

Chapter 5 Maritime Transportation Trends through Egypt and in the Mediterranean Sea

5.1 Cargo Movement to/from Egypt

5.1.1 Cargo Traffic

There are five major ports in Egypt, namely the Greater Alexandria Port (Alexandria and Dekheila Port), Damietta Port, Port Said Port, Suez Port and Safaga Port. More than 90% of maritime traffic involves the five major ports. Trend of cargo volume in the five major ports are shown in Table 5.1.1 and Figure 5.1.1. The volume of cargo handled in the five major ports dropped to 31.6 million tons in 1992 but then increased steadily for five years reaching 51.1million tons in 1997. Among the five major ports, the Greater Alexandria Port has a cargo volume of 24.8 million tons accounting for 48.5% of the total Egyptian cargo volume, followed by Damietta Port (14.1 million tons), Port Said Port (6.8 million tons), Suez Port (4.1 million tons) and Safaga Port (1.5 million tons)

Trend of import and export cargo volume handled in the five major ports is shown in Table 5.1.2. The volume of import cargo has been greater than that of export cargo, while export cargo has steadily increased for the past ten years import cargo has rapidly increase in the last 5 years.

Trend of import and export cargo by major commodity for the last ten years is shown in Table 5.1.3 and Table 5.1.4 As the major commodity of import, wheat accounts for 6.9 million tons (18.1% of total import volume), maize account for 3.3 million tons (8.6%), aluminum accounts for 3.1 million tons (8.1%) and cement accounts for 2.7 million tons (7.0%) in 1997. On the other hand, the major commodity of the export is Petroleum accounting for 4.4 million tons (33.5% of total export volume) in 1997.

Table 5.1.1 Egyptian Port-wise Total Cargo for the last 10 years (by Total)

(Unit: thousand tons)

Port / Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Greater Alexandria	21,449	20,567	21,719	21,401	16,700	20,575	20,313	21,604	22,461	24,815
Port Said	2,773	2,699	3,057	2,933	3,267	3,230	4,571	6,479	6,183	6,764
Damietta	2,747	2,076	2,917	3,276	5,190	5,110	7,366	8,923	11,696	14,052
Suez	6,645	7,726	6,709	5,623	4,887	5,514	4,541	4,330	6,042	4,098
Safaga	2,151	2,271	2,014	1,634	1,598	2,105	1,943	1,397	1,958	1,463
Grand Total	35,765	35,339	36,416	34,867	31,642	36,534	38,734	42,733	48,340	51,192

Source) "10 Years Statistical Report (1988-1997), Vol.No.2-January 1998, English Edition"

Ministry of Maritime Transport, Egyptian Maritime Data Bank

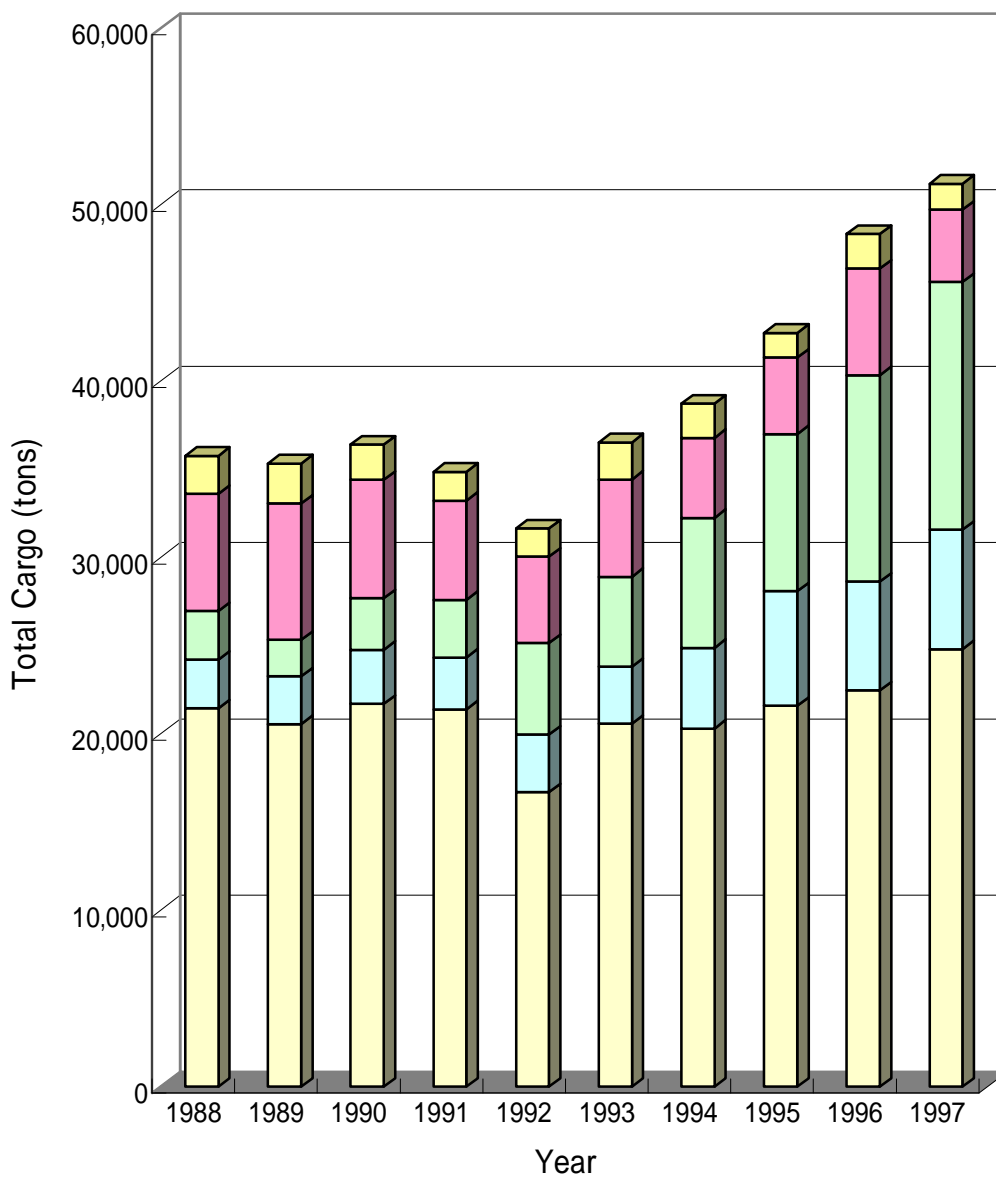


Figure 5.1.1 Egyptian Port-wise Total Cargo for the last 10 years (1988-1997)

Table 5.1.2 Egyptian Port-wise Total Cargo for the last 10 years (by Trade)

(Unit: thousand tons)

Port / Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Greater Alexandria										
Total	21,449	20,567	21,719	21,401	16,700	20,575	20,313	21,604	22,461	24,815
Import	18,892	17,802	18,274	17,165	12,460	15,594	14,984	16,764	17,915	19,944
Export	2,557	2,765	3,445	4,236	4,240	4,981	5,329	4,840	4,546	4,871
Port Said										
Total	2,773	2,699	3,057	2,933	3,267	3,230	4,571	6,479	6,183	6,764
Import	2,099	2,079	2,303	2,193	2,344	1,987	3,164	4,407	3,873	4,332
Export	674	620	754	740	923	1,243	1,407	2,072	2,310	2,432
Damietta										
Total	2,747	2,076	2,917	3,276	5,190	5,110	7,366	8,923	11,696	14,052
Import	2,733	2,046	2,636	2,544	3,789	3,476	5,340	6,722	8,516	10,299
Export	14	30	281	732	1,401	1,634	2,026	2,201	3,180	3,753
Suez										
Total	6,645	7,726	6,709	5,623	4,887	5,514	4,541	4,330	6,042	4,098
Import	5,819	6,709	6,063	4,111	3,412	3,131	2,368	2,106	3,182	2,557
Export	826	1,017	646	1,512	1,475	2,383	2,173	2,224	2,860	1,541
Safaga										
Total	2,151	2,271	2,014	1,634	1,598	2,105	1,943	1,397	1,958	1,463
Import	1,885	1,985	1,615	1,480	1,258	1,431	1,406	896	1,413	1,001
Export	266	286	399	154	340	674	537	501	545	462
Grand Total										
Total	35,765	35,339	36,416	34,867	31,642	36,534	38,734	42,733	48,340	51,192
Import	31,428	30,621	30,891	27,493	23,263	25,619	27,262	30,895	34,899	38,133
Export	4,337	4,718	5,525	7,374	8,379	10,915	11,472	11,838	13,441	13,059

Source) "10 Years Statistical Report (1988-1997), Vol.No.2-January 1998, English Edition"

Ministry of Maritime Transport, Egyptian Maritime Data Bank

Remarks) Transit cargo is included in this table

Table 5.1.3 Commodity-wise Import Cargo through Egyptian Ports for the last 10 years (1988-1997)

(Unit: thousand tons)

Cargo / Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
General cargo										
Flour	1,253	1,030	760	428	104	545	311	261	109	61
General & container	5,880	6,132	6,917	7,117	7,318	6,965	7,694	8,751	9,920	10,688
Sub-total	7,133	7,162	7,677	7,545	7,422	7,510	8,005	9,012	10,029	10,749
Grains										
Wheat	5,548	5,915	5,616	5,048	5,732	4,652	5,888	5,877	6,355	6,920
Maize	1,267	1,074	1,097	884	763	2,297	2,041	2,712	2,146	3,266
Sub-total	6,815	6,989	6,713	5,932	6,495	6,949	7,929	8,589	8,501	10,186
Dust & metals										
Cement	2,906	612	98	32	6	3	458	1,474	2,428	2,678
Aluminum	2,315	2,255	2,515	2,132	2,245	2,243	2,245	1,775	1,976	3,078
Coke	1,283	1,386	1,549	1,415	1,505	1,772	1,876	1,734	1,944	1,797
Phosphate	0	0	0	0	0	0	0	0	0	0
Others	0	0	0	0	11	33	369	535	1,136	888
Fertilizer	628	684	602	569	138	288	158	262	397	207
Sub-total	7,132	4,937	4,764	4,148	3,905	4,339	5,106	5,780	7,881	8,648
Special cargo	1,069	1,120	1,252	1,077	1,056	1,880	1,924	2,217	2,009	2,302
Sub-total	1,069	1,120	1,252	1,077	1,056	1,880	1,924	2,217	2,009	2,302
Liquid bulk										
Petroleum	8,529	9,856	924	6,806	2,114	2,040	1,155	1,184	2,315	1,658
Oil & Grease	720	548	609	746	679	864	733	867	988	862
Molasses	0	0	0	0	0	0	0	0	0	0
Sub-total	9,249	10,404	1,533	7,552	2,793	2,904	1,888	2,051	3,303	2,520
Total	31,398	30,612	21,939	26,254	21,671	23,582	24,852	27,649	31,723	34,405
Transit cargo	0	0	586	1,239	1,592	2,037	2,410	3,346	3,181	3,728
Grand Total	31,398	30,612	22,525	27,493	23,263	25,619	27,262	30,995	34,904	38,133

Source) "10 Years Statistical Report (1988-1997), Vol.No.2-January 1998, English Edition"

Ministry of Maritime Transport, Egyptian Maritime Data Bank

Table 5.1.4 Commodity-wise Export Cargo through Egyptian Ports for the last 10 years (1988-1997)

(Unit: thousand tons)

Cargo / Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
General cargo										
Flour	0	0	0	0	0	0	0	0	0	0
General & container	1,299	1,601	1,740	2,185	2,484	2,500	2,473	2,502	3,492	3,528
Sub-total	1,299	7,162	1,740	2,185	2,484	2,500	2,473	2,502	3,492	3,528
Grains										
Wheat	0	0	0	0	0	0	0	0	0	0
Maize	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0	0	0
Dust & metals										
Cement	8	9	7	49	293	619	247	102	257	20
Aluminum	49	0	1	0	17	0	8	0	0	0
Coke	115	0	0	0	0	12	38	16	17	1
Phosphate	236	274	338	154	158	156	185	111	93	163
Others	0	3	4	0	98	268	251	454	287	384
Fertilizer	135	128	190	327	633	434	756	589	686	682
Sub-total	543	414	540	530	1,199	1,489	1,485	1,272	1,340	1,250
Special cargo	3	9	20	1	2	8	28	41	30	30
Sub-total	3	9	20	1	2	8	28	41	30	30
Liquid bulk										
Petroleum	2,376	2,526	2,570	3,420	2,963	4,682	4,950	4,662	5,265	4,381
Oil & Grease	0	0	0	0	0	0	0	0	0	0
Molasses	116	168	101	131	154	180	171	246	223	186
Sub-total	2,492	2,694	2,671	3,551	3,117	4,862	5,121	4,908	5,488	4,567
Total	4,337	10,279	4,971	6,267	6,802	8,859	9,107	8,723	10,350	9,375
Transit cargo	0	0	504	1,107	1,577	2,056	2,365	3,115	3,090	3,685
Grand Total	4,337	10,279	5,475	7,374	8,379	10,915	11,472	11,838	13,440	13,060

Source) "10 Years Statistical Report (1988-1997), Vol.No.2-January 1998, English Edition"

Ministry of Maritime Transport, Egyptian Maritime Data Bank

5.1.2 Container Cargo Traffic

Historical trend of container cargo volume in TEUs is shown in Table 5.1.5. The container cargo volume in TEUs handled in major ports account for 571 thousand TEUs of local containers and 861 thousand TEUs of transshipment container respectively in 1997. Transshipment container cargo volume has rapidly increased from 114 thousand TEUs in 1990 to 861 thousand TEUs in 1997 in spite of gradual increasing of local container cargo volume from 237 thousand TEUs in 1990 to 571 thousand TEUs in 1997.

Container weight and volume handled through Egyptian Port in 1997 are shown in Table 5.1.6. The average weight per TEU of local container and transshipment container in 1997 are 8.17 tons and 9.14 tons respectively.

Table 5.1.5 Container Volume handled through Egyptian Ports in the Last 10 Years

(unit: TEUs)

Port / Year	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Greater Alexandria	154,512	156,148	228,287	296,396	236,532	257,773	289,115	304,122	326,894	397,327
Import+Export	154,495	152,734	190,790	213,310	229,253	247,143	284,427	301,841	325,129	389,378
Transshipment	17	3,414	37,497	83,086	7,279	10,630	4,688	2,281	1,765	7,949
Import	76,917	75,049	100,014	109,433	117,655	131,111	149,450	155,601	166,833	204,343
Transshipment	10	1,727	19,679	40,871	3,354	5,160	2,337	1,134	884	4,143
Export	77,578	77,685	90,776	103,877	111,598	116,032	134,977	146,240	158,296	185,035
Transshipment	7	1,687	17,818	42,215	3,925	5,470	2,351	1,147	881	3,806
Port Said	31,869	39,299	54,783	60,811	117,515	171,337	183,661	324,487	336,034	415,394
Import+Export	31,869	37,742	38,722	45,795	61,739	61,958	65,159	78,703	95,391	104,014
Transshipment	0	1,557	16,061	15,016	55,776	109,379	118,502	245,784	240,643	311,380
Import	16,765	19,006	19,034	23,488	31,080	30,278	33,066	39,444	46,859	51,841
Transshipment	0	805	8,213	7,530	28,275	55,059	59,695	125,971	120,511	157,340
Export	15,104	18,736	19,688	22,307	30,659	31,680	32,093	39,259	48,532	52,173
Transshipment	0	752	7,848	7,486	27,501	54,320	58,807	119,813	120,132	154,040
Damietta	0	0	60,863	207,963	323,680	421,537	518,003	596,562	585,495	606,973
Import+Export	0	0	0	0	2,745	11,729	29,218	45,759	49,094	64,825
Transshipment	0	0	60,863	207,963	320,935	409,808	488,785	550,803	536,401	542,148
Import	0	0	0	0	328	5,026	13,376	22,804	21,300	26,910
Transshipment	0	0	30,678	105,908	162,140	206,065	246,515	280,312	268,441	273,455
Export	0	0	0	0	2,417	6,703	15,842	22,955	27,794	37,915
Transshipment	0	0	30,185	102,055	158,795	203,743	242,270	270,491	267,960	268,693
Suez	5,846	5,625	7,970	3,275	5,210	3,664	7,651	9,352	17,144	12,521
Import+Export	5,846	5,625	7,970	3,275	5,210	3,664	7,651	9,352	17,144	12,521
Transshipment	0	0	0	0	0	0	0	0	0	0
Import	2,906	2,816	3,906	2,653	2,835	1,849	4,748	5,682	8,978	7,224
Transshipment	0	0	0	0	0	0	0	0	0	0
Export	2,940	2,809	4,064	622	2,375	1,815	2,903	3,670	8,166	5,297
Transshipment	0	0	0	0	0	0	0	0	0	0
Grand Total	192,227	201,072	351,903	568,445	682,937	854,311	998,430	1,234,523	1,265,567	1,432,215
Import+Export	192,210	196,101	237,482	262,380	298,947	324,494	386,455	435,655	486,758	570,738
Transshipment	17	4,971	114,421	306,065	383,990	529,817	611,975	798,868	778,809	861,477
Import	96,588	96,871	122,954	135,574	151,898	168,264	200,640	223,531	243,970	290,318
Transshipment	10	2,532	58,570	154,309	193,769	266,284	308,547	407,417	389,836	434,938
Export	95,622	99,230	114,528	126,806	147,049	156,230	185,815	212,124	242,788	280,420
Transshipment	7	2,439	55,851	151,756	190,221	263,533	303,428	391,451	388,973	426,539

Source) "10 Years Statistical Report (1988-1997) English Edition" Vol.No. 2 - January 1998,

Ministry of Maritime Transport Egyptian Maritime Data Bank

Table 5.1.6 Container Weight and Volume Handled through Egyptian Ports in 1997

Port	Import			Export			Total		
	(TEUs)	(tons)	(tons/TEU)	(TEUs)	(tons)	(tons/TEU)	(TEUs)	(tons)	(tons/TEU)
Greater Alexandria									
Total	208,486	2,547,500	12.22	188,841	888,400	4.70	397,327	3,435,900	8.65
Import + Export	204,343	2,478,600	12.13	185,035	853,300	4.61	389,378	3,331,900	8.56
Transshipment	4,143	68,900	16.63	3,806	35,100	9.22	7,949	104,000	13.08
Port Said									
Total	209,181	1,788,446	8.55	206,213	1,543,527	7.49	415,394	3,331,973	8.02
Import + Export	51,841	537,144	10.36	52,173	208,534	4.00	104,014	745,678	7.17
Transshipment	157,340	1,251,302	7.95	154,040	1,334,993	8.67	311,380	2,586,295	8.31
Damietta									
Total	300,365	2,952,631	9.83	306,638	2,814,864	9.18	607,003	5,767,495	9.50
Import + Export	26,910	270,599	10.06	37,915	317,217	8.37	64,825	587,816	9.07
Transshipment	273,455	2,682,032	9.81	268,723	2,497,647	9.29	542,178	5,179,679	9.55
Suez									
Total	7,224	0	0.00	5,297	0	0.00	12,521	0	0.00
Import + Export	7,224	0	0.00	5,297	0	0.00	12,521	0	0.00
Transshipment	0	0	-	0	0	-	0	0	-
Grand Total									
Total	725,256	7,288,577	10.05	706,989	5,246,791	7.42	1,432,245	12,535,368	8.75
Import + Export	290,318	3,286,343	11.32	280,420	1,379,051	4.92	570,738	4,665,394	8.17
Transshipment	434,938	4,002,234	9.20	426,569	3,867,740	9.07	861,507	7,869,974	9.14

Source) "Analytical Report 1997 English Edition" Vol.No. 4 - January 1998, Ministry of Maritime Transport Egyptian Maritime Data Bank

5.2 Transshipment Containers through Egyptian Major Ports

Most containers through Damietta Port and Port Said Port are transshipment containers. It is necessary to grasp the origin and destination of transshipment containers to plan the future strategy of these ports. The Study Team surveyed origin ports and destination ports of transshipment containers with the discharging container list. The Study Team surveyed 39 vessels that called at Damietta Port from 30th July in 1997 to 19th August in 1997 and 11 vessels that called at Port Said Port from 30th January 1997 to 21st February in 1997.

The container traffic is categorized in four types, eastbound, westbound outbound and inbound. Each category is defined as follows:

Westbound: from Asia to Egypt or from Egypt to West Europe/American Continent

Eastbound: from West Europe/American Continent to Egypt or from Egypt to Asia

It is assumed that mother vessels serve these shipping routes.

Outbound: from Egypt to Mediterranean/Black Sea countries

Inbound: from Mediterranean/Black Sea countries to Egypt

It is assumed that feeder vessels serve these shipping routes.

Movement of transshipment containers is characterized by four types, which are combinations of westbound/eastbound and outbound/inbound. For example, container traffic from Southeast Asia to Turkey via an Egyptian port is categorized as westbound-outbound and that from Syria to United States is categorized as inbound-westbound.

Table 5.2.1 and Figure 5.2.1-5.2.4 show the volume of full transshipment containers loaded/discharged at origin/destination ports. (The unit is TEU.) Empty containers are not included. The result is summarized by country or region. In many cases, proportions of East Mediterranean countries (Turkey, Syria and Lebanon) and Black Sea countries (Bulgaria, Romania and Ukraine) are high compared with West Mediterranean countries (Italy, France and Spain). This indicates that Damietta Port and Port Said Port function as regional hub ports for East Mediterranean and Black Sea countries.

Table 5.2.1 Origin and Destination of Transshipment Containers

Region	Country	Destination				Origin			
		West-Out		East-Out		In-East		In-West	
East Mediterranean	Libya	113	6.2%	16	0.7%				
	Cyprus	28	1.5%	62	2.9%	13	0.9%	3	0.6%
	Lebanon	265	14.6%	838	39.1%	24	1.6%	2	0.4%
	Syria	311	17.2%	490	22.8%	248	16.6%	113	21.7%
	Turkey	558	30.8%	339	15.8%	597	40.0%	230	44.2%
	Greece	280	15.5%	12	0.6%	287	19.2%	7	1.3%
	Croatia	5	0.3%	25	1.2%				
	Slovenia	1	0.1%	15	0.7%				
	Sub-total	1,561	86%	1,797	83.8%	1,169	78.2%	355	68.3%
West Mediterranean	Italy	48	2.7%	58	2.7%	114	7.6%		
	France	9	0.5%						
	Spain	14	0.8%			19	1.3%		
	Sub-total	71	3.9%	58	2.7%	133	8.9%	0	0.0%
Black Sea	Bulgaria	4	0.2%	1	0.0%	38	2.5%	8	1.5%
	Romania	75	4.1%	1	0.0%	120	8.0%	118	22.7%
	Ukraine	17	0.9%	9	0.4%	34	2.3%	1	0.2%
	Sub-total	96	5.3%	11	0.5%	192	12.9%	127	24.4%
North Africa	Tunisia	41	2.3%	5	0.2%				
	Algeria								
	Morocco	1	0.1%		0.0%				
	Sub-total	42	2.3%	5	0.2%	0	0.0%	0	0.0%
Middle East		4	0.2%	230	10.7%			14	2.7%
East Asia				29	1.4%				
South Asia				15	0.7%			24	4.6%
West Europe		26	1.4%						
North America		11	0.6%						
Total		1,811	100.0%	2,145	100.0%	1,494	100.0%	520	100.0%

Region	Country	Origin				Destination			
		West-Out		East-Out		In-East		In-West	
West Europe				928	43.3%			415	79.8%
North America				1217	56.7%			102	19.6%
South America								3	0.6%
Middle East	Yemen					31	2.1%		
	Saudi Arabia	25	1.4%			32	2.1%		
	Gulf Countries	20	1.1%			98	6.6%		
East Asia		1161	64.1%			863	57.8%		
South Asia		152	8.4%			73	4.9%		
South East Asia		453	25.0%			359	24.0%		
Oceania						38	2.5%		
Total		1,811	100.0%	2,145	100.0%	1,494	100.0%	520	100.0%

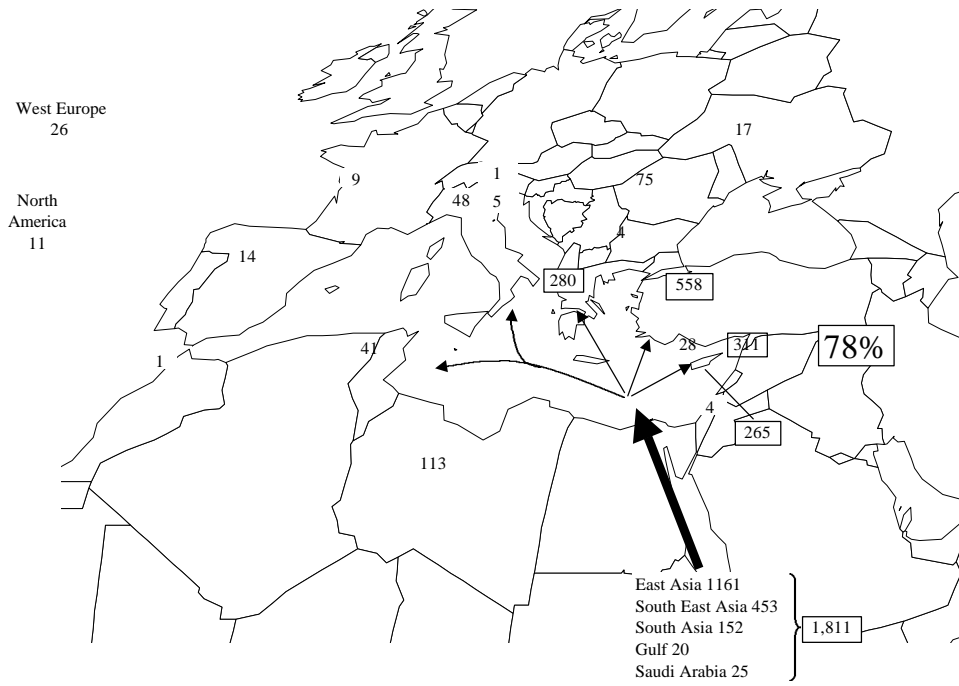


Figure 5.2.1 Westbound-Egypt-Outbound

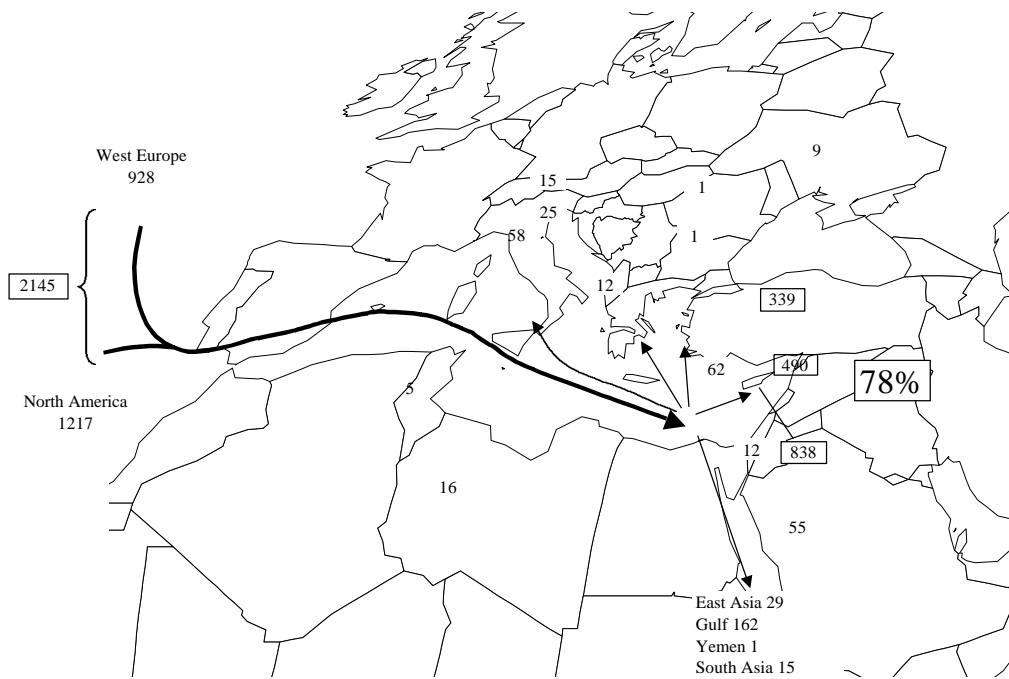


Figure 5.2.2 Eastbound-Egypt-Outbound

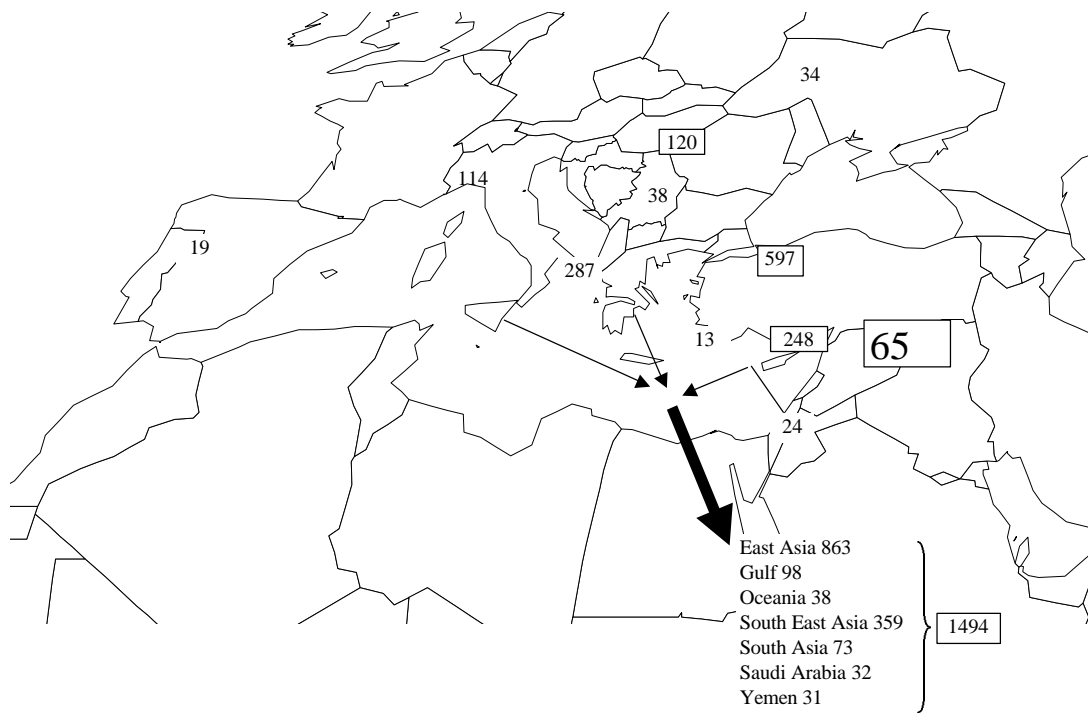


Figure 5.2.3 Inbound-Egypt-Eastbound

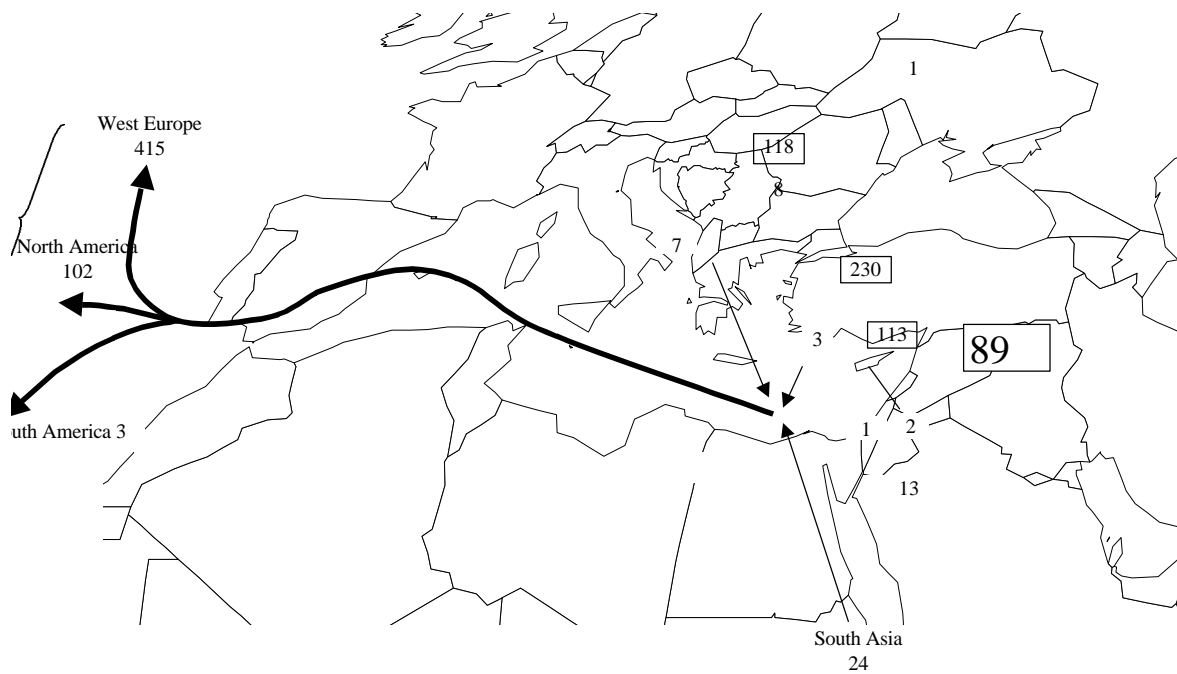


Figure 5.2.4 Inbound-Egypt-Westbound

5.3 Socio-economic Conditions and International Trades of the Mediterranean and Black Sea Region

5.3.1 Socio-economic Conditions of the Regions

Six sub-regions can be identified in examining the Mediterranean and Black Sea region; namely, West-Europe, East-Europe, Black Sea, Middle East, East-Africa and West-Africa. (see Table 5.3.1 and Figure 5.3.1)

Table 5.3.1 Sub-regions of the Mediterranean and Black Sea Region

Sub-Region	Country
West-Europe	France, Italy, Spain, Malta
East-Europe	Slovenia, Croatia, Bosnia & Herzegovina, Yugoslavia, Albania, Macedonia, Greece
Black Sea	Ukraine, Moldova, Romania, Bulgaria, Russian, Georgia, Armenia, Azerbaijan
Middle East	Turkey, Cyprus, Syria, Jordan, Lebanon, Iran, Iraq, Israel, West Bank & Gaza
East-Africa	Egypt, Libya
West-Africa	Tunisia, Algeria, Morocco

Population by sub-region can be estimated with reference to “World Population Projection” conducted by the World Bank.

The population of the Black Sea sub-region exceeds 240 million persons in 2010 due to the large Russian population. In the case of Middle East sub-region, the total population of Iran, Turkey and Iraq is estimated at 230 million persons in 2010. But in spite of the huge population, only a portion shall be recognized as having a relation with Mediterranean maritime transport.

Based on above projection, populations of European countries such as Bulgaria, Ukraine, Italy, Romania, Croatia, Russia, Spain and Slovenia don’t indicate an increasing trend up to 2010. Middle East countries such as West Bank & Gaza, Iraq, Jordan, Syria, Libya, Iran, Algeria, Israel, Egypt and Morocco will experience population growth of more than 1.5% annually up to 2010.

