

## Chapter 2 Present Conditions of the Port of Constantza

### 2.1 Site Conditions

The port of Constantza is located at the west coast of the Black Sea, at about 179 nautical miles from the Bosphorus and 85 nautical miles from the mouth of the Sulina branch of the Danube. The port consists of the old port to the north and the new port to the south. In the south port area, there is the entrance to the Danube-Black Sea Canal, which is part of the Rhine-Maine-Danube waterway. Table 2.1.1 shows the outline of the port.

Table 2.1.1 Outline of the port of Constantza

	Unit	North Port	South Port		Total	
		Existing	Existing	Final	Existing	Final
Total Area	ha	789	2,837	2,837	3,626	3,626
-Land	ha	484	610	1,300	1,094	1,784
-Water	ha	305	2,227	1,573	2,532	1,842
Breakwater	km	3.5	10.5	11.5	14.0	15.0
Quays Length	km	15	10	50	25	65
Number of Berth	No.	82	50	200	132	282
Depth in the basin	M	7.2-14.5	7.0-19.0	7.0-22.5	7.0-19.0	7.0-22.5
Traffic Capacity	mil. Ton/year	63.5	20.0	170.0	83.5	233.5
-dry goods	mil. Ton/year	43.5	10.0	160.0	53.5	203.5
-liquid goods	mil. Ton/year	20.0	10.0	10.0	30.0	30.0
Maximum ship capacity						
-dry goods	D.W.T	65,000	150,000	165,000	150,000	165,000
-liquid goods	D.W.T	80,000	150,000	250,000	150,000	250,000

Source : “Constantza city & port map”, “Romania Ports 2000, Ministry of Transport”

### 2.2 Port Facilities

In northern and southern breakwaters, reparation and completion project are in progress. There still remain to be constructed the last 1 km of the Northern breakwater.

There are about 80 berths in the north port and about 50 berths in the south port. Each berth allocated for the specific cargo type and specific operator, however these days each operator tend to handle various kind of commodities at their berth. Fig. 2.2.1 shows the berths and its operators. Table 2.2.1 shows the name of the dock, name of the berth, length, design depth, present depth, typical usage and operator.

Table 2.2.1 Berths and main usage

Dock	Berth	Length (m)	Number of Berth	Design Depth (m)	Present Depth (m)	Typical Usage	Operator
1	Passenger	296	1		12.3		
	RoRo-5	99	1	13.5	6.8	Ro-Ro	
	RoRo-4	364	1	13.5	8.7	Ro-Ro	
	RoRo-3	91	1	13.5	10.9	Ro-Ro	
	RoRo-2	104	1	13.5	8.7	Ro-Ro	
	1-5	600	5	11.5	10.0	Scrap	Dezrobirea
	6-7	199	2	11.5	10.0	General Cargo	Dezrobirea
2	8	130	1	9.0	8.4	General Cargo	Phoenix
	9-10	168	2	9.0	6.6	(Technical Vessels)	
	11-12	138	2	8.3	8.3	Refrigerated products	Dezrobirea
	13-16	488	4	8.3	7.4	General Cargo	Dezrobirea
	17-18	224	2	8.3	8.3	Cereal	Agroexport
	19	128	1	8.3	7.6	Edible Oil & Molasses	Frial/Agroexpirt
	20	125	1	8.3	6.7	General Cargo	Dezrobirea
	21	125	1	8.3	6.7	Edible Oil & Molasses	Dezrobirea
	22	98	1	8.3	7.3	General Cargo	Phoenix
3	23	141	1	8.3	7.3	Cement	Decirom
	24	137	1	8.3	8.1	Cereal	Agroexport
3-5						<Shipyard>	SNC
6	30	131	1	11.5	8.7	<Shipyard>	SNC
	31-33	674	3	11.5	10.1	Cereal	Agroexport
	34	197	1	11.5	9.7	(Not for Cargo)	Petromar
	35-37	624	3	11.5	10.4	General Cargo	Socep
	38	206	1	11.5	10.4	Equipment	Umex
	39	200	1	13.5	11.9	Container	Umex
7	40	205	1	13.5	10.5	General Cargo, equipment	Umex
	41-43	625	3	13.5	10.5	General Cargo	Socep
	44	220	1	13.5	10.5	General Cargo	Umex
	45-46	448	2	13.5	10.5	Metal products, metal plates	Minmetal
	47-48	460	2	13.5	10.5	Cement, building material,	Decirom
8	49-50	464	2	13.5	8.9	Cement, building material,	Decirom
	51	235	1	13.5	8.5	Cement, building material,	Decirom
	52	241	1	13.5	8.7	Container	Socep
	53	220	1	13.5	8.7	Refrigerated goods	Frial
	54-57	936	4	13.5	10.2	Chemical Products	Chimpex
	58	181	1	13.5	9.4	Chemical Products	Chimpex
9	59-60	463	2	13.5	10.5	Chemical Products	Chimpex
	61-63	674	3	11.5	9.6	Chemical Products	Chimpex
	64-65	430	2	11.5	9.0	Ore, coal, coke	Minmetal
	66-67	430	2	13.5	9.0	Ore, coal, coke	Minmetal
	68	208	1	13.5	10.6	Cement	Sicim

Dock	Berth	Length (m)	Number of Berth	Design Depth (m)	Present Depth (m)	Typical Usage	Operator
10	69	327	1	13.5	11.6	Crude oil & oil product	Oil Terminal
	70	327	1	13.5	10.3	Crude oil & oil product	Oil Terminal
	71		1			(Not Operational)	Oil Terminal
11	72	327	1	13.5	12.2	Crude oil & oil product	Oil Terminal
	73	329	1	13.5	11.4	Crude oil & oil product	Oil Terminal
	74		1			(Not Operational)	Oil Terminal
12	75	326	1	14.0	12.1	Crude oil & oil product	Oil Terminal
	76	326	1	14.0	12.1	Crude oil & oil product	Oil Terminal
	77		1			(Not Operational)	Oil Terminal
	78	335	1	14.0	11.8	Bunkerage	Oil Terminal
1-South	79	405	1	19.0	17.8	Crude oil & oil product	Oil Terminal
	80-81	606	2	19.0	18.2	Ore, coal, coke	Comvex
	82	292	1	16.5	15.2	Ore, coal, coke	Comvex
	83-84	500	2	14.5	12.5	Ore, coal, coke	Comvex
	85	356	1	14.5	10.1	Ore, coal, coke	Minmetal
	86-87		2			(Under construction)	
	88-89	380	2	9.0	6	Barge Preparation	(Mast)
	90	191	1	7.0	6.0	For LPG Terminal	
River	91-93	600	3	7.0	4.1	For LPG Terminal	
	94-96	714	3	7.0	4.1	Ore, coal, coke	Comvex
Maritime Basin	97-99	718	3	7.0	3.4	(Barge repair)	
	100-101	383	2	7.0	4.3	Cereal (Rail->Barge)	(Mast)
	102-103	389	2	7.0	6.3	Bitumen	Sargent
	104	180	1	7.0	4.5	Cereals	Soya Plus
	105-107	330	3	9.0	8.0	Cereals	Soya Plus
	108-109	295	2	9.0	6.6	General cargo	Romtrans
	110-112	586	3	14.5	9.9	General cargo	Romtrans
	113	220	1	14.5	9.9	Cereals	Silotrans
	114	201	1	14.5	12.1	Cereals	Silotrans
	1S	115-118	904	4	14.5	13.8	General cargo
119		307	1	14.5	10.7	General cargo	FTZ/Mast
120		227	1	14.5	9.9	Ferry-Boat	SNTFM
121		214	1	14.5	13.6	Ro-Ro	MPAC
122		214	1	14.5	12.9	Building Materials, cement	Decirom
123		212	1	14.5	14.3		
124-125		441	2	16.5	14.0		Mast
2S,3S	126-130	1070	5	16.5	126,127=15.1		Mast(Berth129,130)
	131-137		7	16.5		Under construction	

Source: CPA, Constantza Port Handbook 2000-2001, etc



## **2.3 Cargo Handling Equipment**

### **(1) Evaluation and Conclusions**

- a. Cargo handling equipment at the North Port (historical area):  
Old fashioned, low efficiency, aged equipment, requiring much maintenance, repair, modernization, or demolition
- b. Cargo handling equipment at the South Port (newly constructing area):  
Relatively new equipment, life span can be prolonged by applying preventive maintenance, efficiency can be improved by introducing new technology.

For the analysis of present conditions of cargo handling equipment, following reference data was prepared for review:

Table 2.3.1-1 Present Conditions of Cargo Handling Equipment  
(Delivery Date, Capacity, etc.)

### **(2) Cargo Handling Capacity**

In order to estimate the port capacity, each berth capacity was evaluated by means of combined capacity taking, 1) quay wall capacity, 2) storage capacity and 3) cargo handling equipment capacity. In order to catch the present situation, a local consultant named IPTANA was temporarily employed by the study team to carry out the cargo handling capacity investigation throughout the port. The consultant worked well since it knows in details of facilities with introductory history and good access to the private operators.

