CHAPTER 1 PRESENT SITUATION AND FUTURE PROSPECTS IN LITHUANIA AND SURROUNDING COUNTRIES

1.1 Baltic Sea Ports

1.1.1 Location of Baltic Ports

The Baltic States of Lithuania, Latvia and Estonia occupy a strategic location on the Eastern edge of the Baltic Sea north of Poland and Kaliningrad (Russia). For many years they have provided transit routes between Russia/Central Asia and the trading markets in Europe and throughout the world. A map showing of the Baltic States and highlighting these routes and principal ports can be found in Figure 1.1 below.

Figure 1.1 Location of Principal Baltic Sea Ports

1.1.2 Lithuanian Ports

(1) Klaipeda Port

Klaipeda Port is located in the eastern part of the Baltic Sea as the northernmost ice-free port. The port is a transit centre in Lithuania connecting the main transportation corridors between the East and West via sea routes. Its staple cargoes are petroleum, grains, fertilizer, iron and steel products, timber, container cargo and Ro/Ro cargo.

(2) Sventoji Port

Sventoji Port is located on the northernmost coast of Lithuania facing the Baltic Sea. The port was developed in the middle of the last century as a digging-type port whose entrance was protected by wooden-pile breakwaters stuffed with rubble stretching into the Baltic Sea from the sandy beach. Presently, however, the port is not in operation and is left with ruins of destroyed breakwaters and basins that are choked with sand.

(3) Butinge Port

Butinge Port is located close to the Lithuania's border with Latvia, handles crude oil through SPM system.

1.1.3 Estonian Ports

(1) Old City Harbor

Old City Harbor is located near the city center, and serves as a main international passenger terminal of Tallinn Port. The major ferry routes are linked to Helsinki and Stockholm.

(2) Muga Harbor

Muga Harbor is located 17km from the city center, and serves as a main cargo terminal of Tallinn Port. Muga Harbor handles 70% of total cargo throughputs and 90% of transit cargo through Estonia. It has six oil terminals and cargo terminals for dry bulk, general cargo, containers and grain.

(3) Paldiski Harbor

Paldiski Harbor is located about 50km north of Tallinn City. Paldiski Harbor, which was developed as a military port under the rule of the Former Soviet Union (FSU), has been redeveloped into a commercial port. It handles metal, fertilizer, peat and Ro/Ro cargo.

1.1.4 Latvian Ports

(1) Riga Port

Riga Port is a river port situated at the estuary of the Daugava River that flows into the Gulf of Riga. Riga Port, taking geographical advantage of being close to Moscow, handles a substantial amount of transit cargo to/from Russia. Its staple cargoes are timber, followed by metal. During winter time, the port is frozen, requiring ice-breaking operation.

(2) Ventspils Port

Ventspils Port is located outside the Gulf of Riga and about 160 km west of Riga Port. It is the largest port in Latvia, chiefly handling transit bulk cargoes such as crude oil and oil products from Russia.

(3) Liepaja Port

Liepaja Port is located about 100 km south of Ventspils Port. Originally it was developed as a navy base and redeveloped into a commercial port after 1994. Its port

zone is as large as 1,180 ha. Now only the inner port basin has been used leaving the outer port basin undeveloped.

1.1.5 Russian Ports in the Baltic Sea

(1) Kaliningrad Port (Kaliningrad)

Kaliningrad Port is located on a river flowing east to west into the Kaliningrad lagoon through the former capital of East Prussia, Konigsburg The port has four main harbors (basins) angled southeast off the river, each up to about 1000m long. There are also riverside berths. Downstream, the river channel becomes a dredged channel 9m deep along the north edge of the lagoon. In the commercial harbor, various kinds of cargoes are handled, including fertilizer, agri-products, steel products (plate, pig iron, coils, etc) and containers.

Figure 1.2 Plan of Kaliningrad Port

(2) Baltiysk Port (Kaliningrad)

On the north side of the entrance to the lagoon is Baltiysk, which is located on a bit of a peninsula/spit from the north. Baltiysk is mainly a naval base for the Russian navy. The most easterly basin of the naval base has recently been developed as a Ro/Ro ferry terminal provided with renovated quay and stern ramp areas. Part of the terminal is still under construction, including a passenger terminal with a quay depth of 10.5m.

(3) St. Petersburg Port (St. Petersburg)

St. Petersburg Port consists of several terminals, including the Sea Port of Saint-Petersburg (JSC), Baltic Bulk Terminal (BBT), etc. (See Figure 1.3). The JSC is a private group of eight stevedoring companies, plus a number of auxiliary companies (towage, security, personnel, agency, bunkering and others). The stevedoring companies within the group handle 55% to 60% of the total traffic through St. Petersburg Port.

(4) Ust Luga (St. Petersburg)

The Ust Luga Company is a joint stock company empowered by the Ministry of Transport to develop the Ust Luga port complex, which has leased a land area of 800

ha for 50 years. Subsidiary companies have been formed to operate the terminals and provide services such as electric power, marine services and water supply.

In practice, only a coal terminal exists, and that only in a preliminary form. The land has been reclaimed and only a small part of the planned storage area has been completed.

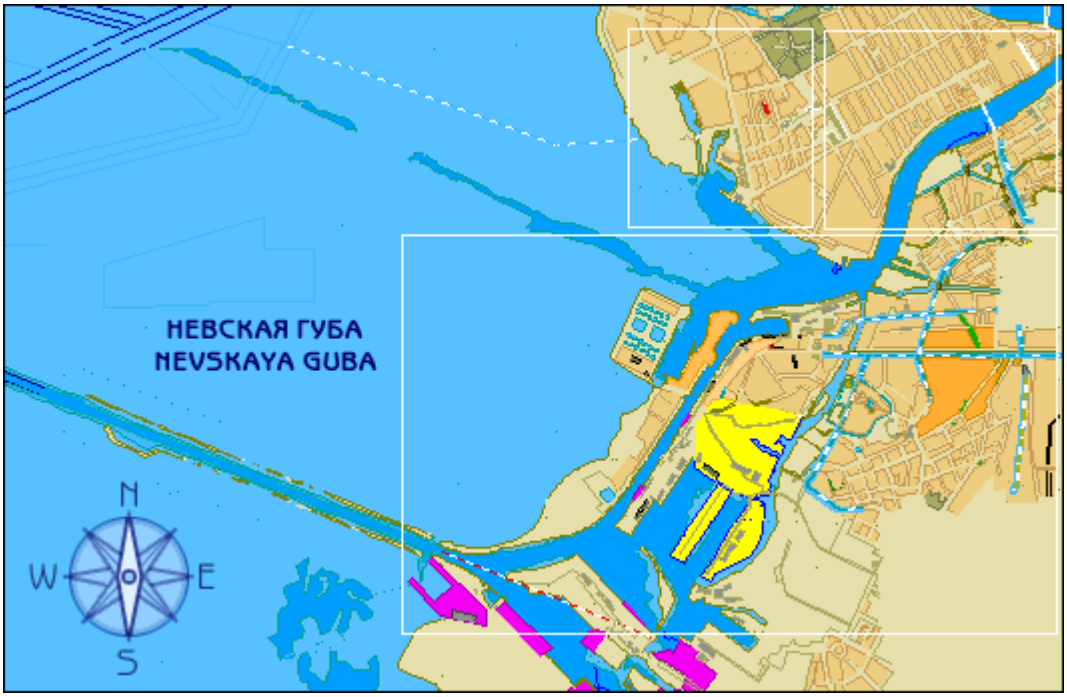


Figure 1.3 Plan of St. Petersburg Port

Photo 1.1 Ust Luga Coal Terminal, June 2003
(Main development area beyond)

1.1.6 Comparative Port Analysis

A comparative traffic analysis is detailed in Table 1.1 and a comparative facilities and capacity analysis in Table 1.2. The following conclusions can be made for the analysis of the traffic levels:

Table 1.1 Comparative Traffic Analysis of Eastern Baltic Ports

	Cargo Category						
PORTS	**Total Passengers** (Numbers)	**Total Freight** (Tons)	**Dry Bulk** (Tons)	**Liquid Bulk** (Tons)	**General Cargo** (Tons)	**Other Cargo** (Tons)	**Containers** (TEUs)
KALININGRAD							
1997	n/a	6,200,000	n/a	n/a	n/a	n/a	n/a
2002	0	9,855,000	3,467,000	4,874,000	1,514,000	0	21,313
Growth/Year (%)	*n/a*	*9.7%*	*n/a*	*N/a*	*N/a*	*N/a*	*'n/a*
KLAIPEDA							
1997	70,120	16,118,040	2,861,890	3,956,670	9,299,480	0	36,736
2002	107,741	19,739,700	5,705,950	7,979,170	6,056,170	0	71,589
Growth/Year (%)	*9.0%*	*4.1%*	*14.8%*	*15.1%*	*-8.2%*	*0.0%*	*14.3%*
LIEPAJA							
1997	n/a	2,295,800	214,800	360,200	1,720,800	0	3,568
2002	12,356 *	4,318,000	820,420	906,780	2,590,800	0	3,821
Growth/Year (%)	n/a	*13.5%*	*30.7%*	*20.3%*	*8.5%*	0.0%	*1.4%*
VENTSPILS							
1997	n/a	36,780,500	4,573,000	28,578,400	3,629,100	0	0
2002	8,370 *	28,704,000	6,203,000	20,021,000	2,480,000	0	0
Growth/Year (%)	n/a	*-4.8%*	*6.3%*	*-6.9%*	*-7.3%*	*0.0%*	*'n/a*
RIGA							
1997	n/a	11,213,100	2,205,900	2,215,100	6,792,100	0	132,559
2002	50,166 *	18,108,600	6,700,182	5,432,580	5,975,838	0	73,900
Growth/Year (%)	n/a	*10.1%*	*24.9%*	*19.7%*	*-2.5%*	0.0%	*-11.0%*
TALLINN							
1997	4,839,000	17,133,000	2,179,000	8,095,000	4,024,000	2,835,000	54,587
2002	5,945,000	37,855,000	5,877,000	24,301,000	2,490,000	5,187,000	87,912
Growth/Year (%)	*4.2%*	*17.2%*	*21.9%*	*24.6%*	*-9.2%*	*12.8%*	*10.0%*
ST PETERSBURG							
1998	n/a	21,450,900	5,773,100	8,873,200	6,804,600	0	202,350
2002	n/a	41,309,000	19,552,000	10,611,000	11,146,000	0	456,836
Growth/Year (%)	*n/a*	*17.8%*	*35.7%*	*4.6%*	*13.1%*	*0.0%*	*22.6%*

* 2001 Data

Sources : Baltic Ports Organisation,
Port Statistics,
Latvian National Agency,
Estimate by the JICA Study Team

a) Klaipeda's passenger traffic is eclipsed by the Port of Tallinn with a large number of passengers who cross the Gulf of Finland each day between Tallinn and Helsinki. With almost 6 million passengers in 2002, Tallinn is one of the most heavily used passenger ports in the world.

b) Apart from Ventspils, all the Eastern Baltic ports have experienced a significant growth in freight traffic. This ranges from an annual increase of 4.1% at Klaipeda to a very significant annual increase of 17.8% at St. Petersburg.

c) All the ports have experienced a very significant growth in dry bulk traffic, with annual growth rates ranging from 6.3% to 35.7%. Many have had growth of several million tons, with St. Petersburg by far the largest increase at 13.8 million tons. Klaipeda's growth in dry bulk cargo from 1997 – 2002 was 2.8 million tons.

d) Liquid bulk cargoes principally relate to oil products. Other than Ventspils, all the ports have experienced a significant growth in liquid bulk, principally due to the increase in exports of oil from Russia. The largest absolute increase was at Tallinn with oil products growing by 16.2 million tons from 1997 – 2002 and now has taken over as the largest exporter of Russian oil in the Baltic. Complementing these results is the development of the new Russian port of Primorsk north west of St. Petersburg over the last few years specifically for the export of Russian oil which reached 12.3 million tons in 2002.

e) Most ports have experienced an increase in container usage over the last five years although the extent has been variable. The exception is Riga which suffered a significant decline (about 40%) as a result of the diversion of Russian container traffic away to St. Petersburg. St. Petersburg is already the largest container port on the Eastern Baltic and has seen its traffic more than double (to 457,000 TEUs) in the last five years. Klaipeda has also seen its traffic almost double in five years and now rivals Riga as the third largest container port.

Table 1.2 Comparative Facilities and Capacities of Eastern Baltic Ports

PORTS/ YEAR	Facilities					Capacities		
	Max. Depth (Metres)	Berths (Number)	Quay Length (Metres)	Ro/Ro Berths (Number)	Liquid Berths (Number)	Port (Mill Tons)	Containers (TEUs)	Lifting (Tons)
KALININGRAD								
2002	8.2	50	6,130	3	3	15.0	30,000	40
KLAIPEDA								
2002	14.0	152	19,216	7	8	30.0	200,000	64
LIEPAJA								
2002	9.5	80	7,000	2	9	7.5	7,000	40
VENTSPILS								
2001	17.0	60	11,012	3	9	80.2	150,000	100
RIGA								
2002	12.2	114	13,818	5	6	20.0	300,000	40
TALLINN								
2002	17.4	59	10,175	12	8	47.0	150,000	60
ST PETERSBURG								
2002	11.5	78	11,640	10	1	50.0	550,000	300

Source : Baltic Ports Organisation.
Port Statistics

From Table 1.2 the following conclusions can be made ;

a) Ventspils and Tallinn have the deepest water depth of the Eastern Baltic ports at 17.0 - 17.4 m, Klaipeda is the next deepest at 14.0 m.

b) Klaipeda has the largest number of berths (152) and the longest quay length (19.2 km) of the Eastern Baltic ports. The next largest is Riga with 114 berths and 13.8 km of quays.

c) Ventspils has the largest capacity (80.2 million tons) of the seven ports. The next largest (50.0 million tons) is St. Petersburg. It also caters for bulk cargoes but some of these e.g. coal are slowly being moved to the new Russian port at Ust Luga to allow the space within St. Petersburg. At 30.0 million tons, Klaipeda has the fourth largest port capacity in the Eastern Baltic.

d) Comparison of the port capacity with the total traffic levels indicates that many are operating at more the 70% of capacity, in particular Riga (at 91%), St. Petersburg (83%), and Tallinn (at 81%). Klaipeda (at 66%) is not far behind.

e) Comparison of the port container capacity with the traffic levels indicates that there is a wide variation in the use of the container facilities. The highest utilisation rate (83%) is at St. Petersburg, suggests a degree of congestion there with a very rapid expansion in usage over the last five years. Klaipeda's usage is 36% reflecting the relative age of the facility and it has also experienced rapid growth over the last five years.

