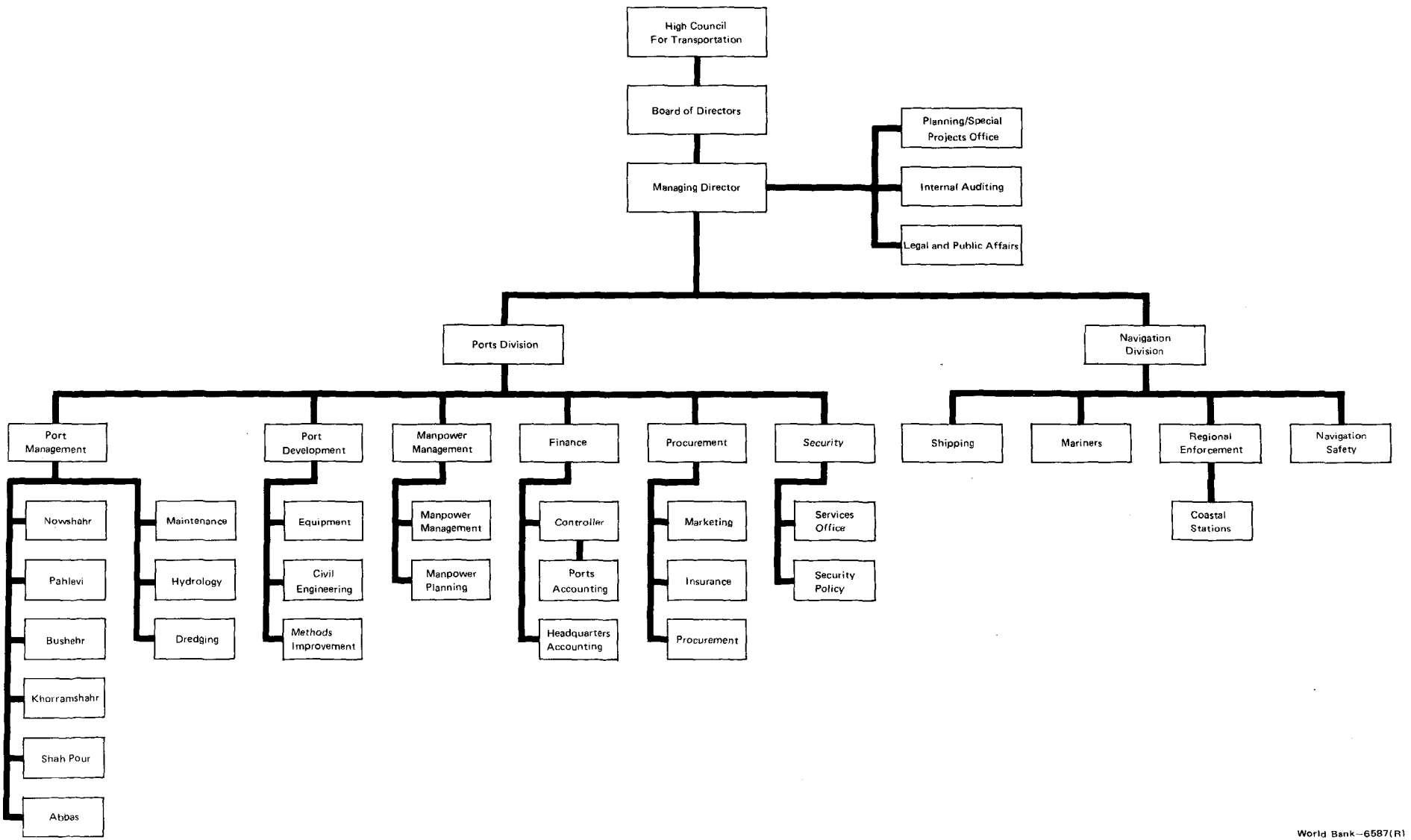
5. From the above, it can be seen that improving port operations in Iran will require good legislation, sound finance, new port regulations, etc. These will help and are basically necessary. However, continuous training, visits overseas by port officials, close supervision with mutual confidence and support by the Bank are essential to achieve the far-reaching reforms and changes which are necessary. Progress is likely to be slow. The proposals associated with the proposed project are aimed at achieving the required results.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT
PORTS AND SHIPPING ORGANIZATION

PROPOSED ORGANIZATION CHART



ANNEX 6

World Bank—6587(R)

April 28, 1972

ANNEX 7

IRAN

APPRAISAL OF PORT PROJECT

Summary of the Objectives of the Iran Port Study

1. The objective of the study is to recommend to the Government of Iran a coordinated port investment program covering the period 1972-82 and encompassing both the Caspian Sea and the Persian Gulf ports. The study will be carried out in two phases. In Phase I the consultants will review existing port facilities and operations, prepare detailed traffic forecasts and undertake preliminary site investigations at existing ports and possible new port sites. This phase is expected to be completed within five months. In their report on Phase I, the consultants will summarize their initial findings and make recommendations on the port investments to be studied in greater detail under Phase II.

2. Phase II, which is expected to last 10 months will include preliminary engineering studies and economic analyses to determine the optimum scope and timing of the port investments found necessary. Master plans for future expansion will be prepared for those ports where, according to the consultants' findings port development should be concentrated. During Phase II, the consultants will also prepare detailed financial forecasts for each port, and an overall forecast for PSO, covering the next five years and taking into account the proposed investment programs. Finally, the consultants will establish an adequate system of ports traffic data collection to be introduced by PSO.

3. The terms of reference provide for close coordination with other studies on the transport sector being carried out or planned. Emphasis has been laid on the need to consider the effects of the proposed port investments on inland transport flows and infrastructure investments. The Government, and in particular PSO, will be closely associated with the study which will provide PSO with the recommendations required to update and modify, as warranted, its port development program.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Detailed Items of the Project

The project consists of the items enumerated below:

1. Construction of four deep-water berths at Bandar Shahpur, adjacent to the existing port and providing:

   (a) three deep-water berths each about 185 m long, capable of accommodating ships of about 16,000 dwt with a draft of 9.5 m;

   (b) one deep-water berth 200 m long capable of accommodating ships of about 18,000 dwt, with a draft of 10.5 m;

   (c) three transit sheds each of 4,400 m^2 and open storage areas and necessary ancillary services;

   (d) dredging of some 2.5 million m^3; and

   (e) land reclamation and fill of some 120,000 m^2.

2. Floating craft comprising:

   (a) a cutter-suction dredger with the following characteristics:

      (i) self-propelled and self-sustained (30 days);
      (ii) fitted with cutter-suction equipment capable of handling rock and coral;
      (iii) equipped with alternative, training-suction pipe heads for varying sea-bed conditions;
      (iv) dredging depth capability 15 m; and
      (v) navigation equipment including gyro compass, Decca navigator and radio;

   (b) one pilot vessel with the following characteristics:

      (i) gross tonnage 700 tons;
      (ii) length 70 m;
      (iii) diesel engine with a speed of 12 knots;
      (iv) off-duty accomodation for 15 pilots; and
      (v) capability for hoisting and carrying two pilot launches;

   (c) one 2,000 dwt buoy vessel capable of carrying and overhauling 12 lightbuoys and equipped for hydrographic surveying;

(d) six tugboats: one of 2,000 hp, three of 1,200 hp[1/], two of 500 hp;

(e) three launches (two of which are for the Caspian Sea); and

(f) two hopper barges of 1,000 m^3 capacity.

3. Cargo-handling equipment comprising:

(a) rehabilitation of one 150-ton derrick crane;

(b) one 90-ton mobile crane;

(c) forklift trucks and mobile cranes, 3 to 10 tons capacity.

4. Technical assistance comprising:

(a) experts in the following key positions in PSO to be filled by technical assistants for a period of three years.

3 Port Operators (Bandar Shahpur, Bandar Khorramshahr, Bandar Pahlevi)

3 Maintenance Specialists (Bandar Shahpur, Bandar Khorramshahr, Bandar Abbas)

1 Transport Economist (Headquarters)

1 Financial Analyst (Headquarters)

1 Auditor (Headquarters)

1 Marine Specialist (Headquarters and Persian Gulf ports)

1 Manpower Planning Officer

1 Training Adviser

(b) training schemes for port personnel. One training program for port operations has been identified and prepared by consultants ADL (Annex 9).