As the results of studies, the following reference data have been prepared by IPTANA:

Table 2.3.1-2 Existing Cargo Handling Equipment Capacity

Table 2.3.1-3 Existing Cargo Handling Capacity of the Port of Constantza

Total capacity of cargo handling equipment at the Port is excessively sufficient for present cargo volume, except for containerized cargoes.

Note: At present (Dec. 2001), construction project of container terminal phase 1 financed by JBIC is smoothly under going at the South Port Pier S3. Selection of private operator for it is simultaneously undertaking between the applicants and CPA.

**Table 2.3.1-1 Present Conditions of Cargo Handling Equipment - 1/3**

Port of Constantza, Romania

Before 1970

From 1971 to 1980

From 1981 to 1990

After 1991

\*: Theoretical

No.	Name of Operator	Berth No.	Equipment						Handling Commodities
			Type	No.	Manufacturer's Name	Delivery Date	Lifting Load(tons)	Productivity* (tons/hour)	
01	ROTRAC S.A.	(RR4)	(See below, No. 08, UME X)	-	-	-	-	-	Loading/unloading general cargoes (construction material, timber, etc.)
02	S.C. DEZROBIREA S.	0 - 5	Jib Type Quay Crane	1	BOCSA	1994	16(in grab)/20(on hook)	-	Loading/unloading general cargoes (Steel scrap, etc.)
				2	Eberswalde	1964	10(on hook)	-	
				3	Eberswalde	1964	10(on hook)	-	
				4	BOCSA	1994	16(in grab)/20(on hook)	-	
				5	BOCSA	1964	5(in grab)/6.3(on hook)	-	
				6	BOCSA	1964	5(in grab)/6.3(on hook)	-	
				7	BOCSA	1994	16(in grab)/20(on hook)	-	
				8	Eberswalde	1964	10(on hook)	-	
				9	Eberswalde	1964	10(on hook)	-	
				10	BOCSA	1994	16(in grab)/20(on hook)	-	
				11	BOCSA	1994	16(in grab)/20(on hook)	-	
		6, 7	Jib Type Quay Crane	1	BOCSA	1964	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	BOCSA	1964	5(in grab)/6.3(on hook)	-	
		11, 12	Jib Type Quay Crane	1	Eberswalde	1955	3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	GANZ	1964	3(on hook)	-	
				3	GANZ	1964	3(on hook)	-	
				4	GANZ	1964	3(on hook)	-	
		13 - 16	Jib Type Quay Crane	1	GANZ	1964	3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	GANZ	1964	3(on hook)	-	
				3	GANZ	1964	3(on hook)	-	
4	GANZ			1964	3(on hook)	-			
5	GANZ			1964	3(on hook)	-			
6	GANZ			1964	3(on hook)	-			
20	Jib Type Quay Crane	1	Eberswalde	1964	5(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
		2	Eberswalde	1964	5(on hook)	-			
03	S.C. AGROEXPORT S	17, 18	Ship Loading Chute	1		1915	-	100	Loading grains
				2		1915	-	100	
				3		1920	-	100	
				4		1920	-	100	
				5		1930	-	100	
		24	Ship Loading Chute	1			-	100	Loading grains
				2			-	100	
		31 - 33	Jib Type Quay Crane	1	To be demolished		-	-	Unloading grains
				2	BOCSA	1978	16(in grab)/20(on hook)	-	
				3	BOCSA	1978	5(in grab)/6.3(on hook)	-	
				4	BOCSA	1978	16(in grab)/20(on hook)	-	
				5	BOCSA	1978	5(in grab)/6.3(on hook)	-	
				6	BOCSA	1978	16(in grab)/20(on hook)	-	
					Pneumatic Unloader	1	East Germany	1992	
			Floating Pneumatic Unloader	1	East Germany	1992	-	150	
		1	Buhler	1979	-	100			
04	S.C. FRIAL S.A.	19	Pipelines						Loading edible oil
		21	Jib Type Quay Crane	1	GANZ	1963	5(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	Eberswalde	1970	3.2(on hook)	-	
		53	Jib Type Quay Crane	1	BOCSA	1973	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (refrigerated food stuff, etc.)
				2	BOCSA	1973	5(in grab)/6.3(on hook)	-	
3	BOCSA			1973	5(in grab)/6.3(on hook)	-			
05	DECIROM S.A.	23	Jib Type Quay Crane	1	BOCSA	1978	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	East Germany	1979	5(on hook)	-	
				3	East Germany	1979	5(on hook)	-	
				4	East Germany	1979	5(on hook)	-	
		47, 48	Jib Type Quay Crane	1	BOCSA	1974	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	BOCSA	1974	5(in grab)/6.3(on hook)	-	
				3	BOCSA	1978	5(in grab)/6.3(on hook)	-	
				4	BOCSA	1978	5(in grab)/6.3(on hook)	-	
		49,50	Jib Type Quay Crane	1	BOCSA	1974	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)
				2	BOCSA	1974	5(in grab)/6.3(on hook)	-	
				3	BOCSA	1974	5(in grab)/6.3(on hook)	-	
				4	BOCSA	1974	5(in grab)/6.3(on hook)	-	
				5	BOCSA	1978	16(in grab)/20(on hook)	-	
				6	BOCSA	1978	5(in grab)/6.3(on hook)	-	
				7	BOCSA	1978	5(in grab)/6.3(on hook)	-	
				8	BOCSA	1978	5(in grab)/6.3(on hook)	-	
				9	BOCSA	1978	5(in grab)/6.3(on hook)	-	
06	S.C. PHOENIX S.A.	8	-	-	-	-	-	-	Loading/unloading general cargoes (construction material, timber, etc.)
				-	-	-	-	-	

**Table 2.3.1-1 Present Conditions of Cargo Handling Equipment - 2/3**

Port of Constantza, Romania

Before 1970

From 1971 to 1980

From 1981 to 1990

After 1991

\*: Theoretical

No.	Name of Operator	Berth No.	Equipment								
			Type	No.	Manufacturer's Name	Delivery Date	Lifting Load(tons)	Productivity* (tons/hour)	Handling Commodities		
07	SOCEP S.A.	35 - 37	Jib Type Quay Crane	1	BOCSA	1978	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				4	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				5	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				6	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				7	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				8	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				9	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				10	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				11	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				12	BOCSA	1978	5(in grab)/6.3(on hook)	-			
		41 - 43	Jib Type Quay Crane	1	BOCSA	1978	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				4	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				5	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				6	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				7	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				8	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				9	BOCSA	1981	16(in grab)/20(on hook)	-			
				10	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				11	BOCSA	1978	5(in grab)/6.3(on hook)	-			
				12	BOCSA	1978	5(in grab)/6.3(on hook)	-			
51 - 52	Ship to Shore Gantry Crane	1	Takraf(East Germany)	1976	36(under spreader)	-	Loading/unloading containers				
		2	Takraf(East Germany)	1976	36(under spreader)	-					
	Storage Yard	Rail Mounted Gantry Crane	1	IPMPB(Pitesti)	1975	32(under spreader)		-	Stacking/unstacking containers		
			2	IPMPB(Pitesti)	1975	32(under spreader)		-			
08	UMEX S.A.	RR 4	Jib Type Quay Crane (owned by UMEX and rented to ROTRAC on an as required basis)	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1979	16(in grab)/20(on hook)	-			
				4	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				5	BOCSA	1979	5(in grab)/6.3(on hook)	-			
		38	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (containers, construction material, timber, etc.)		
				2	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1979	16(in grab)/20(on hook)	-			
		39	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (containers, construction material, timber, etc.)		
				2	BOCSA	1979	16(in grab)/20(on hook)	-			
				3			50(on hook)	-			
		40	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (containers, construction material, timber, etc.)		
				2	BOCSA	1979	16(in grab)/20(on hook)	-			
				3	BOCSA	1979	5(in grab)/6.3(on hook)	-			
		44	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (containers, construction material, timber, etc.)		
				2	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1979	5(in grab)/6.3(on hook)	-			
		09	S.C. MINMETAL S.A.	45, 46	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (steel products, construction material, etc.)
						2	BOCSA	1979	5(in grab)/6.3(on hook)	-	
						3	BOCSA	1979	5(in grab)/6.3(on hook)	-	
						4	BOCSA	1979	16(in grab)/20(on hook)	-	
						5	BOCSA	1979	16(in grab)/20(on hook)	-	
				64 - 66	Gantry Type Ship Unloader	1	Ceretti Tanfani(Italy)	1970	20(in grab)	-	Unloading coals, cokes, ores
						2	Ceretti Tanfani(Italy)	1970	20(in grab)	-	
3	Ceretti Tanfani(Italy)					1978	20(in grab)	-			
4	Ceretti Tanfani(Italy)					1978	20(in grab)	-			
5	Ceretti Tanfani(Italy)					1983	20(in grab)	-			
6	Ceretti Tanfani(Italy)					1983	20(in grab)	-			
Storage Yard No. 1	Portal Type Stacker			1	MAN(Germany)	1971	-	2,000	Stacking/reclaiming coals, cokes, ores		
				1	MAN(Germany)	1971	-	1,000			
Storage Yard No. 2	Boom Type Stacker			1		1983	-	2,000	Stacking/reclaiming coals, cokes, ores		
				2		1983	-	2,000			
	Bucket Wheel Reclaimer			1		1983	-	1,000			
				2		1983	-	1,000			
				3		1983	-	1,000			
85	Barge Loader			1		1983	-	2,000	Loading coals, cokes, ores		
				2		1983	-	2,000			