1.1.7 Ship Movements in the Baltic Sea

The most comprehensive research of shipping patterns and volumes within the Baltic Sea is detailed in a report produced by VTT Technical Research Centre of Finland for the Finnish Ministry of Traffic and Communications in September 2002 as shown in Figure 1.4. Only one of the many diagrams from the VTT report has been reproduced below to illustrate the current (2000) ship movements in the Baltic Sea. Location 4 has the annual traffic of 58,500 and Klaipeda Port 5,400 in 2000.

Source: VTT Technical Research Centre of Finland

Figure 1.4 Current Ship Movements in the Baltic Sea

1.2 Inland Transport Network

1.2.1 Transport Routes in Lithuania

Historically the principal road and railway routes have been east-west transit corridors from Russia and Belarus through Vilnius to the Baltic coast at Klaipeda and at Kaliningrad. With the prospective membership of the Baltic States to the European Union (EU) north-south routes are now becoming more important. Major improvements to the main north-south road route are underway and plans are being considered for a new north-south railway line.

Several of Lithuania's road and railway routes have been incorporated into the European Union's Trans European Network (TEN). The aim of the network is to identify the strategic transport corridors for passenger and freight traffic in the Central and Eastern European countries planning to join the EU and their immediate hinterland. The routes which affect Lithuania are:-

a) Corridor I 'Via Baltica' North/South road corridor from Warsaw (Poland) - Marijampole – Kaunas – Panevezys – Riga (Lativa) and Tallinn (Estonia). A separate branch of it (Corridor IA) runs from Gdansk (Poland) – Kaliningrad (Russia) – Taurage – Siauliai – Joniskis – Riga (Latvia).

b) Corridor IX is a complex network of predominantly North/South routes running from Kaliningrad/Klaipeda and also from Helsinki/St. Petersburg through to Kiev (Ukraine) to the Black Sea at Odessa and to the Mediterranean Sea at Alexandroupoli. Branches which run through Lithuania are: -

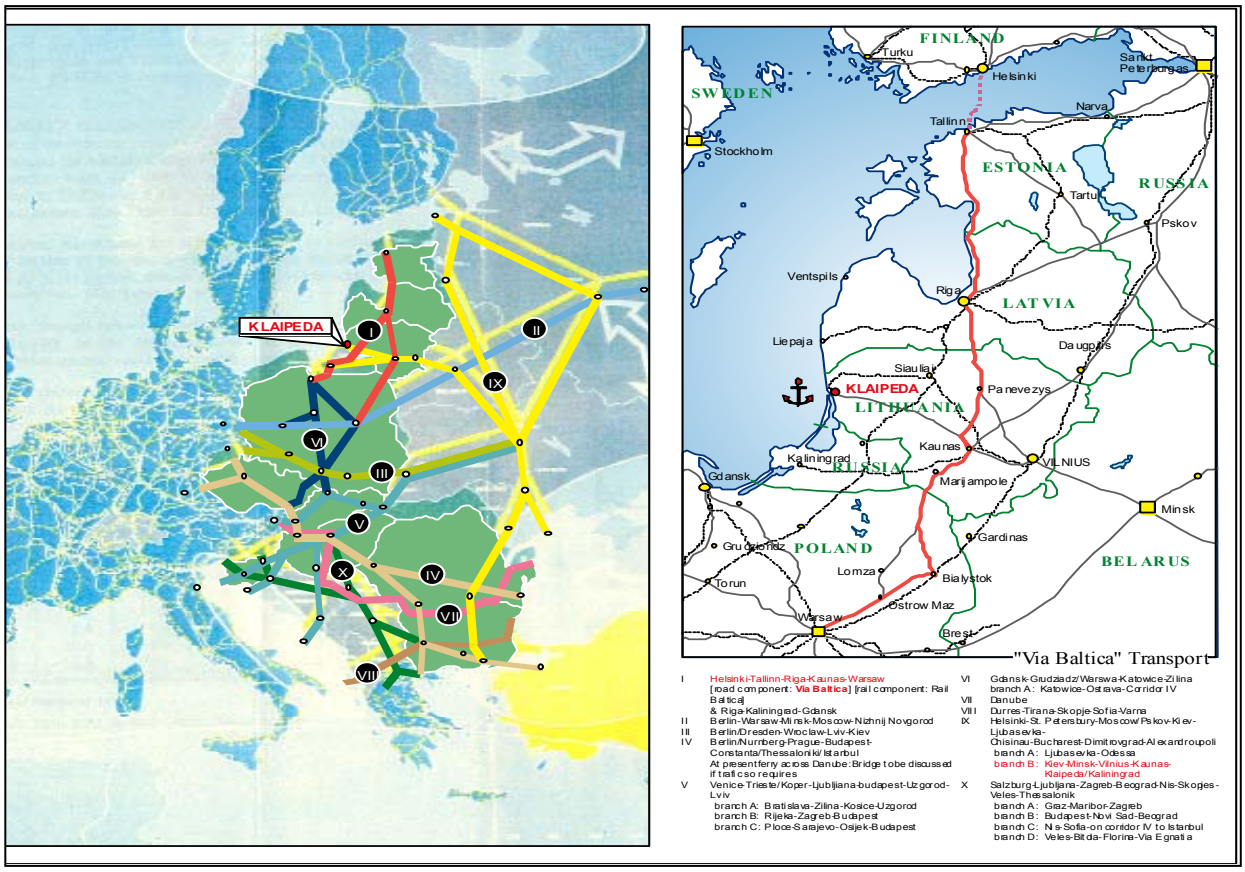


Figure 1.5 Klaipeda and European Transport Network

1.3 Tariff System

1.3.1 Railway Tariff

Table 1.3 shows some examples of commodity-based transit tariff between the eastern Baltic Sea ports and hinterland.

Russian Railway's transit tariffs for the Russian Ports such as Kaliningrad Port and St. Petersburg Port are the lowest for six commodities among the ports. The highest tariffs of the two Russian Ports are around 50 to 60% of those to Klaipeda Port. By comparing the tariff per 100 ton km, the lowest tariff is shown by fertilizer between St. Petersburg Port and Sevemaya Station in Russia as 0.68 US$ followed by Kaliningard Port as 0.80 US$.

The tariffs less than 1 US$ are shown for grain between Moscow and the two Russian Ports as 0.75 US$ to St. Petersburg Port and 0.96 US$ to Kaliningrad Port respectively. The Russian Railway's tariffs for steel products are 1.18 US$/100 ton km to Kaliningrad Port and 1.16 US$/100 ton km to St. Petersburg respectively. These tariffs are almost doubled to that to Klaipeda Port at 2.31 US$/100 ton km.

The weight of railway distance of Russian railway is the largest of all railways of other countries. Then the tariff reduction policy of Russian railway has an effective and positive impact on cargo demand on the routes to the two Russian ports, but has a negative impact on cargo demand to other ports. In particular, the tariffs of the Russian railway to Kaliningrad Port are the lowest of all commodities. Comparing with the tariffs of the Russian railway to Klaipeda port, the tariffs to Kaliningrad Port is only 23% of that to Klaipeda Port for steel products, 21% for fuel oil, fertilizer and grain, and 22% for perishable goods.

To cope with this tariff reduction policy of the Russian railway, the Lithuanian Railways Company has tried to stop the cargo flow from converting from the Klaipeda route to the Kaliningrad port by using a tariff lowering policy. For example, the tariffs of the Lithuanian railway are 1/2.4 for steel products and 1/2.5 for grain, but the weight of distance for the Lithuanian railway is extremely low (less than 15% of the total railway distance). The result is that the tariff reduction by the Lithuanian Railway for this short distance has not been effective in reducing of the total tariff between Russia and the Klaipeda Port, though this policy should have contributed to more cargo to Klaipeda Port.

As can be seen above, the Russian Railway's rates are significantly lower and easily compensate for any additional stevedoring costs at Russian ports or shipping costs to/from the Russian ports in the Gulf of Finland. As a result of this Russian policy, the transit cargo through Klaipeda Port fell drastically.

Table 1.3 International Transit Tariff between Eastern Baltic Seaboard Ports and Hinterland by Major Commodity

Commodity	Ports	RDZ	BC	LG	LDZ	EVR	Total	RDZ	BC	LG	LDZ	EVR	Total	RDZ	BC	LG	LDZ	EVR	Total
		From Novyy Lipetsk St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Steel Products	Tallin	1331				277	1608	42.54				3.37	45.91	3.20				1.22	2.86
	Riga	1210			288		1498	41.33			2.20		43.53	3.42			0.76		2.91
	Ventspilis	1210			459		1669	41.33			3.52		44.85	3.42			0.77		2.69
	Klaipeda	**654**	**503**	**419**			**1576**	**27.66**	**4.20**	**4.54**			**36.40**	**4.23**	**0.83**	**1.08**			**2.31**
	Kaliningrad	913	418	232			1563	8.99	3.40	6.00			18.39	0.98	0.81	2.59			1.18
	S.Peterburgas	1247					1247	14.47					14.47	1.16					1.16
		From Yanichkin St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Fuel Oil	Tallin	793				277	1070	30.32				4.56	34.88	3.82				1.65	3.26
	Ventspilis	703			459		1162	27.75			4.18		31.93	3.95			0.91		2.75
	Klaipeda	**560**	**418**	**419**			**1397**	**22.52**	**4.00**	**5.62**			**32.14**	**4.02**	**0.96**	**1.34**			**2.30**
	Kaliningrad	711	418	232			1361	6.06	4.00	6.00			16.06	0.85	0.96	2.59			1.18
	S.Peterburgas	709					709	9.37					9.37	1.32					1.32
		From Sevemaya St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Fertilizer	Tallin	1019				277	1296	17.51				3.37	20.88	1.72				1.22	1.61
	Ventspilis	697	247		473		1417	13.13	1.80		4.68		19.61	1.88			0.99		1.38
	Klaipeda	**689**	**418**	**419**			**1526**	**13.13**	**3.20**	**5.20**			**21.53**	**1.91**	**0.77**	**1.24**			**1.41**
	Kaliningrad	840	418	232			1490	3.39	3.20	5.40			11.99	0.40	0.77	2.33			0.80
	S.Peterburgas	935					935	6.32					6.32	0.68					0.68
		From Moscow St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Grain	Tallin	764				277	1041	14.52				5.66	20.18	1.90				2.04	1.94
	Ventspilis	685			459		1144	13.44			5.00		18.44	1.96			1.09		1.61
	Klaipeda	**542**	**418**	**419**			**1379**	**11.24**	**3.80**	**4.38**			**19.42**	**2.07**	**0.91**	**1.05**			**1.41**
	Kaliningrad	693	418	232			1343	3.07	3.80	6.00			12.87	0.44	0.91	2.59			0.96
	S.Peterburgas	680					680	5.10					5.10	0.75					0.75
		From Moscow St. (Russia)																	
		Distance, km						Tariff, $/t						Tariff, $/ 100 tkm					
Perishable	Tallin	764				277	1041	75.34				10.11	85.45	9.86				3.65	8.21
	Riga	685			288		973	68.96			10.80		79.76	10.07			3.75		8.20
	Ventspilis	685			459		1144	68.96			16.20		85.16	10.07			3.53		7.44
	Klaipeda	**542**	**418**	**419**			**1379**	**55.96**	**12.20**	**13.57**			**81.73**	**10.32**	**2.92**	**3.24**			**5.93**
	Kaliningrad	693	418	232			1343	15.49	12.20	10.52			38.21	2.24	2.92	4.53			2.85
	S.Peterburgas	680					680	23.42					23.42	3.44					3.44

Source: Marketing Division of Lithuanian Railways (Joint Stock Company)
Note: Abbreviations of railways are as follows.

1.3.2 Truck Tariff

According to the interviews with several forwarder and truck companies, there seem to be two major truck routes in the hinterland and foreland of the Klaipeda Port. Table 1.4 shows the comparison of the tariff estimated on the basis of cost between sea route and inland (road) route. The sea route consumes higher cost and longer time.

Table 1.4 Comparison of Tariff between Vilnius and Munich

Route		Distance (km)	Tariff (€/Vehicle)	Time
Sea Route (Through Klaipeda Port)	Klaipeda-Kiel	770	700	30 hours
	Vilnius-Klaipeda	340	221	1 day
	Kiel-Munich	650	420	1 day
	Total	1,750	1,341	2day+30hour
Road		1,650	1,073	2.0 days

Source: The JICA Study Team's interview with an International forwarding company in Vilnius.

1.3.3 Port Tariff

Figure 1.6 shows the comparison of port dues of the major Eastern Baltic Seaboard Ports in different currencies. Port dues for tankers in Klaipeda Port are 25-40 percent higher than in the other ports. Port dues for dry bulk cargo vessels in Klaipeda Port are up to 30 percent higher, and in comparison to Tallinn Port up to 55 percent. Dues for small dry bulk cargo vessels in Riga Port exceed the dues of Klaipeda Port by nearly 10 percent. The dues for general cargo vessels in Klaipeda Port are on the same level as in Riga and Ventspils ports, but exceed the dues of Tallinn Port by approximately 20 percent. The dues for container vessels in Klaipeda Port are equal to those in Tallinn Port and Riga Port. The dues in Ventspils Port are lowest, but cargo handling volumes in the new container terminal are practically equal to zero. The port dues for Ro/Ro vessels in Klaipeda Port are up to two times lower than in the other ports.