1/ The characteristics of the 1,200 hp tugs (with single screw and Kort type nozzle) are adequate for routine port towage and are standard for this type of work. The 2,000 hp tug will be stationed in Bandar Shahpur: (i) to berth deep-laden bulk carriers; and (ii) to provide assistance to vessels in the Persian Gulf, for which PSO is responsible. Although a 2,000 hp vessel might seem over-powered, this was accepted after review because the size of ships calling in Persian Gulf ports is expected to increase during the economic life of this tug.

5. Consulting Services comprising:

(a) services for completion of detail design and construction supervision;

(b) services for design and procurement of floating craft;

(c) hydraulic studies aimed at establishing the siltation and the resulting maintenance dredging requirements to serve as criteria for the new dredger;

(d) the Iran Port Study (Annex 7).

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Condition of Port Equipment in PSO

1. Dredger

All Iranian ports require some degree of maintenance dredging on an annual or biennial basis to maintain harbor depths and navigable channels through shallow approaches to the harbors.

The present dredging fleet comprises a 20-year old cutter-suction dredger and a grab dredger fully-employed on maintenance at Khorramshahr, Bandar Shahpur and Bandar Bushehr. Although these dredgers still have some useful life, they were ill-maintained because of inadequate repair facilities. A new workshop established in Bandar Shahpur will now alleviate this problem and PSO will be able to maintain additional equipment.

Under the prevailing circumstances of limited equipment fully employed, and limited repair facilities, contract dredging for major improvement was a prudent solution, although somewhat costly in an area remote from the centers of the world dredging industry. The amount to be dredged in the Persian Gulf annually is about 1.5 million m^3, not including: (i) capital dredging expected in future on the inner bar at Bandar Shahpur, presently having 9.5 m depth at LWOST and which is reasonably expected to be dredged to 11.0 m at LWOST in future; (ii) dredging that may be required in the Arvan Rud to maintain access to Khorramshahr; (iii) capital dredging expected in Bandar Abbas; (iv) fishing ports development, presently being considered under an FAO-sponsored study; and (v) increased maintenance with the development of public ports and private berths, such as those of the chemical industry.

2. Pilot Station Vessel

The categorical statement of all surveyors who examined the existing pilot vessel stationed at the Bandar Shahpur/Arvan Rud bar is that it is "unsafe and unseaworthy". There is no other Iranian pilot vessel suitable for these duties in the Persian Gulf; the pilotage distance to Bandar Shahpur is 75 km and more than 1,000 vessels are serviced each year. Because of lack of a pilot vessel stationed at the bar, pilots have frequently to be transported from Bandar Shahpur by port tugs. This is an expensive and slow emergency solution, which adds to ships' delays at anchorage because they wait longer for a pilot, or in port because they have no tug assistance available.

3. Buoyage Vessel

PSO has to maintain about 100 lightbuoys on the Persian Gulf. This number will increase by 30 units with the deepening of a new channel in Bandar Bushehr, to be used by day and night, and with further port

development. The existing buoy tender, a converted tug, is too small and is ill-designed. Buoy maintenance and servicing is presently inadequate, and is carried out by emergency solutions such as, again, the use of port tugs, which are not suitable for this work and should not be diverted from their regular duties.

4. Tugboats

Conditions at Iranian ports make the use of tugboats necessary. In Khorramshahr the channel is only 250 m wide, the current velocity up to 4 knots and winds of 12-20 knots are frequently experienced.

At Bandar Shahpur wind, current and high berth occupancy also make towage necessary. PSO is ill-equipped in tugboats; this causes delays in ship movements, and hazardous maneuvers. In Khorramshahr only one 1,000 hp tug is in service and a fireboat must be pressed into service for berthing ships against the dictates of good practice. The situation is the same at Bandar Shahpur, except that wind is stronger and ships are heavier. At Bandar Abbas, not only are tugs too small, but they are ill-designed for use in the excessively hot climate and are frequently under repair because of engine cooling trouble.

PSO plans to use the tugs to be procured under the proposed project in Khorramshahr and Bandar Shahpur. The existing tugs there will be sent to Bandar Abbas and to Bandar Bushehr, ports which are expected to accommodate traffic diverted from Khorramshahr and Bandar Shahpur to relieve congestion.

5. Pilot Launches

No Iranian pilot vessel is presently stationed at the outer bar of the Arvan Rud, 110 km from Khorramshahr. Pilots are transported in tugs or on the fire tender, a practice which is undesirable for obvious reasons (para. 2). A fast (25 knot) pilot launch is necessary to increase the turnround of pilots.

Two smaller launches are also necessary to carry pilots in the ports of the Caspian Sea, and will replace existing craft which are 35 and 40 years old respectively.

6. Hopper Barges

Two additional hopper buoys of 1,000 m^3 capacity are required in Khorramshahr for the proper evacuation of dredged material to spoil grounds.

7. Heavy Lift Equipment

The increase in heavy lift traffic arriving at Persian Gulf ports (30 lifts from 40 to 130 tons in Khorramshahr alone in 1970-71) makes specialized equipment necessary.

8. Cargo-Handling Equipment

By the end of 1971, PSO had sufficient light cranes, forklift trucks, trailers and tractors for its needs. Locally-made tractors and trailers had been procured and were adequate for the work to be performed.

By February 1972, PSO had received or on order sufficient 5-ton, 10-ton and 25-ton mobile cranes to cover the needs at Khorramshahr and Bandar Shahpur.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Training Program - Port Operations

The port terminal operations training program is designed for jetty, warehouse and maintenance supervisors, equipment operators and cargo handlers. The aims of the program are: (i) to apply the policies and procedures of the PSO in an efficient, fair and just manner; (ii) to develop the ability to employ and direct manpower, securing maximum utilization and effort; (iii) to establish good industrial relations; (iv) to obtain maximum utilization of equipment; and (v) to practice cost control and to develop cost consciousness. The program will be implemented through courses and staff seminars, and will be organized by a Chief Training Officer, in Teheran, assisted by Training Coordinators and Instructors in the field.

Courses will be scheduled on an annual basis and given full publicity at Head Office and at all ports. The direct supervisors of personnel and personnel development officers will select suitable candidates for courses and training programming. The Staff course syllabus will include supervisory skills, development programs, instructor training programs, manpower management and planning, equipment utilization, report writing, industrial relations, policies and procedures, work measurement and budget preparation. The General course will include firefighting, safety and first-aid programs. The Labor skill course will include forklift, crane and vehicle operating and cargo-handling programs.

Staff development seminars will be established to increase management competence and effectiveness of staff members who appear to have appropriate potential. They will include the study of leadership, communication, styles of management, manpower, decision making, organization and solution of problems particular to Iran and to PSO.

The Chief Training Officer to be appointed will carry full responsibility for training of Staff and Labor at Teheran and at all ports in Iran. He will ensure the standard of programs and instruction are adequate and in keeping with requirements, and carry out field checks thereon as necessary. Through contact with the Training Coordinators he will review the development and training requirements of all port personnel.

The Training Coordinators will be responsible to the Chief Training Officer for the satisfactory performance of the duties assigned to him. He will liaise closely with the local Port Director in his area. He will plan, develop and administer local training programs submitting such programs to the Chief Training Officer, Teheran, for approval and coordination with other ports. He will supervise, direct and advise the Job Performance Instructors assigned to him.

The Job Performance Instructor will carry out the ongoing job training, reporting to the Training Coordinator to whom he will be responsible for the completion of approved training programs.

Source: Arthur D. Little, Inc. (USA)

June 5, 1972

ANNEX 11

IRAN

APPRAISAL OF PORT PROJECT

Finalization of Design and Tender Documents

The original design and tender documents, as proposed by the Consultants Hamkar-Kampsax, are being revised along the following lines:

1. The berths to be built should be shifted about 30 m to the west, to provide a mooring dolphin east to Berth No. 1 and to provide six bridges from shore to the berths.