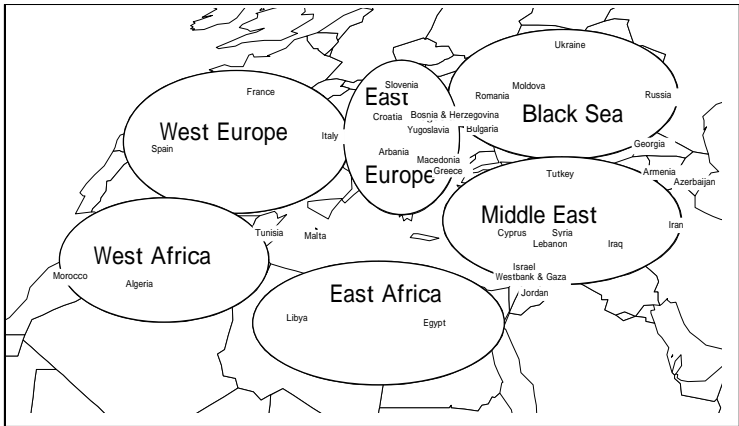
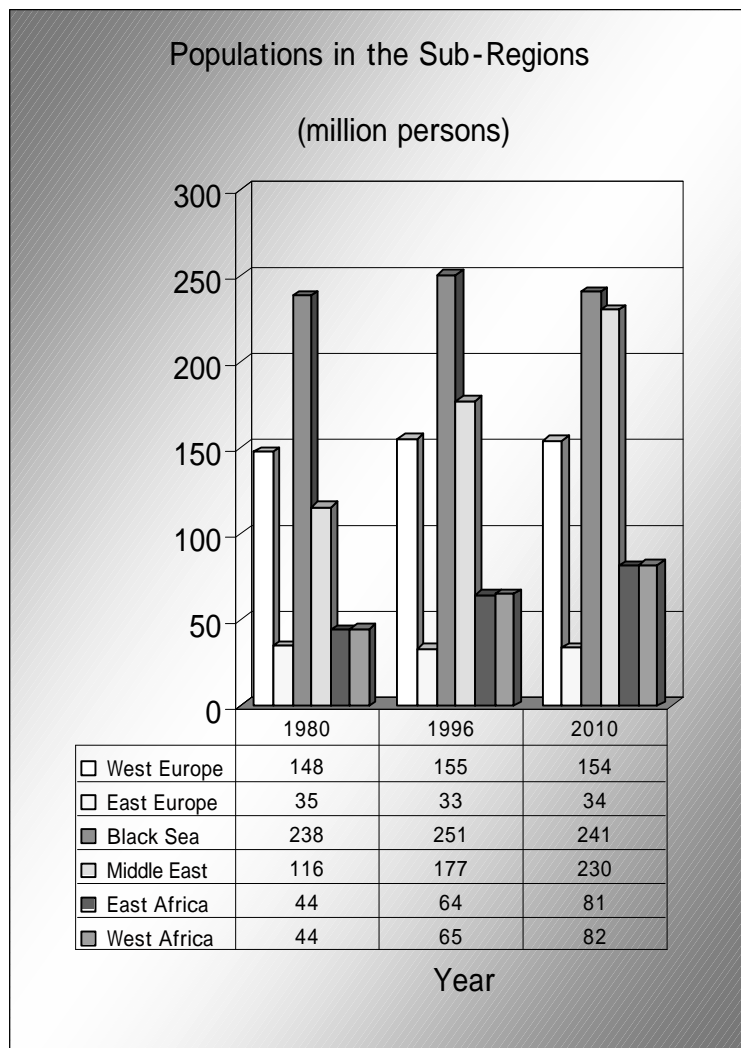
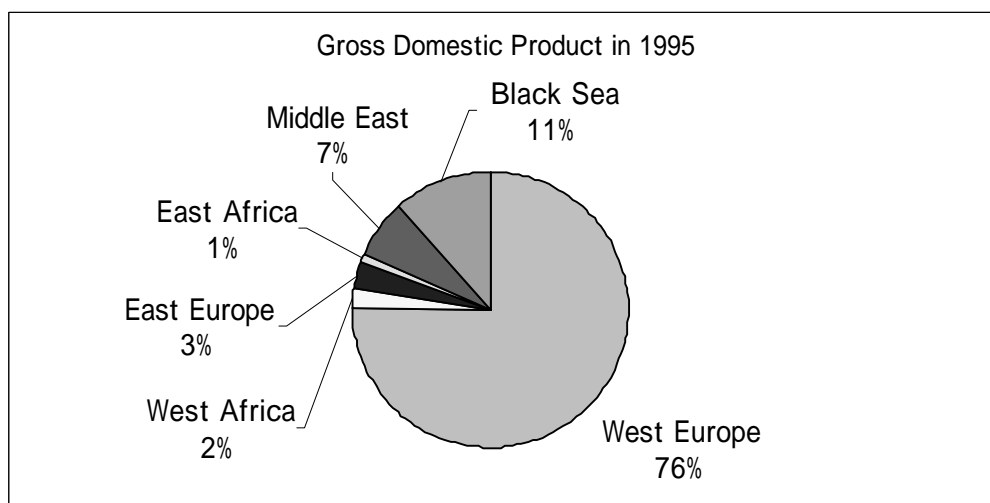


Figure 5.3.1 Sub-Regions of the Mediterranean and Black Sea Region



Source : World Development Indicators 1998 by the World Bank
Figure 5.3.2 Populations of the Sub-regions



Source : World Development Indicators 1998 by the World Bank
Figure 5.3.3 Distribution of Gross Domestic Product in the Region

Table 5.3.2 Socio-economic conditions of the Mediterranean and Black Sea Region

	Population			Average annual Population Growth Rate %	
	Millions			1980-96	1996-2010
	1980	1996	2010		
France	54	58	60	0.5	0.2
Italy	56	57	55	0.1	-0.3
Spain	37	39	38	0.3	-0.1
Malt	0	0	0	n.a	n.a
West Europe	148	155	154		
Slovenia	2	2	2	0.3	-0.1
Croatia	5	5	5	0.2	-0.3
Bosnia and Herzegovina	4	..	..	..	..
Yugoslavia, FR (Serb./Mont.)	10	11	11	0.5	0.2
Albania	3	3	4	1.3	0.9
Macedonia, FYR	2	2	2	0.3	0.7
Greece	10	10	11	0.5	0.1
East Europe	35	33	34		
Ukraine	50	51	47	0.1	-0.6
Moldova	4	4	4	0.5	0.0
Romania	22	23	22	0.1	-0.3
Bulgaria	9	8	7	-0.4	-0.9
Russian Federation	139	148	143	0.4	-0.2
Georgia	5	5	5	0.4	0.0
Armenia	3	4	4	1.2	0.4
Azerbaijan	6	8	8	1.3	0.5
Black Sea	238	251	241		
Turkey	44	63	76	2.1	1.3
Cyprus	..	..	..	..	..
Syrian Arab Republic	9	15	20	3.2	2.3
Jordan	2	4	6	4.3	2.6
Lebanon	3	4	5	1.9	1.4
Iran, Islamic Rep.	39	63	81	2.9	1.9
Iraq	13	21	31	3.1	2.8
Israel	4	6	7	2.4	1.7
West Bank and Gaza	1	2	4	4.0	3.5
Middle East	116	177	230		
Egypt, Arab Rep.	41	59	74	2.3	1.6
Libya	3	5	7	3.3	2.3
East Africa	44	64	81		
Tunisia	6	9	11	2.2	1.4
Algeria	19	29	37	2.7	1.9
Morocco	19	27	34	2.1	1.6
West Africa	44	65	82		

Source : World Development Indicators 1998 by the World Bank

Table 5.3.3 Gross Domestic Product (unit:current USD)

	GDP per capita		Gross domestic product	
	\$	\$	\$ millions	\$ millions
	1986	1995	1986	1995
France	13,195	26,444	731,912	1,536,475
Italy	10,623	19,121	603,634	1,093,799
Spain	5,973	14,111	230,806	559,163
Malt	3,754	8,793	1,303	3,227
Slovenia	5,433	9,652	10,258	18,579
Croatia	3,319	4,014	14,888	18,081
Bosnia and Herzegovina	2,018	271	8,461	968
Yugoslavia, Fed. Rep.	1,938	1,487	19,183	15,243
Albania	820	863	2,483	2,919
Greece	3,942	8,684	39,397	90,785
Ukraine	3,605	694	184,203	35,933
Romania	2,279	1,570	52,046	35,686
Bulgaria	4,079	1,518	36,621	12,918
Russian Federation	5,090	2,451	733,652	363,881
Georgia	3,692	343	19,537	1,869
Armenia	3,689	354	12,003	1,287
Azerbaijan	2,877	321	19,432	2,417
Turkey	1,470	2,814	75,729	171,225
Cyprus	4,590	11,459	3,089	8,537
Syrian Arab Rep.	2,375	3,573	25,461	50,749
Jordan	1,534	1,228	6,042	6,598
Lebanon	1,132	3,114	2,987	9,371
Iran, Islamic Rep.	4,041	1,544	206,032	105,545
Iraq	3,056	11,308	48,457	227,229
Israel	7,494	16,738	32,203	92,480
Egypt, Arab Rep.	1,143	973	58,314	60,436
Libya	5,473	5,498	215,441	29,727
Tunisia	1,187	2,030	8,821	18,247
Algeria	2,802	1,531	63,065	43,037
Morocco	759	1,265	16,947	33,561

Source :United Nations - Statistical Yearbook Forty-first issue 1994 and Forty-second issue 1995

5.3.2 International Trade of the Region

Trade value per capita of West Europe Sub-region is about 5 to 10 times of other Sub-regions. And trade balances of Sub-regions show a surplus only in West Europe and Black Sea in 1996. Trade balance is computed using trade value in 1996 and population in 1995.

Trade values of the Region are listed in Tables 5.3.5-5.3.6. And Table 5.3.7 indicates trade balance and growth rate by volume and value.

Table 5.3.4 Trade Value per capita in 1996

	Merchandise Export Per capita US\$	Merchandise Import Per capita US\$
West Europe	3,900	3,800
East Europe	800	1,400
Black Sea	440	370
Middle East	380	540
East Africa	170	270
West Africa	290	400

Source : The Study Team

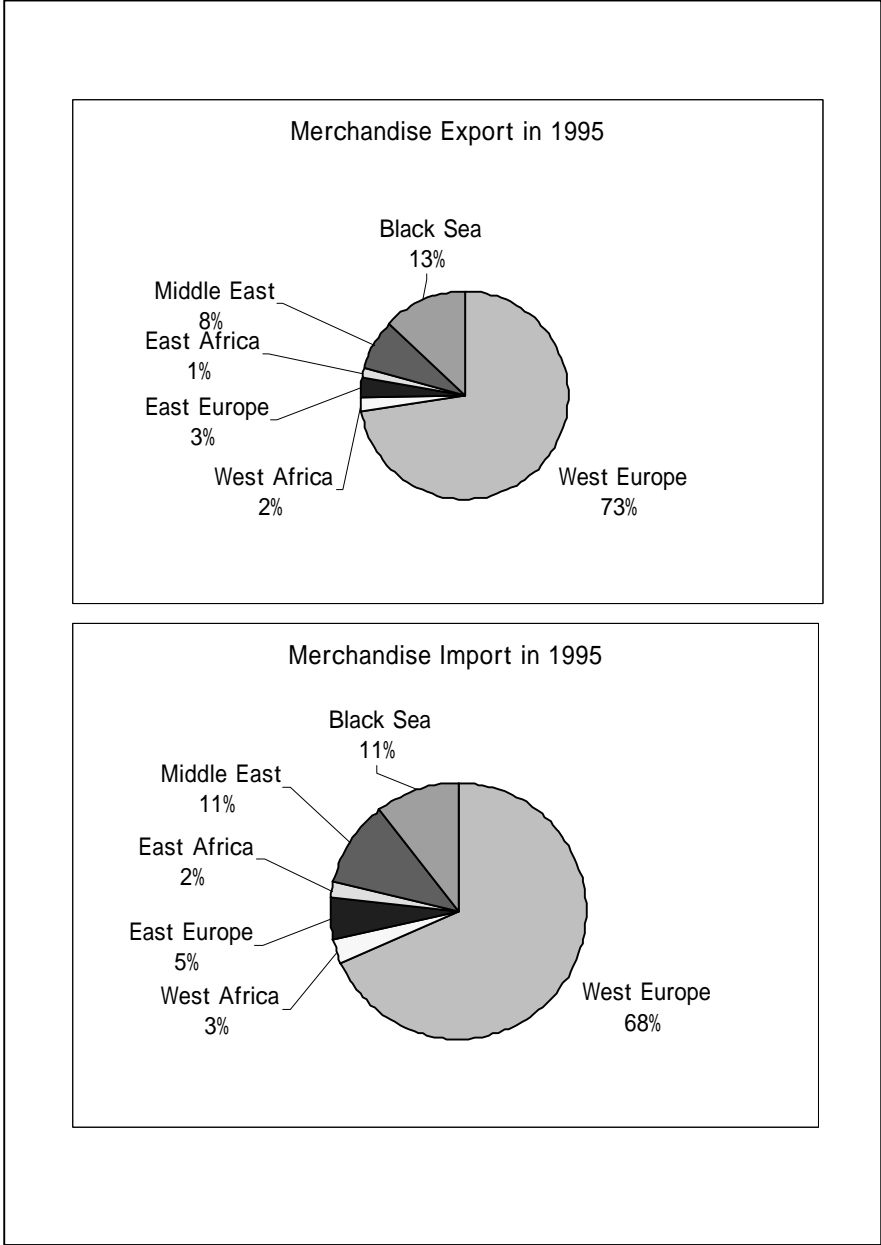
Among the Regions, trade by West Europe accounts for 73% of the total in case of export and 68% in import. Black Sea and Middle East follow with 13 to 8%. East Europe has a share of 3% in Export and 5% in Import. West and East Africa have 3 to 1% of the whole.

Trading partners of Europe are mainly European countries. Figure 5.3.5 indicates that almost 70 percent of trade is conducted within Europe, 10 to 15 percent with America and Asia respectively.

'Fuels', 'Machinery' and 'Other Manufactures' are the three major export commodities. Members of OECD such as French, Italy, Spain, Greece and Turkey have high shares of export on 'Machinery' or 'Other Manufactures'. Needless to say, members of OPEC such as Iran, Iraq, Algeria and Libya have a large share of export on 'Fuels'.

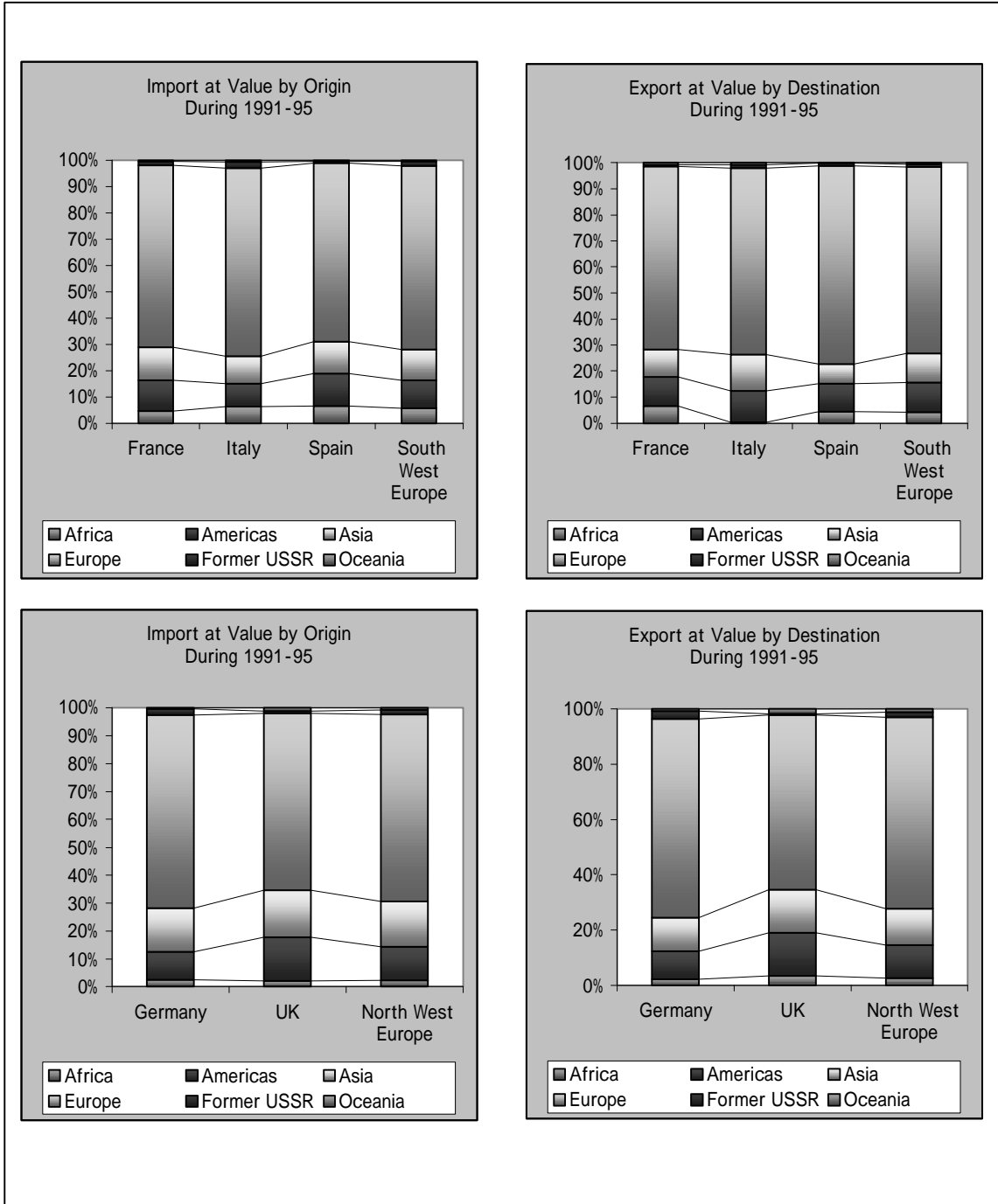
'Foods', 'Machinery' and 'Other Manufactures' are the three major import commodities. As a standard distribution style of import as set at 35-45 percent for 'Other Manufactures', 25-35 percent for 'Machinery' and 10-15 percent for 'Foods'. Egypt, Libya and Algeria are countries to import 'Foods' with over 20 percent of the whole. East Europe is thought to be rich in 'Foods'.

Regarding growing trend of trade in the Region, East Europe Sub-region is increasing its import growth although this is resulting in a negative trade balance. That a variety of capital goods are being imported can be seen as evidence that the area is developing. East Europe Sub-region has seen an expansion of exports rather than imports in the 90's. Slovenia, Lebanon and Israel achieved an annual export growth of over 10% in the 90's and Slovenia, Lebanon and Syria achieved an annual import growth of 15% in the same period.



Source : World Development Indicators 1998 by the World Bank

Figure 5.3.4 Distribution of Export and Import in the Region



Source : International Trade Statistics Yearbook 1995

Figure 5.3.5 Trading Partners of European Major Country

Table 5.3.5 Merchandise Export

	Merchandise Exports		Fuels, minerals, and metals		Machinery and transport Equipment		Other Manufactures	
	\$ millions		% of total		% of total		% of total	
	1980	1995	1980	1993	1980	1993	1980	1993
France	116,000	286,738	8	5	33	38	41	40
Italy	78,100	231,336	7	3	33	37	52	52
Spain	20,700	91,716	9	5	26	41	45	36
Malta	..	..	..	..	..	..	..	..
West Europe	214800	609790						
Slovenia	..	8,286	..	8	..	27	..	58
Croatia	..	4,633	..	11	..	14	..	57
Bosnia and Herzegovina	..	..	..	..	..	..	..	..
Yugoslavia, Fed. Rep.	..	2,760	9	11	28	30	45	47
Albania	367	205	..	..	..	..	..	..
Macedonia, FYR	..	1,244	..	..	..	..	..	..
Greece	5,150	9,384	26	22	3	8	44	40
East Europe	5517	26512						
Ukraine	..	13,647	..	..	..	..	..	..
Moldova	..	746	..	..	..	..	..	..
Romania	11,200	7,548	..	13	..	17	..	60
Bulgaria	10,400	5,100	..	..	..	..	..	..
Russian Federation	..	81,500	..	..	..	..	..	..
Georgia	..	347	..	..	..	..	..	..
Armenia	..	271	..	..	..	..	..	..
Azerbaijan	..	612	..	..	..	..	..	..
Black Sea	21600	109771						
Turkey	2,910	21,600	8	4	3	8	24	64
Cyprus	..	..	..	..	..	..	..	..
Syrian Arab Republic	2,110	3,970	78	71	1	0	5	9
Jordan	574	1,769	41	27	2	4	32	47
Lebanon	868	982	8	..	17	..	48	..
Iran, Islamic Rep.	14,700	18,346	93	93	0	0	5	4
Iraq	26,300	380	99	..	0	..	0	..
Israel	5,540	19,046	2	2	13	31	69	60
West Bank and Gaza	..	..	..	..	..	..	..	..
Middle East	53002	66093						
Egypt, Arab Rep.	3,050	3,435	67	55	0	1	11	32
Libya	21,900	7,540	100	95	..	0	..	4
East Africa	24950	10975						
Tunisia	2,200	5,475	56	13	2	10	34	66
Algeria	13,900	8,594	99	96	..	1	0	2
Morocco	2,490	4,802	45	14	1	6	23	51
West Africa	18590	18871	200	123	3	17	57	119

Source : World Development Indicators 1998 by the World Bank

Table 5.3.6 Merchandise Import

	Merchandise Imports \$ millions		Food % of total		Machinery and Transport Equipment % of total		Other Manufactures % of total	
	1980	1995	1980	1993	1980	1993	1980	1993
France	135,000	275,275	10	11	21	34	33	41
Italy	101,000	204,062	13	13	21	29	25	39
Spain	34,100	115,019	13	14	18	35	20	35
Malta	..	..	..	..	..	..	..	..
West Europe	270,100	594,356						
Slovenia	..	9,452	..	8	..	30	..	44
Croatia	..	7,582	..	9	..	24	..	52
Bosnia and Herzegovina	..	..	..	..	..	..	..	..
Yugoslavia, Fed. Rep.	..	4,300	8	9	28	23	29	43
Albania	354	679	..	..	..	..	..	..
Macedonia, FYR	..	1,420	..	..	..	..	..	..
Greece	10,500	21,466	9	6	36	38	24	25
East Europe	10,854	44,899						
Ukraine	..	15,945	..	..	..	..	..	..
Moldova	..	841	..	..	..	..	..	..
Romania	12,800	9,424	..	14	..	22	..	31
Bulgaria	9,650	5,015	..	8	..	22	..	27
Russian	..	58,900	..	..	..	..	..	..
Georgia	..	687	..	..	..	..	..	..
Armenia	..	674	..	..	..	..	..	..
Azerbaijan	..	955	..	..	..	..	..	..
Black Sea	22,450	92,441						
Turkey	7,910	35,710	4	6	18	38	25	33
Cyprus	..	..	..	..	..	..	..	..
Syrian Arab Republic	4,120	4,616	14	19	21	32	33	42
Jordan	2,400	3,698	18	20	28	27	34	37
Lebanon	3,650	6,721	16	..	25	..	38	..
Iran, Islamic Rep.	12,200	12,700	13	..	44	..	38	..
Iraq	13,900	490	13	..	54	..	31	..
Israel	9,780	29,579	11	7	21	33	36	49
West Bank and Gaza	..	..	..	..	..	..	..	..
Middle East	53,960	93,514						
Egypt, Arab Rep.	4,860	11,739	32	24	27	31	32	34
Libya	6,780	5,380	19	24	38	34	40	39
East Africa	11,640	17,119						
Tunisia	3,540	7,903	14	8	23	32	34	46
Algeria	10,600	9,570	21	29	37	31	35	34
Morocco	4,160	8,563	20	17	21	29	25	31
West Africa	18,300	26,036						

Source : World Development Indicators 1998 by the World Bank

Table 5.3.7 Trade Balance and Growth Rate

	Trade Balance (=Export-Import) Value Million US\$		Export Volume Average annual % growth		Import Volume Average annual % growth		Export Value Average annual % growth		Import Value Average annual % growth	
	1980	1995	1980- 1990	1990- 1995	1980- 1990	1990- 1995	1980- 1990	1990- 1995	1980- 1990	1990- 1995
France	-19,000	11,463	4.1	2.3	5	0.8	7.6	4.5	6.5	1.8
Italy	-22,900	27,274	4.3	6	5.3	-1.7	8.7	5.4	6.9	0.3
Spain	-13,400	-23,303	6.9	11.2	10.1	5.3	10.9	9	10.6	3.2
Malta	..	..	..	..	..	..	..	..	..	..
West Europe	-55,300	15,434								
Slovenia	..	-1,166	..	..	..	..	..	16.7	..	20.1
Croatia	..	-2,949	..	..	..	..	..	3.8	..	12.2
Bosnia and Herzegovina	..	..	..	..	..	..	..	..	..	..
Yugoslavia, Fed. Rep.	..	-1,540	..	..	..	..	..	-2	..	2.7
Albania	13	-474	..	..	..	..	-1.7	0.5	1	13.3
Macedonia, FYR	..	-176	..	..	..	..	..	4	..	4.2
Greece	-5,350	-12,082	5.1	11.9	5.8	12.8	5.8	2.7	6.6	1.8
East Europe	-5,337	-18,387								
Ukraine	..	-2,298	..	..	..	..	..	..	..	..
Moldova	..	-95	..	..	..	..	..	..	..	..
Romania	-1,600	-1,876	-6.8	-4.7	-0.9	-5.3	-3.8	7.3	-3.8	2.4
Bulgaria	750	85	..	..	..	..	4.4	-12.6	4.2	-10.4
Russian Federation	..	22,600	..	..	..	..	..	..	..	..
Georgia	..	-340	..	..	..	..	..	..	..	..
Armenia	..	-403	..	..	..	..	..	..	..	..
Azerbaijan	..	-343	..	..	..	..	..	..	..	..
Black Sea	-850	17,330								
Turkey	-5,000	-14,110	12	8.8	11.3	11.2	14	10.3	9.3	8.7
Cyprus	..	..	..	..	..	..	..	..	..	..
Syrian Arab Republic	-2,010	-646	6.4	-3.2	-9.3	22.3	2.4	-1.1	-8.5	17.2
Jordan	-1,826	-1,929	7.4	7.1	-3.1	13	6.1	9.8	-1.9	8.1
Lebanon	-2,782	-5,739	-1.2	-7.8	-7.4	23.5	-3.6	13.7	-5.4	19.4
Iran, Islamic Rep.	2,500	5,646	7.4	10.2	-4	15.7	2.5	-0.6	0.1	-11
Iraq	12,400	-110	0.2	-55.2	-13.2	-28.9	-5.9	-45	-11.1	-35.1
Israel	-4,240	-10,533	5.9	10	4.6	12.3	8.3	11	5.9	11.5
West Bank and Gaza	..	..	..	..	..	..	..	..	..	..
Middle East	-958	-27,421								
Egypt, Arab Rep.	-1,810	-8,304	-0.2	-0.1	-0.7	-2.9	-3.7	2.7	1.4	5.8
Libya	15,120	2,160	0.2	-11	-6.4	7.7	-7.2	-16.5	-4.2	-0.1
East Africa	13,310	-6,144								
Tunisia	-1,340	-2,428	6.2	7.7	1.3	6.4	3.5	8.4	2.7	7.3
Algeria	3,300	-976	2.5	-0.8	-5.1	-5.7	-4	-9.7	-3	0
Morocco	-1,670	-3,761	4.2	0.8	2.9	1.7	6.1	1.1	3.6	3.5
West Africa	290	-7,165								

Source : World Development Indicators 1998 by the World Bank

5.3.3 Future Growth of the Region

Future economic prospects have been examined by relevant authorities such as OECD, IMF, World Bank, etc. Reports issued by OECD and World Bank are collected and summarized.

OECD mainly analyzes member countries and other countries are computed by group except Big Five. The World Bank estimates future development by country and more groups are examined by the World Bank than OECD's study. In the Regions, five countries are members of OECD while thirty-one countries are non-members.

OECD estimates future GDP by PPP base and the World Bank by US dollar base.

OECD forecasts future world GDP growth at 3.1-3.5% annually in the Low Case up to 2010 and 4.3 to 5.0% in the High Case. On the contrary, the World Bank predicts 3.4% annual growth up to 2006. The projection of OECD seems a little bit higher than that of the World Bank.

Referring to Table 5.3.13, GDP growth rates of countries in the Regions are difficult to be determined. Regional forecast data shall be applied to group countries.

Table 5.3.8 World GDP Growth by OECD

	GDP		GDP per capita	
	High-performance	Business-as-usual	High-performance	Business-as-usual
World	227	115	140	58
Total Non-OECD	420	184	268	101
Big Five	469	220	341	148
Total OECD	104	71	80	51

Note : Percentage growth from 1995-2020, based on 1992 PPP\$

All projection are based on existing OECD membership

Big Five includes Brazil, China, India, Indonesia and Russia

Source : OECD Secretariat projections

Table 5.3.9 GDP Growth Rates by Economies

	1996-2000		2001-2010		2011-2020		1995-2020	
	High	Low	High	Low	High	Low	High	Low
East Asian	7.7	6.1	7.0	4.8	6.4	4.2	6.9	4.8
Brazil	5.4	3.8	6.1	3.0	5.1	2.8	5.6	3.1
China and Hong Kong	9.3	7.9	8.2	5.3	7.2	4.8	8.0	5.6
Eastern & Central Europe	5.5	2.0	5.5	3.8	4.0	2.7	4.9	3.0
European Union and EFTA	2.4	2.4	2.7	2.0	2.1	1.3	2.4	1.8
Indonesia	7.5	5.9	7.0	4.1	6.7	4.0	7.0	4.4
India	6.5	4.4	7.2	4.3	6.6	4.2	6.8	4.3
Japan	3.3	3.3	2.9	2.0	2.3	1.2	2.7	1.9
Latin America	4.3	3.0	5.9	3.2	5.1	3.1	5.3	3.1
Middle East & Northern Africa	5.0	2.1	7.1	2.2	6.9	2.2	6.6	2.2
Newly Independent States	3.5	1.1	6.0	4.2	6.9	4.0	5.8	3.5
Pacific OECD	4.3	4.3	4.7	4.0	4.3	3.4	4.5	3.8
Rest of the World	6.5	5.0	6.6	4.3	6.5	4.0	6.5	4.3
Sub Saharan Africa	4.6	2.8	5.0	2.8	5.8	2.6	5.2	2.7
USA	2.2	2.2	2.7	2.1	2.6	1.5	2.6	1.9
Total	4.3	3.5	5.0	3.1	4.9	2.8	4.8	3.1
OECD	2.7	2.7	3.0	2.3	2.7	1.6	2.8	2.1
Non-OECD	6.5	4.7	6.9	4.1	6.5	3.9	6.7	4.2
Big Five	7.2	5.4	7.3	4.5	6.7	4.3	7.1	4.6
Other Non Member Economies	5.9	4.0	6.5	3.7	6.2	3.5	6.3	3.7

Source : THE WORLD IN 2020 by OECD 1997

Table 5.3.10 Population Growth Rates by Economies

	1996-2000	2001-2010	2011-2020	1995-2020
East Asian	1.54	1.29	0.95	1.20
Brazil	1.25	1.15	0.95	1.09
China and Hong Kong	0.90	0.67	0.60	0.69
Eastern & Central Europe	-0.12	-0.08	-0.11	-0.10
European Union and EFTA	0.21	0.02	-0.09	0.02
Indonesia	1.49	1.20	0.98	1.17
India	1.62	1.36	0.99	1.26
Japan	0.22	0.05	-0.26	-0.04
Latin America	1.73	1.53	1.27	1.47
Middle East & Northern Africa	2.40	2.28	1.85	2.13
Newly Independent States	0.01	0.07	0.05	0.05
Pacific OECD	1.27	1.05	0.82	1.00
Rest of the World	2.09	1.80	1.49	1.74
Sub Saharan Africa	2.79	2.68	2.45	2.61
USA	0.79	0.74	0.76	0.75
Total	1.38	1.24	1.08	1.21
OECD	0.58	0.44	0.34	0.43
Non-OECD	1.54	1.39	1.21	1.35
Big Five	1.11	0.92	0.74	0.89
Other Non Member Economies	2.16	2.01	1.76	2.13

Source : THE WORLD IN 2020 by OECD 1997

Table 5.3.11 World Growth Summary 1966-2006

	1966- 1973	1974- 1980	1981- 1990	1991- 1995	1996 estimate	1997- 2006 forecast	1996- 2005 GEP1996 forecast
World	5.2	3.3	3.1	2.0	2.9	3.4	3.5
High-income	4.9	2.9	3.1	2.0	2.5	2.8	2.9
OECD countries	4.8	2.8	3.0	1.8	2.3	2.7	2.8
Non-OECD countries	9.2	7.7	6.5	7.0	5.8	5.6	5.5
Developing Countries	6.7	4.7	3.0	2.3	4.5	5.4	5.3
East Asia	7.5	6.4	7.7	10.5	8.6	7.6	7.9
South Asia	3.7	4.0	5.7	4.6	6.5	5.9	5.4
Sub-Saharan Africa	4.7	2.8	1.9	1.5	3.8	4.1	3.8
Latin America & the Caribbean	6.9	4.9	1.6	3.2	3.4	4.2	3.8
Europe & Central Asia	6.6	4.8	2.5	-6.4	-0.3	4.5	4.3
Middle East & North Africa	8.7	4.9	0.8	2.6	4.1	3.6	2.9
Eastern Europe & former Soviet Union (#1)	6.7	4.9	2.3	-7.6	-1.8	4.6	4.4
Developing Countries excluding (#1)	6.3	4.7	3.2	5.0	5.6	5.5	5.4

Source : Global Economic Prospects and the Developing Countries 1997 by The World Bank

Table 5.3.12 Growth of World Merchandise Trade 1997-2006

	1981-90	1991-95	1996	1997-2006
World Trade Growth	4.1	6.3	5.4	6.4
World Output Growth	2.9	2.0	2.9	3.4
Import Growth by Region				
High-income	5.1	5.8	4.8	6.2
OECD countries	4.8	4.7	4.9	5.8
Non-OECD countries	7.9	13.2	4.4	8.1
Developing Countries	0.4	7.9	7.6	7.2
East Asia	6.4	15.5	7.2	10.0
South Asia	4.2	9.8	3.7	9.1
Sub-Saharan Africa	-3.4	3.2	5.8	5.3
Latin America & the Caribbean	-0.9	14.7	10.9	6.6
Europe & Central Asia	0.6	3.1	7.5	5.8
Middle East & North Africa	-1.3	-1.0	4.9	5.2
Export Growth by Region				
High-income	4.9	6.0	5.3	6.3
OECD countries	4.5	5.2	5.0	6.0
Non-OECD countries	8.6	11.6	7.3	8.1
Developing Countries	1.7	8.5	5.8	7.2
East Asia	8.2	17.1	6.1	9.4
South Asia	6.0	12.0	6.7	10.7
Sub-Saharan Africa	-0.2	0.7	2.3	5.5
Latin America & the Caribbean	4.2	10.2	9.5	6.7
Europe & Central Asia	-0.1	3.8	3.7	5.0
Middle East & North Africa	-2.2	3.6	4.4	4.4

Source : Global Economic Prospects and the Developing Countries 1997 by The World Bank

Table 5.3.13 Growth of real GDP and per capita GDP, 1996-2006

	Gross Domestic Product				Per capita GDP			
	1995 GDP (US\$ trillion)	Growth 1995 %	Growth 1996 % estimate	Growth 1997- 2006 % forecast	1995 GDP (US\$)	Growth 1995 %	Growth 1996 % estimate	Growth 1997- 2006 % forecast
World	28.34	2.5	2.9	3.4	5,050	1.1	1.4	2.0
High-income	23.22	2.2	2.5	2.8	25,845	1.6	1.9	2.3
G-7 countries	22.11	1.9	2.3	2.6	28,330	1.3	1.8	2.2
G-4 Europe	6.15	2.4	1.4	2.5	24,065	2.1	1.2	2.5
Other high-income	1.11	7.2	5.8	5.6	12,980	6.0	4.7	4.8
Low & Middle income	5.12	3.8	4.5	5.4	1,195	2.1	2.7	3.8
Excluding Eastern Europe & Former Soviet Union	4.10	4.8	5.6	5.5	1,085	3.1	3.8	3.8
Asia	1.68	8.5	7.9	7.1	600	7.0	6.4	5.7
Latin America	1.62	0.2	3.4	4.2	3,520	-1.5	1.7	2.7
Europe & Central Asia	1.05	-0.8	-0.3	4.5	2,220	-1.0	-0.8	4.0
Russia	0.36	-4.3	-6.0	-	2,400	-4.2	-5.9	-
Turkey	0.16	7.0	6.4	-	2,700	5.4	4.7	-
Middle East & North Africa	0.46	3.1	4.1	3.6	2,000	0.8	1.4	1.1
Iran	0.10	2.7	3.6	-	1,650	0.2	0.6	-
Egypt	0.06	4.6	4.3	-	1,045	2.8	2.5	-
Algeria	0.04	4.4	4.2	-	1,485	2.4	1.9	-
Sub-Saharan Africa	0.30	3.9	3.8	4.1	520	1.1	0.8	1.2

Source : Global Economic Prospects and the Developing Countries 1997
by The World Bank

5.4 Cargo Movement through the Mediterranean Sea

5.4.1 Maritime Routes

Container vessels moving on the Mediterranean Sea are classified by maritime route such as Europe-Far East, Mediterranean-Far East, Europe-Middle East/East Africa, InterEuropean, etc. Largest capacity of vessel is applied to Europe-Far East, therefore feeder service is necessary from hub ports. InterEuropean service includes this and local maritime service.

(1) Europe-Far East Route

Cargo volume of west bound was larger than east bound as follows:(westbound)1994-1,878,000TEU, 1995-2,111,000TEU, 1996-1,676,000TEU (eastbound)1994-953,000TEU, 1995-1,001,000TEU and 1996-1,244,000TEU. Generating volumes by Japan and HongKong in 1996 on EastBound are 320,000TEU and 644,000TEU respectively(see following Table).

Major commodities are electric goods/ motorcycles/ autoparts/ machinery/ tires/ synthetic fiber on west bound and machinery/ malt/ daily products/ chemicals/ beverages/ reefer cargo/ plastics/ paper products/ wastepaper/ synthetic-resin on east bound respectively.

Table 5.4.1 Europe/Asia Container Cargo Volume in 1996

Country	Volume(TEU)	Country	Volume(TEU)
Japan	320,000	Korea	98,000
HongKong/China	644,000	Taiwan	140,000
Philippines	26,000	Singapore	59,000
Malaysia	96,000	Thailand	114,000
Indonesia	132,000	Vietnam	47,000
		Total	1,676,000

Source : International Maritime Transport Handbook in Japanese

(2) East Mediterranean and Black Sea-Far East Route

From cargo statistics of east bound, less than 50,000 TEU of containers were transported in 1994-1996 as follows:(westbound)1994-27,352TEU, 1995-40,185TEU, 1996-47,710TEU. Major commodities are machinery/ tires/ chemicals/ CKD/ iron & steel/ canned goods/ miscellaneous on west bound and leaf tobacco/ asbestos/ food products/ marble/ manganese/ chromium on east bound respectively.

(3) West Mediterranean-Far East Route

Cargo volume of west bound was also larger than east bound up to 1995, but in 1996 balance changed as follows:(westbound)1994-301,000TEU, 1995-355,000TEU, 1996-208,000TEU (eastbound)1994-185,000TEU, 1995-208,000TEU and 1996-212,000TEU. Generating volumes by Japan and Italy in 1996 are 42,000TEU on westbound and 136,000TEU on eastbound respectively(see following Table).

Major commodities are electric goods/ motorcycles/ autoparts/ machinery/ textiles/ reefer cargoes on west bound and machinery/ chemicals/ reefer cargo/ wine & spirits/ tires/ marble/ granite on east bound respectively.

Table 5.4.2 West Mediterranean/Asia Container Cargo Volume in 1996

Country	Volume(TEU)	Country	Volume(TEU)
Japan	42,000	Italy	136,000
Other Far East	166,000	France	38,000
		Spain	38,000
West Bound Total	208,000	East Bound Total	212,000

Source : International Maritime Transport Handbook in Japanese

(4) Typical Loading Plan of Container Vessel

Table 5.4.3 shows typical loading plan of container vessel on maritime route between Europe and Far East. Concerning total volumes at last port of Europe, loading volume is smaller than discharging volume. Also, total loading volume at Mediterranean is smaller than discharging volume. This means European trade with Far East is negative by volume. And total volume of Mediterranean, 6,400 TEU, is 23 % of that of Europe, 27,500 TEU.