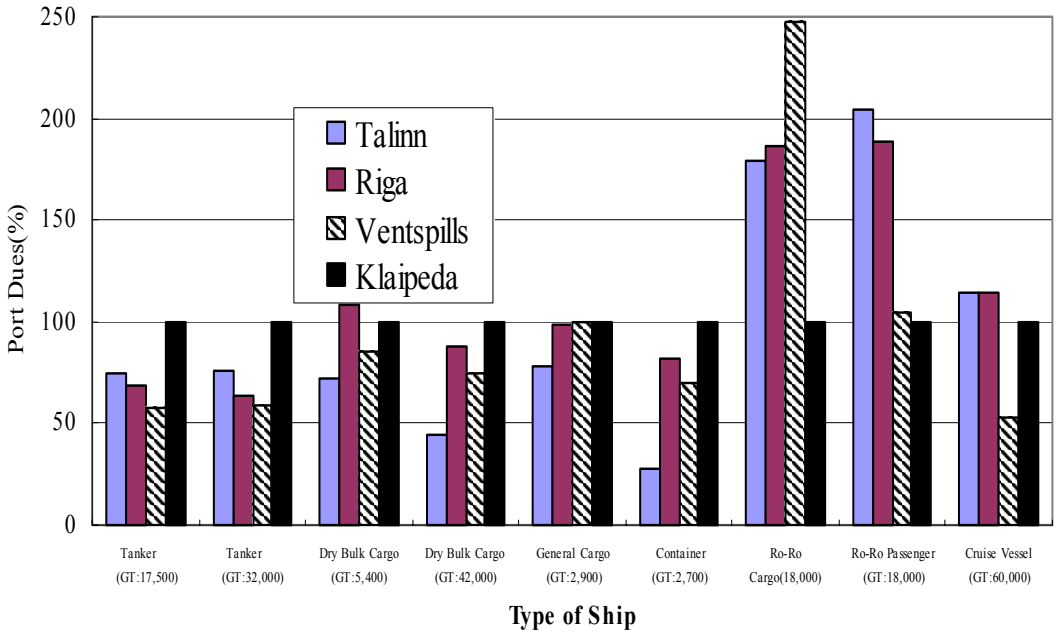


Figure 1.6 Comparison of Port Dues (Klaipeda = 100%) by Type of Vessel for Eastern Baltic Seaboard Ports

The comparison of port dues for GT 3,000 as an example shows that total port dues are 4,824 EURO for Klaipeda Port and 4,332 EURO for Kaliningrad Port respectively. The Klaipeda port dues are slightly higher than that of Kaliningrad.

The stevedoring charges of bulky and general cargo such as fertilizer, food products and raw sugar in St. Petersburg are slightly higher than those of Klaipeda Port. However, other St. Petersburg charges are much higher than those of Klaipeda Port. For example, the St. Petersburg charges for sawn timber and containers are 5.5 times and 2 times those of Klaipeda Port respectively.

1.3.4 Comparison of Tariff by Mode and by Route

As shown in Table 1.5, the total tariffs of routes through the Russian ports of St. Petersburg and Kaliningrad are the cheapest of all routes through ports, mainly because of the abnormal tariff lowering policy of the Russian Railway. In particular, the tariff on the Kaliningrad route (1,563km) is the most beneficial as a result of the tariff lowering policy in spite of being almost the same railway distance as the Klaipeda route.

For the 2,000GT vessel, the weighting of tariff over the total distance via Klaipeda Port route is 64.54% (railway), 7.09% (stevedoring charges) and 28.37% (ocean tariff) respectively. The weighting of the railway tariff is dominant. The weightings of the railway tariffs of other routes, except Russian Ports, are larger than that of that of the Klaipeda Port route. They are mostly 70%. These ports are doubly disadvantageous with respect to tariff competition compared with the two Russian ports. For the 2,000GT vessel, the weights of railway tariff on the routes through the Russian ports are 36.66% for St. Petersburg Port and 44.43% for Kaliningrad Port respectively.

Furthermore, the weights of stevedoring charges of the Russian ports of St. Petersburg and Kaliningrad are the largest of all ports. Therefore, it is obvious that the routes through the Russian ports are more advantageous than other routes via Baltic ports because of the increase of freight traffic volume created by lower railway tariffs and stevedoring companies benefit by an increase of revenue from the higher level and weight of their stevedoring charges.

By taking account of the slight difference of ocean tariff among the routes through the Baltic ports, except the Russian ports, the tariff competition is definitely decided, not by ocean tariff, but by the tariff of inland transportation, including trucking.

Table 1.5 Comparison of Tariff by OD Pair between Russia and Other Countries (Example of Steel Products)

Cargo	Vessel Type (GT)	Hinterland			Foreland		Distance (km)			Tariff (US$/ton)				
		Origin			Destination									
		country	Place (Railway Station)	Port	Port	Country	Railway to Ports	Seaway Between Ports	Total	Railway to Ports	Stevedor-ing Charges	Ocean Tariff	Total	Port Dues
Steel Bar	2,000	Russia	Novyy Lipetsk	St.Petersburg	Hamburg	Germany	1247	1,200	2,747	14.47	7.00	18.00	39.47	0.55
				Tallinn			1608		3,108	45.91	4.00	17.00	66.91	0.85
				Riga			1498		2,998	43.53	4.00	17.00	64.53	1.28
				Ventspils			1669		3,169	44.85	4.00	17.00	65.85	1.28
				Klaipeda			1576		3,076	36.40	4.00	16.00	56.40	1.18
				Kaliningrad			1563		3,063	18.39	5.00	16.00	41.39	1.06
Steel Bar	10,000	Russia	Novyy Lipetsk	St.Petersburg	Houston, Texas	USA	1247	11,000	12,247	14.47	7.00	37.00	58.47	0.45
				Tallinn			1608		12,608	45.91	4.00	36.00	85.91	0.75
				Riga			1498		12,498	43.53	4.00	36.00	83.53	1.13
				Ventspils			1669		12,669	44.85	4.00	36.00	84.85	1.13
				Klaipeda			1576		12,576	36.40	4.00	35.00	75.40	1.04
				Kaliningrad			1563		12,563	18.39	5.00	35.00	60.39	0.94

Source: 1. Baltic Shipping Company, Klaipeda
2. International Railway Transit Tariff, Marketing Division of Lithuanian Railways Company
3. Regulation of each Baltic Seaport Authority

Note: 1. Ocean tariff from the ports of Tallinn, Riga and Ventspils are assumed to be the same as 17.00 US$/ton
2. Ocean tariff from Kaliningrad Port is assumed to be the same as of Klaipeda Port.
3. Stevedoring charges for the Ports of Tallinn, Riga, Ventspils and Kaliningrad are just tentative.

1.3.5 Comprehensive Tariff Policy for International Transport

(1) General

The transport tariff policies in the EU and CIS countries have been developed reflecting their region's socio-economic and political situations. Lithuania has been affected by the history of changing geopolitical and economic climate in the EU and CIS countries. General views on the transport policy in CIS countries and the EU are briefed below.

(2) Russian Tariff Policy

The Russian Government Resolution of May 1998 presented a new concept for the restructuring of railways. The concept provides for a new pricing policy with flexible and reduced tariffs. The Russian Railways decided to reduce the freight tariff to the Russian Seaports (St. Petersburg and Kaliningrad) in 2001. However, the tariff to the other eastern Baltic Seaboard ports, including Klaipeda Port, has remained the same as before.

The background of the transit tariff reduction policy of the Russian Railway is that it basically originated from international trade imbalance of which main causes are reported as follows:

- Construction of new Russian ports in the Baltic Seaboard began in conditions when privatization in Russia was underway and the country simply started running out of money for economic reforms.
- Today Russia loses up to 1.5 billion US dollars a year from transportation of cargo via ports in Ventspils, Riga and Odessa.

(3) Tariff Policy of EU

As Lithuania will be a member of the EU in 2004, the pricing policy of the EU should be regarded for rational tariff setting for each mode of Lithuanian transport. The general pricing principles of EU are considered to be as follows:

Transport users should pay the full marginal costs, internal as well as external, of the transport services they use (external costs should be internalized). External costs include uncovered accident costs, uncovered environmental costs, and congestion costs.

Transport prices should be better aligned with the true costs of the transport and therefore be differentiated according to times, space and mode. In principle, total transport costs should be recovered in the long run.

It is noted that the railway sector in the EU appears to have a lower degree of cost recovery of infrastructure costs than the road sector. In general, the Commission does not aim at full cost recovery in the short run and focuses instead on developing methods for homogeneous calculations of rail infrastructure costs. EU policy has until now been primarily focused at road transport and partly at rail transport, whereas, until recently, there has not been a pricing policy established for ports.

The Green Paper envisages various ways of improving port infrastructure, increasing the efficiency of ports and their integration into the Union's transport network (Trans European Transport Network -TEN).The ownership, organization and administration

of ports varies greatly between member states, and the Commission is therefore looking at ways of pricing port infrastructures to ensure that costs of port services and facilitates are paid by the port users, in accordance with the principles of fair and efficient pricing.

(4) Tariff Unification Policy of TRACECA Project

During May 1993, a conference organized by the European Commission was held in Brussels at which the states of Armenia, Azerbaijan, Georgia, Turkmenistan, Uzbekistan, Kazakhstan, Kyrgyzstan and Tajikistan were represented. The objectives of the Conference were:

To promote co-operation among the participating states in all matters pertaining to the development of trade and transport in the region.

To promote the Central Asian-Trans-Caucasian-Europe transport corridor.

To identify problems and deficiencies in the regional trade and transport systems.

To define in terms of content and timing a Technical Assistance Program to be financed by the EU.

Rail transit tariffs are set according to the International Transit Tariff (MTT) scale, which is periodically adjusted.The MTT scales allow for heavy discounts on published prices, which may compensate for the apparent unrealistic level at which the rates are first set. This discount system allows for some commercial flexibility.

A previous TRACECA project attempted to set up a completely new transit methodology, but it was found that the MTT scale is so deeply implanted in the sales and marketing philosophy of the whole region, that it proved difficult to convince the parties concerned that such a plan was practical. It is felt that the level of expertise in some local rail management on this subject is not well developed and attitudes could be difficult to change.

1.3.6 Clearance of Boarder Bottlenecks

To establish an economical, efficient and environment-friendly cross-border transport system among the Baltic states, EU countries and CIS countries, various kinds of transport projects have been planned or already under operation.

(1) 2K Project

Lithuania and the Russian Federation (RF) obliged the institutions in charge to present their suggestions regarding coordination of rail tariffs of the two states seeking to increment transport flows between Klaipeda and Kaliningrad ports. In May 2001, after approval of the possibility of uniting cargo flows to the two ports into one transport corridor, the Managing Committee of the 2K Project was founded.

The first concrete joint project within the 2K Project is a container shuttle train to Moscow initiated by Klaipeda and Kaliningrad ports and shipping lines. It was reported that Lithuanian, Russian and Belarusian railways have already granted acceptable tariffs. It is expected that the coordination of cargo flows and integration into new transport corridors will be realized.

(2) Viking Project

In 2002, Lithuanian, Belarus and Ukraine railways together with their countries' forwarders and stevedoring companies formulated a joint project of a shuttle train service named "Viking". This train carries various types of cargo in 20 feet/40 feet, special and reefer containers and wagons. It also accommodates auto-trains and other vehicles. The route of the train is Odessa - Berezhest - Slovechno - Gudagoy - Kena - Klaipeda. It is possible to load and unload cargo at intermediate stations.

The operators of the train include Lietuvos Gelezinkeliai in Lithuania, the Belarusian National Transport Forwarding Company, *Belintertrans* in Belarus, the Ukrainian State Transport Service Center *Liski* in Ukraine and the biggest stevedoring company, *KLASCO* in Klaipeda Port. The train runs once a week. With the cargo demand turning up, train service will be more frequent. Currently it takes 68 hours to cover the distance from Odessa (Usatovo Station) to Klaipeda (Draugyste Station) and from (Draugyste Station) to Odessa (Usatovo Station) it takes 72 hours.

(3) Border Bottleneck (Truck)

There are many obstacles for international road transportation such as: i) customs clearance, ii) quota of the quantity of specified imports (Russia set the import quota for meat which led to a decrease in the meat import from the southern part of Europe), iii) number of permits to cross the borders, iv) limit of weight of cargo to be loaded on trucks (Russia and Belarus: 38 ton/traillor, Poland and the Baltic States: 40 ton/trailor, Sweden: 60ton/trailer), v) road tax (Italy, Spain and France: 0.27 Euro/km, Germany: 0.15 Euro/km implemented from August, 2003).

As the TIR (Transport Internationaux Routiers) Convention 1975 stipulates that procedures and checks applied for the Customs authorities of one country are recognized by the Customs authorities of all other countries involved in the transport, the goods theoretically are only inspected at departure and again at destination. There is no need for physical checks of the goods while they are in transit (unless, of course, Customs authorities find a reason to do so). This saves a lot of time and manpower on the part of Customs.

1.4 Economic and Industrial Development

1.4.1 Economy

Alone among the former Soviet republics the Baltic States were quick to adopt market economies and to implement democratic reforms. As a result they have largely avoided the economic and political crises which have affected other regions in transition from a centrally planned economy. Privatisation in the Baltic States was largely completed by 2002. In addition the three states have actively sought to become members of wider economic and political unions including the European Union (EU) and North Atlantic Treaty Organisation (NATO).

An illustration of the economic development of the Baltic States and the members of the Commonwealth of Independent States are provided in the following three graphics (Figure 1.7) using information from the World Bank database. The first shows the trend in real GDP growth of the three Baltic States in US$ (1995 constant level) for a 10 year period from 1992 – 2001. The other two show the equivalent for the 12 CIS states, with Russia and Ukraine separated due to the relative size of their economies.

These graphics reveal the following:

On the break-up of the Former Soviet Union (FSU) in 1992 there was a sharp decline in the economies of the Baltic States for about three years. Since then, however, there has been a consistent improvement in their economies, temporarily interrupted in 1999 due to the affects of the Russian economic crisis the previous year.

Even with its decline in GDP Russia is still by far the largest of the CIS economies, making up about 75% of the total CIS GDP in 2001. But Ukraine's economy has remained relatively flat during the mid 1990s after falling following the break-up of the FSU.

Kazakhstan's economy declined rapidly in the early 1990s but has been recovering just as fast during the late 1990s/early 2000s. Belarus's economy declined significantly from 1992 – 1995 but has improved steadily since then, and is now larger than in 1992. Turkmenistan's economy declined over a longer period (1992 – 1997) but has been increasing very quickly and now almost matches the 1992 level. All the other economies of the CIS countries are relatively small.

1.4.2 Population

Population statistics for the Baltic States and CIS countries are detailed for the last 10 years in Table 1.6 below.

