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STAFF APPRAISAL REPORT

EL DIKHEILA PORT PROJECT

ARAB REPUBLIC OF EGYPT

May 14, 1982

Regional Projects Department
Europe, Middle East and North Africa Region

FISCAL YEAR

July 1 - June 30

CURRENCY EQUIVALENTS

Currency Unit	=	Egyptian Pound (£E)

Central Bank Rate

US$1.0	=	£E 0.7	) for Official Central Bank transactions
US$1.428	=	£E 1.0	)

Commercial Bank Rate

US$1.0	=	£E 0.84	) for economic analysis (non-tradeable items)
US$1.19	=	£E 1.0	)

WEIGHTS AND MEASURES

Metric System	US Equivalent
1 meter (m)	= 3.28 feet (ft)
1 kilometer (km)	= 0.62 miles (mi)
1 metric ton (m ton)	= 2204 pounds (lb)
1 hectare (ha)	= 2.47 acres
1 cubic meter (m3)	= 35.27 cubic feet

ABBREVIATIONS AND ACRONYMS

APA	Alexandria Port Authority
BCEOM	Bureau Central d'Etudes pour les Equipements d'Outre-Mer (France)
CIF	Cost Insurance and Freight
dwt	Deadweight tonnage
ER	Egyptian Railways
grt	Gross registered tons
GWE	General Warehouses of Egypt
IMC	Industrial and Mining Complexes
JICA	Japanese International Cooperation Agency
NK	Nippon/Kokan
NTS	National Transport Study
PAM	Port Autonome de Marseilles (France)
PMM	Peat Marwick & Mitchell (UK)
TPA	Transport Planning Authority, Ministry of Transport Communications and Shipping
UASC	United Arab Stevedoring Company
USAID	United States Agency for International Development
WYP	White Young and Partners (UK)

The words Dikheila and El Dikheila are used synonymously in this report

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EL DIKHEILA PORT PROJECT

ARAB REPUBLIC OF EGYPT

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This report has been prepared by Messrs. D. Grant Duff (Port Engineer), P.O. Cheryan (Financial Analyst), N.C. Yucel (Senior Economist), M. Collins (Consultant Engineer) and I. Smith (Consultant Economist), following an appraisal mission in Egypt from April 29 - May 21, 1981 and an updating mission from November 13 - December 10, 1981.

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I. THE TRANSPORT SECTOR

A. The Transport System

1.01 Egypt has a land mass of about 1 million sq. km (equal to that of France and Spain combined). However, most of its 43 million population and nearly all economic activity are concentrated in 4% of this area, the remainder being desert and wasteland. The main economically active parts of the country are the 900 km long valley of the Nile, especially its Delta, the area adjacent to the Suez Canal, and small areas in both the eastern and western deserts. Nearly half of the population lives in urban centers, of which Cairo with 8 million inhabitants and Alexandria at the western corner of the Delta with 2.6 million, are the largest.

1.02 The most important transport corridors in Egypt are between Cairo and Alexandria, and along the Nile. Other corridors lead to the Suez Canal from the Nile Valley. Outside of urban areas, transport demand is greatest in the densely populated Delta area, where urban development is giving rise to increasing intercity transport (Map 16270).

1.03 Egypt's diverse transport network of which road transport is the dominant mode, was in a dilapidated state after the war years ending in 1973 both with regard to its physical assets and the organizations that administered the sector and operated within it. The main physical deficiencies have been: (i) in the railways, shortages of locomotives and rolling stock; (ii) at Alexandria, which is the major port, congestion because of inadequate facilities; (iii) the poorly maintained road network; and (iv) waterways which are also in poor condition and operate with an inadequate fleet. Since 1975 the Government has been correcting some of these deficiencies with increased allocations for infrastructure in both railways and ports (in which the Bank Group played a part with two railway projects and a port project). The Egyptian Railways (ER) have not recovered significantly as yet. However, with a reform law in 1980, ER became semi-autonomous (para. 1.19), and this provides a basis for reconstituting the railways as a viable enterprise. Alexandria Port has increased its cargo throughput, primarily by utilizing costly methods such as lighterage and a three-shift work schedule, but serious congestion remains with long ship waiting times. The Government has embarked on a long-term port development program based on the recently completed National Transport Study to alleviate capacity shortages at all ports.

1.04 Transport growth rates since 1975 (following table) have been about 12% per annum. This trend is expected to continue in view of the anticipated rapid economic growth and increase in population. Road transport has been able to take up the growth in internal demand that other modes have been unable to meet, but with increasing traffic, many roads will soon reach capacity, all roads are in great need of maintenance, and many need rehabilitation. In the near future, all transport facilities are likely to come under severe strain.

Annual Transport Growth Rates in Egypt

	1969-1974	1975-1979
1. Railways		
- Intercity passenger trips	7.3%	1.4%
- Freight movements	1.4%	1.1%
2. Roads		
- Number of passenger cars	7.7%	13.8%
- Number of buses	8.4%	9.7%
- Number of trucks	8.6%	19.9%
- Consumption of gasoline	n.a.	13.5%
- Consumption of diesel 1/	n.a.	10.5%
- Road traffic	8.0% (Est.)	12.0% (Est.)
3. Alexandria Port		
- General Cargo	-1.4%	14.1%
- Dry bulk	10.7%	-2.0%
- Liquid Bulk	21.0%	3.2%
- Total throughput	10.2%	4.1%

1/ Includes uses other than on roads.

Source: National Transport Study (NTS) 1980 and Transport Planning Authority (TPA).

B. Transport Policy, Planning, Organization and Coordination

Transport Organization and Coordination

1.05 At the national level four principal Ministries and the Governorates are responsible for the transport sector: (i) the Ministry of Transport and Communications responsible for main and secondary roads, inland waterways and the railways; (ii) the Ministry of Maritime Transport for ports and shipping; (iii) the Ministry of Petroleum for pipelines; and (iv) the Ministry of Civil Aviation. Two other ministries also participate: the Ministry of Development, Housing and Land Reclamation in charge of infrastructure investments in the Suez Canal Zone, the Sinai and the western desert and for specific urban development projects; and the Ministry of Industry in charge of industrial and mining projects, including the related transport facilities. Roads, railways, and ports built by the latter two ministries are normally handed over to the in-line ministries for operation and maintenance. Transport coordination between ministries is through the Cabinet. Since 1979, the Governorates have had ministerial status through the participation of Governors in the Cabinet, with the Secretariat for Local Government representing Governorate interests and acting directly through the Prime Minister's office for operational control.

Transport Planning

1.06 Transport planning had been fragmented and uncoordinated until 1973 when the Government set up the Transport Planning Authority (TPA) within the Ministry of Transport and Communications. In 1976, the TPA initiated a comprehensive National Transport Study (NTS), the first phase of which was completed in 1977, identifying major deficiencies in the transport system which are being addressed under the second phase. The second phase, finalized recently, formulated a five-year transport plan for the period 1983-87. TPA has already initiated discussions within the Government to formalize the plan to be incorporated in the National Development Plan. This process is still underway, however, because of the urgent need to expand port capacities. The port subsector development program has already been reviewed and accepted at the Cabinet level (para. 1.14). The proposed project will help maintain the close relationship that the Bank has established with TPA and other transport related agencies, and will help the Bank to follow closely the formalization process of the transport plan and formulation of an implementation program.

1.07 The proposed transport plan combines several policy recommendations regarding pricing, regulation and administration of land transport services with a list of projects designed to increase the capacities of basic infrastructure to meet the expected growth in traffic. The total freight transport is projected to increase by about 55% by 1987 reaching 24 billion ton-km level. Highways will continue to carry the bulk of this traffic; however, both railways and inland waterways will also move increasing volumes of freight. Passenger traffic is expected to grow even more rapidly, about 75% during the same period reaching 60 billion passenger-km. The plan places emphasis on greater utilization of the existing facilities through rehabilitation, better operational arrangements and strengthening maintenance capabilities of transport agencies. The new projects proposed under the Plan are primarily designed to serve the heavily used corridors such as Alexandria-Cairo and other routes in the Delta area. The combination of policy recommendations designed to bring about a rational utilization of transport facilities and much needed physical improvements is expected to make a significant contribution to the transport requirements of the economy and bring about a well-coordinated transport system.

Transport Policies and Constraints

1.08 The over-riding constraint in the sector is the inadequacy of the various transport agencies, especially in planning and operational activities. All transport agencies are confined by restrictive civil service regulations and suffer from very low salary structures and limited rewarding career development opportunities.

1.09 Choice of transport mode is free in Egypt. However, the railways cannot carry all the traffic that is being offered and public sector bus and trucking companies are not very competitive because of the poor quality of their services, which is mainly due to Government controls. As a result, freight is being diverted to private truckers, and intercity taxi services have been able to cut substantially into the passenger market at the expense of public bus services and railways even though both bus and railways tariffs are held low.

1.10 Transport accounts for about 30% of domestic petroleum consumption, and although Egypt has only limited proven petroleum reserves, domestic prices for fuel are well below economic costs, especially gas-oil. In order to assist Egypt in this area, a pricing study was financed under the Gulf of Suez project (Loan No. 1732-EGT) which has since been completed. The major finding of the study is that the current energy price levels and related energy consumption growth are unsustainable without impairing Egypt's development objectives. Based on the findings of the study, the Bank will undertake wide ranging discussions with the Government on the question of petroleum prices and on the overall issue of efficient energy use. Meanwhile the Government has recently stated its intention to bring domestic energy prices more closely in line with international prices and the price of premium gasoline is expected to rise significantly over the next five years.

1.11 The NTS Phase II Report contains several specific recommendations: (i) on operational improvements in the different transport agencies and companies; (ii) on revisions of the laws and regulations controlling transport; and (iii) on appropriate levels of user charges and tariff structures. Implementation of these recommendations will have to be coordinated carefully with the Government's plan for further reforming the public sector transport agencies and companies and, in the case of transport user charges, with general fuel price adjustments.

C. The Transport Modes

(i) Ports

1.12 The Port of Alexandria is by far Egypt's largest port. The ports at Suez and Port Said, at either end of the Suez Canal, are much smaller. Other ports are Safaga, primarily a phosphate port on the Red Sea coast, and Mersa Matruh, a lighterage port serving regional needs of the Western Mediterranean coast.

1.13 The Port of Alexandria embarked in 1976 on a program of rehabilitation and modest expansion to alleviate congestion and meet short-term needs. Cargo handling and operational equipment was modernized and accumulated maintenance dredging undertaken. Construction of new deep water berths is still underway. Throughput at Alexandria reached 14.7 million tons (excluding petroleum) in 1980 and to well over 18 million tons in 1981. With the expected growth in traffic, these new facilities should be fully utilized as soon as they become available in 1983. Additional port capacity is therefore urgently needed, but Alexandria Port, being closely encircled by the city, cannot be easily further expanded.

1.14 Based on the findings of several country-wide port studies and Phase II of the NTS, the Government has initiated a port development program. The first phase of the proposed Dikheila Port is the priority project within this plan. In addition, the plan provides for construction of a new port at Damietta at the eastern corner of the Delta. The first phase of Damietta is to proceed in two stages. The first stage is scheduled for completion in

1986, the commissioning of the second stage is expected to require an additional two to three years. When completed, Damietta Phase I will provide a capacity for about 6 million tons for grain imports, timber and general cargo including container facilities. There are also plans to allocate some capacity for container transit traffic. The National Port Plan also includes rehabilitation of Port Said, Port of Suez and Safaga. The port plan represents a coordinated approach to the elimination of bottlenecks at all ports and should, therefore, foster the country's efforts for economic development and growth. Details of the port plan are given in Annex 1.

(ii) Highways

1.15 The overall road density of about 700 m per square km in the populated areas of both upper and lower Egypt is generally adequate for the present needs of the country, but the condition of the road network is poor. Also, with increasing population densities and with growing per capita incomes, demands will certainly increase in the foreseeable future. In the Nile Valley and the Delta a network has for the most part evolved from the gradual upgrading of roads which were not originally designed for modern, heavy and high speed motor vehicles. The need to preserve agricultural land prevents acquisition of extensive rights-of-way for roads and thus forces traffic to concentrate on the present network. Most of the paved roads no longer have the bearing capacity to meet present traffic demands, and all of them have suffered from lack of maintenance. As a consequence, many roads need extensive rehabilitation, and widening. In desert areas, roads are generally adequate to meet the demands.

1.16 Out of a total highway network of about 28,500 km, about 52% are paved, of which about 18% are classified as main roads. The network is divided into those administered by the Roads and Bridges Authority (RBA) (about 40% of all the roads), and those administered by the Governorates and other agencies. Most of the RBA roads are paved, while most of the Governorate roads are unpaved. About 80% of all paved roads have a carriageway of 6 m or less.

1.17 The motor vehicle fleet grew at an average rate of about 15% p.a. between 1975 and 1979 (para. 1.04), and though Cairo and Alexandria together hold the greater part of the fleet, the growth rates have generally been higher outside these two metropolitan areas. Overall, there are about 10 motor vehicles (8 passenger cars and taxis) per 1,000 inhabitants. Heavy vehicles (buses and trucks) now constitute about 42% of the traffic on the main roads. Freight transport services are provided by five public sector trucking companies, private sector trucking cooperatives and independent truck owner/operators, generally in competition with each other. Highway freight transport is not regulated and, except for normal registration and licensing, there are no restrictions on entry into the industry, nor on the specifications of vehicles and their operations. The public sector companies have been expanding at much lower rates than private truckers in recent years. Intercity bus services are provided by four regional public sector bus companies. Taxi licenses are issued freely and do not contain limitations as to routes or areas of operation, but bus fares are Government regulated.

(iii) Railways

1.18 The ER operates a standard gauge system of 3900 route-km of which 950 km is double track. The only electrified line is a 25 km suburban link between Cairo and its industrial suburb Helwan. The system's main trunk runs from Alexandria to Cairo and up the Nile to Aswan. In the Delta, this trunk is fed by an extensive network of main and branch lines that link it with all important economic centers.

1.19 For many years, critical shortages of locomotives and rolling stock have affected all operations, especially freight traffic which fell to 2 billion ton-km in 1976. Since then, the Railways have invested heavily in new equipment and traffic has recovered to 2.5 billion ton-km. Since 1973, passenger traffic has grown at an average rate of about 3 percent per annum to a level of 7.3 billion passenger-km in 1979, but most of this growth occurred on the Helwan suburban line. The ER has incurred losses in its operating accounts during the recent years. In 1980, legislation was passed to make ER semi-autonomous, so that it could operate more freely and be independent of civil service regulations and the Government salary structure.

(iv) Inland Waterways

1.20 The primary waterway system consists of Lake Nasser between the Sudanese border and the Aswan High Dam; the Nile River between Aswan and Cairo; and the Beheiri and Nobaria Canals between Cairo and Alexandria; in all some 15,000 km. In addition, there are about 1850 km of secondary waterways in the Nile Delta. Inland waterway services are provided by three public sector companies, private motorboat operators and traditional sailing boat operators. Inland water transport is hampered by the aged condition of the fleet and by navigation conditions that do not permit boats to be loaded to their capacity. Total traffic is estimated at 1.5 billion ton-km for 1979, i.e. about two-thirds of rail freight movements. Petroleum products for upper Egypt are the most important commodity group, followed by minerals and coal. Expenditures for maintenance and improvement in inland waterways are being raised to more reasonable levels, from LE 3.5 million in 1977 to LE 11.0 million in 1979. In 1978, the taxes, fees and duties raised by Government from inland waterway users is estimated at only LE 0.7 million, which is insufficient to cover maintenance of the waterways.

(v) Pipelines

1.21 The pipeline network of Egypt comprises about 1,400 km of pipe carrying crude oil and petroleum products and about 600 km of pipe carrying natural gas. These networks carry all the natural gas and about 50%, or 7 million tons/annum in 1977 of the crude oil and petroleum products. The remaining petroleum products are carried by road and inland water transport. Six oil refineries at various sites in lower Egypt were operating near capacity in 1980 with a throughput of about 13 million tons per annum. New crude oil and petroleum product pipelines are planned to meet the expected increases in demand. For the most part, the existing natural gas pipelines together with those under construction and planned, are expected to meet demand through the 1980's.

(vi) Civil Aviation

1.22 Of the six main airports in Egypt, only Cairo is of international standard; the rest conform to domestic standards. Egypt Air is the only authorized carrier for scheduled air services within Egypt. Tourist traffic which comprises almost all the domestic traffic is concentrated on the Cairo-Luxor-Aswan-Abu Simbel corridor. Domestic traffic has been increasing at 17% per annum since 1972 and reached about 450,000 passenger movements in 1978. Cairo Airport handled 3.5 million international passenger movements in 1978, an increase of 11% per annum since 1976. The volume of air freight is insignificant.

D. Previous Transport Projects

1.23 The Bank Group has made one IDA credit and five Bank loans to assist the rehabilitation of transport facilities in Egypt. Loan 243-EGT of 1959 (for US$56.5 million) repaid in 1974, Loan 1064-EGT of 1974 (for US$50 million) and Loan 1482-EGT of 1977 (for US$100 million) successfully supported the development of the Suez Canal. The canal is an international transport facility and, as such, its development and operations are considered separately from the rest of the Egyptian transport system.

1.24 IDA Credit 284-EGT of 1972 (for US$30 million) and Loan 1098-EGT of 1975 (for US$35 million) provided support for ER's 1971-1977 rehabilitation and modernization program. The first Railway Credit was eventually closed on June 30, 1980. The Second Railway Project which had strong institution-building objectives and financed the National Transport Study, suffered a setback when ER's operating and financial conditions deteriorated. However, with the recent law and the implementation of the reforms recommended by NTS, the performance of the railways is expected to improve, in the future.

1.25 Loan 1239-EGT of 1976 (for US$45.0 million) helped to finance the rehabilitation of Alexandria port. The project included a comprehensive study (para. 2.11) of APA's management organization and finances. Execution of the project has been delayed, partly due to delays in contract award for civil works in what was the Bank's first involvement in Egypt's port sector. Project design included in the appraisal has been modified to cater for increasing container traffic and completion is now scheduled by December 1983.

1.26 Bank lending in the transport sector and, in particular, Bank involvement in the financing of the National Transport Study, has resulted in a useful contribution to establishing Egypt's strategy for port development for many years to come.

II. ALEXANDRIA PORT

A. Port Facilities

Situation and Access

2.01 The port and city of Alexandria lie on the Mediterranean coast near the western extremity of the densely populated Nile Delta. The port is partly sheltered by an offshore reef running roughly parallel to the shoreline, and in the absence of any significant tide or littoral drift, the port of Alexandria and the adjoining site of Dikheila are favourably situated for navigation. The shore area available to the port is, however, severely restricted by the encroaching city of Alexandria and by Lake Maryut (Map 15904).

2.02 Vessels enter the deep water of the port through one of two access channels dredged through the offshore reef. The main channel, known as the Great Pass, running roughly WNW provides a channel about 2 km in length and 183m wide with a dredged depth of 12m below mean sea level. The Boghaz Pass 1600m in length and 100m wide lies roughly NW of the port and is dredged to 8m. Pilotage is compulsory.

2.03 Under the Alexandria Port Project, it was intended to provide a further entrance channel with an almost westerly axis, to be known as the Alternate Pass, which would afford safer conditions for navigation. This work has, however, not been executed under the loan in order to ensure that the channel entrance requirements to an enlarged Alexandria/Dikheila Port complex can be considered comprehensively. This work will form part of a study for the modernization of the greater Alexandria Port Area (para. 3.06).

Accommodation

2.04 The commercial port has developed over many years, with numerous berths and basins of varying lengths and depths constructed along the shoreline, and protected by a substantial outer breakwater running westward from the lighthouse promontory. This constitutes the western harbor, and in addition to commercial berths it accommodates a naval basin, a basin for petroleum traffic and other specialized facilities such as those for grain. In the center of the western port area there is a large naval dockyard which is a considerable obstruction to internal port traffic. Traffic enters and leaves the port area by a series of gates leading directly onto extremely congested city roads. To the east of the lighthouse promontory lies the smaller, shallower port with breakwater protection, used almost exclusively by fishing and pleasure craft.

2.05 There are about 49 deep water berths in varying depths with a total quay length of about 7000m. However these statistics provide a misleading picture of port capacity when judged against the present day criteria of the appropriate berth length and depth for ocean going vessels. For general cargo traffic, for example, there are no more than the equivalent of about 22 berths suitable for present day vessel sizes. Moreover, these berths often have narrow quay aprons and antiquated two-story transit sheds which cannot properly handle palletized goods carried by forklift trucks.

2.06 In recent years APA has commenced a program of port renewal in which it has also attempted to overcome the effects of years of neglected port maintenance and improvement. Assistance in this program was provided under the Bank's Alexandria Port Project, Loan 1239-EGT, which included accumulated maintenance dredging, the removal of sunken vessels and wrecks and the construction of a deep water berth which has now been designated as the container terminal. Cargo handling equipment was provided by USAID, while tugs, floating craft and workshop equipment were furnished with Japanese assistance. Project completion is scheduled by 1983. Project implementation by APA has been generally satisfactory. Alexandria Port Project will thus alleviate immediate needs, and make it possible to consider the development of new port facilities at Dikheila under the proposed project. More radical rehabilitation at Alexandria Port, entailing the withdrawal from service of unsuitable old-fashioned berths, and improved access could in turn be contemplated when new port facilities are provided under the proposed project.