**Table 2.3.1-1 Present Conditions of Cargo Handling Equipment - 3/3**

Port of Constantza, Romania

Before 1970

From 1971 to 1980

From 1981 to 1990

After 1991

\*: Theoretical

No.	Name of Operator	Berth No.	Equipment						Handling Commodities		
			Type	No.	Manufacturer's Name	Delivery Date	Lifting Load(tons)	Productivity* (tons/hour)			
10	S.C. CHIMPEX S.A.	54 - 57	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				4	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				5	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				6	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				7	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				8	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				9	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				10	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				11	BOCSA	1987	16(in grab)/20(on hook)	-			
				12	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				13	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				14	BOCSA	1979	5(in grab)/6.3(on hook)	-			
10	S.C. CHIMPEX S.A.	58	Jib Type Quay Crane	1	BOCSA	1979	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1979	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1987	16(in grab)/20(on hook)	-			
		59,60	Jib Type Quay Crane	1	BOCSA	1987	16(in grab)/20(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1987	16(in grab)/20(on hook)	-			
		61	Ship Loader(bulk or bag) Ship Loader(bulk)	1	Forder Technik	1977	-	200	Loading grains		
				2	Forder Technik	1981	-	200			
		62	Gantry Type Ship Unloader	1	MAN(Germany)	1978	25(in grab)	?	Unloading phosphate ores		
				2	MAN(Germany)	1978	25(in grab)	?			
		63	Ship Loader(bulk)	1	-	-	-	200	Loading fertilizers		
				2	-	-	-	200			
		11	S.C. SICIM S.A.	67 - 68	Jib Type Quay Crane	1	BOCSA	-	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (bagged cement, etc.)
						2	BOCSA	-	5(in grab)/6.3(on hook)	-	
					Ship Loader(bulk)	1	-	1985	-	400	
2	-					1983	-	400			
Ship Loader(bulk or bag)	3	-	1984	-	?						
	4	-	-	-	?						
12	S.C. OIL TERMINAL S.A.	69 - 79	Loading/Unloading Arm Set	1	-	1975	-	?	Loading/unloading liquid bulks(crude oil, chemical liquids, etc.)		
				2	-	1975	-	?			
				3	-	1975	-	?			
				4	-	1975	-	?			
				5	-	1975	-	?			
				6	-	1975	-	?			
13	COMVEX S.A.	80 - 84	Gantry Type Ship Unloader	1	Kone(Finland)	1999	52(incl. grab)	?	Unloading coals, cokes, ores		
				2	Voest Alpine(Austria)	1988	50(incl. grab)	?			
				3	Voest Alpine(Austria)	1988	50(incl. grab)	?			
		Storage Yard	Stacker/Reclaimer	1	(Romanian)	1990	-	?	Stacking/reclaiming coals, cokes, ores		
				2	(Romanian)	1990	-	?			
				3	(Romanian)	1993	-	?			
				4	(Romanian)	1994	-	?			
				5	(Romanian)	1999	-	?			
		94 - 96	Barge Loader	1	MKF(Romanian)	1988	-	?	Loading coals, cokes, ores		
				2	MKF(Romanian)	1990	-	?			
3	MKF(Romanian)			1996	-	?					
14	ROMTRANS S.A.	107 - 112	Jib Type Quay Crane	1	BOCSA	1992	5(in grab)/6.3(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1992	5(in grab)/6.3(on hook)	-			
				3	BOCSA	1992	5(in grab)/6.3(on hook)	-			
				4	BOCSA	1992	5(in grab)/6.3(on hook)	-			
				5	BOCSA	1992	16(in grab)/20(on hook)	-			
				6	BOCSA	1992	16(in grab)/20(on hook)	-			
		115 - 118	Jib Type Quay Crane	1	BOCSA	1992	16(in grab)/20(on hook)	-	Loading/unloading general cargoes (construction material, timber, etc.)		
				2	BOCSA	1992	16(in grab)/20(on hook)	-			
				3	BOCSA	1992	5(in grab)/6.3(on hook)	-			
				4	BOCSA	1992	5(in grab)/6.3(on hook)	-			
				5	BOCSA	1992	5(in grab)/6.3(on hook)	-			
				6	BOCSA	1992	5(in grab)/6.3(on hook)	-			
15	SILOTRANS S.R.L.	113	Pneumatic Barge Unloader	1	Christianson	1998	-	400	Unloading grains		
				2	Christianson	1998	-	400			
16	FREE ZONE ADMINISTRATION	119	-	1	Neuro	1998	-	800	Loading grains		
				2	-	-	-	-			
17	SNTFM - Ferry Boat Agency	119	-	1	-	-	-	-	Loading/unloading general cargoes		
				2	-	-	-	-			
18	CPA Ro-Ro	120	-	1	-	-	-	-	Loading/unloading general cargoes		
				2	-	-	-	-			
19	MAST Co. S.A.	-	-	1	-	-	-	-	Loading/unloading grains		
				2	-	-	-	-			



**Table 2.3.1-2 Existing Cargo Handling Equipment Capacity (Estimated by IPTANA)**

Operator	Operating berth	Equipment	Calculation of equip't productivity											Productivity of equipment [tons/year]	No. of equipment [no]	TOTAL Productivity of equipment [t/year]	Factor of berth occupancy [berth/occup]	Quay Operating Capacity [t/year]	Total Capacity of Berths [t/year]		
			[tons/cycle]	[Cycles/hour]	[minutes/cycle]	[minutes/occupancy]	[hours/day]	[hours/year]	[days/year]	[days/year]	[days/year]	[days/year]	[days/year]								
1 DEZROBIREA	0-5	Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	2	202,672	x	0.5	101,336	633,559
		Quay crane EBERSWALDE 101	10	3.88	x	16.30	x	22	x	0.85	x	365	x	111,634	x	4	446,536	x	0.5	223,268	223,268
		Quay crane BOCSA 161	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	5	617,910	x	0.5	308,955	308,955
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	2	202,672	x	0.5	101,336	101,336
		Quay crane EBERSWALDE 31	3	4.63	x	12.50	x	22	x	0.85	x	365	x	85,618	x	4	342,472	x	0.5	171,236	171,236
2 AGROEXPORT	17-18	Quay crane GANZ 31	3	4.63	x	12.50	x	22	x	0.85	x	365	x	85,618	x	6	513,708	x	0.5	256,854	256,854
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	2	202,672	x	0.5	101,336	101,336
		Ship loading Chute	17-18			41.00	x	22	x	0.85	x	365	x	280,000	x	5	1,400,000	x	0.5	700,000	700,000
		Quay crane BOCSA 51	5	20.81	x	42.14	x	22	x	0.85	x	365	x	288,406	x	2	576,812	x	0.5	288,406	288,406
		Quay crane BOCSA 161	8	14.12	x	91.50	x	22	x	0.85	x	365	x	626,124	x	3	1,878,372	x	0.5	939,186	939,186
3 FRIAL	53	Pneumatic Unloader	250.00			250.00	x	22	x	0.85	x	365	x	1,711,050	x	2	3,422,100	x	0.5	1,711,050	1,711,050
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	3	304,008	x	0.5	152,004	152,004
		Quay crane EBERSWALDE 31	3	4.63	x	12.50	x	22	x	0.85	x	365	x	85,618	x	1	85,618	x	0.5	42,809	42,809
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	1	101,336	x	0.5	50,668	50,668
		Pipelines	5			1,100,000	x	22	x	0.85	x	365	x	1,100,000	x	1	1,100,000	x	0.5	550,000	550,000
4 DECROM	23	Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	4	405,344	x	0.5	202,672	202,672
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	14	1,418,704	x	0.5	709,352	709,352
		Quay crane BOCSA 161	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	1	123,582	x	0.5	61,791	61,791
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	23	2,330,728	x	0.5	1,165,364	1,165,364
		Portainer 40T	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	1	123,582	x	0.5	61,791	61,791
5 SOCEP	35-37/41-43	Container 40T	118.66			118.66	x	22	x	0.85	x	365	x	810,000	x	2	1,620,000	x	0.5	810,000	810,000
		Conveyor TEU/DEAR	13.00			13.00	x	22	x	0.85	x	365	x	90,000	x	2	180,000	x	0.5	90,000	90,000
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	5	506,680	x	0.5	253,340	253,340
		Quay crane BOCSA 161	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	3	370,746	x	0.5	185,373	185,373
		Quay crane BOCSA 50T	25	4	x	50.00	x	22	x	0.85	x	365	x	342,210	x	1	342,210	x	0.5	171,105	171,105
6 UMEX	44	Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	3	304,008	x	0.5	152,004	152,004
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	4	405,344	x	0.5	202,672	202,672
		Quay crane BOCSA 161	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	1	123,582	x	0.5	61,791	61,791
		Quay crane BOCSA 51	5	5.68	x	26.98	x	22	x	0.85	x	365	x	184,600	x	3	553,800	x	0.5	276,900	276,900
		Unloader 20T	10	87.8	x	44.54	x	22	x	0.85	x	365	x	4,000,000	x	6	24,000,000	x	0.5	12,000,000	12,000,000
8 CHIMPEX	54-63	Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	15	1,520,040	x	0.5	760,020	760,020
		Quay crane BOCSA 161	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	4	494,328	x	0.5	247,164	247,164
		Ship Unloader (buib) 25T*	16	8.82	x	1060.39	x	22	x	0.85	x	365	x	6,000,000	x	2	12,000,000	x	0.5	6,000,000	6,000,000
		Ship Unloader (buib)	16			246.77	x	22	x	0.85	x	365	x	1,684,500	x	4	6,738,000	x	0.5	3,369,000	3,369,000
		Ship Loader (buib)	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	2	202,672	x	0.5	101,336	101,336
10 OIL TERMINAL	69-79	Ship Loader (buib)	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	2	202,672	x	0.5	101,336	101,336
		Loading/Unloading Arm	69-79			20,868	x	22	x	0.85	x	365	x	2,400,000	x	2	4,800,000	x	0.5	2,400,000	2,400,000
		Ship Unloader 50T*	80-84			1,200	x	22	x	0.85	x	365	x	8,000,000	x	3	24,000,000	x	0.5	12,000,000	12,000,000
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	8	810,688	x	0.5	405,344	405,344
		Pneumatic Unloader	113-114			18.05	x	22	x	0.85	x	365	x	123,582	x	4	494,328	x	0.5	247,164	247,164
11 COMVEX	107-112; 115-118	Quay crane BOCSA 161	16	3.76	x	18.05	x	22	x	0.85	x	365	x	123,582	x	2	2,000,000	x	0.5	1,000,000	1,000,000
		Pneumatic Unloader	113-114			2,000,000	x	22	x	0.85	x	365	x	2,000,000	x	1	2,000,000	x	0.5	1,000,000	1,000,000
		Ship loader					x														
		Quay crane BOCSA 51	5	4.23	x	14.81	x	22	x	0.85	x	365	x	101,336	x	2	202,672	x	0.5	101,336	101,336
		Ship loader					x														
12 ROMTRANS	113-114	Ship loader					x														
		Ship loader					x														
		Ship loader					x														
		Ship loader					x														
		Ship loader					x														
13 SILOTRANS	113-114	Ship loader					x														
		Ship loader					x														
		Ship loader					x														
		Ship loader					x														
		Ship loader					x														