2. The tenderers should be allowed to propose alternative designs for the reinforced concrete marine structures (fully detailed and priced), provided, however, that they submit an offer on the project as tendered. Alternative offers are to be quoted on a fixed lump-sum basis.

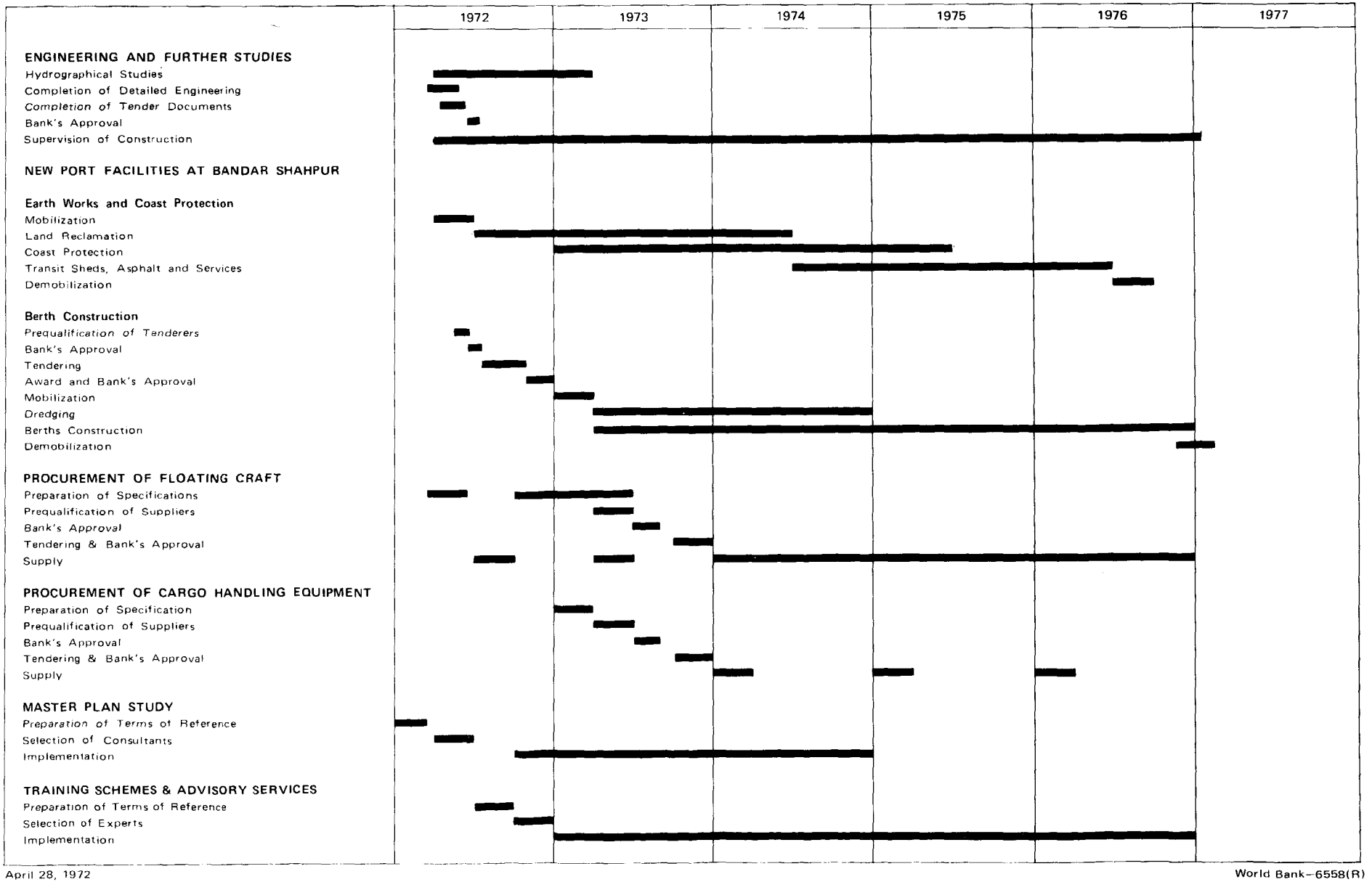
3. The specifications should allow for test loadings to be performed for the individual jetty sections, except for the first, in advance of casting of the piles.

4. The specifications should state that the contractor will be paid for dredging of resiltation above a specified quantity.

5. The site for a possible silo should be relocated at a greater distance from the berths than is presently shown on the drawings.

June 5, 1972

IRAN
APPRAISAL OF PORT PROJECT
IMPLEMENTATION SCHEDULE



April 28, 1972

World Bank–6558(R)

ANNEX 12

IRAN

APPRAISAL OF PORT PROJECT

Assumptions Used for Calculation of Revenue and Expenditure and Additional Financial Information

1. Dues on tankers

Before August 1971, all tankers entering Iranian waters paid light dues. In addition, tankers calling at Bandar Mahshahr which use the channel from Khor Musa Bar to Bandar Shahpur paid port dues. From time to time Port Authorities billed tankers calling at other oil terminals in Iran for port dues, but the Iranian oil operating companies (Consortium) refused to pay such bills on the ground that the Port Authorities were not rendering any services to those tankers. The companies also referred to the then existing Oil Agreement, according to which they considered tankers calling at other oil terminals as exempt from any taxes, dues and charges.

Within the framework of the 1971 agreement between the government and the oil companies, the latter accepted to pay dues, effective August 1, 1971, in respect of any tanker entering Iranian waters. The rates are as follows:

		Rials per G.R.T.
Light dues		0.5
Port dues:		
Entry fee on vessel coming into harbor	1.0	
Entry fee on vessel coming into port	1.5	
Dues on vessel for loading and/or discharging in port waters.....	7.0	
		9.5
Total		10.0

In 1970/71, the G.R.T. totals for tankers were as follows:

Port used	in million G.R.T.
Lavan Island	6.1
Khark Island	101.2
Bandar Mahshahr	12.5
Total	119.8

Assuming a growth rate in tanker movement of about 5% p.a., the estimated receipt for 1971/72 (commencing August 1971) is Rls 790 million and the budgeted receipt for 1972/73 is Rls 1,350 million. These revenues

are far in excess of the cost of the services provided by PSO.

Without prejudice to the right of the government to continue to receive from the oil companies the amounts that they agreed to pay, dues on tankers collected and retained by PSO as operating revenues should be related to the costs of services it provides, such as navigational aids, channel dredging, etc. The consultants (ADL) recommended that all tankers pay light dues, but only those tankers calling at Bandar Mahshahr pay port dues. The forecast of PSO's operating revenues are based on the consultants' proposal.

2. Assumptions made for forecasting operating revenues

The following assumptions have been made regarding the new tariff to be introduced in early 1974:

(a) Dues on tankers collected and retained by PSO as operating revenues will be related to the costs of services provided by PSO, as discussed above.

(b) The existing porterage tariff, under which packages of 100 kgs or less are charged at half the normal rate will be changed to a strictly per ton basis, which will increase revenue considerably. The increased mechanization and palletization will lead to larger packaging over a period and the assumed change in the basis of the charge anticipates this development.

(c) Export cargo rates will be increased to reduce the differences between them and import rates.

(d) Charges for light dues and pilotage fees will be increased, and charges will be introduced for time spent working ships at anchorage.

(e) Government cargo will be treated as private cargo.

Items (a) and (b) are taken from the consultants' proposal. Items (c), (d) and (e) are the mission's best judgment of the adjustments which will be required in order to introduce a new tariff which, as closely as possible, reflects the costs incurred in each of the individual services provided.

An overall tariff increase of 5% has been assumed in 1979/80 to recover part of the estimated increases in costs due to inflation.

3. Assumptions made for forecasting operating expenditures

In the last two years, operating expenditures increased as a result of: (i) the take-over of former Customs staff; (ii) increases in staff and labor benefits in November 1971; (iii) further recruitment and increases in staff compensation to bring PSO terms of service to the level of other commercial organizations; and (iv) increases in repair and maintenance following PSO's efforts to eliminate the backlog of deferred maintenance, including large-scale dredging in the Caspian Sea ports.