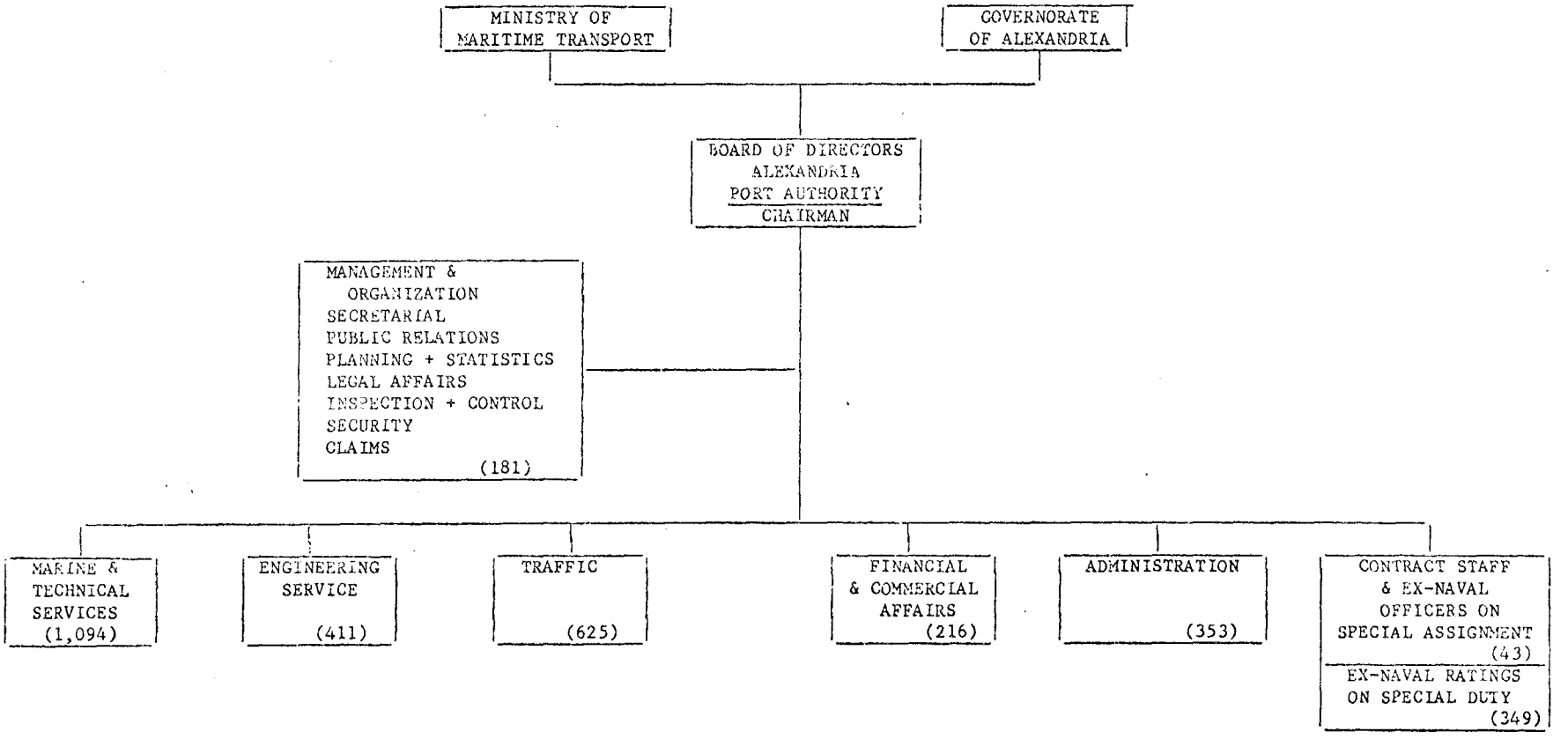
B. Organization, Management and Staffing

Organization and Legal Set-up

2.07 Established under Law No. 6 in 1967, Alexandria Port Authority has the overall responsibility for the management, control, maintenance, expansion and modernization of the Alexandria port. Operational responsibility for various activities at the port, however, is shared by APA with its two subsidiary agencies, viz. the United Arab Stevedoring Company (UASC) and the General Warehouses of Egypt (GWE). APA itself provides pilotage, towage, berthing and other services to ships, while UASC furnishes services for the stevedoring and shore-handling of cargo, and GWE furnishes services for the warehousing and storage of cargo. APA and its subsidiaries come under the supervision of the Ministry of Maritime Transport. In addition, the Governor of Alexandria has recently been given increased jurisdiction to monitor the affairs of Alexandria port, which is expected to facilitate the decision making process.

2.08 APA's organization chart is shown on the next page. The responsibilities of each department are clearly designated and are generally carried out without undue interference from others. The UASC and GWE have boards of directors and chairmen of their own, and their chairman also serves on the Board of APA. The agencies responsible for the various port operations meet weekly with APA to coordinate their respective activities and to discuss operational problems.

ALEXANDRIA PORT AUTHORITY (APA)
ORGANIZATION CHART



Figures in brackets denote numbers of staff in May 1981

APA - Regular Staff	2,952
APA - Contract Staff	392
TOTAL STAFF	3,344

2.09 APA submitted to government in 1978 a draft revision to the existing port legislation designed to increase APA's autonomy, and thus enable it to introduce more efficient operations at the port. This proposed legislation, however, met some political opposition and was not enacted. Recent devolution of authority from the central government to governorates, has made it possible for APA to submit in November 1, 1981 through the Governor of Alexandria proposals for revision of the existing law in order to consolidate and strengthen APA's powers for controlling all activities at the Alexandria Port. Envisaged also is a new decree setting out the working regulations and by-laws of APA. The process for their enactment is lengthy, involving the President and Parliament of the country, and may take about a year before final approval. However, the present arrangements are adequate for the purposes of the project.

2.10 The management of APA and its subsidiaries, though generally satisfactory, is uneven in certain specific respects such as planning and accounting. However, there are a few key individuals who are very active and competent and whose efforts are the main factor in sustaining the durability of these agencies. Also because of the existence of APA, UASC and GWE as separate entities, their operations are not always properly integrated or coordinated and these weaknesses are aggravated by the present congestion at the port, and the inadequacy of present port facilities. There is a need to reinforce APA's administrative authority over all the services that take place within the port confines, despite improvements which have already been effected with assistance from consultants engaged under the ongoing project.

2.11 A consultants' (BCEOM/PMM/PAM group) survey on the management, organization, operations and accounting activities at Alexandria port which was undertaken in 1978 under the Alexandria Port Project (Loan 1239-EGT), made a number of recommendations to remedy weaknesses in APA's operations and that of its subsidiaries. These recommendations included closer integration of the activities of APA and its subsidiaries, greater delegation of operational and administrative control to sectors within the port, and tighter procedures for maintenance and accounting activities. Maintenance procedures have improved since the inception of the present project despite the congestion at the port, and with the execution of the present and proposed project further improvements would be realised (para. 2.21). During negotiations, APA agreed to submit proposals, not later than June 1983, for the long-term plans for staffing, operations and training, designed to further overcome the present managemental weaknesses identified in para. 2.10, and to ensure APA's preparedness for the wider responsibilities which will result from the creation of port facilities at Dikheila and to implement these in accordance with a time schedule satisfactory to the Bank.

2.12 APA's total staff strength in May 1981 was some 3,344 employees of which 2,952 were regular staff and 392 were temporary employees (ex-naval officers and ratings on special assignment as advisors and technical staff). UASC's staff in May 1981 totalled some 8,000 employees of which 5,000 are dockworkers, while GWE's staff in May 1981 totalled some 2,170 of which about half are involved in the warehousing of cargo.

2.13 The present staffing of APA and its subsidiaries shows an increase of about 10% in the numbers employed at the start of the Alexandria Port Project in 1976. As government encourages public organisations to engage students and ex-military personnel, clearly APA and its subsidiaries cannot expect exemption. Nevertheless, recent recruitment of ex-naval officers (para. 2.14) has been fully justified in view of their contribution to the port's development program. There is some attrition of staff by retirement. APA will train their staff for the future operation of container terminals; as a consequence, even though it may remain slightly overstaffed in the aggregate, quality of performance will improve and some redeployment to El Dikheila Port will be possible. However, new specialized staff will still be necessary in some fields (See Part C).

2.14 The requirements under the ongoing project also included the provision that APA should complete, by December 31, 1977, a study of appropriate incentives for the services of qualified staff and the recruitment of such staff. As a result, APA has introduced productivity standards and production bonuses. It has also devised a scheme whereby retired naval officers and ratings, who are competent and qualified, are recruited on a contract basis on special assignments. This has improved day-to-day port operations and discipline. Salary scales in Government and Government-owned entities are relatively low but this is a national problem which can only be tackled on a national basis.

2.15 Dock labor is unionized, but strikes are forbidden by law. Negotiations play a key role in labor management. The ships are normally worked from 8 a.m. till midnight, which is covered by one full shift and two half shifts. APA is currently working on proposals to change the present wage structure based on hours worked to a new structure based on tonnage handled. The new wage structure is expected to be in force by July 1982.

C. Training

2.16 APA carries out an extensive training program in co-operation with several institutions, such as the Arab Maritime Academy at Alexandria, the Economic Centre for Maritime Administration at Alexandria, the Centre for Organization and Management at Alexandria and Cairo, and the Arab Management Society at Alexandria. The training department is run capably by a retired admiral. The training programs for the fiscal year beginning July 1, 1980 summarized below show the wide variety of subjects covered:

(i) At the Arab Maritime Academy - Alexandria

Courses in a wide range of subjects from management to several practical courses for technicians such as electricians and mechanics totalling some 300 trainee man months;

(ii) At the Economic Centre for Maritime Transport - Alexandria

Courses in radar equipment operation and maintenance, and maritime economics and law totalling some 400 trainee man months;

(iii) At the Centre for Organisation and Management - Alexandria and Cairo

Courses in secretarial and personnel work of about 50 trainee man months;

(iv) At the Arab Management Society - Alexandria

Courses in social law, industrial safety and incentives of about 20 trainee man months.

APA's training programme is already extensive, but insufficiently comprehensive with regard to container operations. APA has shown a readiness to expand training programs according to need. APA has agreed to submit detailed proposals for Bank comment on their training program for all staff who are expected to be directly involved in the operation of container facilities. Such a program will be included in the staffing and training plans that APA agreed to submit (para. 2.11). All contracts for the supply of equipment under the project will contain appropriate provision for training in its use. Furthermore, APA has adequate funds to continue its present policy of sending key staff for training at overseas ports as the need may arise.

D. Operations

2.17 Alexandria Port is currently operating in excess of the optimum capacity of its present facilities, and in recent years has been obliged to handle an increasing volume of traffic by lighters. General cargo, bagged and container traffic are handled largely by ships' gear supplemented by an ample fleet of mobile cranes of varying capacity much of which has recently been provided through recent loans by USAID and by Japan. UASC is responsible for unloading cargo from the ship's hold and placing it at the door of the transit sheds or on the quay. GWE is responsible for moving the cargo from the shed door into the transit shed and for its subsequent dispatch to consignees. An increasing proportion of general cargo traffic is now loaded directly on to trucks which bypass the transit sheds and storage areas because of congestion on the quays and limited covered and open storage spaces.

2.18 Container traffic is handled at various berths, but this will shortly be concentrated at the new container and roll-on/roll-off terminal being constructed under Alexandria Port Project and scheduled to come into operation in 1983. It will be equipped with two container handling quay cranes and associated equipment and is designed to handle up to about 100,000 containers per annum. This new terminal will be operated by APA. A container and general cargo freight station is now being built at Nobaria, which lies about 20 km from the port in an industrial warehouse area. This station is being constructed under the Alexandria Port Project and will be operated by GWE.

2.19 Specialized traffic such as grain, coal and petroleum products are handled at separate berths operated by state-owned organizations including the General Company for Silos. In addition, bulk cement is landed at a floating bagging station operated by a licensee. Lighterage operations are undertaken both by UASC, and by private companies, the latter being responsible for most of the recent increase in lighterage.

2.20 Productivity in cargo-handling operations is adequate and has in general reached the target of 11.3 tons per gang hour set under Alexandria Port Project (an increase from about 8.9 tons per gang hour in 1975). The average statistics for 1980 are as follows, in tons per gang hour:

Unloading general cargo	12.9
Loading General Cargo	15.1
Unloading lumber	22.3
Cement	19.1

2.21 A further improvement in the efficiency of port operations is however expected when the container terminal comes into operation and the congestion caused by scattered containers is alleviated. When a study is completed of the modernization of Alexandria Port and its links with Dikheila (para. 3.06), decisions can then be taken as to any further major improvements within the Port of Alexandria which are likely to lead to improved traffic throughput.

E. Port Planning and Development Strategy

2.22 The Government decided that the task of creating new port facilities at Dikheila should be undertaken by an independent agency supported at cabinet level who would be responsible both for the creation of the Dikheila steel mill and all the Dikheila port facilities. The agency selected is the Industrial and Mining Complexes (IMC) of the Ministry of Industry. After completion of the new port, IMC will hand over the facility to APA for its operation (paras. 3.01, 3.02). APA is represented on the Higher-Technical Committee reviewing the development plans for Dikheila but is not directly involved in the day-to-day tasks of the development of Dikheila. This policy has been chosen by Government in an attempt to ensure the earliest execution of port facilities to meet its port development strategy, and there is an adequate measure of cooperation between APA and IMC to ensure effective project implementation. Moreover, APA has the necessary capability to undertake the operation of port facilities at Dikheila, subject to the staffing and training requirements noted in paras. 2.11 and 2.16. As in the case of present operations at Alexandria, APA would continue to engage the services of other appropriate organizations for Dikheila (para 3.07).

F. Budgets, Accounts, Audit, Insurance

Budgets

2.23 APA and its subsidiaries are subject to the standard budgetary controls exercised by the Government. Annual operating budgets and capital budgets are broken down by the following subsidiary budgets: Revenue Budget, Salary Budget, Current Expenses Budget, Capital Projects Budget, and Budget for the Repayment of Loans. The budgetary system itself is well conceived. All transactions are pre-checked with budget provisions before commitments are made; however, the budgetary control reports are not prepared in a timely manner to help management to compare current actual performance with the budget. APA is expected to improve its budgetary controls as a result of improvements in APA's accounts reporting system discussed in paras. 2.25 and 2.26 below.

Accounts

2.24 All organizations in Egypt in the public sector are required to adhere to the national uniform accounting system in the maintenance of their accounts. The accounting concepts, classifications, and definitions follow the generally accepted principles of accounting, and the accounting system itself is conventional and generally adequate. The annual financial reports consist of the Balance Sheet, Current Operations Account, Production and Trading Account, Profit and Loss Account, and a Statement of Sources and Uses of Funds. These reports are produced in Arabic from which the usual Balance Sheet and Income Statement for purposes of the financial evaluation included in this report have been extracted.

2.25 APA's accounting activities have until recently been carried out in a haphazard manner lacking as it did a qualified and experienced accountant to head its accounting organization. Also the quality of performance of most of its accounting staff is in need of improvement. With this in view, APA has since August 1981 appointed a qualified and experienced accountant as its Financial and Commercial Director. The new Director is enthusiastic about introducing improvements all around particularly for putting into effect some of the recommendations made by the BCEOM group of consultants. Since a great deal of his attention will be taken up in improving the accounting organization, activities and performance, it is preferable that the duties associated with the commercial activities such as insurance, contracts, purchasing and stores are separated and allocated to another department. APA's chairman has indicated that such a separation of duties is presently under consideration. The completion of this separation by July 1, 1983, was agreed during negotiations.

2.26 APA's internal accounting reporting requirements which are adequate for APA's management purposes are as follows:

Title	Frequency	Remarks
Trial balance	Monthly	actually prepared several months behind schedule
Departmental operating statements	Monthly	"
Execution and payments covering capital projects	Monthly	"
Report on financial situation	Quarterly	"
Cost accounts	Quarterly	"
Balance sheet & income statement	Annually	produced within six months after year end.

It is expected that with the improvements discussed in the preceding paragraph the internal submission of the above reports will become more timely. As a result of the consultants' recommendations, a costing system had been introduced in APA to determine the cost of operating each type of marine services. The system is well-conceived but in practice its usefulness has been reduced by the tardiness in bookkeeping. During negotiations, agreement was reached that APA will take all the necessary steps by July 1, 1983, for improving the costing system by implementing the appropriate recommendation of the consultants BCEOM group in their report dated July 1980 and for the timely submission of its internal accounting and budgetary control reports.

2.27 The Government has decided to change the accounting year from calendar year to fiscal year (July 1 to June 30) starting July 1, 1980, the last accounting period being for six months starting January 1, 1980 and ending June 30, 1980. This change was a reversion to the fiscal year concept which was in existence till 1974, when a change to the calendar year concept was made.

Audit

2.28 Annual audits are conducted by the Central Accounting Organisation, an agency of the Government, and are considered acceptable. Auditing is continuous and is usually completed soon after the financial statements are presented in final form. Auditing comments and queries are discussed and disposed of during the course of the audit. Under Loan 1239-EGT, Alexandria Port Project, APA is required to submit audited financial statements within six months after the end of each fiscal year. APA complies with this covenant. During negotiations, agreement was reached that APA will continue to observe this requirement under the proposed Dikheila Port Project.

Insurance

2.29 APA maintains adequate insurance for its equipment. During negotiations, confirmation was obtained that adequate insurance coverage will be provided at dates to be agreed, over the enlarged Alexandria/Dikheila Port complex.

III. THE PROJECT

A. Background and Master Plan

3.01 The Government of Egypt instructed IMC, an agency of the Ministry of Industry, to arrange for the development of port facilities at Dikheila to meet forecast commercial and industrial traffic. The port will in particular provide facilities for the importation of iron ore and pellets to be used in the Dikheila integrated steel mill project. IMC retained the consulting consortium of Bureau Central d'Etudes pour les Equipments d'Outre-Mer (France), White Young and Partners (UK) and Port Autonome de Marseille (France) (BCEOM/WYP/PAM), who prepared during 1977 a series of master plan studies to the year 2000 for the Dikheila Port Project. These studies embraced many subsidiary analyses, notably hydraulic and mathematical model tests undertaken by the Laboratoire Central d'Hydraulique de France. Subsoil information already available from actual and prospective development in the vicinity of the Port of Alexandria, was supplemented by additional studies for Dikheila notably seismic surveys by Sesam (France), and soil laboratory analyses by Dr. A.H. Ramli (Egypt) and by Doris (France). These studies are adequate for the purpose of obtaining responsible tenders for the development proposed under the project. Additional soil investigations and studies may, however, be needed in carrying out the study of Alexandria Port modernization and its integration with Dikheila.

3.02 IMC is a large public sector construction/management organization with a staff totalling about 1500 including about 250 engineers specializing in civil, mechanical and electrical and other fields. IMC's work covers industrial development especially in the steel, mining and allied fields and has, for example, included construction management for expansion of the steel plant at Helwan. IMC carries out feasibility studies, prepares detailed engineering and undertakes supervision of construction. Its budget has been adequately secured by revolving funds from the Egyptian Government since the inception of the organization in 1969.

3.03 Draft master plan proposals for Dikheila prepared by the BCEOM group were reviewed within Egypt by the Higher Technical Committee for Ports, on which Alexandria Port Authority was represented, and the plan selected from amongst several alternatives was also submitted for comment to the International Engineering Co. Inc. (USA). Their recommendations were taken into account and a master plan was accepted in principle by the Government as the basis upon which port facilities should be developed at Dikheila for the steel mill, as well as for commercial and industrial traffic. Construction of

the port and some associated shoreworks has already started, notably the main breakwater, the channel dredging and mineral jetty, the commercial berths and improvement of part of the Alexandria-Mersa Matruh road (para. 3.16).

3.04 Facilities at the port which have been designed to cater to industrial traffic consist of a mineral jetty and stockyard. These facilities will initially serve the Dikheila steel mill and the jetty can accept ore carriers of up to about 160,000 dwt. which would require a channel depth of 20m. A substantial part of total iron ore imports are expected to be carried in vessels of this size from sources such as Brazil. Egypt has undertaken to provide facilities for vessels of this size, together with the appropriate infrastructure for the steel mill, as set forth in an Annex to the Basic Agreement signed in September, 1981, between the Egyptian Government and the Japanese Consortium consisting of Nippon Kokan, Kobe Steel Ltd, and Toyo Menka Kaisha, which will assist in the financing of the steel mill project. IMC will be one of the Egyptian shareholders in a Joint Venture Company (JVC) which is scheduled to be established in April 1982 to construct and operate the steel mill. The Japanese Consortium will be a 10% shareholder in this Joint Venture Company providing engineering, management and training.

3.05 The steel mill project is designed to have an initial productive capacity of about 800,000 tons per year of re-bars and rods based on the direct reduction electric arc furnace process utilizing Abu Qir natural gas. In addition to Egyptian Govermental and Japanese concessionary funds, the steel mill project is expected to attract finance from foreign export credit agencies and commercial sources. A joint appraisal by the Bank and the International Finance Corporation was undertaken during February 1982 who reported favorably on the economic viability of the steel project. Site clearance for the mill has already started and construction of the mill is scheduled to commence during 1982 leading to completion by the end of 1985. An integrated construction timetable for both the port project and the steel mill project is given in para. 3.27.

3.06 The commercial port facilities included in the project are derived from the first stage of Phase I of the 1977 Dikheila Port Master Plan, providing for container, general cargo and timber traffic. As the construction of major new port facilities at Dikheila will have an obvious impact on the present port of Alexandria, the Board of APA has agreed on the need for a study to review and update APA's own modernization and development plans in the light of the combined facilities at Alexandria and Dikheila. The objectives of this study (Annex 4) include:

(i) the improvement of the main transport arteries to the Port of Alexandria/Dikheila;

(ii) the integration of port services offered by Alexandria and Dikheila and cargo allocations within both parts of the enlarged port;

(iii) the future development of both ports to 1990 with particular reference to the designation of land for port related use; and

(iv) recommendations for the entrance channel to Alexandria, in the light of the new channel being dredged for Dikheila.

During negotiations, confirmation was obtained from the Government that APA would carry out this study under terms of reference and with the assistance of consultants satisfactory to the Bank, and that APA would exchange views with the Bank on the steps to implement the recommendations. APA agreed that the substantive conclusions of the study would be available for Bank review by December 31, 1983.

3.07 On completion of construction, the port facilities at Dikheila will be handed over to APA and become an integral part of an enlarged Alexandria Port under APA ownership and under APA operational control. APA will continue its present policy of delegating stevedoring and warehousing responsibility at the timber and general cargo quays to its agencies UASC and GWE. APA will however establish a specialized agency under its direct control to ensure the unified operations of all container terminal facilities. In addition, APA will operate the mineral jetty and stockyard in association with the joint venture, El Dikheila Steel Company. APA will forward to the Bank by September 1, 1982, a confirmatory list of the arrangements which APA will make for the operation and maintenance of all of the new port facilities in accordance with the broad policy decisions outlined above. Furthermore, APA agreed during negotiations to review the staffing and training needs of all those to be engaged in the operation of the port facilities at El Dikheila, in the light of APA's policies for operation of the port. APA will then submit its staffing and training proposals together with an execution timetable for Bank's comment (paras 2.11 and 2.16).