Table 5.4.3 An Example on Weekly Loading Plan of Container by Region

Route Type	EUROPE-ASIA		MEDITERRANEAN-ASIA		TOTAL	
	Loading	Discharging	Loading	Discharging	Loading	Discharging
NorthEurope	13,350	14,150			13,350	14,150
Mediterranean	700	800	2,300	2,400	3,000	3,200
MiddleEast-EB	1,150	1,550			1,150	1,550
MiddleEast-WB	900	1,300			900	1,300
SouthAsia	1,400	1,400	150	50	1,550	1,450
AsiaHub"a-EB"	2,750	4,900	150	650	2,900	5,550
AsiaHub"b-EB"	450	1,500	250	500	700	2,000
AsiaHub"c-EB"	250	1,200			250	1,200
AsiaHub"a-WB"	4,850	3,000	350	150	5,200	3,150
AsiaHub"b-WB"	2,950	1,900	700	250	3,650	2,150
AsiaHub"c-WB"	1,300	350			1,300	350
FarEast	7,050	6,500	1,100	1,250	8,150	7,750

Source : Interview

5.4.2 Container Volume through Suez Canal

Container vessel is most common carrier at Suez Canal, accounting for 28% of the total vessels and 38% of total cargo volume at Suez Canal in 1997. Tanker and bulk carrier follow container vessel (see Table 5.4.4).

Container traffic through Suez Canal includes not only vessels of the Mediterranean - Asia route but also North Europe - Asia one and Europe - Middle East/ East Africa. As already mentioned, Cargo of Mediterranean - Asia is around 20% of that of North Europe - Asia. Cargo volume to/from Southeast Asia and Far East reached 40.6 % and Red Sea 26.3 % of total Suez southern traffic in 1997. Concerning Suez northern traffic, north Europe occupied 30.2 % and whole Mediterranean 53.4 % of the total.

Table 5.4.4 Suez Canal Traffic in 1997

Type of Vessel	Number of vessel (%)	Net Weight ,000 ton (%)	Remarks
Tanker	2,256 (16)	78,013 (21)	
Bulk Carrier	2,992 (21)	73,009 (20)	
General Cargo	2,790 (19)	22,020 (6)	
Container Vessel	4,012 (28)	138,834 (38)	11,700,000TEU
Lash	33 (0)	981 (0)	
RORO	298 (2)	6,908 (2)	
Car Carrier	871 (6)	38,520 (11)	
Passenger Ship	76 (0)	998 (0)	
War Ship	175 (1)	1,223 (0)	
Others	839 (6)	3,355 (1)	
Grand Total	14,342 (100)	363,861 (100)	

Source : Analytical Report

by Egyptian Maritime Data Bank and Ministry of Maritime Transport

Table 5.4.5 Container Vessel Size Distribution in loading capacity passing through Suez Canal in 1997

Container Vessel Generation Type	Loading Capacity (TEUs)	Number of Vessels	Share (%)
First Generation	-700	69	1.7 %
Second Generation	700 – 1500	465	11.6 %
Third Generation	1500 – 2000	529	13.2 %
Fourth Generation	2000 – 3000	1245	31.0 %
Fifth Generation	3000 -	1711	42.6 %
Grand Total		4019	100.0 %

Source : The Study Team

Table 5.4.6 Cargo Volume by Direction(February, 1998)

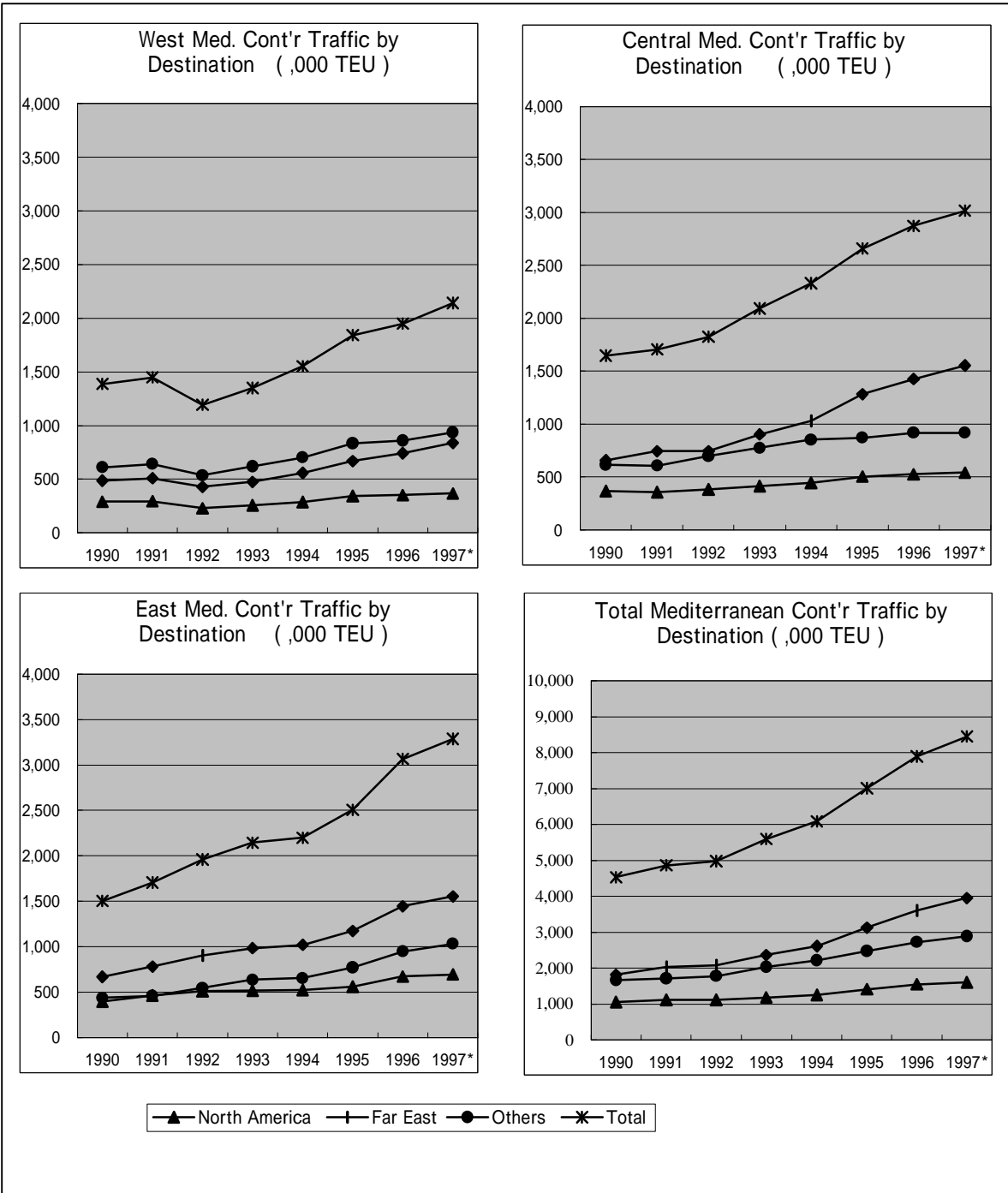
Region	Cargo Volume (,000 ton)	Percent Share (%)
North the Canal :		
East & S.E.Mediterranean	2,914	13.3
North Mediterranean	6,327	28.8
West & S.W.Mediterranean	2,486	11.3
Black Sea	1,261	5.7
North, West Europe & UK	6,629	30.2
Baltic Sea	724	3.3
America	1,327	6.0
Others	267	1.2
Total	21,935	100.0
South the Canal :		
Red Sea	5,769	26.3
East Africa & Aden	364	1.7
Arabian Gulf	2,357	10.7
South Asia	3,371	15.4
South East Asia & Far East	8,904	40.6
Australia	1,170	5.3
Others	-	-
Total	21,935	100.0

Source : SUEZ CANAL REPORT February 1998
By Suez Canal Authority

5.4.3 Container Volume to/from the Region

Major trading partners of the Region are Far East and North America. From 1990-97, share of Far East has been increasing while that of North America has been decreasing. Central/South America, South Asia and Australasia, which comprise the “Others” category, are also basic trading partners through deepsea ports.

The Medcenter Container Terminal (MCT) in Giaio Tauro provided the Study Team with distribution volume by region in 1997. Container boxes to Far East, Middle East, America, North Europe and Africa are 33.4%, 24.5%, 23.4%, 15.3% and 3.4% of 593,000 TEUs of annual handling volumes. Intra Mediterranean container traffic was as follows: to Aegean Sea, Italy, North Africa, Adriatic Sea, West Mediterranean, Black Sea and East Mediterranean are 28.7%, 20.0%, 12.5%, 11.7%, 11.3%, 8.3% and 7.5% of 856,000 TEUs(see Table 5.4.9 & 5.4.10).



Source : MEDITERRANEAN CONTAINERISATION – Growth Prospects to 2010
By Ocean Shipping Consultants Ltd.

Figure 5.4.1 Mediterranean Container Traffic by Destination

Table 5.4.7 Mediterranean Deep Sea Port Demand by Trading Region
(Unit: : ,000 TEUs)

West Med	1990	1991	1992	1993	1994	1995	1996	1997*
North America	291.2	295.7	228.8	256.5	287.1	343.0	351.4	368.6
Far East	485.4	510.2	429.0	472.4	560.2	667.5	741.8	837.8
Others	610.3	643.6	533.8	620.9	704.4	833.5	858.9	936.4
Total	1,386.9	1,449.5	1,191.6	1,349.8	1,551.7	1,844.0	1,952.1	2,142.8
Note: Spain, France, Morocco, Algeria								
Central Med	1990	1991	1992	1993	1994	1995	1996	1997*
North America	368.9	356.7	383.6	414.8	447.3	505.4	528.7	543.0
Far East	660.4	742.5	745.4	905.0	1,029.7	1,282.1	1,425.2	1,553.5
Others	617.6	607.7	697.9	775.1	852.7	872.4	919.5	920.0
Total	1,646.9	1,706.9	1,826.9	2,094.9	2,329.7	2,659.9	2,873.4	3,016.5
Note: Italy, Slovenia, Croatia, Malta, Tunisia								
East Med/Black Sea	1990	1991	1992	1993	1994	1995	1996	1997*
North America	398.5	464.1	511.1	521.0	525.9	561.7	674.7	696.9
Far East	667.7	779.8	900.9	986.2	1,018.7	1,173.4	1,444.5	1,554.9
Others	437.6	462.4	546.4	636.7	655.7	772.1	947.7	1,035.5
Total	1,503.8	1,706.3	1,958.4	2,143.9	2,200.3	2,507.2	3,066.9	3,287.3
Note: Greece, Turkey, Cyprus, Egypt, Syria, Black Sea								
WholeMediterranean	1990	1991	1992	1993	1994	1995	1996	1997*
North America	1,058.6	1,116.5	1,123.5	1,192.3	1,260.3	1,410.1	1,554.8	1,608.5
Far East	1,813.5	2,032.5	2,075.3	2,363.6	2,608.6	3,123.0	3,611.5	3,946.2
Others	1,665.5	1,713.7	1,778.1	2,032.7	2,212.8	2,478.0	2,726.1	2,891.9
Total	4,537.6	4,862.7	4,976.9	5,588.6	6,081.7	7,011.1	7,892.4	8,446.6

1997* – preliminary estimate

Source : MEDITERRANEAN CONTAINERISATION – Growth Prospects to 2010
By Ocean Shipping Consultant Ltd.

Table 5.4.8 Mediterranean Deep Sea Port Demand by Trading Region (Unit : %)

West Med	1990	1991	1992	1993	1994	1995	1996	1997*
North America	21%	20%	19%	19%	19%	19%	18%	17%
Far East	35%	35%	36%	35%	36%	36%	38%	39%
Others	44%	44%	45%	46%	45%	45%	44%	44%
Total	100%	100%	100%	100%	100%	100%	100%	100%
Central Med	1990	1991	1992	1993	1994	1995	1996	1997*
North America	22%	21%	21%	20%	19%	19%	18%	18%
Far East	40%	43%	41%	43%	44%	48%	50%	52%
Others	38%	36%	38%	37%	37%	33%	32%	30%
Total	100%	100%	100%	100%	100%	100%	100%	100%
East Med/Black Sea	1990	1991	1992	1993	1994	1995	1996	1997*
North America	26%	27%	26%	24%	24%	22%	22%	21%
Far East	44%	46%	46%	46%	46%	47%	47%	47%
Others	29%	27%	28%	30%	30%	31%	31%	32%
Total	100%	100%	100%	100%	100%	100%	100%	100%
WholeMediterranean	1990	1991	1992	1993	1994	1995	1996	1997*
North America	23%	23%	23%	21%	21%	20%	20%	19%
Far East	40%	42%	42%	42%	43%	45%	46%	47%
Others	37%	35%	36%	36%	36%	35%	35%	34%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Table 5.4.9 World Container Distribution from Gioia Tauro in 1997

Destination	Container Volume (TEUs)	Share (percent)
Far East	198,000	33.4
Middle East	145,000	24.5
North Europe	91,000	15.3
America	139,000	23.4
Africa	20,000	3.4
Total	593,000	100.0

Source : The Medcenter Container Terminal (MCT) in Gioia Tauro

Table 5.4.10 Mediterranean Container Distribution from Gioia Tauro in 1997

Destination	Container Volume (TEUs)	Share (percent)
Italy	171,000	20.0
Adriatic Sea	100,000	11.7
Black Sea	71,000	8.3
Aegean Sea	246,000	28.7
East Mediterranean	64,000	7.5
North Africa	107,000	12.5
West Mediterranean	97,000	11.3
Total	856,000	100.0

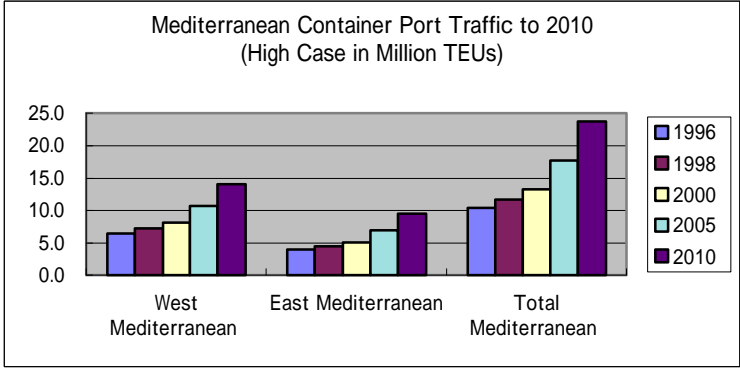
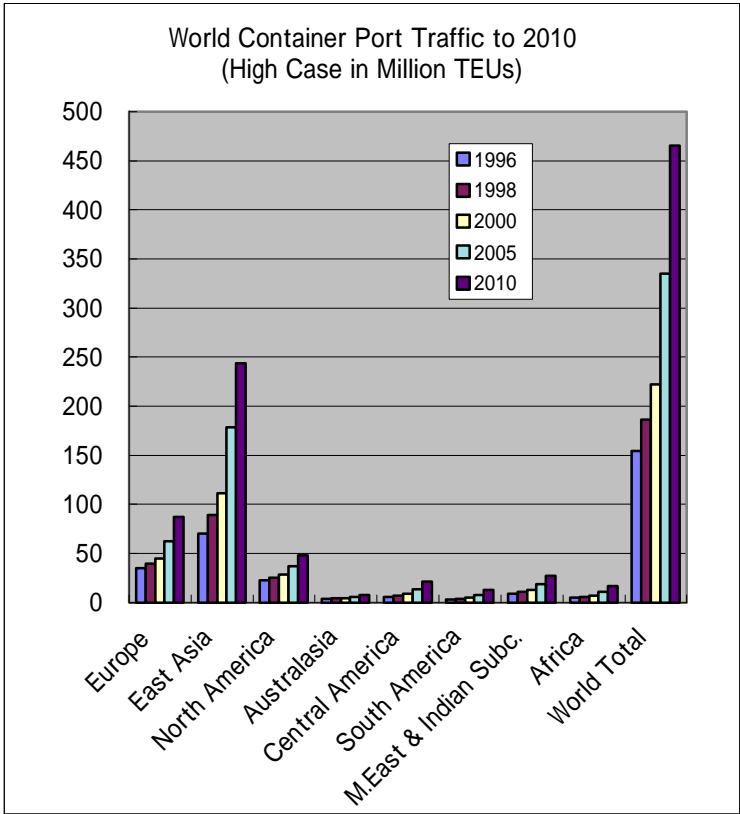
Source : The Medcenter Container Terminal (MCT) in Gioia Tauro

5.4.4 Future Demand Forecast by Ocean Shipping Consultants

Ocean Shipping Consultants (O.S.C) is a maritime consultant on international containerisation. Future forecast on international container movement by region was conducted and those reports were issued in 1997 and 1998. Among them, World Projection and Mediterranean Projection are useful for the Study. Demand forecasts to 2010 are shown in the following two Figures.

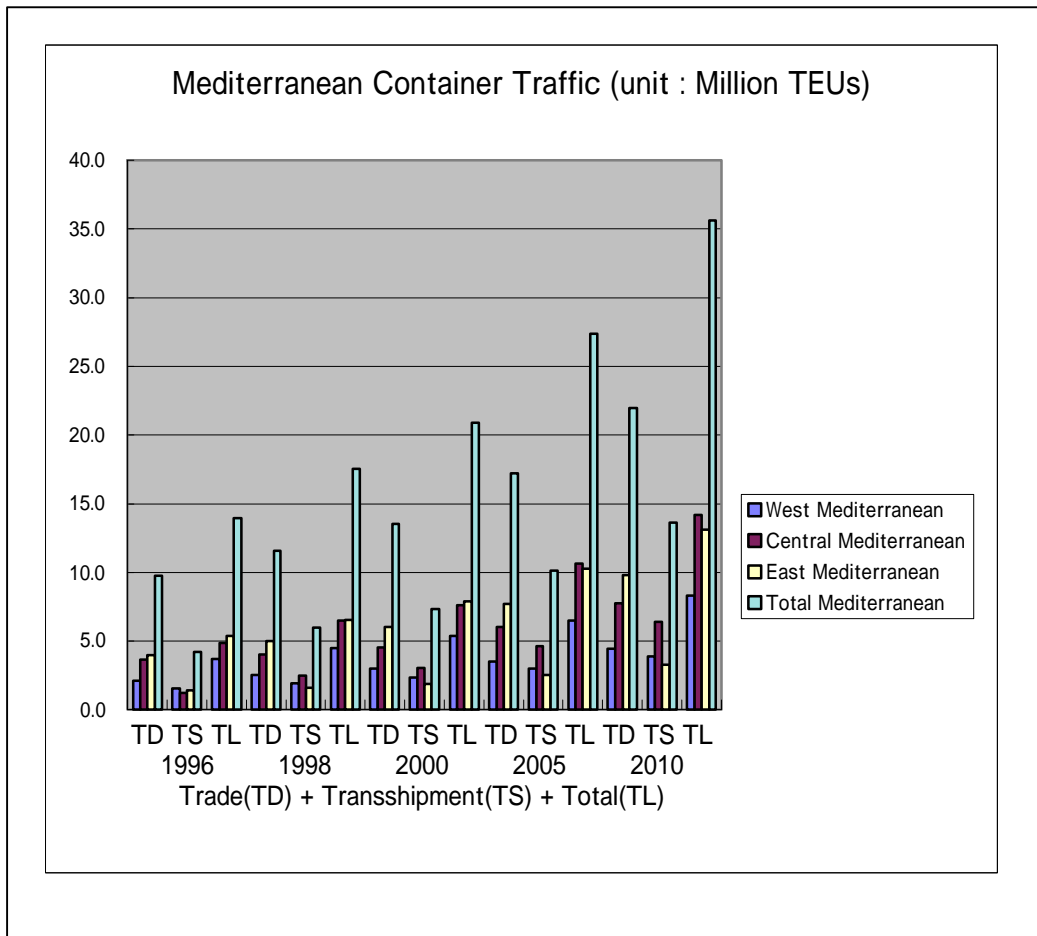
World projection sets two cases of estimation. One is the High Case and the other is the Low case. The High Case assumes free development of trade, and the Low Case reflects pessimistic trade outlook by a greater degree of protectionism of OECD members. World container market in 2010 is estimated at 465 million TEUs in the High Case and 391 million TEUs in the Low Case. West and East Mediterranean market are computed at 14.1 and 9.6 million TEUs in the High Case and 13.0 and 8.9 million TEUs in the Low Case respectively.

Mediterranean Projection provides detailed information on current container movement in the Mediterranean Sea. The Region is divided into three sub-regions, namely West Mediterranean, Central Mediterranean and East Mediterranean. West Mediterranean includes Spain, South France, Morocco and Algeria. Central Mediterranean includes Italy, Malta, Slovenia, Croatia and Tunisia. Finally East Mediterranean includes many types of countries such as Greece, Turkey, Bulgaria, Romania, USSR, Ukraine, Cyprus, Syria, Lebanon, Israel and Egypt. Demand forecast was analyzed by country, trade type and transshipment. Total future container demand of West-, Central- and East-Mediterranean are estimated at 9.6, 12.8 and 13.1 million TEUs respectively.



Source : THE WORLD CONTAINER PORT MARKET TO 2010
By Ocean Shipping Consultants Ltd.

Figure 5.4.2 World Container Demand



Source : MEDITERRANEAN CONTAINERISATION
 – Growth Prospects to 2010
 by Ocean Shipping Consultants Ltd.

Figure 5.4.3 Mediterranean Container Demand

5.5 Rapidly Growing Overseas Container Hub-Ports in the Mediterranean Sea

While the geographical location of an international hub-port is still important to attract transshipment containers, local container generation demand is more essential for the feeder container transport on relatively short-haul routes in the Mediterranean Sea. Thus transshipment container business in the Mediterranean Sea has been getting highly competitive for major shipping companies and shipping space charter consortium.

5.5.1 Port of Algeciras (Spain)

(1) Location of port: Lat 36° - 08' N/ Long 5° - 26' W

Diversion distance between the main shipping route and the entrance of port of Algeciras or calling on 1 sea-mile.

(2) Port management: Port Authority of Algeciras

(3) Port Facility :

1) Conventional Ships berth	(- 9.0 m)	150 meters
2) Passenger Ships Berth (RO/RO)	(-13.0 to - 15.0 m)	1,070 meters
3) Container Ships Berth	(-13.0 to - 16.0 m)	1,910 meters
4) Oil Tanker Sea Berth	(-60.0 m)	360 meters
5) Solid Bulk Cargo Berth	(-23.0 to - 30.0 m)	150 hectares
6) Oil Refines Berth	(-20.0 m / Jetty Berth)	52 meters

(3) Container Handling Equipment

1) Quay-side Gantry Crane	11 Units
(Panamax Type / out-reach 28 m to 34 m)	4 Units)
(Post Panamax type / out-reach 39 m to 48 m)	7 Units)
2) Transfer Crane (Rubber Tier Mounted type)	23 Units
3) Tractor and Trailer	N/A
4) Fork Lift (Top-Loader) and Reach Stacker	N/A

(4) Container Storage Area 54.2 hectares 11,131 G/Slots

(5) Working Schedule :

- 1) Hour of Working : Ships operation 24 hours a day, seven (7) days a week
(3 shift / day system)
- 2) No Working Day : Two (2) days holiday (New Years Day and Christmas Day)
: Total 363 days working available per year.

(6) Container Handling Productivity

1) Ships operation	Average 25 (Containers/ hour)
2) Yard operation	Average 27 (Containers / hour)

(7) Present Computerization and EDI

- 1) Hardware: IBM AS-400
- 2) Software developer: Self developed
- 3) Function:
 - a) Yard Inventory
 - b) Yard Equipment control
 - c) Container Stowage Planning
 - d) Equipment Maintenance

Table 5.5.1 Total Traffic of Solid Bulk Cargo and Liquid Bulk Cargo (Unit : M/Tons)

Year	Solid Bulk Cargo	Liquid Bulk Cargo	Total
1990	16,061,000	1,545,000	17,606,000
1991	17,125,000	1,721,000	18,846,000
1992	16,897,000	2,051,000	18,948,000
1993	14,724,000	1,835,000	16,559,000
1994	18,296,000	2,109,000	20,405,000
1995	17,226,000	2,162,000	19,388,000
1996	15,901,000	1,739,000	17,640,000
1997	16,907,000	1,759,000	18,666,000

Table 5.5.2 Containerized Cargo and Container Traffic (Unit: M/Tons / TEUs)

Year	Containerized Cargo	TEUs
1990	552,555	492,000 TEUs
1991	761,795	658,700 TEUs
1992	780,336	686,900 TEUs
1993	806,543	810,000 TEUs
1994	1,003,528	940,400 TEUs
1995	1,154,714	1,189,400 TEUs
1996	1,306,824	1,377,700 TEUs
1997	1,537,627	1,582,100 TEUs

Table 5.5.3 Number of Calling Ships and Vehicles transported by Ferry

Year	Number of Total Calling Ships	Number of Container Ships	Number of Vehicles by Ferry
1990	26,346	2,939	536,000
1991	29,646	3,902	596,000
1992	30,034	4,358	689,000
1993	30,002	7,034	701,000
1994	34,771	9,210	707,000
1995	36,987	10,586	572,000
1996	36,836	10,594	601,000
1997	40,052	10,956	678,000

(8) Future Development Plans

1) Container Berth (Target year: 2000)

Expansion of MUELLE DEL NAVIO Container Terminal (Maersk-Line)

a) Length: 292 meters / Depth: -16.0 m

b) Length: 300 meters / Depth: -16.0 m

c) Total container storage area for two berths: 87.6 hectares

2) Solid Bulk Cargo Berth (Target year: 2000) / Instalaciones De Campamento

Expansion by reclamation of 150 hectares at the south for Los Barrios Power Station

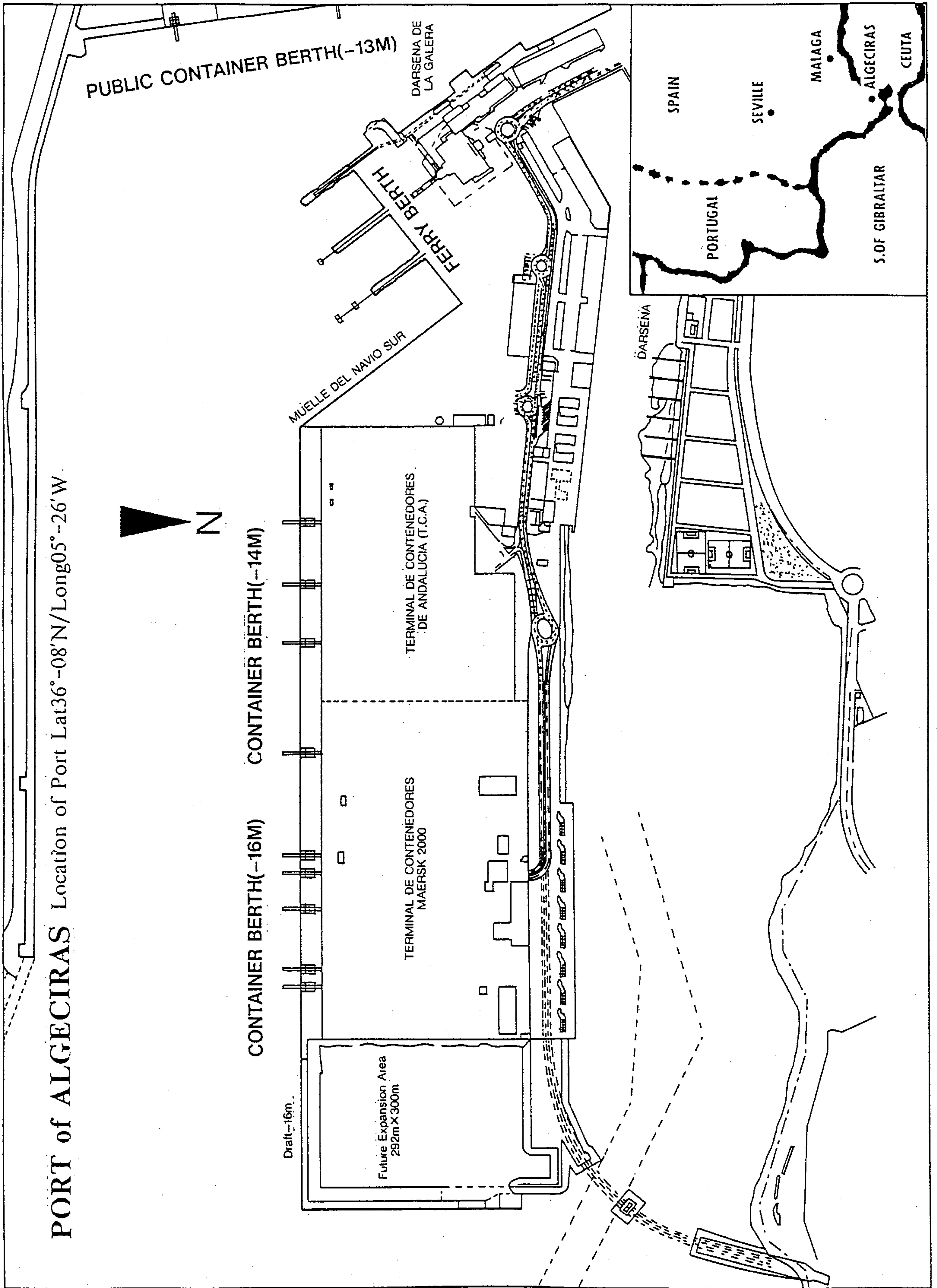


Figure 5.5.1 Port of Algeciras

5.5.2 Port of Gioia Tauro (Italy)

- (1) Location of Port: Lat 38- 26’N / Long 15-53’E
 Diversion distance between the main shipping route and the entrance of Port of Gioia Tauro is 66 sea-miles.
- (2) Port Management: MCT (Medcenter Container Terminal)
- (3) Port Facilities:
- | | | |
|--|------------------|--------------|
| 1) Container Berth (LO/LO Berth) | (-13.5 - 18.0 m) | 3,012 meters |
| 2) Container Berth (RO/RO Berth) | (- 12.5 m) | 144 meters |
| 3) Container Storage Area | | 950,000 sq.m |
| 4) Container Stacking Capacity (G/Slots) | | 24,000 TEUs |
| 5) Reefer Container Plug(Electric 380 V) | | 1,680 Points |
- (4) Container Handling Equipment
- | | |
|---|----------|
| 1) Quay-Side Gantry Cranes (Post Pana-max type) | 14 Units |
| 2) Mobile Quay-Side Cranes (Tier Mounted Type) | 3 Units |
| 3) Straddle Carriers (3 high and 1 over type) | 60 Units |
| 4) Fork Lifts (Top-loader) / Reach Stacker | 9 Units |
| 5) Multi-Trailers (5 Units joint type) | 6 Sets |
| 6) Tractors and Trailers | 10 Sets |
| 7) Wagon Tractors | 2 Units |

Table 5.5.4 Container Traffic and Number of Calling Ships (Gioia Tauro)

Year	Container Traffic	Number of Calling Ship
1995	17,000 TEUs	50 Ships
1996	572,000 TEUs	1,331 Ships
1997	1,448,500 TEUs	2,729 Ships
1998	2,000,000 TEUs (Estimated)	3,530 Ships (Estimated)
	663,053 TEUs (January-April 1998)	1,072 Ships (J-A 1998)

- (5) Working schedule
- 1) Hour of working: Ships operation 24 hours a day, seven (7) days a week
 (4 shift working system)
- | |
|---------------------------------|
| 1 st Shift: From 01:00 To 07:00 |
| 2 nd Shift: From 07:00 To 13:00 |
| 3 rd Shift: From 13:00 To 19:00 |
| 4 th Shift: From 19:00 To 01:00 |
- 2) Working Day: Through years working available

(6) Present Computerization and EDI

Most of the terminal functions are well controlled through computers:

- 1) Container yard activity control system
- 2) Reefer container monitoring system
- 3) Container handling equipment maintenance system
- 4) Container loading and unloading sequence control system

Software was designed by COSMOS N.V. / Hardware running on IBM AS-400

(7) EDI Method

EDI communication system supports EDIFACT standards (BAPLIE, COARRI, CALINF, CODECO etc.) but customized protocols can be implemented. “MCT” is

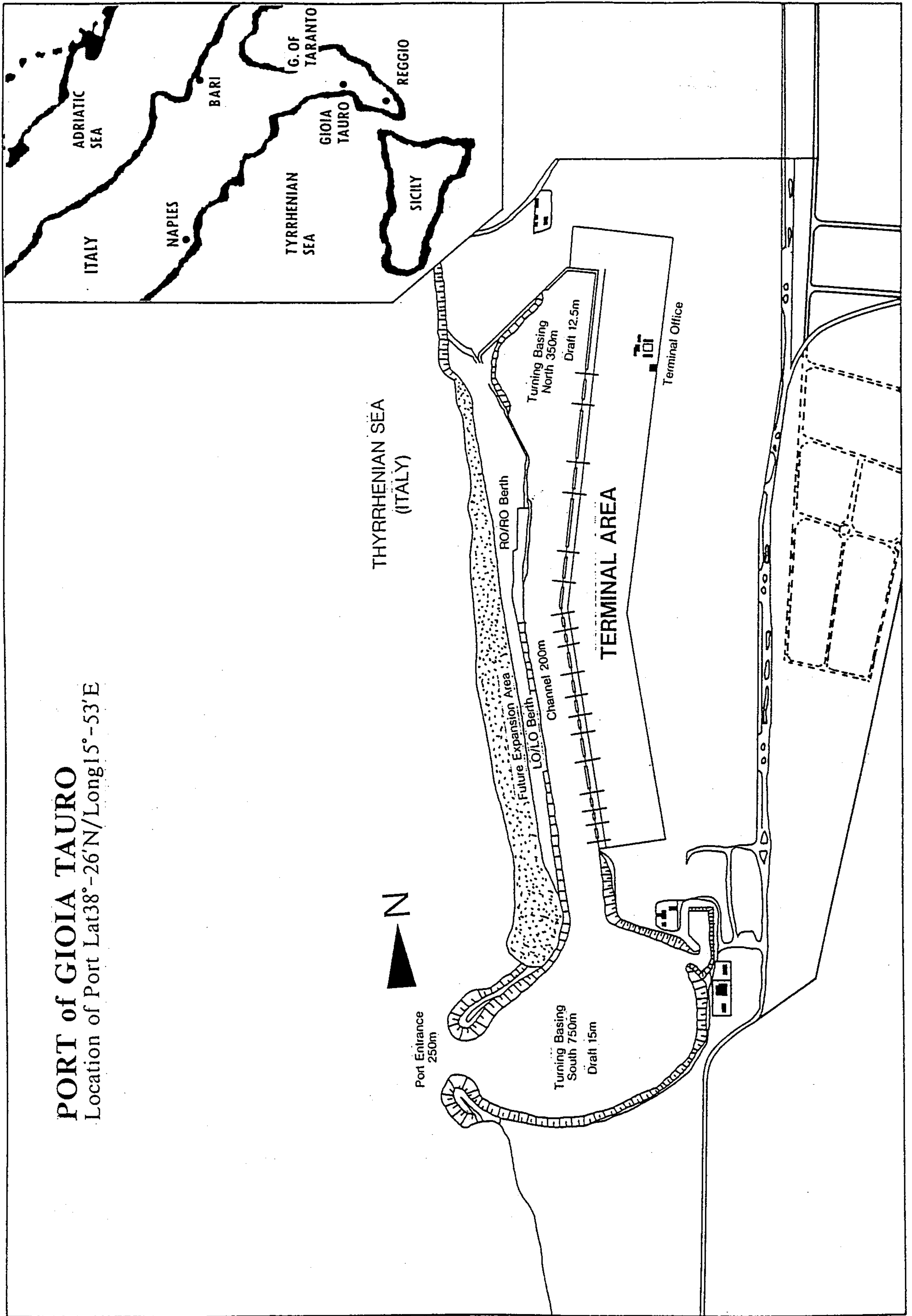


Figure 5.5.2 Port of Gioia Tauro

connected to all major commercial networks. The container terminal is connected to local Customs office and shipping agencies by means of dedicated proprietary network.

(8) Future Development Plans

- 1) RO/RO Ship Container Berth (- 13.0 m): 2 Berths
- 2) LO/LO Ship Container Berth (-14.0 - 15.0m): 1,250 meters
- 3) Container Handling Equipment (Target year: 2000)
 - a) Quay-Side Gantry Cranes (Post Panamax Type): Additional 6 Units
 - b) Straddle Carrier (3 High and 1 Over Type): Additional 19 Units
 - c) Fork Lift (Top-Lifter) and Reach Stacker: Additional 5 Units
 - d) Tractors and Trailers: Additional 12 Sets

5.5.3 Port of Marsaxlokk (Malta)

(1) Location of Port: Lat 35- 49’N / Long 14- 34’E

Diversion distance between the main shipping route and the entrance of Port of Marsaxlokk is 6 sea-miles.

(2) Port Management: Malta Free Port Corporation Limited.

(3) Port Facilities :

- 1) Container Berth (North Quay) -14.5 m 1,000 meters
- 2) Container Berth (South Quay) -15.5 m 480 meters
- 3) Conventional Ship Berth (West Quay) -15.5 m 118 meters
- 4) Oil Tanker Berth (West Quay) - 9.5 m 168 meters
(Refines oil tank capacity 359,000 cb.m * 18 Tanks)
- 5) Container Storage Area 274,000 sq.m
- 6) Container Stacking Capacity (G/Slots) 3,852 TEUs
- 7) Reefer Container Plugs (Electric) 384 Points
- 8) RO/RO Ship Berth - 15.5 m 220 meters
- 9) Covered Cargo Storage Space (2,400 sq.m * 10) 24,000 sq.m

(4) Container Handling Equipment

- 1) Quay-Side Gantry Cranes (Pana-Max Type) 1 Unit
- 2) Quay-Side Gantry Cranes (Post Pana-Max Type) 10 Units
- 3) Transfer Cranes (Rail-Mounted Type) 3 Units
- 4) Transfer Cranes (Tier-Mounted Type) 17 Units
- 5) Fork Lifts (Top-Lifter) / Reach Stackers 18 Units
- 6) Tractors and Trailers 104 Sets

Table 5.5.5 Container Traffic and Number of Calling Ships (Marsaxlokk)

Year	Container Traffic	Calling Ships
1990	4,500 TEUs	231 Ships
1991	157,631 TEUs	381 Ships
1992	259,232 TEUs	709 Ships
1993	288,192 TEUs	702 Ships
1994	383,060 TEUs	1,165 Ships
1995	514,767 TEUs	1,559 Ships
1996	593,013 TEUs	1,339 Ships
1997	662,648 TEUs	N/A

(5) Oil Tanking Performance in 1997

Total products of 1,956,542 metric tons were handled at the oil terminal facilities, whilst 170 ships berthed alongside oil tanking quay.