Regarding the future, the following assumptions have been made:

(a) Salaries and wages. In 1972/73 the payroll increases as a result of the Consultants' job evaluation exercise (Rls 121 million) and of an allowance for recruitment of replacements for people declared "redundant" (those not meeting the established standards) and additional recruitment (Rls 63 million). In subsequent years, an allowance has been made for biennial awards of 5% (1-2/3% the first year, and 3-1/3% the second year), with an additional award of 5% every 10 years. The payroll will also increase with the recruitment of additional crews for vessels and plant, and increases in staff and labor related to increases in traffic.

(b) Other staff expenses. They include allowances, medical expenses, uniforms and training. Allowances have been made for increases in staff and the level of salaries and wages, and increases in the prices of uniforms, rations, etc. The 1972/73 figure includes Rls 25 million for the training scheme undertaken by consultants ADL.

(c) Pensions. The increase of Rls 67 million in 1972/73 was the result of the implementation of a policy of providing the same pension rights to all employees (staff and labor taken over from Customs had different pension rights). In subsequent years, the forecast amounts are related to the level of salaries and wages.

(d) Contract payments. Substantial provisions have been made in the first three years for recovery of deferred maintenance and dredging in Caspian Sea ports. Thereafter, allowance has been made for increases in prices of 3% a year.

(e) Repair and maintenance. The very high figure for 1972/73 includes recovery of deferred maintenance, and a provision of Rls 100 million for the purchase of a stock of small maintenance items (spare parts, nuts, bolts, etc.) to be maintained by PSO. An allowance has been made for increases in prices of 3% a year.

(f) Fuel. This item includes an allowance for increases in prices of 2% a year.

(g) Utilities. This item increases in 1972/73 following a change to Municipal electricity and water supplies at the ports. A 5% increase in prices has been assumed for 1978/79.

(h) General expenses. This item increases in proportion to the number of staff and volume of traffic, and an allowance

has been made for increases in prices of 3% a year. The high amount for 1972/73 includes Rls 90 million for compensating "redundant" staff and Rls 12 million for additional insurance.

4. Depreciation Rates of Port Installations and Equipment

As shown below PSO considers presently annual rates of depreciation which are much higher than the rates used in the port industry throughout the world:

Item	PSO's Rate	Standard Rates
Wharves	10%	2% to 3.3%
Sheds	10%	3.3% to 5%
Buildings	10%	2% to 5%
Dredgers	10%	3.3% to 5%
Tugs	10%	4% to 6.6%
Plant and Equipment	20%	6.6% to 14.3%
Miscellaneous	25% to 33%	10% to 20%

5. Comments on Fluctuations of the Ratios

The turnover ratios are initially inflated by the low assets values; the downward trend to a more satisfactory rate of 46.0% in 1977/78 followed by a rising trend through to 1980/81 indicates that the project will need to be followed up by a second phase of rehabilitation and expansion of facilities if the situation of accumulating deferred maintenance and run-down assests at the major ports is not to be repeated. The rate of return follows a similar pattern to that of the turnover ratio indicating an over-utilization of assets at major ports prior to the project followed by a trend to satisfactory rates and leading again to inflated rates as forecast expenditure on assets reverts to a more normal level. Interest and debt service coverages are more than adequate owing to the policy of no debts passed on to PSO for initial assets and the lack of need for further borrowing in the forecast period.

IRAN

APPRAISAL OF PORT PROJECT

Ports and Shipping Organization

Proposed Investments 1970/71 to 1980/81
(Rls '000,000)

	Capital Works	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
1.	IBRD Project			231.00	565.50	921.00	783.30	366.20				
2.	Equipment - PSO		252.01	167.20	68.53	69.86	76.96	61.80				
3.	Works in Progress - PSO		254.41	738.70	370.00							
4.	Works in PSO Operations Budget	38.02	52.00									
5.	Estimated Future Expenditures							450.00	920.00	960.00	1,000.00	1,050.00
	Total Capital Works	38.02	558.42	1,136.90	1,004.03	990.86	860.26	878.00	920.00	960.00	1,000.00	1,050.00
	Non-Capital Works											
1.	IBRD Project (Study & Training)			30.00	80.00	70.00	42.00	33.00				
2.	Equipment - PSO (Palletization)						2.00	2.50				
3.	Works in Progress - PSO (Study)		34.20	45.00								
	Total Non-Capital		34.20	75.00	80.00	70.00	44.00	35.50				
	TOTAL INVESTMENT	38.02	592.62	1,211.90	1,084.03	1,060.86	904.26	913.50	865.00	960.00	1,000.00	1,050.00
	Division of Capital Works (Bank Estimate)											
	Renewals Works	38.02	388.51	384.60	266.68	354.93	232.48	385.60	550.00	560.00	400.00	600.00
	New Works	-	169.91	752.30	737.35	635.93	627.78	492.40	370.00	400.00	600.00	450.00

TABLE 4

June 5, 1972

TABLE 2

IRAN

APPRAISAL OF PORT PROJECT

Details of Cost Estimates
('000,000)

	Rls			US$ (Equivalent)			% of Total Expenditure
	Local	Foreign	Total	Local	Foreign	Total	
I. CIVIL WORKS							
(a) Landworks							
1) Earthworks incl. asphalt, drainage and coast protection	253.0	168.9	421.9	3.37	2.25	5.62	13.50
2) Transit sheds	52.6	42.0	94.6	0.70	0.56	1.26	3.03
3) Rail connection	17.0	28.0	45.0	0.23	0.37	0.60	1.44
4) Services: electricity, water sewage, tel. etc.	13.7	12.4	26.1	0.18	0.17	0.35	0.84
5) Miscellaneous works	6.4	3.6	10.0	0.09	0.05	0.14	0.34
Subtotal Landworks	342.7	254.9	597.6	4.57	3.40	7.97	19.15
6) Dredging							
Subtotal Dredging	38.5	153.9	192.4	0.51	2.05	2.56	6.15
(b) 4 Berths Construction							
7) Construction works	238.6	302.5	541.1	3.18	4.03	7.21	17.30
8) Rails on berths	6.5	16.0	22.5	0.09	0.21	0.30	0.72
Subtotal Berths	245.1	318.5	563.6	3.27	4.24	7.51	18.02
Total I - Civil Works	626.3	727.3	1,353.6	8.35	9.69	18.04	43.32
II. FLOATING CRAFT							
9) One suction hopper dredger - 1,500 m^3 capacity	-	230.0	230.0	-	3.07	3.07	7.37
10) One pilot vessel	-	100.0	100.0	-	1.33	1.33	3.20
11) One Buoy placing vessel	-	150.0	150.0	-	2.00	2.00	4.80
12) Three tugs 1,200 hp	-	150.0	150.0	-	2.00	2.00	4.80
13) One tug 2,000 hp	-	90.0	90.0	-	1.20	1.20	2.88
14) Two tugs 500 hp (Caspian ports)	-	45.0	45.0	-	0.60	0.60	1.44
15) One fast pilot launch	-	7.5	7.5	-	0.10	0.10	0.21
16) Two pilot/hydrographic launches (Caspian ports)	-	15.0	15.0	-	0.20	0.20	0.48
17) Two hopper barges	1.1	7.5	8.6	0.01	0.10	0.11	0.27
Total II - Floating Craft	1.1	795.0	796.1	0.01	10.60	10.61	25.45
III. CARGO HANDLING EQUIPMENT							
(a) Heavy Lift Equipment							
18) 150 ton derrick	2.3	15.0	17.3	0.03	0.20	0.23	0.55
19) 90 ton mobile crane	5.6	37.5	43.1	0.08	0.50	0.58	1.40
Subtotal Heavy Lift Equipment	7.9	52.5	60.4	0.11	0.70	0.81	1.95
(b) Light Cargo Handling Equipment							
20) Forklifts and cranes	9.0	60.0	69.0	0.12	0.80	0.92	2.22
Total III - Cargo Handling Equipment	16.9	112.5	129.4	0.23	1.50	1.73	4.17
IV. TECHNICAL ASSISTANCE							
21) Experts	30.0	60.0	90.0	0.40	0.80	1.20	2.88
22) Training	30.0	45.0	75.0	0.40	0.60	1.00	2.39
Total IV - Technical Assistance	60.0	105.0	165.0	0.80	1.40	1.20	5.27
V. CONSULTING SERVICES							
(a) Engineering							
23) Supervision of construction (6% of items 1-8)	40.1	40.1	80.2	0.53	0.54	1.07	2.58
24) Siltation studies	3.7	3.8	7.5	0.05	0.05	0.10	0.24
25) Procurement of floating craft	3.0	12.0	15.0	0.04	0.16	0.20	0.48
Subtotal Engineering	46.8	55.9	102.7	0.62	0.75	1.37	3.30
(b) Master Plan							
26) Iran Ports Study	30.0	60.0	90.0	0.40	0.80	1.20	2.88
Total V - Consulting Services	76.8	115.9	192.7	1.02	1.55	2.57	6.18
Subtotal	781.1	1,855.7	2,636.8	10.41	24.64	35.15	84.39
VI. CONTINGENCIES							
Physical (10% on 1)	62.6	72.7	135.4	0.82	0.98	1.80	4.34
Price (15% on 1 to 20)	96.5	245.3	341.8	1.29	3.23	4.53	10.95
Price (10% on 23)	4.0	4.1	8.1	0.06	0.05	0.11	0.32
Total VI - Contingencies	163.1	322.1	385.3	2.17	4.26	6.44	100.00
TOTAL PROJECT COST	944.2	2,177.8	3,122.0	12.59	29.00	41.59	
Should the foreign currency cost of Items 21 and 22 be financed directly by PSO, the Bank loan would be					27.60		