B. Project Objectives

3.08 The project would continue the Bank's present involvement in the Port of Alexandria, and enhance our constructive role in the national transport development plan. The main project objectives are summarised as follows:

(a) to provide commercial port facilities at Dikheila for forecast traffic, particularly containerized traffic, which cannot be accommodated within the present limits of the Port of Alexandria.

(b) to provide a jetty at which large ore carriers may serve the steel mill to be built at Dikheila; and

(c) to facilitate the future orderly expansion and development of the Alexandria/Dikheila port complex.

C. Engineering Aspects

3.09 El Dikheila possesses some natural advantages as a port site from the navigational viewpoint. It lies about 10 km west of the Port of Alexandria and is partly protected by a reef of rock outcrops which will form the core of a main breakwater affording shelter from the predominant westerly and north

westerly weather (Maps 15904, 15905). There is a natural bar lying offshore running parallel to the coast and the existing Port of Alexandria lies within this reef.

3.10 The area available for development of the new port is partly occupied by the military authorities, and during negotiations the Government confirmed that (a) land will be ceded as required for port construction and operating the facilities, and (b) no action will be taken in respect of the project area which may jeopardise the implementations of the recommendations of the Alexandria port modernization plan. The shore area for Dikheila Port development is narrow, and is limited by the steel mill on which site clearance has already started. Geological investigations reveal considerable variations in subsoil strata with deposits of peat in the vicinity of the proposed berths and with layers of hard chalk interspersed in the softer clays and silts in the area of the proposed entrance channel. The geological complexity of the project area and the space limitations imposed by the site have influenced the selection of the port layout from a large number of trial schemes. In the selected site, the commercial berths have been located in such a way as to minimize the excavation of hard material. The port entrance channel alignment has been dictated primarily by the need to afford easy access by large ore carriers to the mineral berth.

3.11 Rock suitable for construction of the main breakwater is available about 80 km from the site. Construction of the commercial berths would be of concrete blockwork, which is adequate and has been found to be suitable from past experience at Alexandria. The mineral berth would be of reinforced concrete caissons which are suitable for the site conditions and the required depths.

D. Details of the Project

3.12 The principal components of the project are as follows:

(a) Civil Works and Dredging

(i) A main breakwater of natural rock rubble with concrete block armour, about 2 km in length, providing protection against the predominant westerly and north-westerly weather.

(ii) A mineral jetty about 660 m long, constructed of concrete caissons with concrete block armoured protection on the lee side. This berth would accommodate two ore or other bulk carriers simultaneously in depths of 14 m and 20 m respectively.

(iii) A dredged entrance channel about 4 km long, with a depth of 20 m and width of 250 m and associated reclamation.

(iv) Two concrete blockwork commercial quays, one about 600 m long for container traffic, and the other about 820 m for timber and general cargo, together with the usual transit shed, warehousing and related buildings, utilities and other facilities, and access to the berths. Depths alongside are 12 and 14 m according to location.

(v) A large stockyard for ore and scrap steel for the steel mill with space for other prospective commodities.

(b) Equipment

(vi) Cargo-handling equipment for the container berths including 3 container quay cranes and yard equipment for operation of the port terminal, the freight station and rail transfer area.

(vii) Cargo-handling equipment at the timber and general cargo berths including quay and mobile cranes and forklift trucks.

(viii) Cargo-handling equipment at the mineral berth comprising two rail mounted gantry crane unloaders of about 30-ton capacity with the associated conveyor and handling equipment feeding the stockyard within the port area and the Dikheila steel mill.

(ix) Floating plant including three tugs of about 2500 hp, launches and workboats.

(x) Miscellaneous equipment, firefighting, navigation lights and beacons.

All items of equipment include appropriate spares, control systems, site commissioning and training.

(c) Engineering Services

(xi) Detailed engineering and supervision of execution. (Detailed design has already been completed for the major components (para. 3.18)).

(xii) A study of the continued modernization of Alexandria Port and its integration with Dikheila Port.

E. Cost Estimates

3.13 The total cost of the project, excluding customs and duties, is estimated at about US$473 million equivalent, with a foreign exchange content of US$248 million (about 52%) (Annex 2). A summary is given below. During negotiations, the Government representative confirmed that in presenting the project to the People's Assembly, they would recommend that project items be excluded from customs' duties and taxes.

Summary of Estimated Project Costs

Item	Description	-----LE Million----- Local	Foreign	Total	-----US$ Million----- Local	Foreign	Total	Foreign Exch.%
I.	Civil Works and Dredging							
	Main breakwater	17.8	3.4	21.2	25.3	4.8	30.1	16
	Mineral berth and access channel	19.0	16.0	35.0	27.2	22.8	50.0	46
	Commercial berths	24.7	20.2	44.9	35.2	28.8	64.0	45
	Shoreworks & miscellaneous 3/	31.7	17.3	49.0	45.4	24.9	70.3	35
	Subtotal	93.2	56.9	150.1	133.1	81.3	214.4	38
II.	Equipment							
	At commercial berths	1.5	29.5	31.0	2.2	42.1	44.3	95
	At mineral berths	0.5	10.0	10.5	0.8	14.3	15.1	95
	At stockyard	1.9	16.6	18.5	2.6	23.8	26.4	90
	Floating plant	0.6	11.4	12.0	0.8	16.2	17.0	95
	Subtotal	4.5	67.5	72.0	6.4	96.4	102.8	94
III.	Engineering & Consulting							
	Services	5.4	4.8	10.2	7.8	6.8	14.6	47
	Subtotal	103.1	129.2	232.3	147.3	184.5	331.8	56
IV.	Contingencies							
	Physical /1	15.2	16.0	31.2	21.8	22.8	44.6	51
	Price /1	39.1	28.6	67.7	55.8	40.9	96.7	42
	Subtotal	54.3	44.6	98.9	77.6	63.7	141.3	45
GRAND TOTAL (rounded)		157	174	331	225	248	473	52
	Front-end fee/2 on Bank loan	-	1.4	1.4	-	2.0	2.0	
Total Financing required		157	175.4	332.4	225	250	475	

/1 See para. 3.14
/2 See para. 5.07 C (ii)
/3 Includes miscellaneous small items of equipment.

3.14 Cost estimates reflect December 1981 prices and are based on estimates prepared by the consultants BCEOM/WYP/PAM in their reports dated 1977 and 1979, with revisions to take particular account of: (a) the accepted tender for the main breakwater, and for the entrance channel and mineral berth, (b) some costs for construction and equipment under the current Alexandria Port Project, and (c) costs for equipment obtained by Bank staff. The estimates are therefore realistic and acceptable. Physical contingencies of 15% have been applied uniformly to all civil works which is considered appropriate coverage for the assessed risks which include those for dredging in hard material, together with 10% for equipment. Price contingencies have been determined in the light of recent experience in Egypt and are as follows for the local component of both civil works and equipment: 1982 - 14%, 1983, 1984, 1985, 1986 - 13%, 1987 - 12%. Annual price contingencies have been provided for the foreign component of both civil work and equipment as follows: 1982, 1983 - 8%; 1984 - 7.5%; 1985 - 7%; 1986, 1987 - 6%. Consulting services are estimated at the following totals and average man month costs, including salaries, overheads travel and subsistence:

i) for completion of designs and tender documents: an estimated total of US$500,000 based on the use of specialized expatriate staff mainly for the design of the equipment at the mineral jetty and stockyard, at the container terminal and for floating craft representing 45 man months at an average cost of about US$11,100;

ii) for supervision of construction: an estimated total of US$1,560,000 based on the use of a resident expatriate adviser specialized in maritime construction, with assistance and occasional use of contractual experts representing 150 man months at an average cost of about US$10,400;

iii) for Alexandria Port Modernisation Study: an estimated total of US$821,000 based on the engagement of expatriate port planners, operations specialists, hydraulic engineers and allied staff representing 80 man months at an average cost of about US$10,300.

These costs are reasonable.

F. Financing Plan

3.15 IMC has obtained assurances of Government finance to meet project needs both for local and foreign currency. IMC has already arranged to provide both local and foreign exchange requirements for the main civil works' contracts, and IMC will similarly finance all other civil works. IMC has requested Bank finance for all of the principal items of equipment needed under the project, namely the cargo-handling equipment at the commercial berths, ore-handling equipment at the mineral jetty and the ore stockyard as well as floating plant. Bank finance of US$132.0 million proposed in the table below covers 100% of the foreign exchange content of all this equipment, together with the financing of 100% of the foreign exchange content of the Alexandria Port Modernization Study in which the Bank has had a long-standing

interest and which is important to the successful development of the Alexandria/Dikheila port complex. Bank finance would include appropriate provision for physical and price contingencies. Interest in providing financing assistance for the port project has been tentatively expressed by a number of development agencies including the Nordic Fund, the Irish Government Overseas Development Agency and by a foreign commercial bank. During negotiations, the Government representative accordingly confirmed that the Egyptian Government would use its best efforts to secure co-financing for equipment up to an amount equivalent to US$20.0 million by the time of loan signing in which case an equal amount would be deleted from the Bank loan.

Tentative Financing Plan
US$ million equivalent

Item	Description	Cost Estimate (Incl. physical and price contingencies) Local	Foreign	Total	Tentative Financing Plan Local Egypt	Foreign Egypt	Foreign IBRD
1	Civil Works and Dredging	204	110	314	204	110	
2	Equipment						
	i) Commercial berths	4	56	60	4		56
	ii) Floating	1	22	23	1		22
	iii) Mineral jetty	1	19	20	1		19
	iv) Stock yard	4	32	36	4		32
3	Engineering Services Design and Supervision	11	8	19	11	8	
	Technical Assistance (Alexandria)	0.1	0.9	1	0.1		0.9
	TOTAL (rounded)	225	248	473	225	118	130
	Front end fee on Bank loan	-	2	2	-	-	2
Total financing required		225	250	475	225	118	132

G. Procurement

3.16 Egypt has decided that tenders for the main civil works and dredging will be restricted to three selected Egyptian contractors, each of whom will be free to associate with a foreign contractor. A contract for the construction of the main breakwater was awarded to the Arab Contractors (Egypt) on November 29, 1980. A contract for the mineral berth and the access channel was awarded to the Arab Contractors (Egypt) with Royal Bos Kalis Westminister N.V. (Holland/UK) on July 26, 1981 as sub-contractor. Construction of the commercial berths is also being undertaken by the same group following negotiations with the Arab Contractors which were concluded on December 23, 1981. Rail access will be undertaken by the Egyptian Railways and utilities will be undertaken by state organizations. It is expected that all remaining shoreworks including items such as paving, transit shed, customs, administrative and other buildings and miscellaneous items will be limited to local contractors.

3.17 As the extent of equipment which may be provided through tied bilateral aid or possibly through suppliers' credits is not yet known, procurement procedures for any such items will be provided at a later date. Bank-financed equipment would be procured under international competitive bidding in accordance with the Bank's procurement guidelines.

3.18 Detailed designs and tender documents have been prepared by the consulting group BCEOM/PAM/WYP (France, United Kingdom) for the major components of the civil works, namely the main breakwater, the mineral berth and access channel and the commercial berths. These designs and documents are adequate for the project. Associated utilities, access, buildings and other shore-work and miscellaneous items are in general at a preliminary design stage in accordance with the master plan proposals by the BCEOM/PAM/WYP group. Completion of detailed designs and tender documents for outstanding civil work is scheduled not later than June 1983 and is summarized as follows:

Item	Responsibility (IMC with assistance as indicated below)
Roads and paving	Road and Bridges Authority
Rail access	Egyptian Railways
Additional utilities	State Utility Organizations
Shed and warehouse) Container shed/Freight station) Fencing and miscellaneous items) Lighthouse) Buildings)	(in cooperation with the Department of Lighthouses and other appropriate authorities)
Ore stockyard	BCEOM

During negotiations, a detailed execution timetable was agreed for the completion of all outstanding design work.

3.19 Tender documents have been prepared for most of the items of cargo-handling equipment at the commercial berths. However, IMC will prepare revisions to the tender documents for the equipment at the general cargo and timber berths after consultation with APA as a consequence of IMC's decision to exclude dangerous cargo from the first stage of the project. In addition, IMC will invite alternative proposals for the cargo-handling equipment at the container terminal in order to ensure that different types of equipment and different container stacking configurations are fully examined, not only at the container yard but also at the freight station and at the transfer points to road and rail routes. These alternative proposals will be competitively evaluated with the assistance of consultants. It is not expected that there would be any change in the provision of the three rail-mounted container gantry cranes, and at container berths the use of yard gantry cranes has been assumed (Annex 3).

3.20 A preliminary assessment of the required floating plant has already been determined by IMC in co-operation with consultants, and includes tugs, miscellaneous harbour craft and work boats. Existing floating plant at Alexandria is generally fully committed, and with increasing traffic at Alexandria, there will not be transferable surplus capacity. However, radar surveillance at Alexandria being provided under the present project is designed to serve the greater Alexandria/Dikheila port. Three tugs are required in order to ensure the safe and efficient handling of large ore carriers as well as vessels using the commerical berths. In addition, provision will be made for firefighting equipment, and for dealing with possible limited oil spills during bunkering operations. This assessment of the required floating plant is subject to confirmation by APA, who will thereafter engage consultants to prepare the tender documents by December 1982.

3.21 Tender documents have been prepared by consultants for equipment to handle ore and pellets at the mineral jetty. These documents will be reviewed and modified by the consultants to cater for the present requirements of the steel mill. This review will ensure that provision is made for the importation of scrap steel, and the documents will include conveyor equipment at the ore stockyard and equipment to convey the ore, pellets and other materials from the stockyard to the steel mill.

3.22 IMC's procedure for inviting alternative proposals entailing both the design and supply of some of the equipment is acceptable and will be undertaken in accordance with the Bank's procurement guidelines. Equipment to be financed by the Bank totalling approximately US$129 million equivalent, including contingencies, would be grouped to the extent practicable to increase competition in bidding. The total number of contracts is expected to be 10. The threshold for prior Bank review of procurement documentation would be US$500,000 resulting in the anticipated prior review of all contracts.

3.23 In evaluating international bids for equipment contracts, domestic manufacturers will be allowed a preferential margin of 15% of the CIF landed price of competing imports on the prevailing level of customs duties whichever is the lower.

3.24 During negotiations, it was agreed that before proceeding with the invitation of bids for the supply of equipment required for the mineral jetty and stockyard and before disbursing for this equipment, IMC shall have undertaken a review of the status of the steel project which shall have concluded to the satisfaction of the Bank that there are no substantial legal, financial or technical problems likely to obstruct the timely implementation of the steel project.

H. Disbursements

3.25 Disbursements from the proprosed loan would be made on the following basis, subject to appropriate agreements with Egypt and/or other financing agencies:

Equipment:	100% of foreign expenditures; 100% of local expenditures ex-factory if locally manufactured; and 60% of local expenditures for imported items procured locally
Technical Assistance:	100% of foreign expenditures

The estimated disbursement schedule for Bank-financed items is given below:

Bank Fiscal Year and quarter	--------US$ million equivalent-------- Quarterly Disbursements	Cumulative Disbursements
1982-83		
June 30, 1983	2.3	2.3
1983-84		
September 30, 1983	19.8	22.1
December 31, 1983	15.4	37.5
March 31, 1984	3.5	41.0
June 30, 1984	3.5	44.5
1984-85		
September 30, 1984	15.4	59.9
December 31, 1984	16.5	76.4
March 31, 1985	14.2	90.6
June 30, 1985	17.7	108.3
1985-86		
September 30, 1985	20.0	128.3
December 31, 1985	3.7	132.0

Since the major civil works have already commenced, the anticipated period of expenditure for all project items is approximately 6 years compared to a period of about 7 1/2 years for disbursements under Bank-financed projects in Egypt. Bank disbursements, which are limited to equipment items, are expected to take about 4 years. The loan would be closed on December 31, 1986.

I. Project Execution

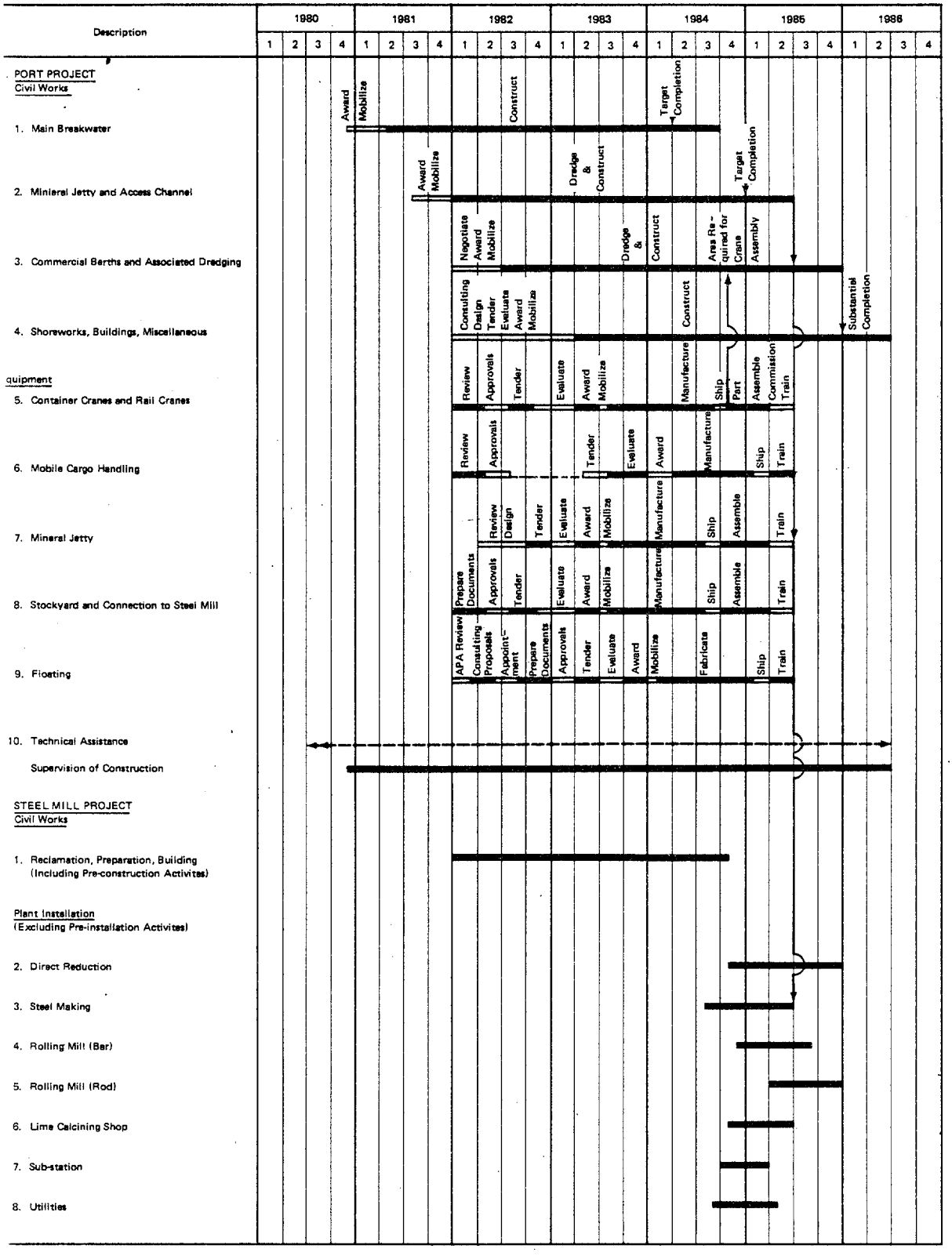
3.26 Project execution commenced in November 1980 with the award of a contract for the main breakwater to the Arab Contractors (para. 3.16). Breakwater construction has already been partially carried out for a distance of about 1.3 km from the shoreline, by the deposition of rock hearting and placement of concrete block armour. Mobilization for the contract for construction of the mineral jetty and the dredging of the access channel, awarded in July 1981 to the Arab Contractors, with Royal Bos Kalis Westminister N.V. undertaking the dredging work, is well advanced and a large cutter suction dredger arrived on site during December 1981. Construction of the commercial berths by the same contracting group already has commenced following negotiations with IMC in December 1981. The Arab Contractors are thus the main contractor for the three main civil works contracts, with consequent advantages in the time needed for mobilization.

3.27 An overall program for the execution of the port project showing the important links with the scheduled timetable for execution of the Dikheila Steel Project is given in the next page. The program for the port project has been prepared in the light of actual achievements for similar work at the Port of Alexandria and is slightly longer than the timetable assumed by IMC. The timetable for the Steel Project is taken from a detailed chart prepared by the Japanese Consortium. The combined program shows that the expected completion of the mineral jetty by mid-1985 would be generally appropriate to the scheduled commencement of operations of the steel mill. However, close co-ordination will be needed in order to ensure the earliest practicable start in the site assembly of the ore-handling equipment on the mineral jetty, and the container-handling cranes at the commercial berths. This program also illustrates the need for Bank participation in the procurement process for equipment starting in 1982, to ensure that equipment is installed in time. During negotiations, agreement was reached with IMC, that in order to ensure the scheduled completion of the project and of the proposed Dikheila steel project, IMC and APA will adhere to the target dates for the award of the following contracts:

(i)	Equipment: Mineral jetty and stockyard	April 1, 1983
	Commercial berths	April 1, 1983
	Floating plant	October 1, 1983
(ii)	Alexandria Port Modernisation Study	May 1, 1983

3.28 IMC will be responsible for project execution, and with assistance from consultants, has adequate capability for this task. The Governement has established a co-ordination committe with representatives from IMC, APA and the responsible Ministries to facilitate project implementation. Moreover, experience is already available in Egypt in the construction of concrete block quay walls, and IMC will be able to recruit or obtain on secondment from APA, experienced engineers to assist them. Construction of the mineral jetty is more specialized and IMC staff are expected to need assistance for this and for some other specialized aspects of project execution. IMC has entered into

ARAB REPUBLIC OF EGYPT
DIKHEILA PORT PROJECT
EXECUTION SCHEDULE
(With Link to Steel Mill Project)



Sources: IMC, Bank Staff.