(6) Working Schedule:

1) Hours of Working: Ship operation 24 hours a day, seven (7) days a week.

(3 Shift working system)

1 st Shift From 08:00 To 16:00 Hrs

2 nd Shift From 16:00 To 24:00 Hrs

3 rd Shift From 24:00 To 08:00 Hrs

2) No working Days: New Years Day, Good Friday, Easter Day, May Day and Christmas Day, total 360 days working available per year.

(7) Container Handling Productivity

Ship operation: Average 20 - 23 (boxes/hour/crane)

(8) Present Technical Status

The Free Port Technical Department already achieved this milestone and awarded the BS EN / ISO 9001 quality certificate in April 1997.

(9) Present Computerization Method.

NAVIS XPRESS SYSTEM integrated real-time control of container movement and handling equipment with the NAVIS SPARCS

Function:

1) Container Movement in Container Yard and Container Depot.

2) Ship Call Schedules (Berth Windows)

3) Yard Allocation and Container Position

4) Gate Tracking Activities

5) Container Loading and Unloading Planning

6) Container Handling Equipment Maintenance Management.

(10) Future Development Plans

1) RO/RO Ship Berth (- 15.5 m)

1 Berth

2) LO/LO Ship Berth (- 15.5 m)

1,000 meters

3) Oil Tanking Storage Capacity

Additional 141,000 cb.m

4) Back Yard covered cargo storage space and non-covered cargo storage area in future expansion planning.

Zone "A" area: 17,956 sq.m

Zone "B" area: 25,106 sq.m

Zone "C" area: 28,956 sq.m

Zone "D" area: 5,484 sq.m

Zone "E" area: 9,534 sq.m

Total: 147,036 sq.m

5.5.4 Necessary Functions for the Hub-Port in the Mediterranean Sea

A Hub-Port thrives on transshipment container activities. To attract transshipment container, the geographic location and in the neighboring countries of cargo consumers, should be ideal for operational logistics of shipping Co., and the high quality performance that would include no waiting berthing times, efficiency operation and speedy turn round of ships is essential, Egyptian Ports having an ideal geographic

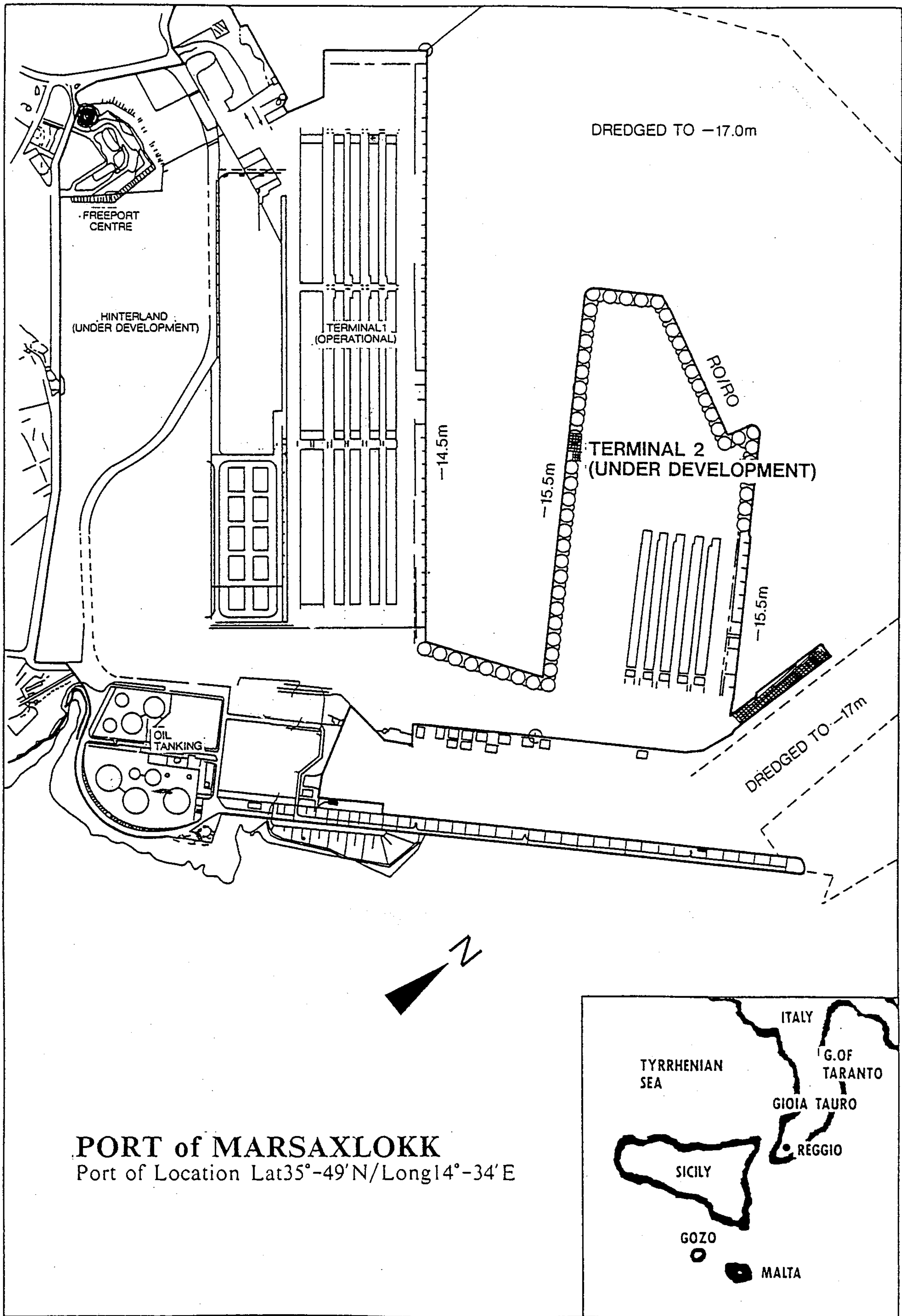


Figure 5.5.3 Port of Marsaxlokk

location, providing adequate capacity with excellent logistical support for handling both main container carrier shipping lines and feeder container carrier shipping lines is a prime need towards establishing Global Hub-Port status.

Thus to ensure the development of the Egyptian ports as a Global Hub-Port it is essential to provide :

- 1) Adequate and timely container storage capacity and enough container handling equipment.
- 2) High quality service at a reasonable port charge and container handling charge.
- 3) Local export and import container transport that help to fill up vacant space in ship.

Adequate ports facilities for value added activities in transshipment container business that will help to attract a box to Egyptian port as against a rival neighboring container handling ports.

5.6 Maritime Networking Strategy in the East Mediterranean Sea

As far as container ships are concerned, one half of the container volume is carried by larger mother container ships and the other half is carried by smaller feeder container ships. The average sizes of the existing container ships in loading capacity are in a range of 600 and 800 TEUs for feeder vessel and in a range of 3,000 and 3,500 TEUs for mother vessel at present. According to the growing trends of container ship size, the average sizes of the container ships in loading capacity are estimated as approximately 1,500 TEUs for feeder vessel and as over 6,000 TEUs for mother vessel.

Considering regional hub-port which provides relatively short-haul distance routes in the Mediterranean Sea, two types of the feeder services are presently provided. Even though the feeder vessel size is increasing in the future, these feeder services will be still essential in the future.

(1) Shuttle Feeder Transport

Shuttle feeder services between a hub-port and a specific destination port is a type of typical feeder service which has the following characteristics

- 1) Quick turn round of container ship
- 2) More demand between a hub-port and specific port is required.
- 3) Appropriate to smaller ship operation

(2) Round Trip Feeder Transport

Round trip feeder services among a hub-port and the plural feeder ports with circular trip have the following characteristics.

- 1) Longer trip time between hub-port and a specific feeder port than that of shuttle feeder services
- 2) Providing the linking services on less demand routes among feeder ports
- 3) Larger ship is required than the shuttle services.

Chapter 6 Present Condition of the Greater Alexandria Port

6.1 Outline of the Existing Port Facility and the Future Development Plan

6.1.1 Alexandria Port

The port area is divided into six Customs Zones stipulated by the resolution No.618/1997. The first Customs Zone is a district between the floating berths and berth no.15, including marine service berths, dry docks, spillways and workshop. The second Customs Zone is a district between berth no.16 and no.31, including passenger terminal, general cargo berths, Ro-Ro berths and storage yard for empty containers. The third Customs Zone is a district between berths no.33 and no.47, including general cargo berths, Ro-Ro berths and storage yard for empty containers. The fourth Customs Zone is a district between berths no.49 and no.68, including container terminal, and timber barges, coal, fertilizer and cement berths. The fifth Customs Zone is a district between berth no.71 and berth no.85, including grain terminal and timber barge and molasses berths. The sixth Customs Zone is a district between berths no.87/1, 87/2, 87/3, 87/4 and 87/5 and berth no.86, including petroleum and vegetable oil berths.

(1) Container Terminal

The container terminal is operated by Alexandria Container Handling Company. There are three container berths (no.49, 51 and 53) of which total length is 560 m and one Ro-Ro berth (no.54) of which length is 160 m. Berth depth is practically maintained at 12.0 m though design depth is 14.0 m.

There are three Quay-side Gantry Cranes (QGCs), six Rubber Tyred Gantries (RTGs) in the terminal. Stacking capacity of laden container in the terminal is said to be 9,600 TEUs (ground slots of approximately 3,000 TEUs) with the terminal area of 163,000 sq.m. Empty container yard with stacking capacity of 2,400 TEUs is prepared outside the terminal but in the port area.

Potential handling capacity of Alexandria Container Terminal is expected to be 400 thousand to 450 thousand TEUs by introducing additional container handling equipment, while the terminal throughput in 1997 is 188 thousand TEUs.

(2) Grain Terminal

The grain terminal is operated by Alexandria General Company for Silos and Storage. There are three grain berths (no.82, 84 and 85) whose length and depth are 485 m and 10.0 m respectively. There are also two silos with their storage capacities of 100,000 tons and 50,000 tons respectively. Three unloaders with discharging rate of 150 (tons/hour/unloader) and two unloaders with discharging rate of 250 (tons/hour/unloader) are also equipped at berth no.84 and no.85 respectively. One mobile unloader with discharging rate of 150 (tons/hour/unloader) is available at berth no.82.

A new grain berth of 315 m in length and 14.0 m in depth is planned to be constructed on the extension of the timber breakwater.

(3) Coal Terminal

There are three coal berths (no.62, 63 and 64) is 480 m in length and 10.0 m deep. An open yard is located right behind the berths with stacking capacity of 80,000 tons for coal and 30,000 tons for cokes. There are three cranes whose discharging rates are 150 to 200 (tons/hour/crane) for coal, and 100 (tons/hour/crane) for cokes respectively.

(4) Petroleum Terminal

Berth no.87/1 is mainly used for butane, lubricant oil, petrol gas, vegetable oil with a length of 236 m and a depth of 10.0 m. Berth no.87/2 is mainly used for LPG and vegetable oil with a length of 136 m and a depth of 10.0 m. Berths no.87/3 and 87/4 are mainly used for fuel oil, jet oil and naphtha with a total length of 296 m and a depth of 12.0 m. Berth no.87/5 is used for fuel oil with a length of 94 m and a depth of 12.0 m.

(5) General Cargo Berth

There are 31 general cargo berths of 3,804 m in length and 5.5 m to 12.0 m in depth. The extension of timber berths (berths no.71 to no.81) is under construction and has almost been completed. The extension between the berths no.57 and 59 with reclamation is planned and under design. The extension between berths no.44 and no.45 is also planned for the additional space of the roads.

(6) Approach Channel

Alexandria Port is protected by marine rocks and two breakwaters. A width of entrance to the inner harbor is approximately 400 m. The western strait (main channel) is used for the entry and exit of the ships to and from the port, and its dimensions are 2,000 m in length, 220 m in width and 14.0 m in depth. The eastern strait (secondary channel) is used for the entry and exit of the ships to and from the port, and its dimensions are 1,600 m in length, 100 m in width and 9.0 m in depth.

Outer harbor channel from the harbor entrance to the inner harbor is maintained to be 220 m in width and 14.0 m in depth.

Table 6.1.1 Outline of Major Terminals in Alexandria Port

1. Container Terminal				
Throughput in 1997		(TEUs)	187,994	Potential capacity = 400 ~ 450 thousand TEUs
Quay		Length	Depth	Remarks
	Berth No.49	560 m	14.0 m	These berths are practically maintained at depth of -12.0 m.
	Berth No.51		14.0 m	
	Berth No.53		14.0 m	
	Berth No.54	160 m	14.0 m	This berth is mainly used by Ro-Ro vessels.
Terminal	Area	(sq.m)	163,000	(Area of 28,000 sq.m for empty container in the Harbour)
	Ground Slot	(TEUs)	Aprox.3000	(Stacking capacity = 9600TEUs in the Teminal / 2400 TEUs (Empty) outside the terminal but within the Port)
	Reffer Point	(points)	-	
	QGCs	(Quantity)	3	(Outreach: 35m, Underspreader: 25m, Railspan: 15m)
	RTGs	(Quantity)	6	4 for (3 High+1Over), 2 for (5High +1Over)
	Toplifters	(Quantity)	10	(Capacity: 42 - 45 ton)
	Forklifts	(Quantity)	2	(Capacity: 37 ton)
	Forklifts	(Quantity)	10	(Capacity: 11.5 - 16 ton)
Forklifts	(Quantity)	3	(Capacity: 4 ton)	
2. Grain Terminal				
Throughput in 1997		(tons)	0.6 million	
Quay		Length	Depth	Remarks
	Berth No.82	190m	10.0 m	A new grain berth is planned at the extension of the timber breakwater (Depth = -14.0m, Length = 315m).
	Berth No.84	165m	10.0 m	
	Berth No.85	130m	10.0 m	
Terminal	Unloader (No.84)	(Quantity)	3	(Discharging rate: 150 tons/hour/unloader)
	Unloader (No.85)	(Quantity)	2	(Discharging rate: 250 tons/hour/unloader)
	Mobile unloader	(Quantity)	1	(Discharging rate: 150 tons/hour/unloader)
	Silo	(Quantity)	2	(Capacity: 150,000 tons = 100,000 tons + 50,000 tons)
3.Coal Terminal				
Throughput in 1997		(tons)	1.0 million (Coal: 0.7 million / Cokes: 0.3 million)	
Quay		Length	Depth	Remarks
	Berth No.62	480m	10.0 m	
	Berth No.63		10.0 m	
	Berth No.64		10.0 m	
Terminal	Cranes	(Quantity)	3	(Average discharging rate: 150 ~ 200 tons/hour/crane (Coal), 100 tons/hour/crane (Cokes))
	Open Yard	(sq.m)	30,000	(Stacking capacity: 110,000 ton = 80,000 tons (Coal) + 30,000 tons (Cokes))
4. Petroluem Terminal				
Throughput in 1997		(tons)	3.6 million	
Quay		Length	Depth	Remarks
	Berth No.87/1	236m	10.0 m	Buthane, Lubricant Oil, Petroleum Gas, Vegetable Oil
	Berth No.87/2	136m	10.0 m	LPG, Vegetable Oil
	Berth No.87/3	148m	12.0 m	Fuel Oil, Jet Oil, Naphtha
	Berth No.87/4	148m	12.0 m	
	Berth No.87/5	94m	12.0 m	Fuel Oil,
5. General Cargo Berth				
Throughput in 1997		(tons)	7.1 million	
Quay		Length	Depth	Remarks
	Berth No.5 ~ No.44	3,804m	5.5m ~ 12.0m	

Source) Alexandria Port Authority, Alexandria Container Handling Company, Alexandria General Company for Silo and Storage, El Nasre Company for Coal and Cokes, and Alexandria Petroleum Company

Table 6.1.2 The Major Existing Proposals of Alexandria Port Development up to the Year 2017

	Facility Description	Situation
Berth and Facilities		
1	Extension (-12.0m) Berths between No.71 and No.81 by reclamation	Under construction
2	Extension (Depth = -10.0m, Length = 360m) between Berths No.57 and No.59 for general cargo	Under design
3	Grain Berth (Depth = -14.0m, Length = 315m) behind the timber breakwater	Under design
4	Reclamation between Berths No.44 and No.45 for Roads	Plan
5	To dredge and increase depth beside the berths and harbours	Plan
Road and yard pavement		
1	Road between Al Nobarria and the silos (17,000 sq.m)	Under construction
2	Road in El Mahoudia area (Berths No. 33, 34, 35, 40, 41, 42) (35,500 sq.m)	Under construction
3	Road of the tower	Under construction
4	Paving the roads and the yards behind timber berths (80,000 sq.m)	Under construction
5	Paving the roads and the yards behind Berths No.57 and No.58 using high density brick (2,500 sq.m)	Under design
6	Paving the roads and the yards in front of Berths No.43 and No.44 (19,000 sq.m)	Under design
7	Re-paving the highway at the coal station crossing (10,000 sq.m)	Plan
8	Re-paving the area behind Berth No.16 using concrete flagstones (2,000 sq.m)	Plan
9	Re-paving the area behind Berth No.35 to the end of Berth No.37 (35,000 sq.m)	Plan
10	Re-paving the area from Berth No.59 to Berth No.55 (30,000 sq.m)	Plan
11	Re-paving the area from Gate No.14 to the end of highway (2,500 sq.m)	Plan
12	Re-paving the area in front of Gate No.27	Plan
13	Re-paving the way parallel to to Gates No.46-53-54 (Customs gate) (4,000 sq.m)	Plan
14	Emergency paving operations	Plan

6.1.2 El Dekheila Port

(1) Container Terminal

El Dekheila Container Terminal is operated by Alexandria Container Handling Company. There are two container berths (no.96/1 and 96/2) of which total length is 480 m and of which depth is 14.0 m. There are three QGCs but no RTGs in the terminal. Stacking capacity of the terminal is said to be 9,400 TEUs for laden containers and 5,000 TEUs for empty containers with the terminal area of 280,000 sq.m. One hundred and eighty (180) reefer points are provided in the terminal.

The extension of the container berths (new berths no.97/1 and no.97/2) is under construction. When the extension is completed, the existing container berths (berth no.96/1 and no.96/2) will reach to 620 m in total length and 14.0 m in depth, having new berths of 420 m in total length and 12.0 m in depth.

Potential handling capacity of El Dekheila Container Terminal is expected to be 1.0 million TEUs when the extension of container berths is completed, while the terminal throughput in 1997 is 152 thousand TEUs.

(2) General Cargo Berth

Berth no.92 is prepared as general cargo berth whose length and depth are 307 m and 15.0 m respectively. However, this berth is often used by bulk carrier carrying maize.

The extension of the general cargo berths (new berths no.95/1 and no.95/2) is under construction. The new general cargo berths of 570 m in total length and 12.0 m in depth are expected to handle one to 4.5 million tons of general cargo.

(3) Grain Terminal

There are two grain berths (no.94/1 and 94/2) whose total length and depth are 490 m and 14.0 m respectively. There are also five silos with a total storage capacity of 440,000 tons. Two unloaders with discharging rate of 500 (tons/hour/unloader) and six mobile unloaders with discharging rate of 100 (tons/hour/unloader) are equipped at the berths.

(4) Iron ore / Coal Terminal

There are two berths (no.90/1 and 90/2). Berth length and depth of berth no.90/1 are 375 m and 20.0 m respectively. Berth length and depth of berth no.90/2 are 255 m and 14.0 m respectively. An open yard is located right behind the berths with stacking capacity of 300,000 tons for iron pellet and 150,000 tons for coal. There are two unloaders whose discharging rates are 1,000 (tons/hour/unloader).

There are two extension plans of the mineral berth. The one extension of the mineral berth no.1 (berth no.90/1) is planned to receive 250,000 DWT-size vessel, with a length of 300

m and depth of 24.0 m. Another extension of the mineral berth no.2 (berth no.90/2) is also planned with a length of 600 m and a depth of 20.0 m.

(5) Other development plans

The extension of timber berth (berth no.99) and Ro-Ro berth (berth no.100) are also planned and under construction. Berth no.99 is under construction with a length of 300 m and depth of 12.0 m. Berth no.100 is under construction with a length of 130 m and a depth of 12.0 m.

Marine service jetty (berth no.101) is planned and under construction for tugs, pilot launches and mooring launches.

Dry bulk and chemical berths are planned with a length of 940 m and a depth of 12.0 m. Dangerous cargo berths are also planned with a length of 1,400 m and a depth of 11.0 m. Detailed location of these berths is not available.

(6) Approach Channel

Dimensions of the main channel in El Dekheila Harbor are 2,800 m in length, 250 m in width and 24.0 m in depth.

Table 6.1.3 Outline of El Dekheila Port Facility

1. Container Terminal				
Throughput in 1997		(TEUs)	151,622	Potential capacity = 1.0 million TEUs when the Second Phase Project completed
Quay		Length	Depth	Remarks
	Berth No. 96/1	480 m	14.0 m	After the completion of the berths no.97/1 and 97/2, total berth length is to be extended to 620m. (Under construction for the Second Phase Project)
	Berth No. 96/2	(620m)	14.0 m	
	Berth No. 97/1	560 m	12.0 m	
	Berth No. 97/2	(420m)	12.0 m	
Terminal	Area	(sq.m)	280,000	(planned to imcrease up to 380,000 sq.m)
	Ground Slot	(TEUs)	Aprox 4,000	
	Reffer Point	(points)	180	
	QGCs	(Quantity)	3	(Outreach: 45m, Underspreader: 33m, Railsan: 15m)
	RTGs	(Quantity)	-	
	Reach Stackers	(Quantity)	5	(Capacity: 45 ton)
	Toplifters	(Quantity)	6	(Capacity: 45 ton)
	Toplifters	(Quantity)	6	(Capacity: 3 to 7.5 ton)
	Forklifts	(Quantity)	8	(Capacity: 16 ton)
	Tractors	(Quantity)	12	
	Trailers	(Quantity)	12	
2. General Cargo Berth				
Throughput in 1997		(tons)	2.3 million	
Quay		Length	Depth	Remarks
	Berth No.92	307m	15.0 m	
3. Grain Terminal				
Throughput in 1997		(tons)	3.7 million	
Quay		Length	Depth	Remarks
	Berth No.94	490m	14.0 m	
		=(2*245m)	14.0 m	
Terminal	Unloader	(Quantity)	2		(Discharging rate: 500 tons/hour/unloader)
	Mobile unloader	(Quantity)	6	(Discharging rate: 100 tons/hour/unloader)
	Silo	(Quantity)	5	(Capacity: 440,000 tons = 130,000 tons *2 + 60,000 tons *3)
4. Iron ore / Coal Terminal				
Throughput in 1997		(tons)	2.6 million	(Iron pellets: 1.15 million / Coal: 1.47 million)
Quay		Length	Depth	Remarks
	Berth No.90/1	375m	20.0 m	
	Berth No.90/2	255m	14.0 m	
Terminal	Unloaders	(Quantity)	2	(Discharging rate: 1000 tons/hour/crane)
	Stackers	(Quantity)	2	(Discharging rate:500 tons/hour/crane)
	Reclaimers	(Quantity)	2	(Discharging rate: 800 tons/hour/crane)
	Open Yard (Iron)	(sq.m)	30,000	(Stacking capacity (Iron pellets): 300,000 ton)
	Open Yard (Coal)	(sq.m)	18,000	(Stacking capacity (Coal): 150,000 ton)

Source) Alexandria Port Authority, Alexandria Container Handling Company, Alexandria Silo and Stores Company

Table 6.1.4 The Major Existing Proposals of El Dekheila Development Port up to the Year 2017

	Facilities	Description	Situation
Berths and Facilities			
	1 Extension of General Cargo Berth No.94 (No.95)	Depth = -12.0m, Length = 570m, Annual Capacity = 1 to 4.5 million tons	Under construction
	2 Extension of Container Terminal Berth No.96 (No.97)	Depth = -12.0m, Length = 500m, Annual Capacity = 3.8 million tons	Under construction
	3 Extension of Timber Berth (Berth No.99) and Ro-Ro Berth (Berth No.100)	1) Depth = -12.0m, Length = 300m, Annual Capacity = 500 thousand tons for Timber Berth / 2) Depth = -12.0m, Length = 130m, Annual Capacity = 500 thousand tons for Ro-Ro Berth	Under construction
	4 Marine service jetty (Berth No.101)	For tugs, pilotage launches and mooring launches with draft of 6.0m	Under construction
	5 Extension of Mineral Berth No.1 and electrical works (Berth No.90-1)	Depth = -24.0m, Length = 300m, to accommodate 250,000 DWT-size Vessel, Annual Capacity = 10.2 million tons	Plan
	6 Mineral Berth No.2 (Berth No.90-2)	Depth = -20.0m, Length = 600m, Annual Capacity = 10.0 million tons	Plan
	7 Dry Bulk and Chemical Berths (Location unknown)	Depth=-12.0m, Length=940m for Bulk, Length=200m for Chemical, Annual Capacity for both bulk and chemical=3.6	Plan
	8 Dangerous Cargo Berth (Location unknown)	Depth = -11.0m, Length = 1,400m, Annual Capacity = 1.0 million tons	Plan
Pavement and Breakwater			
	1 Road and yard pavement	Roads: area of 1.0 million sq.m, Yard extension: area of 48,000 sq.m	Plan
	2 Breakwater	Additional breakwater and renewing the existing one	Under study

6.2 Cargo Movement

(1) Cargo Traffic

Historical trend of cargo volume handled through Greater Alexandria Port is shown in Table 6.2.1. Port cargo is divided into four cargo types, namely conventional cargo, container cargo, dry bulk cargo and liquid bulk cargo. Cargo volume of Conventional, Container, Dry Bulk and Liquid Bulk in 1997 account for 7,087 thousand tons (28.7% of total cargo volume), 2,707 thousand tons (10.9%), 10,635 thousand tons (43.0%) and 4,297 thousand tons (17.4%) respectively. Total volume of cargo handled in Greater Alexandria Port amount to 24,725 thousand tons, average annual growth rate is 2.3% in the period of 1988-1997. Major cargoes among import commodities are Grains (4,425 thousand tons in 1997), Iron Pellets (1,988 thousand tons) and Coal (1,659 thousand tons) as Dry Bulk, Timber (1,629 thousand tons) and Iron/Steel Products (3,142 thousand tons) as Conventional. Major cargoes among export commodities are Petroleum Oil (2,956 thousand tons in 1997) as Liquid Bulk

(2) Outline of Container Cargo

Conventional cargo divided into three categories. One is “Containerizable” cargo which is already containerized or has the potential to be containerized as containerization progress. The other is “non-Containerizable” cargo which has no possibility to be containerized even in the future; such as long, heavy and bulk cargo (some type of steel products), livestock (goat, sheep and so on) and vehicles.

To estimate the percentage of containerization in the future, it is necessary to categorize port cargo into two groups mentioned above using the existing port statistics. In this report, “Annual Statistical Report of Alexandria Port” issued by Planning and Research Department which gives commodity-wise items, is used to classify the port cargo into two groups. Some items, however, include both “Containerizable” and “Non-Containerizable” cargo. Hence, those cargo items make the third category, “Statistically mixed cargo in containerizability”. The result of the classification is shown in Table 6.2.1.

(3) 20 Foot Container Ratio to Total TEUs in the Greater Alexandria Port

20 Foot Container Ratio is shown in Table 6.2.2. 20 Foot Container Ratio to total TEUs has been decreasing steadily for the last 10 years reaching about 47.6% in 1997. However, the number of 20 Foot containers is still greater than that of 40 Foot.

(4) Empty Container Ratio to Total TEUs in the Greater Alexandria Port

Empty Container Ratio to total TEUs is shown in Table 6.2.3. Empty Container Ratio for import and export container cargo in 1997 is 1.1% and 61.6% respectively.

Table 6.2.1 Historical Trend of Cargo Volume Handled at Greater Alexandria Port

(Unit: thousand tons)

Package Style	Containerizability	Commodity	1988			1989			1990			1991			1992			1993			1994			1995			1996			1997			Average Annual Growth Rate	Share in 1997				
			Import	Export	Total	Import	Export	Total	Import	Export	Total	Import	Export	Total	Import	Export	Total	Import	Export	Total	Import	Export	Total	Import	Export	Total	Import	Export	Total									
Conventional Cargo	Containerizable	Miscellaneous	2,163	368	2,530	2,482	552	3,034	2,770	600	3,370	3,216	655	3,870	3,944	1,190	5,133	5,434	949	6,383	2,858	274	3,132	2,695	432	3,127	3,880	432	4,311	2,889	55	2,943	1.7%	11.9%				
		Frozen Food	268	15	283	241	10	251	246	2	248	157	157	182	157	182	1	88	228	8	236	232		232	223	223	168	168	164	164	122	122						
		Lash Cargo	75	24	99	78	23	102	99	19	118	94	94	100	86	100	1	88	70	8	70	70		115	1	116	150	150	122	122								
		Citrus		45	45		8	8		31	31		61	61		40	40		8	8			104	104		14	14		16	16		12	12					
		Cotton		49	49		31	31		25	25		3	3		4	4		1	1			4	4		7	7		1	1								
		Fiber		8	8		1	8	9		13	13		15	15		5	5		3	3			3	3					0								
			Sub-total	2,506	508	3,014	2,802	632	3,434	3,115	690	3,805	3,466	739	4,206	4,212	1,240	5,270	5,732	969	6,701	3,090	385	3,475	3,033	453	3,486	4,198	451	4,649	3,175	67	3,241	0.8%	13.1%			
		Statistically Mixed	Timber	977		977	1,011		1,011	1,036		1,036	986		986	904		904	1,237		1,237	1,157	0	1,158	1,501	1	1,502	1,440		1,440	1,629	3	1,633	5.9%	6.6%			
	Ro-Ro Cargo		597	132	730	573	166	739	706	216	922	605	213	818	318	102	421	250	65	315	482	147	629	695	192	888	539	154	693	625	133	758	0.4%	3.1%				
	Sugar		531		531	384		384	448		448	293		293	132		132	152		152	368		368	521	7	527	406		406	661		661	2.5%	2.7%				
	Paper		246		246	238		238	225		225	247		247	342		342	196		196	296		296	333	1	334	300	2	302	172	1	173						
	Rice		11	42	53	1	6	7	2	39	41		62		62		92	92		38	38		114	1	61	62	2	123	125	1	49	50						
			Flour	972		972	848		848	640		640	429		429	104		104	502		502	284		284	257		257	84		84	53		53					
			Sub-total	3,334	174	3,508	3,055	172	3,226	3,056	255	3,311	2,560	275	2,835	1,801	194	1,995	2,337	103	2,440	2,587	261	2,849	3,308	262	3,570	2,771	279	3,050	3,142	187	3,329	-0.6%	13.5%			
		Non-containerizable	Iron/Steel Products	455		455	497		497	580		580	250		250	63	4	67	566	123	689	499	96	594	539	61	601	676		676	293	192	485	0.7%	2.0%			
Scrap						0		179		179	114		114	109		109	96		96	74		74	62		62	201		201	16		16							
Car	9		1	10	1		1	5		5	3	1	4	12		12	11		11	36	1	37	27		27	17		17	10		10							
Livestock	15			15			1		1		1		1	15		15	176		176	72		72	48		48	33		33	6		6							
		Sub-total	479	1	480	498	0	498	765	0	765	368	1	369	199	4	203	849	123	972	681	97	777	676	61	738	927	0	927	325	192	517	0.8%	2.1%				
		Total	6,319	684	7,002	6,354	804	7,158	6,936	945	7,881	6,395	1,016	7,410	6,212	1,438	7,468	8,918	1,196	10,114	6,358	743	7,101	7,017	776	7,794	7,896	730	8,626	6,641	446	7,087	0.1%	28.7%				
Containers		'000 tons ('000 TEUs)	639	112	751	854	251	1,106	827	264	1,091	812	331	1,143	883	370	1,253	1,011	426	1,437	1,166	613	1,778	1,458	584	2,042	1,698	610	2,308	2,055	651	2,707	15.3%	10.9%				
		(% of Containerization)			19.9%			24.4%			22.3%			21.4%		19.2%			17.7%				33.8%			36.9%			33.2%			45.5%						
Dry Bulk		Grains	2,012		2,012	1,798		1,798	1,212		1,212	843		843	1,155		1,155	1,014		1,014	2,889		2,889	3,783		3,783	3,204		3,204	4,425	18	4,442	9.2%	18.0%				
		Iron Pellets	377	48	425	359		359	218	1	218	1,337		1,337	1,604		1,604	1,640	13	1,653	1,557		1,557	1,257		1,257	1,394		1,394	1,988	7	1,995	18.7%	8.1%				
		Coal	1,254		1,254	1,307		1,307	1,389		1,389	1,312		1,312	1,412		1,412	1,556		1,556	1,732		1,732	1,568		1,568	1,833		1,833	1,659		1,659	3.2%	6.7%				
		Coke				6		6											148		148			378		378			306		306			1.2%	1.2%			
		Cement	1,338		1,338																			339		339			976		976			-3.5%	3.9%			
		Sulpher																						207		207			235		235	349	1	351			1.4%	1.4%
		Fertilizer	630		630	629		629	603	23	625	569	54	623	124	321	445	284	86	369	145	118	263	254	45	299	372	9	381	239	19	258			-9.5%	1.0%		
		Salt																						182		182			201		201	235		235				
	Others																						307	17	324	180	4	183	112	4	116	413	1	414			1.7%	1.7%
		Total	5,611	48	5,660	4,100	0	4,100	3,422	23	3,445	4,061	54	4,115	4,295	321	4,616	4,493	246	4,740	6,837	695	7,532	7,551	572	8,123	7,154	210	7,364	10,047	588	10,635	7.3%	43.0%				
Liquid Bulk		Petroleum Oil	4,375	1,598	5,974	4,948	1,542	6,490	4,998	1,877	6,875	4,839	2,365	7,204	506	1,926	2,432	436	2,880	3,317	135	3,084	3,219	169	2,652	2,822	622	2,762	3,383	614	2,956	3,570	-5.6%	14.4%				
		Edible Oil	541		541	402		402	491		491	623		623	504		504	658		658	420		420	500		500	450		450	480	3	483			-1.2%	2.0%		
		Grease	180		180	109		109	59		59	21		21	33		33	23		23	43		43	57		57	86		86	58		58			-11.9%			
		Molasses		116	116		168	168		101	101		131	131		154	154		180	180			170		246	246		223	223	186		186						
		Total	5,096	1,715	6,810	5,459	1,710	7,169	5,548	1,978	7,526	5,483	2,497	7,980	1,043	2,081	3,090	1,117	3,060	4,177	598	3,255	3,853	726	2,898	3,624	1,157	2,985	4,142	1,151	3,145	4,297			-5.0%	17.4%		
Grand Total			17,665	2,558	20,223	16,767	2,765	19,532	16,733	3,210	19,943	16,751	3,898	20,648	12,433	4,209	16,427	15,539	4,928	20,467	14,959	5,306	20,264	16,753	4,830	21,583	17,905	4,535	22,440	19,895	4,830	24,725	2.3%	100.0%				

Source: APA

Note: Percent of containerization is calculated by using the volume of container cargo as numerator and the volume of Containerizable cargo and container cargo as denominator.

For example: % of Containerization in 1997 = 2,707/(3,241+2,707) = 45.5%

(5) Cargo Weight per Container (TEU) Handled in the Greater Alexandria Port

Cargo weight per container (TEU) of Import and export handled in the Greater Alexandria Port in 1997 are 11.8 tons and 4.6 tons respectively. Cargo weight per container are shown in Table 6.2.4.

