

Appendix II C

INLAND TRANSPORTATION

APPENDIX IIC INLAND TRANSPORTATION

Appendix 4.2.1 Evolution of River/Maritime Traffic Ratio
Port of Constantza (1995 – 2000)
Commodity wise

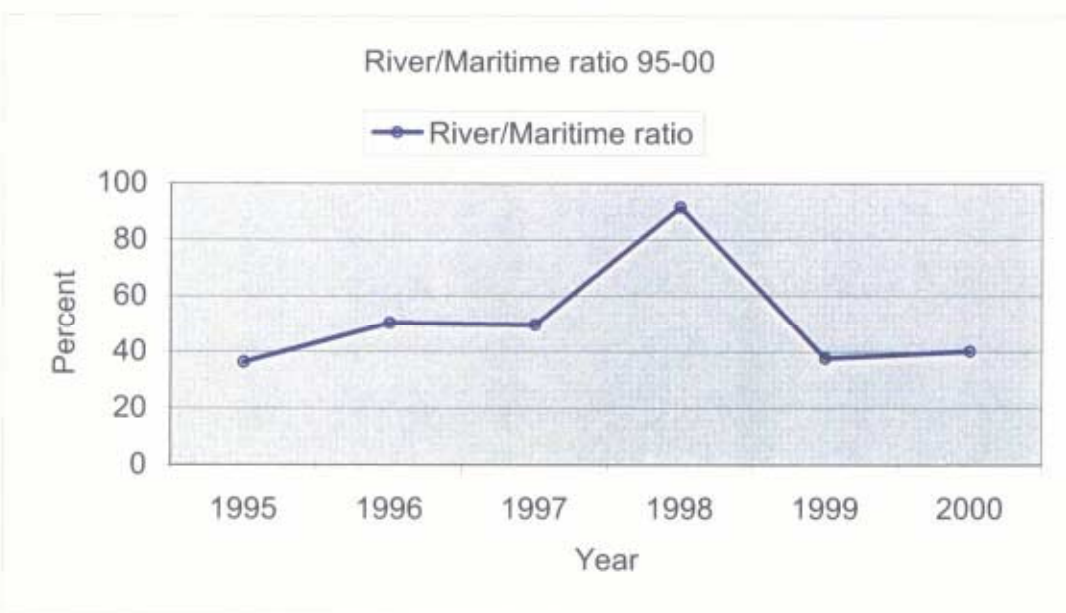
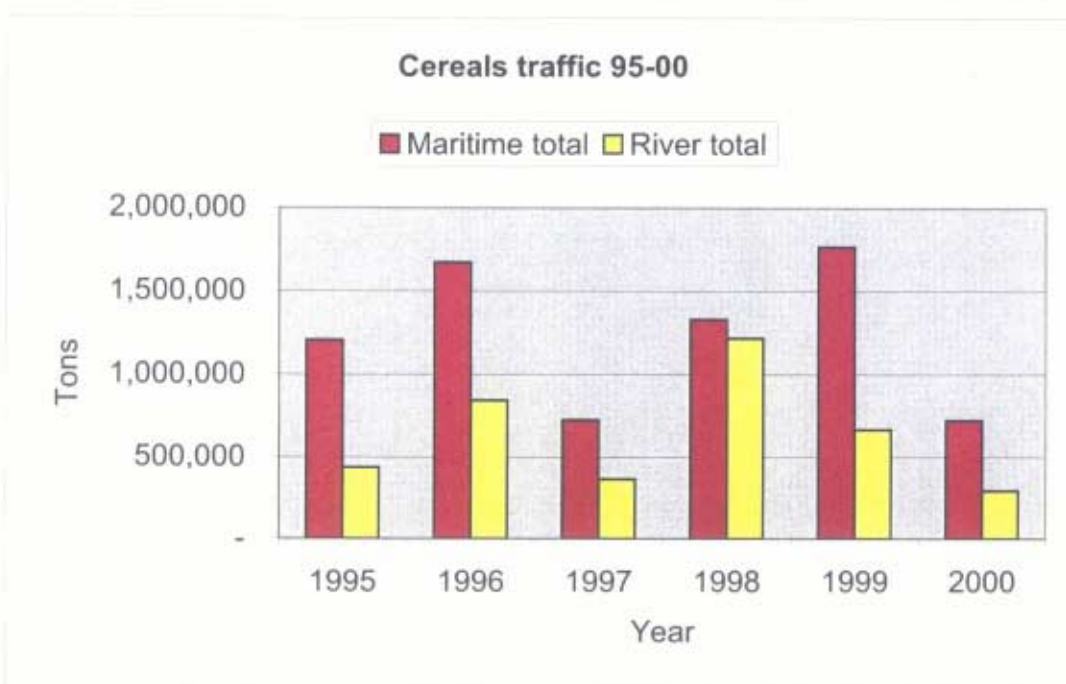
Appendix 4.2.2 Estimated Barge Traffic

Appendix 4.2.1 Evolution of River/Maritime Traffic Ratio Port of Constantza (1995-2000)

Commodity wise

1. Cereals

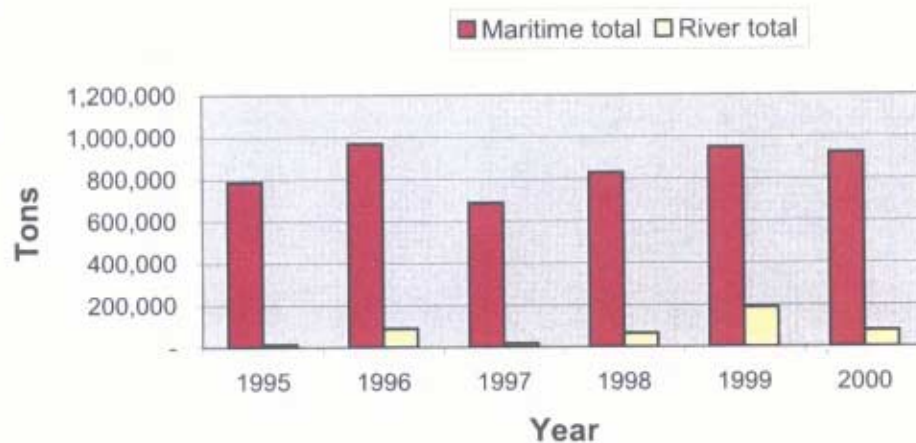
Year	Maritime total	River total	River/Maritime ratio
1995	1,203,676	436,339	36.25
1996	1,671,109	841,125	50.33
1997	724,069	359,212	49.61
1998	1,327,841	1,215,578	91.55
1999	1,764,457	665,342	37.71
2000	722,230	290,168	40.18



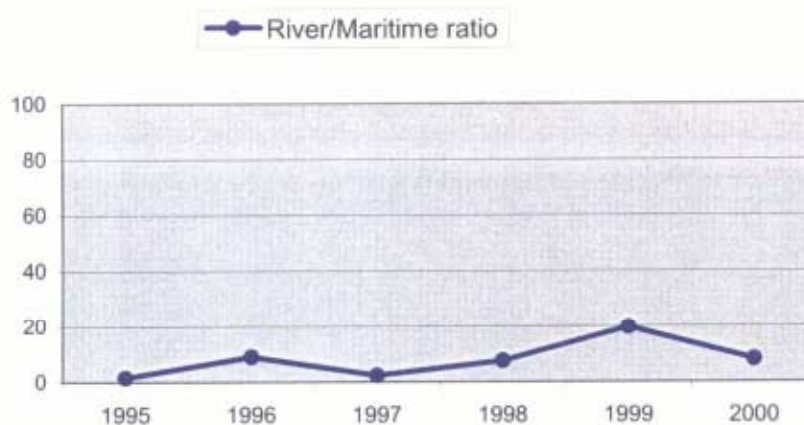
2. Other food and seeds traffic

Year	Maritime total	River total	River/Maritime ratio
1995	784,752	12,526	1.60
1996	969,300	87,984	9.08
1997	685,394	16,676	2.43
1998	829,263	63,259	7.63
1999	949,656	186,636	19.65
2000	922,782	74,953	8.12

Other food and seeds traffic 95-00



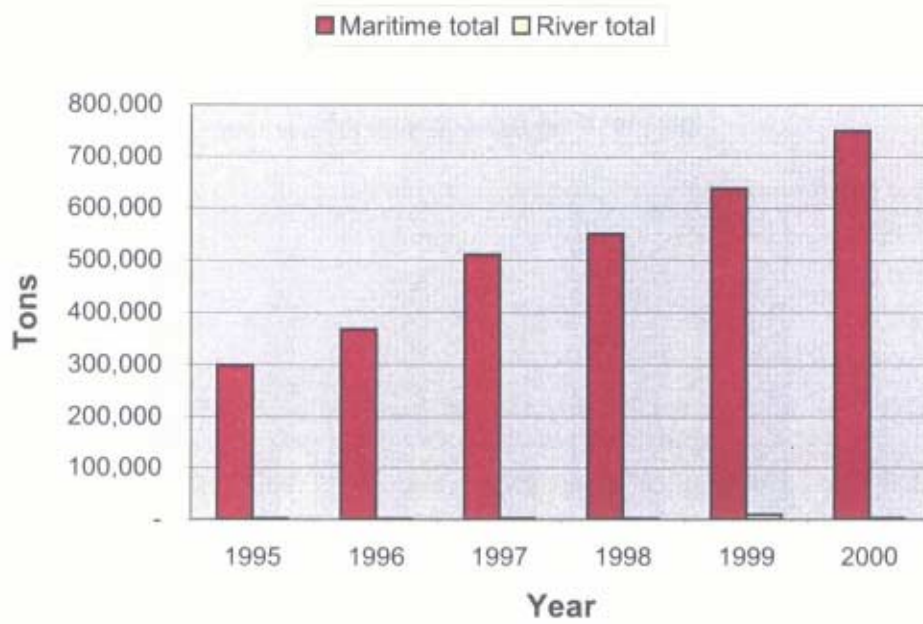
River/Maritime ratio



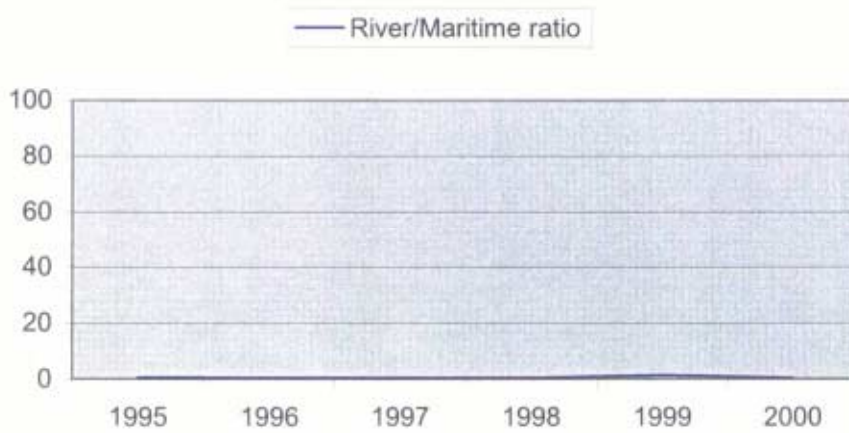
3. Timber, fire wood

Year	Maritime total	River total	River/Maritime ratio
1995	298,634	1,755	0.59
1996	367,066	1,320	0.36
1997	510,702	2,201	0.43
1998	550,557	1,750	0.32
1999	637,773	8,918	1.40
2000	749,501	2,691	0.36