**Note:** Unloader 20T, 25 T, 50T Tons/hour multiply with 0.82 (moving tractor shovels in ship holes)  
The calculation of Berths Capacity was realised on base of Quay Crane theory

**Table 2.3.1 – 3 Existing Cargo Handling Capacity of the Port of Constantza**

(Estimated by IPTANA)

No.	Operator	Operating Area [Berths]	Quay Operating Capacity [Tons/Year]	Storage Capacity		Railway Capacity [Tons/Year]
				Simultaneous [Tons]	Annual [Tons/Year]	
1	DEZROBIREA	0 - 5	633.559	78.000	858.000	1.910.000
		6 - 10	101.336	27.430	301.730	195.000
		11 - 12	171.236	80.158	881.738	490.000
		13 - 16	256.854	73.528	808.808	650.000
		20	101.336	24.978	274.760	171.250
2	AGROEXPORT	17 - 18	700.000	90.000	990.000	1.100.000
		31 - 33	2.938.642	-	-	3.005.000
3	FRIAL	53	152.004	8.648	95.128	200.000
		21	93.477	3.900	42.900	171.250
		19	550.000	20.000	140.000	550.000
4	DECIROM	23	202.672	86.018	946.202	342.500
		47 - 50	771.143	253.500	2.788.500	1.350.000
5	SOCEP	35 - 37 ; 41 - 43	1.227.155	174.143	1.915.571	2.333.333
		51 - 52	810.000 [90,000 TEU/year]	39.600 [4,400 TEU/year]	792.000 [88,000 TEU/year]	675.000 [75,000 TEU/year]
6	UMEX	38 - 40	609.818	290.600	2.034.200	1.166.667
		44	152.004	300.000	2.100.000	350.000
			264.463	128.104	1.409.142	-
7	MINMETAL	45 - 46	581.714	553.729	3.876.100	675.000
		64 - 67	12.000.000	547.960	9.863.280	10.848.000
		85	-	-	-	-
8	CHIMPEX	54 - 63	10.376.184	163.606	1.800.000	3.980.000
9	SICIM	68	2.501.336	63.400	443.800	2.712.000
10	OIL TERMINAL	69 - 79	36.000.000	640.000	36.000.000	-
11	COMVEX	80 - 84	12.000.000	4.200.000	75.600.000	6.000.000
12	ROMTRANS	107 - 112 ; 115 - 118	652.508	639.090	7.029.994	3.300.000
13	SILOTRANS	113 - 114	2.000.000	100.000	2.000.000	400.000
<b>TOTAL</b>			<b>85.847.441</b>	<b>8.586.392</b>	<b>152.991.853</b>	<b>42.575.000</b>

## **2.4 Inland Transport facilities in the port**

There are four transport modes connected to and from the port, namely railways, roads, canals and pipelines. In addition, there are two Ro-Ro terminals and one ferry terminal in the port.

The total length of the railway in the port reaches 144km, formed by marshalling yards and railways along the quay (transfer cargo directly from the vessel to wagons and vice versa) and behind the quay (transfer cargo from wagons to warehouses and platform and vice versa). Almost every berth has direct rail access.

There are four railways stations in the port area, namely (a) Constantza Port A (permitting the access and operation to the berths 1-24), (b) Constantza Port B (for berths 25-48), (c) Constantza Port Mol 5 (for berths 49-78) and (d) Constantza South Port Ferry Boat (79-135).

The total length of the road in the port is about 100km. There are 10 road access gates to the port area. Gates 5, 6, and South Port are major access points for cargo transport.

In the Constantza south port area, there is the entrance of the Danube-Black Sea canal. Length of the canal is 64.4 km, breadth of waterways is 90 m, and canal water depth is 7 m. The canal connects the port of Constantza and the Danube at Cernavoda, 300km upstream from its mouth of the Danube.

## **2.5 Port Activities**

Inspectorate of Civil Navigation (ICN)

Its duties cover not only the port marine activities, but also control of Romanian ships in international waters and outside ports in national navigable waterways. It keeps the ships registries and certification and is also in charge with seafarers certification.

Pilotage

The ports of Constantza, Midia and Mangalia are adequately provided with pilotage services. Pilotage is compulsory for all vessels except naval, public service and salvage vessels and leisure craft. The ship's master must notify Constantza Port Control at least 12 hours prior to arrival at the roadstead.

Towage

Tug assistance is compulsory within the port area for vessels over 1,000NRT(net register tonnage), for vessels under 1,000 NRT towage needs are established depending on the weather conditions and the mooring area. The tug is allocated depending on NRT, the vessels cargo, the transfer zone, and other conditions. The towage services in the roadstead and in the port are continuously performed, 24 hours a day.

## **2.6 Cargo Operations**

There are 18 major cargo-handling operators at Constantza Port in December 2000. Table 2.6.1 shows the major terminal operators.

## **2.7 Evaluation of the Existing Development Plans**

Identified Existing development plans projects are shown as follows: South Port New Container Terminal, Breakwater Rehabilitation, LPG terminal, Bitumen terminal, Soya Bean terminal, Grain Terminal in the north port, Grain Terminal in the south port, International Business center, Passenger maritime station, Waste Management and Dredging Project.

Table 2.6.1 Major Terminal Operators in the Port of Constantza

Operator	Berth		Major Cargo	Handling Volume in 2000 (thousand ton)	Remarks
	No. of Berth	Berth Length (m)			
Rotrack	North: Ro-Ro		Lumber, Construction materials	77	Ro-Ro handling
Dezrobirea	North: 14	1,691	Scrap, Copper (Roll)	486	
Phoenix	North: 2	230	Wood, Chemicals, Metal product, Foods	55	
Agroexport	North: 6	1,035	Cereal, Foods, General cargo	663	Silo 30,000 t x 3
Frial	North: 3	458	Cold foods, Chemical product	54	
Decirom	North: 6 South: 1	1,514	Lumber, Cement, Coal, Cokes	924	
Socep	North: 7	1,490	Container, Metal product, Cereal, Chemical product, General cargo	2085	
Umex	North: 4	831	Metal product, Lumber, Foods, General cargo, Container	481	
Minmetal	North: 6 South: 1	1,664	Iron ore, Bauxite, Coal, Cokes, Metal or nonmetal, Aluminum, Copper, Steel product, Cereal, Salt, Lumber	971	
Chimpex	North: 10	2,269	Cereal, Chemicals, Phosphoric acid	1211	
Sicim	North: 1	208	Cement	478	
Oil Terminal	North: 6 South: 1	2,369	Crude oil, Gasoline, Chemicals, Motor oil	3,966	
Comvex	North: 9	2,112	Coal, Iron ore, Bauxite	4,066	
Romtrans	South: 9	1,785	Steel product, Cereal, Lumber, General cargo	1,414	
Silotrans	South: 2	421	Cereal	257	
Mast	South: 6	1,168	Cereal	960	
Soia Plus	South: 4	510	Cereal	-	
T.T.S	South: 1	192	Cereal	-	
U.S.A	South: 1	177	-	-	
Sargent	South: 1	212	-	-	
A.Z.L	South: 1	338	-	-	