Table 6.2.2 20 Foot Container Ratio to Total Containers handled through the Greater Alexandria Port in 1997

Year	Import			Export			Total			20 Foot Ratio
	20 Foot (Boxes)	40 Foot (Boxes)	Total (TEUs)	20 Foot (Boxes)	40 Foot (Boxes)	Total (TEUs)	20 Foot (Boxes)	40 Foot (Boxes)	Total (TEUs)	
1988	48,917	14,000	76,917	49,698	13,940	77,578	98,615	27,940	154,495	63.8%
1989	45,200	15,788	76,776	47,736	15,818	79,372	92,936	31,606	156,148	59.5%
1990	70,609	24,542	119,693	63,498	22,548	108,594	134,107	47,090	228,287	58.7%
1991	82,708	33,798	150,304	79,004	33,544	146,092	161,712	67,342	296,396	54.6%
1992	63,239	28,885	121,009	61,709	26,907	115,523	124,948	55,792	236,532	52.8%
1993	68,979	33,646	136,271	60,942	30,280	121,502	129,921	63,926	257,773	50.4%
1994	74,494	37,478	149,450	65,173	34,902	134,977	139,667	72,380	284,427	49.1%
1995	75,869	40,433	156,735	72,563	37,412	147,387	148,432	77,845	304,122	48.8%
1996	81,691	43,013	167,717	76,523	41,327	159,177	158,214	84,340	326,894	48.4%
1997	99,846	54,320	208,486	89,251	49,795	188,841	189,097	104,115	397,327	47.6%

Source) Calculated by the Study Team based on the data from APA

Table 6.2.3 Empty Container Ratio to Total Containers handled through the Greater Alexandria Port in 1997

Year	Import			Export			Total			Empty Ratio
	Empty (TEUs)	Laden (TEUs)	Total (TEUs)	Empty (TEUs)	Laden (TEUs)	Total (TEUs)	Empty (TEUs)	Laden (TEUs)	Total (TEUs)	
1988	119	76,798	76,917	52,610	24,968	77,578	52,729	101,766	154,495	34.1%
1989	638	76,498	77,136	45,943	34,437	80,380	46,581	110,935	157,516	29.6%
1990	9,118	110,575	119,693	52,542	56,052	108,594	61,660	166,627	228,287	27.0%
1991	10,744	139,560	150,304	62,004	84,088	146,092	72,748	223,648	296,396	24.5%
1992	3,005	121,358	124,363	65,624	53,824	119,448	68,629	175,182	243,811	28.1%
1993	1,494	139,937	141,431	62,961	64,011	126,972	64,455	203,948	268,403	24.0%
1994	2,714	149,073	151,787	65,292	72,036	137,328	68,006	221,109	289,115	23.5%
1995	2,536	154,199	156,735	82,399	64,988	147,387	84,935	219,187	304,122	27.9%
1996	1,105	166,612	167,717	98,151	61,026	159,177	99,256	227,638	326,894	30.4%
1997	2,229	206,258	208,487	116,277	72,563	188,840	118,506	278,821	397,327	29.8%

Source) Calculated by the Study Team based on the data from APA

Table 6.2.4 Cargo Weight per Container (TEU) handled through the Greater Alexandria Port in 1997

Year	Import			Export			Total		
	Cargo Weight (thousand tons)	TEU (TEUs)	Weight/TEU (ton/TEU)	Cargo Weight (thousand tons)	TEU (TEUs)	Weight/TEU (ton/TEU)	Cargo Weight (thousand tons)	TEU (TEUs)	Weight/TEU (ton/TEU)
1988	814	76,917	10.6	225	77,578	2.9	1,038	154,495	6.7
1989	816	76,776	10.6	313	79,372	3.9	1,129	156,148	7.2
1990	1,102	119,693	9.2	326	108,594	3.0	1,429	228,287	6.3
1991	1,261	150,304	8.4	503	146,092	3.4	1,764	296,396	6.0
1992	1,353	121,009	11.2	493	115,523	4.3	1,846	236,532	7.8
1993	1,600	136,271	11.7	557	121,502	4.6	2,157	257,773	8.4
1994	1,849	149,450	12.4	840	134,977	6.2	2,689	284,427	9.5
1995	1,958	156,735	12.5	816	147,387	5.5	2,775	304,122	9.1
1996	2,037	167,717	12.1	733	159,177	4.6	2,770	326,894	8.5
1997	2,453	208,486	11.8	868	188,841	4.6	3,321	397,327	8.4

Source) Calculated by the Study Team based on the data from APA

6.3 Port Activities

6.3.1 Alexandria Port

(1) Ship Movement and Berth Occupancy Ratio

A total of 3,886 vessels (3,263 vessels at Alexandria Port / 426 vessels at El Dekheila Port) called the Greater Alexandria Port in 1996. General cargo, container and dry bulk vessels account for approximately 50%, 16% and 14% respectively of the total number of vessels calling at Alexandria Port. Average ship waiting time on anchorage is estimated as 3.14 (days/ship).

Table 6.3.1 Number of Vessels calling at Alexandria and El Dekheila Ports in 1996

Vessel Type	Alexandria Port (vessels)	El Dekheila Port (vessels)	Grand Total (vessels)
1. Container	519 (15.9%)	426 (68.4%)	945 (24.3%)
2. General Cargo	1,653 (50.7%)	59 (9.5%)	1,712 (44.1%)
3. Dry Bulk	450 (13.8%)	130 (20.9%)	580 (14.9%)
4. Liquid Bulk	297 (9.1%)	0 (0%)	297 (7.6%)
5. Passenger	82 (2.5%)	0 (0%)	82 (2.1%)
6. Supply	121 (3.7%)	0 (0%)	121 (3.1%)
7. Others	141 (4.3%)	8 (1.3%)	149 (3.8%)
Grand Total	3,263 (100%)	623 (100%)	3,886 (100%)

Source) "Annual Statistics Report 1997", Alexandria Port Authority

Berth-wise Berth Occupancy Ratio (BOR) was calculated based on the berthing records in 1997 and is presented in Table 6.3.2. Overall average BOR of Alexandria Port is 65.5% in 1997. Some examples of vessels were selected to analyze cargo-wise handling productivity, based on both berthing and cargo handling records of February and August in 1997. Seventy two (72) examples are selected and presented for Alexandria Port in Table 6.3.3.

Table 6.3.2 Berth-wise Berth Occupancy Ratio of Alexandria Port in 1997

Berthing No	Berth Type	Major Cargo Handled	Berth Depth (m)	Berth Length (m)	Berth Occupancy Ratio (%)	Berthing Time (hours)	
5_1	General	General Cargo	6.0	300	77.8%	6,816	
5_2	General	General Cargo	6.0		83.0%	7,270	
5_3	General	General Cargo	6.0		78.8%	6,906	
5_4	General	General Cargo	6.0		64.0%	5,605	
9	General	General Cargo	5.5	68	69.2%	6,063	
10	General	General Cargo	8.0	130	96.2%	8,425	
11	General	General Cargo	8.5	128	48.6%	4,255	
12	General	General Cargo	8.5	100	42.5%	3,721	
13	General	General Cargo	8.8	143	87.4%	7,656	
14	General	General Cargo	10.0	180	90.1%	3,568	
14_16	Ro-Ro	General Cargo	-	-		4,326	
16	Passenger	General Cargo	10.2	212	70.3%	3,078	
16_14	Ro-Ro	General Cargo	-	-		721	
16_18	Ro-Ro	General Cargo	-	-		2,357	
18	Passenger	General Cargo	10.2	110	59.0%	894	
18_16	Ro-Ro	General Cargo	-	-		2,469	
18_20	Ro-Ro	General Cargo	-	-		1,806	
20	Passenger	General Cargo	12.0	316		100.0%	12,434
22	Passenger	General Cargo	12.0		77.8%	6,815	
24	Passenger	General Cargo	12.0		160	100.0%	8,793
25	General	General Cargo	10.2	290	90.5%	7,928	
25_26	Ro-Ro	General Cargo	-		35.8%	3,140	
26	General	General Cargo	10.2		98.2%	8,603	
27	General	General Cargo	10.2		76.5%	6,705	
27_28	Ro-Ro	General Cargo	-	220	8.5%	744	
28	General	General Cargo	12.0	280	53.9%	4,721	
30	General	General Cargo	7.0		70	71.8%	6,293
34	General	General Cargo	6.5		125	71.2%	6,239
35	General	General Cargo	10.0		360	86.6%	7,588
36	General	General Cargo	10.0			45.4%	3,975
37	General	General Cargo	10.0			100.0%	8,883
38	General	General Cargo	10.0			115	100.0%	8,826
39	General	General Cargo	10.0		89.2%	7,816	
40	General	General Cargo	10.0		83.5%	7,318	
41	General	General Cargo	19.0		170	95.9%	8,401
42	General	General Cargo	7.5	276	89.0%	7,799	
42_43	Ro-Ro	General Cargo	-		7.5%	660	
43	General	General Cargo	7.5		86.2%	7,552	
44	General	General Cargo	1.2	150	86.4%	7,570	
46_47	Military		-	-	3.5%	310	
49	Container	Container	14.0	560	45.0%	7,890	
51	Container	Container	14.0				
53	Container	Container	14.0				
54	Ro-Ro	Container	14.0	160	7.7%	679	
55	Cement	Cement	9.0	250	46.6%	4,086	
56	Cement	Cement	9.0		79.1%	6,927	
62	Coal	Cokes	10.0	480	6.7%	585	
63	Coal	Coal	10.0		12.6%	1,108	
64	Coal	Coal	10.0		32.8%	2,870	
65	Fertilizer	Fertilizer	10.0	450	88.0%	7,708	
66	Fertilizer	Fertilizer	10.0		79.7%	6,983	
67	Cement	Cement	10.0		16.3%	1,429	
71	Molasses	Molasses	-		-	34.0%	2,980
73	Timber	under construction					
75	Timber						
77	Timber						
79	Timber						
80	Timber						
82	Wheat	Wheat	10.0	190	79.3%	6,946	
84	Wheat	Wheat	10.0	165	32.8%	2,875	
85	Wheat	Wheat	10.0	130	32.5%	2,851	
86	Livestock	Livestock	5.0	100	11.8%	1,034	
871	Petroluem	Petroluem	10.0	236	18.8%	1,650	
872	Petroluem	Petroluem	10.0	136	28.3%	2,482	
873	Petroluem	Petroluem	12.0	148	23.5%	2,056	
874	Petroluem	Petroluem	12.0	148	43.1%	3,773	
875	Petroluem	Petroluem	12.0	94	24.1%	2,110	
876	Petroluem	Timber	-	-	100.0%	15,048	
199	Anchorage		-	-	-	9,013	
200	Anchorage	Timber	-	-	-	95,023	
Grand Total					65.3%	309,114	

Source) Alexandria Port Authority

Table 6.3.3 Samples of Vessel Berthing Record at the Greater Alexandria Port during February and August in 1997

Arriving Date (m/d/yy)	Vessel Name	Vessel Type	DWT	LOA (m)	Summer Draft (m)	Moulded Breadth (m)	Container Capacity (TEU)	Goods Description	Package Type	Cargo Weight (mt)	Container Total (boxes)	Berth Waiting Time (hr)	Anchoring for Stevedoring		Berthing at Quays		Port of Loading	Cargo Handling Productivity (mt/hr)	Import/Export
													(hr)	Anchorage	(hr)	Quay No.			
(Cement)																			
2/24/97	VICTOR III	Bulk Carrier	16,992	143.7	9.2	21.9		cement	bulk	16,200	2	2	-	-	215	56	Volos	75	Import
8/3/97	EUROBULKER	Bulk Carrier	60,682	223.0	11.6	32.2		cement	bulk	13,486	2	83	-	-	187	56	Constanza	72	Import
8/16/97	VICTOR III	Bulk Carrier	16,992	143.7	9.2	21.9		cement	bulk	16,385	2	144	-	-	234	56	Volos	70	Import
								Sub-total		46,071		229			636	Average		72	
(Butane)																			
2/27/97	LYNE	LPG Tanker	5,886	105.3	5.9	19.5		butane	bulk	2,600	2	2	-	-	44	87/1	Priolo	59	Import
8/5/97	GAZ SYMPHONY	LPG Tanker	8,106	135.0	6.4	21.5		butane	bulk	4,300	2	11	-	-	96	87/1	Lavera-France	45	Import
								Sub-total		6,900		13			140	Average		49	
(Fuel Oil)																			
2/9/97	FOUR RIVERS	Tanker	36,457	168.6	9.2	28.0		fuel oil	bulk	29,935	-	8	-	-	46	87/3	Civitaveochia	651	Export
2/8/97	PINK STAR	Tanker	32,755	180.0	10.8	27.1		fuel oil	bulk	27,400	-	12	-	-	46	87/5	Rotterdam	596	Export
8/4/97	POLYXENI I	Tanker	25,228	175.1	9.7	25.1		fuel oil	bulk	24,420	-	3	-	-	44	87/5	Haifa	555	Export
								Sub-total		81,755		23			136	Average		601	
(Vegetable Oil)																			
8/2/97	TEAL	Tanker	29,590	180.8	10.0	32.3		vegetable oil	bulk	2,000	2	4	-	-	91	87/2	New Orleans	22	Export
8/6/97	BOW LEOPARD	Tanker	40,249	170.7	11.3	32.2		vegetable oil	bulk	24,870	4	172	-	-	115	87/2,87/4	Kuantan Port	217	Import
								Sub-total		26,870		176			206	Average		131	
(Iron Pellets)																			
2/6/97	ZETLAND	Bulk Carrier	145,905	267.3	17.5	43.0		iron pellets	bulk	137,410	2	15	-	-	117	90	Tubarao	1174	Import
8/2/97	MARSHAL ZAKHAROV	Bulk/Oil	116,283	245.5	17.5	38.7		iron pellets	bulk	114,556	2	5	-	-	81	90	Tubarao	1414	Import
								Sub-total		251,966		20			198	Average		1273	
(Cokes)																			
8/6/97	STARA PLANINA	General Cargo	9,423	126.0	7.6	17.7		coke	bulk	4,744	-	66	-	-	46	61	Ceyhan,Turky	103	Export
(Wheat)																			
8/1/97	TIAN SHAN HAI	Bulk Carrier	45,884	194.5	11.4	30.5		wheat	bulk	31,500	6	2	-	-	127	94	Galveston,Texas	248	Import
8/18/97	AMOLIANI	Bulk Carrier	72,070	230.0	14.4	32.3		wheat	bulk	60,500	4	6	-	-	220	92	Westwego ,Louisiana	275	Import
8/20/97	SEA EAGLE	Bulk Carrier						wheat	bulk	53,124		4	-	-	281	90/2,94	Houston,Texas	189	Import
								Sub-total		145,124		12			628	Average		231	
(Maize)																			
2/28/97	REGINA	Bulk Carrier	129,882	261.0	17.6	40.6		maize	bulk	53,000	30	16	-	-	357	90,92	Reserve, Louisiana	148	Import
8/18/97	PRINCESS CLIPPER	Bulk Carrier	118,049	260.0	16.5	39.7		maize	bulk	73,496	8	3	-	-	280	94	Ama ,Louisiana	262	Import
8/25/97	ANGELIKI I	Bulk Carrier	126,579	261.0	17.6	40.6		maize	bulk	85,000	28	40	-	-	413	90/1,92,94	Reserve,Louisiana	206	Import
8/21/97	FLAG MERSINIDI I	Bulk/Oil	123,043	257.0	17.1	39.1		maize/soya bean	bulk	71,126	48	88	-	-	345	90/1,90/2,92,94,92	San Lorenzo	206	Import
								Sub-total		282,622		147			1,396	Average		203	
(Salt / Soya Bean)																			
8/21/97	STANDARD VIRTUE	Bulk Carrier	66,493	219.1	13.7	32.3		soyabean meal	bulk	25,381	4	179	-	-	561	90/2,98,90/2,94	San Lorenzo	45	Import
2/28/97	VALERIA R	N.A.						salt	bulk	26,275	-	21	-	-	116	94	Baltimore	227	Export
(Sawn Timber)																			
2/3/97	ANANGEL TRIUMPH	Bulk Carrier	22,669	164.3	9.9	22.9		sawn timber	bundle	16,350	24	73	232	87/6	-	-	Norrkoping	70	Import

Arriving Date (m/d/yy)	Vessel Name	Vessel Type	DWT	LOA (m)	Summer Draft (m)	Moulded Breadth (m)	Container Capacity (TEU)	Goods Description	Package Type	Cargo Weight (mt)	Container Total (boxes)	Berth Waiting Time (hr)	Anchoring for Stevedoring		Berthing at Quays		Port of Loading	Cargo Handling Productivity (mt/hr)	Import/Export
													(hr)	Anchorage	(hr)	Quay No.			
2/13/97	KREVA	General Cargo	4,471	97.3	6.7	16.2		sawn timber	bundle	936	3	1	65	200	-	-	Yxpila	14	Import
8/1/97	OGNYAN NAYDOV	General Cargo	4,150	123.5	4.5	15.0		sawn timber	bundle	4,218	3	5	191	200	-	-	England U.K.	22	Import
8/13/97	PRIMOSTEN	Bulk Carrier	7,580	123.3	6.9	17.1		sawn timber	bundle	8,713	119	1	126	200	-	-	Rahja	69	Import
8/16/97	KAPITAN DANILKIN	Ro-Ro	19,763	173.6	10.5	24.6	576	sawn timber	bundle	11,231	197	50	161	200	-	-	Tallinn	70	Import
8/15/97	SPAR THREE	Bulk Carrier	35,941	189.7	10.9	27.7		sawn timber	bundle	25,242	23	17	341	200,87/6	-	-	Yxpila	74	Import
8/19/97	MAKSIM RYLSKIY	General Cargo	5,485	124.4	5.5	16.4	165	sawn timber	bundle	2,813	2	29	150	200	-	-	Novorossllsk	19	Import
8/23/97	KAPITAN BURMAKIN	Bulk Carrier	14,203	151.8	8.7	21.1	308	sawn timber	bundle	6,962	13	26	199	200	-	-	Valko,finland	35	Import
8/7/97	ZLARIN	Bulk Carrier	9,246	119.5	7.4	18.5	160	sawntimber	bundle	7,712	18	4	163	200	-	-	Uddevalla	47	Import
8/17/97	AFAMIA	General Cargo	5,735	107.1	7.0	15.3		sawntimber	bundle	2,798	3	5	203	200	-	-	Novorossllsk	14	Import
								Sub-total		86,975		211	1,831			Average		47	
(Steel Billets)																			
2/12/97	APOLLONIA TRADER	General Cargo	11,720	133.0	7.9	22.0		steel billets	bundle	11,300	2	82	-	-	172	92	Tuapse	66	Import
8/16/97	APOLLONIA TRADER	General Cargo	11,720	133.0	7.9	22.0		steel billets	bundle	10,442	2	36	-	-	138	41	Odessa	76	Import
8/22/97	ANDREAS	Bulk Carrier	28,633	176.9	10.6	25.1		steel billets	bundle	11,979	6	32	-	-	228	22	Odessa	53	Import
8/22/97	WOLF	General Cargo	11,845	139.7	8.4	19.3		steel billets	bundle	11,480	2	163	-	-	255	25	Odessa	45	Import
8/27/97	OSMAN ER	Bulk Carrier	12,687	132.0	8.5	21.2	476	steel billets	bundle	10,546	6	104	-	-	202	37,62	Tuapse	52	Import
								Sub-total		55,747		417			995	Average		56	
(Steel Products)																			
2/18/97	HELIOPOLIS SKY	General Cargo	8,745	147.5	7.1	18.6		steel products	bundle	5,086	-	130	-	-	329	27,16/14,27	Antwerp	15	Export
2/18/97	ABDUL FATTAH	General Cargo	1,048	59.3	4.2	10.7		steel products	bundle	847	-	167	-	-	125	30,5/4	Elefsis	7	Export
2/25/97	SAMIR	General Cargo	3,059	78.1	5.6	13.0		steel products	coil	2,633	12	157	-	-	86	43,94	Koper	31	Import
8/9/97	KARIM ALLAH	General Cargo	1,952	70.0	5.0	11.1		steel products	bundle	1,845	4	189	-	-	65	42	Llichivsk	28	Import
8/13/97	FEROI	General Cargo	3,414	80.2	6.0	16.1	165	steel products	bundle	5,676	2	106	-	-	80	66	Misurata	71	Import
8/21/97	NEW LILY	General Cargo	2,400	88.7	5.3	12.8		steel products	coil	2,337	2	22	-	-	153	5/2	Barcelona	15	Export
8/17/97	VALERIAN ZORIN	General Cargo	2,099	91.9	3.4	13.6		metal products	bundle	1,036	4	26	-	-	50	38	Izmeil	21	Import
								Sub-total		19,460		797			888	Average		22	
(Paper Rolls)																			
2/20/97	CONCORD	General Cargo	9,650	123.4	8.0	20.0	504	paper rolls	roll	5,000	2	86	-	-	120	37	Canada	42	Import
8/9/97	G R GUMUSPALA	NA						paper rolls	roll	1,946	12	16	-	-	81	24,22	Mobila	24	Import
								Sub-total		6,946		102			201	Average		35	
(Sulphur)																			
2/6/97	ABDULRAZZAK	General Cargo	11,773	127.8	8.0	20.6	233	sulfur	bulk	10,994	2	13	235	200	-	-	Mariupol	47	Import
(Vegetable)																			
2/2/97	GHARIB III	General Cargo	745	55.4	3.3	8.7		vegetable	box	76	-	265	-	-	112	28,30	Beirut	1	Export
2/10/97	PAULA	General Cargo	1,073	62.4	3.8	9.9		vegetable	bag	996	-	125	-	-	90	16/18	Beirut	11	Export
2/28/97	GHARIB III	General Cargo	745	55.4	3.3	8.7		vegetable	box	554	-	117	-	-	105	28	Beirut	5	Export
2/10/97	ICE FERN	Reefer	6,686	118.2	8.3	18.8		fruit	carton	2,268	2	46	-	-	152	39,11	Seattle	15	Import
2/24/97	HAJ MOHAMMED	General Cargo	2,898	80.8	5.8	12.6		fruit	carton	400	-	22	-	-	68	34	Odessa	6	Export
8/15/97	TUKANAS	Reefer	3,919	92.2	6.6	16.2		frozen meat	carton	1,132	-	2	-	-	494	44,35,38,36	La Pallice	2	Import
2/2/97	ROBIN	General Cargo	3,040	79.1	5.0	12.5		frozen meat	carton	2,413	32	189	-	-	414	38,39	Velsen	6	Import
8/27/97	KOSHKKA	Reefer	2,861	91.1	4.9	13.1	8	frozen meat	carton	1,664	48	27	-	-	283	34,35,35	Beverwijk	6	Import
8/24/97	SCORFF	Reefer	3,514	101.3	5.3	13.7		frozen meat	carton	2,637	4	0	-	-	290	82	Killybegs	9	Export
2/22/97	PAKRUOJIS	General Cargo	3,930	102.3	6.2	14.0		peatmoss	bag	550	2	77	-	-	110	38,26	Klaipeda	5	Import

Arriving Date (m/d/yy)	Vessel Name	Vessel Type	DWT	LOA	Summer Draft	Moulded Breadth	Container Capacity	Goods Description	Package Type	Cargo Weight	Container Total	Berth Waiting Time	Anchoring for Stevedoring		Berthing at Quays		Port of Loading	Cargo Handling Productivity (mt/hr)	Import/Export
				(m)	(m)	(m)	(TEU)			(mt)	(boxes)	(hr)	(hr)	Anchorage	(hr)	Quay No.			
(Refined Sugar)																			
8/27/97	BURCUM I	General Cargo	5,172	97.8	6.7	15.4		refined suger	bag	4,010	4	18	-	-	175	27,43	Ravenna	23	Import
(Mixed)																			
2/24/97	NEW FLORA	General Cargo	3,130	84.2	5.4	13.6		mixed		1,322	0	26	-	-	242	12	Tunis	5	
2/9/97	AMREET	General Cargo	1,408	69.8	4.2	10.8		mixed		1,285	4	192	-	-	188	28,16/18	Antalya	7	
2/4/97	VALENCIA BRIDGE	Ro-Ro	4,600	140.1	6.6	19.2	242	mixed		400	6	19	-	-	19	18/20	Ravenna	22	
8/24/97	ABUDE I	General Cargo	750	56.2	3.8	9.4		mixed		586	6	148	-	-	186	34,5	Said	3	
8/25/97	CAPTAIN FOUAD	General Cargo	1,175	74.1	3.7	11.6		mixed		1,028	10	131	-	-	127	9,5/3	Constanza	8	
8/11/97	THORNDALE	Container	4,380	101.3	5.5	17.1	326	mixed		1,598	12	0	-	-	48	14	houston	34	
9/1/97	EBN AL WALEED	Ro-Ro	12,718	132.9	9.5	20.5	380	mixed		3,292	20	152	-	-	162	14,37	Gros Cacouna	21	
8/28/97	EZZ-ELDIN REFAAT	General Cargo	7,402	116.6	7.5	17.2	249	mixed		6,766	26	2	-	-	196	26	Constanta	35	
8/12/97	ABU EGILA	Ro-Ro	12,750	132.9	9.5	20.6	380	mixed		6,860	28	361	-	-	389	37	Gulfport	18	
8/31/97	PIONER KAZAKHSTANA	General Cargo	6,017	130.3	6.9	17.4	214	mixed		3,317	30	93	-	-	70	98	Houston	50	
8/14/97	HELIOPOLIS SPRING	General Cargo	10,070	147.7	8.3	20.2		mixed		4,030	60	0	-	-	440	22,13	Antwerp	9	
8/10/97	NUWAYBA	Ro-Ro	3,133	101.1	5.2	17.5	236	mixed		1,143	168	1	-	-	129	18/16	Barcelona	11	
8/10/97	FAST NAVIGATOR	Ro-Ro	2,877	109.8	5.5	19.2	160	mixed		825	250	34	-	-	47	25/26	Marseille	52	
2/25/97	TABA	Ro-Ro	3,133	112.7	5.3	17.9	257	mixed		672	282	34	-	-	114	40	Marseille	9	
2/18/97	RAS MOHAMED	Ro-Ro	3,133	112.7	5.2	17.9	236	mixed		373	334	1	-	-	188	18/20,18,64,14/16	Ravenna	3	
8/15/97	ABURDEES	Ro-Ro	12,600	132.9	9.4	20.6	380	mixed		7,548	384	74	-	-	270	25	Hamburg	34	
								Sub-total		41,045	1,620				2,815	Average		16	
(Clay / Feldspar)																			
8/25/97	ZAKYNTHOS	General Cargo	2,995	80.0	5.3	14.0		clay	bulk	2,745	-	1	147	200	20	39	Fowey	19	Import
8/11/97	HAI MOHAMMED	General Cargo	2,898	80.8	5.8	12.6		feldspar	bulk	2,750	2	0	149	200			Gulluk	18	Import
								Sub-total		5,495		1	296				Average	19	
(Soda Solid)																			
8/25/97	GHAT	Ro-Ro	2,900	118.6	5.7	16.1		soda solid	drum	577	86	105	-	-	98	40	Alkohms	7	Import
2/1/97	APACHE	General Cargo	3,099	78.5	5.7	13.1		solvent neutral	drum	2,460	-	140	-	-	27	34	Augusta	25	Import
								Sub-total		3,037		245			125		Average	24	
(Furniture)																			
8/12/97	LADY LINDA	General Cargo	3,370	87.0	5.1	13.0	153	flat bottom ware	rails	2,767	2	1	-	-	126	65	Workingion	22	Import
2/16/97	PRIME VENTURE 2	General Cargo	4,025	93.3	5.8	15.5	263	furniture		3	316	6	-	-	8	49	Larnaca		Export
8/31/97	EVRIPOS	General Cargo	2,175	70.4	5.3	11.5	12	tiles		1,117	2	56	-	-	50	9	Halicis ,greece	22	Import
(Vehicles)																			
2/24/97	ALTINIA	Ro-Ro	8,924	150.0	6.1	21.6	536	vehicles		34	392	6	-	-	10	54	Genoa		Import
2/24/97	COUGAR ACE	Vehicle Carrier	18,922	199.5	9.7	32.3		vehicles		597	22	33	-	-	23	18/20	Kobe	29	Import
8/12/97	JOLLY AMARANTO	Ro-Ro/Cont.	10,677	142.9	9.0	32.2	419	vehicles		58	1,526	2	-	-	111	40	Napoli		Import
8/17/97	PAULINE Metz	Container	3,030	95.6	4.9	16.1	195	vehicles		6	368	1	-	-	20	96,53,96	Ravenna		Export
8/20/97	ANCONA BRIOGE	Ro-Ro	4,463	119.0	5.8	19.4	235	vehicles		355	196	2	-	-	22	18/16	Venice		Import

Source) Alexandria Port Authority

(2) Container Terminal

Average BOR of container terminal (berths no.49, 51 and 53) is calculated as 45.0% assuming two berths of 280 m each in length. Small container vessels less than 700 TEUs in loading capacity account for 80% of the total calling vessels at the terminal (see Table 6.3.4).

Table 6.3.4 Vessel Size Distribution calling at Alexandria Container Terminal in 1997

Loading Capacity (TEUs)	Number of Vessels (Vessels)	Percentage (%)
up to 700	455	80.1%
701 - 1,500	73	12.8%
1,501 - 2,000	29	5.1%
2,001 - 3,000	9	1.6%
3,001 plus	2	0.4%
N.A.	112	---
Grand Total	680 (568)	100%

Source) Alexandria Port Authority, Alexandria Container Handling Company, Lloyds Electronic Maritime Directory

Average container ship waiting time is calculated as 5.4 (hours/vessel) based on the berthing records. Total containers of 133,031 boxes were handled through berths no.49, 51, 53 and 54 with a total berthing time at the berths of 7,890 hours in 1997. Container handling productivity is calculated as 16.9 (boxes/hour/vessel).

Average dwelling time of import and export containers in the container terminal are 14 – 15 days and 5 –7 days respectively. Dwelling time of import containers to de-stuff at CFS is 5 –7 days.

(3) Grain Terminal

Average BOR of grain terminal (berths no.82, 84 and 85) is calculated as 48.2%. Average handling productivity of the grain terminal from the berthing records is not available, since no sample is available from Table 6.3.3.

(4) Coal Terminal

Average BOR of coal terminal (berths no.62, 63 and 64) is calculated as 17.4%. Average handling productivity of “Coal” is not available, but that of “Cokes” is estimated as 103 (tons/hour/vessel) from a berthing record of “Stara Planina” on August 6 1997.

(5) Petroleum Terminal

Average BOR of petroleum terminal (berths no.87/1, 87/2, 87/3, 87/4 and 87/5) is calculated as 27.6%. Average handling productivity of “Butane”, “Fuel Oil” and “Vegetable Oil” are estimated as 49, 601 and 131 (tons/hour/vessel) respectively from the seven berthing records.

(6) Fertilizer Berths

Average BOR of fertilizer berths (berths no.65 and 66) is calculated as 83.9%. Average handling productivity of “Sulphur” is estimated as 47 (tons/hour/vessel) from a berthing record of “Abdul Razzak” on February 6 1997.

(7) Cement Berths

Average BOR of cement berths (berths no.55, 56, and 67) is calculated as 47.3%. Average handling productivity of “Cement” is estimated as 72 (tons/hour/vessel) from the three berthing records.

(8) General Cargo Berths

Average BOR of general cargo berths (31 berths between berths no.5/1 to no.44) is calculated as 82.8%. Average handling productivity of “Miscellaneous Cargo” is estimated as 16 (tons/hour/vessel) from the 16 berthing records. Average handling productivity of “Timber”, “Steel Products” and “Iron Billets” are 47, 22 and 56 (tons/hour/vessel) respectively.

6.3.2 El Dekheila Port

(1) Ship Movement and Berth Occupancy Ratio

Container and dry bulk vessels account for 68% and 21% respectively of the total number of vessels which called at El Dekheila Port in 1996. Berth-wise Berth Occupancy Ratio (BOR) was calculated based on the berthing records in 1997 and is presented in Table 6.3.5. Overall average BOR of El Dekheila Port in 1997 is 65.0%.

Table 6.3.5 Berth-wise Berth Occupancy Ratio of El Dekheila Port in 1997

Berthing No	Berth Type	Major Cargo Handled	Berth Depth (m)	Berth Length (m)	Berth Occupancy Ratio (%)	Berthing Time (hours)
901	Iron Ore	Iron Ore / Coal / Maize	20.0	375	75.0%	6,569
902	Iron Ore	Maize	14.0	255	28.7%	2,514
91	Petroleum	Plan	Plan			
92	General	Maize	15.0	307	91.9%	8,046
941	General	Grain	14.0	245	83.1%	14,567
942	General	Grain	14.0	245		
95	General	Plan	Plan			
961	Container	Container	14.0	245	34.4%	6,032
962	Container	Container	14.0	245		
97	Container	under construction	under construction			
98	Dangerous		12.0	250	89.1%	7,802
99	-		6.0	-	-	-
Grand Total					65.0%	45,530

Source) Alexandria Port Authority

Some examples of vessels were selected to analyze cargo-wise handling productivity, based on both berthing records and manifest data during February and August in 1997. Fourteen (14) examples are selected and presented for El Dekheila Port in Table 6.3.3.

(2) Container Terminal

Average BOR of container terminal (berths no.96/1 and 96/2) is calculated as 34.4% assuming two berths of 245 m each in length. Small container vessels less than 700 TEUs in loading capacity account for 64% of the total calling vessels at El Dekheila Terminal.

Table 6.3.6 Vessel Size Distribution calling at El Dekheila Container Terminal in 1997

Loading Capacity (TEUs)	Number of Vessels (Vessels)	Percentage (%)
up to 700	216	64.1%
701 - 1,500	36	10.7%
1,501 - 2,000	76	22.6%
2,001 - 3,000	9	2.7%
3,001 plus	0	0.0%
N.A.	73	---
Grand Total	410 (337)	100%

Source) Alexandria Port Authority, Alexandria Container Handling Company, Lloyds Electronic Maritime Directory

Average container ship waiting time is calculated as 8.0 (hours/vessel) from the berthing records. Total containers of 112,446 boxes were handled through berths no.96/1 and 96/2 with a total berthing time at the berths of 6,032 hours in 1997. Container handling productivity is calculated as 18.6 (boxes/hour/vessel).

Average dwelling times of import and export containers in the container terminal are 13 days and 3 - 5 days respectively. Average dwelling time of import containers to de-stuff as CFS is 5 days.

(2) General Cargo Berth

Average BOR of general cargo berth (berth no.92) is calculated as 91.9%. Records indicate that “Wheat” and “Steel Billets” were handled at this berth. Average handling productivity of “Steel Billets” is estimated as 66 (tons/hour/vessel) from the berthing record of “Apollonia Trader” on February 12, 1997.

(3) Grain Terminal

Average BOR of grain berths (berth no.94/1 and 94/2) is calculated as 83.1%, assuming two berths of 245 m each in length. “Wheat” was transported by 50,000 to 70,000 DWT-size bulk carriers and discharged at berths no.90/2, 92 and 94 from the three berthing records. Average handling productivity of “Wheat” is estimated as 231 (tons/hour/vessel) from the three berthing records. “Maize” was transported by 120,000 DWT-size bulk carriers and discharged at berths no.90/1, 90/2, 92 and 94 from the four berthing records. Average handling productivity of “Maize” is estimated as 203 (tons/hour/vessel) from the four berthing records.

(4) Iron Ore Terminal

Average BOR of iron ore berths (berth no.90/1) is calculated as 75.0%. “Iron Pellets” was transported by 120,000 to 140,000 DWT-size bulk carriers and discharged at berths no.90/1, 92 and 94 from the two berthing records. Average handling productivity of “Iron Pellets” is estimated as 1,273 (tons/hour/vessel) from the two berthing records.

6.4 Hinterland and Trading Partner

(1) Hinterland of Container Cargoes through the Greater Alexandria Port

Hinterland of import container cargoes have been analyzed by the Study Team based on cargo handling records provided from Alexandria Port Authority. The results are shown in Table 6.4.1 and Figure 6.4.1. Import container cargoes discharged at Alexandria have been distributed toward inner Egypt. In terms of destination of import container cargoes, the suburbs of Cairo account for 68.3%, the suburbs of Alexandria accounts for 28.3% and middle delta accounts for 0.6%.

(2) Origin and Destination of Container Cargoes through Alexandria Port by Trading Partner

The Study Team sets up trading partner areas such as “West Mediterranean” (consist of South Europe and North Africa), “West and North Europe”, “East Mediterranean and Black Sea”, “East Asia”, “North America East Coast”, “South-East Asia” and “South Asia”

Origin and destination of container cargoes through Alexandria Port are shown in Table 6.4.2. “West Mediterranean” accounts for 39%, “West and North Europe” accounts for 25.8% and “East Asia” accounts for 14.2%. In terms of percentage by service type, “West Mediterranean” accounts for 99.8% as direct services and 0.2% as feeder services, “West and North Europe” accounts for 95.1% as direct services and 4.9% as feeder services and “East Asia” accounts for 64.2% as direct services and 35.8% as feeder services.

(3) Hinterland of General Cargoes through Alexandria Port

Hinterland of general cargoes are shown in Table 6.4.3. Major commodity of general cargoes through Alexandria Port are Agricultural Products, Sawn Timber and Right Industry Products. As to destination of Agricultural Products, the suburbs of Cairo accounts for 65.4%, the suburbs of Alexandria accounts for 24.5% and Middle Delta accounts for 2.5% and so on. Sawn Timber have been distributed mainly Alexandria (66.1%), the suburbs of Cairo (26.1%) and Damietta (0.2%). Right Industry Products have been distributed mainly to the suburbs of Cairo (86.6%) and to the suburbs of Alexandria (13.4%).