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Planning of Expenditure
(US$'000 Equivalent)

	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	Total 1971/77
Hydrographic Studies	-	100	-	-	-	-	100
Detailed Engineering and Supervision	-	120	267	293	320	176	1,176
Earth Works	267	1,600	2,400	2,666	2,267	760	9,960
Dredging	-	533	1,067	1,200	406	-	3,206
Berths Construction	-	1,467	2,267	3,200	1,866	593	9,393
Floating Craft Design	-	200	-	-	-	-	200
Floating Craft Procurement	133	133	2,133	4,266	4,200	1,340	12,205
Cargo Handling Equipment Procurement	-	-	666	666	651	-	1,983
Master Plan Studies - Port Development	-	400	533	267	-	-	1,200
Training Schemes	-	267	533	533	573	294	2,200
TOTAL	400	4,820	9,866	13,091	10,283	3,163	41,623

June 5, 1972

TABLE 3

TABLE 4

IRAN

APPRAISAL OF PORT PROJECT

Estimated Schedule of Disbursements

IBRD Fiscal Year Quarter	Cumulative Disbursement at End of Quarter (US$'000)
FY 73	
December 31, 1972	900
March 31, 1973	2,000
June 30, 1973	3,030
FY 74	
September 30, 1973	3,910
December 31, 1973	4,860
March 31, 1974	7,580
June 30, 1974	9,730
FY 75	
September 30, 1974	11,950
December 31, 1974	14,350
March 31, 1975	17,070
June 30, 1975	19,130
FY 76	
September 30, 1975	20,900
December 31, 1975	21,670
March 31, 1976	22,970
June 30, 1976	24,000
FY 77	
September 30, 1976	25,500
December 31, 1976	26,770
March 31, 1977	27,100
June 30, 1977	29,000

1/ Contracts for civil works are expected to be awarded by the end of 1972 and berth construction to start by the second quarter of 1973. Works are expected to be completed by the end of 1976/beginning of 1977 and and disbursement of retention money, etc. will be during the first and second quarter of 1977. Down payment of floating craft to be procured is expected to be early 1974. Disbursement for floating craft procurement will extend over 1975-76. Procurement and payment of cargo-handling equipment will be over 1974-76. The Iran Plan Study will be completed by the middle of 1973 and disbursement will extend over the second half of the year.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Volume of External Trade by Sea and Land
(Petroleum Products Excluded)
1961/62 - 1970/71
('000 tons)

	1961/62	%	1962/63	%	1963/64	%	1964/65	%	1965/66	%	1966/67	%	1967/68	%	1968/69	%	1969/70	%	1970/71	%
Exports	550		590		600		760		910		810		770		1,000		890		1,740	
Imports	1,620		1,420		1,360		2,310		2,280		2,430		2,790		3,640		2,860		3,080	
Total Trade	2,170		2,010		1,960		3,070	100	3,190	100	3,240	100	3,560	100	4,640	100	3,750		4,820	
By Sea:																				
Southern Ports 2/	1,650		1,640		1,580		2,550		2,430		2,280		2,350		3,120		2,660		2,870	
Northern Ports 3/	120		170		150		160		240		320		410		430		410		440	
Total Ports	1,770	82	1,810	90	1,730	88	2,710	89	2,670	84	2,600	80	2,760	78	3,550	74	3,070	82	3,310	68
By Land 1/	400	18	200	10	230	12	360	11	520	16	640	20	800	22	1,190	26	680	18	1,510	32

1/ Arrived at by deducting port traffic from total foreign trade volumes.
Figures thus include traffic by road and rail as well as some air traffic.
2/ Persian Gulf.
3/ Caspian Sea.

Source: Government of Iran, Ministry of Economy, Foreign Trade Statistics.

June 5, 1972

TABLE 5

IRAN

APPRAISAL OF PORT PROJECT

Total Throughput of the Iranian Ports, 1961/62-1970/71

('000 tons)

	CASPIAN SEA PORTS			PERSIAN GULF PORTS					
Year	Bandar Pahlavi	Nowshahr	Total	Khorramshahr	Bandar Shahp	Bushehr	Bandar Abbas	Total	GRAND TOTAL
1961/62	100	20	120	990	540	50	70	1,650	1,770
1962/63	140	30	170	1,080	430	60	70	1,640	1,810
1963/64	140	10	150	1,000	390	80	110	1,580	1,730
1964/65	140	20	160	1,390	930	90	140	2,550	2,710
1965/66	210	30	240	1,470	730	80	150	2,430	2,670
1966/67	260	60	320	1,560	490	70	160	2,280	2,600
1967/68	300	110	410	1,410	730	60	150	2,350	2,760
1968/69	310	120	430	1,770	960	50	240	3,020	3,450
1969/70	320	90	410	1,560	800	50	250	2,660	3,070
1970/71	340	100	440	1,700	740	70	360	2,870	3,310

TABLE 6

Source: Ports and Shipping Organization

June 5, 1972

TABLE 7

IRAN

APPRAISAL OF PORT PROJECT

Forecast of Foreign Trade Volumes

(excluding exports of petrochemicals and ores, and grain imports)
('000 tons)

		Exports	Imports	Total
Average	1968-1971	830	2,969	3,799
	1972/73	1,180	3,390	4,570
	1973/74	1,280	3,730	5,010
	1974/75	1,390	4,140	5,530
	1975/76	1,720	3,400	5,120
	1976/77	1,860	3,900	5,760
	1977/78	2,010	4,450	6,460
	1978/79	2,170	5,050	7,220
	1979/80	2,350	4,210	6,560
	1980/81	2,775	5,185	7,960

Source: Government of Iran, Ministry of Economy, Foreign Trade Statistics; Bank's estimates.