## Chapter 3 Cargo Movement related to the Port

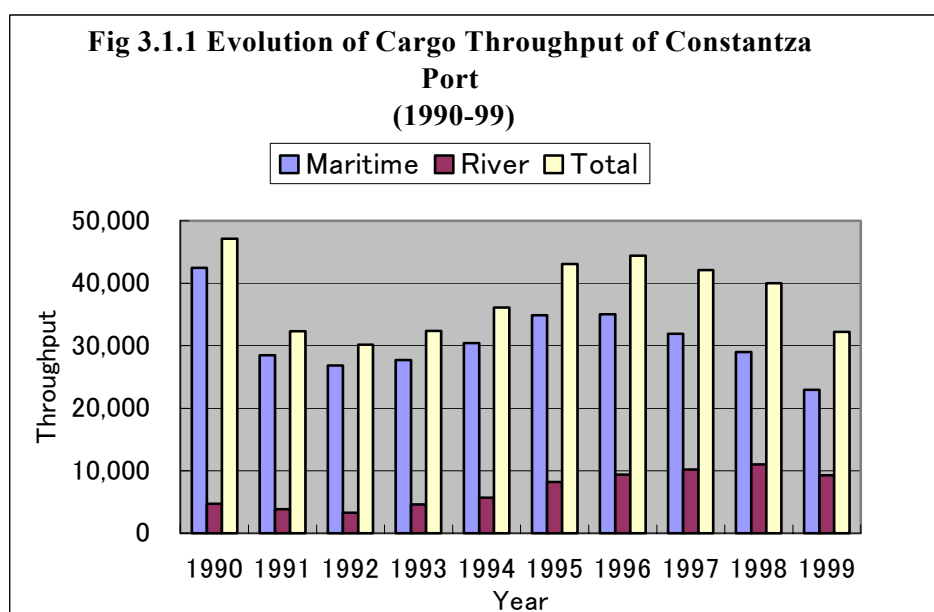
### 3.1 Summary of the Cargo Traffic at the Port

The cargo traffic at the Port of Constantza reached a peak in 1988-89, then decreased abruptly until 1992, and has since repeated expansion and contraction according to variations in the economic activities in Romania. The greater part of the cargo traffic at the Port of Constantza is maritime traffic. River traffic, which accounted for only about 10% of the whole in the beginning of the 1990s, increased in ratio gradually and reached 29% in 1999. (See Tables 3.1.1 to 3.1.2 and Fig. 3.1.1 to 3.1.3)

**Table 3.1.1 Evolution of Cargo Throughput of Constantza Port (1994-99)**  
( 1,000 Ton)

	Maritime		River		Total
1990	42,452	( 90 )	4,669	( 10 )	47,121
1991	28,486	( 88 )	3,836	( 12 )	32,322
1992	26,882	( 89 )	3,284	( 11 )	30,166
1993	27,746	( 86 )	4,611	( 14 )	32,357
1994	30,410	( 84 )	5,726	( 16 )	36,136
1995	34,852	( 81 )	8,217	( 19 )	43,069
1996	35,013	( 79 )	9,379	( 21 )	44,392
1997	31,910	( 76 )	10,177	( 24 )	42,087
1998	29,011	( 73 )	10,989	( 27 )	40,000
1999	22,956	( 71 )	9,252	( 29 )	32,208

Source : CPMA

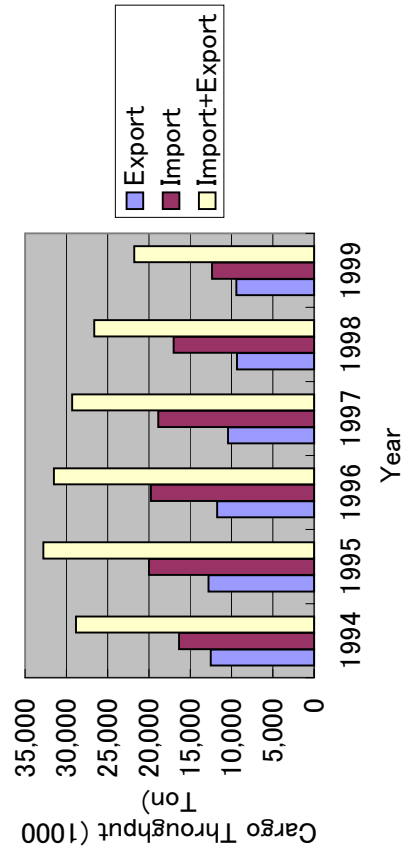


**Table 3.1.2 Maritime Cargo Throughput of the Port of Constantza (1994-1999)**

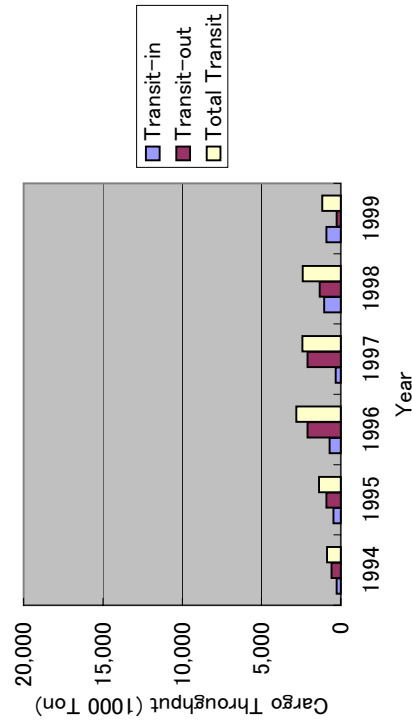
	Loading			Discharging			Total			Grand Total							
	Export	Transit-in	Cabotage	Total	Import	Transit-out	Cabotage	Total	Import+Export	Total Transit	Cabotage	Total					
1994	12,511	268	21	12,800	( 42 )	16,339	591	680	17,610	( 58 )	28,850	( 95 )	859	( 3 )	701	( 2 )	30,410
1995	12,772	458	0	13,229	( 38 )	20,014	910	699	21,622	( 62 )	32,785	( 94 )	1,368	( 4 )	699	( 2 )	34,852
1996	11,744	705	0	12,449	( 36 )	19,765	2,099	700	22,564	( 64 )	31,509	( 90 )	2,804	( 8 )	700	( 2 )	35,013
1997	10,427	329	0	10,756	( 34 )	18,883	2,093	178	21,154	( 66 )	29,310	( 92 )	2,422	( 8 )	178	( 1 )	31,910
1998	9,339	1,059	0	10,398	( 36 )	17,007	1,336	0	18,343	( 64 )	26,616	( 93 )	2,395	( 8 )	0	( 0 )	28,741
1999	9,413	914	0	10,326	( 45 )	12,370	260	0	12,629	( 55 )	21,782	( 95 )	1,173	( 5 )	0	( 0 )	22,956