Table 1.6 Population Size (Million) in Baltic States and CIS Countries

Country	1991	1996	2001	Growth 1991-2001
Lithuania	3.70	3.60	3.49	-5.7%
Latvia	2.66	2.49	2.34	-12.0%
Estonia	1.57	1.45	1.35	-14.0%
Russia	148.62	147.74	144.84	-2.5%
Ukraine	52.00	51.11	49.12	-5.5%
Belarus	10.19	10.16	9.97	-2.2%
Moldova	4.36	4.33	4.27	-2.1%
Kazakhstan	16.23	15.58	14.83	-8.6%

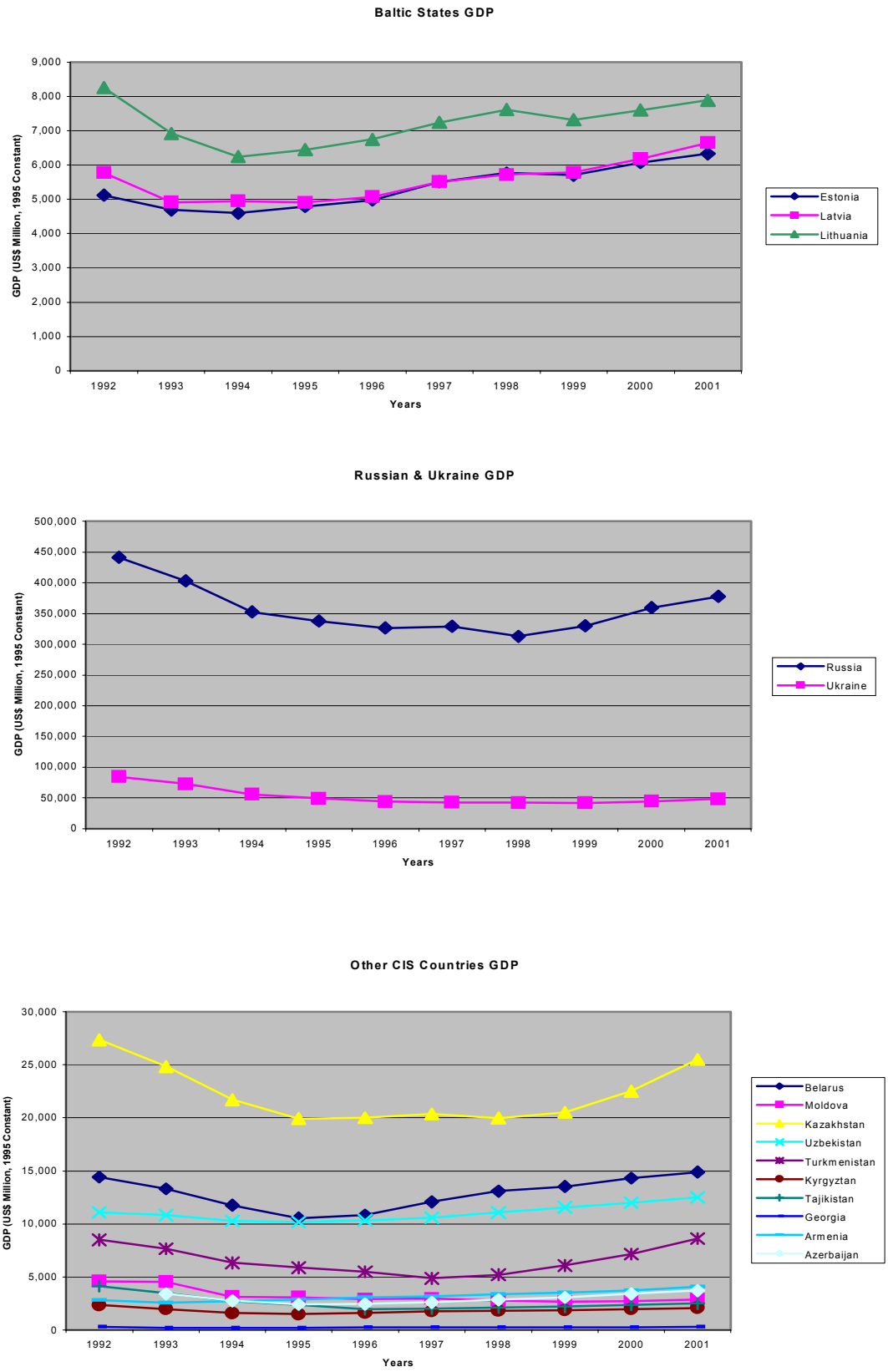
Source: World Bank Economic Database

The following conclusions can be made from these population statistics:-

There has been a significant relative decrease in the population of each of the three Baltic States, particularly Latvia and Estonia. This is principally due to the migration of Russians back to their home country following the break up of the FSU. Latvia and Estonia had larger Russian populations than Lithuania.

Russia has by far the largest population compared with the Baltic States and the other CIS countries (133.8 million). It makes up just over half of the CIS total population.

Whilst some of the CIS countries have experienced small relative declines due to a combination of economic and political factors a number of the Central Asian countries have experienced significant increases.



Source: World Bank Economic Database

Figure 1.7 GDP Growth in Baltic States and CIS Economies

A notable feature of many of the countries has been a decline in the birth rate as a result of the economic climate which will lead to a gradual ageing of the overall population. This may reverse now that the economies of most of the countries are starting to recover.

1.4.3 Industry

(1) Russian Oil

Prior to 1991, the FSU was the world's largest exporter of oil. Soviet oil production and exports declined throughout the 1980s and in the aftermath of the break up of the FSU, Russia's net oil exports plummeted in 1994.

After Russia restructured its oil industry into a number of vertically-integrated, private oil companies the country's oil production and exports began to increase again. In 2001, Russia's net oil exports rose for the seventh consecutive year. In January 2003 Russia's exports exceeded those of Saudi Arabia, the world's largest oil producer. Russia's net oil exports increased again to 5.2 million bpd in 2002. Crude oil exports are a key source of income for Russia and provide approximately 25% of the Russian government's income.

The majority of Russian oil is exported via several terminals on the Baltic Sea and Black Sea, and then on to Europe.

Russia has traditionally exported much of its crude oil through the Baltic ports. As Ventspils has discovered, these traditional routes may be altered and one of the reasons for halting crude oil to that port was the need to supply the new Baltic Pipeline System with supplies of crude oil to feed Primorsk.

There would appear to be a desire to have some ownership of the supply routes to the world market whether via the new Baltic Pipeline system or the traditional routes through the Baltic States. The Russian Yukos oil company is part owner of the Mazeikei oil refinery and Butinge oil terminal in Lithuania. As the Ventspils oil terminal has not yet been privatised no Russian company has gained a stake in the terminal and it has been suggested that one of the reasons the crude oil supply has been terminated is to put pressure on the Latvian government during this process.

The consistent flow of Russian oil onto the world market and the income derived has helped to stabilise the Russian economy and to increase the country's wealth. This will increase the propensity for the Russian economy to import more consumer goods, most likely from Western Europe.

Two issues affecting the overall supply and price of crude oil in the next few years will be the increased oil production from Iraq (which has the world's second largest oil reserves) and also the new supplies due to become available from the Caspian Sea area.

(2) Iron and Steel

Table 1.7 Net Importers and Exporters of Steel in 2001

(Units : Million Metric Tons)

Rank	Country	Net Exports*	Rank	Country	Net Imports*
1	Japan	25.4	1	United States	22.1
2	Ukraine	24.0	2	China	18.1
3	Russia	22.5	3	Hong Kong	5.8
4	Belgium, Luxemburg	9.1	4	Thailand	5.6
5	Brazil	8.2	5	Italy	5.4
6	Turkey	5.1	6	Iran	4.1
7	Germany	4.8	7	Spain	4.1
8	South Africa	4.0	8	Vietnam	3.5
9	South Korea	3.3	9	Philippines	2.8
10	Kazakhstan	2.9	10	Portugal	2.4
11	Austria	2.3	11	Singapore	2.3
12	Slovak Republic	2.2	12	U.A. Emirates	2.2
13	Czech Republic	1.5	13	Malaysia	2.1
14	India	1.4	14	Indonesia	2.1
15	Argentina	1.3	15	Greece	2.0

Source: Report of World Steel (2003)

There are relatively few main net exporting countries (Japan, Ukraine, and Russia) and principally only two net importing countries (USA and China). Within the CIS countries Russia, Ukraine and, to a lesser extent Kazakhstan, are significant manufacturers of iron and steel products. It is clear that they are also very important net exporters of these products onto the world market. Due to the Russian Railway tariff introduced in 2001 most of these Russian iron and steel products are now being directed via Russian ports. Baltic ports such as Klaipeda which handle this traffic have seen a significant decrease.

(3) Fertilisers

There has been a very significant increase in exports from Lithuania which has now become a major producer of fertilisers. Imports of other fertilisers have also increased significantly, but not as fast as exports.

Latvia and Estonia have only a very small trade in fertilisers.

Russia, Ukraine, and Belarus are all major producers of fertilisers and all three countries have significantly increased exports over the period from 1992 – 2000. Imports to these countries have virtually ceased.

Surprisingly, Kazakhstan's trade in fertilisers, both imports and exports, would appear to have almost ceased. As fertiliser production and consumption in the country has also declined it suggests a cutback of agricultural production, but this is not substantiated as shown by the level of grain production described below. It is assumed the data for 2000 is incomplete.

(4) Grain

Whilst the amount of data on grain production and exports was less extensive it was still useful to reveal the main trends in agricultural production. The characteristics of grain production (wheat, maize and barley) in the main CIS producing countries, along with Lithuania are as follows;

Kazakhstan is by far the largest grain exporting country and has been so for several years. It is blessed by a large area of agricultural land, a relatively small population (about 15 million) requiring feeding, and a well run economy. Whilst agricultural production in Russia and Ukraine is higher, their populations are significantly larger (145 million and 49 million respectively). Many years ago Ukraine used to be called 'The Bread Basket of the Soviet Union' and agricultural production should now be significantly higher but the sector has been hampered by a lack of reform and incentives.

CHAPTER 2 EXISTING CONDITIONS OF KLAIPEDA PORT

2.1 Location of the Port

The Port extends from north to south in a long and narrow band of over 10 km lying mostly adjacent to the urban area of Klaipeda City. The water area of the Port is a natural channel connecting the Kursiu Lagoon (the Lagoon) and the Baltic Sea. The left bank of the channel is the coast of Kursiu Spit and is mostly designated as a national park.

The Port has good connections to both national railway and road networks. The Port is linked with two railway lines extending from Klaipeda, one to the east and one to the south. The line extending to the east is the principal line running from Klaipeda to Vilnius via the northern principal city, Siauliai. (about 5 hours) The Port has direct access to the four-lane expressway (No E85) running between Klaipeda and Vilnius. (about 4 hours) The expressway has junctions with the other principal roads running from north to south (No. E77 (Riga - Siauliai - Kaliningrad), and No. E66 (Tallinn - Riga- Kaunas - Warsaw). From the east end of the expressway, Road No. E28 extends to Minsk.

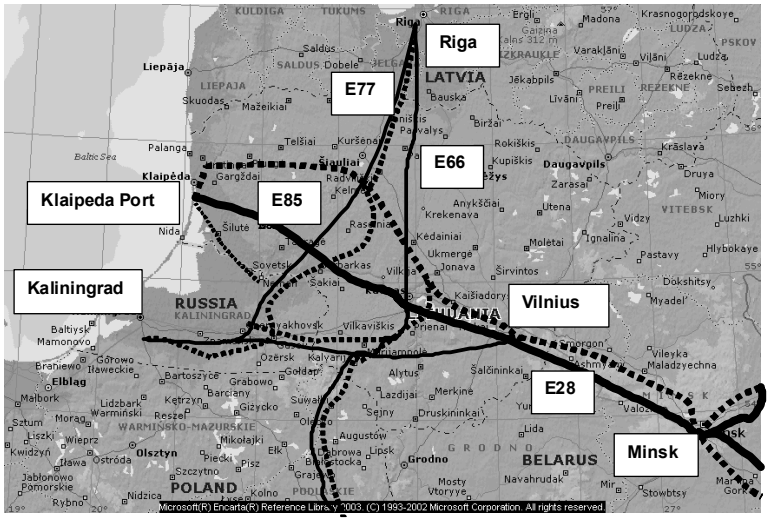


Figure 2.1 Location of Klaipeda Port (Railway and Road Access to the Port)

2.2 Marine Terminals and Factories

2.2.1 General

KSSA leases the port land on a long-term contract basis to around 60 lessees, including 21 private companies listed in Table 2.1. Their locations are shown in Figure 2.2. They are divided into the two categories, viz. port terminal operator and manufacturer by business type. Port terminal operators provide services mainly of stevedoring and warehousing on their respective territories using berths that are retained by KSSA (not leased out). The manufacturers consist of four shipyards and one paper mill. The activities of the major lessees are outlined below.

Table 2.1 Terminal Operators and Factories in Operation within Klaipeda Port

No.	Lessees Granted Lands by KSSA at the Port	Type of Business
1	Klaipedos NAFTA (Klaipeda Petroleum)	Port terminal operator specialized for handling petroleum
2	Cargo Terminal (UAB Kroviniu terminalas)	Port terminal operator (stevedoring and warehousing)
3	Klaipeda Stevedoring Company (KLASCO)	Terminal operator
4	Laivite Ship repair Yard (Laivite)	Ship repair/stevedoring
5	Klaipeda Ship Repair Yard	Ship repair
6	Baltija Ship Building Yard (Baltija)	Shipbuilding and repair
7	Klaipedos Kartonas	Paper mill
8	Klaipeda Stevedoring Company Bega (BEGA)	Port terminal operator
9	Ferry Smiltyne (AB Smiltynes perkela)	Ferry point for channel crossing
10	Transfosa	Stevedoring, waste oil treatment
11	Klaipedos Smelte (SMELTE)	Port terminal operator
12	Progresas	Storage, warehousing,
13	AB Senoji Baltia	Fishing company
14	Klaipedos Hidrotechnika	Marine construction works, cargo-handling (timber)
15	Lithuanian Peat Cargo	Port terminal operator specialized for handling peat
16	Klaipedos Terminalas (Klaipeda Terminal)	Terminal for handling containers, Ro/Ro and general cargo
17	Western Ship Repair Yard	Shipbuilding and repair/stevedoring
18	KLASCO	Container Terminal
19	Timber handling Terminal	Stevedoring for handling timber
20	Baltic Ferry Terminal	Ferry Terminal for Ro/Ro ships
21	KLASCO	Ferry Terminal for Ro/Ro ships

Source: KSSA
Note: There are 68 lessees entered into contracts with KSSA; the above list shows the major lessees.