World Bank-23528

an agreement with the consulting group BCEOM/PAM/WYP for the provision of an adequate level of expert assistance as required throughout the construction period. An adviser from the BCEOM group to the Project has already been appointed on site. During negotiations, confirmation was obtained on the above arrangements and on the adequacy of the number and calibre of IMC engineers, the establishment of an effective team for project execution, and on the format and responsibility for preparation of project progress reports.

J. Operational Targets

3.29 Targets for productivity in port operations at Dikheila have been agreed with APA at negotiations, so that after a reasonable period of time the new facilities will function satisfactorily. These targets, based on those achieved at Alexandria and assuming full port completion in 1986, are as follows:

	1987	1988	1989
(a) Availability of container quay cranes, ore unloaders & rail-mounted quay cranes	85%	90%	95%
(b) Availability of mobile cargo-handling equipment (excluding straddle carriers, side loaders)	75%	80%	95%
(c) Availability of straddle carriers, side loaders	65%	70%	75%
(d) Gang shift productivity in tons per gang hour for general cargo (average of imports and exports)	10	12	12

K. Environmental Aspects

3.30 The effect of the project on the environment may be considered from two points of view namely: (i) the effect of marine works on the present coastal regime and, (ii) the effect of development of shore works on the adjoining resort town of Agami. Any pollution which might occur from vessels using the new port would be effectively controlled by APA, under regulations for imposing penalties on offending vessels which have been drafted for parliamentary approval under the present project.

3.31 Siltation at Dikheila is not expected to be a problem and, as in the case of Alexandria, depths in the channel and at the berths are expected to be controlled by periodic maintenance dredging.

3.32 A shelter of trees will screen the port area from the town of Agami. Road traffic from the port destined for Cairo will be able to reach the desert road by a proposed new road link without seriously affecting either Alexandria or Agami. Assurances on the timely construction of this road link were given during negotiations. Traffic originating or destined for Alexandria will of course add to the present already heavily crowded Alexandria roads. This problem is addressed in the proposed modernization study of the greater Alexandria Port area (para. 3.06).

3.33 Traffic envisaged at the mineral jetty in iron ore, pellets, scrap steel and possibly small volumes of minerals such as fluorspar will have a minimal effect on air quality.

L. Employment Impact

3.34 The project will create local employment opportunities during the construction stage over a period of about 5 1/2 years. On completion of the project a wide range of jobs would be created totalling about 1000 ranging from port labor to skilled and semi-skilled workers in the operation and maintenance of equipment, floating craft and in the management of the port facilities. These jobs would be filled by staff already within APA and its agencies and by recruitment.

IV. ECONOMIC EVALUATION

A. General

4.01 Over the last four years Egypt has experienced continued rapid economic growth. Overall, GDP increased at an average rate of about 10% per annum (in FY81 constant prices) reflecting rapid industrialization, the emergence of the petroleum sector and growth in transportation and trades, both external and internal. The liberalization of the external trade and the payment system coupled with the rapid economic growth has created serious bottlenecks in the country's ports. These trends are expected to continue in the foreseeable future. Given a moderately optimistic outlook for the petroleum and gas sectors, GDP growth will continue to be rapid, averaging about 7% per year. Continued economic development and diversification of the economy will mean further pressures on the available port capacity, particularly at the country's major port on the Mediterranean coast, Alexandria. The Port of Alexandria is already operating well above its nominal capacity. In recent years, despite diversion of significant volumes of traffic to Port Said the increase in cargo has necessitated extensive usage of lighterage operations. In 1980, about 1.2 million ton of general cargo was handled at anchorage. In addition, significant volumes of cement (about 1 million ton), timber (0.7 million ton), various ores and grain were unloaded to barges because of the inadequacy of suitable berths. Despite such costly arrangements, however, ship waiting times have reached unacceptable levels: in 1980 about 12,800 days with an average of 7 days for general cargo ships, 9 days for fertilizer and 11 days for wheat.

4.02 The Bank's first port project in Egypt for the rehabilitation of the Port of Alexandria, was primarily designed to provide a temporary relief to congested conditions. Any attempt to rehabilitate the port on a major scale without providing alternative facilities would have resulted in serious disruptions in port operations causing unmanageable delays in handling traffic. Moreover, it was then agreed by the Bank and the Government of Egypt that future major port constructions would be based on the transport plans to be formulated within a comprehensive National Transport Study. Although Alexandria Port Project is scheduled for completion in 1983, the existing high volume of lightering operations, excessive ship-waiting times and expected growth in traffic, will result in the full utilization of the new facilities as soon as they become available. The relief provided by the present project will thus be temporary and inadequate to achieve a satisfactory port operation with reasonable cargo-handling costs.

4.03 The recently adopted National Port Plan has been formulated within the framework of the National Transport Study, is designed to provide long-term solutions to the main bottleneck in the transport system; namely, the ports. The projects included in the plan will enable Egypt to eliminate severe congestion existing at all ports and also to meet effectively the requirements of the expected growth in traffic. The plan will achieve additional cost savings in cargo handling and ocean transport through rehabilitation of old and long-neglected port facilities which are largely obsolete and unsuitable for modern shipping technology. The proposed project at Dikheila which is included in the port plan as the priority project, the new development at Damietta and, to some extent, Port Said will serve Egypt's commerce within the Mediterranean which makes up a predominant portion of the total external trade. The total planned capacity, assuming that all proposed projects are implemented as scheduled in the plan, will be fully utilized by about 1987. Similarly, the planned rehabilitation works at Red Sea ports, i.e., Port of Suez and Safaga will meet adequately the requirements of the Far-East bound trade. Details of the National Port Development Plan are given in Annex 1.

4.04 The proposed project as a natural extension of the existing facilities, will relieve congestion presently experienced at the Port of Alexandria, particularly in handling general cargo and provide a mineral jetty primarily for the Dikheila steel mill. The existence of well established shipping institutions and enterprises in Alexandria will assure the immediate use of the commercial facilities of the project and the generation of benefits expected from them. Availability of adequate land transport linkages with the hinterland which extends to the whole of the Delta and Cairo area will mean that the benefits generated by the project will pervade much of the country. The Dikheila Port Project site has potential for further increase in port capacity which will be possible at a relatively low investment cost after the completion of the main breakwater and access channel included in the proposed project.

B. Traffic Projections

4.05 The traffic projections used in the following economic rate of return calculations are based on sector analyses for major commodity and commodity groups, macro-economic relationships and origin-destination studies. In order

to arrive at the projected volume of cargo to be handled at Dikheila/Alexandria Port complex, total forecast traffic of Egypt was allocated to all the ports on the basis of minimizing land transport costs and regional analyses of major commodity supply and demand conditions. The basis and details of traffic projections are discussed in Annex 1.

4.06 Rapid growth in the economy and the resulting quantum increase in Egypt's maritime traffic which occurred during the recent years are expected to continue in the future, although at a somewhat reduced pace. Imports will account for about 75% of the projected port traffic. Egypt's traditional exports, fresh fruits, vegetables and other agricultural commodities, will remain relatively stable because of increasing domestic demand pressures resulting from growths in population and increase in per capita incomes. General cargo traffic is forecast to grow at an average rate of about 5.5% which is considerably below the rate experienced during recent years. Growth in grain imports will continue reaching about 9.5 million ton in 1995 from the current level of 6.3 million. Timber will be imported in increasing quantities. Because of the ongoing and planned investment in cement production, it is estimated that the demand for imports will decline and the economy will become self-sufficient in this commodity around 1992. After this date, there will be some surplus for exports. Similarly, in fertilizers, Egypt will become self-sufficient by about 1987 and will be in a position to export this commodity in modest quantities. The Dikheila steel complex will generate demand for imports of iron ore and pellets, about 1.3 million ton initially increasing to 3 million ton after 1990 and for scrap steel, 200,000 tons until 1991. Traffic projections for all ports of Egypt by major commodity and commodity groups are summarized below:

Traffic Projections for Selected Years /1
(in 1000 tons)

	1981/2	1986	1995
General Cargo	8,100	10,800	17,700
Cement	5,200	3,000	1,000
Grains	6,300	7,300	9,600
Timber	1,100	1,600	2,500
Coal	2,600	2,900	3,500
Pellets	-	1,300	3,000
Alumina	250	340	400
Phosphate	130	300	300
Salt	50	160	160
Fertilizer	900	500	100
Scrap	-	200	-
Other	400	900	1,350
Total	25,030	29,300	39,610

/1 Excludes petroleum products.
/2 Estimates based on actual figures for first 9 months of 1981.

4.07 The Alexandria/Dikheila Port complex will continue to handle a substantial portion of the total maritime traffic, although its share will decrease because of the availability of additional new port facilities: about 65% in 1986 and 60% in 1995 compared to 75% at present. The complex, however, will remain the most diversified port facility of the country handling a major part of general cargo as well as a variety of bulk and break-bulk cargo. In 1986, the complex will account for 6.7 million ton or 62% of the total general cargo, and 9.2 million ton or 52% in 1995. General cargo facilities at Damietta will gradually receive increasing volumes of traffic to relieve the congested conditions in the country's ports: about 1.5 million ton in 1986 increasing to 3.6 million ton in 1995. Alexandria will continue to receive the major share of the total imported grain tonnage, 3.0 million ton and 3.8 million ton for 1986 and 1995 respectively. Damietta will also become an important grain receiving port during the same period: 1.5 million ton in 1986 and 2.0 million ton in 1995. Other ports, after the completion of rehabilitation works which are included in the national plan, will also be able to handle increasing volumes of traffic. The following table summarizes traffic projections for Alexandria/Dikheila Port for selected years and major commodities. The distribution of the total maritime traffic among all ports of Egypt by major commodities, is discussed in detail in Annex 1.

Allocation of Forecast Traffic between
Alexandria and Dikheila
(in million tons)

	1986			1995		
	Alexandria	Dikheila	Total	Alexandria	Dikheila	Total
General Cargo	5.0	1.7	6.7	6.5	2.7	9.2
Cement	2.0	-	2.0	0.5	-	0.5
Grain	3.0	-	3.0	3.8	-	3.8
Timber	0.9	0.4	1.3	1.2	0.8	2.0
Coal	2.9	-	2.9	3.5	-	3.5
Pellets	-	1.3	1.3	-	3.0	3.0
Other	0.8	0.2	1.0	0.8	0.3	1.1
Total	14.6	3.6	18.2	16.3	6.8	23.1

4.08 During recent years, despite difficulties due to the lack of suitable equipment at Alexandria, the share of containerized cargo in total traffic has increased rapidly. The number of ships which carry containers increased from 176 in 1978 to 670 (both Ro/Ro and containers) in 1980. During the first 9 months of 1981, the number of containers handled reached about 50,000; 39,000 for imports and 11,000 for exports. It is expected that the provision of suitable terminal facilities at Alexandria/Dikheila Port complex will rapidly bring the share of containerized traffic to a level currently observed in

other ports in the region with container facilities. Based on the trends prevailing in the primarly trade routes, it is estimated that on the average about 40% of the containerizable cargo will be shipped in containers, about 1.3 million ton in 1986. This containerization rate is the same as the rate observed in other ports in the region. The containerization rate is expected to increase to about 50% of containerizable traffic, namely about 2.3 million ton in 1995.

C. Project Benefits

General

4.09 Due to steadily increasing traffic, particularly general cargo, the Port of Alexandria is operating well in excess of its optimum capacity. In order to cope with the situation the port has resorted to costly solutions such as, extensive usage of lighterage and overtime work. The situation is certain to worsen considerably during the next few years until the proposed project comes into operation. The construction of new commercial port facilities at Dikheila will, therefore, help relieve the congestion at Alexandria and significantly reduce cargo-handling costs. The benefits will bear principally on general cargo traffic, timber and other break-bulk and bulk cargo.

4.10 The economic evaluation of the project is based on a comparison of costs involved in handling forecast traffic with the project conditions with those in the "without" situation. Given the severe congestion presently prevailing, the "without" situation used in the analyses incorporates, in addition to ongoing improvements, some incremental capacity increases to maintain a flow of traffic, albeit, under difficult conditions. Because of the inadequacy of landspace and the encroachment of urban development to the port area, only a minor capacity increase is feasible. A major expansion of the existing port at Alexandria would be an alternative which is costlier than the proposed project. Accordingly the "without" situation represents the existing facilities, the facilities which will be available after the completion of the ongoing works at Alexandria and a marginal increase in cargo throughput by more extensive utilization of the modern berths, primarily container and ro/ro, and the use of additional cargo handling equipment. Investment expenditure required for the latter is estimated to be about $50 million for equipment and land acquisition and other related facilities. Even with these expansions, the capacity available under the "without" situation will be completely saturated by about 1988.

4.11 In the "with" situation, it is assumed that new facilities at Dikheila will be operational by 1986 and Alexandria/Dikheila complex will operate as a single unit. Facilities will handle the type of ship or cargo for which they provide the most efficient service, and therefore, the lowest cost of cargo handling.

Assessment of Benefits

4.12 The principal benefits quantified for the rate of return calculations include: (a) reductions in ship waiting times; (b) reduction in ship service

times by the use of modern facilities; (c) the elimination of lighterage operations; (d) reductions in damage to cargo; (e) reduced freight and handling costs of pellets needed for the steel complex. In addition, the project will generate further benefits in the form of elimination of hazardous conditions for ships navigating in the port, reductions in pilferage and delays in delivery of goods. However, these additional benefits have not been quantified in the rate of return calculations. Project benefits beyond 1988 are frozen at this level because of the undefinably high ship-waiting time costs and unavailability of a feasible alternative port capacity elsewhere. Therefore, the rate of return calculations presented below are conservative estimates of benefits which will be generated by the proposed project.

4.13 The savings in ship-waiting time attributed to the project commence at the beginning of 1986 and are calculated on the basis of cost per ship-day for each type of vessel and the pattern of ship types and sizes handled at the port. In 1986 the reduction in ship waiting times estimated to be about 8,000 ship days increasing to 10,000 in 1988. By comparison, in 1980 Alexandria already experienced some 12,800 ship-days waiting time.

4.14 The availability of new cargo-handling equipment including container facilities will also generate benefits by reducing average ship service time. These benefits are conservatively estimated to be about 10% of the average ship service time. Estimates of savings in cargo-handling costs are confined only to the tonnage which would have to be lightered in the without project case. Based on the existing cost differential between the along-the-side operations and lighterage, the savings in cargo-handling costs are estimated to be about $2 per ton. Similarly, estimates of the benefits resulting from the reduction in damage to cargo are based only on the lightered tonnage and represents about 2% of the value. This is a conservative estimate as the damage at present is about 20% of the total value of the cargo handled at Alexandria.

4.15 The savings resulting from the mineral jetty are estimated separately. It is assumed that without the project, pellets would be shipped in large carriers of about 150,000 dwt to an intermediate point in the Mediterranean and arrive in Alexandria in self-unloading smaller carriers of about 30,000 dwt. The final deliveries at the steel complex would be carried out by barges after lighterage operation at anchor. The cost differential per ton of pellet delivered at the steel complex is estimated to be $8.80 per ton.

Distribution of Benefits

4.16 The estimate of the economic return on the project includes only the portion accruing to Egypt. That share of benefits would ultimately pervade the whole economy in the form of reduced prices of imported goods to domestic consumers and uninterrupted deliveries and lower costs for investors in industrial and other productive activities. Moreover, benefits retained by the Egyptian economy will also be reflected in reduction in total transport costs for exporters.

4.17 Savings in ship waiting time should be retained by Egypt either in the form of reduced demurrage charges on chartered trade, or as elimination of congestion surcharges in liner operations. In economic rate of return calculations only about 80% of these savings have been taken into account based on Egypt capturing 100% of the savings in the trade handled by Egyptian owned vessels (accounting for about 15%), 100% of the savings in charter trade (50% of total traffic), and 50% of the savings for the remaining liner shipping. Similarly only about 80% of benefits resulting from reductions in ship-service time has been included in rate of return calculations.

4.18 Benefits which result from the elimination of costly working practices in Alexandria will accrue to Egypt in totality. Similarly, the residual value of the project facilities at the end of the evaluation period will accrue to Egypt in the form of additional benefits.

D. Economic Costs of the Project

4.19 The economic costs of the project include investments required for the operation of the commercial port and the mineral jetty. In economic cost estimates, custom duties on imported items are excluded and major tradeable items border priced. Costs are expressed in 1981 prices, and therefore exclude price contingencies. Operating and maintenance costs of the project are also estimated without price escalation.

E. Economic Return and Sensitivity Analysis and Risks

4.20 The economic return from the project investments has been estimated on the basis of costs and benefits quantified on the basis of the principles presented in the foregoing sections. A summary of cost and benefit streams is shown below:

Economic Cost and Benefit Streams of Project (in 1981 Prices, US$Million)

	COSTS		BENEFITS						
	Capital	Operating	Cost of Expanding Existing Facilities	Ship Waiting Time Savings	Ship Service Time Savings	Savings on Cargo Damage	Cargo Handling Cost Savings	Mineral Jetty Benefits	Total
1981	8.7								
1982	22.9	-	14.0	-	-	-	-	-	14.0
1983	55.3	-	16.0	-	-	-	-	-	16.0
1984	124.6	-	16.0	-	-	-	-	-	16.0
1985	140.4	-	6.0	-	-	-	-	-	6.0
1986	30.4	5.8	-	33.6	3.4	8.8	3.1	11.4	60.3
1987	-	5.8	-	42.5	4.5	9.7	4.1	11.4	72.2
1988 - 1990	-	5.8	-	48.3	5.1	10.2	4.9	14.4	79.9
1991 - 2000	-	5.8	-	48.3	5.1	10.2	4.9	26.4	94.8

4.21 The project yields a satisfactory rate of return of 22.6%. The first year rate of return from the project based on a 12% discount rate is estimated to be 16.7%.

4.22 The high return on the project indicates the economic justification of the project and its urgency. The economic rate of return was tested for its sensitivity to variations in the cost and benefit parameters. The results of this analysis are shown below:

		Rate of Return
a)	10% increase in project costs	20.2
b)	20% increase in project costs	18.0
c)	10% reduction in project benefits	19.9
d)	20% reduction in project benefits	17.2
e)	a combined 10% increase in costs and 10% reduction in benefits	17.7
f)	a combined 15% increase in costs and 15% reduction in benefits	15.5

4.23 If the port were to have been constructed without facilities for handling the industrial traffic for the steel mill, namely, without the mineral jetty and the ore unloading cranes, and having an access channel dredged to only 15.0 m, then the remaining commercial port bearing the full cost of the breakwater would show a 25% rate of return. A sensitivity for variations in costs and benefits shows the following:

		Rate of Return
(a)	10% increase in project costs	22.5
(b)	20% " " " "	20.0
(c)	10% reduction in project benefits	22.1
(d)	a combined 10% increase in costs and 10% reduction in benefits	19.5

As a corollary to the analysis above, rate of return calculations for the mineral jetty including only those costs and benefits which are directly related to it yield a rate of return of 19.6%. A sensitivity for variations in costs and benefits show the following:

	Rate of Return
(a) 10% increase in project costs	16.6
(b) 20% increase in project costs	13.9
(c) 10% reduction in project benefits	15.0
(d) 20% reduction in project benefits	13.3
(e) Combination of (a) and (c)	13.6

4.24 Risks due to a short-fall in the forecast traffic allocated to the project is considered to be low. This is due to the fact that much of the capacity expansions resulting from the project as well as from other projects

included in the National Port Plan will be taken up by the existing backlog of demand. Projections indicate that the total port capacity will be fully utilized by the end of the plan period. Even in the unlikely event that the projected traffic growth rate is not fully realized due to unforeseeable developments, the rate of return on the project will not be significantly reduced. This is due to the fact that in the economic evaluation the project benefits are "frozen" at the level reached in the third year of operation of the project, as under "without the project case" costs became unrealistically high. Therefore, a short-fall in traffic will have the effect of delaying "the maximum benefit" year. As a result, the total net benefit stream generated by the project will not be reduced significantly. For example, a 15% reduction in traffic will delay "the maximum benefit" year until about 1990. The resulting reduction in the total net discounted benefit will lower the rate of return to about 20% which still is an acceptable level.

4.25 Risks to the project due to an increase in cost or a decrease in benefits greater than those already dealt with in the foregoing sensitivity analyses are considered unlikely. The competitive design and supply procedure envisaged for the procurement of some items of equipment, and completion of outstanding detailed designs and tender documents might result in more advantageous solutions with slightly lower costs and increased benefits.

4.26 As IMC has not hitherto undertaken the responsibility for such a large port project their ability to ensure scheduled project completion has been assessed as a possible project risk. However, arrangements already made with consultants for advisory staff and the review during negotiations of the calibre of IMC staff responsible for project execution will reasonably mitigate this minor risk.

4.27 Administration of the new port facilities might initially place a strain on APA's management which is a minor risk to the achievement of forecast benefits. This risk would be offset by the training and staffing plans agreed during negotiations, and consequently is fully covered in the sensitivity analyses.

V. FINANCIAL EVALUATION

A. Introduction

5.01 This report confines itself to the financial evaluation of APA only. APA's subsidiaries, UASC and GWE, participate in the cargo-handling and warehousing activities at the existing Alexandria Port as independent self-accounting entities. The financial analysis in this report is based on the concept that APA will be directly responsible for the cargo handling and warehousing activities at the new Dikheila Port, and that consequently the financial results of these activities will be reflected in APA's books.