Source:CPMA

**Fig. 3.1.2 Evolution of Maritime Cargo Throughput**

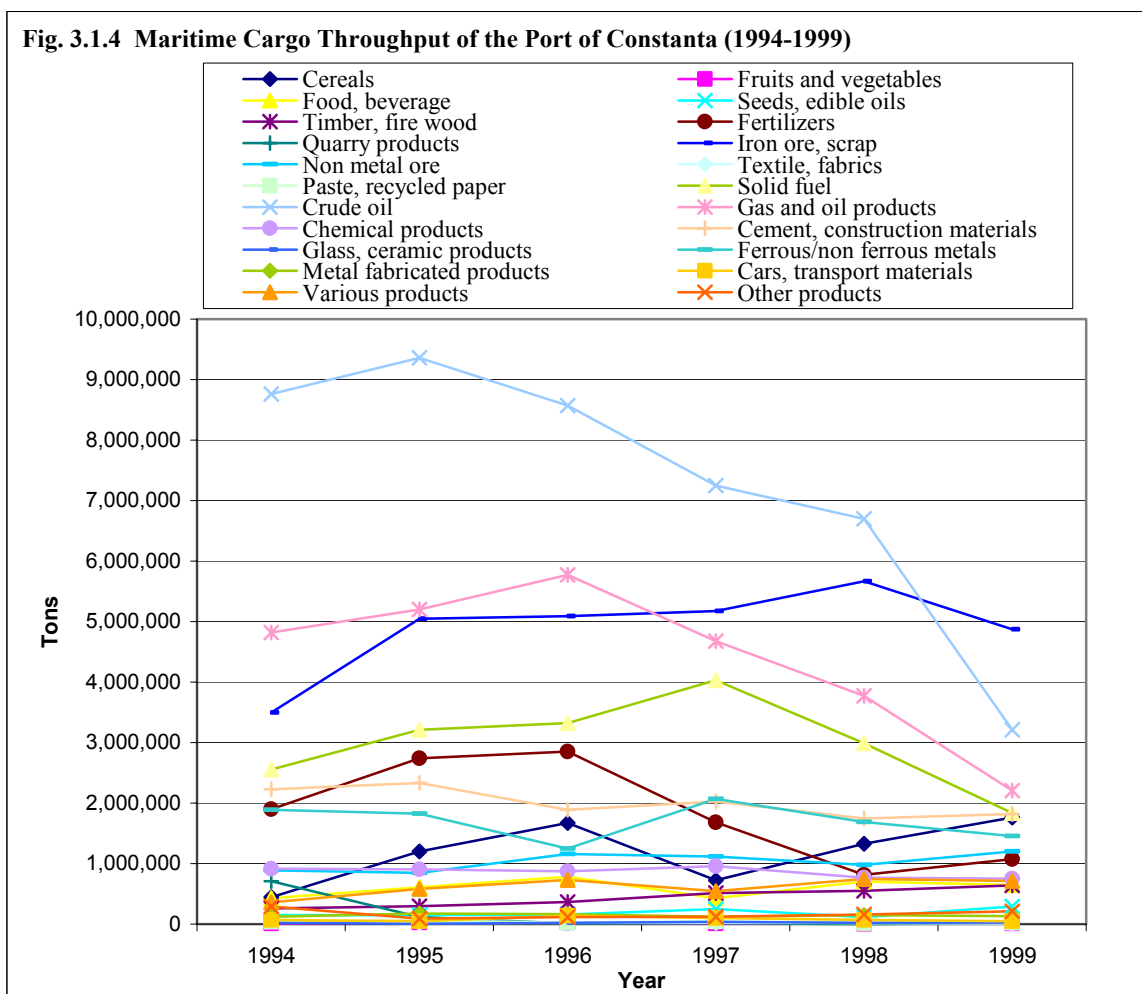


**Fig. 3.1.3 Evolution of Transit Cargo Throughput (1994-99)**



When the transition of the maritime traffic at the Port of Constantza for the past six years is viewed for each commodity, abrupt decreases in crude oil, oil products and solid fuel are remarkable. It seems that the recent rise in the international energy prices has had a serious effect on the Romanian economy. The traffic of imported iron ore essentially tends to decrease. However, because iron ore is put in the same category as steel scrap, the traffic of iron ore tends to remain flat or increase a little reflecting the recent increase in scrap exports from Romania. (See Fig. 3.1.4)

The traffic of cereals and timber has increased. The traffic of other cargo, i.e., general cargo has for the past six years developed at a constant value without increase or decrease. The fact that the amount of handled containers has increased rapidly for the past six years was described in the previous section. This is not because of an increase in the traffic of containerizable cargo itself, such as general cargo, but because of the progress of containerization of such cargo.





### 3.2 Origin and Destination of the Cargo by Mode

As basic data on the basis of which approximate answers to these questions can be derived, JICA Study Team used the data base created in an investigation conducted as part of the Phare Program (a Study titled "Traffic Forecast on the Pan European Transport Corridor of Helsinki", August 1999). In this database, each European country is divided into some economic areas on the basis of the TINA Network (network generated in the study titled "Transport Infrastructure Needs Assessment in Central and Eastern Europe", June 1999) and the cargo traffic between these areas as of 1996 is grasped through the use of customs statistics and trade statistics. In the case of Romania, the country is divided into eight economic areas and the traffic with each area in the country, the traffic with other countries and the traffic within each area in the country are kept in this data base. The Port of Constantza belongs to the Romania South East Area. Besides the Port of Constantza, river-sea ports such as Garati, Braila and Turcea also belong to this area. At these ports, however, river transport is predominant and the maritime traffic at these ports is much smaller than that at the Port of Constantza. Therefore, on the assumption that the traffic in the South East Area is almost equal to the traffic at the Port of Constantza, the origins and destinations of the cargo handled at the Port of Constantza were analyzed with the aid of this database.

#### 3.2.1 Cargo Going via the Port of Constantza (1996)

The tonnage of cargo unloaded or loaded at the Port of Constantza and the tonnage of the cargo transported to the hinterland countries and transport modes adopted for the transport of the cargo to the countries as well as other area in Romania are analysed in this Study. The above cargo is described for each main commodity. Tables 3.2.1 and 3.2.2 briefly summarize the flow of the cargo.

Table 3.2.1 Unloading Cargo at the Constantza Port (1996) (1,000 ton)

		To Romania	Outward To other Countries	<b>Total</b>
Unloading at Constantza	IWW	1,298	1,021	<b>2,319</b>
	Rail	13,641	808	<b>14,449</b>
	Road	6,880	339	<b>7,219</b>
<b>24,984</b>	<b>Total</b>	<b>21,819</b>	<b>2,168</b>	<b>23,987</b>

IWW: Inland Waterways

Table 3.2.2 Loading Cargo at the Constantza Port (1996) (1,000 ton)

		From Romania	Inward From other Countries	<b>Total</b>
Loading at Constantza	IWW	47	347	<b>394</b>
	Rail	9,683	1,888	<b>11,571</b>
	Road	6,792	267	<b>7,059</b>
<b>12,423</b>	<b>Total</b>	<b>16,522</b>	<b>2,502</b>	<b>19,024</b>

IWW: Inland Waterways

The following points become apparent from these analysis:

- [1] Main commodities discharged at the Port of Constantza are industrial raw materials and energy raw materials, such as crude oil, petroleum products, iron ore and solid mineral fuel.
- [2] Almost all the cargo discharged at the Port of Constantza is transported to within Romania and the volume of cargo transported to other hinterland countries accounts for not more than 10% of the whole. For the modes of transport to within the country, rail transport is most prevalent (63%). Road transport ranks second (32%) and the proportion of inland water transport is very low. The volume of transport by barge to Garati Port, which belongs to the Romania South East Area and its traffic (river) approximately eight million tons, however, thus is not included in the statistics.
- [3] Main commodities loaded at the Port of Constantza are grain, building materials such as cement, fertilizer, industrial products such as steel products, petroleum products and agricultural products.
- [4] Although almost all cargo loaded at the Port of Constantza is transported from inside Romania, the volume of cargo transported from other hinterland countries accounts for about 10%. Main transport modes adopted for the transport from within the country to the Port of Constantza are rail transport (59%) and road transport (41%). The ratio of inland water transport is less than 10% excluding traffic in the same areas.

### 3.2.2 Origins and Destinations of the Seaborne Cargo handled at the Port

This Study also covers the analysis of the origins of the seaborne cargo discharged at the Port for each area, as well as the destinations of the seaborne cargo loaded at the Port by area.

The following points become apparent from these analysis:

- [1] Main exporting countries of the cargo discharged at the Port of Constantza are Russia and former CIS countries, mainly Russia (30%), Middle East and North African countries (21%), Asian and Oceania countries (21%), Central and South American countries (8%) and EU and Western European countries (8%). The commodities exported from the above four main areas are crude oil, oil products, coal and iron ore and are all bulk cargo.
- [2] The transport mode for 70% of the cargo imported by Romania is marine transport. However, half of the cargo imported from former CIS countries is transported by rail, and 24% of the cargo transported from EU and Western European countries is transported by road and 14% by rail. In the case of the cargo imported from CEEC, 42% is transported by rail, 23% by road and 19% by IWW, whereas the proportion of marine transport accounts for only 15%.
- [3] The principal partners importing the seaborne cargo loaded at the Port of Constantza are Middle East and North African countries (53%), thus forming an overwhelming proportion. Agricultural products, construction materials including cement, fertilizer, metal products including steel, petroleum products, etc., are commodities exported from Romania to this area. Further importing partners are Asian countries (19%), EU and Western European countries (10%), and Mediterranean countries (10%). Although the volume of exports from Romania to CEEC is large, there is no cargo exported by marine transport.
- [4] The transport mode for 67% of the cargo exported by Romania is marine transport. However, almost all cargo exported to former CIS countries is transported by rail and the proportion of marine transport is very low. In the case of the cargo exported to CEEC (Central & Eastern European Countries), 67% is by rail, 22% by IWW and 7% by road, whereas the proportion of marine transport accounts for only 7%. In the case of the cargo exported to EU and Western European countries, 31% is transported by road, 21% by rail and 10% by IWW and marine transport accounts for 38%.

### **3.3 Traffic Potential of the Port of Constantza with Surrounding Countries**

#### **3.3.1 Size of Economy and Trade Volume**

Tables 1.2.1 and 1.2.2 show the 1998 values of population, size of economy of CEEC, Black sea countries, and Caucasia and Central Asian countries. Table 1.2.3 also shows the trade volume of the surrounding countries. Because of the limited availability of data capable of comparison in list form including Caucasia and Central Asian countries, data is cited from World Development Indicators (World Bank, 2000) in the present survey.

With the exception of Kazakhstan and Uzbekistan, both the population and the scale of economic activities (GDP and trade volume) of Caucasia and Central Asian countries that the Port of Constantza aims as a market are smaller than those of Romania by an order of magnitude, and it will be a long time before the trade and traffic in this area develop to substantial volumes. For example, even if an annual growth rate of 8% continues for a decade, the scale of economy develops to only 2.2 times.