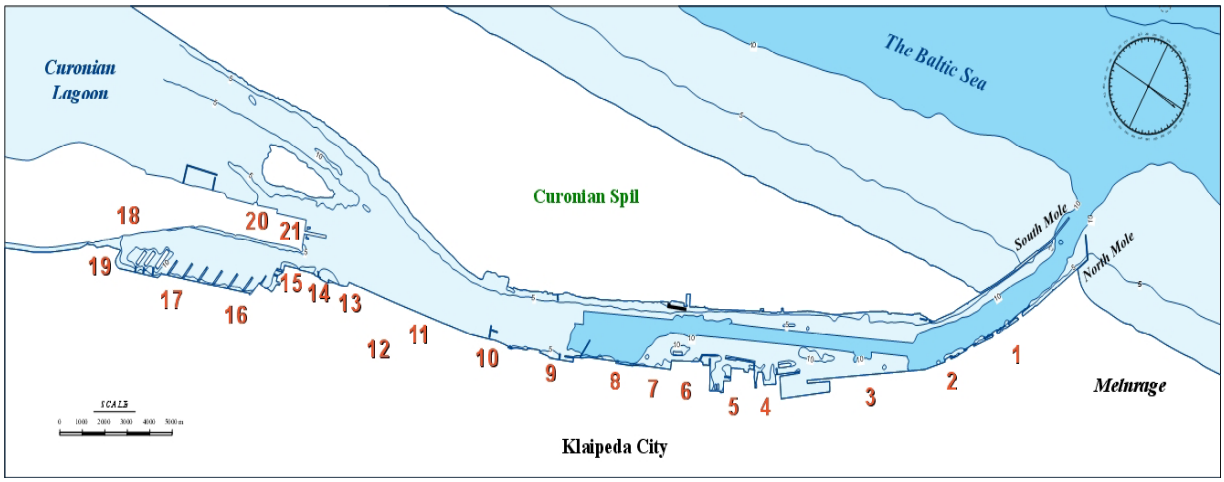


Figure 2.2 Location of Major Lessees in Klaipeda Port

2.2.2 General Description of Marine Terminals and Factories

(1) Klaipedos NAFTA (Klaipeda Petroleum)

Klaipedos NAFTA is a joint stock company that was founded with Lithuanian and USA capital in 1994 to provide marine terminal services specializing in petroleum. Currently almost all services are to handle product oil onto/out of a tanker. Product oil comes from the refineries of Mazeikiai (Lithuania), Russia and Belarus, and is shipped mainly to Western Europe countries and USA.

Two oil jetties, viz. Berths No.1 and No.2, with a water depth of 14 m are placed at the port mouth, and used to load petroleum. These berths can receive a Panamax Type tanker in full draft condition.

Photo 2.1 Klaipeda Petroleum (Klaipedos Nafta) Terminal, Top right and national park on the left

(2) Klaipeda Stevedoring Company (KLASCO)

Klaipeda Stevedoring Company is the largest terminal operator at Klaipeda Port. The company was privatised from a state-owned company in 1999. The company operates the three terminals of the Port: General Cargo Terminal, Container Terminal and International Ferry Terminal.

<u>General Cargo Terminal</u>

The General Cargo Terminal handles dry bulk, liquid bulk and break-bulk cargoes Currently, the main services are to load vessels with liquid fertilizer (UAN solution), dry fertilizers (DAP, ammonia nitrate), wheat, ferroalloy, and steel products or to unload raw material of fertilizer (apatite), raw sugar and frozen fishes from vessels.

This terminal has 15 berths (Berths No. 4 – No. 18), with water depths varying from 7 m to 14 m. The water depth of Berth No. 5 is being deepened to 14 m. After completion of the deepening works, a new loader and storage connected through belt conveyors are planned to be installed.

Photo 2.2 General Cargo Terminal of KLASCO

Container Terminal

The services at the Container Terminal started in January 1999 by EUROGATE, a subdivision of KLASCO. At present, 3,000-8,000 DWT (200-1,000 TEU) vessels provide feeder services on a weekly and bi-weekly basis. Berth No. 143, which is 450 m long and 10 m deep, is used to receive feeder vessels The terminal area is 229,207 sq. m and an area of 78,000 sq. m is reserved for future expansion. The container stacking capacity is said to be 7,500 TEUs. The estimated annual throughput capacity at the terminal is said to be 150,000 TEUs. If the reserved area is developed, the capacity is expected to increase to 200,000 TEUs.

Photo 2.3 Container Terminal of EUROGATE (KLASCO)

International Ferry Terminal

The services at the International Ferry Terminal are also provided by EUROGATE. At present, the two shipping lines, viz. Lisco Baltic Service and Krantas Shipping provide the shuttle services within the Baltic Sea, German, Sweden and Denmark. EUROGATE (KLASCO) provides services of hauling out or in vehicles from or into Ro/Ro decks at Berth Nos 146 - No. 151. The sizes of Ro/Ro ships vary from 7,000 to 22,000 GT.

(3) Klaipeda Stevedoring Company Bega (BEGA)

BEGA, the first private terminal operator at Klaipeda Port, started its operation in 1992. At present the main services of the company are to load liquid fertilizer (UAN solution), dry fertilizers (DAP, potash, urea), wheat, rapeseeds, cement and timber or to unload raw material of fertilizer (apatite) and raw sugar into or from a vessel.

This terminal consists of 7 berths (Berths No. 66 – No. 72) with water depths varying from 6.1 m to 12 m and is located in the middle portion of the port territory. The berth facilities have been comparatively developed, however, storage areas, both covered and open, are lacking, because BEGA should handle various kinds of bulk cargoes, requiring further land space for efficient cargo handling.

Photo 2.4 Facility Layout of BEGA Terminal

(4) Klaipedos Smelte (SMELTE)

Klaipedos Smelte is a private joint stock company that was founded as a part of the Industry and Finance Cooperation in West Lithuania capital in 1998.The main services of the company are to load dry fertilizers (potash, urea, ammonium sulphate), grains (wheat, rye), rapeseeds, forest products (pulp logs, sawn timber), and scrap and steel products onto vessels or to unload foodstuffs such as frozen fish, meat, fruit and soybeans from vessels. The terminal has 25 berths (Berths No. 82 – No. 106) in the southern part of the port territory. It is planned to deepen the existing shallow water berths (Berths No. 81 – No. 100) to 12.5 m deep and to widen the apron through reconstructing the existing quay structures

Photo 2.5 Facility Layout of SMELTE Terminal

(5) Klaipedos Terminalas (Klaipeda Terminal)

Klaipedos Terminalas is a private company founded in 1994 and is located in the southern part of the port territory. The main services of the company are to load or unload containers, Ro/Ro and conventional cargoes onto or from vessels, to store them in open storage yards or warehouses. Container handling services are provided at Berth No. 128 and Berth No. 130. The container stacking areas are rather small, requiring additional space urgently.

Photo 2.6 Facility Layout of Klaipedos Terminals

(6) Baltic Ferry Terminal

Baltic Ferry Terminal belongs to "Krantas Shipping Group" that provides mainly cargo transportation services. The company provides stevedoring services at Berth No. 151 for Ro/Ro ships.

(7) Transfosa

Transfosa was founded as an affiliated company of LIFOSA, one of the two fertilizer manufacturers in Lithuania. The principal strategies of the company's activity are to provide services for handling bulk cargo including fertilizers, ship bunkering and receiving/treating waste oil from vessels.

(8) Timber Handling Terminal

Timber handling Terminal specializes in timber export. Its territory of 12 ha is behind Berth No. 141. The storage capacity of its open yard is 200,000 cu.m of timber. Timber is mainly exported to Sweden and Finland by crossing the Baltic Sea.

(9) Lithuanian Peat Cargo

The company mainly provides stevedoring services for peat in bulk or packages and wood chips at Berth No. 119 – No. 120. An open yard of 12,000 sq.m is used for cargo storage.

(10) Laivite Ship repair Yard (Laivite)

The main activity of Laivite is ship repair. The shipyard is placed behind Berth Nos 19 – 25.

(11) Klaipeda Ship Repair Yard

The main activity of Klaipeda Ship Repair Yard is the repair of small and medium size ships. The shipyard is placed behind Berth Nos 26 – 60.

(12) Baltija Ship Building Yard (Baltija)

Baltija belongs to the Danish Odense Lindo Group of Companies. The company provides a wide range of shipbuilding services, from complete ships to assembly components. The assembly components are shipped to the group company's shipyard by barges. The shipyard with a total area of 29 ha is placed behind Berths No. 61 – No. 65.

(13) Klaipedos Kartonas

Klaipedos Kartonas is manufacturing paperboard from waste papers. The company's territory of approximately 4 ha is behind BEGA without waterfront. Its products are exported via the Port.

(14) Progresas

Progresa was founded for fish-canning. Currently, the manufacturing of canned products is not in operation, and instead its territory is used for the storage of scraps and for other miscellaneous uses, mainly on a sublease basis

(15) Western Ship Repair Yard

Western Ship Repair Yard belongs to the Estonian "Group of BLRT". Its sister company "Tallinn Shipyard" operates in Estonia. Western Ship Repair Yard provides services for building and repairing vessels. In addition to shipbuilding/repairing, the company provides stevedoring services at Berth No.140. Currently, the main cargoes handled there are forest products, such as pulp logs and sawn timber, and scrap.

Photo 2.7 Western Ship Repair Yard (lower right) and International Ferry Terminal (upper left)

(16) Klaipedos Hidrotechnika

Klaipedos Hidrotechnika handles marine and river construction, including constructing port infrastructures. The company operates Berth No. 118 for mooring its working ships. In addition to construction, the company provides stevedoring services at Berth No. 118, specializing in handling forest products.

Photo 2.8 View of Berth No.118

2.3 Navigation

Vessel navigation is controlled by the subdivision of the Harbour Master's Office of KSSA in compliance with "the Klaipeda State Seaport Regulations" The VTS manages vessel navigation from the first buoy to the inner channel throughout the entire territory of the port waters. The VTS operators are on a twenty-four-hour watch. To ensure the safety of all vessels and the port itself, every vessel, with a pilot on board, without one, is additionally guided by radar.

The distance from the first buoy to the port entrance is approximately 3 miles. The controlled water depth of the access fairway is 14.5 m. The vessel enters the inner channel and moves to an allocated berth. The distance from the entrance to the basins at the bottom of the Port around the Ro/Ro terminal is approximately 7 miles.

From the port entrance to the turning basin placed in front of Berth No. 10, a water depth is maintained up to 14 m. Channel width (bottom) varies from place to place and the narrowest part is the port entrance with 125 m. The inner channel is not straight having several bends. For navigational safety, in addition to lighted buoys installed at intervals, 4 leading lights are placed on land: 2 lights at the port entrance and the remaining 2 on the Ro/Ro terminal site.

From the turning basin placed in front of Berth No.10 to the bottom basins, current water depths vary from 12m to 9m. This part of the inner channel will be deepened up to 12.5 m by the end of the year (2004) with a width (bottom) of 125 m.

One of operational bottle-necks in the Port is a very narrow channel width in the port entrance zone, about 125m, which restricts to one way traffic for most of vessels. Furthermore, the navigational space is also limited for ship turning in the inner channel. These navigational problems would become more crucial as the ship traffic increase in future.

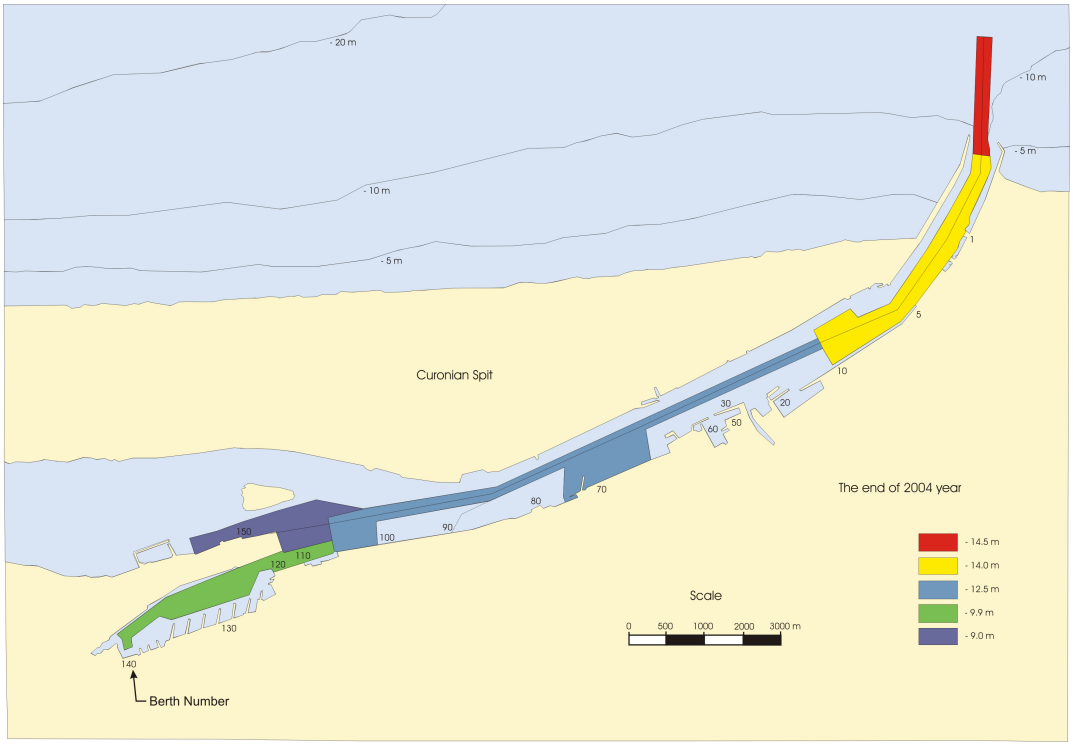


Figure 2.3 Water Depth of Navigation Channel in Klaipeda Port

2.4 Railway in Klaipeda Port

2.4.1 Existing Condition of Railway

The Klaipeda railway network is mainly divided into a Northern part and a Southern part, which are separated by the Dane River. The Northern part consists of Klaipeda Station with Pauosio, Angline and Uosto Yards. The latter two yards are inside the Port within the territory of KLASCO, which is connected by an access line to Klaipeda Station.

The Southern part consists of Draugyste Station, Rimku Station and Perkelos Yard. Perkelos Yard is in the International Ferry Terminal area. In the Southern part, the Port is connected by an access line from Draugyste Station, and each company in this part has its own yard or tracks.

The Northern and Southern parts of the Klaipeda railway network are connected by a single track that starts from Klaipeda Station, crosses Rimku Station and runs to Draugyste Station. The distance between Klaipeda Station and Draugyste Station is approximately 11 km.