June 5, 1972

TABLE 8

IRAN

APPRAISAL OF PORT PROJECT

The Regional Pattern of Iran's Foreign Trade

	Percentage of Total Trade		
	average 1961-63	average 1969-71	Government forecast 1980/81
Asia and Middle East			
imports	15	30	40
exports	29	41	59
Australia			
imports	2	1	2
exports	1	1	-
Africa			
imports	2	1	3
exports	5	6	10
Western Europe			
imports	51	38	20
exports	37	20	9
Russia and Eastern Europe			
imports	13	20	27
exports	24	27	15
Canada, North and South America			
imports	17	10	8
exports	4	5	7

Source: Government of Iran, Ministry of Economy, Foreign Trade Statistics; Port and Shipping Organization

June 5, 1972

TABLE 9

IRAN

APPRAISAL OF PORT PROJECT

Forecast of General Cargo Traffic at Khorramshahr/Bandar Shahpur

('000 tons)

1972/73 to 1980/81

Year	Forecast Total Traffic in Persian Gulf Ports	Khorramshahr/Bandar Shahpur		
		Forecast Traffic	Available Capacity Without Project	Available Capacity With Project
1972/73	3.070	2.760	2.420	2.420
1973/74	3.350	3.020	2.260	2.260
1974/75	3.670	3.300	2.260	2.380
1975/76	3.430	3.090	2.260	2.490
1976/77	3.870	3.480	2.600	3.190
1977/78	4.330	3.900	2.600	3.790
1978/79	4.860	4.370	2.600	3.790
1979/80	4.470	4.020	2.340	3.560
1980/81	5.440	4.900	2.340	3.500

Source: Ports and Shipping Organization and Bank estimates.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

General Cargo Berth Capacity at Khorramshahr/Bandar Shahpur
('000 tons)

	1972/73		1973/74		1974/75		1975/76		1976/77		1977/78		1978/79		1979/80		1980/81	
	b[1]	tons	b	tons	b	tons	b	tons	b	tons	b	tons	b	tons	b	tons	b	tons
Khorramshahr																		
without project	8[2]	1,400	8	1,400	8	1,400	8	1,400	9[7]	1,580	9	1,580	9	1,580	8[10]	1,400	8	1,400
with project	8	1,400	8	1,400	8	1,470[6]	8	1,540	9	1,810	9	1,810	9	1,810	8	1,610	8	1,610
Bandar Shahpour																		
without project	4.5[3]	720	3.5[3]	560	3.5	560	3.5	560	4.5[7]	720	4.5	720	4.5	720	4[10]	640	4	640
with project	4.5	720	3.5	560	3.5	590[6]	3.5	620	5.5[8]	1,030	8.5[9]	1,630	8.5	1,630	8	1,540	8	1,540
Lighterage[4]																		
without project		300		300		300		300		300		300		300		300		300
with project		300		300		320[6]		330		350		350		350		350		350
Total Capacity																		
without project	12.5	2,400	11.5	2,260	11.5	2,260	11.5	2,260	13.5	2,600	13.5	2,600	13.5	2,600	12	2,340	12	2,340
with project	12.5	2,420	11.5	2,260	11.5	2,380	11.5	2,490	14.5	3,190	17.5	3,790	17.5	3,790	16	3,500	16	3,500

TABLE 10

/1 b = number of general cargo berths available.
/2 One out of the existing nine berths under repair.
/3 One out of the existing six existing berths occupied by the Navy, and one berth occupied half of the time to handle military and grain traffic.
/4 Practically all lighterage takes place in Khorramshahr.
/5 One berth under repair.
/6 Increase in productivity due to better equipment, training, and technical assistance.
/7 Berth repairs completed.
/8 First new berth in service.
/9 All four new berths in service.
/10 Berth repair works start again.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Ports and Shipping Organization (All Ports)

Estimated Income and Expenditure Accounts 1970/71 to 1980/81
(Rls '000,000)

	Actual	Revised Estimate	Original Estimate	Forecast						
	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Operating Revenue											
Marine and Terminal	341.17	344.00	394.00	446.00	781.25	806.47	889.37	925.07	1,001.79	1,071.65	1,188.95
Tanker Contribution	-	790.00	1,350.00	1,451.25	-	-	-	-	-	-	-
Small Vessels Income	3.53	5.00	23.00	24.15	25.00	26.25	27.60	29.00	30.45	32.00	33.60
Cargo Handling & Storage	954.19	1,054.92	1,099.00	1,205.00	1,979.77	1,807.56	2,021.11	2,243.40	2,558.21	2,506.61	2,999.82
Sundries	5.60	4.00	6.00	6.45	6.50	7.45	8.01	8.61	9.25	9.94	10.69
Total	1,304.49	2,197.92	2,872.00	3,132.85	2,792.52	2,647.73	2,946.09	3,206.08	3,599.70	3,620.20	4,233.06
Operating Expenditures											
Salaries and Wages	424.48	666.70	843.02	860.20	924.25	955.50	1,023.00	1,040.05	1,104.22	1,122.62	1,220.75
Other Staff Expenses	17.23	27.09	85.68	63.00	67.75	70.25	76.25	77.77	82.82	84.55	89.45
Pensions	35.00	60.00	127.00	129.60	137.25	141.25	149.50	151.98	158.25	160.78	170.82
Contract Payments	35.38	46.85	204.00	159.00	140.75	119.25	98.25	101.19	109.75	118.70	128.50
Repair and Maintenance	62.32	124.88	239.11	165.25	159.75	169.25	237.50	244.61	278.55	294.08	340.40
Fuel	20.54	21.39	19.82	27.50	36.25	45.00	53.50	54.56	60.74	61.94	71.68
Utilities	12.29	20.30	31.96	34.25	36.50	39.50	43.25	43.25	46.41	47.41	49.45
General Expenses	31.76	58.71	171.41	126.50	108.50	119.25	145.00	149.35	165.82	170.80	197.45
Studies, Training Schemes, etc.	-	-	-	189.20	70.00	44.00	35.50	-	-	-	-
Sub-Total	639.00	1,025.92	1,722.00	1,754.50	1,681.00	1,703.25	1,861.75	1,862.76	2,006.56	2,060.88	2,268.50
Depreciation	-	-	475.51	494.55	540.05	554.60	599.46	660.47	689.36	716.79	758.50
Total	639.00	1,025.92	2,197.51	2,249.05	2,221.05	2,257.85	2,461.21	2,523.23	2,695.92	2,777.67	3,027.00
Net Operating Revenue	665.49	1,172.00	674.49	883.80	571.47	389.88	484.88	682.85	903.78	842.53	1,206.06
Interest on Borrowings	-	-	5.19	33.13	69.46	114.19	149.04	157.85	155.10	154.31	153.23
Net Surplus	665.49	1,172.00	669.30	850.67	502.01	275.69	335.84	525.00	748.68	688.22	1,052.83
Operating Ratio (%)	-	-	76.6	71.1	79.5	83.0	83.5	78.7	74.9	76.7	71.5
Turnover Ratio (Gross Operating Revenue as a % of av. Net Fixed Assets) (%)	25.4	44.7	59.9	61.2	51.5	48.8	47.6	46.3	50.6	49.4	55.2
Return on Average Net Fixed Assets in Use (%)	-	-	14.1	17.3	10.5	7.1	7.9	9.9	12.7	11.5	15.7
Times Interest covered No.	-	-	-	-	-	-	3.3	4.3	5.8	5.4	7.9
Times Debt Service covered No.	-	-	-	-	-	-	-	7.4	7.7	7.4	5.8

Source: PSO Budgets and Bank Estimates.

TABLE 11

IRAN

APPRAISAL OF PORT PROJECT

Ports and Shipping Organization

Estimated Pro forma Balance Sheets 1970/71 to 1980/81
(Rials '000,000)

	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Assets											
Net Fixed Assets	4,960.42	4,868.33	4,723.02	5,517.36	5,323.92	5,565.48	6,813.12	7,022.65	7,193.29	7,476.50	7,868.00
Add: Capital Works in Progress	-	188.91	995.61	710.75	1,355.00	1,419.10	450.00	500.00	600.00	600.00	500.00
Sub-Total	4,960.42	5,057.24	5,718.63	6,228.11	6,678.92	6,984.58	7,263.12	7,522.65	7,793.29	8,076.50	8,368.00
Bank Deposits	-	-	78.88	315.98	561.09	621.45	435.03	156.95	46.22	-	26.44
Net Current Assets	127.47	127.47	206.64	210.48	210.48	210.48	223.44	223.44	240.84	116.79	272.20
Total	5,087.89	5,184.71	6,004.15	6,754.57	7,450.49	7,816.51	7,921.59	7,903.04	8,080.35	8,193.29	8,666.64
Financed from:											
Equity - Government	5,087.89	5,184.71	5,184.71	5,184.71	5,184.71	5,184.71	5,184.71	5,184.71	5,184.71	5,184.71	5,184.71
- Reserves	-	-	669.30	1,001.50	985.04	742.26	559.63	566.16	796.37	966.12	1,500.48
Sub-Total	5,087.89	5,184.71	5,854.01	6,186.21	6,169.75	5,926.97	5,744.34	5,750.87	5,981.08	6,150.83	6,685.19
Loans	-	-	150.14	568.36	1,280.74	1,889.54	2,177.25	2,152.17	2,099.27	2,042.46	1,981.45
Total	5,087.89	5,184.71	6,004.15	6,754.57	7,450.49	7,816.51	7,921.59	7,903.04	8,080.35	8,193.29	8,666.64

TABLE 12

Source: PSO and Bank estimates.