B. APA's Present Financial Situation

5.02 APA's operating results as presented in the annual financial statements have been satisfactory, and APA is a dependable source of revenue for the Government. Under the ongoing Loan (1239-EGT), APA is required: (i) to achieve an annual rate of return of not less than 9.0% on the value of its net fixed assets; (ii) with the assistance of consultants to: (a) revalue its fixed assets by December 31, 1977, (b) introduce an appropriate management accounting system by December 31, 1978, and (c) implement a new cost-related tariff structure by December 31, 1978. APA has been achieving annual financial returns well above the stipulated rate of 9.0%. APA also engaged consultants to carry out the requirements stated above, but the consultants' work has not produced entirely satisfactory results in all areas. For example, although the fixed assets have been revalued by the consultants, APA does not revalue these assets on a regular basis; however, APA will be required to do so under the proposed project. The revaluation of the net fixed assets as at December 31, 1977 showed an increase from £E 14.0 million to £E 32.0 million or a revaluation factor of 2.3 times. Net fixed assets as at December 31, 1979 totalled £E 20.9 million, and APA's net operating income generated for calender year 1979 was £E 19.1 million of which depreciation amounted to £E 2.7 million. Applying the revaluation factor to these values, the rate of return resulting from APA's operations on its net fixed assets is of the order of some 40%. The operating results of APA's subsidiaries, UASC and GWE, are also similarly high. As regards the management accounting system, APA has introduced cost accounting methods for arriving at the cost of its individual services but the resulting reports are circulated too late to be useful. APA's Board of Directors has recently approved a change in the basis of assessing tariffs on ships from the Suez Canal Tonnage which has limited use in the shipping world to the more universally accepted Gross Registered Tonnage (grt). The new tariffs will be broadly cost-related and this introduction by APA will be a step in the right direction. The change in the tariff basis is also expected to result in higher receipts for APA. The changes, however, are subject to the Parliament's approval and agreement was reached during negotiations that the Government will take the necessary steps to obtain such approval by July 1, 1983.

5.03 APA received from its subsidiary companies, UASC and GWE, £E 6.6 million, £E 8.6 million respectively for calendar years 1978 and 1979 and £E 7.6 million for six months ending June 30, 1980; however, these are excluded in the rate of return calculations. APA hands over these dividends directly to Government immediately on their receipt.

5.04 APA's income statements for years 1978 and 1979 and for six months ending June 30, 1980 are summarized below. The reason for presenting the six months' statement is due to the fact that the accounting year has reverted to the fiscal year basis of July 1 to June 30. The income statement also shows that the operating ratios are remarkably low and the annual return on net fixed assets is high on account of the relatively low operating and maintenance costs.

APA's Income Statement - £E '000

	for year ending Dec 31, 1978	for year ending Dec 31, 1979	for six months ending June 30, 1980
Operating Revenues			
Income from services and use of facilities	10,971	21,856	13,775
Income from supervision of UASC and GWE	982	1,574	1,042
Other	1,579	2,448	1,435
Total	13,532	25,878	16,252
Operating Expenses			
Operating and maintenance costs	1,943	3,243	2,187
Administrative expenses	486	977	453
Depreciation	1,663	2,683	1,687
Total	4,092	6,903	4,327
Net operating income	9,440	18,975	11,925
Non-operating items			
Interest charges	317	658	605
Net income	9,123	18,317	11,320
Operating ratio %	30.24	26.68	26.62
Return on net fixed assets %	86.6	119.2	53.7
Return on revalued net fixed assets %	34.2	42.9	18.4

5.05 APA's balance sheets as at December 31, 1978 and 1979 and as at June 30, 1980 are summarised below. The balance sheets reflect delays in the collection of APA's accounts receivable. For the years 1978 and 1979, the receivables show some 40% of its total annual revenue as outstanding , i.e., a lag of about five months. APA's accounts also reflect large accumulations of cash as well as increasing amounts of accounts payable as at December 31, 1979 and June 30, 1980. Liability on account of dividends due to the Government constitute about 80% of the total accounts payable; likewise the receivables also include large amounts due from the Government. During negotiations agreement was reached with APA and the Government that they will: (a) submit to the Bank by June 30, 1983, a program for the settlement of APA's outstanding accounts receivable and payable from and to the Government's

agencies; (b) ensure the implementation of such program in accordance with a time schedule satisfactory to the Bank; and (c) ensure that all future accounts receivable of APA will be settled within three months of the billing date. Large accumulations of cash (where they are not immediately required), receivables and payables, should be discouraged and APA will be required to keep its relevant current assets and current liabilities at a level consistent with its working capital requirements (see also para. 5.04) regarding use of excess cash, i.e., either for financing investments in fixed assets or for earlier retirement of debt. During negotiations assurances were obtained that APA will maintain current assets and current liabilities at levels consistent with its working capital requirements.

APA's Balance Sheet - £E '000

	As at Dec 31,78	As at Dec 31,79	As at June 30,80
Current Assets			
Cash	1,022	12,362	18,147
Accounts receivable	5,559	10,915	16,215
Inventory	710	2,603	9,185
Sub-total	7,291	25,880	43,547
Investments - subsidiaries	2,112	3,097	3,998
Fixed Assets			
Land	1,265	1,272	1,272
Buildings, quays, roads, etc.	20,646	21,320	21,884
Equipment	10,039	21,113	24,058
	31,950	43,705	47,214
Less: Accum. depreciation	21,043	22,763	23,719
	10,907	20,942	23,495
Add: Work-in-progress	15,270	20,512	30,444
Sub-total	26,177	41,454	53,939
Deferred Charges - consult. fees	163	184	738
TOTAL ASSETS	35,743	70,615	102,222
Current Liabilities			
Accounts payable	6,749	20,750	36,325
Non-current Liabilities			
Long-term debt	13,424	32,687	47,503
Government Equity			
Capital	13,047	14,032	14,932
Reserves	1,841	2,455	2,777
Retained earnings	682	691	685
Sub-total	15,570	17,178	18,394
TOTAL LIABILITIES AND EQUITY	35,743	70,615	102,222

C. Future Prospects

5.06 APA's financial results have been forecast for FY 1981 through 1990. The projected financial statements (income, cash flow and balance sheet) show acceptable results.

5.07 The projected income statement for FY 1981 to 1990 included in this section is based on the following assumptions:

(a) Operating Revenues

(i) Alexandria Port: APA's income from marine services is projected at the same rate of growth as total traffic. An increase of 30% is assumed in FY 84 resulting from tariff changes. Tariff adjustments to keep in step with inflationary pressures have been assumed for FY 1987 through 1990. Other income includes supervision fees received from APA's subsidiaries; open space rentals, passenger departure dues and miscellaneous items, and is projected at an average annual increase of 2%.

(ii) Dikheila Port (starting January 1, 1986): Income from services - commercial facilities: includes receipts from marine, cargo handling and cargo storage services all of which are assumed to accrue to APA. Income per ton of cargo handled at present has been determined for each of the above services and applied to the general cargo, timber and other traffic that are expected to be handled at Dikheila. Tariff adjustments to offset inflation have been assumed for FY 1986 through 1990. Income from services - mineral facilities: includes receipts from marine and cargo handling services for mineral traffic charged at the same rate as commercial traffic. Tariff adjustments to offset inflation have been assumed for FY 1986 through 1990. Also included among the revenue producing items for Dikheila is port dues, which is charged on all traffic passing through the port. The rate assumed is sufficient to assure Dikheila port's financial viability. During negotiations agreement was reached that port dues should be introduced by APA at Dikheila port with effect from January 1, 1986, to meet the financial objectives referred to in paras. 5.13 and 5.14.

(b) Operating Expenses

(i) Alexandria Port: Operating and maintenance costs are projected at the same rate of growth as total traffic. Inflation factors at the same rate as for local costs in the project cost estimates, have been applied in projecting these costs. Productivity gains resulting from more efficient use of men and equipment starting FY 1984 (on completion of the Alexandria Port Project) have been assumed at the rate of 1.0% of costs. Administrative expenses are assumed to increase at the rate of

1.0% p.a. and are also assumed to increase annually on account of inflation. Depreciation of existing fixed assets, after applying an initial revaluation factor for equipment of 3.0 times as well as new additions under the ongoing Alexandria Port Project have been calculated with annual increase in values at the rate of 10% starting FY 1981. The cost of consultancy studies is being amortized through FY1990.

(ii) Dikheila Port: Operating costs for marine, cargo handling and cargo storage services (all of which are assumed to be handled by APA) have been calculated on the basis of projections of current unit costs per ton of cargo at Alexandria port. An amount of £E300,000 p.a. has been included to cover administrative costs at the Dikheila location. Inflation factors at the same rate as for local costs in the project cost estimates have been applied for projecting these costs. Additionally, maintenance costs for the facilities and equipment have been assumed at the rate of 2.0% p.a. Depreciation charges of the new facilities have been provisionally subdivided as follows: 60% as applicable to the commercial facilities and 40% as applicable to the mineral facilities.

(c) Non-operating Items

These include: (i) interest charges on debt; and (ii) front-end fee on the proposed Bank loan.

5.08 Net operating incomes are satisfactory throughout for Alexandria Port operations, which show an operating ratio ranging from 43.8% in FY 1981 to 65.7% in FY 1990. The operating ratios are seen to increase as the new facilities under the ongoing Alexandria Port Project are placed in service. The rates of return on revalued net fixed assets at Alexandria Port Project are considerably higher than the stipulated rate of 9.0% p.a. under the loan agreement for the Alexandria Port Project (Loan 1239-EGT). For the new Dikheila port, the operating results show marginal performance in the initial years because of the lumpy investments involved; however, the trend shows progressive improvements which is acceptable; operating ratios improve from 86.0% in FY 1987, the first full year of operations, to 76.7% in FY 1990; and the rate of return on net fixed assets also shows improvement from 1.8% in FY 1987 to 5.8% in FY 1990. For APA as a whole (both ports together), operating ratios deteriorate from 54.9% in FY 1985, the year preceding start of Dikheila port operations, to 78.8% in FY 1988, but improve from then onwards to an acceptable level of 71.3% in FY 1990. Return on net fixed assets is also acceptable at rates ranging from 9.0% in FY 1986 to 4.8% in FY 1987, 5.6% in FY 1988, 7.7% in FY 1989 and 11.5% in FY 1990. Net incomes after interest charges also show satisfactory results.

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ALEXANDRIA PORT AUTHORITY

PROJECTED INCOME STATEMENT-FISCAL YEAR

AMOUNT IN THOUSANDS-EGYPTIAN POUNDS

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
OPERATING REVENUES										
ALEXANDRIA PORT										
INCOME FROM SERVICES	34335.1	38905.1	39897.2	40459.8	39998.5	34722.7	30062.9	30574.0	31393.4	32416.8
TARIFF CHANGE				12137.9	11999.6	10416.8	9018.9	9172.2	9418.0	9725.0
TARIFF ADJUSTMENT						1467.0	5139.3	10731.5	17238.7	24994.3
OTHER INCOME	2321.5	2368.0	2415.3	2463.6	2512.9	2563.1	2614.4	2666.7	2720.0	2774.4
SUBTOTAL	36656.7	41273.1	42312.5	55061.3	54511.0	49169.7	46835.5	53144.4	60770.2	69910.6
DIKHEILA PORT										
INCOME FROM COMMERCIAL FACILITIES						7860.0	16417.5	18048.8	19762.5	20583.8
TARIFF ADJUSTMENT						255.5	2158.9	4873.2	8347.7	12208.2
INCOME FROM MINERAL FACILITIES						4612.5	9532.5	10147.5	10762.5	15375.0
TARIFF ADJUSTMENT						149.9	1253.5	2739.8	4546.1	9118.9
PORT DUES						5400.0	11250.0	12225.0	13200.0	15750.0
SUBTOTAL						18277.9	40612.4	48034.2	56618.8	73035.9
TOTAL OPERATING REVENUES	36656.7	41273.1	42312.5	55061.3	54511.0	67447.6	87447.9	101178.6	117388.9	142946.5
OPERATING EXPENSES										
ALEXANDRIA PORT										
OPER & MAINT COSTS	5237.9	6879.7	8057.0	9159.5	10232.1	10037.1	9797.0	11182.8	12860.3	14872.8
ADMINISTRATIVE COSTS	1032.3	1208.6	1394.0	1594.3	1819.5	2076.6	2364.5	2680.4	3032.0	3429.8
DEPRECIATION	9515.7	11633.6	13188.3	15347.0	17508.1	19155.5	20901.6	22822.3	24935.0	27259.1
AMORTIZATION	278.2	278.2	278.2	278.2	357.1	436.0	436.0	436.0	436.0	357.1
SUBTOTAL	16064.0	20000.0	22917.5	26378.9	29916.8	31705.2	33499.0	37121.4	41263.3	45918.7
DIKHEILA PORT										
OPER & MAINT. COSTS						5586.3	16517.7	23027.4	26649.3	33248.5
ADMINISTRATIVE COSTS						150.0	339.5	431.1	613.2	976.9
DEPRECIATION						8521.6	18061.5	19181.6	20413.7	21769.0
SUBTOTAL						14257.9	34918.6	42640.1	47676.1	55994.4
TOTAL OPERATING EXPENSES	16064.0	20000.0	22917.5	26378.9	29916.8	45963.1	68417.6	79761.5	88939.5	101913.1
NET OPERATING INCOME	20592.6	21273.0	19395.1	28682.4	24594.2	21484.5	19030.3	21417.1	28449.5	41033.4
INTEREST CHARGES	2624.8	3054.8	4180.7	6037.4	10001.9	13167.7	13586.7	12782.7	11970.9	11150.5
FRONT END FEE			1400.0							
TOTAL NON-OPER.CHARGES	2624.8	3054.8	5580.7	6037.4	10001.9	13167.7	13586.7	12782.7	11970.9	11150.5
NET INCOME/LOSS	17967.8	18218.2	13814.4	22645.0	14592.3	8316.8	5443.6	8634.4	16478.6	29882.9
OPERATING RATIO										
ALEXANDRIA PORT	43.8	48.5	54.2	47.9	54.9	64.5	71.5	69.9	67.9	65.7
DIKHEILA PORT						78.0	86.0	88.8	84.2	76.7
BOTH PORTS TOGETHER	43.8	48.5	54.2	47.9	54.9	68.1	78.2	78.8	75.8	71.3
RETURN ON NET FIXED ASSETS										
ALEXANDRIA PORT	64.1	51.2	44.1	45.8	31.1	22.8	18.2	23.0	29.6	38.7
DIKHEILA PORT						2.5	1.8	1.7	2.9	5.8
BOTH PORTS TOGETHER	64.1	51.2	44.1	45.8	31.1	9.0	4.8	5.6	7.7	11.5

5.09 The projected cash flow statement for FY 1981 to 1990 included in this section indicates APA's relatively strong cash position throughout the years under review. The salient points are:

(a) APA will meet local currency requirements of the order of £E 14.1 million towards the ongoing Alexandria Port Project which will be completed by January 1, 1984;

(b) Expenditure totalling £E 332.4 million for the Dikheila Port Project will be met as follows:

(i) By IBRD: A loan to government to finance certain project items in the amount of US$132.0 million equivalent to £E 92.4 million at a rate of 11.6% interest p.a. for a term of 20 years including a grace period of 3 years. Included in the loan is a front end fee of US$2.0 million. The total loan amount will be relent to APA on the same terms as above;

(ii) By Government: Government will finance the remaining project items to the tune of £E 240.0 million as contribution to APA's equity;

(c) After a series of upward adjustments domestic interest rates are at present between 8.0% and 14.0%; the latter rate corresponding to the current domestic inflation rate of 14.0%. Recent domestic inflationary pressures are expected to continue for a few years, but to decrease to a level of 12.0% by year 1987. The on-lending rate of 11.6% is considered reasonable under the circumstances;

(d) APA will service the debt incurred for the ongoing Alexandria Port Project and for the proposed Dikheila Port Project;

(e) APA will hand over to the Government directly the dividends it receives from its subsidiaries UASC and GWE; and

(f) APA will distribute to the Government its net income. However, APA is allowed to keep part of the depreciation provisions for the renewal of its fixed assets.

The resulting cash position shows a favourable situation reflecting the increase from £E 16.5 million at FY 1981 to £E 93.6 million at FY 1990. This accumulation of cash could be used for future major port development programs by APA, or for the earlier retirement of debt owed by APA to the Government.

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ALEXANDRIA PORT AUTHORITY

PROJECTED CASH FLOW STATEMENT-FISCAL YEAR

AMOUNT IN THOUSANDS-EGYPTIAN POUNDS

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
SOURCES OF FUNDS										
INTERNAL GENERATION										
NET OPR INCOME-ALEX PORT	20592.6	21273.0	19395.1	28682.4	24594.2	17464.6	13336.5	16023.0	19506.9	23991.9
ADD-DEP & AMOR.ALEX PORT	9793.9	11911.8	13466.5	15625.2	17865.2	19591.5	21337.6	23258.3	25371.0	27616.2
ADD-INC.FROM SUB.ALEX PORT	13266.2	14204.1	14553.5	14728.1	14960.9	13390.0	11993.4	12575.1	13157.3	13738.8
SUBTOTAL	43652.7	47388.9	47415.0	59035.7	57420.2	50446.0	46667.4	51856.3	58035.2	65346.9
NET OPR INCOME.DIKHEILA PORT						4019.9	5693.8	5394.1	8942.6	17041.5
ADD-DEP.DIKHEILA PORT						8521.6	18061.5	19181.6	20413.7	21769.0
SUBTOTAL						12541.5	23755.3	24575.7	29356.3	38810.5
TOTAL INTERNAL GENERATION	43652.7	47388.9	47415.0	59035.7	57420.2	62987.5	70422.7	76432.0	87391.5	104157.4
BORROWINGS										
ALEXANDRIA PORT PROJECT										
IBRD LOAN-1239EGT	6500.0	5800.0	5800.0	2400.0						
OTHER LOANS-JAPANESE,USAID,ETC	1450.0	1450.0								
DIKHEILA PORT PROJECT										
IBRD LOAN RELENT TO APA			1600.0	29500.0	44700.0	16600.0				
GOVT CONTRIBUTION/EQUITY	4975.0	28722.0	34497.0	57578.0	61088.0	53240.0				
TOTAL BORROWINGS	12925.0	35972.0	41897.0	89478.0	105788.0	69840.0				
TOTAL SOURCES OF FUNDS	56577.7	83360.9	89312.0	148513.7	163208.2	132827.5	70422.7	76432.0	87391.5	104157.4
APPLICATION OF FUNDS										
CAPITAL PROJECTS										
ALEXANDRIA PORT	11600.0	11500.0	10100.0	4300.0						
DIKHEILA PORT	4975.0	28722.0	36097.0	87078.0	105788.0	69840.0				
SELF FINANCED			2000.0			200.0				
TOTAL CAPITAL PROJECTS	16575.0	40222.0	48197.0	91378.0	105788.0	70040.0				
DEBT SERVICE PAYMENTS										
ALEXANDRIA PORT-PRINCIPAL	2173.0	2526.0	3388.0	3455.0	3521.0	3595.0	3675.0	3763.0	3861.0	3962.0
-INTEREST	2624.8	3054.8	3400.9	3570.4	3509.6	3349.8	3183.5	3010.1	2828.7	2638.9
SUBTOTAL	4797.8	5580.8	6788.9	7025.4	7030.6	6944.8	6858.5	6773.1	6689.7	6600.9
DIKHEILA PORT-PRINCIPAL							5435.3	5435.3	5435.3	5435.3
-INTEREST			779.8	2467.0	6492.3	9817.8	10403.2	9772.7	9142.2	8511.7
-FRONT END FEE			1400.0							
SUBTOTAL			2179.8	2467.0	6492.3	9817.8	15838.5	15208.0	14577.5	13947.0
TOTAL DEBT SER. PAYMENTS	4797.8	5580.8	8968.7	9492.4	13522.9	16762.7	22697.0	21981.0	21267.2	20547.8
INCREASE/DECREASE IN WORK.CAP	5528.3	1953.9	1377.3	2555.3	360.3	2506.6	7521.0	7601.2	3668.9	5275.1
TOTAL APPLICATION OF FUNDS	26901.1	47756.7	58542.9	103425.7	119671.3	89309.3	30218.0	29582.2	24936.1	25823.0
SURPLUS/DEFECIT.ANNUAL	29676.5	35604.2	30769.1	45087.9	43537.0	43518.2	40204.8	46849.8	62455.4	78334.5
OPENING CASH	18147.0	16589.5	19771.4	22172.6	29887.4	43871.3	57161.2	61867.4	68326.2	80732.0
DISTRIBUTION TO GOVERNMENT										
INCOME FROM SUBSIDIARIES	13266.2	14204.1	14553.5	14728.1	14960.9	13390.0	11993.4	12575.1	13157.3	13738.8
APAS NET	17967.8	18218.2	13814.4	22645.0	14592.3	16838.4	23505.1	27815.9	36892.3	51651.9
CLOSING CASH	16589.5	19771.4	22172.6	29887.4	43871.3	57161.2	61867.4	68326.2	80732.0	93675.8
DEBT SERVICE COVERAGE	9.1	8.5	5.3	6.2	4.2	3.8	3.1	3.5	4.1	5.1

5.10 APA's projected balance sheet summary for FY 1981 to 1990 is also included in this section. They indicate the following:

(a) The soundness of APA's liquidity position as shown by satisfactory current ratios throughout as exemplified by the level of 9.4 in FY 1990;

(b) APA's debt/equity ratio changes from 56/44 in FY 1981 to 31/69 in FY 1986, and to 21/79 in FY 1990, which is satisfactory.

5.11 Although APA has the financial resources to participate in the project, the Government has assumed the responsibility for the construction and the financing of the Dikheila Port Project. The financing arrangements are discussed in para. 5.09. During negotiations, agreement was reached that the proposed Bank loan of US$132.0 million equivalent to £E 92.4 million will be onlent to APA at the rate of 11.6% interest p.a. for a term of 20 years including a grace period of 3 years. The Government's expenditures totalling £E 240.0 million for the Dikheila Port Project will be treated as an equity contribution by the Government to APA's capital.