Timber, firewood traffic 95-00



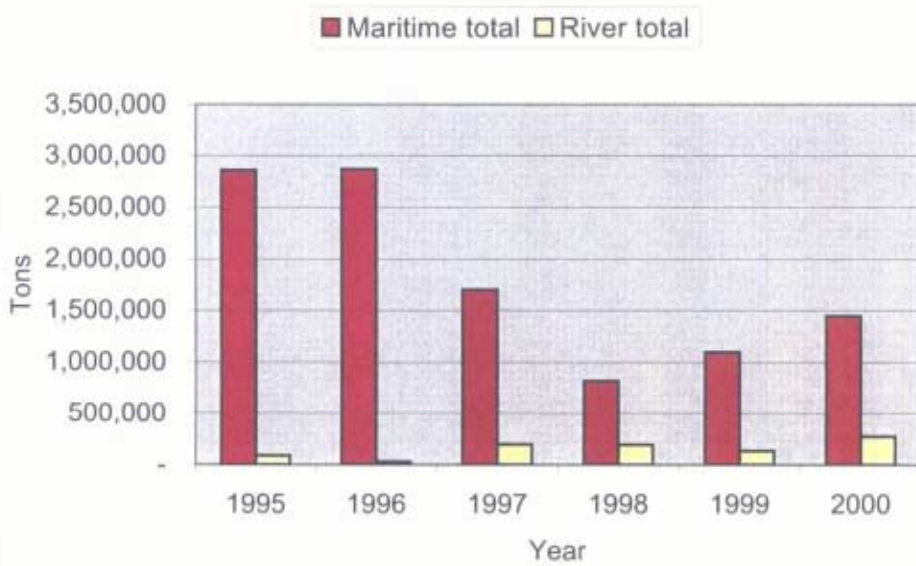
River/Maritime ratio



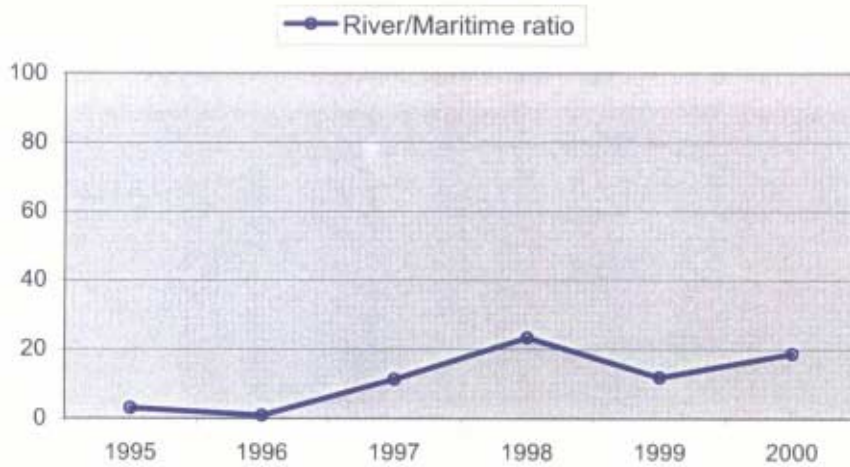
4. Fertilizers, mineral rough prod

Year	Maritime total	River total	River/Maritime ratio
1995	2,855,987	87,208	3.05
1996	2,865,541	26,908	0.94
1997	1,698,628	193,479	11.39
1998	813,130	190,421	23.42
1999	1,094,398	131,309	12.00
2000	1,444,026	269,969	18.70

Fertilizers, mineral rough products traffic 95-00

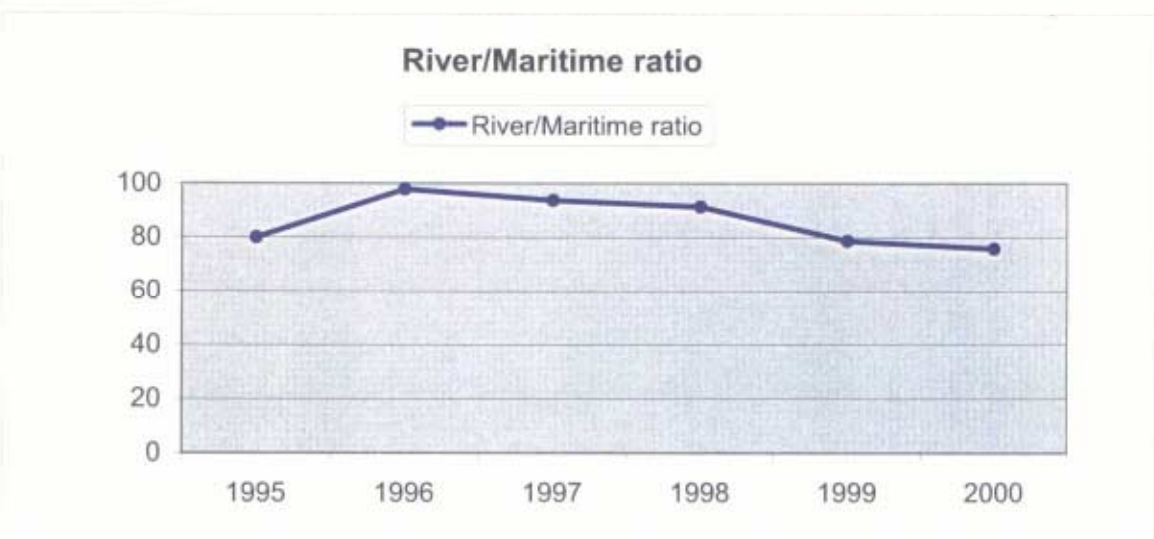
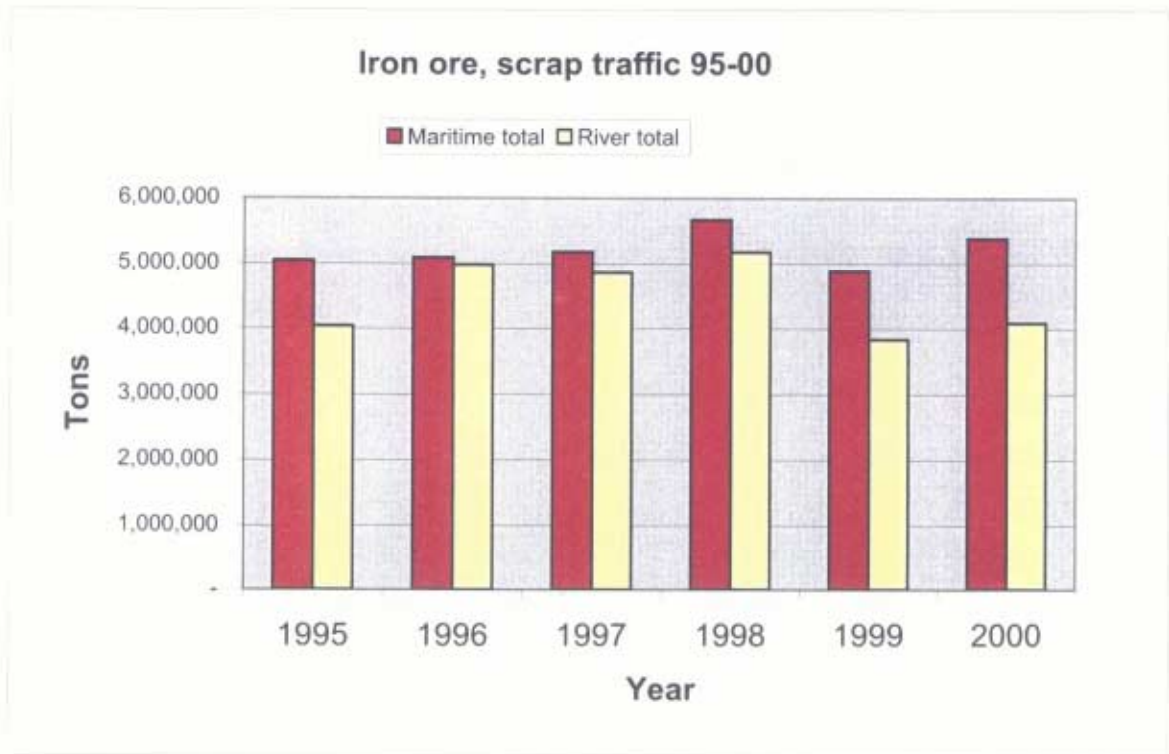