Table 6.4.1 Hinterland of Import Containers through Alexandria Port

Hinterland Area inner Egypt	Hinterland city of Container Cargoes	Distribution of Hinterland in Percentage
The suburbs of Cairo	Cairo	58.3%
	10th of Ramadan City	4.2%
	Giza	3.0%
	6th of October City	2.1%
	Sadat City	0.5%
	Others	0.3%
The suburbs of Cairo Sub-total		68.3%
The suburbs of Alexandria	Alexandria	26.7%
	Amerya Free Zone	0.6%
	Borg El Arab City	0.5%
	Others	0.5%
The suburbs of Alexandria Sub-total		28.3%
Middle Delta	Tanta	0.5%
	ZaGazig	0.1%
Middle Delta Sub-total		0.6%
Port Said	Port Said	0.3%
Ismailia	Ismailia	0.3%
Suez	Suez	0.2%
Damietta	Damietta	0.1%
Others		1.9%

Source: Analysed by the Study Team based on the data from Damietta Port Authority

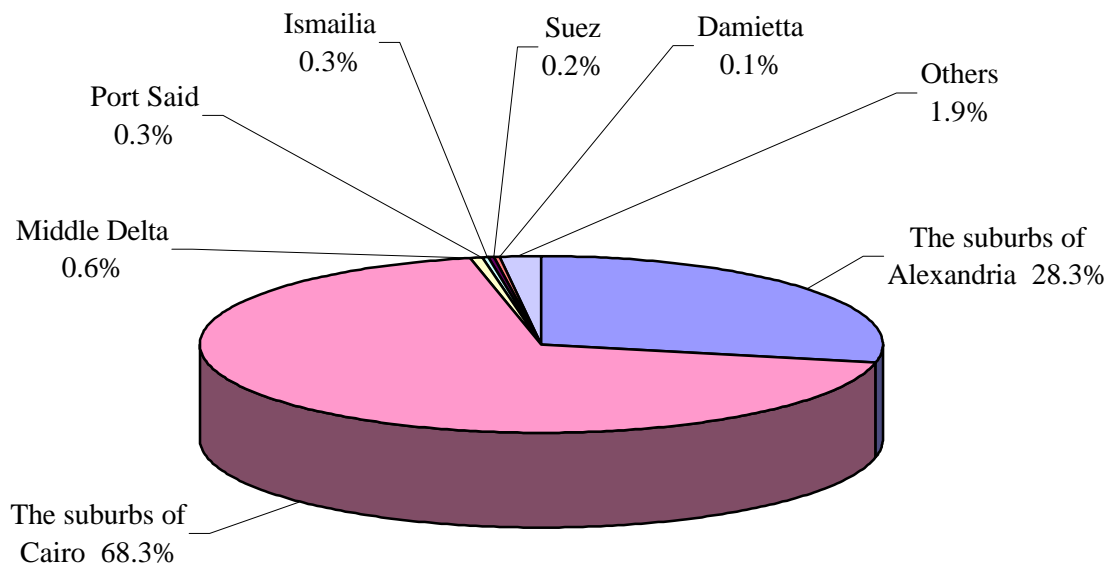


Figure 6.4.1 Hinterland of Import Containers through Alexandria Port

Table 6.4.2 Origins/Destinations of Containers through Alexandria Port by Trade Partner and the Percentages by Service Type

Origin/Destination of the Volume of Containers through Alexandria Port			Percentage by Service Type			Navigational Distance from/to Alexandria Port	
Egyptian Trade Partner Areas		Percentage of Trade	Total	Direct	Feeder	(Nautical. Miles)	Representative Ports
West Mediterranean	South Europe	38.9%	100.0%	99.8%	0.2%		
	North Africa	0.1%	100.0%	100.0%	0.0%		
	Sub-total	39.0%	100.0%	99.8%	0.2%	1,356	Marseilles
West and North Europe	West Europe	24.6%	100.0%	95.1%	4.9%		
	North Europe	1.2%	100.0%	95.5%	4.5%		
	Sub-total	25.8%	100.0%	95.1%	4.9%	3,118	Rotterdam
East Asia		14.2%	100.0%	64.2%	35.8%	6,626	Hong Kong
East Mediterranean and Black Sea	East Mediterranean	8.1%	100.0%	98.4%	1.6%		
	Black Sea	1.3%	100.0%	76.2%	23.8%		
	Sub-total	9.5%	100.0%	95.3%	4.7%	437	Piraeus
North America East Coast		4.6%	100.0%	56.5%	43.5%	4,963	New York
South-East Asia		2.8%	100.0%	18.6%	81.4%	7,403	Singapore
South Asia		2.2%	100.0%	43.7%	56.3%	3,202	Mumbai
Others		1.9%	100.0%	84.2%	15.8%		
Total		100.0%	100.0%	87.3%	12.7%		

Source: Analysed by the Study Team based on the data in 1997 from APA

Note: Percentage of transhipped containers by the Mediterranean transshipment port: Gioia Tauro (38.5%), Haifa (21.1%), Damietta(16.7%), Limassol (16.4%) Marxaslock (3.0%), Others (4.3%)

Table 6.4.3 Summary of Destination of General Cargoes through Alexandria Port

Commodity	Destination of the Volume of General Cargoes through Alexandria Port		
	Destination Area	City Name	Percentage of Cargoes
Agricultural Products	The Suburbs of Cairo	Cairo	62.6%
		Helwan	1.6%
		6th of October City	1.2%
		Sub-total	65.4%
	The Suburbs of Alexandria	Alexandria	24.5%
	Middle Delta	Ismailia	2.4%
		Others	0.1%
		Sub-total	2.5%
	Other Areas		7.6%
	Total		100.0%
Sawn Timber	Alexandria		66.1%
	The Suburbs of Cairo	Cairo	21.3%
		Giza	3.1%
		El Fayoum	1.7%
		Sub-total	26.1%
	Damietta		0.2%
	Othera		7.6%
Total		100.0%	
Right Industry Products	The suburbs of Cairo		86.6%
	The suburbs of Alexandria		13.4%
	Total		100.0%

Source: Analysed by the Study Team based on the data in 1997 from APA

Chapter 7 Present Condition of Damietta Port

7.1 Outline of the Existing Port Facility and the Future Development Plan

Damietta Port is located 8.5 km west of Ras El Bar, Damietta branch of River Nile to the Mediterranean Sea and also 70 km west of Port Said Port. Damietta Port started its operations June 26, 1986. Dimension of the entrance channel is 11.3 km long, 300 m wide and 15 m deep. The entrance channel is protected by two breakwaters of about 1,500 m in length. The western breakwater is 1,640 m long and the eastern breakwater is 738 m long.

(1) General Information

- a) Area: 6.2 sq.km (Land area) / 3.1 sq.km (Water area)
- b) Tide: Two feet up above the constant level of the map
- c) Maximum permissible vessel draft: 12.8 m (42 feet)

Table 7.1.1 Berth Dimension of Damietta Port

Berth No.	Berth Type	Berth Length (m)	Berth Depth (m)
1	Container	250	14.5
2	Container	250	14.5
3	Container	250	14.5
4	Container	250	14.5
5	General Cargo	200	12.0
6	General Cargo	200	12.0
7	General Cargo	200	12.0
8	General Cargo	200	12.0
9	General Cargo	225	12.0
10	General Cargo	225	12.0
11	General Cargo	225	12.0
12	General Cargo	225	12.0
13	Grains	300	14.5
14	Grains	300	14.5

Source) "Egyptian Ports Information" Egyptian Ports Bulletin April 1998, MOMT

(2) Container Terminal

The container terminal is operated by Damietta Container Handling Company. There are four container berths (no.1, 2, 3 and 4) of which total length is 1,000 m. Berth depth is maintained at 14.5 m while the entrance channel is facing siltation problems.

There are six QGCs and 21 toplifters but no RTGs in the terminal. Accordingly, container marshaling is done not by RTGs but toplifters. Ground slots of the stacking yard is said to be 3,400 TEUs with the yard area of 163,000 sq.m. Potential handling capacity of Damietta Container Terminal is expected to be 900 thousand TEUs, while the terminal throughput in 1997 is 607 thousand TEUs. Potential capacity is also said to be 1.7 million TEUs when converting the existing four general cargo berths (berths no.5, 6, 7 and 8) into container berths with additional seven QGCs and 21 RTGs in the future.

(3) Grain Terminal

The grain terminal is operated by Damietta General Company for Silos and Storage. There are two grain berths (no.13 and 14) whose length and depth are 300 m and 14.5 m respectively. There are also two silos with their storage capacities of 100,000 tons and 50,000 tons. There are also two pneumatic unloaders with discharging rate of 700 (tons/hour/unloader) and one mechanical unloader with discharging rate of 1,000 (tons/hour/unloader).

Table 7.1.2 Outline of Damietta Port Facility

1. Container Terminal					
Throughput in 1997		(TEUs)	606,973	(1) Potential capacity = 900 thousand TEUs (2) Potential capacity = 1.7 million TEUs with a conversion of the existing general cargo berths of 800m into new container berths	
Quay		Length	Depth	Remarks	
	Berth No. 1	1,000 m	14.5 m		
	Berth No. 2		14.5 m		
	Berth No. 3		14.5 m		
	Berth No. 4		14.5 m		
Terminal	Area	(sq.m)	256,000	(Outreach: 42m, Underspreader: 32m, Railspan: 15m)	
	Ground Slot	(TEUs)	Aprox.3400		
	Reefer Point	(points)	96		
	QGCs	(Quantity)	6		
	RTGs	(Quantity)	-		
	Toplifters	(Quantity)	21		(Capacity: 40 - 45 tons for Laden Container)
	Toplifters	(Quantity)	3		(Capacity: 16 - 25 tons for Empty Container)
	Forklifts	(Quantity)	4		(Capacity: 15 tons for Empty Container)
	Tractors	(Quantity)	52		(capacity: 40 - 50 tons)
Trailers	(Quantity)	43	(capacity: 40 - 55 tons)		
2. General Cargo Berth					
Throughput in 1997		(tons)	1.3 million		
		Length	Depth	Remarks	
Quay	General Cargo	1,700m	12.0 m	200 m *4 berths + 225 m * 4 berths	
Storage	Open Yard	(sq.m)	300,000		
	Shed	(sq.m)	5,000	(5 Sheds)	
	Cold Storage	(sq.m)	3,000	(Capacity: 15,000 cb.m, 250,000 tons/year)	
3. Grain Terminal					
Throughput in 1997		(tons)	3.7 million		
		Length	Depth	Remarks	
Quay	2 Berths	600m =(2*300m)	14.5 m		
Terminal	Unloader	(Quantity)	2	Pneumatic (Discharging rate: 700 tons/hour/unloader)	
	Unloader	(Quantity)	1	Mechanical (Discharging rate: 1,000 tons/hour/unloader)	
	Silo	(Quantity)	2	(Capacity: 100,000 tons + 50,000 tons)	

Source) Damietta Port Authority

7.2 Cargo Movement

Historical trend of cargo volume handled through Damietta Port is shown in Table 7.2.1 and 7.2.2. Total volumes of import and export cargoes handled through Damietta Port amount to 9,371 thousand tons and 3,077 thousand tons respectively. Major cargoes among import commodities are "Wheat" (2,544 thousand tons in 1997), "Maize" (1,147 thousand tons) and "Cement" (1,686 thousand tons). Major cargoes among export commodities are "Fertilizer" (130 thousand tons in 1997).

Table 7.2.1 Historical Trend of Import Cargo Volume Handled at Damietta Port by Commodity (1988-1997)

		(Unit: thousand tons)									
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Grain											
	Flour	132	103	54	0	0	43	11	0	0	0
	Wheat	1,348	1,643	1,918	1,707	2,090	1,344	2,200	2,151	2,243	2,544
	Maize	105	0	105	0	137	301	380	705	651	1,147
Other agricultural products											
	Soyabean	0	0	0	0	0	0	0	151	303	243
	Fish and Meat	0	0	0	0	0	124	83	62	124	138
	Others	0	0	0	0	0	138	165	59	102	71
	Sub-total	1,585	1,746	2,077	1,707	2,227	1,950	2,839	3,128	3,423	4,143
Dust & metals											
	Cement	1,100	87	1	0	0	2	432	1,126	1,359	1,686
	Iron products	0	0	6	0	0	0	0	0	0	622
	Fertilizer	0	49	0	0	0	0	13	8	18	7
	Others	0	0	0	0	7	2	23	147	658	3
	Sub-total	1,100	136	7	0	7	4	468	1,281	2,035	2,318
Special cargo											
	Timber	0	0	0	0	0	78	170	147	135	197
	Others	5	30	141	25	33	2	6	74	70	31
	Sub-total	0	30	141	25	33	80	176	221	205	228
Local container		0	0	0	0	3	51	135	229	214	271
	Sub-total	0	0	0	0	3	51	135	229	214	271
	Total	2,685	1,912	2,225	1,732	2,270	2,085	3,618	4,859	5,877	6,960
Transshipment container		0	0	310	768	1,336	1,543	1,873	2,183	2,107	2,682
	Grand total	2,685	1,912	2,535	2,500	3,606	3,628	5,491	7,042	7,984	9,642

Source: Egyptian Maritime Data Bank, Ministry of Maritime Transport, Damietta Port Authority

Table 7.2.2 Historical Trend of Export Cargo Volume Handled at Damietta Port by Commodity (1988-1997)

		(Unit: thousand tons)									
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
General cargo											
	General cargo	14	0	13	6	3	21	33	57	418	378
	Sub-total	14	0	13	6	3	21	33	57	418	378
Dust & metals											
	Fertilizer	0	15	10	23	52	16	177	27	53	130
	Others	0	0	0	0	17	31	8	7	26	62
	Sub-total	0	15	10	23	69	47	185	34	79	192
Special cargo		0	0	0	0	0	0	0	0	8	9
	Sub-total	0	0	0	0	0	0	0	0	8	9
Local container		0	0	0	0	20	56	133	192	233	317
	Sub-total	0	0	0	0	20	56	133	192	233	317
	Total	14	15	23	29	92	124	351	283	738	896
Transshipment container		0	0	258	703	1,329	1,566	1,808	2,110	2,025	2,498
	Grand total	14	15	281	732	1,421	1,690	2,159	2,393	2,763	3,394

Source: Egyptian Maritime Data Bank, Ministry of Maritime Transport, Damietta Port Authority

7.3 Port Activities

7.3.1 Ship Movement

A total of 1,493 vessels called at Damietta Port in 1997. Container vessel accounts for approximately 65% of the total number of vessels which called at Damietta Port.

Table 7.3.1 Number of Vessels calling at Damietta Port in 1997

Vessel Type	Number of Vessels (vessels)
1. Container	979 (65.6%)
2. General Cargo	93 (6.2%)
3. Dry Bulk	244 (16.3%)
4. Liquid Bulk	0 (0.0%)
5. Passenger	0 (0.0%)
6. Supply	0 (0.0%)
7. Others	177 (11.9%)
Grand Total	1,493(100%)

Source) "10 Years Statistical Report (1998)", Egyptian Maritime Data Bank

Only ten-month records (excluding October and November) in 1997 were available in the case of Damietta Port.

Some examples of vessels were selected to analyze cargo-wise handling productivity, based on both berthing and cargo handling records during February and August in 1997. Thirty eight (38) examples are analyzed and presented in Table 7.3.2.

Table 7.3.2 Some Examples of Vessel Berthing Records at Damietta Port in February and August in 1997

Arriving Date (m/d/yy)	Ship Name	Vessel Type	DWT (tons)	LOA (m)	Breadth (m)	Draft (m)	Container (TEUs)	Cargo Description	Package Type	Cargo Weight (tons)	Berthing Time (hours)	Cargo Handling Productivity (box/hour/vessel)	Import / Export
(Cement)													
2/1/97	DALAKI	Bulk Carrier	29,156	180.8	23.1	10.6		Cement	Bulk	28,731	96.25	298.5	Import
2/15/97	EUROBULKER II	Bulk/Container	25,950	163.0	26.0	11.0	734	Cement	Bulk	28,574	97.92	291.8	Import
2/23/97	DALAKI	Bulk Carrier	29,156	180.8	23.1	10.6		Cement	Bulk	28,928	90.33	320.2	Import
2/28/97	EUROBULKER II	Bulk/Container	25,950	163.0	26.0	11.0	734	Cement	Bulk	28,526	166.50	171.3	Import
8/18/97	DALAKI	Bulk Carrier	29,156	180.8	23.1	10.6		Cement	Bulk	28,605	73.50	389.2	Import
8/19/97	THOR 2	Bulk Carrier	NA	148.4	22.6	9.0		Cement	Bulk	15,198	73.25	207.5	Import
8/21/97	LAKE PLACID	NA	NA	201.0	27.8	10.9		Cement	Bulk	35,655	118.17	301.7	Import
											Average	271.3	
(Grains)													
2/5/97	ASCONA	Bulk Carrier	64,942	224.5	32.3	12.9		Wheat	Bulk	52,500	220.75	237.8	Import
2/13/97	WADI ALARAAB	Bulk Carrier	70,114	225.0	32.2	13.3		Wheat	Bulk	52,500	157.75	332.8	Import
2/18/97	KARDAMYLA	Bulk Carrier	65,239	210.0	32.2	12.4	102	Wheat	Bulk	52,500	204.75	256.4	Import
2/24/97	NOSTOS T.	Bulk Carrier	61,839	223.2	32.3	13.0		Wheat	Bulk	51,850	214.92	241.3	Import
8/21/97	IOANNIS M.	Bulk Carrier	61,451	224.5	32.2	12.5		Wheat	Bulk	52,500	148.67	353.1	Import
8/9/97	OLIVER SPIRIT	Bulk Carrier	26,741	183.0	23.1	10.4		Soybean	Bulk	20,000	94.83	210.9	Import
											Average	270.6	
(Frozen Fish)													
2/1/97	SARONIC PRIDE	Refrigerator	3,903	97.0	15.1	5.4		Frozen Fish	Carton	3,066	175.92	17.4	Import
2/17/97	FRIO BRAZIL	Refrigerator	4,196	103.0	16.0	6.3	32	Frozen Fish	Carton	3,318	187.42	17.7	Import
2/23/97	ANTIGUA	Refrigerator	4,468	105.4	16.0	6.8	40	Frozen Fish	Carton	2,986	134.75	22.2	Import
											Average	18.8	
(Bagged Cargo)													
2/18/97	KARIM I	General Cargo	2,704	79.9	12.0	5.9		Rice	Bag	1,800	203.00	8.9	Import
8/18/97	COSETTE	General Cargo	615	47.8	9.2	3.4		Lentil	Bag	1,000	167.50	6.0	Import
8/18/97	PAULA	General Cargo	1,073	62.4	9.9	3.8		Rice	Bag	1,100	155.50	7.1	Import
											Average	7.4	
(Steel Products)													
2/10/97	IVAN LESOVIKOV	General Cargo	3,134	114.0	13.2	3.7		Steel Bar	Bundle	2,518	117.08	21.5	Import
2/16/97	CAPTAIN GIANNIS	General Cargo	8,472	126.2	17.2	7.7		Steel Coil	Coil	6,451	225.42	28.6	Import
2/5/97	JOY	General Cargo	8,478	127.4	18.0	8.0	146	Steel Bar	Bundle	19,400	265.25	73.1	Import
2/10/97	KAILA	General Cargo	6,081	106.9	15.9	6.9	189	Steel Bar	Bundle	5,800	205.33	28.2	Import
2/13/97	ATALANTI I	General Cargo	6,705	91.8	15.9	8.4	236	Steel Bar	Bundle	3,100	74.75	41.5	Import
8/22/97	EL HASHAISHI	General Cargo	9,420	134.8	19.0	8.1	271	Steel Bar	Bundle	7,000	167.67	41.7	Import
8/10/97	CAPTAIN GIANNIS	NA	NA	126.0	17.0	7.8		Steel Bar	Bundle	7,000	138.33	50.6	Import
8/24/97	MUAMMER YAGCI	General Cargo	2,480	75.2	12.0	5.1		Steel Bar	Bundle	2,389	119.75	19.9	Import
8/31/97	HGGI HILMI	NA	NA	112.0	15.4	6.8		Steel billet	Bundle	5,089	64.25	79.2	Import
											Average	42.6	
(Timber)													
2/3/97	LION	NA	NA	74.0	10.3	3.7		Timber	Bundle	255	75.75	3.4	Import
2/3/97	MARIVAN	General Cargo	3,698	84.3	14.4	6.3	122	Timber	Bundle	1,200	250.00	4.8	Import
2/15/97	CALMA	General Cargo	1,041	61.5	9.6	3.9		Timber	Bundle	418	100.00	4.2	Import
2/15/97	SWEET SPIRIT	General Cargo	1,330	70.3	11.8	3.9		Timber	Bundle	723	91.92	7.9	Import
2/17/97	LEJA	General Cargo	3,950	102.3	14.1	6.2		Wood	Bundle	1,522	116.33	13.1	Import
2/24/97	SKY K.	General Cargo	1,650	74.7	11.4	2.5		Wood	Bundle	1,135	134.17	8.5	Import
8/11/97	NOUR EL ASLAM	General Cargo	1,162	68.4	10.6	4.0	39	Sawn Timber	Bundle	550	52.00	10.6	Import
8/12/97	MARI I	General Cargo	1,041	61.5	9.6	3.9		Sawn Timber	Bundle	229	40.08	5.7	Import
8/24/97	SWEET SPIRIT	NA	NA	79.0	11.4	4.0		Sawn Timber	Bundle	425	90.75	4.7	Import
8/9/97	KASIF KALKAVAN	Bulk Carrier	39,722	180.7	27.7	12.1		Timber	Bundle	4,417	53.42	82.7	Import
											Average	10.8	

Source) Damietta Port Authority

7.3.2 Container Terminal

Average BOR of container terminal (berths no.1, 2, 3 and 4) is calculated as 68.3%. Vessel size distribution is presented in Table 7.3.3.

Table 7.3.3 Vessels Size Distribution called at Damietta Container Terminal in 1997

Loading Capacity (TEUs)	Number of Vessels (Vessels)	Percentage (%)
up to 700	529	59.8%
701 - 1,500	96	10.9%
1,501 - 2,000	85	9.6%
2,001 - 3,000	136	15.4%
3,001 plus	38	4.3%
N.A.	95	----
Grand Total	979	100%

Source) Damietta Port Authority, Damietta Container Handling Company, Lloyd's Electronic Maritime Directory

Total containers of 337,494 boxes were handled through berths no.1, 2, 3 and 4 with a total berthing time at the berths of 23,593 hours in 1997. Container handling productivity is calculated as 14.8 (boxes/hour/vessel). Average dwelling time of laden transshipment container in the yard is 8 days. Average dwelling time of empty transshipment container in the yard is 20 days.

Table 7.3.4 Container Dwelling Time at Terminal and CFS in Damietta Terminal

	Transshipment (Laden)	Transshipment (Empty)
Dwelling Time in Terminal	Average: 8 days	Average: 20 days

7.3.3 Grain Terminal

“Wheat” was transported by 50,000 DWT-size bulk carriers and discharged at berths no.13 and 14 from the six existing berthing records. Average handling productivity of “Wheat” is estimated as 270 (tons/hour/vessel) from the six berthing records.

7.3.4 Cement Berths

Average handling productivity of “Cement” is estimated as 271 (tons/hour/vessel) from the seven berthing records.

7.3.5 General Cargo Berths

Average handling productivity of “Frozen Fish” is estimated as 18.8 (tons/hour/vessel) from the three berthing records. Average handling productivity of “Rice /Lentil” is estimated as 7.4 (tons/hour/vessel) from the three berthing records. Average handling productivity of “Steel Products” is estimated as 42.6 (tons/hour/vessel) from the nine berthing records. Average handling productivity of “Timber” is estimated as 10.8 (tons/hour/vessel) from the ten berthing records.

Average handling productivity for “Rice ” and “Timber” seems to be comparatively low, supposedly because those bags and bundles are discharged directly onto trucks along the quay.

7.4 Hinterland and Trading Partner

(1) Hinterland of Container Cargoes through Damietta Port

Hinterland of import container cargoes have been analysed by the Study Team based on cargo handling records provided by Damietta Port Authority. The results are shown in Table 7.4.1 and Figure 7.4.1. In terms of destination of import container cargoes, the suburbs of Cairo account for 77.1%, the suburbs of Alexandria account for 12.7% and the suburbs of Damietta account for 4.7% and middle delta accounts for 3.8%.

(2) Origin of Container Cargoes through Damietta Port by Trading Partner

Origin of container cargoes through Damietta Port are shown in Table 7.4.2. “West and North Europe ” accounts for 64.2%, “East Mediterranean and Black Sea” accounts for 12.2% and “South Asia” accounts for 8.3%.

(3) Hinterland of Conventional Cargoes through Damietta Port

Hinterland of conventional cargoes is shown in Table 7.4.3. Major commodity of conventional cargoes through Damietta Port are “Agricultural Products”, “Sawn Timber and Plywood” and “Steel”. As to destination of “Agricultural Products”, the suburbs of Cairo account for 82.2%, the suburbs of Damietta account for 0.8% and Middle Delta accounts for 1.4% and so on. “Sawn Timber and Plywood” have been distributed mainly to Damietta (56.3%), the suburbs of Cairo (27.4%) and Port Said (3.5%). “Steel have been distributed mainly to the suburbs of Cairo (71.4%) and Alexandria (7.2%).

Table 7.4.1 Hinterland of Import Containers through Damietta Port

Hinterland Area	Hinterland City of Import Containers	Hinterland in Percentage
The Suburbs of Cairo	Cairo 6th of October City Giza 10th of Ramadan City Others	77.1%
The Suburbs of Alexandria	Alexandria Borg El Arab Amerya Freezone	12.7%
The Suburbs of Damietta	Damietta	4.7%
Middle delta	Mansura Kubra	3.8%
Others	Other Cities	1.7%
Total		100%

Source: Analysed by the Study Team based on the data from Damietta Port Authority

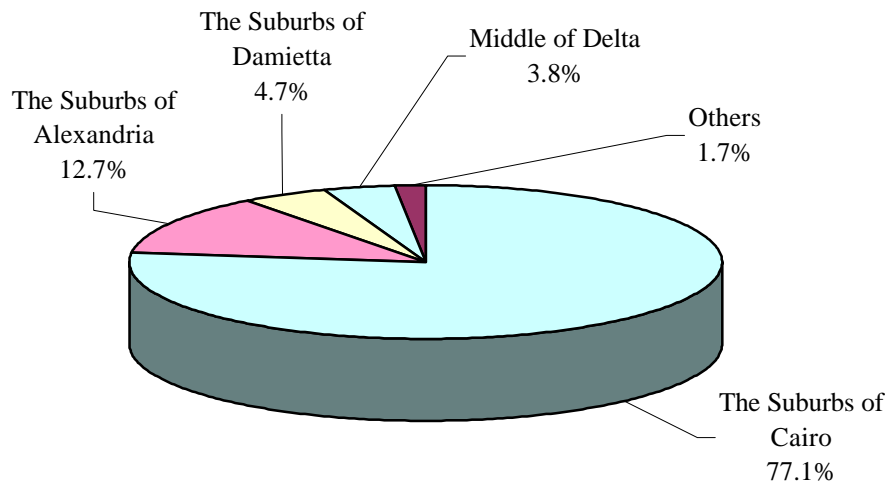


Figure 7.4.1 Hinterland of Import Container through Damietta Port

Table 7.4.2 Origin of Containers through Damietta Port

Egyptian Trade Partner		Percentage of Trade
West and North Europe	West Europe	62.9%
	North Europe	1.5%
	Sub-total	64.4%
East Mediterranean and Black Sea	Black Sea	7.3%
	Turkey	4.5%
	Greece/Libya	0.3%
	Syria/Lebanon/Israel	0.1%
	Sub-total	12.2%
South Asia	South Asia	8.3%
South Europe	South Europe	7.1%
East Asia		5.1%
Others		2.9%
Total		100.0%

Source: Analysed by the Study Team based on the data from Damietta Port Authority

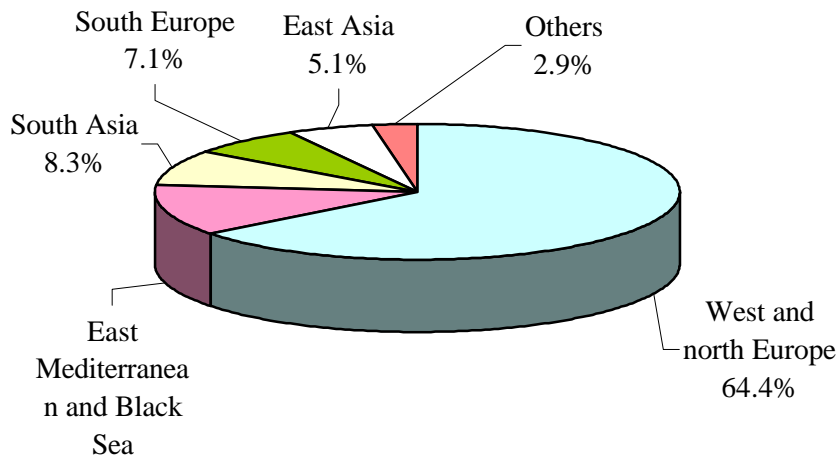


Figure 7.4.2 Origin of Containers through Damietta Port

Table 7.4.3 Summary of Destination of General Cargoes through Damietta Port

Commodity	Destination of the Volume of General Cargoes through Damietta		
	Destination Area	City Name	Percentage of Cargoes
Agricultural Products	The Suburbs of Cairo	Cairo	81.6%
		6th of October City	0.6%
		Sub-total	82.2%
	The Suburbs of Damietta	Damietta	0.8%
	Middle Delta	El Mehalla	0.9%
		El Mansoura	0.4%
		Tanta	0.1%
		Sub-total	1.4%
Others		15.6%	
Total		100.0%	
Sawn Timber and Plywood	Damietta		56.3%
	The Suburbs of Cairo	Cairo	26.7%
		Giza	0.7%
		Sub-total	27.4%
	Port Said		3.5%
	Others		12.8%
Total		100.0%	
Steel	Cairo		71.4%
	Alexandria		7.2%
	Others		21.4%
	Total		100.0%

Source) Analysed by the Study Team based on the data in 1997 from DPA

7.5 Transshipment Container Flow

As mentioned in Chapter 5.2, the Study Team surveyed the transshipment containers of 39 vessels that called at Damietta Port from 30th July to 19th August in 1997. The numbers in Table 7.5.1 and Figure 7.5.1-7.5.4 show the volume of full transshipment containers loaded/discharged at origin/destination ports.

East Mediterranean countries are major destination and origin of containers transshipped at Damietta Port. Black Sea countries follow them except the eastbound-outbound case. In case of eastbound-outbound, Middle East countries follow them. This implies that Damietta Port functions as a transshipment port for neighboring countries. Damietta Port is situated at the east side of Mediterranean Sea, therefore it is difficult for Damietta Port to attract containers originating from west Mediterranean countries. For example, when shippers in Italy export containers to North America, they are expected to use other transshipment ports located in center or west Mediterranean Sea. If they use Damietta Port as a transshipment port, sailing distance and transit time to the final destination become longer.

Table 7.5.1 Origin and Destination of Transshipment Containers via Damietta Port

Region	Country	Destination				Origin			
		West-Out		East-Out		In-East		In-West	
East Mediterranean	Libya	29	2.6%	16	1.1%				
	Cyprus			55	3.9%	13	1.0%	3	1.7%
	Lebanon	218	19.2%	250	17.6%	24	1.9%	2	1.1%
	Syria	250	22.0%	396	27.9%	248	19.3%	76	42.0%
	Turkey	373	32.8%	309	21.8%	398	31.0%	61	33.7%
	Greece	147	12.9%	3	0.2%	287	22.4%	1	0.6%
	Croatia	5	0.4%	25	1.8%				
	Slovenia			15	1.1%				
	Sub-total	1,022	90%	1,069	75.4%	970	75.7%	143	79.0%
West Mediterranean	Italy	11	1.0%	58	4.1%	114	8.9%		
	France	9	0.8%						
	Spain					19	1.5%		
	Sub-total	20	1.8%	58	4.1%	133	10.4%	0	0.0%
Black Sea	Bulgaria			1	0.1%	38	3.0%	1	0.6%
	Romania	41	3.6%	1	0.1%	107	8.3%	21	11.6%
	Ukraine	13	1.1%	9	0.6%	34	2.7%	1	0.6%
	Sub-total	54	4.8%	11	0.8%	179	14.0%	23	12.7%
North Africa	Tunisia	24	2.1%	5	0.4%				
	Algeria								
	Morocco	1	0.1%						
	Sub-total	25	2.2%	5	0.4%	0	0.0%	0	0.0%
Middle East			230	16.2%			13	7.2%	
East Asia			29	2.0%					
South Asia			15	1.1%			2	1.1%	
West Europe		4	0.4%						
North America		11	1.0%						
Total		1,136	100.0%	1,417	100.0%	1,282	100.0%	181	100.0%

Region	Country	Origin				Destination			
		West-Out		East-Out		In-East		In-West	
West Europe				928	65.5%			76	42.0%
North America				489	34.5%			102	56.4%
South America								3	1.7%
Middle East	Yemen					31	2.4%		
	Saudi Arabia	25	2.2%			32	2.5%		
	Gulf Countries					98	7.6%		
East Asia		609	53.6%			651	50.8%		
South Asia		53	4.7%			73	5.7%		
South East Asia		449	39.5%			359	28.0%		
Oceania						38	3.0%		
Total		1,136	100.0%	1,417	100.0%	1,282	100.0%	181	100.0%