5.12 It is important that APA maintains adequate accounting records to reflect the cost of operations and the revenues accruing to each of its port locations at Alexandria and Dikheila as well as the different operations at Dikheila. During negotiations agreement was reached that (a) APA will maintain records for Alexandria port operations and the Dikheila port operations as separate self-accounting units so that their individual profitability can be assessed after taking into account the full cost of their operations; and (b) APA will also maintain a separate cost centre for its operations at the mineral facilities at Dikheila in order to ascertain the full cost of their operations. Alexandria port's financial performance taken by itself is expected to be excellent throughout; but that of Dikheila is relatively less satisfactory in the initial years, but show potential for improvement on a progressive basis. During negotiations, assurances were obtained that the operating ratios of 87.0% for FY 1987, 90.0% for 1988, 85.0% for FY 1989 and 77.0% for FY 1990 be adopted as indicators to monitor the financial performance of Dikheila port.

5.13 APA's financial objectives are to generate sufficient operating revenues: (a) to cover its operating costs including depreciation; (b) to service its debt; (c) to maintain adequate working capital; (d) to maintain adequate provisions; and (e) to internally generate funds sufficient to finance a reasonable portion of capital expenditures including the replacement of fixed assets. The projections as presented herein indicate that APA is capable of meeting these objectives. These objectives were agreed to during negotiations.

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ALEXANDRIA PORT AUTHORITY

PROJECTED BALANCE SHEET-AS AT JUNE 30

AMOUNT IN THOUSANDS-EGYPTIAN POUNDS

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
ASSETS										
CURRENT ASSETS										
CASH	16589.5	19771.4	22172.6	29887.4	43871.3	57161.2	61867.4	68326.2	80732.0	93675.8
ACCOUNTS RECEIVABLE	28738.4	18193.8	7052.1	9176.9	9085.2	11241.3	14574.7	16863.1	19564.8	23824.4
INVENTORY	9644.3	10126.5	10632.8	11164.4	11722.6	17584.0	23439.4	24611.4	25842.0	27134.1
TOTAL CURRENT ASSETS	54972.2	48091.7	39857.5	50228.8	64679.1	85986.4	99881.5	109800.7	126138.8	144634.2
INVESTMENTS										
SUBSIDIARIES	3998.0	3998.0	3998.0	3998.0	3998.0	3998.0	3998.0	3998.0	3998.0	3998.0
FIXED ASSETS										
AT ALEXANDRIA PORT	120947.4	135126.5	150623.6	200970.4	216491.8	232365.4	249826.3	269033.3	290161.1	313401.6
LESS-ACCUMULATED DEPRECIATION	80672.7	92306.2	105494.5	120841.5	138349.6	157505.0	178406.6	201228.8	226163.9	253422.9
NET BOOK VALUE	40274.7	42820.3	45129.1	80128.9	78142.2	74860.3	71419.7	67804.5	63997.2	59978.6
AT DIKHEILA PORT						332511.0	342693.7	353894.7	366215.7	379768.9
LESS-ACCUMULATED DEPRECIATION						8521.6	26583.1	45764.7	66178.4	87947.4
NET BOOK VALUE						323989.4	316110.6	308130.0	300037.4	291821.5
ADD WORK IN PROGRESS										
AT ALEXANDRIA	21600.0	28700.0	34500.0	1200.0						
AT DIKHEILA	4975.0	33697.0	70394.0	157472.0	262510.0	-17475.0				
TOTAL FIXED ASSETS	66849.7	105217.3	150023.1	238800.9	340652.2	381374.7	387530.3	375934.5	364034.6	351800.2
DEFERRED CHARGES										
CONSULTANCY	3292.8	3014.6	2736.4	2458.2	2101.1	1665.1	1229.1	793.1	357.1	
TOTAL ASSETS	129112.8	160321.6	196615.0	295485.8	411430.5	473024.2	492638.9	490526.3	494528.5	500432.4
LIABILITIES & EQUITY										
CURRENT LIABILITIES										
CURRENT PORTION OF LONG TERM DEBT										
ALEXANDRIA PORT LOANS	2526.0	3388.0	3455.0	3521.0	3595.0	3675.0	3763.0	3861.0	3962.0	4074.0
DIKHEILA PORT LOANS						5435.3	5435.3	5435.3	5435.3	5435.3
ACCOUNTS PAYABLE	26051.4	14035.1	2022.4	2123.5	2229.7	7740.5	9408.3	5267.6	5531.0	5807.5
TOTAL CURRENT LIABILITIES	28577.4	17423.1	5477.4	5644.5	5824.7	16850.8	18606.6	14563.9	14928.3	15316.8
NON CURRENT LIABILITIES										
LONG TERM DEBT-ALEXANDRIA PORT	56567.0	60429.0	62774.0	61653.0	58058.0	54383.0	50620.0	46759.0	42797.0	38723.0
LONG TERM DEBT-DIKHEILA PORT			1600.0	31100.0	75800.0	86964.7	81529.4	76094.1	70658.8	65223.5
TOTAL NON CURRENT LIABILITIES	56567.0	60429.0	64374.0	92753.0	133858.0	141347.7	132149.4	122853.1	113455.8	103946.5
GOVERNMENTS EQUITY										
CAPITAL	19907.0	48629.0	83126.0	140704.0	201792.0	255032.0	255032.0	255032.0	255032.0	255032.0
REVALUATION RESERVE	7895.4	17674.5	28871.6	41618.4	55939.8	71813.4	99457.0	129865.0	163313.8	200107.5
OTHER RESERVES	2777.0	2777.0	2777.0	2777.0	2777.0	2777.0	2777.0	2777.0	2777.0	2777.0
NET INCOME ACCOUNT	33981.6	55254.7	73249.7	101932.1	125776.3	121225.2	139669.0	141904.5	149940.3	169204.7
LESS										
DISTRIBUTIONS	20592.6	41865.7	61260.7	89943.1	114537.3	136021.8	155052.1	176469.2	204918.6	245952.1
SUBTOTAL	43968.4	82469.5	126763.6	197088.4	271747.8	314825.8	341882.9	353109.3	366144.4	381169.1
TOTAL LIABILITIES & EQUITY	129112.8	160321.6	196615.0	295485.8	411430.5	473024.2	492638.9	490526.3	494528.5	500432.4
DEBT/EQUITY RATIO	1.3	0.7	0.5	0.5	0.5	0.4	0.4	0.3	0.3	0.3
CURRENT RATIO	1.9	2.8	7.3	8.9	11.1	5.1	5.4	7.5	8.4	9.4

5.14 The financial results shown in the tables included herein and summarized in para. 5.08 indicate that in the initial years starting January 1, 1986 when the Dikheila port commences operations until FY1989 APA will not achieve the 9.0% annual rate of return on net fixed assets originally stipulated in the existing Loan Agreement (1239-EGT) for the Alexandria Port Project; however, it is noteworthy that APA will achieve 11.5%, which is more than the required 9.0%, in FY1990. In the circumstances, the existing Loan Agreement will be suitably amended, and during negotiations agreement was reached that APA will take all necessary measures including adjustments in tariffs to achieve a rate of return on total net fixed assets (at Alexandria and Dikheila ports) as revalued annually of at least 9.0% through FY 1985, 8.0% in FY 1986, 4.0% in FY 1987, 5.0% in FY 1988, 7.0% in FY 1989, and 10.0% in FY 1990 and thereafter.

5.15 APA's financial viability could be endangered if it were to incur substantial additional debt. During negotiations, agreement was reached that APA will not incur any additional long-term debt without the Bank's prior agreement unless its net cash revenues for the fiscal year or the twelve consecutive months immediately before the date of incurrence, whichever is greater, would be at least 1.5 times its maximum debt service requirements of any succeeding year on all APA's debts.

VI. RECOMMENDATIONS AND AGREEMENTS REACHED

6.01 During negotiations, agreement was reached that the Government will, in collaboration with IMC and/or APA as appropriate, undertake the following:

(1) Master Plan

Prepare, through the auspices of APA and with the assistance of consultants, a Master Plan of the modernization of the Port of Alexandria and of the greater Alexandria Port area, under terms acceptable to the Bank and meeting of the broad objectives already outlined by the Bank to APA; the substantive conclusions of the study to be available for Bank review by December 31, 1983 and the implementation of the study recommendations to be reviewed with the Bank (para. 3.06);

(2) Land Acquisition

Cede land as required for port construction and operating the facilities and take no action in respect of the project area which may jeopardise the implementation of the recommendations of the Alexandria port modernization plan (para. 3.10);

(3) Financing Plan

Use its best efforts to ensure co-financing in which case an equal amount would be deleted from the Bank loan (para. 3.15);

(4) Project Execution and Procurement

(a) Provide satisfactory evidence of arrangements for the completion of design and tender documents of all outstanding project items not later than June 30, 1983 (para. 3.18);

(b) Ensure that before proceding with the invitation of bids for the supply of equipment required for the mineral jetty and stockyard, and before disbursing thereon, IMC shall have undertaken a review of the status of the steel project which shall have concluded to the satisfaction of the Bank that there are no substantial legal, financial or technical problems likely to obstruct the timely implementation of the steel project (para. 3.24);

(c) Ensure that progress reports on the execution of the project shall be submitted to the Bank each quarter, for which the format and content were agreed by IMC and APA (para. 3.28);

(d) Adhere to the target dates for the award of the following contracts (para. 3.27):

(i) Equipment: Mineral jetty and stockyard, April 1, 1983;
Commercial berths, April 1, 1983;
Floating plant, October 1, 1983;

(ii) Alexandria Port Modernization Study, May 1, 1983.

(e) Continue to ensure the adequacy of the number and calibre of IMC engineers, of outside expertise and the establishment of an effective team for project execution (para. 3.28).

(5) Work Associated with the Project

Undertake the new road link from Dikheila to the desert road to Cairo (para. 3.32);

Customs and Duties

(6) In submitting the project to the People's Assembly, recommend that project items be excluded from custom's duties and taxes (para. 3.13);

(7) Management, Organisation and Training

(a) Forward to the Bank by September 1, 1982 a confirmatory list of the arrangements which APA will make for the operation and maintenance of all of the new port facilities (para. 3.07);

(b) Provide, not later than June 1983, a staffing, operation and training plan adequate for the activities which APA will administer under the enlarged Alexandria/Dikheila Port (para. 2.11);

(8) Operational Targets

Undertake, in collaboration with APA, the agreed operational targets for cargo handling at Dikheila (para. 3.29).

(9) Budgets, Accounts, Audit and Insurance

(a) Separate the commercial activities from the Accounting Department by July 1, 1983 (para. 2.25);

(b) Introduce procedures by July 1, 1983 to improve the costing system and to ensure the timely submission of internal accounting and budgetary control reports (para. 2.26);

(c) Submit audited financial statements within six months after the end of each year (para. 2.28);

(d) Submit evidence by dates to be agreed that arrangements for adequate insurance have been made covering the enlarged Alexandria/Dikheila Port (para. 2.29);

(10) Financial Evaluation

(a) Take necessary steps to obtain approval of the proposed tariff revision by July 1, 1983 (para. 5.02);

(b) Submit in collaboration with APA by June 30, 1983, a program for the settlement of APA's outstanding accounts receivable and payable from and to the Government's agencies; ensure the implementation of such program in accordance with a time schedule satisfactory to the Bank; and ensure that all future accounts receivable of APA will be settled within 90 days of billing date (para. 5.05);

(c) Ensure that APA maintains current assets and liabilities at levels consistent with working capital requirements (para. 5.05);

(d) Ensure that APA establishes a satisfactory level and structure of port dues at Dikheila port with effect from January 1, 1986 (para. 5.07);

(e) ensure that APA maintains records for Alexandria port operations and Dikheila port operations as separate self-accounting units (para. 5.12);

(f) Ensure that APA maintains a separate cost center for its operations at the mineral facilities at Dikheila (para. 5.12);

(g) Ensure the achievement of financial performance indicators for Dikheila port (para. 5.12);

(h) Ensure the achievement of APA's financial objectives (para. 5.13);

(i) Ensure that APA maintains an annual rate of return on net fixed assets as revalued annually of at least 9.0% through FY1985, 8.0% in FY1986, 4.0% in FY1987, 5.0% in FY1988, 7.0% in FY1989 and 10.0% in FY1990 and thereafter (para. 5.14); and

(j) Ensure APA obtains the Bank's prior agreement before incurring any substantial debt which would reduce its debt service coverage below 1.5 times (para. 5.15).

6.02 On the basis of the above, the proposed project provides a suitable basis for a Bank loan to the Arab Republic of Egypt of US$132.0 million including funds for the front-end fee of approximately US$2.0 million. An agreed condition of loan effectiveness is the execution of a subsidiary agreement between the Borrower, APA and IMC whereby the proceeds of the Bank loan will be made available to APA on satisfactory terms and conditions.

Annex 1

STAFF APPRAISAL REPORT
EL DIKHEILA PORT PROJECT
ARAB REPUBLIC OF EGYPT

Ports and Port Traffic: Present Conditions and Future Plans and Forecasts

Recent Developments

1. Egypt at present is mainly served by the Ports of Alexandria and Port Said on the Mediterranean Coast and by Suez (including both Ports of Ibrahim and Addabia) and Safaga on the Red Sea Coast. In addition, there are other smaller ports which handle nominal amounts of traffic. Alexandria is by far the largest port handling about 75% of the country's maritime traffic. Moreover, Alexandria is the only port providing diverse services in facilitating Egypt's foreign trade; other ports handle primarily specialized bulk commodities although during the recent years because of the severe congestion at Alexandria some general cargo traffic had to be diverted to these ports.

2. Over the last five years Egypt has achieved a relatively rapid economic growth: GDP increased at an average rate of about 10% per year, the petroleum sector emerged as a significant driving force of the economy, important strides were made in industrialization. Parallel to these developments, the introduction of an "open-door" policy and the liberalization of the external trade and payment system has led to quantum increases in port traffic.

3. The increase in port traffic has almost exclusively been in imports; exports have remained relatively stable and in some cases, have declined due to increased domestic demand. Of the estimated 25 million tons of cargo handled (excluding petroleum) in 1981 about 22 million represented imports. Within this group about 80% of the traffic consisted of a few major commodities or commodity groups. These, in terms of relative importance, are grains/flour 6.3 million tons, cement 5.2 million tons, coal 2.9 million tons, timber 1.1 million tons, fertilizer 0.9 million tons. Other import items of some importance were alumina, sugar, edible oils, steel and a variety of manufactured consumer and producer goods.

4. Traditionally, a predominant portion of Egypt's exports consisted of agricultural products, mainly fresh fruits, potatoes, onions and cotton. Exports of manufactured products, primarily textile yarns and fabrics, represented only a small portion, about 300,000 tons, of the total export volume. Other exports, molasses, salt and phosphate are shipped through special handling facilities.

5. Although the predominant portion of the total maritime traffic was handled at Alexandria, the volume of cargo handled at Port Said was nevertheless relatively significant and diversified. Because of increasing congestion at Alexandria, significant volumes of bulk cargo (wheat, maize, flour and some cement and sugar) was discharged at Port Said. Safaga was primarily used for wheat, alumina and fertilizers. The Port of Suez handled primarily wheat imports and some general cargo. The following table summarizes the distribution of the total maritime traffic by ports for years 1978 through 1981:

Table 1

Total Traffic by Ports, 1978 - 1981 /2
(in 1,000 tons)

	1978	1979	1980	1981/2
Alexandria	11,200	12,020	14,730	18,750
Port Said	3,550	3,420	3,650	3,750
Suez	1,240	0,800	1,150	1,230
Safaga	0,760	1,460	1,280	1,350
Total	16,750	17,700	20,810	25,030

/1 Excludes petroleum traffic.
/2 Estimated on the basis of actual figures for first 9 months.

Future Prospects

6. While it is not expected that the rather high rate of growth in imports which was experienced during the last four years will be sustained for long, a moderate rate of growth in the economy and therefore in port traffic is expected based on planned specific investments and favorable general economic trends. The basic assumptions and principles which underlie some of the major commodity forecasts are discussed below:

General Cargo

7. In parallel with the expected increase in incomes at an average annual rate of 7%, imports of general cargo are forecast to increase at about 5.5% per annum after 1985. It must be noted that this is well below the rate of increase which has taken place during recent years and therefore, must be regarded as a conservative estimate. General cargo exports, on the other hand, are expected to stabilize at the current level until about 1986 and then to increase at a moderate rate.

Cement

8. During the last few years due to the building boom in the country, cement consumption increased rather rapidly, about 12% per year. As a result

Egypt, which was a net exporter of cement, became a net importer after 1978. In 1980 about 3.8 and in 1981 4.1 million tons of cement were imported to supplement the local production of about 3.0 million tons. Current plans indicate that the demand for cement will increase at a rate of 8.7% in the foreseeable future. There are also plans to expand domestic production. The output is expected to reach about 11.5 million tons in 1983 and 13.0 million tons in 1986. Although the production target for 1983 may not be feasible, it is expected that in the long run Egypt will become self-sufficient in cement and therefore imports of cement will start to decline after about 1985 and Egypt will be self-sufficient by about 1992 and begin to export in modest quantities. As a result, cement should gradually lose its importance in port traffic.

Wheat/Flour

9. A strong increase in imports of food items in general and in wheat in particular is expected in the future. The estimates based on 3% growth rate in real per capita incomes, population increases, and the income elasticities of demand indicate that by 1986 demand will reach about 9.5 million tons and to about 11.6 million tons in year 1995. Part of this total requirement will continue to be met by imported flour, although in reduced amounts, because of the planned extensions in the domestic milling industry. After allowing for flour imports and domestic production (1.6 million tons) the volume of wheat imports is expected to be in the order of 7.3 million tons in 1986 and about 10.0 million tons in 1995.

Wood/Timber

10. All timber requirements and a predominant portion of wood product needs of Egypt are met by imports. This situation will not change in the future. It is estimated that demand for wood and timber will grow at about 9% per year in a parallel fashion with the growth in construction industry and in demand for furniture. This gives rise to 1.6 million tons of imports in 1986 increasing to about 2.5 million tons in year 1995.

Coal

11. Although coal deposits have been known to exist in Egypt they have never been developed, as most are regarded as uneconomic. The most promising coal field is the Maghara deposits in Sinai with potential reserves of about 35 million tons. The coal is not of good quality and reserves are too small to justify development at this field. Therefore, Egypt will continue to rely completely on imports to meet its coal requirements. The availability of natural gas will limit the need for coal as a source of energy, in particular for industrial usages. Based on the planned expansion of the domestic coke plants, the volume of imports is expected to reach to about 2.9 million tons in 1986 and to 3.5 in year 1995.

Pellets

12. Demand for imported pellets and virtually all of metal scrap will

originate exclusively from the proposed iron and steel complex at Dikheila. The initial demand for the complex in 1986 is estimated to be 1.3 million tons rising to 3 million tons in 1990 after the commencement of the planned second phase expansion. Total port traffic projections for years 1981 through 1995 are shown in Table 2.

Table 2

TOTAL PORT TRAFFIC PROJECTIONS

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
General Cargo	8,100	8,500	9,100	9,650	10,200	10,800	11,500	12,100	13,000	13,700	14,500	15,400	16,200	17,200	17,700
Grains	6,300	6,500	6,700	6,900	7,100	7,300	7,500	7,700	8,000	8,200	8,500	8,700	9,000	9,300	9,600
Cement	5,200	5,000	5,000	4,000	3,000	3,000	2,000	2,000	2,000	2,000	2,000	2,000	1,000	1,000	1,000
Timber	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500
Phosphate	130	140	150	200	250	300	300	300	300	300	300	300	300	300	300
Coal	2,600	2,700	2,700	2,800	2,800	2,900	3,000	3,000	3,000	3,100	3,100	3,200	3,300	3,400	3,500
Fertilizer	900	1,000	1,000	1,000	500	500	-	-	-	100	100	100	100	100	100
Alumina	250	270	310	330	340	340	350	350	360	370	350	390	400	400	400
Salt	50	100	160	160	160	160	160	160	160	160	160	160	160	160	160
Pellets	-	-	-	-	-	1,300	1,400	1,500	1,600	3,000	3,000	3,000	3,000	3,000	3,000
Scrap	-	-	-	-	-	200	200	200	200	200	200	-	-	-	-
Other	400	500	600	700	800	900	1,000	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350
Total	25,030	25,910	27,020	27,740	26,650	29,300	29,110	30,110	31,570	34,240	35,490	36,650	37,110	38,560	39,610

Planned Port Expansions

13. The Government's recently adopted long-term National Port Development Plan includes, in addition to the proposed facilities at Dikheila, the construction of the first phase of Damietta as well as rehabilitation of Port Said, Port of Suez and Safaga. These planned investments together with the ongoing improvements in Alexandria are expected to meet the country's port capacity requirements until about 1995. Details of the expansion and rehabilitation plans for each port are discussed below (Map 16270). The proposed project port at Dikheila and ongoing improvements at Alexandria are discussed in detail in Chapter III of the report and therefore will not be repeated here.

Damietta Port

14. The City of Damietta lies immediately west of the Damietta branch of the Nile River and is about 50 km west of Port Said and 150 km east of Alexandria. The site selected for the construction of the port is just west of the Damietta branch of the Nile. Phase I development of the port includes the construction of 12 berths with an average length of 250m. The access channel is designed for a depth of 15 m with berth depths varying from 14.5 m to 12 m. Of the 12 berths, 2 will be for grain imports with a silo capacity of 55,000 tons, 3 container and Ro/Ro berths and the remainder will be for conventional general cargo and break-bulk cargo. The construction of the first phase is to proceed in two stages: Stage I will include 6 berths and is planned for completion by 1986. The work on Stage II is planned to commence about the same time and expected to take a further 2 to 3 years. The total capacity is estimated to be around 6.0 million tons when completed. The plans also include allocating a part of the container terminal for transshipment operations.

Port Said

15. The town and port of Port Said is located at the northern end of the Suez Canal. The port was originally designed to serve as a waiting area for ships to be assembled into convoys to transit the canal, and for bunkering and ship repair point; cargo-handling activities were a secondary consideration. Port facilities were severely damaged during the hostilities in 1967 and 1973. Due to increasing congestion in Alexandria, however, cargo-handling operations have been resumed in mid 70's. The port consists of a continuous quay wall around three basin areas at a length of 1245 m with depths varying from 6 to 9 m. The plans include overall improvement of the port facilities as well as construction of commercial berths. Under the plan, a container berth of 350 m is scheduled for completion; the salt export quay and 7 general cargo berths will be improved. The estimated capacity after rehabilitation is estimated to be about 3.9 m tons.