River/Maritime ratio



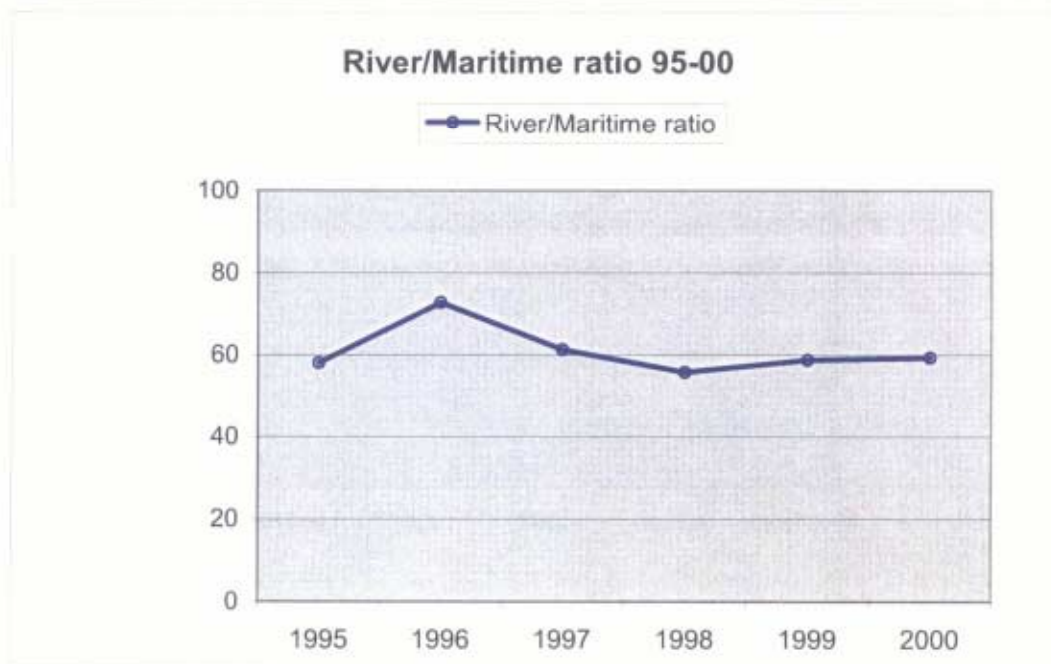
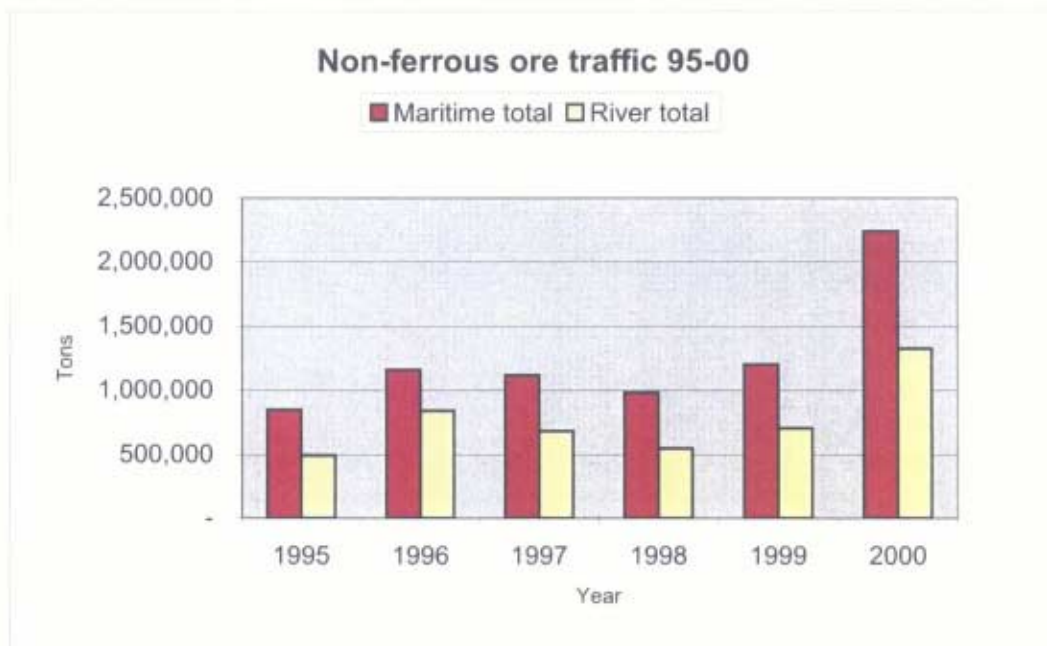
5. Iron ore, Scrap

Year	Maritime total	River total	River/Maritime ratio
1995	5,046,014	4,034,589	79.96
1996	5,087,357	4,980,868	97.91
1997	5,174,074	4,848,147	93.70
1998	5,668,784	5,175,700	91.30
1999	4,872,518	3,831,502	78.63
2000	5,388,190	4,083,325	75.78



6. Non ferrous ore

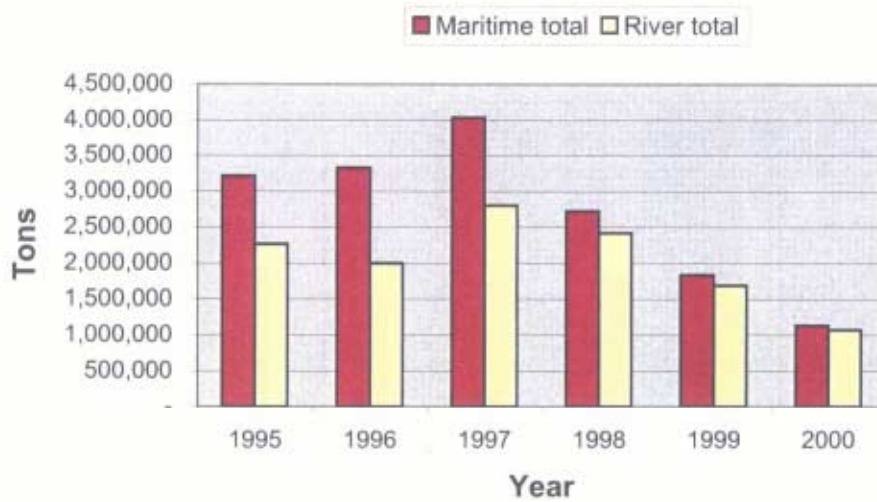
Year	Maritime total	River total	River/Maritime ratio
1995	848,067	492,531	58.08
1996	1,158,287	841,926	72.69
1997	1,115,997	683,942	61.29
1998	980,327	547,117	55.81
1999	1,201,727	706,249	58.77
2000	2,232,500	1,323,510	59.28



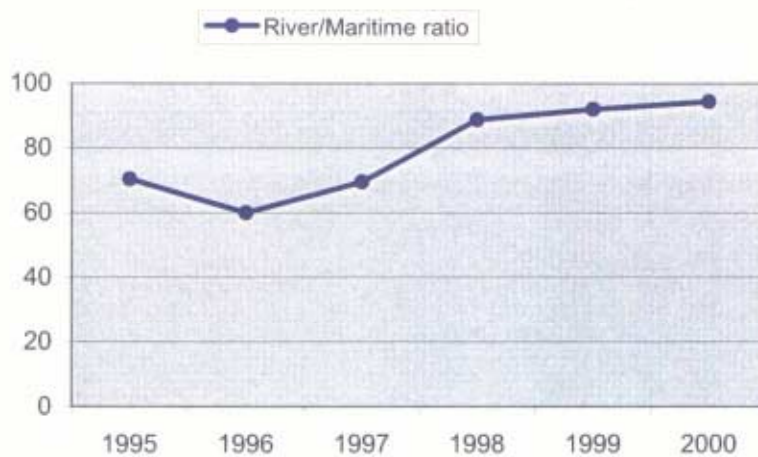
7. Solid fuel, (coal, coke, etc)

Year	Maritime total	River total	River/Maritime ratio
1995	3,211,207	2,260,758	70.40
1996	3,324,151	1,991,900	59.92
1997	4,032,978	2,800,671	69.44
1998	2,720,490	2,415,224	88.78
1999	1,835,880	1,688,433	91.97
2000	1,130,567	1,067,220	94.40

Solid fuel traffic 95-00



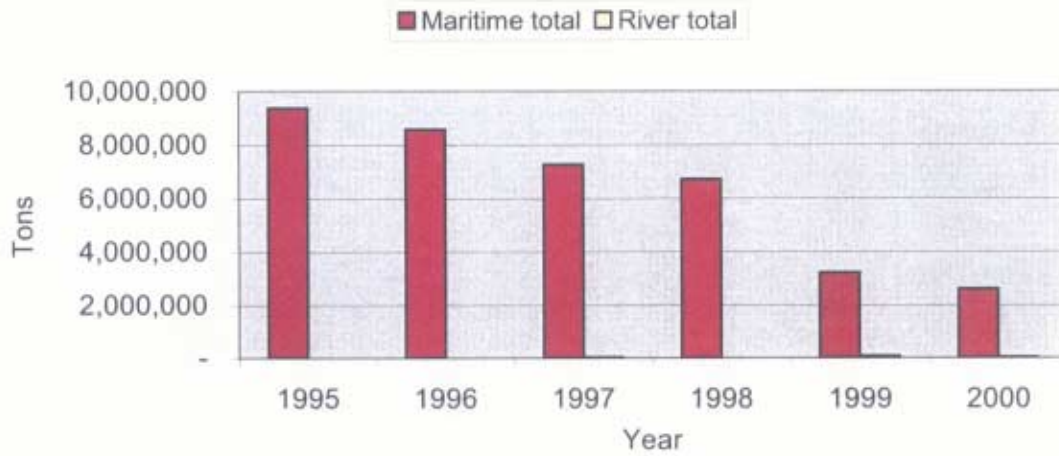
River/Maritime ratio



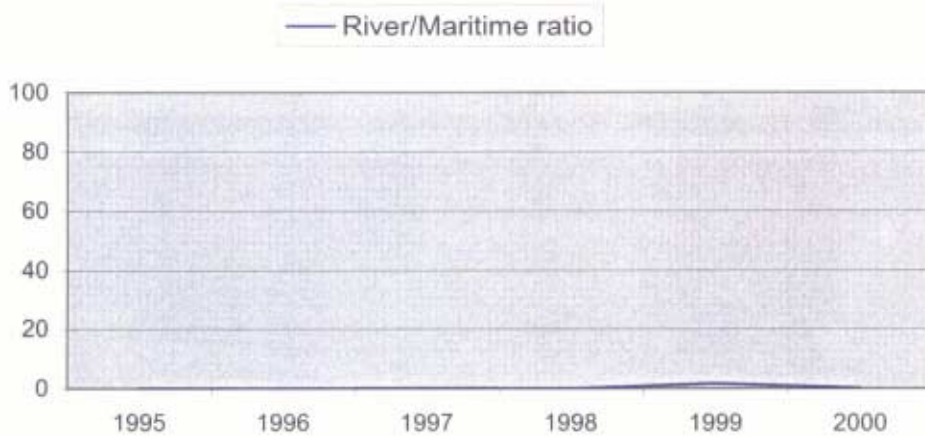
8. Crude Oil

Year	Maritime total	River total	River/Maritime ratio
1995	9,361,000	-	0.00
1996	8,570,000	-	0.00
1997	7,251,000	14,569	0.20
1998	6,701,000	-	0.00
1999	3,209,000	54,546	1.70
2000	2,590,000	6,588	0.25