June 5, 1972

IRAN

APPRAISAL OF PORT PROJECT

Ports and Shipping Organization

Statement of Estimated Capital Assets, Capital Works in Progress and Depreciation
(Rls '000,000)

		1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
1. Land		768.00	768.00	768.00	768.00	768.00	768.00	768.00	768.00	768.00	768.00	768.00
2. Quays, Wharves, Buildings etc.												
Net Book Value	b/f	2,830.00	2,547.00	2,264.00	2,118.00	2,969.36	2,656.53	2,790.60	3,800.69	3,826.35	3,895.97	3,999.59
Less Assets Withdrawn		-	-	-	-	-	-	-	-	-	-	-
	Total	2,830.00	2,547.00	2,264.00	2,118.00	2,969.36	2,656.53	2,790.60	3,800.69	3,826.35	3,895.97	3,999.59
Add: Asset Replacements & Rehabilitation		-	-	132.00	395.00	-	-	-	250.00	310.00	350.00	150.00
Additional Assets		-	-	5.00	739.61	-	446.90	1,340.80	160.00	150.00	150.00	550.00
	Total	2,830.00	2,547.00	2,401.00	3,252.61	2,969.36	3,103.43	4,131.40	4,210.69	4,286.35	4,395.97	4,699.59
Less: Annual Depreciation		283.00	283.00	283.00	283.25	312.83	312.83	330.71	384.34	390.38	396.38	402.38
Net Book Value	c/f	2,547.00	2,264.00	2,118.00	2,969.36	2,656.53	2,790.60	3,800.69	3,826.35	3,895.97	3,999.59	4,297.21
3. Vessels, Plan and Equipment etc.												
Net Book Value	b/f	1,786.00	1,645.42	1,836.33	1,837.02	1,780.00	1,899.39	2,006.88	2,244.43	2,428.30	2,529.32	2,708.91
Less: Assets Withdrawn		-	-	-	-	-	-	-	-	-	-	-
	Total	1,786.00	1,645.42	1,836.33	1,837.02	1,780.00	1,899.39	2,006.88	2,244.43	2,428.30	2,529.32	2,708.91
Add: Asset Replacements		38.02	288.51	83.60	61.43	261.68	135.98	454.60	300.00	250.00	250.00	200.00
Additional Assets		-	81.00	109.60	92.85	84.93	213.28	51.70	160.00	150.00	250.00	250.00
	Total	1,824.02	2,014.93	2,029.53	1,991.30	2,126.61	2,248.65	2,513.18	2,704.43	2,828.30	3,029.32	3,158.91
Less: Annual Depreciation		178.60	178.60	192.51	211.30	227.22	241.77	268.75	276.13	298.98	320.41	356.12
Net Book Value	c/f	1,645.42	1,836.33	1,837.02	1,780.00	1,899.39	2,006.88	2,244.43	2,428.30	2,529.32	2,708.91	2,802.79
4. Net Fixed Assets		4,960.42	4,868.33	4,723.02	5,517.36	5,323.92	5,565.48	6,813.12	7,022.65	7,193.29	7,476.50	7,868.00
5. Capital Works in Progress	b/f	-	-	188.91	995.61	710.75	1,355.00	1,419.10	450.00	500.00	600.00	600.00
Add: Annual Expenditure - Program		38.02	558.42	1,136.90	1,004.03	990.86	860.26	428.00	-	-	-	-
- Other		-	-	-	-	-	-	450.00	920.00	960.00	1,000.00	1,050.00
	Total	38.02	558.42	1,325.81	1,999.64	1,701.61	2,215.26	2,297.10	1,370.00	1,460.00	1,600.00	1,650.00
Less: Completed Works: Renewals		38.02	288.51	215.60	456.43	261.68	135.98	454.60	550.00	560.00	600.00	350.00
Additions		-	81.00	114.60	832.46	84.93	660.18	1,392.50	320.00	300.00	400.00	800.00
	Total	38.02	369.51	330.20	1,288.89	346.61	796.16	1,847.10	870.00	860.00	1,000.00	1,150.00
Balance in Progress	c/f	-	188.91	995.61	710.75	1,355.00	1,419.10	450.00	500.00	600.00	600.00	500.00

Source: PSO and Bank estimates.

June 5, 1972

TABLE 13

IRAN

APPRAISAL OF PORT PROJECT

Ports and Shipping Organization

Cash Flow Statement and Forecast - 1970/71-1980/81
(Rls '000,000)

Year Ending March 20	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Source of Funds											
Net Operating Revenue	665.49	1,172.00	674.49	883.80	571.47	389.88	484.88	682.85	903.78	842.53	1,206.06
Depreciation Provision	- 1/	461.60	475.51	494.55	540.05	554.60	599.46	660.47	689.36	716.79	758.50
Funds Generated from Operations	665.49	1,633.60	1,150.00	1,378.35	1,111.52	944.48	1,084.34	1,343.32	1,593.14	1,559.32	1,964.56
Borrowings:											
Proposed IBRD Loan	-	-	150.14	418.22	712.38	608.80	287.71	-	-	-	-
Further Loans	-	-	-	-	-	-	-	-	-	-	-
Short-term Borrowing	-	-	-	-	-	-	-	-	-	125.00	-
Additions to Govt. Equity	-	96.82	-	-	-	-	-	-	-	-	-
Total Available	665.49	1,730.42	1,300.14	1,796.57	1,823.90	1,553.28	1,372.05	1,343.32	1,593.14	1,684.32	1,964.56
Application of Funds											
Capital Expenditure											
Proposed Project	-	-	231.00	565.50	921.00	783.30	366.20	-	-	-	-
Other	38.02	558.42	905.90	438.53	69.86	76.96	511.80	920.00	960.00	1,000.00	1,050.00
Sub-Total	38.02	558.42	1,136.90	1,004.03	990.86	860.26	878.00	920.00	960.00	1,000.00	1,050.00
Short-term Loans - Interest	-	-	-	-	-	-	-	-	-	3.12	6.24
- Principal	-	-	-	-	-	-	-	-	-	-	125.00
Debt Service - Interest	-	-	5.19	33.13	69.46	114.19	149.04	157.85	155.10	151.19	146.99
- Amortization	-	-	-	-	-	-	--	25.08	52.90	56.81	61.01
Sub-Total	-	-	5.19	33.13	69.46	114.19	149.04	182.93	208.00	208.00	208.00
Increase in Working Capital	127.47	-	79.17	3.84	-	-	12.96	-	17.40	.95	30.41
Dividends paid to Government	-	-	-	518.47	518.47	518.47	518.47	518.47	518.47	518.47	518.47
Surplus Transferred to Government	500.00	1,172.00	-	-	-	-	-	-	-	-	-
Total Applied	665.49	1,730.42	1,221.26	1,559.47	1,578.79	1,492.92	1,558.47	1,621.40	1,703.87	1,730.54	1,938.12
Cash Surplus (Deficit) in Year	-	-	78.88	237.10	245.11	60.36	(186.42)	(278.08)	(110.73)	(46.22)	26.44
Cumulative Cash Surplus	-	-	78.88	315.98	561.09	621.45	435.03	156.95	46.22	-	26.44