Port of Suez

16. The Port of Suez is located at the northern shores of the Bay of Suez and at the southern end of the Suez Canal. It is approximately 135 km to Cairo. The port traditionally serves the eastern trade routes and primarily used for wheat from Australia and some general cargo. Port Ibrahim and Adabiyah are the two principal facilities for cargo and passenger traffic. At Port Ibrahim, the total usable quay length is about 850 m with 6 berths. Water depth varies between 7 to 9 m. At Adabiyah, only about 300 m of quay, at present, is used for handling ships. The plans for rehabilitation works include 3 berths for passenger/cargo combination at Port Ibrahim and 2 berths for grain and 3 berths for general cargo at Adabiyah. The estimated capacity is about 3.0 million tons.

Safaga

17. Safaga is located in the center of Egypt's Red-Sea Coast and enjoys a large and well-protected harbour. The bay offers a considerable depth of water even at close distances to the shoreline. At present, the port consists of a 600 m quay with a depth of 10 m providing three berths for medium size ships. In addition, there is a lighter quay of 200 m long with a depth of 2.5 m and 115 m long 8.5 deep jetty for bulk phosphate. The plans are designed to improve the general cargo berths and to establish a grain berth. The phosphate jetty will also be improved. After the completion of rehabilitation works, Safaga will have a capacity of 2.0 m tons.

Allocation of Forecast Traffic by Ports

18. In terms of allocation of Egypt's maritime traffic among different ports, the distinction between the Mediterranean ports and the Red-Sea ports is the most important. This distinction is, for the most, partly dictated by the overseas origins/destinations of the traffic. All eastbound traffic destined to or originating from Cairo, Middle and Upper Egypt is likely to be handled at the Red Sea ports of Suez and Safaga. In the case of such traffic,

the hinterlands of the Mediterranean ports will be confined primarily to Alexandria, Damietta and Port Said governorates. In the case of westbound traffic, the entire country becomes the hinterland of the Mediterranean ports, although in the case of Upper Egypt some traffic may use the Red Sea ports depending on the trade-off between the additional inland transport costs and the extra sailing costs and canal charges. In any event the volume of maritime traffic originating from or destined to Upper Egypt is not likely to be substantial.

19. Although Egypt has relatively strong trade relations with Far Eastern countries such as India, Japan, People's Republic of China and Taiwan, the greater part of its commercial relationships is with the Western countries. There are no indications suggesting that this pattern will change in the future. Therefore the division of Egypt's total maritime traffic will likely remain in the ratio of 85 to 15 in favor of the westbound/originating traffic. In terms of traffic allocation between the Mediterranean ports, with the exception of the areas immediately adjacent to each port, inland transport costs do not play an important role. In this case, the availability of adequate port facilities and appropriate cargo-handling equipment is a more important factor in traffic allocation among ports. Similar observations also apply to the Red Sea ports.

Minerals and Coal

20. Coal traffic is presently handled at Alexandria where special unloading and storage facilities are available. The estimated capacity is about 3.5 million tons. Therefore, totality of coal imports will continue to be received at this port. Alumina will continue to be imported through Safaga where special unloading and storage facilities are available. The future of phosphate trade is uncertain; however if and when the Abu Tartur deposits are developed, the export traffic, in all likelihood, will use Safaga. Imports of pellets will be handled at the new mineral jetty which is to be built at Dikheila.

Wheat

21. Wheat is at present imported mostly in bulk. There are plans to upgrade the handling and storage facilities in existing ports and also to construct facilities in new ports, i.e., Damietta. In Alexandria, additional silo capacity is presently under construction. When completed Alexandria will be able to handle about 4.0 million tons of wheat. The first phase of Port of Damietta will have a special berth for wheat with an annual capacity of around 2 million tons. The Ports of Suez, Safaga and Port Said also have additional wheat-handling capacity of about 3.8 million tons. Therefore, the available capacity will be adequate to handle Egypt's wheat imports for some years to come, although an additional capacity will be required after 1995.

Timber

22. Historically Alexandria has been the main port of entry for Egypt's timber and wood imports. A special area in the port is reserved exclusively

for this traffic and it is expected that bulk of this traffic will continue to be handled at Alexandria. The proposed Dikheila port project and Port of Damietta include special berths for timber to help ease the congested situation presently existing at the Port of Alexandria, and to facilitate the movement of expected growth in this traffic.

Other

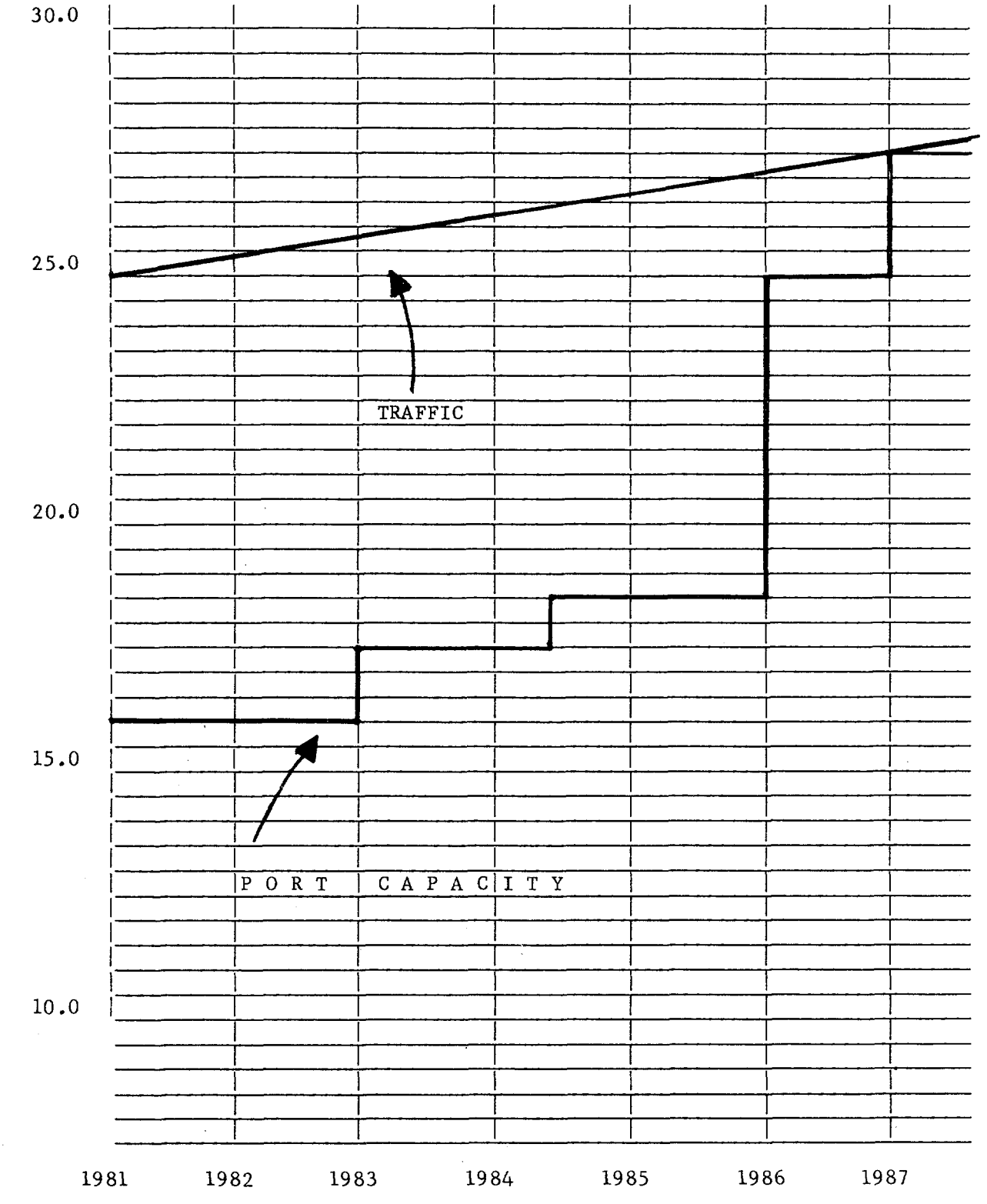
23. Other commodities which assume some importance in Egypt's maritime traffic are cotton, salt, molasses and edible oils. Alexandria is the country's cotton trading center; all institutions involved in grading and preparing cotton for export are located in this area. Therefore, all cotton-related traffic will continue to use the port of Alexandria. Salt will continue to be shipped from Port Said, since salt works are located near the port. In molasses and edible oils, Alexandria will continue to be the major trading center and therefore will handle the bulk of this traffic.

24. Alexandria/Dikheila will remain to be the country's major port facility in general cargo. The availability of commercial institutions and shipping agents in this area will continue to attract traffic to this port. Much of the Delta area as well as Cairo region will continue to rely on Alexandria/Dikheila for most of its import requirements. Damietta port will gradually develop to be the second important port for general cargo. With the development of ancillary services, the volume of cargo handled will rapidly increase after 1990's to reach about 3.6 m tons. Other secondary ports, after the completion of rehabilitation programs will also contribute, although modestly in moving general cargo traffic.

Projected total port traffic and planned capacity Expansion: A Synthesis

25. In the following paragraphs the details of the planned port capacity expansions and traffic projections which are discussed above are brought together with the aid of diagrams. The figure below related the projected traffic volume to the planned capacity expansions. Petroleum and raw material requirements of the Dikheila steel plant are excluded, as the facilities needed for these commodities are location specific and cannot readily be substituted for other traffic. Existing facilities and those planned under the national port expansion program will be adequate to meet the requirements of these commodities. Completion of the ongoing improvements at Alexandria and the planned rehabilitation of smaller ports will gradually increase the total port capacity in the immediate future. With the completion of the project port at Dikheila and the first stage of Phase I development at Damietta, the total port capacity will achieve a significant jump by 1986.

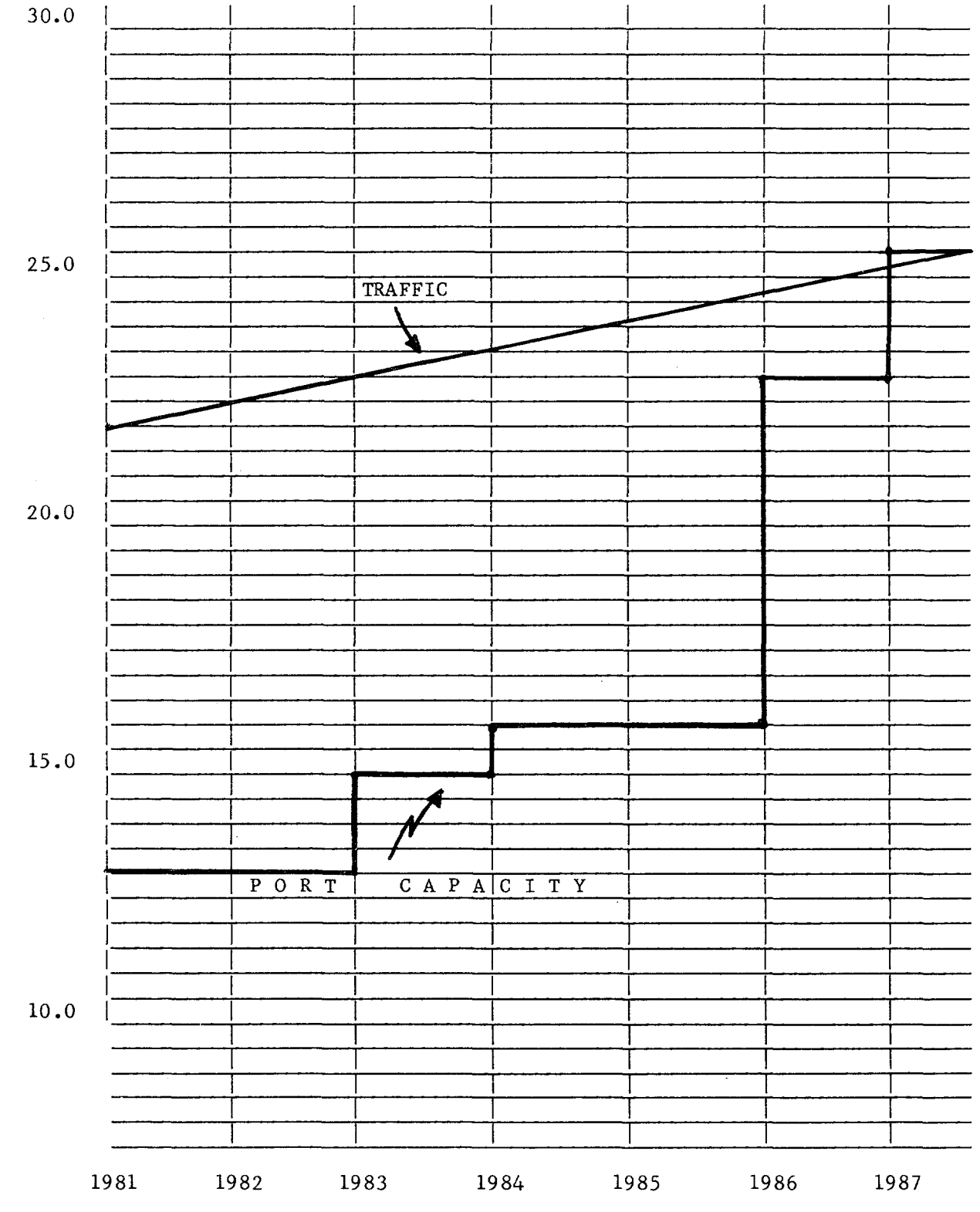
Total Plan Port Capacity of the Arab Republic of Egypt and Traffic Forecasts



The figure above clearly shows that because of the long delays in expanding port capacity to handle the growing traffic, even with the assumption that all planned capacity expansions would be implemented on schedule, the nominal port capacity will be just adequate to meet the demand by about 1987. The equilibrium will be reached only after the completion of the second stage of Phase I of Damietta. The projected growth in port traffic after 1987 will require the construction of the second phase developments both at Dikheila and Damietta. However, preparations for these further expansions need to be started soon if a recurrence of congestion is to be avoided in the future.

26. Because hinterlands of the Mediterranean ports and the Red-Sea ports are separate and distinct, the facilities provided in one region are not readily substitutable for the other. Therefore, traffic projections and planned capacity expansions of each region are analyzed separately. The figure below shows the projected traffic and planned capacities of the Mediterranean ports. The equilibrium, similar to the country-wide case will be attained only by about 1987.

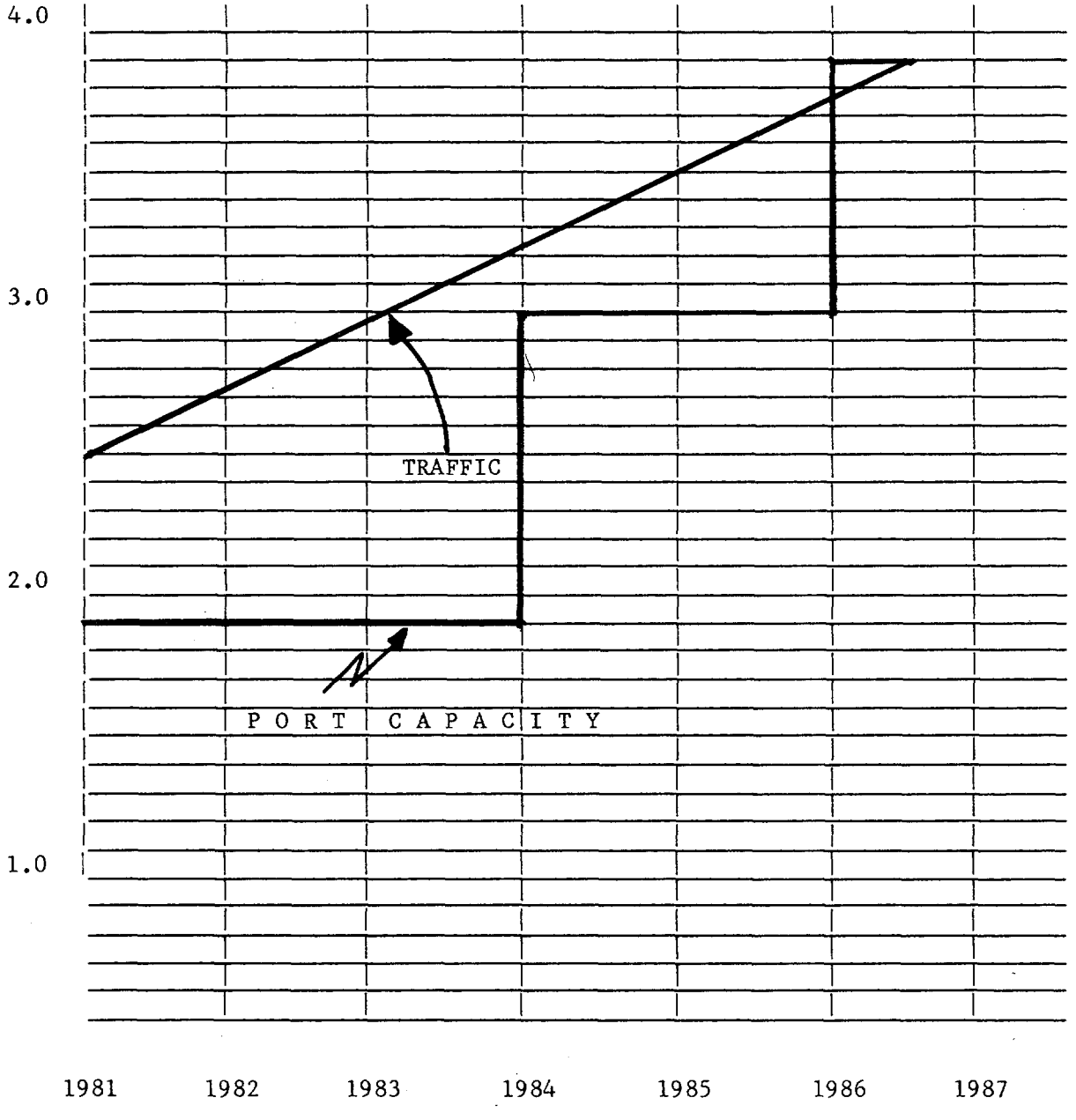
Mediterranean Ports of the Arab Republic of Egypt
Traffic and Capacity Forecasts



27. The figure below relates the projected traffic and the planned capacity expansions at the Red-Sea ports. The results are similar to those shown above.

Capacity
Traffic
(m Ton)

Red-sea Ports of the Arab Republic of Egypt
Traffic and Capacity Forecasts



28. The following tables show forecast traffic volumes for major commodity and commodity groups by ports for 1986 and 1995:

Table 3

1986 Traffic Allocation by Ports

	Alex/Dikh.	Damietta	P. Said	Suez	Safaga	Total
General Cargo	6,700	1,500	1,900	500	200	10,800
Grains	3,000	1,500	1,000	800	1,000	7,300
Cement	2,000	400	400	100	100	3,000
Timber	1,300	300	-	-		1,600
Phosphate	-	-			300	300
Coal	2,900	-	-	-	-	2,900
Fertilizer	400	-	100	-	-	500
Salt	-	-	160	-		160
Pellets	1,300					1,300
Scrap	200					200
Other	400		200	300		900
	18,200	3,700	3,760	1,700	1,940	29,300

Table 4

1995 Traffic Allocation by Ports

	Alex/Dikh.	Damietta	P. Said	Suez	Safaga	Total
General Cargo	9,200	3,600	2,600	1,300	1,000	17,700
Grains	3,800	2,000	1,400	1,400	1,000	9,600
Cement	500	-	-	500	-	1,000
Timber	2,000	500	-	-		2,500
Phosphate	-	-			300	300
Coal	3,500	-	-	-	-	3,500
Fertilizer	100	-	-	-	-	100
Alumina	-	-	-	-	400	400
Salt	-	-	160	-		160
Pellets	3,000					3,000
Other	950	400	-	-		1,350
	23,050	6,500	4,160	3,200	2,700	39,610

Summary

29. The proposed port project at Dikheila as well as other components of the national port plan are long overdue and are much needed. The planned new constructions and rehabilitation works will not only meet the requirements of the expected growth in traffic during the plan period but will also enable Egypt to avoid high cargo-handling costs by eliminating severe port congestion presently prevailing, particularly at Alexandria. Moreover, the planned capacity expansions, assuming that they are all implemented as scheduled, will be just adequate to handle efficiently the forecast traffic volume. Therefore, it is essential that preparation should start soon for implementing the second phases of development both at Dikheila and Damietta if a recurrence of congestion is to be avoided.