Crude oil traffic 95-00



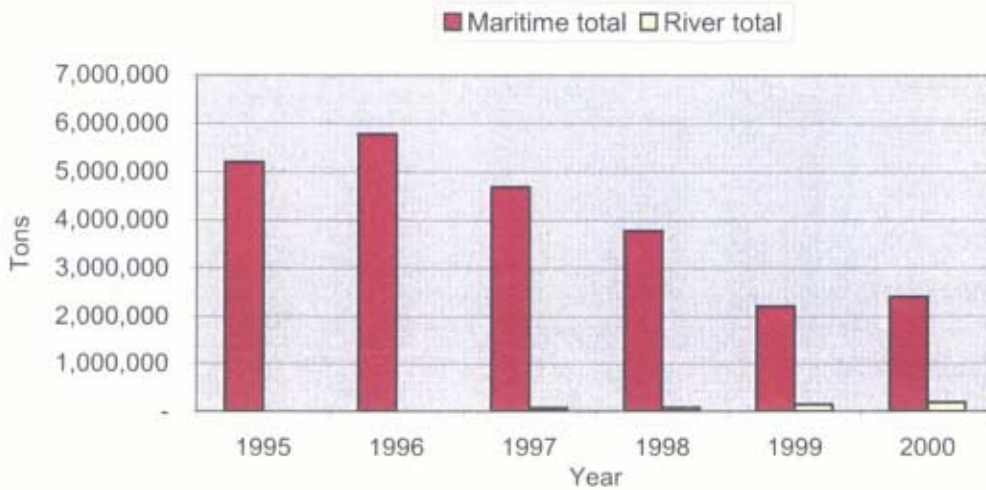
River/Maritime ratio



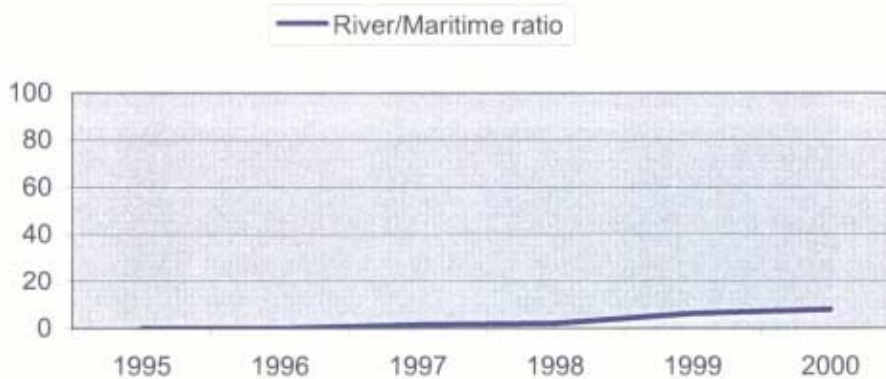
9. Gas and Oil Products (15,16)

Year	Maritime total	River total	River/Maritime ratio
1995	5,198,655	-	0.00
1996	5,770,822	-	0.00
1997	4,678,021	69,399	1.48
1998	3,770,020	75,231	2.00
1999	2,208,000	138,063	6.25
2000	2,403,642	188,284	7.83

Gas and oil products traffic 95-00

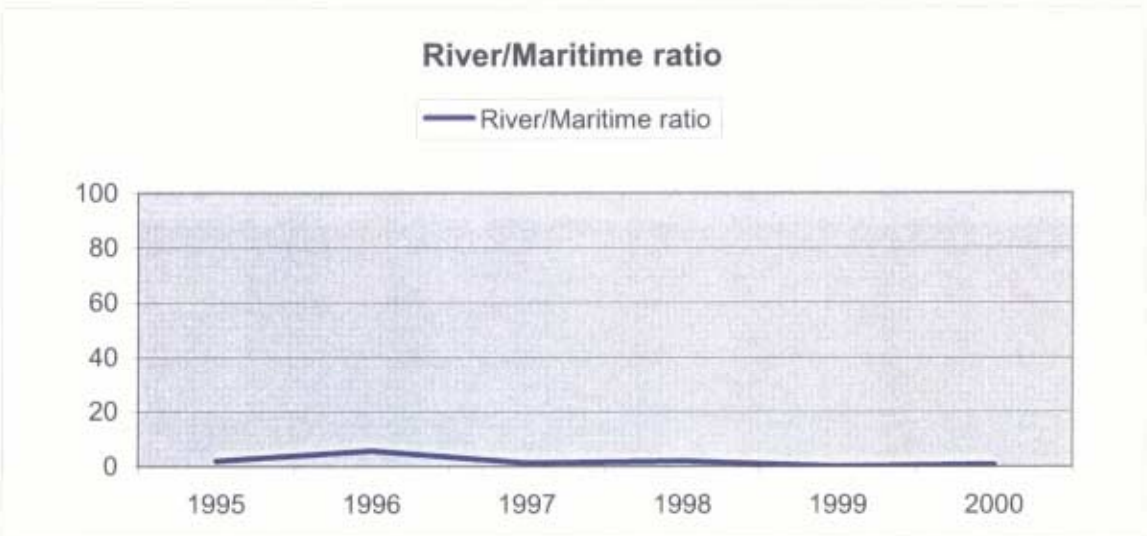
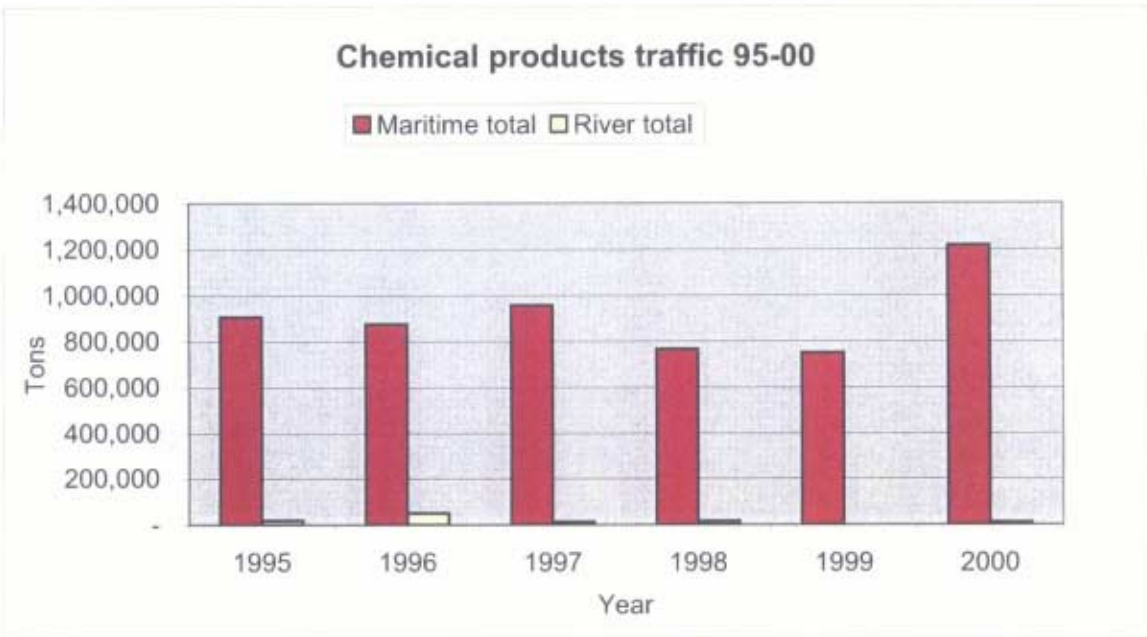


River/Maritime ratio



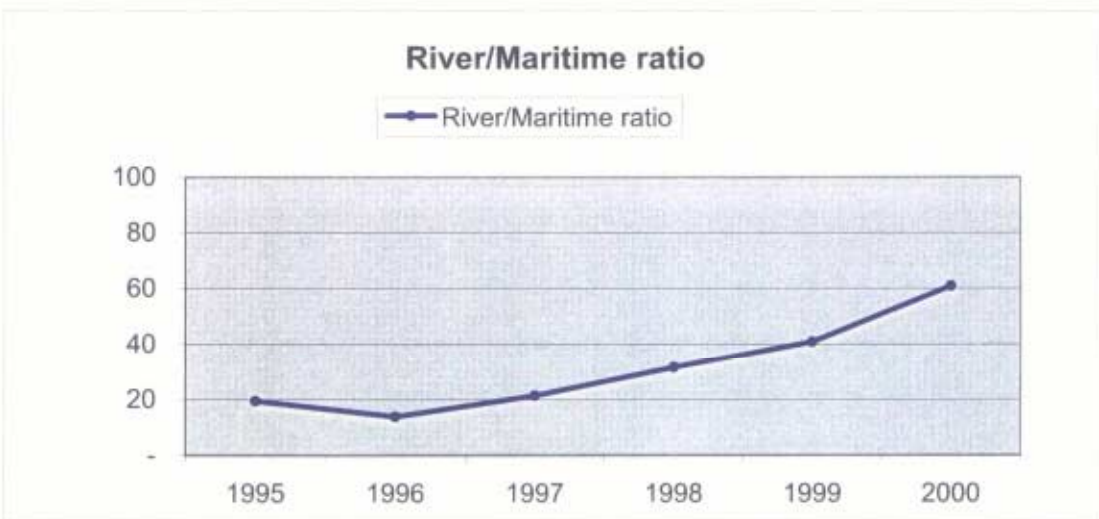
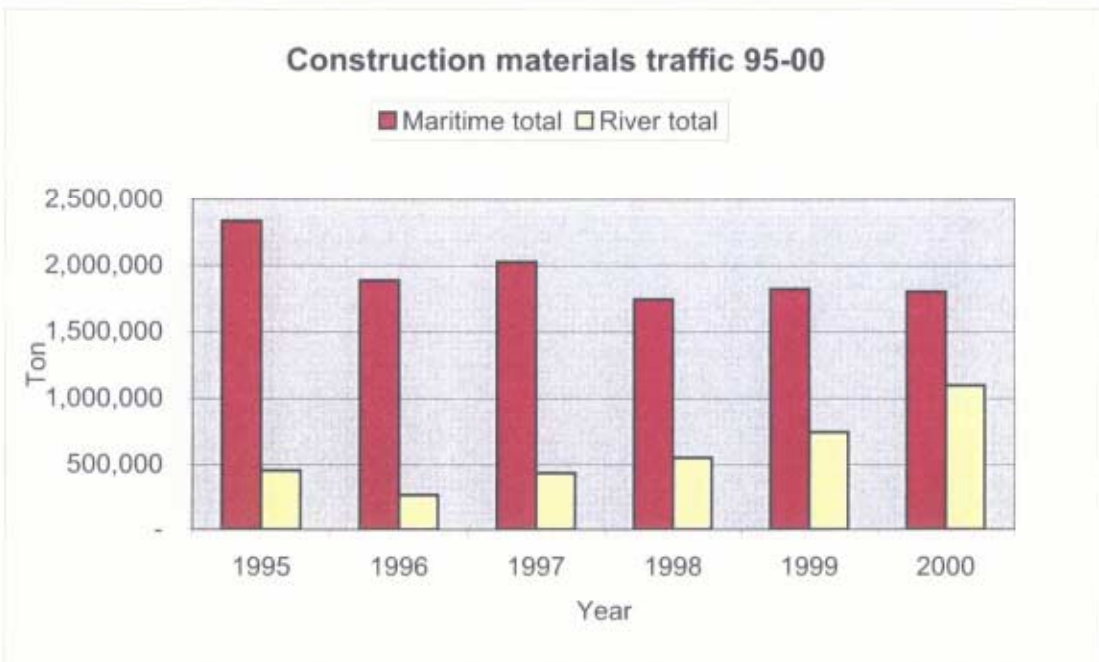
10. Chemical Products