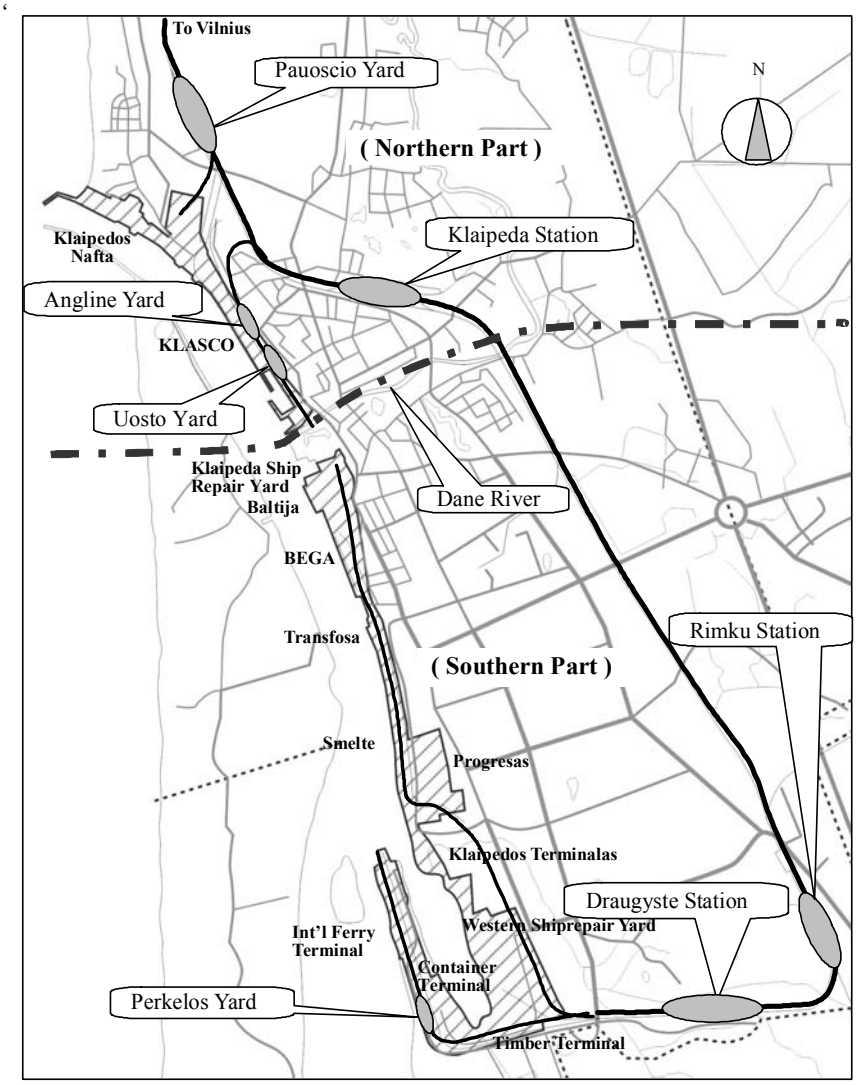


Figure 2.4 Railway Network in Klaipeda

Photo 2.9 Klaipeda Station

Photo 2.10 Pauoscio Yard

2.4.2 Railway Operations in Terminals

(1) Klaipedos NAFTA

There are 4 main tracks and a small spur line in Klaipedos Nafta, which is connected with Pauocio Yard by two tracks and wagons moved by Klaipeda Station locomotives. There are offloading stations for 124 wagons to be discharged simultaneously. Approximately 10,000 tank wagons, which equates to 570,000 tons, are being discharged per month. The track is owned by KSSA and maintained by Klaipedos Nafta. No significant operational problem is noticed.

(2) KLASCO

Six loading/unloading tracks parallel to the berth are mainly used for unloading ferro-alloys, steel products and loading fertilizers and raw material for fertilizers. The tracks located in the southern area are used for handling some frozen products from a cold storage facility next to the track. Two tracks next to the Uosto Yard are for loading foodstuffs from the warehouse. The tracks in their territory are owned and maintained by LG, with the exception of 6 tracks that have been added by KLASCO themselves. The land space is so limited that Angle Yard and Uosto Yard could not be expanded, resulting in shortage of train marshalling in future.

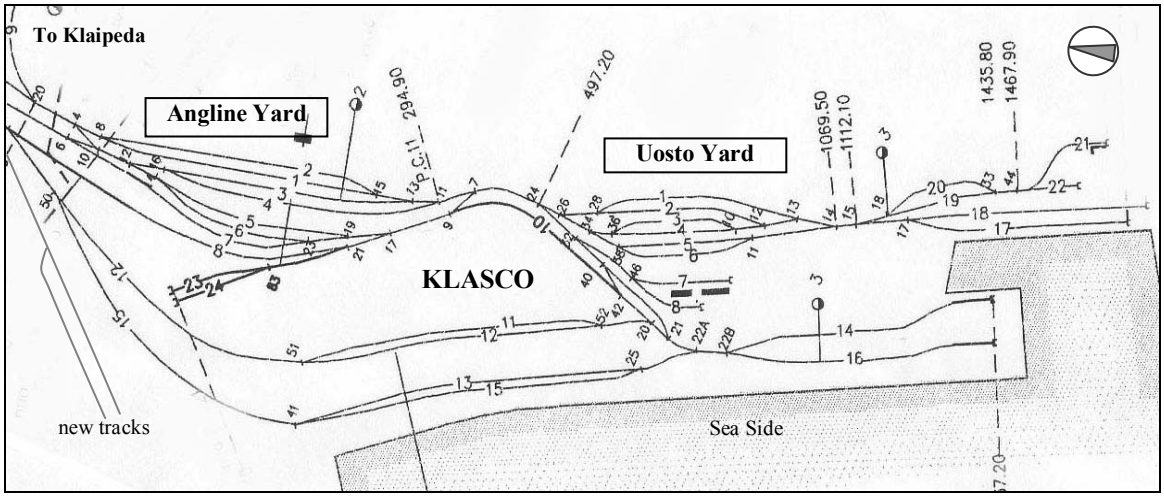


Figure 2.5 Track Layout of KLASCO

(3) Klaipeda Ship Repair Yard

The company is located 9.1 km from the Draugyste Station, to the south of the Dane River. The total length of track is 1.1 km. Mainly metal, metal products, and paint products are brought to the company. LG locomotives bring wagons into BEGA territory and from there BEGA locomotives bring wagons into this yard. These movements have to take place by passing through the Baltija Territory. The condition of track and facilities are not well maintained. The tracks in the yard are owned and maintained by KSSA.

(4) Baltija Ship Building Yard

The company is located 8.4 km from Draugyste Station next to the Klaipeda Ship Repair Yard. The total length of this track is 2.6 km. Mainly metal and metal products are brought to the company. LG locomotives bring wagons into BEGA territory and from there BEGA locomotives bring wagons into this yard. They can reload the metal and metal products to the warehouse. The condition of the track and facilities are good at present. The track is owned and maintained by KSSA.

(5) BEGA

The company is located 7.0 km from the Draugyste Station and its territory from south to north is 1.1 km long. The company owns 7 locomotives and the total length of track is 13 km; up to 400 wagons can be accommodated and handled simultaneously. Wagons are brought by Draugyste Station locomotives to BEGA's territory. Wagons are distributed to their loading or unloading position by BEGA's own locomotives. The existing sidelines are short in capacity, and reinforcement of access lines and effective arrangements of unloading/loading sidelines will be required.

(6) Transfosa

The company is located in territory that is bordered by Varnenai Street to the north and Smelte Company to the south. There is only one track with a length of 60 m. It has discharging facilities for 2 wagons for molasses and 2 wagons for diesel oil at one time. LG locomotives bring wagons into this territory. The track is owned and maintained by KSSA.

(7) SMELTE

The company is located about 6.2 km from the Draugyste Station. The total length of track in this territory is 7.2 km where up to 150 wagons can be accommodated and handled simultaneously. There are two entrances from the access line, but at present, they are using the North entrance only, requiring switch-back movements on the access line. With many commodities being handled, loading/unloading times are rather long, causing inefficient train operation. The company owns 4 locomotives for distributing of wagons inside which are brought to their territory by Draugyste Station Locomotives. The tracks in their territory are owned and maintained by KSSA.

(8) Progresas

The Progressas have five tracks but do not use any of them. Wagons come to one of the Progressas tenants for sawn wood and to Smelte tenants for offloading scrap metal. Overall rail usage for this facility disrupts rail traffic on the access line and road

traffic on Senoji Smilteles street due to the requirement to shunt in and out of the facility several times, taking place across the road junction each time.

(9) Klaipedos Terminalas

This terminal is located 2.5 km from the Draugyste Station. LG locomotives bring wagons into the territory from the Draugyste Station at night. Inside the territory, Klaipedos Terminalas moves wagons by truck and rope. There are 2 tracks with a total length of 405 m. The track is owned by KSSA and maintained by Klaipeda Terminalas.

(10) Western Ship Repair Yard

This yard is located 2.5 km from the Draugyste Station. The complex has 2 approach tracks with a northern gate servicing the main complex and a southern gate serving to offload scrap. There are 8 tracks with a total length of 4 km. There are plans by KSSA to extend the tracks by 1 km in order to serve a new metal treatment facility. LG locomotives bring wagons into this territory from the Draugyste Station. The track is owned by KSSA and maintained by Western Ship Repair Yard.

(11) Timber Handling Terminal

This terminal is located 2.0 km from the Draugyste Station and is the only terminal operator specialising in a single commodity. There are 2 tracks with a total length of approximately 200 m inside the present boundary gate but the territory extends well beyond this. The track is owned and maintained by KSSA.

(12) KLASCO Container Terminal

This terminal is located in the east side of the Perkelos Yard, 3.5km from the Draugyste Station. There are 4 tracks in the loading area but only two of these can be reached by the loading equipment. The track is owned and maintained by LG.

(13) KLASCO International Ferry Terminal

This terminal is located on the north side of the Perkela Yard, 4.0 km from the Draugyste Station. There are 4 railway lines from the Perkela Yard to the terminal, which has four specialized berths for simultaneous multiple track loading and unloading of wagons.

Two berths are located on the upper level and the rest are on the lower level and each berth has 5 tracks to enter the Ro/Ro ferry. The track is owned and maintained by LG.

2.5 Road Access to Klaipeda Port

The main access route to the Port is from Vilniaus Street to Minijos Street via Baltijos Street or Silutes Plentas Street. Lorries are not permitted to pass along Taikos Street or into the urban area of Klaipeda City. There is no time zone restriction for lorries to access the Port in the Klaipeda area. The location Map is shown in Figure 2.6.

Photo 2.11 Highway Route E 85 (A1)

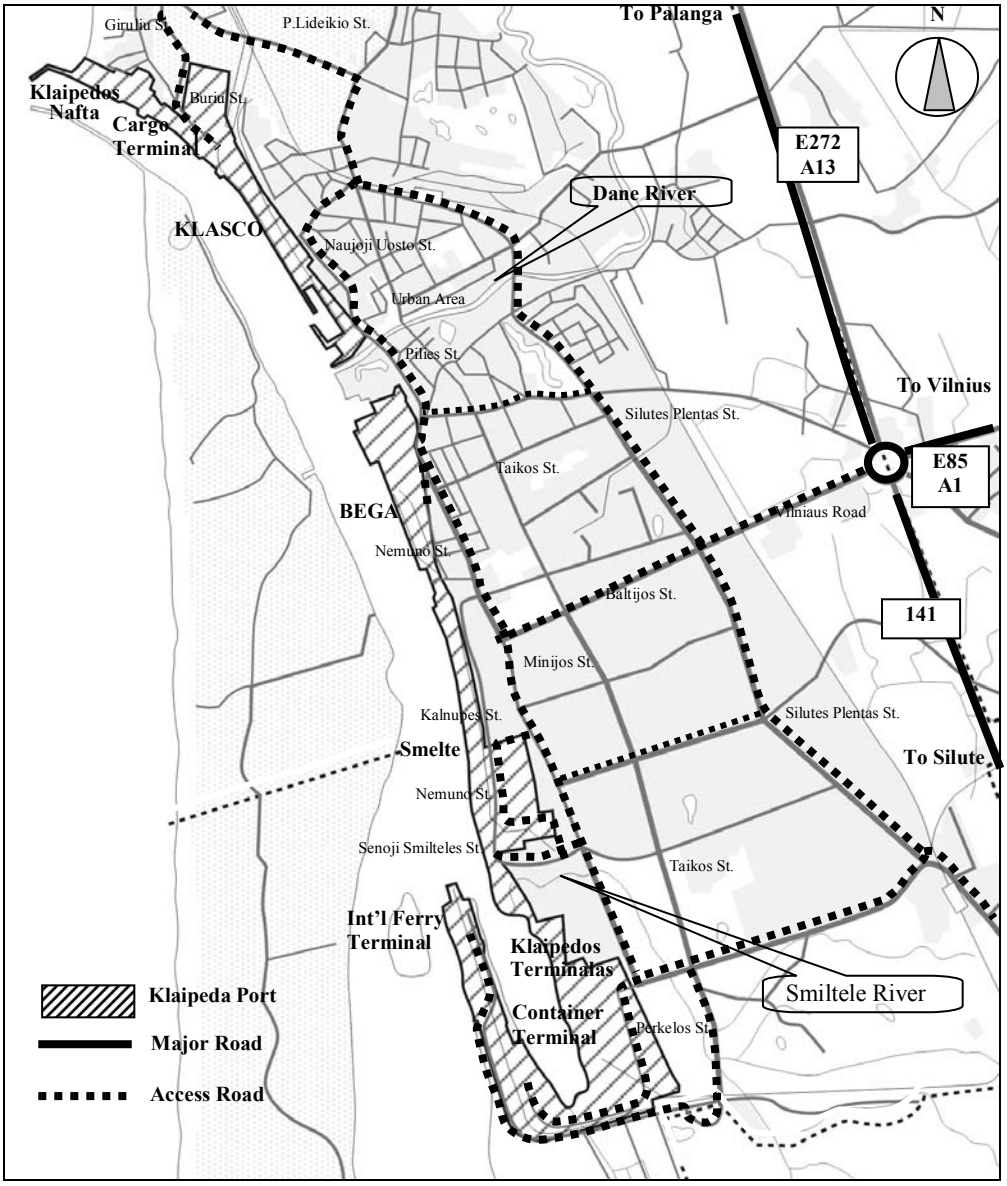


Figure 2.6 Road Network in Klaipeda

2.6 Institutional Matters and Port Management

Klaipeda Port is in many ways in transition from a Soviet-style port to a western-style port. A new structural framework has been established and implemented but there remain some anomalies, and there are strategic issues that remain unresolved.