Who are the trading partners of Kazakhstan and Uzbekistan? Table 3.3.1 shows main trading partners and main commodities of these two countries. The main export commodities of Kazakhstan are crude oil and natural gas (24%), which are followed by steel products (11%). Those of Uzbekistan are cotton and textiles (63%), which are followed by crude oil and natural gas (13%). The main import commodities of the two countries are machinery and consumer goods.

The greatest trading partners of Kazakhstan and Uzbekistan are Russia and former CIS countries. The trade volume of Kazakhstan and Uzbekistan with Russia and former CIS countries in 1996 accounts for 30%-50% of the total trade volume and is decreasing. Second to Russia and former CIS countries, EU countries are the greatest trading companies (20%-30%) and the trade volume with both Asian countries and Middle Eastern countries is not more than 10%.

Then, what is the percentage of the trade volume that goes via the Port of Constantza? It is inconceivable that the cargo imported from and exported to Russia and former CIS countries and the cargo imported from and exported to Asian countries and Middle Eastern countries come to the Port of Constantza. The trading cargo with EU countries and CEEC, such as Germany, Switzerland and Hungary, can be a candidate. The trade volume with EU countries and CEEC is about 10%-16% of the total trade volume.

### 3.3.2 Cargo Traffic at the Port of Poti

The sea transport of cargoes to and from Caucasus and Central Asian countries is carried out using the ports on the Black Sea coast of Georgia. Of these cargoes, bulk cargo, general cargo and other cargoes excluding oil are exported or imported via the Port of Poti.

About 50% of cargoes handled at the Port are transit cargoes originated from or destined to Caucasian countries such as Armenia and Azerbaijan as well as Central Asian countries. Cargoes for both Kazakhstan and Uzbekistan with a comparatively large economic scale are not amount for substantial volume at present. Due to their economic scale, they are to be considered as forming a potential backland region in the future. The percentage of container cargoes is about 20% for domestic cargoes from Georgia, and 4% for transit cargoes. (See Table 3.3.1)

The originating countries of import cargoes through Poti Port are the former CIS countries (Ukraine and Russia), CEE countries around the Black Sea (Bulgaria and Rumania), and the USA. On the other hand, major countries to which export cargoes are destined through Poti Port are Turkey and Ukraine. Of these cargoes, those which go via Constanta Port are approximately 5 ~ 15% including trade cargoes with Romania, and of which transit cargoes at Constanta Port are currently about 5%. Major sea trade partner countries for Caucasus and

**Table 3.3.1 (1) Evolution of Seaborn Cargo Traffic at the Port of Poti / Georgia**

		Import			Export			Import+Export		
		Domestic	Transit	Total	Domestic	Transit	Total	Domestic	Transit	Total
1998	Ton	839,925	1,084,919	1,924,844	391,816	169,351	561,167	1,231,741	1,254,270	2,486,011
	%	44	56	100	70	30	100	50	50	100
1999	Ton	570,460	689,440	1,259,900	873,080	165,743	1,038,823	1,443,540	855,183	2,298,723
	%	45	55	100	84	16	100	63	37	100
2000	Ton	633,688	1,412,934	2,046,622	1,026,426	546,673	1,573,099	1,660,114	1,959,607	3,619,721
	%	31	69	100	65	35	100	46	54	100
Total	Ton	2,044,073	3,187,293	5,231,366	2,291,322	881,767	3,173,089	4,335,395	4,069,060	8,404,455
	%	39	61	100	72	28	100	52	48	100

Note: % in domestic or transit cargo ratio

Source: Poti Port Authority

**Table 3.3.1 (2) Evolution of Container Traffic at the Port of Poti / Georgia**

		Import			Export			Import+Export		
		Domestic	Transit	Total	Domestic	Transit	Total	Domestic	Transit	Total
1998	Ton	234,123	86,044	320,167	135,816	0	135,816	369,939	86,044	455,983
	%	28	8	17	35	0	24	30	7	18
1999	Ton	145,266	31,591	176,857	135,508	0	135,508	280,774	31,591	312,365
	%	25	5	14	16	0	13	19	4	14
2000	Ton	168,832	56,282	225,114	183,903	1,204	185,107	352,735	57,486	410,221
	%	27	4	11	18	0	12	21	3	11
Total	Ton	548,221	173,917	722,138	455,227	1,204	456,431	1,003,448	175,121	1,178,569
	%	27	5	14	20	0	14	23	4	14

Note: % in domestic or transit cargo ratio

Source: Poti Port Authority

Central Asian countries are Ukraine, Turkey, Bulgaria, Rumania and the USA. The sea trade with Ukraine and Bulgaria is strongly supported by the railway ferry services between Poti and Bulgarian or Ukraine ports.

### **3.3.3 Potential Trade Percentage to be attracted by Constantza**

The scales of economic activities, such as GDP and trade volume, of CEEC-5 and Croatia are larger than those of Romania and these economic indicators are growing in a stable manner at a ratio of 4% to 5%. With what trading partners are the export and import of these countries performed and does the trade cargo go via the Port of Constantza? Hungary and Slovak Republic are selected from these countries as areas that may provide the greatest potentiality as the hinterland countries of the Port of Constantza, and an overview of the trading partners of these two countries and their potential trade percentage to be attracted by the Port of Constantza is given below.

The main trading partners to which Hungary exports goods are overwhelmingly the Western European countries including EU (75% in 1999) and the export volume has increased by as much as 17% from 58% for the past six years. The second greatest trading partners to which Hungary exports goods are the various countries within the area including CEFTA (Central European Free Trade Agreement) countries and the export volume in 1999 accounts for 10% of the whole. The proportion of the export volume with Mediterranean countries, former CIS countries and Asian countries, which are trading partners for which there is a possibility that cargo may go via the Port of Constantza, was 17% in 1993. This proportion, however, has decreased year by year and became 6% in 1999. This is because the proportion of export volume with former CIS countries decreased from 13% (1993) to 2% (1999).

On the other hand, the main trading partners from which Hungary imports goods are overwhelmingly the Western European countries including EU (64% in 1999) and the import volume has increased 8% from 56% for the past six years. Imports from Asian countries rank second (accounting for 11% of the whole) and this point is different from exports. Almost all imports from Russia are crude oil and petroleum products, which are transported by pipelines. The proportion of the import volume with Mediterranean countries, former CIS countries and Asian countries, which are trading partners for which there is a possibility that cargo may go via the Port of Constantza, was 7% in 1993. This proportion, however, has increased year by year and became 14% in 1999. This is because the proportion of import volume with Asian countries increased from 5% (1993) to 11% (1999).

As with Hungary, the greatest trading partners to which Slovak Republic exports goods are the Western European countries including EU (60% in 1999) and the export volume has increased by as much as 30% from 30% for the past six years. The second greatest trading partners to which Slovak Republic exports goods are the various countries within the CEEC area and the export volume accounts for 30% of the whole. The export volume to these two areas of trading partners to which Slovak Republic exports goods accounts for 90%. The proportion of the export volume with Mediterranean countries, former CIS countries and Asian countries, which are trading partners for which there is a possibility that cargo may go via the Port of Constantza, was 9% in 1993. This proportion, however, has decreased year by year and became 4% in 1999.

On the other hand, the greatest trading partners from which Slovak Republic imports goods are also the Western European countries including EU (51% in 1999) and the import volume has increased 30% from 28% for the past six years. Imports from the various countries in the area rank second (accounting for 13% of the whole). However, the proportion of trade volume within the area has been decreasing year by year. Almost all imports from Russia are crude oil and petroleum products, which are transported by pipelines. The proportion of the import volume with Mediterranean countries, former CIS countries and Asian countries, which are trading partners for which there is a possibility that cargo may go via the Port of Constantza, is 9%.

## **Chapter 4 Port Administration, Management and Operation**

### **4.1 Port Administration**

Legal acts related to Port Management and Facilities

(1) Main legal acts of port activities

GO no. 22/1999 regarding the administration of ports and the services in ports

GO no. 131/2000 concerning the establishment of several measures to facilitate operation of ports

GD no. 3/2001 for the organisation and the functioning of Ministry of Public Works, Transport and Housing (MPWTH)

GD no. 517/1998 regarding the establishment of the National Company “Constantza Maritime Ports Administration (CMPA)”

(2) Legal acts of port public properties and concessions

Constitution of Romania 1991 (especially art. 135)

Law no. 213/1998 on the public property and its legal regime (an organic law)

Law no. 219/1998 on the regime of concessions (an organic law)

GD no. 216/1998 approving the Methodological Norms for the application of Law no. 213/1998 on the regime of concessions

### **4.2 Port Management and Operation**

As provided by art. 10 of GO no. 22/1999, the services performed in ports are classified into 2 categories:

A. Public port services, namely:

Pilotage, Towage, mooring/unmooring of ships, collection of residues, waste water and garbage from vessels, sanitation and de-pollution of lands and port water and the collection of garbage from ships

Maintenance dredging, provision of signals and buoys in port water area and the access ways in ports, provision of signals and maintenance of the usage and illumination of public roads in port

Fire-fighting on vessels and on floating platforms in the port.

B. Port services, which are all kind of services provided in ports.

Port services are performed by commercial entities, on a free basis, but for some port services, these entities have to be authorised by MPWTH who practically delegated the right to authorise to the ICN.