Year	Maritime total	River total	River/Maritime ratio
1995	906,330	17,502	1.93
1996	874,702	49,760	5.69
1997	955,506	11,759	1.23
1998	765,068	15,516	2.03
1999	749,231	550	0.07
2000	1,217,079	9,656	0.79



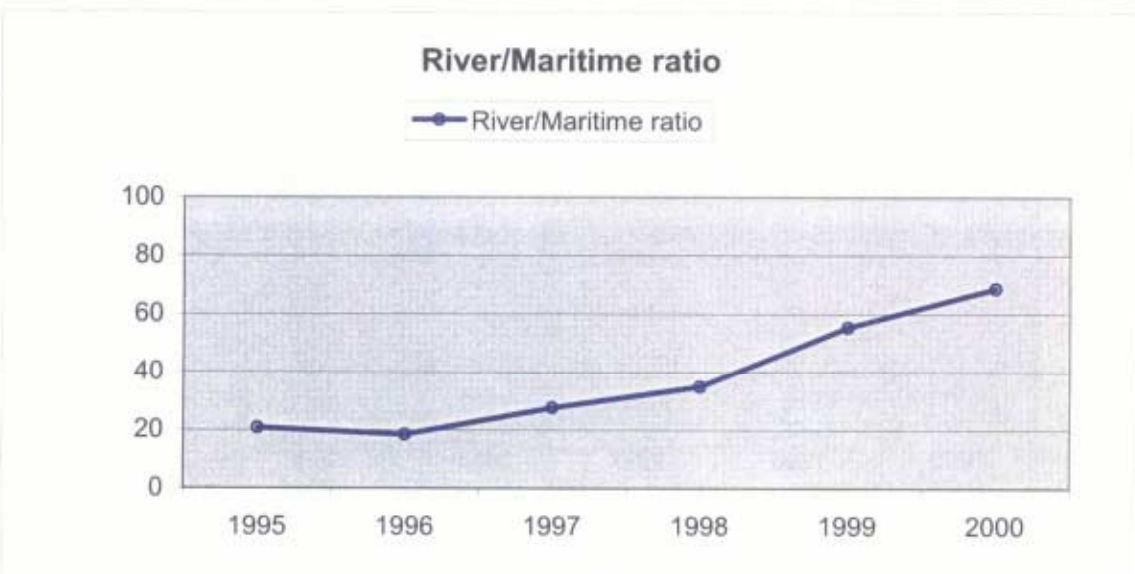
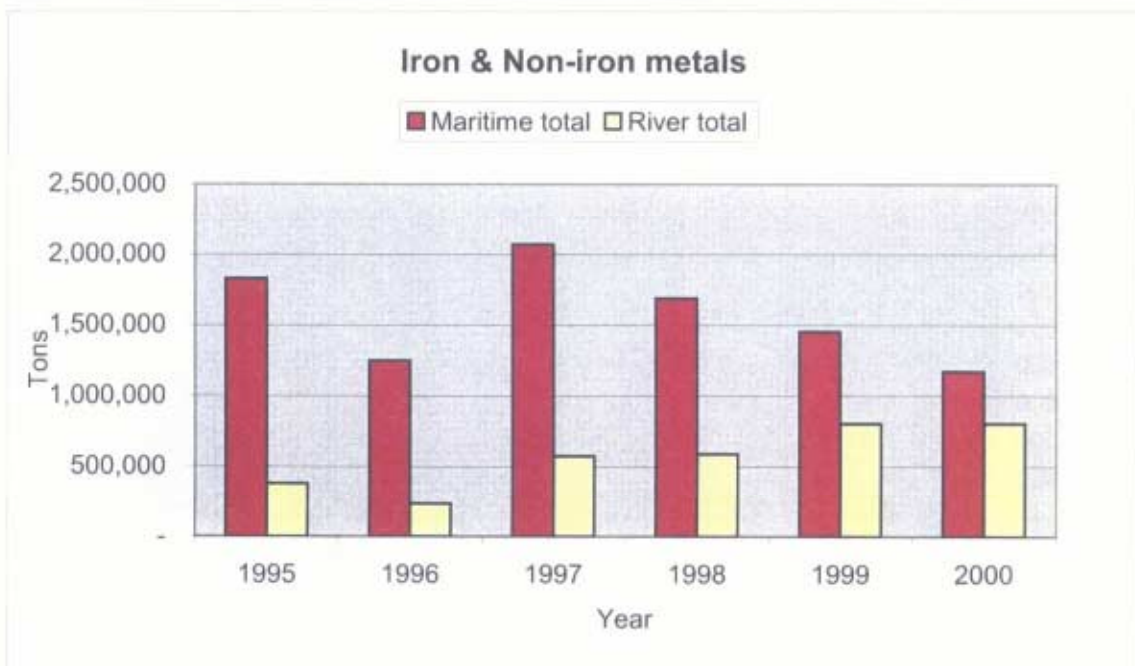
11. Chalk, cement, construction materials

Year	Maritime total	River total	River/Maritime ratio
1995	2,335,308	454,706	19.5
1996	1,886,641	260,000	13.8
1997	2,027,769	433,272	21.4
1998	1,744,709	549,950	31.5
1999	1,822,659	742,748	40.8
2000	1,802,048	1,094,788	60.8



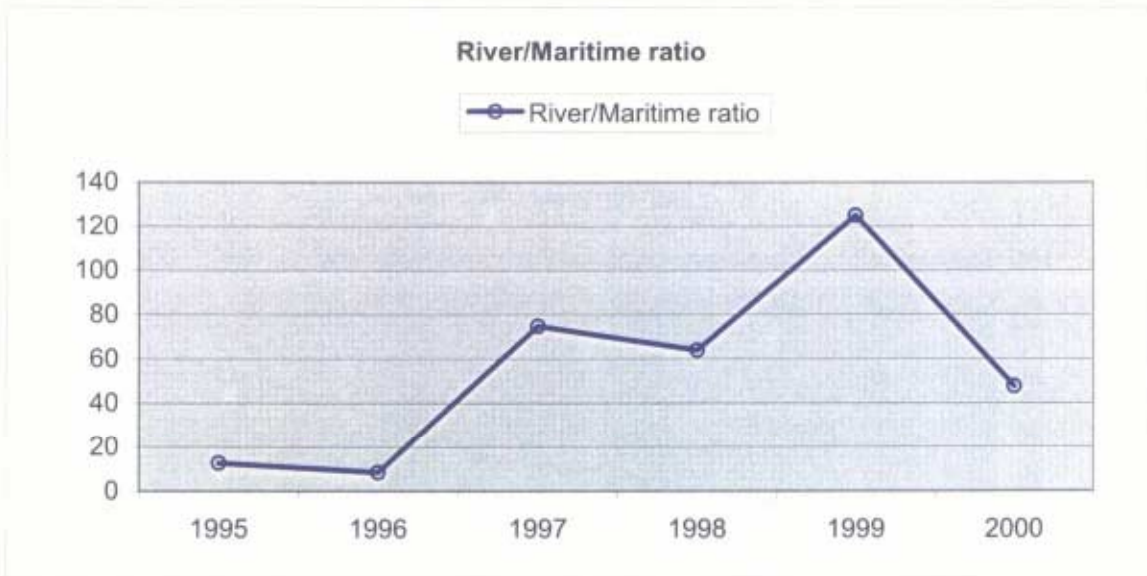
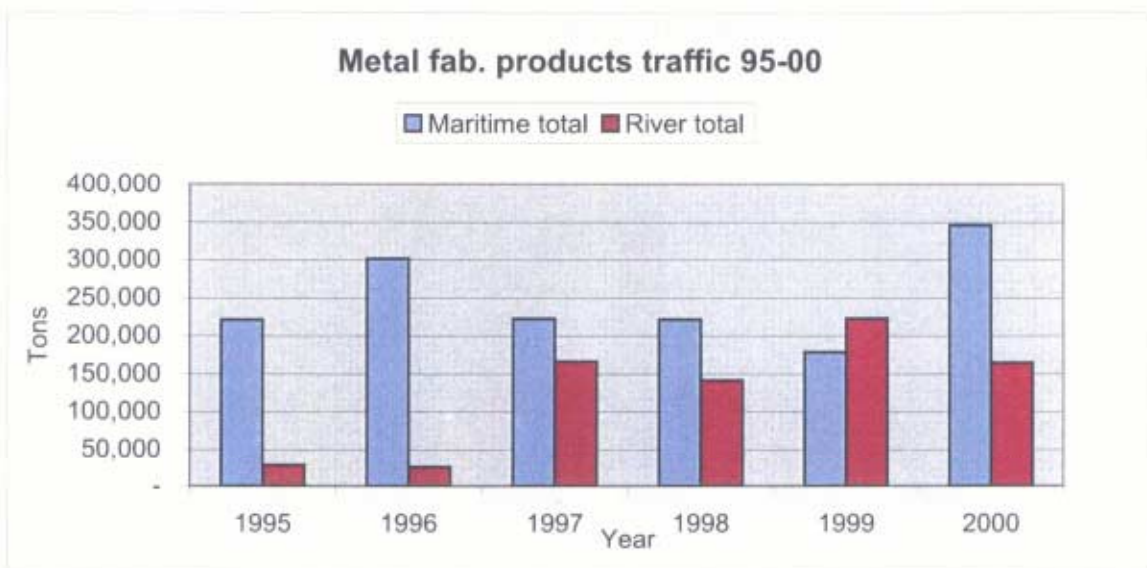
12. Iron / Non Iron Metals

Year	Maritime total	River total	River/Maritime ratio
1995	1,826,479	378,932	20.75
1996	1,246,078	230,718	18.52
1997	2,068,739	571,033	27.60
1998	1,689,331	588,336	34.83
1999	1,452,602	803,454	55.31
2000	1,170,070	803,363	68.66