2.6.1 Klaipeda State Seaport Authority (KSSA)

(1) Establishment of KSSA

During Soviet times, the port territory was controlled by a number of different bodies, under different ministries – the oil terminal under the Ministry of Energy, the fishing harbour (and the fishing fleets) under the Ministry of Agriculture and Fisheries, the commercial harbour under the Ministry of Transport, the shipyard under the Industry Ministry. Even the water area was divided. After restoration of independence in 1990, all the port territory and the water area were quickly brought under one control, KSSA. The port being a strategic asset in a monopolistic situation, there was never any intention to privatise the port authority, or the port territory and water area, and the Law on Klaipeda Port (the port law) specifically states that port territory and water area may not be privatised.

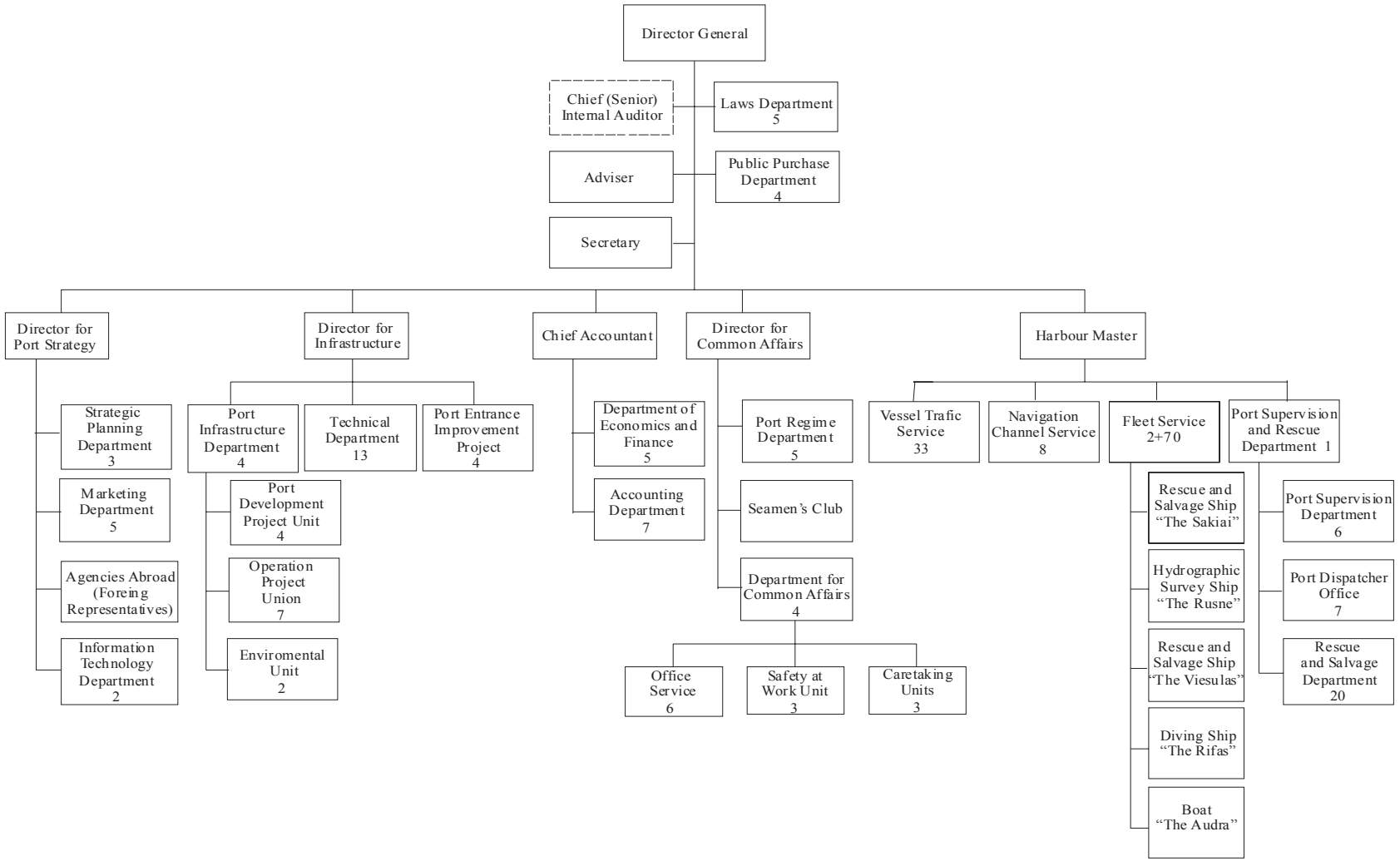
(2) KSSA Organisation

The founder of KSSA is MOTC. The head of the Water Transport Department is chairman of KSSA; the other four directors are the Director General of KSSA and three more from MOTC.

Under the law, port development plans have to be referred to a separate body, the Port Development Board. Membership includes representatives from KSSA, MOTC, Ministry of Finance and other interested ministries, Klaipeda country and Klaipeda municipality, port users and others (there were nineteen at a recent meeting). The Minister of Transport and Communications is the chairman, and it meets twice a year. Its decisions are subject to approval by the government.

Internally, KSSA has been reorganised, following the spinning off of the Maritime Safety Administration (MSA) in June 2002. Some employees were transferred. Close liaison exists between KSSA harbour master and the MSA. The organisation chart also shows the employee numbers. In addition to administrative and harbourmaster functions, KSSA employs the pilots and the pilot boat crews, which brings up the numbers. (Figure 2.7)

The port law requires KSSA "to prepare port strategy projects, detailed plans of port territory and port reserve territory, to organize their implementation, and to analyse and to approve reconstruction projects and new construction projects, and to build, to use and to develop the infrastructure of the port." The Strategic Planning Department oversees the development strategy, including territorial planning (land use). The Infrastructure Department does the preliminary design of development work, and project planning. For detailed design, they employ consultants, usually PramProjectas, a private consultancy based in Kaunas. Under the land lease contracts, any construction or demolition of infrastructure must be approved by KSSA.



Source: KSSA

Figure 2.7 Organisation Chart of Klaipeda State Seaport Authority (KSSA)

2.6.2 Land Ownership and Privatisation

Historically, land ownership by the general populace or by private organisations came relatively recently to Lithuania. During the subsequent Soviet era, all land and all institutions were expropriated from individuals, and became state-owned. Following independence in 1990, the government re-established private land ownership and commenced privatisation of state property.

After 1995, the privatisation became more commercial: sales were for cash, at market prices as determined by auction or tendering or other methods, and with requirements on investment programmes, and restraints on the dismissal of employees. Foreign investors (and their cash) were welcomed into joint ventures. Some large state companies that were previously not ready for privatisation were sold. Major enterprises such as Lithuanian Gas, Lithuanian Energy and Lithuanian Railways are scheduled for partial or total privatisation in the short or medium term, and are being restructured with that in mind.

2.6.3 Port Operators and Land Lease Contracts

(1) Port Operators

All the operators are in essence the enterprises that were operating in the territories when KSSA was formed. The enterprises existing at that time had priority, or first refusal. In practice, this was probably inevitable, because of the buildings and fixed assets and employees that were transferred with the privatisation, some of which were essential to the operation of the port.

The port operators inherited assets and businesses that varied greatly in usefulness and prospects. Most were fighting for survival. For example, the former fishing harbour occupied a large area (roughly the area now occupied by Transfosa, SMELTE and Senoji Baltija), but the Lithuanian fishing fleet was in dire trouble in the early 1990s (since when most vessels have been scrapped or sold), and almost no fish were being landed in Klaipeda. In order to survive, the fishing harbour resorted to cargo handling operations, in direct competition with the existing commercial harbour. Similar factors led other terminals, including shipbuilding and ship repair enterprises, to do the same.

The total employment number in Klaipeda Port is approximately 9000, of whom over 5600 are in the shipyards or ship repair yards, and about 700 more in enterprises with no direct port-related activity (Klaipedos Kartonas and Hidrotechnika). About 2700 are involved with commercial shipping, ferries and cargo-handling operations.

In addition to the eighteen main terminal operators, there are over 40 lessees of port territory. Some are associated with the terminal operators, or are involved in cargo-related activities, such as the cold store company within SMELTE terminal;

(2) Land Lease Contracts

Under the contract the lessee may use the berth and related territory for activities specified in the contract. The port law demands that these activities must be related to port use, and a minimum performance of stevedoring or other measure of activity (such as turnover) may be specified (although this is not being enforced). The lessee may build (or demolish) buildings, roads and other facilities on the land, but only with written permission of KSSA. He must maintain the area and the berths and quays,

except that unless otherwise specified KSSA will "repair with his (KSSA's) own funds the coatings of hydraulic engineering structures, retaining constructions and mechanisms, (and) remove serious defects of hydraulic engineering structures …"

The maximum length of lease is 50 years. A few contracts are for 50 years; most contracts for port operators with port-related activities are for 25 years; contractors for non-port-related use are now given for 5 years or less. Although some earlier leases are for longer.

The land lease rates are calculated according to a formula. The rate depends on various factors, with higher rates for having access to a berth, for having railway access, and for having deeper water at the berth. The rate is indexed to inflation if inflation exceeds 10%, and the rate is reviewed every 5 years, when the formula is adjusted in conjunction with MOTC. There are various discounts if the infrastructure is in poor condition, for unusable areas or unsuitable buildings, and special discounts for ship repair (30%), for shipbuilding (10%), and for non-profit-making associations (85%). The formulae look complicated, but if the discounts are ignored, the rates can be simplified to the following:

Table 2.2 Calculation of Land Lease Rates in Klaipeda Port

Maximum Vessel Draft Permitted at the Berth	Port Land Lease Rate before Discounts Lt/m^2 per Annum	
	With Railway	Without Railway
12 to 13 M	12.00	10.00
11 to 12 M	10.00	9.00
10 to 11 M	8.00	7.00
9 to 10 m	7.00	6.00
8 to 9 m	6.00	5.00
7 to 8 m	5.50	4.50
6 to 7 m	5.00	4.00
5 to 6 m	4.50	3.50
4 to 5 m	4.00	3.00
3 to 4 m	3.50	2.50
less than 3 m	3.00	2.00
without berth	2.00	1.50

Source: Law for Calculating Land Lease Rates, Jan. 2001 revised Sept. 2002

The average land lease rate for the port territory that is let is 3.86 Litas per square metre per year, and in total comprised 14% of KSSA's revenue. For comparison, figures for Riga and Tallinn are shown below:

Table 2.3 Land Lease Rates in Baltic Ports

Port	Area of Leased Territory	Annual Revenue from Rental	Percentage of Total Revenue	Average Land Lease Rate
Klaipeda	405 ha	15.6m Lt	14 %	3.9 Lt/m^2 pa
Riga	2000 ha			
Tallinn (2002)	514 ha	18.5m Lt	8 %	3.6 Lt/m^2 pa
Rotterdam (2002)	4330 ha	512.0m Lt	38 %	11.9 Lt/m^2 pa

Source: Annual reports of KSSA and Port of Tallinn; PKF World Bank study.

(3) Responsibility for Railways

Main Line Railway Tracks

Lithuanian Railways (LG) is responsible for all mainline tracks in Lithuania. The marshalling yards are under LG ownership and control.

Access Railway Tracks

The connection(s) between the LG system and the terminals is more of an issue. In the port law, the definition of the port infrastructure includes the access roads and railways. Under Article 11, the main functions of KSSA include: "to build, to use and to develop the infrastructure of the port." Thus, in the case of Klaipeda, KSSA is clearly responsible for the connection between the LG main line system and the terminals. This is sensible: the layout of the port is such that the access railways run through parts of the port territory that are 'common territory' – not allocated to any one terminal. LG have been concentrating their resources on the development of the main line routes, and have shown little enthusiasm for the port railways: the LG sections of port track are noticeably less well maintained.

Railway Tracks on Terminals

KSSA has also undertaken to be responsible for the development of railways on the terminals. This is outside the requirements of the port law. However, under the subsidiary law, the pro-forma land lease, the lessee must maintain the railways in good condition, but, unless otherwise specified, KSSA will undertake railway replacements, and all building of new railway track. This is the case even if the lessee operates the railways on his leased territory and has his own locomotives. Except Bega, all railway development so far has been undertaken by KSSA.

CHAPTER 3 TRAFFIC FORECAST AT KLAIPEDA PORT

3.1 Present Cargo Volumes

The total cargo handling volume of Klaipeda Port reached 21.2 million tons in 2003, and has increased at an annual rate of 4.2% over the last five years.

Tables 3.1 and 3.2, respectively, outline the total cargo handling volume and the cargo handling volume of oil products at Klaipeda Port and cargo handling volumes broken down by major commodities, including container cargoes and Ro/Ro cargoes at Klaipeda Port, from 1992 to 2003.

Table 3.1 Total Cargo Handling Volume and Cargo Handling Volume of Oil Products at Klaipeda Port from 1992 to 2003

(Units : Thousand Tons)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Oil Products	5424	7252	4915	2729	4195	3591	2233	3915	5197	5121	6681	6640
Non-Oil Products	7499	8666	9594	9980	10634	12527	12770	11056	14199	12115	13058	14552
Total	12923	15918	14509	12709	14829	16118	15003	14971	19396	17236	19739	21192

Source : KSSA

Table 3.2 Cargo Handling Volume Breakdown by Major Commodities

(Units : Thousand Tons)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Metal & Ferroalloy	1052	1699	2805	3233	3496	4304	5187	3059	4348	1563	1022	973
Scrap Metal	99	237	425	538	342	372	389	211	388	511	681	700
Fertiliser	65	744	1078	1162	1651	1885	2317	2823	2904	2840	3443	3987
Timber	175	264	534	729	536	698	562	686	681	714	944	1073
Grain & Fodder	2533	1543	556	310	440	517	379	159	707	289	745	851
Sugar	57	80	39	55	404	403	367	726	479	561	660	702
Frozen cargo	177	204	327	568	842	940	578	445	376	326	288	322
Cement	105	189	226	210	293	340	303	339	235	145	145	158
Peat	0	0	64	93	94	93	116	115	90	90	62	75
Container	21	16	86	276	385	289	279	268	395	505	731	1099
Ro – Ro	1809	2882	3279	2791	2901	3325	2378	2156	2549	2998	2556	3072
Oil Products	5424	7252	4915	2689	3956	3535	2301	3958	5198	5135	6739	6640
Total	11517	15110	14334	12654	15340	16701	15156	14945	18350	15677	18016	19652

Source : KSSA

Table 3.2 indicates the three principal cargoes in 2003 were oil products (33.8% of total), fertiliser (20.3%) and Ro/Ro (15.6%). Together these constituted about 70% of total traffic. It also reveals that several of the main commodities have been growing significantly over the last five years at annual growth rates in excess of 10%. These include containers (32% per annum), oil products (23% per annum), scrap (13% per annum), fertiliser (12% per annum) and sugar (14% per annum).