TABLE 14

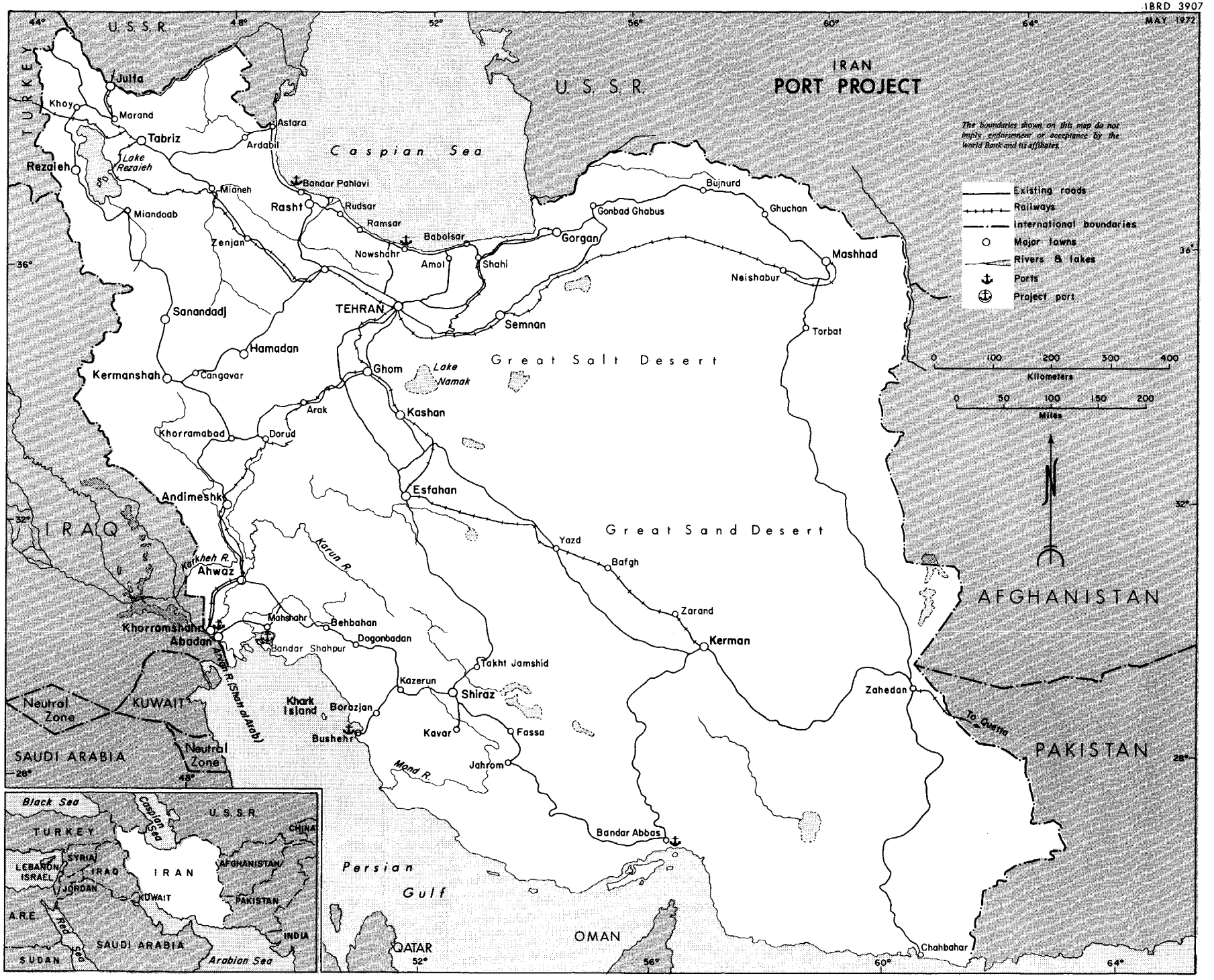
1/ Included to maintain Net Fixed Assets and Govt. Equity values.

Source: PSO Budgets and Bank Estimates.

June 5, 1972

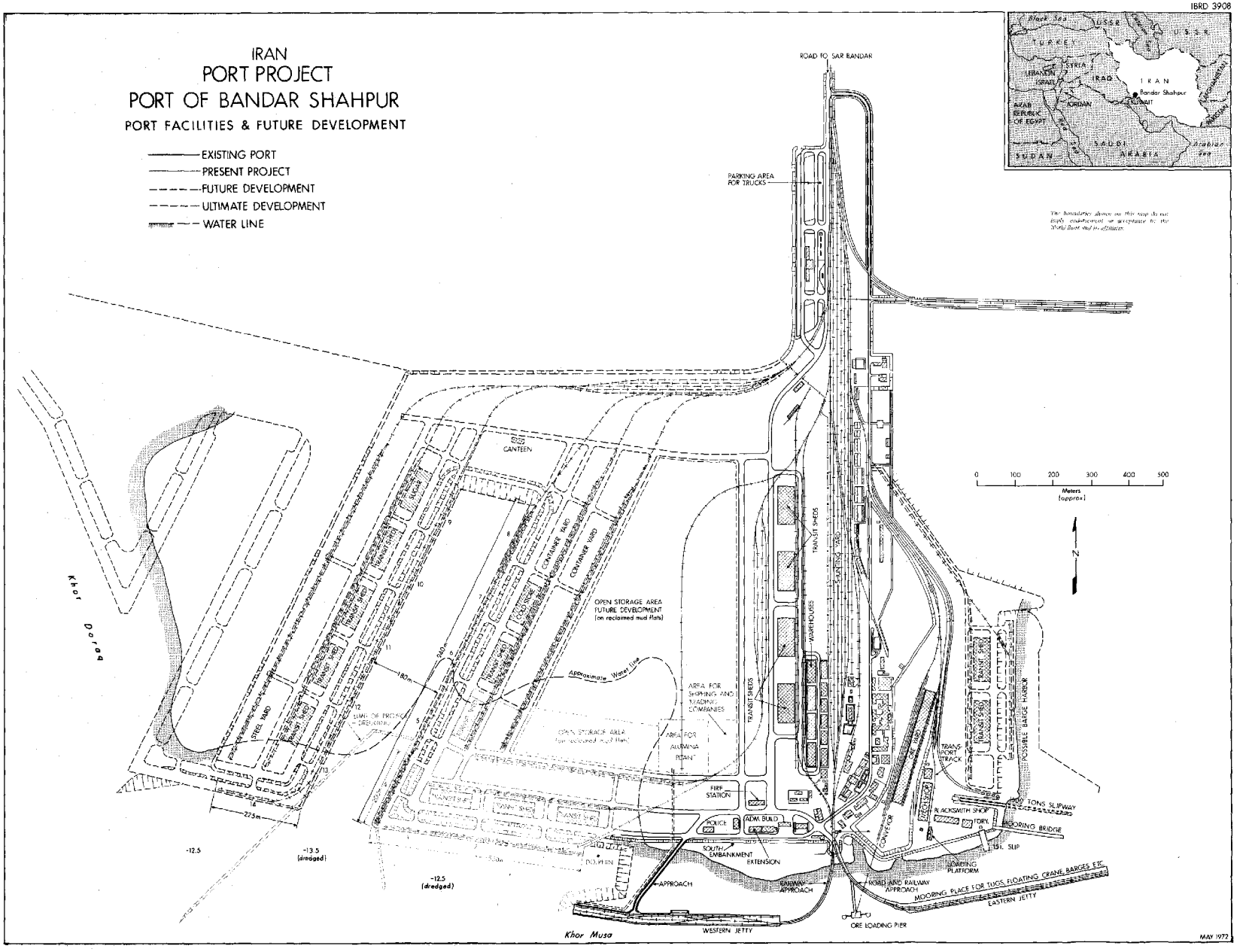
IBRD 3907

MAY 1972



IBRD 3908

IRAN
PORT PROJECT
PORT OF BANDAR SHAHPUR
PORT FACILITIES & FUTURE DEVELOPMENT



MAY 1972