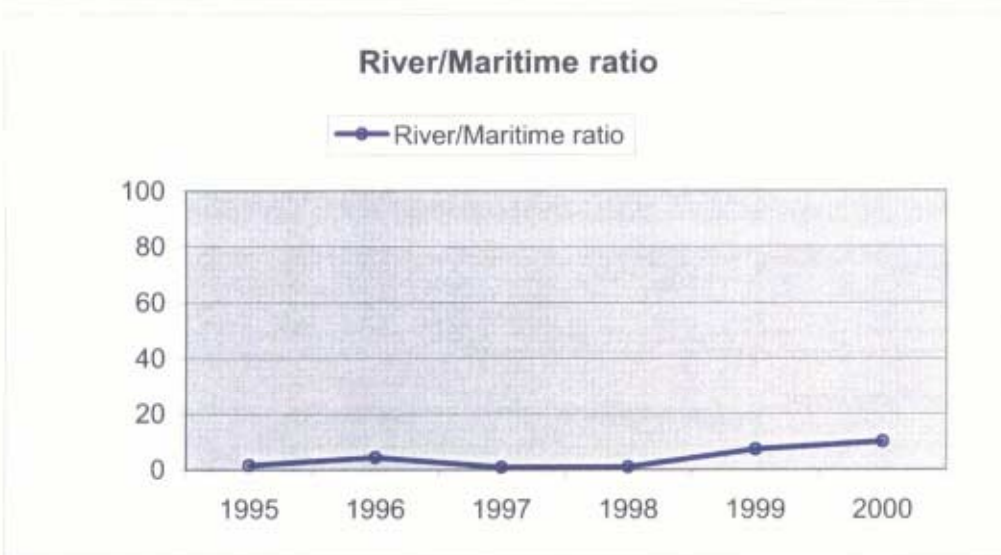
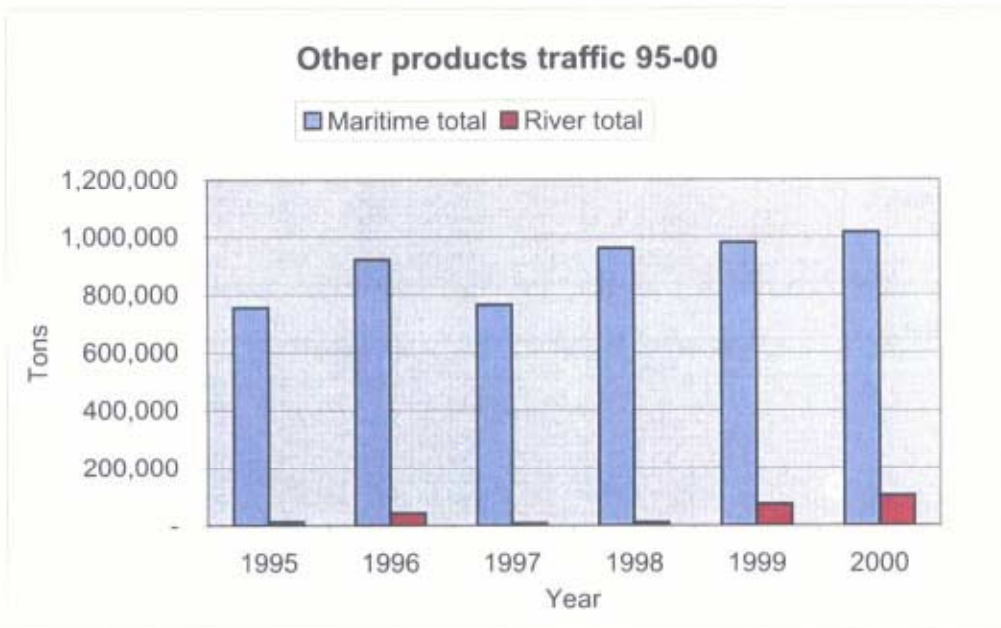
13. Metal Fab. Products, Car, Transport (21,22)

Year	Maritime total	River total	River/Maritime ratio
1995	220,666	27,858	12.62
1996	301,068	25,310	8.41
1997	222,051	165,761	74.65
1998	220,892	141,114	63.88
1999	177,862	222,219	124.94
2000	345,533	164,114	47.50



14. Other Products (11,12,19,23,24)

Year	Maritime total	River total	River/Maritime ratio
1995	755,091	12,439	1.65
1996	920,811	41,486	4.51
1997	765,035	6,661	0.87
1998	959,605	9,870	1.03
1999	979,857	71,975	7.35
2000	1,014,100	101,832	10.04



Appendix 4.2.2 Estimated Barge Traffic: Port of Constantza 2010 and 2020 (CASE 1 of Master Plan Demand Forecast)

Note: Crude Oil is Excluded

TOTAL VOLUMES

	Master Plan Demand Forecast			River Maritime Ratio			Barge Traffic		
	1999	2010	2020	1999	2010	2020	1999	2010	2020
Cereals	1,764,457	4,410,000	6,480,000				873,718	2,668,500	3,924,000
Foods, Beverages, Tobacco	643,124	1,191,449	2,171,123				60,000	175,859	436,741
Timber, Charcoal	637,773	1,128,942	676,413				-	-	-
Natural / Chemical Fertilisers	1,075,998	1,044,990	1,428,067				124,880	104,499	142,807
Iron Ore, Scrap	4,872,518	8,685,062	9,636,642				4,316,215	7,922,481	9,370,746
Non-ferrous Ore	1,201,727	1,953,986	1,169,924				961,382	1,563,189	935,939
Solid Fuel (Coal, Coke, etc.)	1,835,880	2,110,126	2,553,305				1,830,675	2,110,126	2,553,305
Oil and Gas Products	2,205,000	3,837,775	4,036,429				110,250	191,889	201,821
Chemical Products	749,231	669,833	360,782				-	-	-
Chalk, Cement, Construction Materials	1,822,559	1,069,573	643,628				1,003,146	588,265	353,995
Ferrous / Non-ferrous Metals	1,452,602	2,000,000	2,000,000				881,712	1,215,000	1,215,000
Various Manufactured Products	712,872	1,391,956	2,542,169				213,862	521,962	1,057,986
Other Cargoes	772,779	1,393,207	2,540,638				47,036	91,381	188,332
TOTAL	19,746,620	30,885,998	36,239,139				10,422,874	17,153,151	20,380,672

1. TRADE EXPORT - LOADED

Table 2.3.4 Estimated Barge Traffic: Port of Constantza 20	Master Plan Demand Forecast			River Maritime Ratio			Barge Traffic		
	1999	2010	2020	1999	2010	2020	1999	2010	2020
Cereals	1,008,155	1,800,000	2,640,000	0.25	0.25	0.25	252,039	450,000	660,000
Foods, Beverages, Tobacco	140,853	244,966	418,343	0.05	0.05	0.05	7,033	12,248	20,917
Timber, Charcoal	636,591	1,127,760	875,231	0.00	0.00	0.00	-	-	-
Natural / Chemical Fertilisers	682,798	357,560	191,500	0.10	0.10	0.10	68,280	35,756	19,150
Iron Ore, Scrap	618,115	847,312	295,439	0.10	0.10	0.10	61,812	84,731	29,544
Non-ferrous Ore	21,934	-	-	0.80	0.80	0.80	17,547	-	-
Solid Fuel (Coal, Coke, etc.)	104,097	-	-	0.95	NA	NA	98,892	-	-
Oil and Gas Products	1,376,000	2,393,960	1,570,741	0.05	0.05	0.05	68,800	119,698	78,537
Chemical Products	701,293	669,833	360,782	0.00	0.00	0.00	-	-	-
Chalk, Cement, Construction Materials	1,810,262	1,069,573	643,628	0.55	0.55	0.55	995,644	588,265	353,995
Ferrous / Non-ferrous Metals	1,331,503	1,900,000	1,900,000	0.60	0.60	0.60	798,902	1,140,000	1,140,000
Various Manufactured Products	359,237	625,660	1,068,476	0.30	0.30	0.30	107,771	187,698	320,543
Other Cargoes	622,159	1,083,574	1,850,483	0.05	0.05	0.05	31,108	54,179	92,824
TOTAL	9,412,797	12,120,198	11,614,623				2,507,827	2,672,575	2,715,210

2. TRADE IMPORT - DISCHARGED

	Master Plan Demand Forecast			River Maritime Ratio			Barge Traffic		
	1999	2010	2020	1999	2010	2020	1999	2010	2020
Cereals	35,296	-	-	0.25	0.25	0.25	8,824	-	-
Foods, Beverages, Tobacco	473,162	824,075	1,407,322	0.05	0.05	0.05	23,658	41,204	70,366
Timber, Charcoal	1,182	1,182	1,182	0.00	0.00	0.00	-	-	-
Natural / Chemical Fertilisers	374,000	687,430	1,236,566	0.10	0.10	0.10	37,400	68,743	123,657
Iron Ore, Scrap	4,174,201	6,900,000	8,304,243	1.00	1.00	1.00	4,174,201	6,900,000	8,304,243
Non-ferrous Ore	1,069,794	1,682,951	1,007,585	0.80	0.80	0.80	855,835	1,346,281	806,068
Solid Fuel (Coal, Coke, etc.)	1,731,783	2,110,126	2,553,305	1.00	1.00	1.00	1,731,783	2,110,126	2,553,305
Oil and Gas Products	629,000	1,443,815	2,465,688	0.05	0.05	0.05	41,450	72,191	123,284
Chemical Products	31,569	-	-	0.00	0.00	0.00	-	-	-
Chalk, Cement, Construction Materials	10,878	-	-	0.55	0.55	0.55	5,983	-	-
Ferrous / Non-ferrous Metals	53,426	-	-	0.60	0.60	0.60	32,056	-	-
Various Manufactured Products	353,835	615,903	1,051,814	0.30	0.30	0.30	106,091	184,771	315,544
Other Cargoes	94,640	184,828	281,487	0.05	0.05	0.05	4,732	8,241	14,074
TOTAL	9,232,556	14,430,210	18,309,192				7,022,012	10,731,556	12,310,541