APPRAISAL OF DIKHEILA PORT PROJECT

Details of Cost Estimates

	----Egyptian Pounds (Million)---- Local	Foreign	Total	----------US$ (Million)-------- Local	Foreign	Total	Approximate Foreign %	Approximate % of Total Cost
I. Civil Works and Dredging								
a) Main Breakwater	17.776	3.386	21.162	25.394	4.837	30.231	16	6.4
b) Mineral Berth and Access Channel	19.049	16.009	35.058	27.213	22.870	50.083	46	10.6
c) Commercial Berths (incl. dredging)	24.669	20.183	44.852	35.241	28.833	64.074	45	13.5
e) Roads, Paving	20.077	3.824	23.901	28.681	5.463	34.144	16	7.2
f) Rail Access	1.116	0.084	1.200	1.594	0.120	1.714	7	0.4
g) Sheds & Warehouses	0.940	2.530	3.470	1.343	3.614	4.957	73	1.1
h) Container Shed	0.320	0.850	1.170	0.457	1.214	1.671	73	0.4
i) Miscellaneous	4.745	7.117	11.862	6.779	10.167	16.946	60	3.5
j) Lighthouse	0.600	0.400	1.000	0.857	0.571	1.428	40	0.3
k) Port Buildings	3.882	2.588	6.470	5.546	3.697	9.243	40	1.9
Subtotal	93.174	56.971	150.145	133.105	81.386	214.491	38	45.3
II. Equipment								
a) At Commercial Berths	1.550	29.450	31.000	2.214	42.071	44.285	95	9.3
b) At Mineral Berths	0.526	10.004	10.530	0.751	14.292	15.043	95	3.2
c) At Stockyard	1.850	16.650	18.500	2.643	23.786	26.429	90	5.6
d) Floating Plant	0.600	11.400	12.000	0.858	16.285	17.143	95	3.6
Subtotal	4.526	67.504	72.030	6.466	96.434	102.900	94	21.7
III. Engineering Services								
a) Supervision of Construction	4.443	1.111	5.554	6.347	1.587	7.934	20	1.7
b) Design	0.868	3.217	4.085	1.240	4.596	5.836	79	1.2
c) Technical Assistance - Alexandria	0.115	0.460	0.575	0.164	0.657	0.821	80	0.2
Subtotal	5.426	4.788	10.214	7.751	6.840	14.591	47	3.1
III. Contingencies								
a) Physical	15.243	16.014	31.257	21.776	22.877	44.653	51	9.4
b) Price	39.067	28.567	67.634	55.810	40.810	96.620	42	20.5
Subtotal	54.310	44.581	98.891	77.586	63.687	141.273	45	29.9
Grand Total	157.436	173.844	331.280	224.908	248.347	473.255	52	100.0

Note

1. Sources IMC, Consultants, Bank Staff

2. Contingencies - Physical Contingency 15% on Civil Works and 10% on equipment; Price Contingencies on Civil Works and equipment; Foreign Component: 1982, 83 - 8%, 84 - 7.5%; 85 - 7%; 1986 - 88 - 6%; local component: 1982, 14%; 1983-86, 13%; Price Datum for Cost Estimates - end 1981.

3. Currency exchange rate: Egyptian pound £E 0.7 = US$1.0

ANNEX 3

STAFF APPRAISAL REPORT

EL DIKHEILA PORT PROJECT

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Principal Items of Equipment

Equipment required under the project is considered hereunder under four general categories; namely:

i) cargo-handling equipment at the commercial berths;

ii) cargo-handling equipment at the mineral jetty;

iii) floating plant; and

iv) cargo-handling equipment at the ore stockyard.

Cargo-handling Equipment at the Commercial Berths

The definitive list of equipment to be provided under the project will be selected following the procurement procedures already outlined in paras. 3.19, 3.20 and 3.21. Thus, at the container terminal, the equipment to be selected to handle containers in the yard, at the freight station and at the transfer points for road and rail delivery is expected to be influenced by a choice between straddle carrier operation and operation by yard-gantry cranes. The evaluation bids would take account of alternative stacking arrangements as well as other relevant factors, such as the paved area required for each system, the most suitable location of a freight station, and the facilities for equipment maintenance. A list of the equipment adopted for the purposes of this report is as follows:

i) Commercial berths

Container berths, freight station and rail transfer yard

3 rail-mounted container gantry cranes: 45-ton capacity
6 tyred gantry yard cranes
11 tractors 200 HP
30 trailers 2 x 20
9 forklifts 12 ton
3 forklifts 4 ton
6 forklifts 2 ton
2 rail-mounted transfer cranes
4 container handling units

General Cargo and Timber Berths

10 rail-mounted quay cranes 8 ton
6 mobile cranes 15 ton
1 mobile crane 40 ton
15 forklift trucks 12 ton
8 forklift trucks 6 ton
51 forklift trucks 3 ton
3 forklift trucks 2 ton
5 tractors
30 trailers

ii) Mineral Jetty and at a Berth for Scrap Metal

2 rail-mounted unloading gantry cranes of 30-ton capacity
2 unloading conveyors of 1,000-ton per hour capacity. Conveyor transfer station
1 crane 12-ton capacity with grab and magnet
20 heavy-duty dump trucks
1 bulldozer

iii) Floating Plant

3 tugs 2,500 HP with fire-fighting equipment
2 pilot boats
2 workboats
Bunkering vessel and mooring
Oil spill equipment

iv) Ore Stockyard

2 rail-mounted ore stackers, 2,000 ton/hr 40 m outreach
2 rail-mounted ore reclaimers, 500 ton/hr
Conveyor belt system 2,000 ton/hr feeding four stacks including conveyance system crossing the main road between the stockyard and the steel mill.
Small plant including stack trimmers.

Control and information systems, one for containers movements and one for the movements of materials for use in the steel mill (iron ore, pellets, etc.) together with training in the use of all important equipment items are included in the project. The cost of the foregoing is included in the estimated cost of the equipment. The cost of small and miscellaneous items of equipment, such as electrical switchgear, is included under the appropriate civil works.

ANNEX 4

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Alexandria Port Modernisation Plan

Main Objectives

The main objectives of the study are to provide APA and the Government with specific engineering and planning proposals to assist APA in:

(1) The continued modernisation of the port of Alexandria.

(2) The improvement of the main transport arteries to the port of Alexandria/Dikheila.

(3) The integration of port services offered by Alexandria and Dikheila and cargo allocations within both parts of the enlarged port.

(4) The future development of both ports to 1990 with particular reference to the designation of land for port related use.

(5) Recommendations for the entrance channel to Alexandria, to be effective when port faciilities at Dikheila come into operation.

(6) A review of siltation within the Alexandria/Dikheila port complex and on any recommended remedial measures.

Details to be taken into account in carrying out this study should include, but not necessarily be limited, to the following:

1 - Alexandria Modernisation

(a) Taking account of the current programme for modernisation of the port of Alexandria already prepared and being executed by APA, to review and incorporate this work as appropriate into an updated comprehensive modernisation programme providing recommendations for the timing of all important elements such as renewal of quays and demolition of unsuitable sheds and other facilities.

2 - Transport Improvements to the Port of Alexandria/Dikheila

Taking account of the development proposals for road, rail and water transport already contained in the Ministry of Transport's General development schemes, to prepare for the port of Alexandria/Dikheila

and the city of Alexandria, specific phased proposals to relieve congestion at the present port entry and exit gates. These recommendations should consider traffic destined or originating from Cairo and that related to Alexandria. These recommendations should be made in the light of town planning measures already submitted and currently being studied and shall have due regard to the development concerns of the Alexandria Governorate.

3- Alexandria/Dikheila Integration

(a) Recommendations for the optimum traffic allocation between these two parts of Alexandria port to ensure maximum efficiency in container-handling operations, and modern facilities for bulk imports such as grain and coal.

(b) Proposals for future traffic allocation within the greater Alexandria port complex based on the forecast of the Ministry of Transport - Port Sector review by consultants Nedeco, and having regard to port development at other Egyptian ports.

(c) Proposals for the most economic development of facilities for both parts of the greater Alexandria port area having regard to the outline master plan for Dikheila prepared in 1977 by consultants BCEOM/WYP/PAM.

4- Future Land use and Development

Recommendations shall be made for the use of land within the boundaries of land already ceded to the domain of Alexandria port and having due regard to the industrial land use and urban plans of the Alexandria Governorate.

5- Access Channel

Recommendations for a new or improved access channel to Alexandria based on an analysis of sub-soil conditions and navigational factors in view of the cancellation of plans to dredge an alternate pass, under World Bank Loan 1239-EGT and in view of the present development plans for Dikheila.

6- Siltation

A review of siltation within the boundaries of the sea area between Alexandria and Dikheila and recommendations for any subsidiary studies or analyses to minimise siltation, if in the opinion of the consultant such studies are warranted.

ANNEX 5

STAFF APPRAISAL REPORT

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Selected Documents and Data Available in the Project File

A. General Reports and Studies in the Transport Sector

1. Egypt National Transport Study Draft Final Report 1981 Phase II including Annexes I to VIII by Netherlands Engineering Consultants (Holland) in association with PACER consultants, Cairo.
2. Development Policy
   Ports of Egypt
   Fedric R. Harris 1980
3. National Transport Study
   Intern Report 1977
   by Louis Berger International
4. Master Plan, Port of Damietta
   July 1979 by F.R. Harris

B. General Reports and Studies Relating to the Project

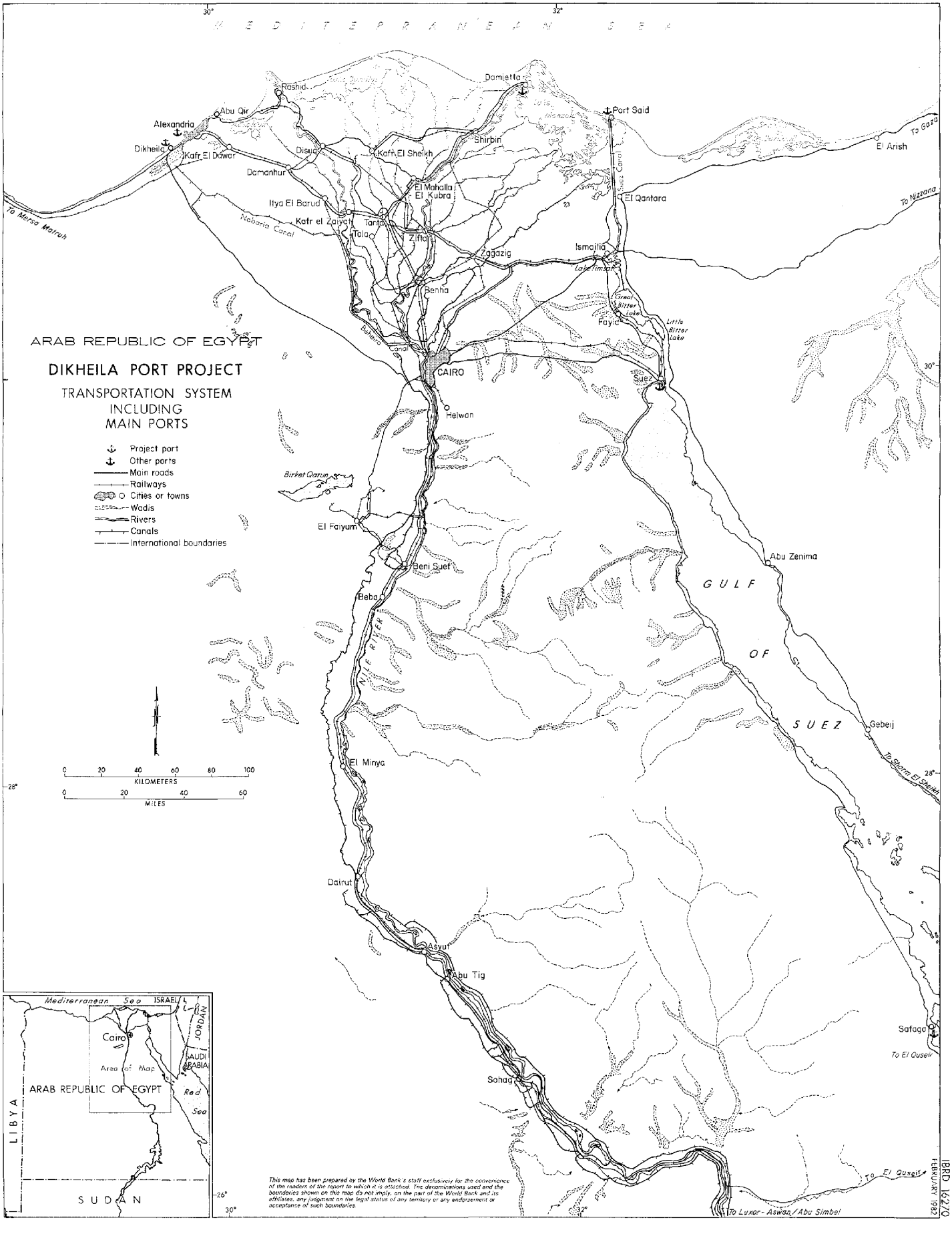
Dikheila Port Project Master Plan

1. Volume 1 - Proposed layout year 2000
2. Volume 2 For Phase 1
   December 1977
   By Bureau Central d'Etudes pour les Equipements d'Outre-Mer (France).
   White Young and Partners (UK), and
   Port Autonome de Marseilles (France) (BCEOM/WYP/PAM).
3. Feasibility study on Dikheila Integrated Steel Mill Project
   Japan International Cooperation Agency, August 1979.
4. Dikheila Port Project
   The sponge iron pier
   BCEOM, August 1976
5. Alexandria Port Authority
   Report on organization, management and finance by consultants Bureau Central d'Etudes pour les Equipements d'Outre-Mer (France), Peat Marwick & Mitchell (UK), Port Autonome de Marseilles and Port Autonome du Havre (France), (BCEOM/PMM/PAM/PAH)

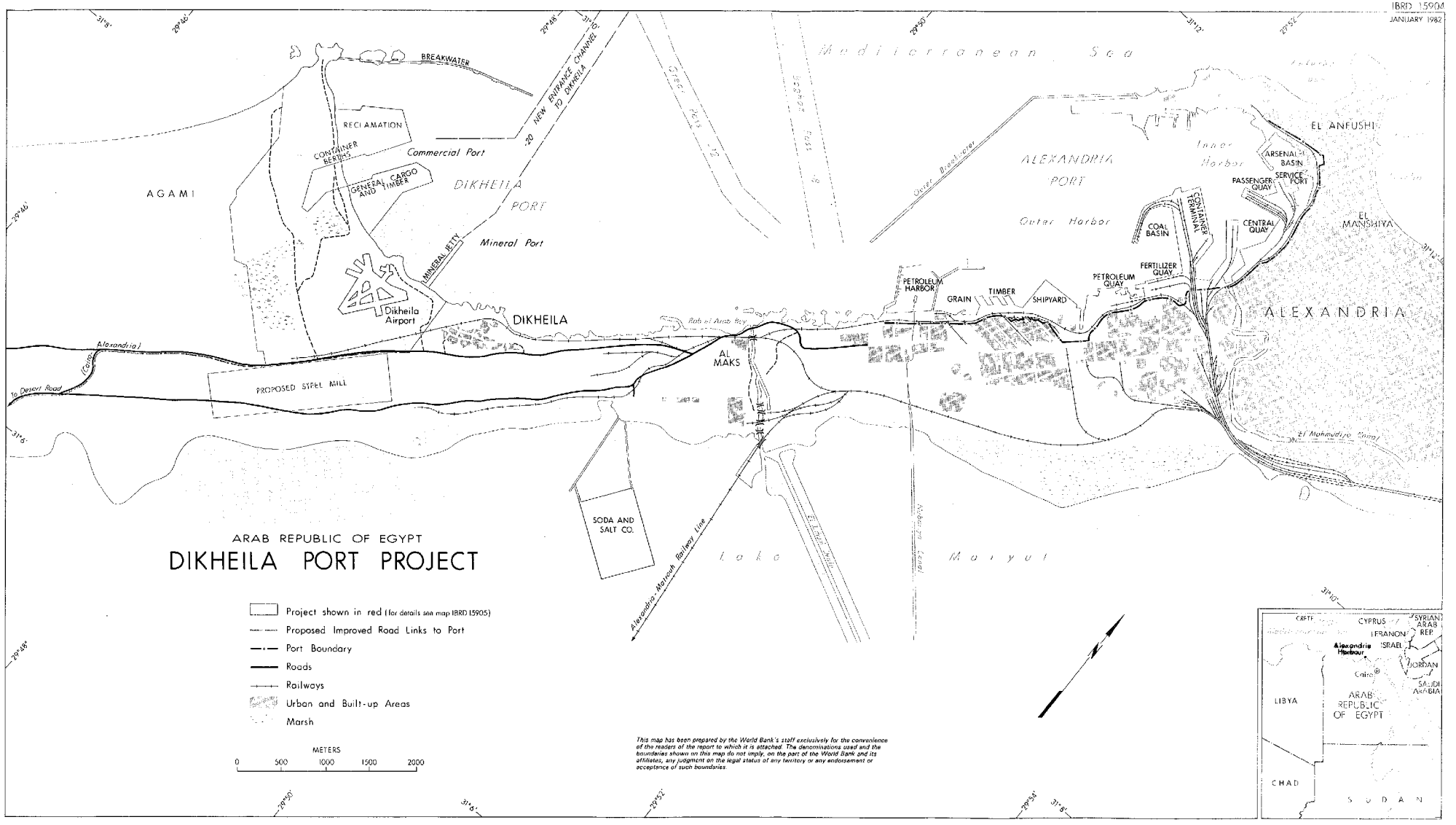
C. Selected Working Papers

1. APA's audited accounts for 1979 and June 30, 1980
2. UASC's audited accounts for 1979 and June 30, 1980
3. GWE's audited accounts for 1979 and June 30, 1980
4.* Project cost estimates

* Held by Project Officer


ARAB REPUBLIC OF EGYPT
DIKHEILA PORT PROJECT
TRANSPORTATION SYSTEM
INCLUDING
MAIN PORTS
Project port
Other ports
Main roads
Railways
Cities or towns
Wadis
Rivers
Canals
International boundaries
KILOMETERS
MILES
MEDITERRANEAN SEA
Rashid
Damietta
Port Said
Abu Qir
Alexandria
Dikheila
Kafr El Dawar
Disuq
Kafr El Sheikh
Shirbin
El Arish
To Gaza
Damanhur
El Mahalla El Kubra
Suez Canal
El Qantara
To Nizzana
To Mersa Matruh
Itya El Barud
Kafr el Zaiyat
Tanta
Talaa
Zifta
Nubaria Canal
Zagazig
Ismailia
Lake Timsah
Benha
Great Bitter Lake
Fayid
Little Bitter Lake
Canal
CAIRO
Suez
Helwan
Birket Qarun
El Faiyum
Beni Suef
Abu Zenima
GULF OF SUEZ
Beba
NILE RIVER
Gebeij
To Sharm El Sheikh
El Minya
Dairut
Asyut
Abu Tig
Safaga
To El Quseir
Sohag
To El Quseir
To Luxor - Aswan / Abu Simbel
Mediterranean Sea
ISRAEL
JORDAN
Cairo
SAUDI ARABIA
Area of Map
ARAB REPUBLIC OF EGYPT
Red Sea
LIBYA
SUDAN
This map has been prepared by the World Bank's staff exclusively for the convenience of the readers of the report to which it is attached. The denominations used and the boundaries shown on this map do not imply, on the part of the World Bank and its affiliates, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.
IBRD 16270
FEBRUARY 1982

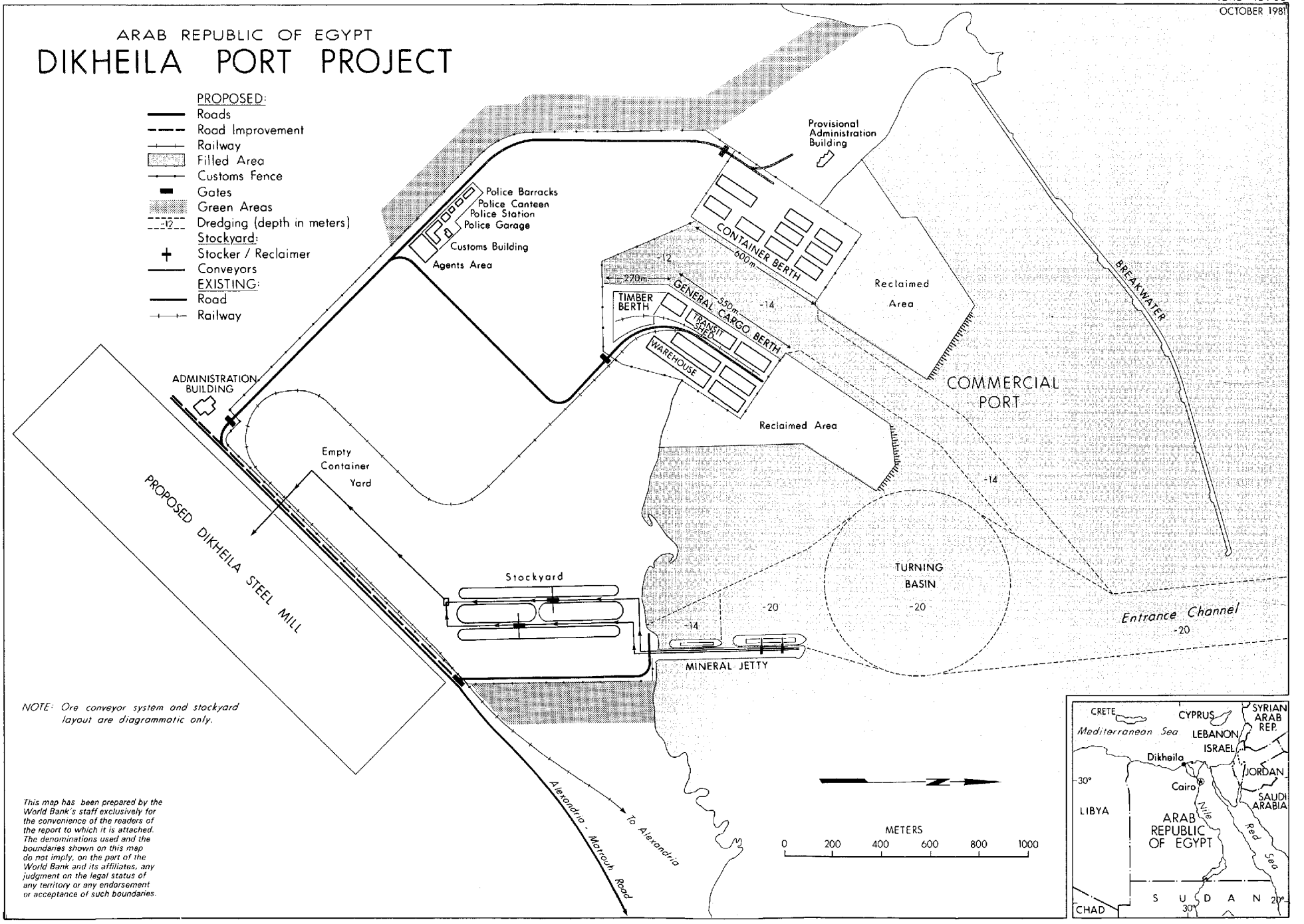
IBRD 15904
JANUARY 1982



IBRD 15905
OCTOBER 1981

ARAB REPUBLIC OF EGYPT

DIKHEILA PORT PROJECT



NOTE: Ore conveyor system and stockyard layout are diagrammatic only.