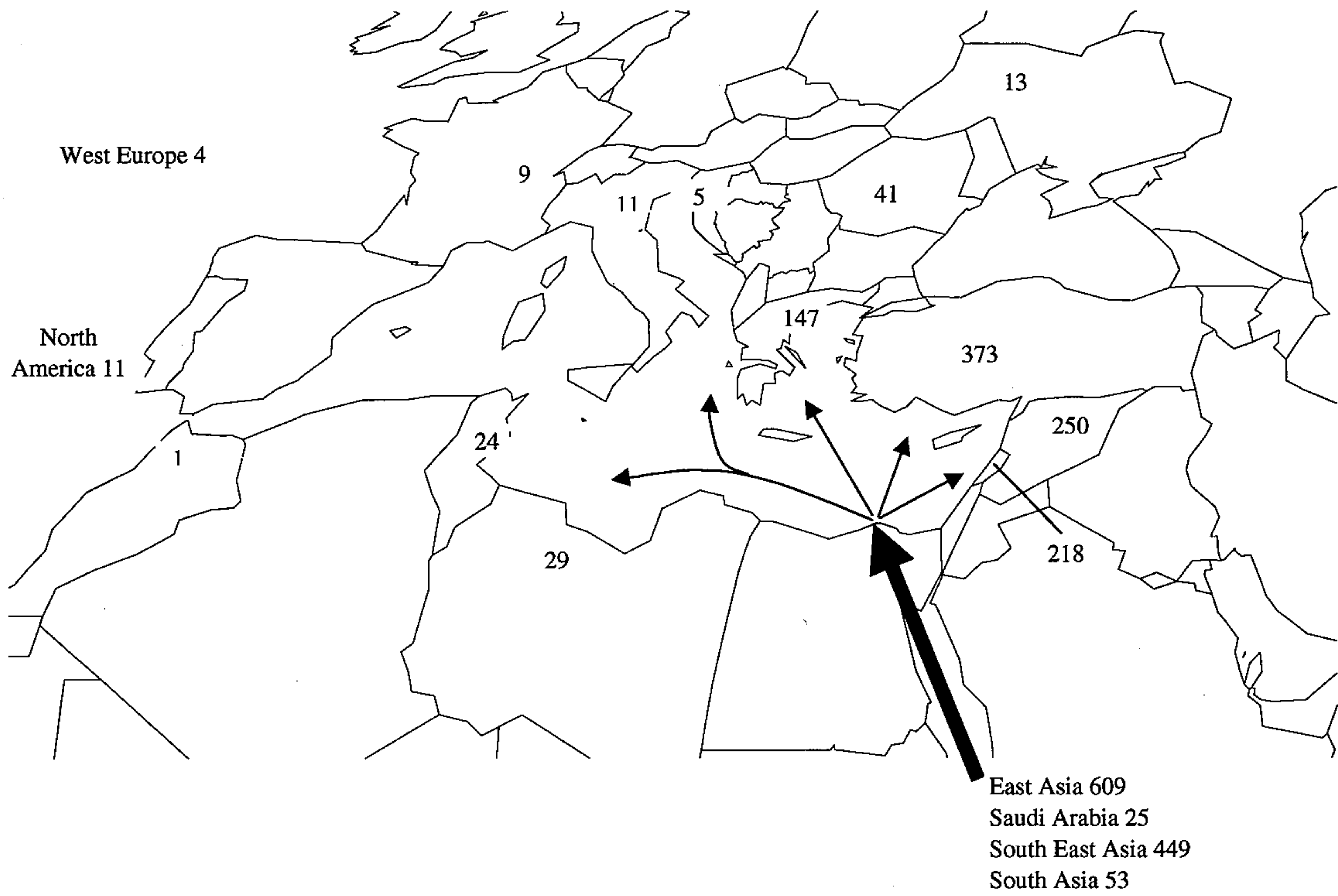


Figure 7.5.1 Westbound-Damietta-Outbound

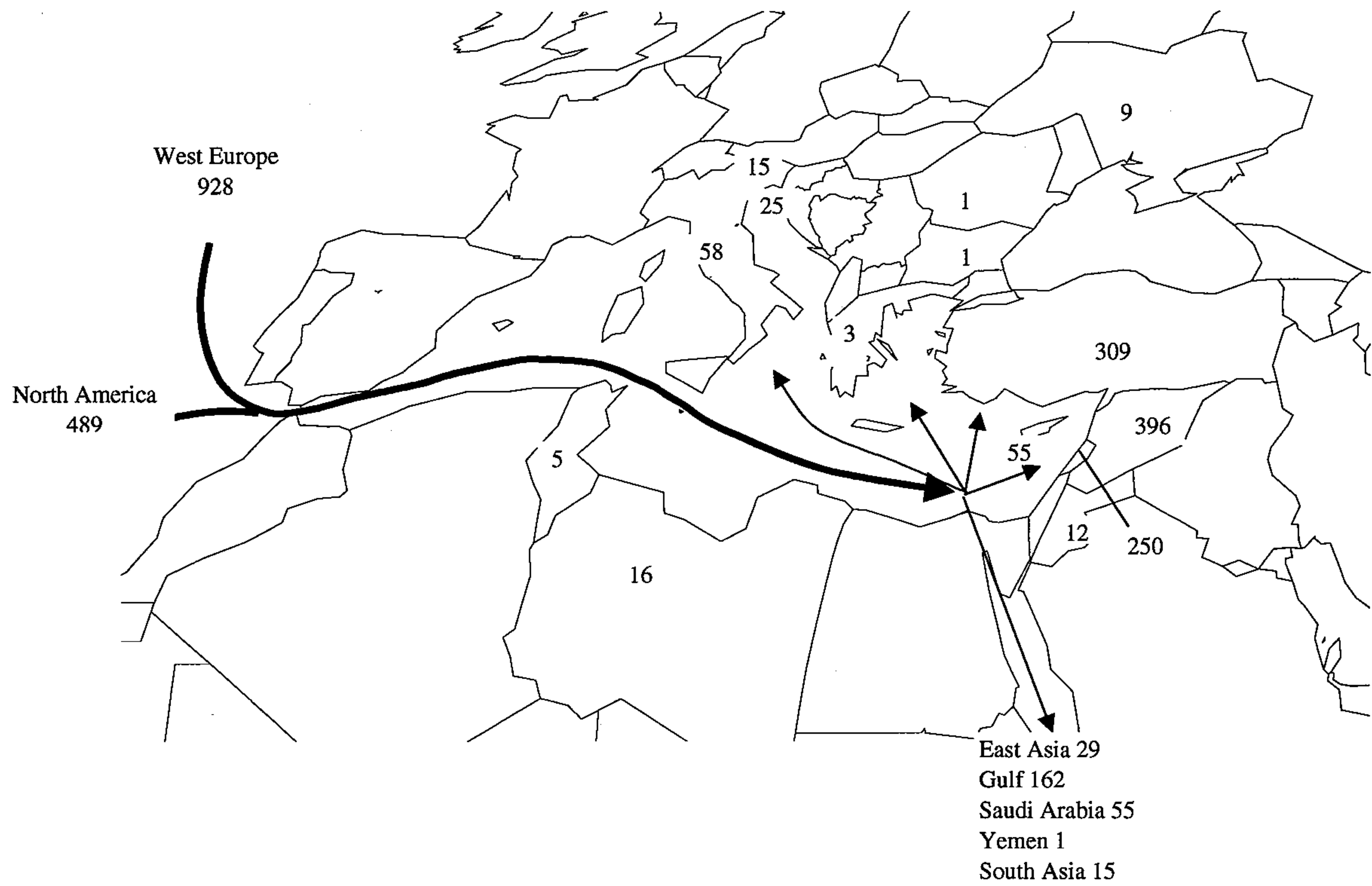


Figure 7.5.2 Eastbound-Damietta-Outbound

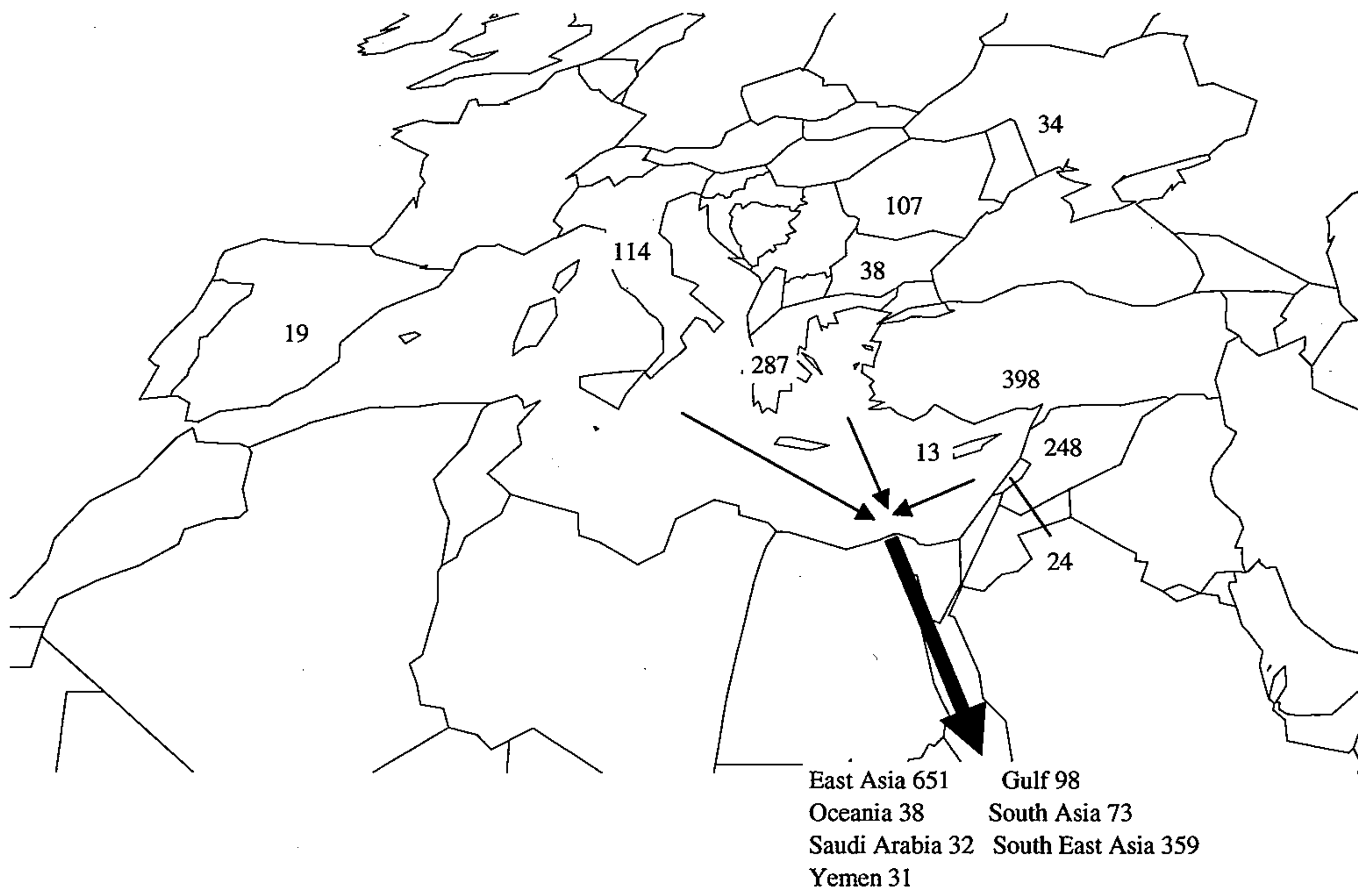


Figure 7.5.3 Inbound-Damietta-Eastbound

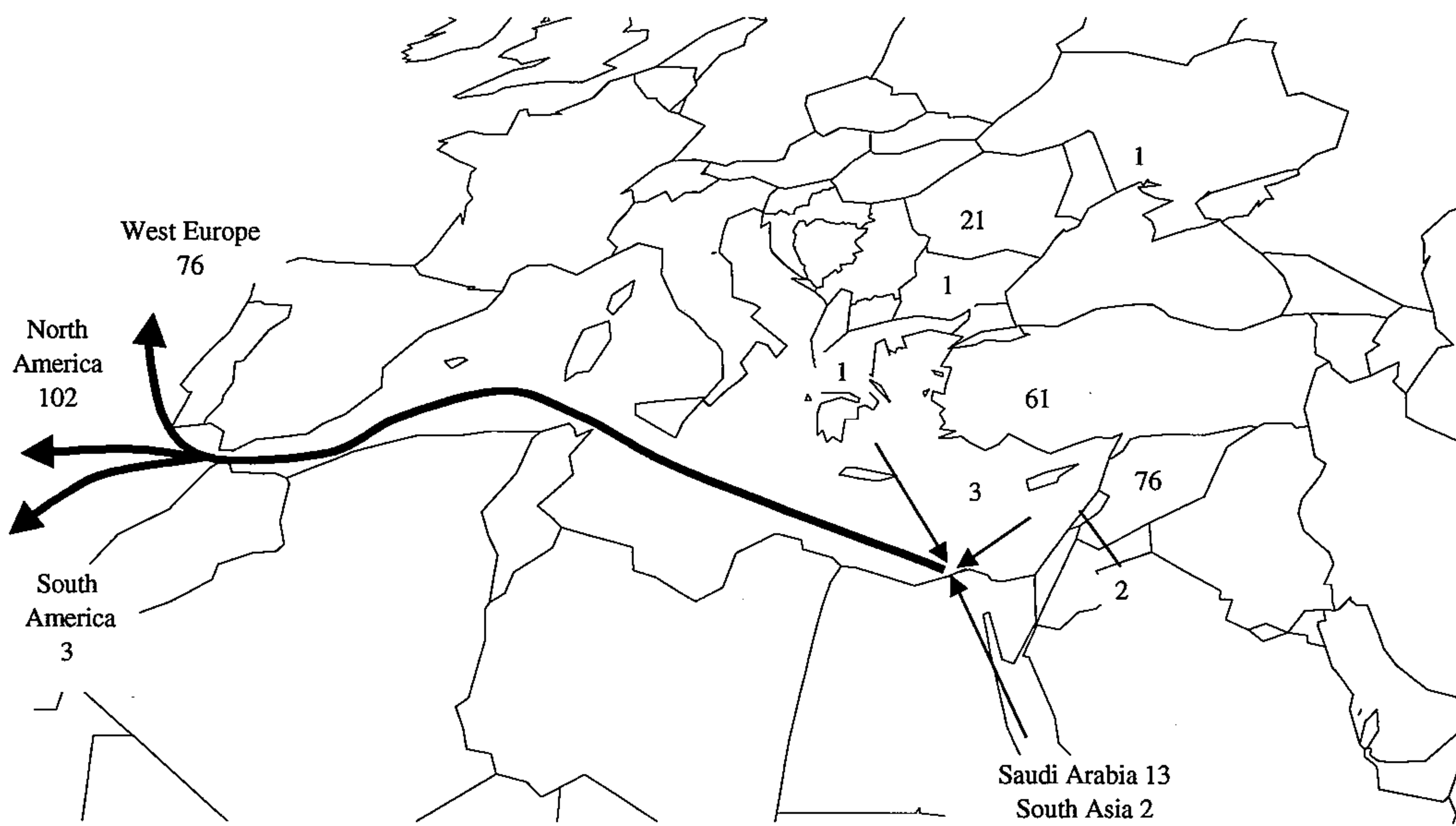


Figure 7.5.4 Inbound-Damietta-Westbound

Chapter 8 Present Condition of Port Said Port

8.1 Outline of the Existing Port Facility and the Future Development Plan

Port Said Port is located at the northern entrance of the Suez Canal. The canal entrance leading to the port is protected by two breakwaters. The eastern breakwater is approximately 6.5 km long while the western is approximately 2.8 km long.

8.1.1 General Information

- a) Approach Channel: 140 m wide, 12.5 to 13.0 m deep
- b) Tide: 70 cm
- c) Maximum permissible vessel draft: 12.8 m (42 feet)

Table 8.1.1 Berth Dimension of Port Said Port

Berth No.	Berth Type	Berth Length (m)	Berth Depth (m)
1	Lighters Discharge	175	3.66
2	Lighters Discharge	198.75	3.66
3	Lighters Discharge	136.3	3.66
4	Lighters Discharge	243	3.66
5	General Cargo	281.8	3.66
6	General Cargo	295.38	8.23
7	Grains	264.6	11.59
8	Grains	262.6	13.0
9	General Cargo	364.8	8.23
10	Petroleum	410	3.66
11	Containers	341	13.7
12	Multi-purpose	248.15	13.7
13	Lighter Discharge	163	1.83

Source) "Egyptian Ports Information" Egyptian Ports Bulletin April 1998, MOMT

8.1.2 Container Terminal

The container terminal is operated by Port Said Port Container Handling Company. There is one container berth (no.11) and one multipurpose berth (no.12) mainly used by large mother vessels of which total length is 590 m. Berth depth is maintained at 13.7 m. There is also general cargo berth (no.6) whose length and depth are 295 m and 8.2 m, mainly used by small feeder vessels. A new multipurpose berth whose length and depth are 300 m and 13.7 m respectively is under construction. Four additional post panamax QGCs are planned to be introduced at the terminal.

There are six QGCs and four RTGs in the terminal. Ground slots of the stacking yard is said to be 2,300 TEUs with the yard area of 300,000 sq.m. Potential handling capacity of Port Said Port Container Terminal is expected to be 800 thousand TEUs, while the terminal throughput in 1997 is 415 thousand TEUs.

8.1.3 Grain Terminal

There are two grain berths (no.7 and 8) whose length and depth are 263 m and 13.0 m respectively. There are also two silos with total storage capacity of 43,000 tons. There are also two floating unloaders with discharging rate of 16,000 (tons/day/unloader).

Table 8.1.2 Outline of Port Said Port Facility

Throughput in 1997		(TEUs)	415,394	Future potential capacity = 800 thousand TEUs with additional multipurpose berth (Length=300m, Depth=13.7m) under construction with 4 Post-panamax
Quay		Length	Depth	Remarks
	Container	350 m	13.7 m	RTGs are used behind Container and Multipurpose Berth.
	Multipurpose	250 m	13.7 m	
	New Multipurpose	350 m	13.7 m	(under construction)
General	300 m	8.5 m	This berth is used especially by feeder container vessels.	
Terminal	Area	(sq.m)	300,000	(planned to increase upto 450,000 sq.m)
	Ground Slot	(TEUs)	Aprox.2300	
	Reffer Point	(points)	100	
	QGCs	(Quantity)	3	Panamax (Capacity: 41 tons)
	Mobile Cranes	(Quantity)	2	(Capacity: 80 - 100 tons)
	RTGs	(Quantity)	4	(Capacity: 32 - 35 tons)
	Reach Stckers	(Quantity)	7	(Capacity: 42 - 45 tons)
	Reach Stckers	(Quantity)	3	(Capacity: 7.5 tons)
	Toplifters	(Quantity)	16	(Capacity: 12 - 42 tons)
	Tractors and Semi-Trailers	(Quantity)	21	
2. Grain Terminal				
Throughput in 1997		(tons)	1.7 million	
		Length	Depth	Remarks
Quay	2 Berths	526m =(2*263m)	13.0 m	
Terminal	Floating unloaders	(Quantity)	2	(Discharging rate = 16,000 tons/day)
	Silo	(Quantity)	2	(Capacity: 43,000 tons)

Source) Port Said Port Authority

8.2 Cargo Movement

Historical trend of cargo volume handled through Port Said Port is shown in Table 8.2.1 and 8.2.2. Total volumes of import and export cargo handled through Port Said Port amount to 4,385 thousand tons and 2,216 thousand tons respectively. Major cargoes among import commodities are "Wheat" (1,678 thousand tons in 1997), "Sugar" (308 thousand tons) and "Iron Products" (118 thousand tons). Major cargoes among export commodities are "Salt" (139 thousand tons in 1997) and "Fertilizer" (139 thousand tons).

Table 8.2.1 Historical Trend of Imported Cargo Volume Handled at Port Said Port by Commodity (1988-1997)

		(Unit: thousand tons)									
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
General cargo											
	Flour	148	79	60	0	0	0	15	4	25	24
	Sugar	203	126	116	268	206	44	135	304	37	308
	Frozen	79	75	68	62	48	43	37	41	32	45
	Others	154	127	123	149	205	230	253	294	258	243
	Sub-total	584	407	367	479	459	317	440	643	352	620
Grains											
	Wheat	377	381	678	496	1,064	770	1,605	1,937	1,621	1,678
	Maize	756	1,074	898	884	216	121	77	158	27	0
	Sub-total	1,133	1,455	1,576	1,380	1,280	891	1,682	2,095	1,648	1,678
Dust & metals											
	Cement	81	37	71	26	1	1	26	10	10	6
	Iron products	5	6	30	21	56	44	108	167	273	118
	Sub-total	86	43	101	47	57	45	134	177	283	124
Special cargo		79	75	68	62	118	118	136	162	32	57
	Sub-total	79	75	68	62	118	118	136	162	32	57
Liquid bulk											
	Petrol	138	0	0	7	13	0	0	0	0	0
	Sub-total	138	0	0	7	13	0	0	0	0	0
Local containers		174	197	197	243	322	314	343	409	485	537
	Sub-total	174	197	197	243	322	314	343	409	485	537
Total		2,194	2,177	2,309	2,218	2,249	1,685	2,735	3,486	2,800	3,016
Transshipment container		0	0	90	57	229	439	512	1,052	1,064	997
Grand total		2,194	2,177	2,399	2,275	2,478	2,124	3,247	4,538	3,864	4,013

Source: Egyptian Maritime Data Bank, Ministry of Maritime Transport, Port Said Port Authority

Table 8.2.2 Historical Trend of Exported Cargo Volume Handled at Port Said Port by Commodity (1988-1997)

		(Unit: thousand tons)									
		1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
General cargo											
	Sugar	0	0	0	3	10	9	6	9	0	0
	Frozen	0	2	8	0	2	3	1	1	1	0
	Agricultural products	133	83	100	81	30	14	16	52	90	56
	General cargo	5	14	14	8	11	17	14	63	66	32
	Sub-total	138	99	122	92	53	43	37	125	157	88
Dust & metals											
	Coke	5	0	0	0	0	0	0	0	0	0
	Cement	0	0	0	0	0	0	0	2	0	0
	Fertilizer	133	107	147	141	140	150	107	93	149	139
	Others	0	0	0	0	1	0	0	55	0	0
	Sub-total	138	107	147	141	141	150	107	150	149	139
Special cargo		1	2	8	0	2	5	1	2	1	0
	Sub-total	1	2	8	0	2	5	1	2	1	0
Liquid bulk											
	Petrol	360	366	359	385	437	517	631	724	780	704
	Sub-total	360	366	359	385	437	517	631	724	780	704
Local containers		60	75	79	89	123	127	128	157	194	209
	Sub-total	60	75	79	89	123	127	128	157	194	209
Total		697	649	715	707	756	842	904	1,158	1,281	1,140
Transshipment container		0	0	84	65	217	437	533	995	1,055	1,146
Grand total		697	649	799	772	973	1,279	1,437	2,153	2,336	2,286

Source: Egyptian Maritime Data Bank, Ministry of Maritime Transport, Port Said Port Authority

8.3 Port Activities

8.3.1 Ship Movement

A total of 1,823 vessels called at Port Said Port in 1997. Container and general cargo vessels account for approximately 58% and 11.5% respectively of the total number of vessels which called at Port Said Port.

Table 8.3.1 Number of Vessels calling at Port Said Port in 1997

Vessel Type	Number of Vessels (vessels)
1. Container	1,069 (58.4%)
2. General Cargo	209 (11.5%)
3. Dry Bulk	64 (3.5%)
4. Liquid Bulk	0 (0.0%)
5. Passenger	435 (23.9%)
6. Supply	0 (0.0%)
7. Others	46 (2.5%)
Grand Total	1,823 (100%)

(Source) "10 Years Statistical Report (1998)", Egyptian Maritime Data Bank

8.3.2 Container Terminal

Average BOR of container terminal (berth no.11), multipurpose berth (no.12) and general cargo berth (no.6) is calculated as 72.3%. Vessel size distribution is presented Table 8.3.2.

Table 8.3.2 Vessel Size Distribution called at Port Said Port Container Terminal in 1997

Loading Capacity (TEUs)	Number of Vessels (Vessels)	Percentage (%)
up to 700	591	58.8%
701 - 1,500	157	15.6%
1,501 - 2,000	115	11.5%
2,001 - 3,000	86	8.6%
3,001 plus	55	5.5%
N.A.	65	---
Grand Total	1,069	100%

(Source) Port Said Port Authority, Port Said Container Handling Company, Lloyd's Electronic Maritime Directory

Total containers of 312,454 boxes were handled through berths no.11, 12, and 6 with a total berthing time of 19,009 hours in 1997. Since original berthing and cargo handling records obtained from Port Said Container Handling Company include only operating hours, preparation time of four hours for each vessel are added to analyze cargo handling productivity. Container handling productivity is calculated as 16.4 (boxes/hour/vessel). Average dwelling time of laden transshipment container in the yard is 8 days. Dwelling time of import and export container in the yard is 10 and three (3) days respectively.

8.4 Hinterland and Trading Partner

(1) Hinterland of Container Cargoes through Port Said Port

Hinterland of import container cargoes has been analysed by the Study Team based on the cargo handling records provided from Port Said Port Authority. The results are shown in Table 8.4.1 and Figure 8.4.1. In terms of destination of import container cargoes, Port Said 48.1%, the suburbs of Cairo accounts for 38.7% and Ismailia account for 6.6% and Alexandria accounts for 6.6%. Port Said play a role as the free zone and many importers have been conducting economic activities. Hence, some of import cargoes through Port Said Port have been stock in warehouse, and then, cargoes are distributed to all of Egypt.

Table 8.4.1 Hinterland of Import Containers through Port Said Port

Hinterland Area inner Egypt	Hinterland city of Container Cargoes	Percentage of Hinterland
Port Said	Port Said Free Zone	48.1%
The Suburbns of Cairo	Cairo	34.9%
	Heriopolis	1.4%
	10th of Ramadan City	1.4%
	Nasr City	0.5%
	Sub-total	38.7%
Ismailia		6.6%
Alexandria		6.6%
Total		100.0%

Source: Analysed by the Study Team based on the data from Port Said Port Authority

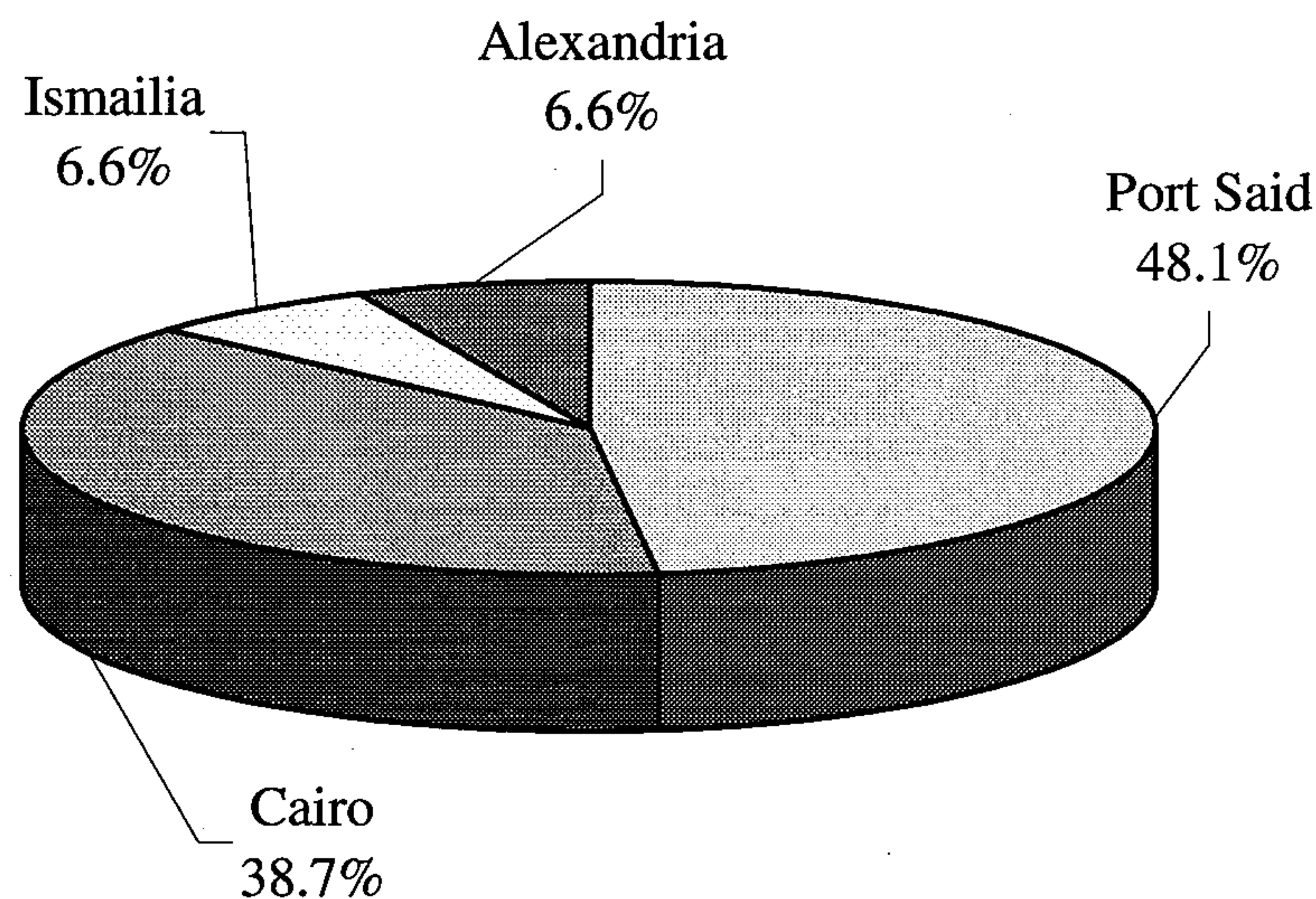


Figure 8.4.1 Hinterland of Import Containers through Port Said Port

8.5 Transshipment Container Flow

As mentioned in Chapter 5.2, the Study Team surveyed the transshipment containers of 11 vessels that called at Port Said port from 30th January to 21st February in 1997. The numbers in Table 8.5.1 and Figure 8.5.1-8.5.4 show the volume of full transshipment containers loaded/discharged at origin/destination ports. The tendency pointed out in Chapter 7.5 is more pronounced. The countries of origin and destination are limited to East Mediterranean and Black Sea countries except westbound-outbound case.

Table 8.5.1 Origin and Destination of Transshipment Containers via Port Said Port

Region	Country	Desitination				Origin			
		West-Out		East-Out		In-East		In-West	
East Mediterranean	Libya	84	12.4%						
	Cyprus	28	4.1%	7	1.0%				
	Lebanon	47	7.0%	588	80.8%				
	Syria	61	9.0%	94	12.9%			37	10.9%
	Turkey	185	27.4%	30	4.1%	199	93.9%	169	49.9%
	Greece	133	19.7%	9	1.2%			6	1.8%
	Croatia								
	Slovenia	1	0.1%						
	Sub-total	539	80%	728	100.0%	199	93.9%	212	62.5%
West Mediterranean	Italy	37	5.5%						
	France								
	Spain	14	2.1%						
	Sub-total	51	7.6%	0	0.0%	0	0.0%	0	0.0%
Black Sea	Bulgaria	4	0.6%					7	2.1%
	Romania	34	5.0%			13	6.1%	97	28.6%
	Ukraine	4	0.6%						
	Sub-total	42	6.2%	0	0.0%	13	6.1%	104	30.7%
North Africa	Tunisia	17	2.5%						
	Algeria								
	Morocco	0	0.0%						
	Sub-total	17	2.5%	0	0.0%	0	0.0%	0	0.0%
Middle East		4	0.6%					1	0.3%
East Asia									
South Asia							22	6.5%	
West Europe		22	3.3%						
North America									
Total		675	100.0%	728	100.0%	212	100.0%	339	100.0%

Region	Country	Origin				Destination			
		West-Out		East-Out		In-East		In-West	
West Europe								339	100.0%
North America				728	100.0%				
South America									
Middle East	Yemen								
	Saudi Arabia								
	Gulf Countries	20	3.0%						
East Asia		552	81.8%			212	100.0%		
South Asia		99	14.7%						
South East Asia		4	0.6%						
Oceania									
Total		675	100.0%	728	100.0%	212	100.0%	339	100.0%

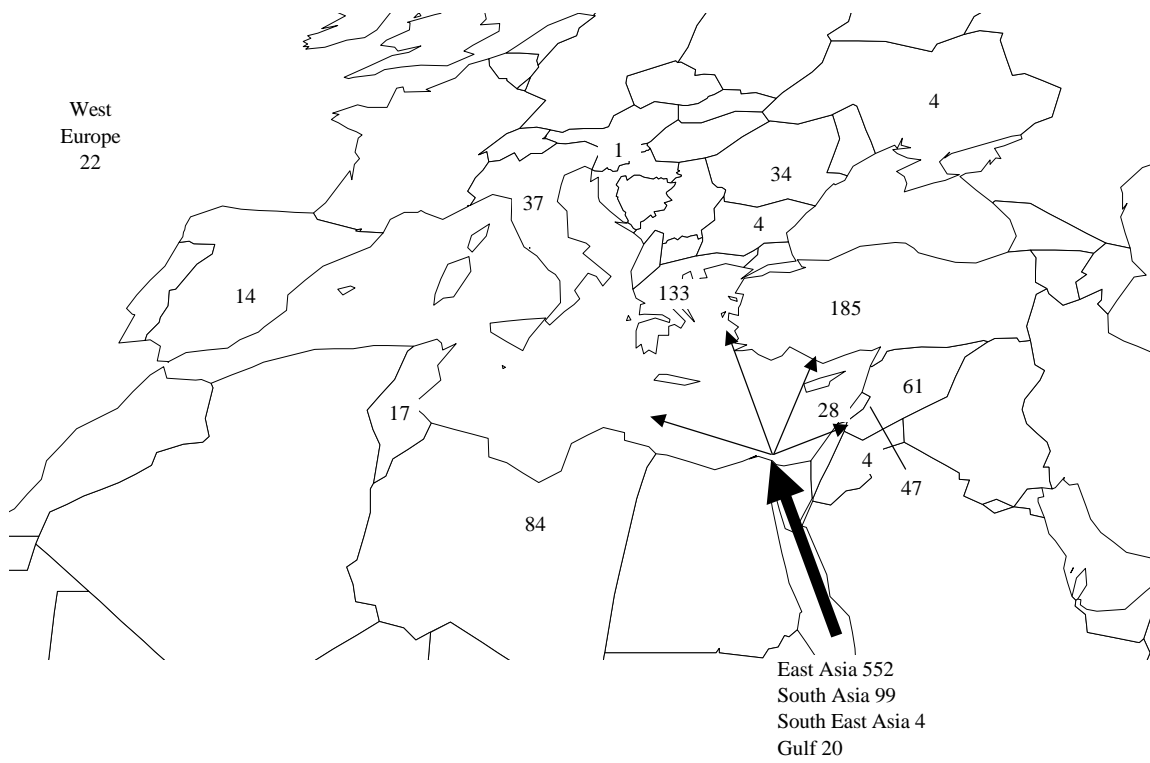


Figure 8.5.1 Westbound-Port Said-Outbound

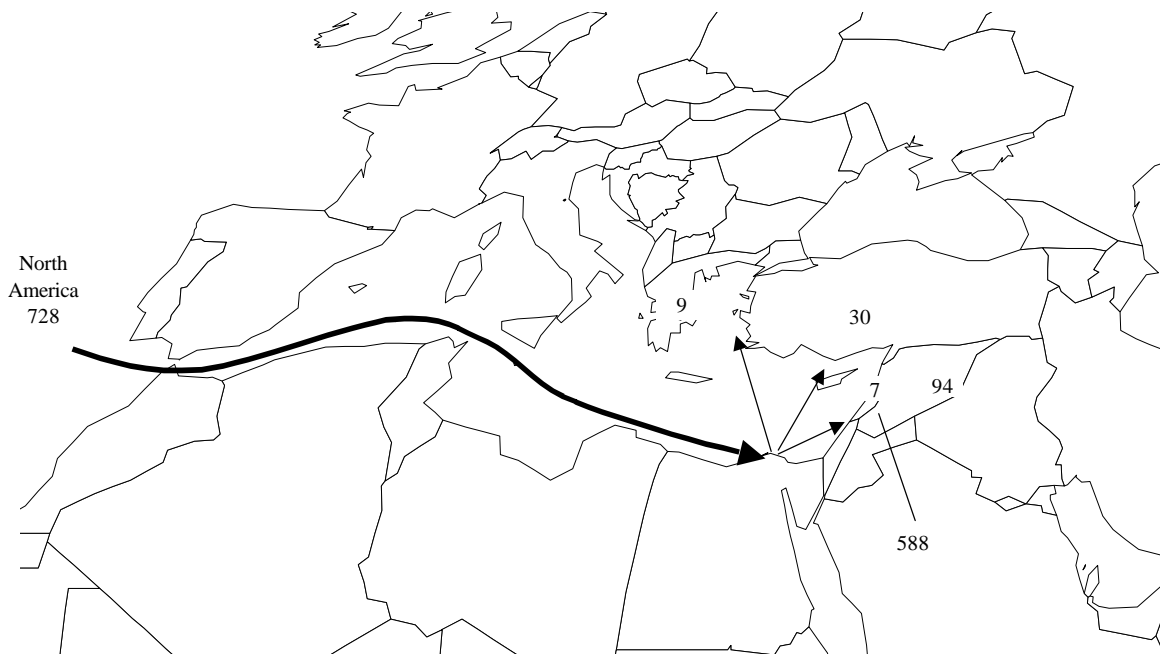


Figure 8.5.2 Eastbound-Port Said-Outbound

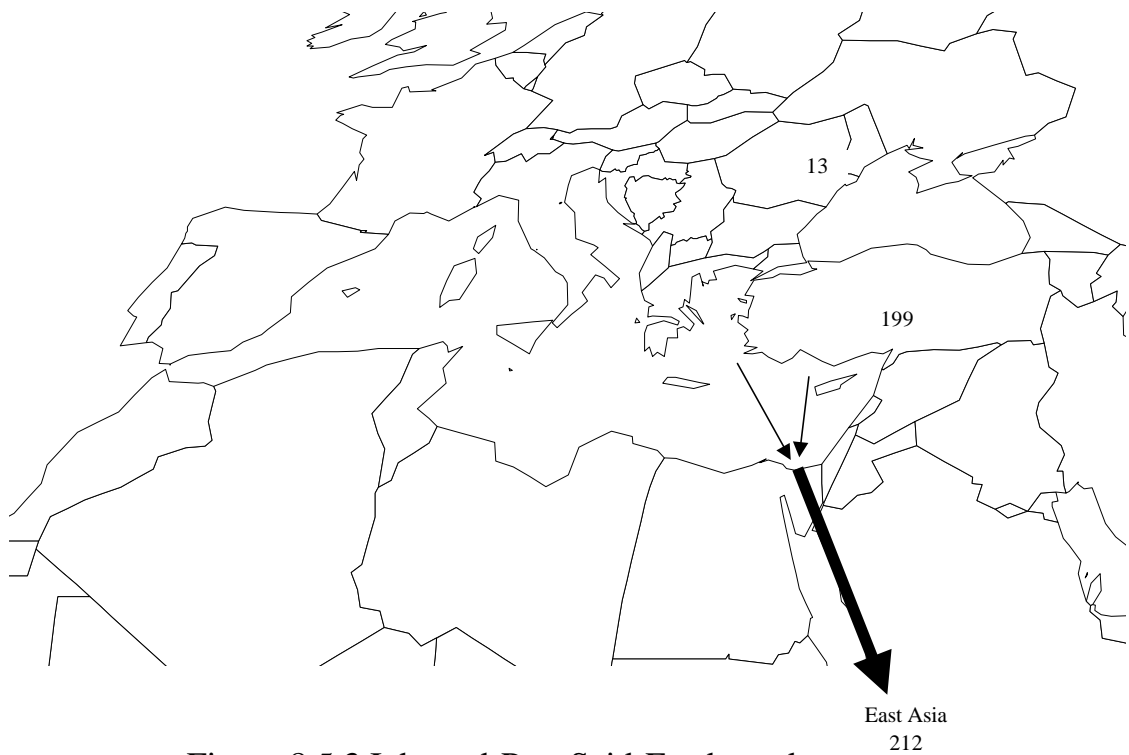


Figure 8.5.3 Inbound-Port Said-Eastbound

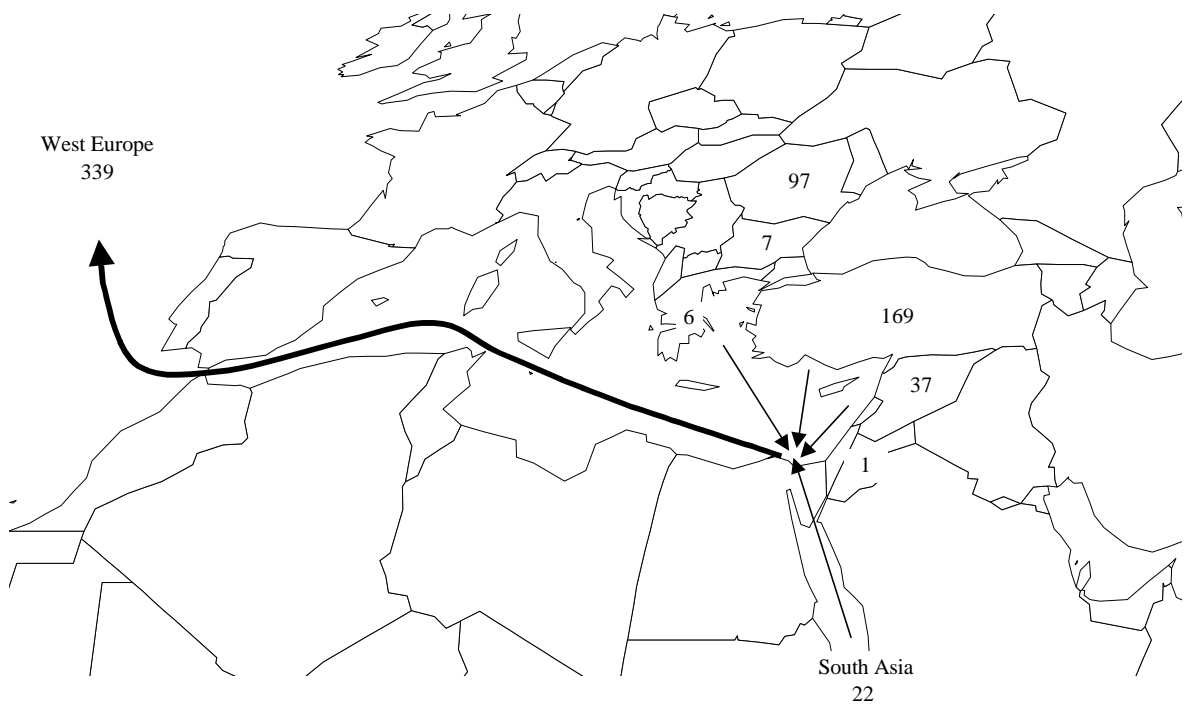


Figure 8.5.4 Inbound-Port Said-Westbound

Chapter 9 Port Management and Operation in the Egyptian Major Ports

9.1 General

Ministry of Maritime Transport (MOMT) supervises overall administration of port management and controls port authorities. Port authorities are in charge of planning, construction of port facilities, securing navigation safety and marine services in the Port. Alexandria Port Authority (APA) controls Alexandria and El Dekheila Port. Damietta Port Authority (DPA) controls Damietta Port. Port Said Port Authority (PSPA) controls Port Said Port. Port Authorities own land and facilities in their port area and lease them to State-owned companies and private companies and collect fees from them.

State-owned companies perform cargo handling operation. United Arab Stevedoring Company is in charge of loading/unloading break bulk cargo. Alexandria Container Handling Company is in charge of container handling operation at the Container Terminal in Alexandria port and Dekheila port. General Warehouse Company is in charge of storing cargoes at warehouses in Alexandria Port. Concerning shipping agent, there are three state-owned companies, Thebe and Abu Simbel Shipping Agencies, Amon Shipping Agencies and Memphis Shipping Agencies. These state-owned companies are under the control of the Holding Company for Maritime Transport.

In Damietta port, Damietta Container & Cargo Handling Company is in charge of container handling operation and break bulk cargo handling operation. In Port Said Port, Port Said Container & Cargo Handling Company is in charge of container handling and dry bulk and general cargo operation. Concerning passing through the Suez Canal, Canal Shipping Agency is forwarding the necessary procedures for joining the convoy passing through the Suez Canal on behalf of shipping lines or ship owners. These state-owned companies are under the control of the Holding Company of Inland Transport. The Holding Company for Maritime Transport and the Holding Company of Inland Transport are under the control of Ministry of Public Enterprises of Egyptian Government.