3. TRANSIT - LOADED (to Maritime Vessels)

	Master Plan Demand Forecast			River Maritime Ratio			Barge Traffic		
	1999	2010	2020	1999	2010	2020	1999	2010	2020
Cereals	678,197	2,610,000	3,840,000	0.85	0.85	0.85	576,467	2,218,500	3,264,000
Foods, Beverages, Tobacco	27,000	28,849	80,852	1.00	1.00	1.00	27,000	28,849	80,852
Timber, Charcoal	-	-	-	0.00	0.00	0.00	-	-	-
Natural / Chemical Fertilisers	8,200	-	-	1.00	1.00	1.00	8,200	-	-
Iron Ore, Scrap	78,200	107,197	37,377	1.00	1.00	1.00	78,200	107,197	37,377
Non-ferrous Ore	9,711	-	-	0.80	0.80	0.80	7,769	-	-
Solid Fuel (Coal, Coke, etc.)	-	-	-	NA	NA	NA	-	-	-
Oil and Gas Products	-	-	-	0.05	0.05	0.05	-	-	-
Chemical Products	4,492	-	-	0.00	0.00	0.00	-	-	-
Chalk, Cement, Construction Materials	1,519	-	-	1.00	1.00	1.00	1,519	-	-
Ferrous / Non-ferrous Metals	64,884	100,000	100,000	0.75	0.75	0.75	48,663	75,000	75,000
Various Manufactured Products	-	74,486	210,214	1.00	1.00	1.00	-	74,486	210,214
Other Cargoes	41,437	126,053	355,748	0.20	0.20	0.20	8,287	25,211	71,150
TOTAL	913,640	936,385	1,284,191				756,106	2,529,042	3,738,593

4. TRANSIT - DISCHARGED (from Maritime Vessels)

	Master Plan Demand Forecast			River Maritime Ratio			Barge Traffic		
	1999	2010	2020	1999	2010	2020	1999	2010	2020
Cereals	42,809	-	-	0.85	0.85	0.85	36,388	-	-
Foods, Beverages, Tobacco	2,309	93,759	264,606	1.00	1.00	1.00	2,309	93,759	264,606
Timber, Charcoal	-	-	-	0.00	0.00	0.00	-	-	-
Natural / Chemical Fertilisers	11,000	-	-	1.00	1.00	1.00	11,000	-	-
Iron Ore, Scrap	2,002	830,554	999,583	1.00	1.00	1.00	2,002	830,554	999,583
Non-ferrous Ore	100,288	271,135	162,336	0.80	0.80	0.80	80,230	216,908	129,871
Solid Fuel (Coal, Coke, etc.)	-	-	-	1.00	1.00	1.00	-	-	-
Oil and Gas Products	-	-	-	0.05	0.05	0.05	-	-	-
Chemical Products	11,887	-	-	0.00	0.00	0.00	-	-	-
Chalk, Cement, Construction Materials	-	-	-	1.00	1.00	1.00	-	-	-
Ferrous / Non-ferrous Metals	2,789	-	-	0.75	0.75	0.75	2,092	-	-
Various Manufactured Products	-	75,007	211,685	1.00	1.00	1.00	-	75,007	211,685
Other Cargoes	14,543	16,752	52,921	0.20	0.20	0.20	2,909	3,750	10,584
TOTAL	259,627	1,799,670	2,278,692				136,929	1,618,348	1,618,348

Appendix IID

ROAD AND RAILWAY TRAFFIC SURVEY

1. ROAD TRAFFIC SURVEY IN THE PORT OF CONSTANTZA

(1) Traffic count survey in the port

Traffic count survey for inward and outward directions were conducted at following observation points(see Fig.1.1):

- One gate for 7 days; Gate 5
- Six gates for 4 days; Gate 1, Gate 3, Gate 6, Bitum and South Port
- Two major port terminals for 4 days; North Port and South Port
- Two main road crossings in the city ; the bridge Agigea and Gate 5

The type of vehicle to be counted in the Survey is classified 5 categories as follows (see Fig.1.2):

- A) Passenger cars
- B) 2 axle goods vehicle
- C) 3-4 axle goods vehicles
- D) Articulated lorries, trailer lorries, more than 4 axle vehicles
- E) Others

Fig.1.2 Type of Vehicle


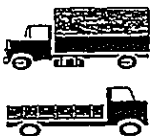


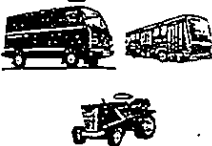
Passenger Cars	2 axle goods vehicles	3 - 4 axle goods vehicles	Articulated lorries, trailer lorries, more than 4 axle goods vehicles	Others
				



Fig. 1.1 Survey Points of Road Traffic

(2) Result of count survey

Table 1.1 RESULTS OF THE ROAD TRAFFIC COUNT SURVEY (Wednesday 25.07)

(vehicles/day)

Gate		Type of Vehicle					TOTAL
		Cars	2 axle	3-4 axle	Over 4	Others	
Gate 1	IN	2316	17	28	0	137	2498
	OUT	2352	34	113	0	154	2653
Gate 3	IN	1201	21	3	1	78	1304
	OUT	972	27	3	0	76	1078
Gate 5	IN	2339	175	130	231	197	3072
	OUT	2514	156	139	87	178	3074
SOCEP	IN	66	2	1	129	48	246
	OUT	41	2	8	128	45	224
Gate 6	IN	365	14	15	3	53	450
	OUT	357	42	57	100	53	609
BITUM	IN	42	30	15	10	5	102
	OUT	55	38	17	13	4	127
MOL 1S	IN	224	22	5	28	33	312
	OUT	91	13	2	29	31	166
FREE ZONE	IN	82	4	0	2	22	110
	OUT	95	3	0	2	31	131
Total	IN	6635	285	197	404	573	8094
	OUT	6477	315	339	359	572	8062

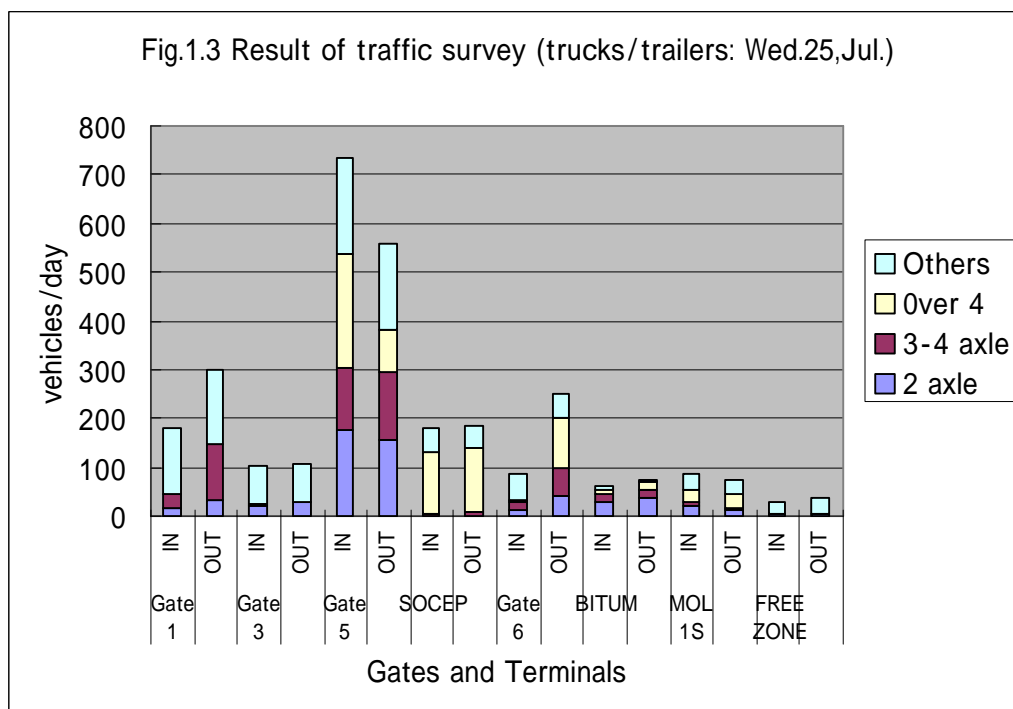
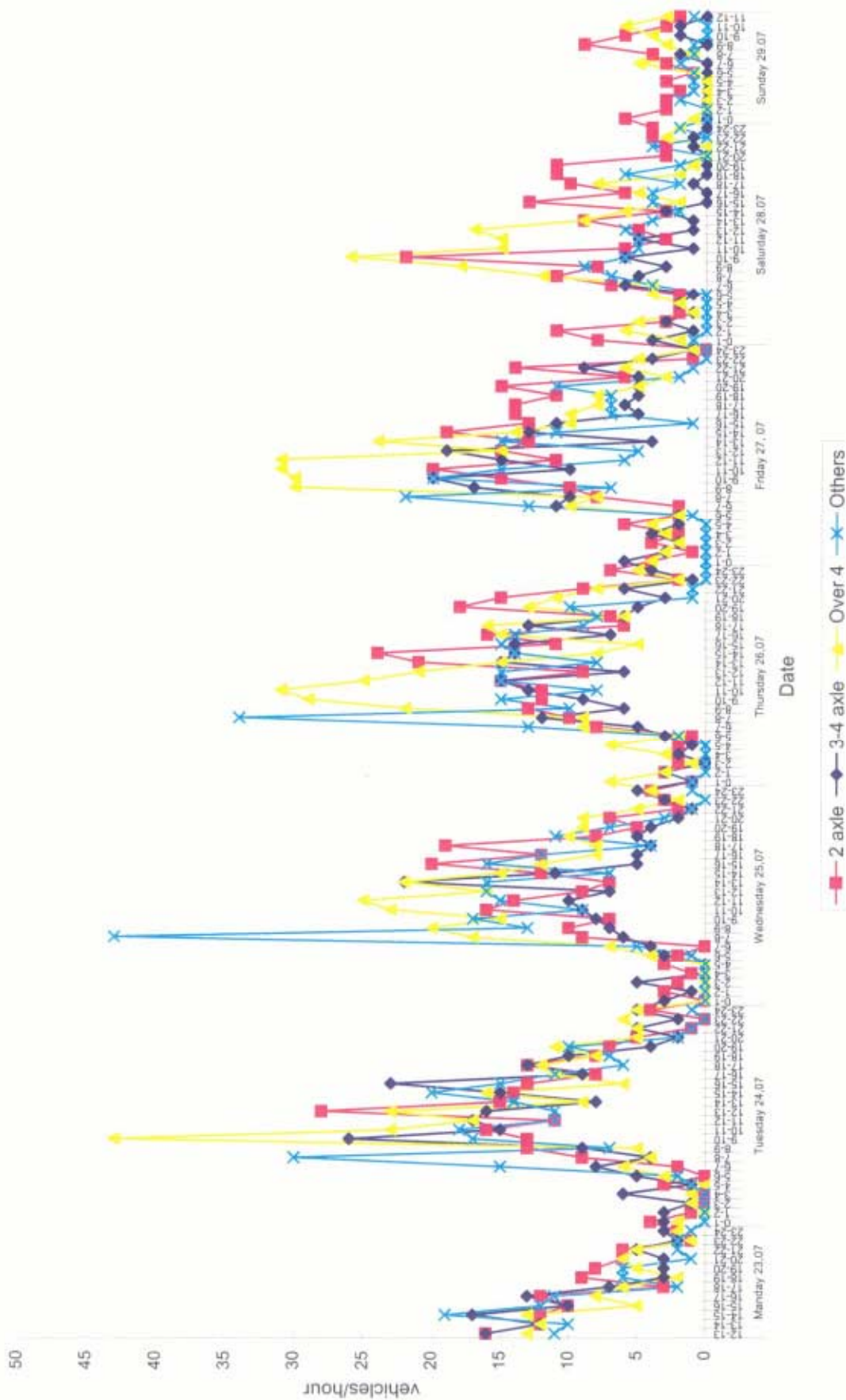