(1) CMPA's Legal Status

In 1998, through Government Decision no. 517/1998, CMPA was reorganised as a



joint-stock company, entirely owned by the state. It is a commercial entity, normally attached to profit maximization as a priority goal, yet, as art. 1 (2) of the said GD stipulates, performing mainly national public interest activities. It has given the name of National Company (in accordance with art. 2(2) UGO no. 30/1997 as modified and approved by Law no. 207/1997). For the present time, all the shares of the National Company CMPA - S.A. are owned by the state, exercising its rights and obligations through the MPWTH (art. 3(1) GD no. 517/1998).

**(2) CMPA’s Organizational Structure**

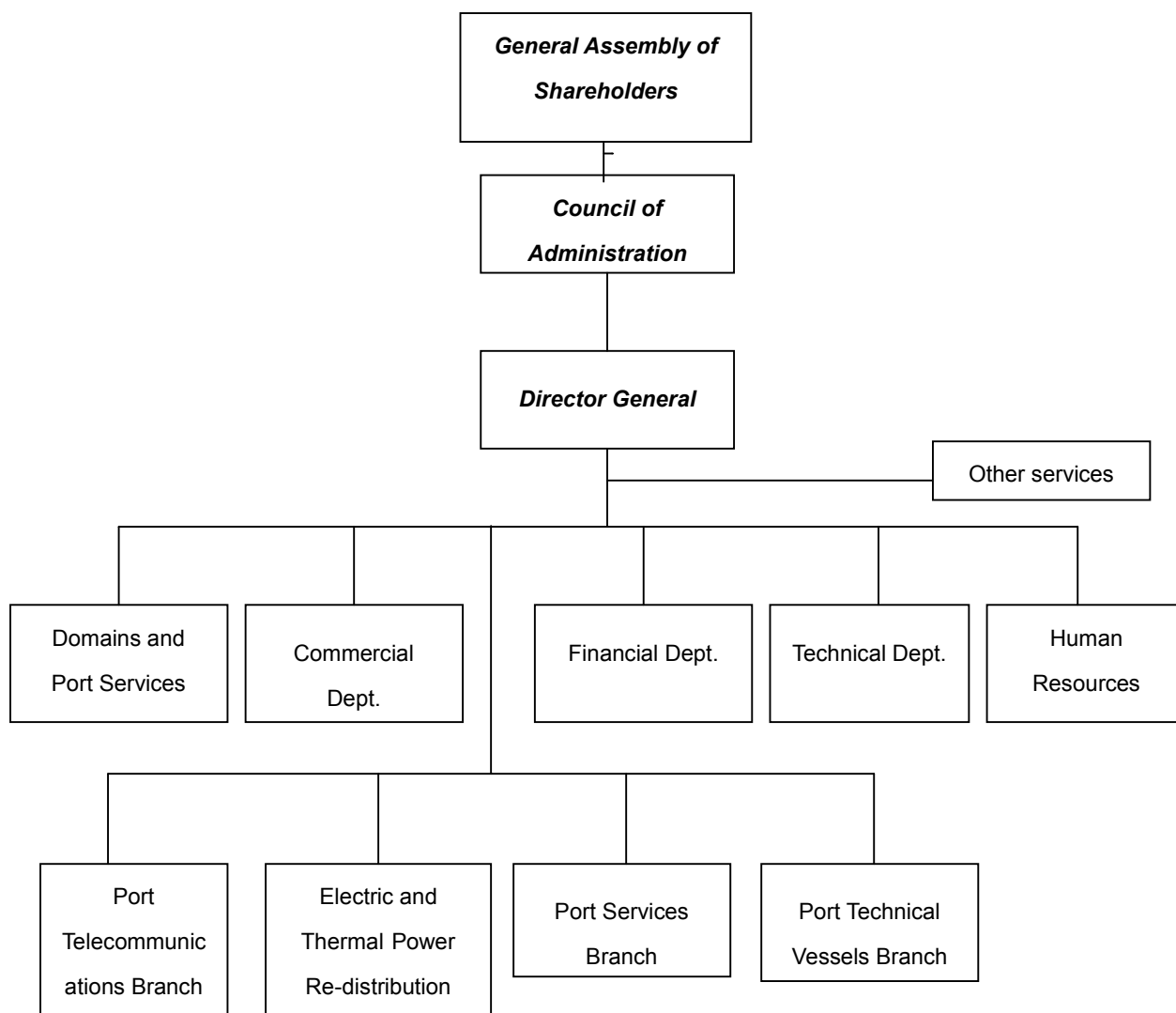
As provided for in the GD no. 517/1998, it is composed of:

The General Assembly of Shareholders (AGA) which is the ruling body:

it decides upon the company's activity and economic policy, issues related to company’s registered capital etc.

Present organizational structure of CMPA can be represented as in the chart.

**Present Organizational structure of CMPA**



### (3) Present Tariff System

The main tariff of CMPA shows below. (US\$ base ) Almost tariffs are set up adequately. But the tariff for port domain using (590 Lei/sq.m./month) is extremely cheap. It seems the reason is that CMPA didn't have legal rights over the state owned Port land so far.

## THE TARIFF LIST USED BY C.M.P.A. WITH THE ECONOMIC AGENTS AUGUST, 1<sup>st</sup>, 2001

### A. US \$ TARIFFS

#### 1. Tariff for the port access

Item	Vessel type	U/m	0-5000	5001-10000	10001-20000	20001-40000	>40000
1.	Ore carrier	usd/UTB	0,15	0,15	0,15	0,15	0,15
2.	Tanker	usd/UTB	0,15	0,15	0,15	0,15	0,15
3.	Cargo carrier	usd/UTB	0,15	0,15	0,15	0,15	0,15
4.	Container carrier	usd/UTB	0,15	0,15	0,15	0,15	0,15
5.	RoRo	usd/UTB	0,15	0,15	0,15	0,15	0,15
6.	Passenger carrier	usd/UTB	0,15	0,15	0,15	0,15	0,15
7.	Military	usd/UTB	0,15	0,15	0,15	0,15	0,15
8.	Fishing vsl	usd/UTB	0,09	0,09	0,09	0,09	0,09
9.	River cargo carrier	usd/t	0,05	-	-	-	-

Out of which: light house tax – seagoing vessels 0,03usd/UTB

- fishing vessels 0,02 usd/UTB

- river vessels 0,01usd/UTB

#### 2. Quay tariff

Item	Vessel type	U/m	0-5000	5001-10000	10001-20000	20001-40000	>40000
1.	Ore carrier	usd/m /day	3,00	4,70	8,00	9,00	21,0
2.	Tanker	Usd/m /day	6,50	12,50	14,30	26,60	28,20
3.	Cargo carrier	Usd/m /day	2,10	2,50	3,70	3,80	20,00
4.	Container carrier	Usd/m /day	6,00	6,80	7,00	7,20	8,00
5.	RoRo	Usd/m /day	4,70	5,80	6,20	6,80	7,00
6.	Passenger carrier	Usd/m /day	8,50	8,50	8,50	8,50	8,50
7.	Military	Usd/m /day	9,50	9,50	9,50	9,50	9,50
8.	Fishing vessel	Usd/m /day	17,50	17,50	17,50	17,50	17,50
9.	River cargo carrier	Usd/m /day	0,63	-	-	-	-

### 4.3 Compliance of Applicable International Conventions

A present's situation adopted the International Maritime Organization's Conventions by Romania. Almost of the adopted Conventions are regarding regulations of the maritime transport and the prevision of environment.

### 4.4 Present Financial Condition of CMPA

#### (1) Fiscal Year

The fiscal year of CMPA is from January 1 to December 31.

#### (2) Regulation

The financial procedures are regulated by the Accountancy Law (No.82), which was established in 1991. It is the only law regarding the public finance that has been passed by the Parliament of Romania. Concerning the details of the financial procedure, CMPA has the internal regulations.

#### (3) Revenues

The total operating revenues increased in 1998-2000. It appears that Port services (Port access tariff, Quay tariff, etc) account for the greatest part of operating revenues in every year. Secondly, power supply account is occupied second position. And Net Income after Tax in 2000 shows more than four times of the figures in 1998, 1999.

#### (4) Expenses

It appears that Third-parties Services (entrustment), Raw materials, Salaries are account for the great part of operating expenses in every year.

#### (5) Operational Efficiency

Table 4-4 shows the operation ratio and the working ratio of CMPA from 1998 to 2000. In 1998 and 1999, the operating ratio and working ratio was beyond satisfactory level. In 2000, the operation ratio was 66% and the working ratio was 60%. Therefore these ratio were barely of satisfactory level. Thus the financial condition of CMPA is not so efficient. On the other hand it necessary for CMPA to properly carry out investment in port infrastructure, such as maintenance and improvement of breakwaters, quays and road, dredging, etc. The only solution would be to increase their revenue and minimize their expenses, and CMPA should take any countermeasures immediately. .

**Table 4-4 Operating & Working Ratio of CMPA**

Year	1998	1999	2000
Operating Ratio (%)	73.7	79.8	66.0
Working Ratio (%)	70.6	67.3	60.0