9.2 Port Authority

9.2.1 Alexandria Port Authority

Board of directors was established according to the Law No.6/1967 and reorganized in 1997 in accordance with the Resolution 736/1997 and its revision under the Authorization of the President of Egypt. The main tasks of the Board are to prepare plans and policies for the port. Chairman of the Port Authority presides over the Board. Board of directors is comprised of first under secretary of MOMT and other related ministries, vice chairman of the Port Authority and other members representing public institution concerning port activities, state-owned or private companies working in the port, university scholars and consultants of the Transport Minister. Figure 9.2.1 indicates the organizational structure of APA.

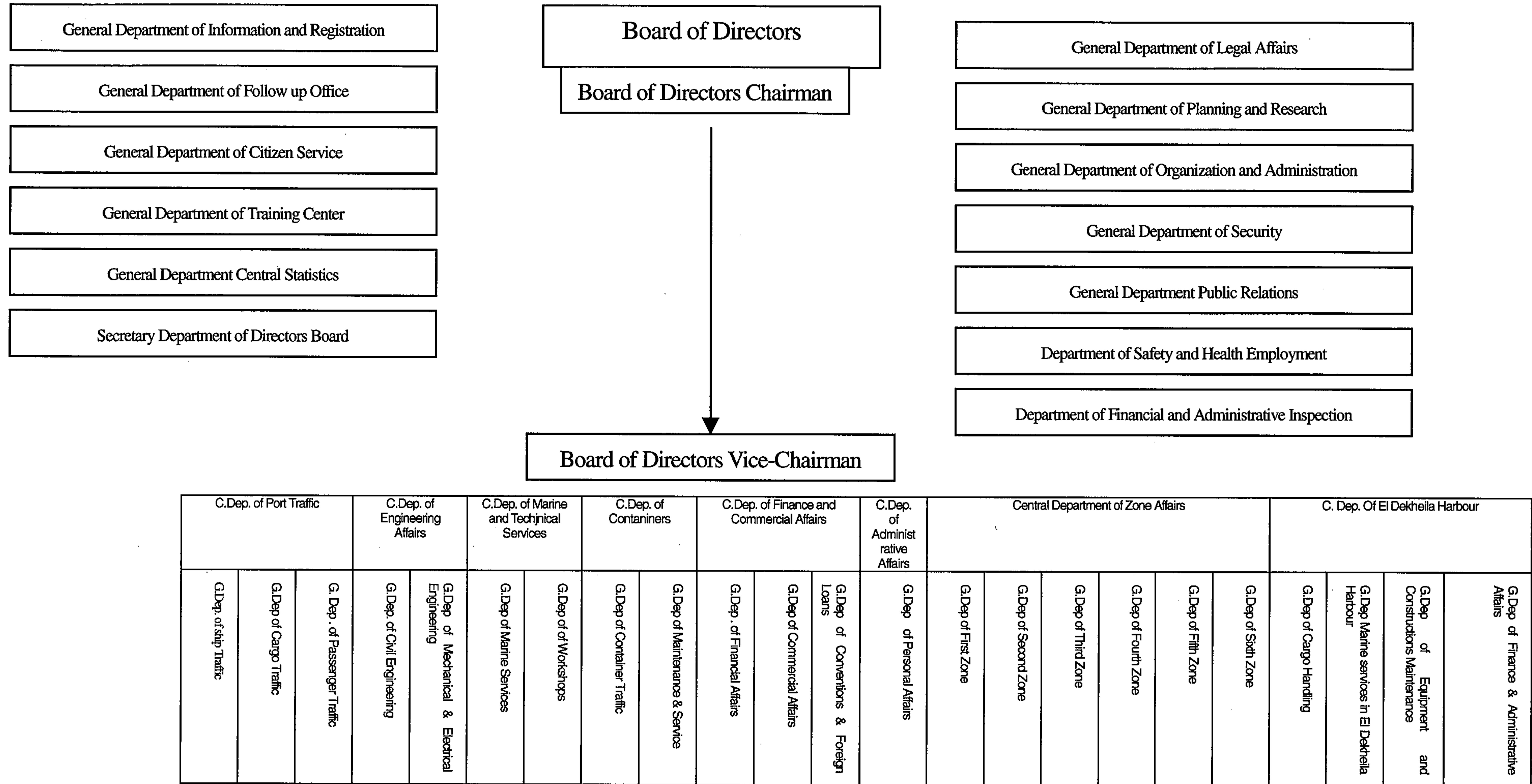


Figure 9.2.1 Organizational Structure of APA

(Source: Statistical Annual Report of Alexandria Port Authority)

Table 9.2.1 Number of Employees of APA

	31 Dec. 97	31 Dec.96	Difference
Board of Directors	32	33	-1
Civil Engineering	8	6	2
Mechanical Engineering	60	57	3
Electric Engineering	57	45	12
Electronic Engineering	28	28	0
Medical Work	28	24	4
Legal Work	1	1	0
Supplying and Accounting	30	34	-4
Administrative Department	99	101	-2
Statistics, Mathematics and Computer	85	86	-1
Information	31	26	5
Security	24	23	1
Pilotage	14	14	0
Clerk and Secretary	72	68	4
Technical Assistant in Engineering	678	682	-4
Techniques and Buildings	281	266	15
Nursing and General Health	25	25	0
Expert/Traffic and Transport	1	1	0
Expert/Workshops and Machinery	868	818	50
Expert/Techniques and Buildings	401	399	2
Clerks without Certifications	164	155	9
Assistant services	4	5	-1
Total	3316	3172	144
Temporary Employees	193	200	-7
Grand Total	3509	3372	137

(Source: Statistical Annual Report of Alexandria Port Authority)

9.2.2 Damietta Port Authority

Ministry of Construction, New Civilized Communities and Land Reclamation planned and constructed Damietta port. The port was taken over by the Ministry of Transport and Communication after the construction was completed. In 1986, under the control of Ministry of Transport and Communication, the Damietta Port Authority was established to administrate and operate the port. Figure 9.2.2 shows the organizational structure of Damietta Port Authority.

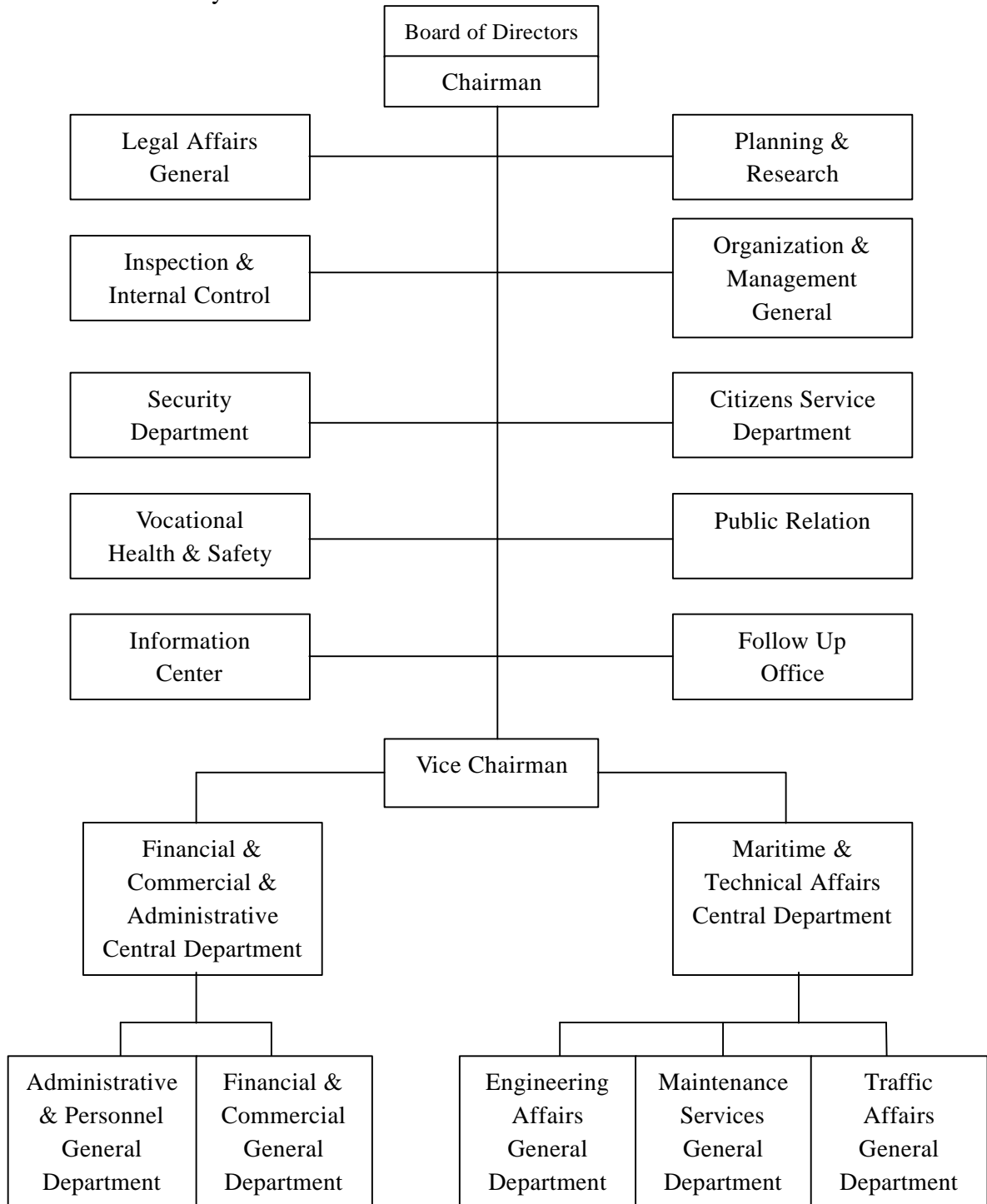


Figure 9.2.2 Organizational Structure of Damietta Port Authority

(Source: Damietta Port Authority)

9.3 Private Participation and Privatization in Maritime Transport Sector

State owned companies have provided maritime transport services. Resolution 30/1998 allows the private sector to participate in the following maritime transport services.

- Stevedoring work for grains and general cargo
- Shipping agent
- Ship chandler and marine supplies
- Ship repair, maintenance and marine works
- Warehouse
- Container handling

Required amount of company's capital and permission period are shown in the following table.

Table 9.3.1 Required Capital and Permission Period

	Required capital	Permission period
Stevedoring works for grains and general cargo	Not less than 25 million L.E.	15 years
Shipping agent	Not less than 250,000 L.E.	3 years
Ship chandler and marine supplies	Not less than 50,000 L.E.	2 years
Ship repair, maintenance and marine works	Not less than 50,000 L.E.	2 years
Warehouse	Not less than 10 million L.E.	10 years
Container handling	Not less than 25 million L.E.	15 years

In case of shipping agent, a company needs a bank guarantee of 250,000 L.E. After permission period expired, permission can be renewed.

The National Assembly approved the privatization of maritime transport companies last November. The Holding Company for Maritime Transport offered 25% share of the equity of the United Arab Stevedoring Company for public subscription in April. This is the first case of privatization in the maritime transport sector. After the sale of the stock, the ownership structure of the United Arab Stevedoring Company changed as follows.

Government Share	41%
The company's employee shareholding association	8%
Private owners	51%

9.4 Port Operations

9.4.1 Alexandria Port

(1) Pilotage, tug, security, fire fighting and telephone services are rendered 24 hours a day. Pilotage is compulsory for vessels coming into or going out the port and vessels moving

(5) Agricultural quarantine and water supply are conducted in two shifts (day/night).

9.4.2 El Dekheila Port

Pilotage, tug assistance, berth assignment and container terminal operation are the same as Port of Alexandria. Cargo handling operation is performed 24 hours a day regardless of the kind of cargo.

9.4.3 Damietta Port

(1) Pilotage is compulsory for vessels having 200 GRT or more.

(2) Tug assistance is compulsory for vessels having 400 GRT or more.

(3) Container terminal operates 24 hours a day and 363 days a year. Container operation is performed on a three-shift basis. The starting and ending times of each shift are as follows:

1st shift: 8:00-16:00 2nd shift: 16:00-24:00 3rd shift: 24:00-8:00

Closing days are the first day of the Bairam Feast (Eid Al Fitr) and the first day of the Great Bairam Feast (Eid Al Adha).

9.4.4 Port Said Port

(1) Pilotage and tug assistance

Pilotage is compulsory for vessels coming into or going out the port and passing through the Suez Canal. Suez Canal Authority carries out pilotage and tug assistance.

Port Said Port is situated at the north entrance of Suez Canal. This gives the port potential to become a hub port in East Mediterranean Sea because of its geographical advantage, as there is no deviation from the main shipping route between Europe and Asia. On the other hand, it restricts navigation time of vessels to call at the port. It is required for vessels passing the canal to join the convoy. The convoy has the priority to navigate the canal. While the convoy is passing in front of the port, vessels to call at the port can not enter the port or vessels at berth can not leave the port.

(2) Container terminal operates 24 hours a day and 363 days a year. Container operation is performed on a three-shift basis. The starting and ending times of each shift are as follows:

1st shift: 8:00-16:00 2nd shift: 16:00-24:00 3rd shift: 24:00-8:00

Closing days are the first day of the Bairam Feast (Eid Al Fitr) and the first day of the Great Bairam Feast (Eid Al Adha).

9.5 Tariff

9.5.1 The Greater Alexandria Port

	Egyptian ships (L.E.)	Foreign ships (US\$)
(1) Port dues (per GRT)	0.25	0.30
(2) Berth hire (per GRT per day)	0.1	0.01
(3) Stay due (per GRT per day)	0.1	0.01

This charge is collected from the 16th day after berthing date or the next day of completion of cargo loading/unloading, whichever comes earlier.

(4) Light house due (per GRT)	0.5	0.05
(5) Pilotage		

1) From outside port to berth/anchorage or vice versa

	Egyptian ships (L.E.)	Foreign ships (US\$)
GRT 300 - 999	70	83.1
1,000 - 4,999	115	136.5
5,000 - 9,999	160	190.25
10,000 - 19,999	225	267.5
20,000 - 29,999	485	351.5
30,000 - 39,999	645	467.4
40,000 - 49,999	725	525.4
50,000 - 59,999	765	554.35
60,000 or more	900	652.2

2) Harbor zones

GRT 20,000 - 29,999	340	346.4
30,000 - 39,999	430	311.6
40,000 - 49,999	455	329.75
50,000 - 59,999	470	340.6
60,000 or more	550	398.55

Pilotage increases by 50 % from sunset to sunrise

In case of container ships and ferries transporting transit containers, pilotage, lighthouse due, berthing and staying due are discounted as follows:

Number of transit containers	Discount rate
80-120 boxes	20%
121-160 boxes	35%
161-2000 boxes	45%
more than 200 boxes	50%

Ships carrying transit containers between Egyptian ports 75%

(6) Tug assistance

- 1) Inside the port US\$500/movement
- 2) Outside the port US\$1,000/movement

Movement starts from the time of arrival beside the ship till the time of completing the maneuver.

(7) Container loading/unloading charge

(8) Container storage charge (unit: L.E.)

	20'		40'	
	full	empty	full	empty
Per day				
First three days	3	1.5	6	3
Next 10 days	6	3	12	6
Additional days	10	5	30	15

(9) General cargo storage charge (unit: L.E.)

Per ton per day

First three days	0.5
Next four days	1
Next seven days	4
From the next day	5

(10) Bulk cargo storage charge (unit: L.E.)

Per ton per day

First three days	0.2
Next four days	0.4
From the next day	1

9.5.2 Damietta Port

	Egyptian ships (L.E.)	Foreign ships (US\$)
(1) Port due (per GRT)	0.25	0.21
(2) Berth hire (per GRT per day)	0.1	0.01
(3) Stay due (GRT per day)	0.1	0.01

This charge is collected from the 16th day after berthing date or the next day of completion of cargo loading/unloading, whichever comes earlier.

(4) Light house due (per GRT)	0.5	0.05
(5) Pilotage	Egyptian ships (L.E.)	Foreign ships (US\$)

1) Port Pilot	GRT 300 - 999	70	83.1
	1,000 - 4,999	115	136.5
	5,000 - 9,999	160	190.25
	10,000 - 19,999	225	267.5
	20,000 - 29,999	485	351.5
	30,000 - 39,999	645	467.4
	40,000 - 49,999	725	525.4
	50,000 - 59,999	765	554.35
	60,000 or more	900	652.2

2) Harbor Pilot	GRT 300 - 999	30	35.6
	1,000 - 4,999	40	47.5
	5,000 - 9,999	60	71.25

10,000 - 19,999	75	89
20,000 - 29,999	145	105.1
30,000 - 39,999	215	155.8
40,000 - 49,999	270	195.65
50,000 - 59,999	300	217.4
60,000 or more	350	253.65

Pilotage increases by 50 % from sunset to sunrise

	Egyptian ships (L.E.)	Foreign ships (US\$)
(6) Tug assistance for general cargo ships	950	475
(7) Moorage	50	25

Resolution 106/1989 concerning tug/moorage discount for container ships gives 50% discount of tug assistance charge and moorage. (Maximum US\$300 per tug)

According to the resolution 40/1990, for container ships and ferries transporting transit containers, pilotage, lighthouse due, berthing and staying due are discounted as follows:

Number of transit containers	Discount rate
20-50 boxes	20%
51-100 boxes	35%
100-150 boxes	45%
more than 150 boxes	50%

Ships carrying transit containers between Egyptian ports 75%

(8) Container loading/unloading charge (unit: US\$)

	20'		40'	
	full	empty	full	empty
1) Import/export container	183	86	367	172

These rates include the following.

- Discharging from vessel to container handling equipment or loading from container handling equipment to vessel
- Transport from quay to CY or vice versa
- Storage at CY for 10 days
- Terminal guarding and checking the container during the storage period and reporting any damages
- Loading the container onto a trailer or discharging the container from a trailer

	20'		40'	
	full	empty	full	empty
2) Transshipment/transit container	80	50	105	60

These rates include the following.

- Discharging and reloading the container
- Storing 20 days in the CY

A container discharged at Damietta port and transported to another Egyptian port by road or waterway shall be treated as transit container.

Shipping Agency (state owned company) collects the following commission for transshipment containers.

- A shipping line pays two US dollars per transshipment container (full or empty).
- The terminal company pays five US dollars per transshipment container (full or empty).
- A shipping line pays 200 US dollars per vessel carrying transshipment/transit containers per call at Damietta port.

Damietta Container and Cargo Handling Company will consider granting volume rebate if a shipping line discharged 90,000 boxes of transshipment containers. The rebate is calculated on net stevedoring charges after deduction of all commissions collected by shipping agent.

(9) Container storage charge (unit: US\$)

1) Import/export container	20'		40'	
	full	empty	full	empty
First 10 days	free	free	free	free
From 11th day (per day)	12	6	24	12
2) Transshipment/transit container	20'		40'	
	full	empty	full	empty
First 20 days	free	free	free	free
From 21st day (per day)	3	3	3	3
From 31st day (per day)	6	6	12	12

9.5.3 Port Said Port

Port Said Port Authority does not collect pilotage or tug assistance fees because Suez Canal Authority performs pilotage and tug assistance. Other items are the same as Damietta Port's.

Container loading/unloading charge is the same as Damietta Container and Cargo Handling Company's.

Container storage charge (unit: US\$)

1) Import/export container	20'		40'	
	full	empty	full	empty
First three days (full)	free	-	free	-
First two days (empty)	-	free	-	free
Next five days (per day)	6.5	free	13	free
From the next day (per day)	7	7	14	14

2) Transshipment/transit container	20'		40'	
	full	empty	full	empty
First 20 days	free	free	free	free
From 21st day (per day)	3	3	6	6
3) Import container for Free Zone	20'		40'	
	full	empty	full	empty
First five days	free	free	free	free
From the next day (per day)	7	7	14	14

9.6 Financial Situation

9.6.1 Alexandria Port Authority

The contents of operating revenues are summarized in the table 9.6.1. The main revenues are lease fees of real estate, port dues and towage charge. APA's financial statements are summarized in the table 9.6.2-4. Operating ratio clears the required level, less than 75%, from the fiscal year 92/93 through 96/97. Although the port authority reduced its cash in 96/97, the fixed assets were increased. Return on net fixed assets is exceeding the required level, more than 7%. Debt equity ratio is 38:62 in 96/97, which also clears the required level, 50:50.

9.6.2 Damietta Port Authority

DPA's financial statements are summarized in the table 9.6.6-8. While operating ratio is more than 100% (Net operating income is negative.), working ratio shows the favorable level, less than 60%. The port authority is suffering from the deficit due to the large amount of depreciation cost and repayment of long-term loan. Debt service coverage ratio is less than 1.0, which means that the port authority can not repay the loan with its internal funds. So far the port authority has no shortage of cash flow because of the central government's subsidy to repay loans. However its amount is decreasing for three years. It is very difficult for the port authority to make further investment under this financial situation. Debt equity ratio is 67:33, which is under the required level. The port authority must reduce the deficit and increase the capital.

9.6.3 Damietta Container and Cargo Handling Company

The financial statements of the company are summarized in the table 9.6.9-11. Both operating ratio and working ratio, which are increasing for this three years, still keep the required level. Therefore operation is regarded as efficient according to the income statement. Cash balance impaired in the fiscal year 96/97 as cash outflow increased. Return on net fixed assets exceeds the required level. Debt equity ratio is improved from 57:43 in 94/95 to 49:51 in 96/97, which clears in the required level.

Table 9.6.1 Operating Revenues of APA

Unit: L.E. 1,000

	92/93	93/94	94/95	95/96	96/97
Port dues	23,650	26,874	29,482	31,851	32,582
Berth dues	4,858	5,987	6,175	6,766	6,312
Units annual dues	208	207	204	214	203
Telephones hire for others	304	356	329	268	193
Towage	1,438	17,166	15,852	15,286	15,476
Diving	87	81	407	384	888
Petrol dues	26	27	32	32	22
Grains handling	5,442	5,551	4,666	6,120	9,944
Cement handling			2,377	4,074	4,072
Water surface	133	87	68	496	166
Travel permission	70	83	79	79	78
Night shift dues	147	175	168	162	172
Clearing berths from vehicles	216	281	361	360	322
Cleaning	988	1,190	1,216	1,265	1,220
Various income	198	405	442	151	136
Handling on anchor (resolution 90/1993)		724	2,660	2,086	1,535
Cranes, floating cranes	868	1,846	1,305	665	795
Porters	587	685	655	1,007	877
Using buildings and land dues	36,256	44,338	46,154	45,277	48,662
Dues for using assets	19,947	21,284	25,294	39,940	22,678
Demurrage (berths and sheds)	765	225		1,987	4,878
Pilot dues	6,488	7,548	7,817	7,741	7,382
Net income from selling products (printing office)	1		7	6	26
Net income from selling products (work shops)	23				
Fees of entering cars and equipment (resolution 5/1995)		29	1,973	2,495	2,339
Fees for bollard	698	785	836	835	796
Wrought by cost price (work shop)	201	96	320	91	165
Remaining from products	6	12	15	35	9
Port service dues (resolution 67/1989)	872	888	278		
Workshop dues	434	520	597	679	564
Services (resolution 60-1988)	6,234	7,485	7,868	8,706	4,636
Changing incomplete storage using cost price		144	114	49	27
Total	111,145	145,079	157,751	179,107	167,155

(Source: Alexandria Port Authority)

Table 9.6.5 Operating Revenues

(Unit: L.E.1,000)

	94/95	95/96	96/97
Port dues	11,412	11,996	12,370
Staying	170	43	0
Anchorage	1,803	1,760	1,804
Tugs	5,140	5,374	6,018
Handling	9,974	17,434	10,932
Petrol observation	1	11	4
Permission for lorry entering	402	455	524
Shift overtime	188	210	212
Travel permission	31	35	37
Berthing	3	4	42
Cleaning	316	376	508
Received for profit by properties and land	3,219	4,740	6,648
Received for using assets	322	1,319	392
Revenue from weigh porters storing services	603	20	918
Pilotage	1,897	2,032	2,132
Permissions	167	80	149
Moorage	222	296	298
Other	1,073	2,155	2,394
Departure	0	0	1
Telephone	35	118	80
Wrought with cost price	0	4	70
Total	36,998	48,460	45,535

(Source: Damietta Port Authority)

Table 9.6.6 Income Statement of DPA

Unit: L.E.1,000

	94/95	95/96	96/97
Operating Revenues	36,998	48,460	45,535
Operating Expenses	55,666	54,116	68,639
Wages	2,169	2,741	4,625
General Expenses	8,684	13,106	26,018
Taxes	186	117	71
Depreciation	44,627	38,152	37,926
Net Operating Income (Deficit)	-18,668	-5,655	-23,105
Non-Operating Income	6,622	9,454	19,918
Non-Operating Expenses	32,593	24,140	16,648
Payment of Interest	29,362	23,764	16,204
Other Expenses	3,231	376	443
Net Surplus (Deficit)	-44,639	-20,342	-19,834
Operating Ratio	150%	112%	151%
Working Ratio	30%	33%	67%

Table 9.6.7 Cash Flow Statement of DPA

Unit: L.E.1,000

	94/95	95/96	96/97
Cash Beginning	16,858	37,798	39,240
Cash Inflow	112,916	114,392	123,750
Operating Income	44,099	50,408	75,276
Sale of Fixed Assets		4,527	4,527
Long-term Loan	10,531	8,644	14,755
From Public Treasury to repay loan	58,285	50,813	29,192
Cash Outflow	91,976	112,949	154,336
Operating Expenses	22,347	34,702	93,690
Investment in Fixed Assets	11,343	9,624	13,513
Repayment of Long-term Loan	58,285	68,623	47,133
Cash Balance	20,940	1,443	-30,585
Cash Ending	37,798	39,240	8,655
Debt Service Coverage Ratio	0.45	0.47	0.31

Table 9.6.8 Balance Sheet of DPA

Unit: L.E.1,000

	94/95	95/96	96/97
Assets	761,105	777,422	757,404
Current Assets (Cash)	37,798	39,240	8,655
Fixed Assets	654,308	660,956	680,752
Work in Progress	11,690	16,326	11,353
Inventories	8,381	7,739	10,081
Receivable	38,829	43,060	36,463
Investment	10,100	10,100	10,100
Liabilities	555,606	539,161	504,671
Current Liabilities	68,341	76,110	41,409
Long-term Loans	158,120	98,141	65,763
Provision	329,144	364,910	397,498
Capital	205,499	238,260	252,733
Government Share	627,746	678,559	707,751
Reserves	2,416	4,707	9,822
Deficits	-424,664	-445,006	-464,840
Liabilities & Capital	761,105	777,422	757,404

(Source: Damietta Port Authority)

Table 9.6.9 Income Statement

Unit: L.E.1,000

	94/95	95/96	96/97
Operating Revenues	84,330	106,160	97,254
Operating Expenses	53,578	70,954	71,789
Wage	8,780	10,729	10,441
General Expenses	11,143	23,627	19,881
Taxes	748	890	2,075
Depreciation	13,793	13,268	15,428
Rent Expenses	957	1,599	2,002
Other Expenses	18,157	20,840	21,962
Net Operating Income	30,752	35,206	25,465
Non-Operating Revenues	25,464	33,221	33,716
Non-Operating Expenses	23,638	27,267	19,289
Net Surplus	32,578	41,160	39,893
Distribution	14,947	28,821	20,065
Retained earnings (Reserves)	17,631	12,340	19,828
Operating ratio	64%	67%	74%
Working ratio	47%	54%	58%

Table 9.6.10 Cash Flow Statement

Unit: L.E.1,000

	94/95	95/96	96/97
Cash Beginning	65,631	78,419	116,564
Cash Inflow	88,867	116,537	103,190
Cash Outflow	76,080	78,392	100,985
Cash Balance	12,788	38,146	2,205
Cash Ending	78,419	116,564	118,770

Table 9.6.11 Balance Sheet

Unit: L.E.1,000

	94/95	95/96	96/97
Assets	196,377	238,065	258,198
Fixed Assets	74,433	71,302	84,670
Work in progress	68	1,690	19,272
Inventories	18,817	18,579	16,941
LC	9,549	10,495	2,361
Investments	83	83	83
Receivables	14,722	18,108	16,371
Cash	78,419	116,294	118,500
Others	288	1,515	0
Liabilities & Capital	196,377	238,065	258,198
Liabilities	62,470	77,223	71,903
Allowances	48,473	50,747	54,958
Capital	40,000	40,000	40,000
Reserves	45,434	61,294	91,338
Retained earnings	0	8,801	0
Return on net fixed assets	41%	49%	30%
Debt equity ratio	57:43	54:46	49:51

(Source: Damietta Container and Cargo Handling Company)

Chapter 10 Port Said East Port Project

10.1 Outline of the Project

Studies concerning a new hub port project, namely “Port Said East Port Project” have been or will be conducted by Sir William Halcrow and Partners (UK), Netherlands Engineering Consultants (Nedeco) and Arab Academy. Although the detailed information of the project has not been so far available, an outline of the project is summarized materializing information of newspapers, magazines¹⁾²⁾ and interviews.

A new company to be in charge of the port development and its operations is expected to capitalize at LE 1,500 million. The new company is being established by the Port Said Container and Cargo Handling Company, Damietta Container Handling Company, the Suez Canal Authority and Egyptian General Petroleum Corporation at the beginning stage. This company is also expected to be funded 25% by above-mentioned Egyptian authorities, 15% by other Egyptian investors and 60% by foreign investors.

A whole project area of about 12,000 acres (4,850 hectares) is planned for warehouses, storage space and an industrial zone. A container terminal with area of 2,000 acres (810 hectares) is planned to have one-kilometer-long container berths and ten (10) quay-side gantry cranes (QGCs) with a capacity to handle 1.0 million TEUs. Future capacity of the whole project is expected to be 6.0 million TEUs.

An alternative project site is proposed on the east of the eastern Suez Canal Bypass along with a development of Sinai, even though this bypass is being used to a certain extent by all the north-bound convoy and south-bound larger vessels convoy. The other alternative site is considered to be out the Mediterranean Sea.

It is said that the studies concluded the project is feasible only if the government takes a full responsibility of the infrastructure. One study concluded that an internal rate of return (IRR) of this project is 24% to investors.

10.2 Alternative Site and Layout Plans

Two alternative layout plans have been available so far to the Study Team without any detailed information. Those layout plans are presented in Figure 10.2.1 and Figure 10.2.2.

¹⁾ MEED, 24 April, 1998, pp.2 - 3

²⁾ MEED, 6 February, 1998, p.16

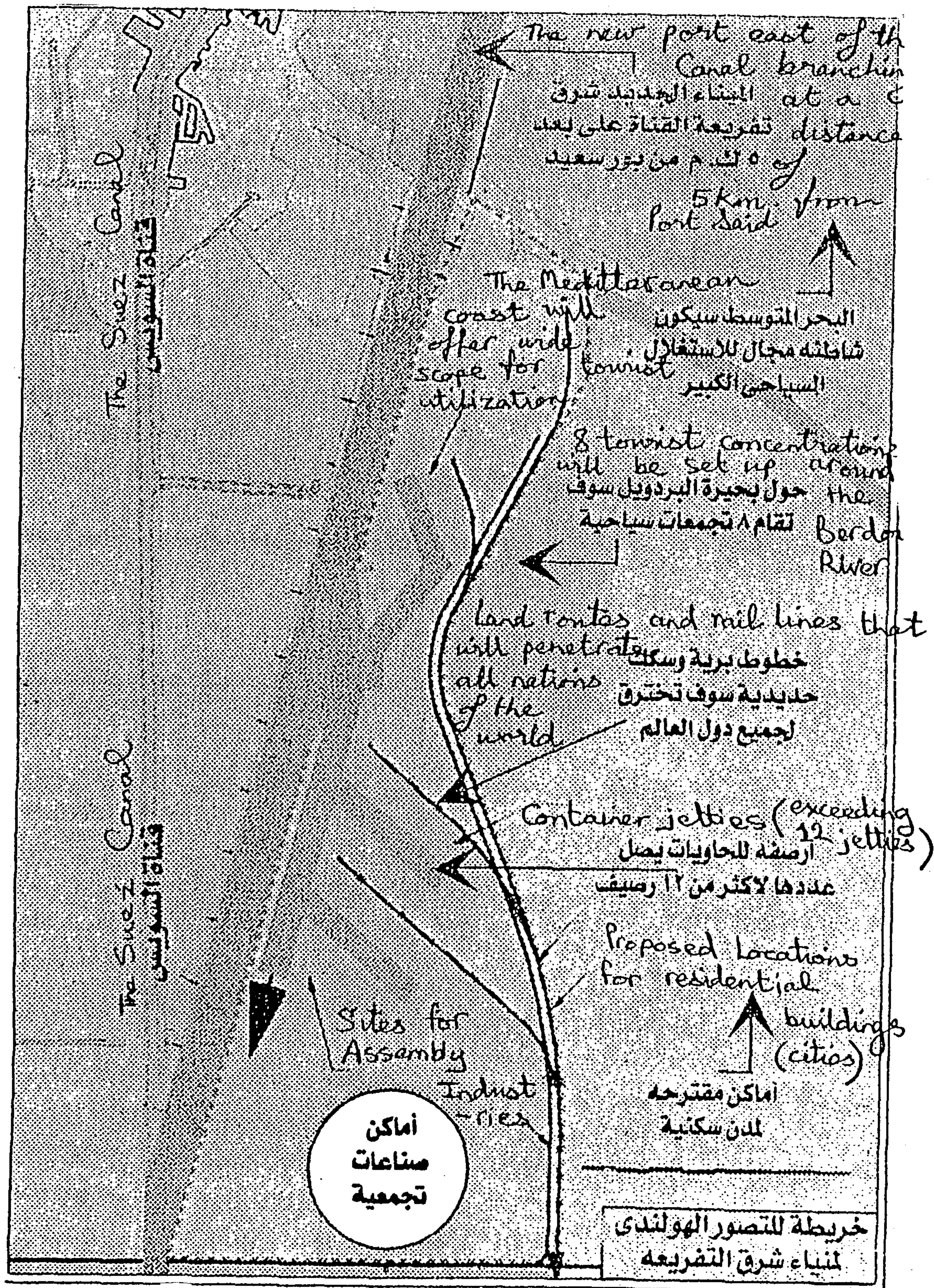


Figure 10.2.1 Alternative Layout Plan of the Port Said East Port Project (1)

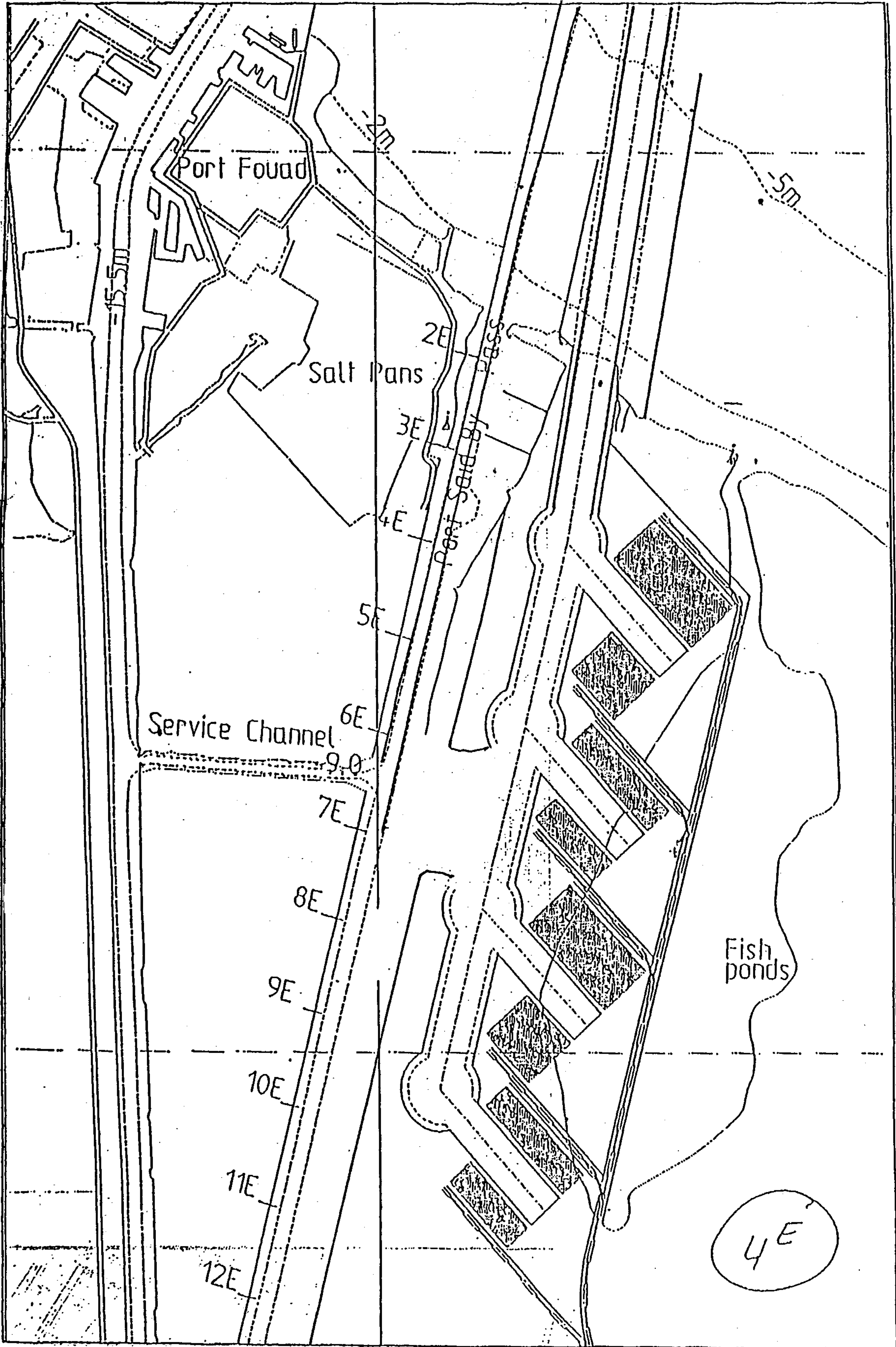


Figure 10.2.2 Alternative Layout Plan of the Port Said East Port Project (2)