Fig.1.4 Result of traffic survey (Gate 5 IN; trucks/trailers)



2. RAILWAY TRAFFIC SURVEY IN THE PORT OF CONSTANTZA

(1) Traffic count survey in the port

Traffic count survey for inward and outward directions were conducted at following points (see Fig.2.1):

- Three railway access points for 7 days; 1 point at North Port
2 points at South Port
- Three major port terminals for 4 days; 2 terminals at North Port
1 terminal at South Port

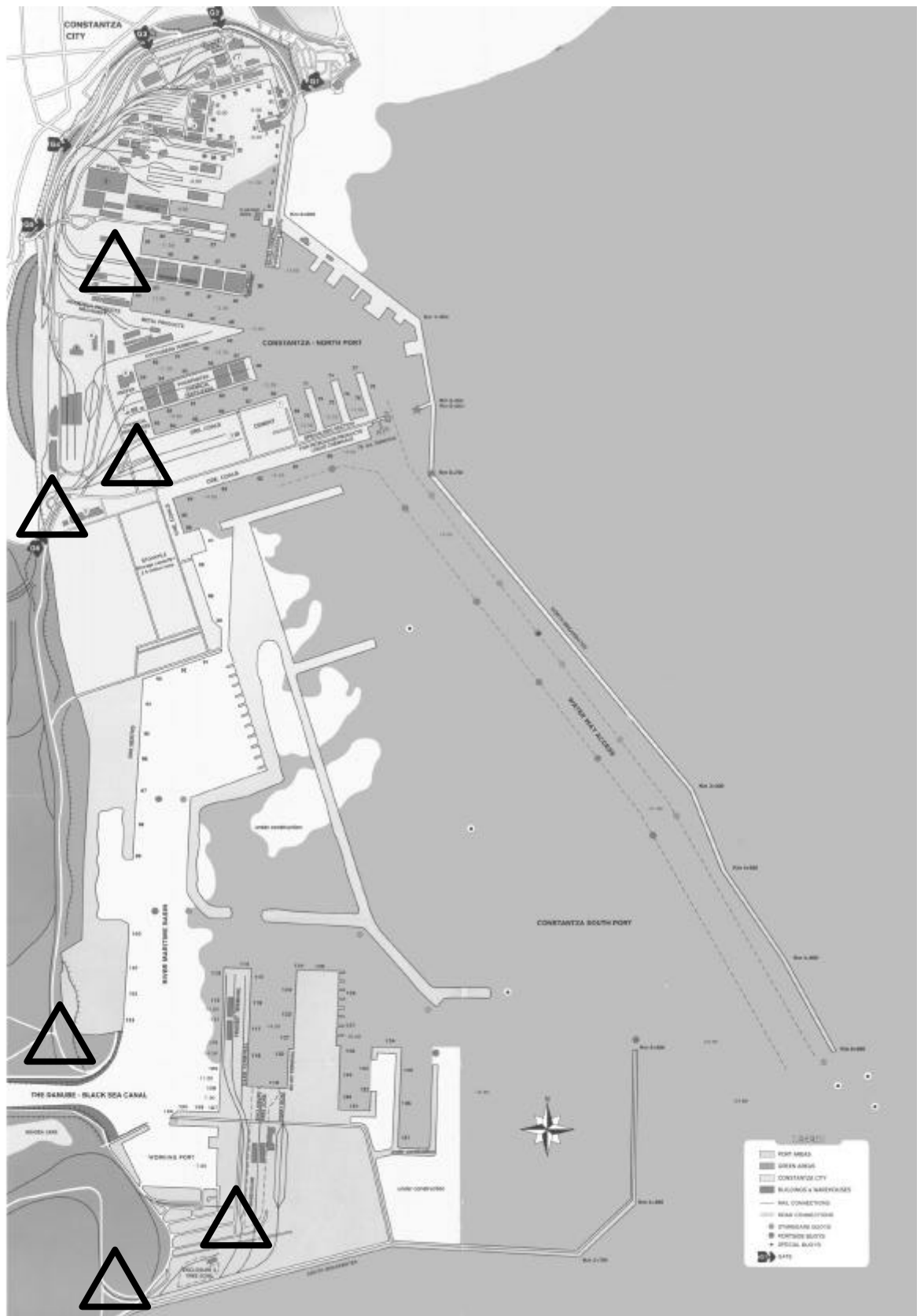


Fig.2.1 Survey Points of Railway Traffic

(2) Result of count survey

Table 2.1 Result of Railway Survey

(1)ZONE A,B,5 Station

Date	Arrived			Sended		
	Trains	Wagons	Net ton	Trains	Wagons	Net ton
Mon.23,Jul	15	553	16195	9	390	2574
Tue.24,	21	804	19021	11	436	646
Wed.25,	16	568	12653	16	629	2391
Thu.26,	16	622	16194	17	546	6528
Fri.27,	15	503	14557	21	753	8559
Sat.28,	12	416	11321	17	575	4226
Sun.29,	12	418	11038	17	531	4805
Total	107	3884	100979	108	3860	29729

(2)Agigea Nord Station

Date	Arrived			Sended		
	Trains	Wagons	Net ton	Trains	Wagons	Net ton
Mon.23,Jul	3	109	3888	3	116	0
Tue.24,	6	166	7596	3	88	0
Wed.25,	3	119	5328	4	162	0
Thu.26,	4	76	3566	4	85	0
Fri.27,	1	20	988	2	76	0
Sat.28,	6	170	7868	3	87	0
Sun.29,	5	155	7170	4	150	0
Total	28	815	36404	23	764	0

(3) Ferry Boat Station

Date	Arrived			Sended		
	Trains	Wagons	Net ton	Trains	Wagons	Net ton
Mon.23,Jul	2	46	1693	1	36	1674
Tue.24,	2	27	1102	2	74	1656
Wed.25,	1	6	165	2	75	985
Thu.26,	1	4	83	0	0	0
Fri.27,	2	69	2270	1	14	426
Sat.28,	2	30	1140	2	38	1497
Sun.29,	3	52	1499	2	61	1134
Total	13	234	7952	10	298	7372

(4) Total

Date	Arrived			Sended		
	Trains	Wagons	Net ton	Trains	Wagons	Net ton
Mon.23,Jul	20	708	21776	13	542	4248
Tue.24,	29	997	27719	16	598	2302
Wed.25,	20	693	18146	22	866	3376
Thu.26,	21	702	19843	21	631	6528
Fri.27,	18	592	17815	24	843	8985
Sat.28,	20	616	20329	22	700	5723
Sun.29,	20	625	19707	23	742	5939
Total	148	4933	145335	141	4922	37101

Fig. 2.2 Railway cargo per day (net ton)

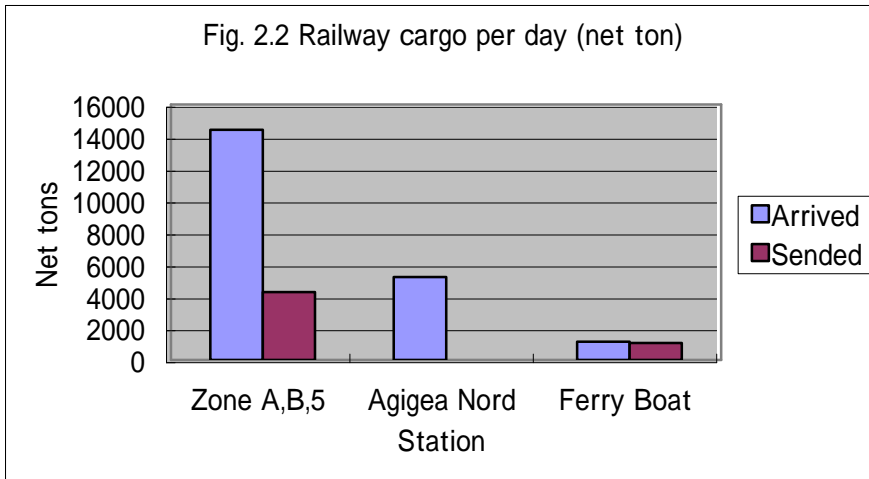


Fig.2.3 Number of Wagons per day (Arrived)

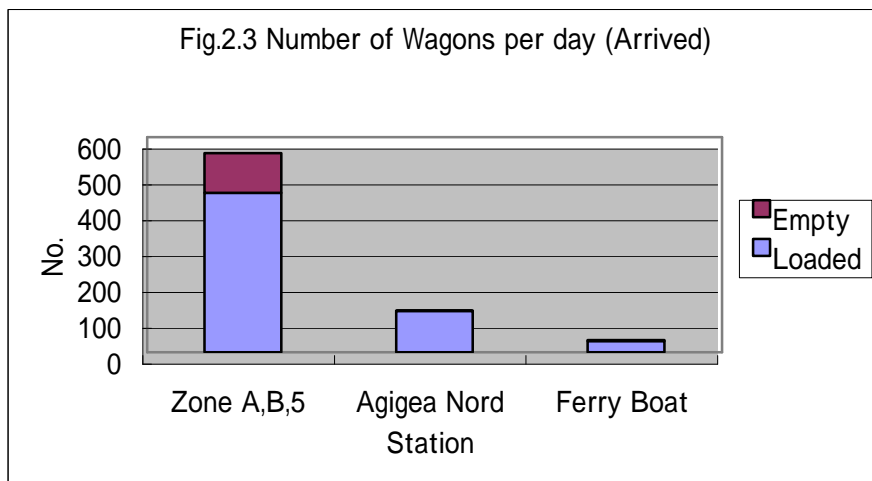


Fig.2.4 Nuber of wagons per day (Sended)