3.2 Existing Traffic Forecasts for Klaipeda Port

Two main sets of traffic forecasts were identified for Klaipeda port and are illustrated in Figures 3.1 and 3.2 below. The first was prepared in April 2000 by the World Bank as part of their appraisal report into the project for the rehabilitation and extension of the port's breakwaters and deepening of the entrance channel. The second was prepared in July 2002 by the firm PKF for the European Bank for Reconstruction and Development (EBRD). This formed part of the latter's project to deepen two of the berths at the port used by the operator Bega and to provide associated terminal equipment. The former report prepared forecasts by commodity up to the year 2010, while for the latter, forecasts were made to the year 2015.

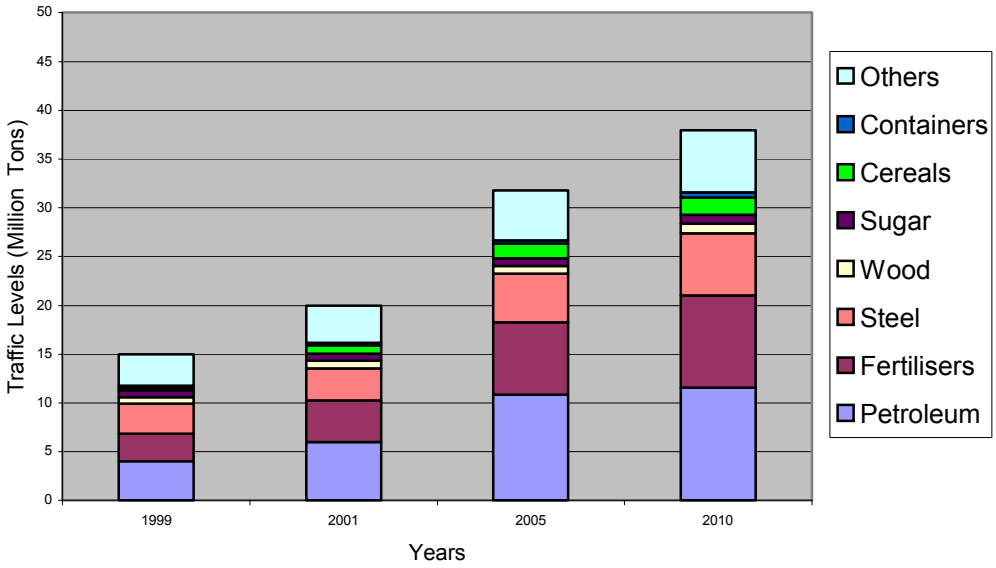


Figure 3.1 Summary of World Bank Forecasts for Klaipeda Port

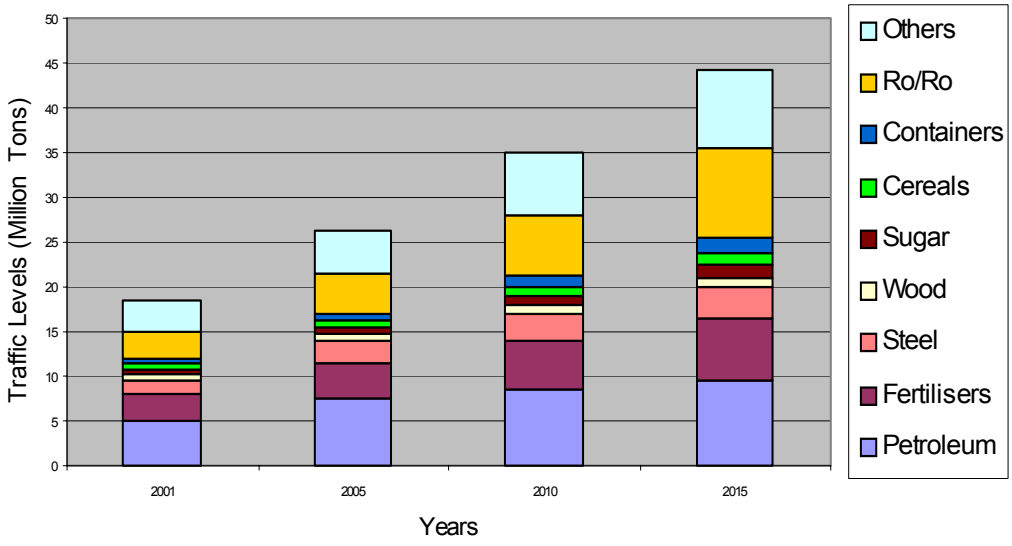


Figure 3.2 Summary of PKF Forecasts for Klaipeda Port

Both sets of forecast totals are similar for 2010, with the World Bank forecasting 38.0 million tons and PKF forecasting 34.9 million tons. Using the underlying growth trend in the World Bank's forecasts from 2005 – 2010 (3.61% per annum), their extended forecasts to 2015 produce an even closer match. The World Bank forecast is 45.3 million tons while PKF's is 44.3 million tons.

Although both forecasts predict a growth in all major commodities, the World Bank forecasts are more optimistic. The associated underlying annual growth is 8.8% per annum, compared with 6.4% in the PKF forecasts. The other main difference is that in the PKF forecasts Ro/Ro traffic has been separately identified as a commodity category whereas it was incorporated within the other major commodities in the World Bank forecasts.

Since both sets of forecasts were prepared there have been some changes that have affected the growth in cargo through Klaipeda. In particular the introduction in 2001 of the preferential railway tariffs by the Russian railways has diverted some of the transit traffic away from Klaipeda to Russian ports. This has affected traffic in several of the main commodities, particularly steel.

3.3 Demand Forecasting Overview

For the preparation of the traffic forecasts, freight commodities have been sub-divided into four separate categories:

- Lithuanian import traffic
- Lithuanian export traffic
- Inbound transit traffic passing through Lithuania to hinterland CIS countries
- Outbound transit traffic passing through Lithuania from hinterland CIS countries

Where appropriate the ten principal freight commodities have been subdivided into these categories and forecasts prepared for each before aggregating the results. The methodologies for forecasting imports/exports and for forecasting transit traffic are described separately below.

Two separate scenarios (Cases) have been prepared for the forecast of each commodity and for each of the four separate cargo categories described above. Case One scenario represents the pessimistic (low) scenario. Case Two scenario represents the optimistic (high) scenario. The reasons for the variability between the two scenarios depend on the nature of each individual commodity. The main forecast has been prepared as an average of the Case One and Case Two scenarios for each commodity.

The study's Terms of Reference required that traffic forecasts should be prepared consistent with the Short-term Development Plan for the year 2015 and Master Plan for the year 2025. Therefore forecasts for each commodity have been prepared for target years 2015 and 2025 against the base traffic levels observed in 2001, which are the most detailed data available for the forecasting process.

Freight traffic forecasts therefore consisted of the aggregation of a matrix of 240 individual traffic flows and involved:

- 10 principal freight commodities

- Lithuanian import/exports and inbound/outbound transit traffic
- Case One (Low) and Case Two (High) scenarios
- Target years 2015 and 2025 against the base year of 2001

In comparison, the forecasts of passenger traffic are relatively simple in that they consisted of arriving and departing passengers for the years 2015 and 2025 against the base level observed in 2001. No separate low/high cases were analysed for passenger traffic.

3.4 Lithuanian Foreign Trade (Exports/Imports) Volume

3.4.1 Procedure of Freight Cargo Forecast

The procedure to forecast Lithuanian's foreign trade cargoes at Klaipeda Port was based on the following:

1) Setting up economic indicators such as GDP and population of Lithuania in the target years, which would affect the demand for imports and exports
2) Selecting the major commodities for exports and imports based on the past data of Klaipeda Port
3) Estimating the volumes of the major commodities of Lithuania's total foreign trade handled by Klaipeda Port in the target years, for both exports and imports
4) Estimating cargo volumes for each major commodity for exports and imports in the target years

3.4.2 Socio-Economic Indicators in Lithuania

Economic indicators for GDP and population in Lithuania for the target year of the Short-term Plan (2015) were based on forecasts prepared by the OECD and the Lithuanian Ministry of Finance (MOF). These are illustrated in Tables 3.3 and 3.4 below. For the Case One scenario a constant growth rate after 2015 was assumed. For the Case Two scenario it was assumed that Lithuania's GDP growth rate will slowly accelerate after joining the EU to 9.8% per annum by 2018. This would allow Lithuania's per capita GDP to increase from 39% of the EU average in 2001 to 60% of the average by 2025. Several of the more recent members of the EU, such as Spain and Portugal, experienced significant real growth in GDP following their membership of the EU in the 1980s.

Lithuania's population declined by 5.7% between 1991 and 2001, although the annual rate of decline has been slowing. With the economic conditions in Lithuania steadily improving and the opportunities provided by membership of the EU from 2004, it is anticipated the net emigration of people observed over the last 10 years will be reversed. It is therefore assumed that Lithuania's population will slowly increase up to the target years of 2015 and 2025 at a rate of 0.5% per annum, equivalent to the long-term (1950 – 2000) historical population growth rate previously observed for the three Baltic States.

Table 3.3 GDP and Population in Target Years

Year	GDP			Per Capita GDP			Population
	Case 1	Estimated by MOF	Case 2	Case 1	Estimated by MOF	Case 2	
	(US$ Million)	(US$ Million)	(US$ Million)	(US$)	(US$)	(US$)	(Million)
2001	7,513	7,513	7,513	2,155	2,155	2,155	3.487
2015	13,237	17,375	17,719	3,616	4,746	4,840	3.661
2025	19,593	32,650	43,542	5,143	8,570	11,429	3.810

Source : Ministry Of Finance and estimate by the JICA Study Team

The estimated annual growth rates in GDP from 2001 to 2025 are presented in Table 3.4.

Table 3.4 Annual GDP Growth Rate

Year	Case 1	Case 2
2001 – 2009	4.2%	6.0%
2010 – 2016	4.0%	6.9%
2016	4.0%	7.5%
2017	4.0%	8.5%
2018 – 2025	4.0%	9.8%

Source : OECD and estimate by the JICA Study Team

3.4.3 Selection of Major Commodities for Import and Export

According to the past records of Klaipeda Port, UN statistical data and interviews with forwarding agents, major commodities of foreign trade for Lithuania at Klaipeda Port are as follows:

Export

- Petroleum and its products
- Foodstuffs
- Fertilisers
- Timber and its products
- Grains
- Scrap metal
- Containerized cargoes
- Ro/Ro cargoes
- Others

Import

- Foodstuffs
- Fertilisers and their materials
- Containerized cargoes
- Ro/Ro cargoes
- Others

3.4.4 Estimation of Lithuanian Foreign Trade Cargo at Klaipeda Port by Commodity

(1) Foodstuffs

Exports

The exports of foodstuffs through Klaipeda, including containerised cargoes, for the target years of 2015 and 2025 have been estimated using the growth rates of the population and per capita GDPs of the two major trading partners for this commodity (Sweden and Denmark). These countries received approximately 85% of the total exports of foodstuffs in 1999 and 2000. The Case 1 (low) scenario is matched with the actual population growth rate from 1991 – 2001 while the Case 2 (high) scenario is matched with the increase in per capita GDP for 2001 – 2010 from the OECD growth rates.

Imports

Except for sugar, imports of foodstuffs have been forecast by correlating the volume of foodstuff imports at Klaipeda Port with the population of Lithuania or by multiplying the average per capita import volume of foodstuffs at Klaipeda Port from 1998 to 2001. Sugar imports through Klaipeda Port have been estimated by multiplying the forecast population of Lithuania in the target years with the per capita consumption of sugar.

(2) Oil products

Over the last five years there has been a significant change in the source of oil products passing through Klaipeda port. In 1997 3.5 million tons were exported, 93% of which was transit traffic from Belarus and Russia. By 2001 exports had grown to 5.1 million tons but the transit cargo share had fallen to 55%. The two main factors behind this are:

- The privatisation of Mazeikiai refinery in the late 1990s and its subsequent agreement with Yukos oil company, which improved the reliability of oil supplies to the plant, along with technical improvements to the refinery itself.
- The declared preference of the Russian government to concentrate cargoes at Russian ports, including the new oil terminal at Primorsk.

Because of the political nature of the export of oil and oil products it was decided to derive the forecasts of export volumes for oil products in the Short-term Plan (2015) and the Master Plan (2025) based on the capacity of the Mazeikiai oil refinery in Lithuania and the recent growth in world oil consumption.

(3) Fertilisers

Exports

For the Case 1 scenario, the estimate was determined by the total annual volume imported by consuming countries and Lithuania's share of this total market. The export volume of fertilisers is principally affected by imports from Western and Northern European countries, which take approximately 90% of Lithuania's fertiliser exports. For the Case 2 scenario, the estimate was determined by the expected growth rate in Lithuania's fertiliser production and the proportion exported.

Imports

The total import volumes of phosphates and apatite were estimated by combining the forecast fertiliser export volumes in the target years with the ratio of phosphates/apatite imports to total fertiliser exports, as shown from past records.

(4) Timber and timber products

The volume of timber exports from Lithuania was estimated as the difference between domestic production and domestic consumption for the target years. Production is based on the projected forestry cutting area in the target years relative to those areas designated for forest preservation. Consumption is based on per capita timber consumption estimated from past data.

(5) Grain

The average volume of wheat exports from Lithuania over the last four years was used to estimate the export volumes at Klaipeda Port in the target years.

(6) Scrap metal

In general, scrap metal is generated by the growth in the economy. The growth rate in the volume of scrap medal was assumed to increase with the steady growth of Lithuania.

(7) Ro/Ro

Ro/Ro traffic from 1993 to 2001 through Klaipeda Port increased slightly but with some large fluctuations. The forecasts for the target years were based on the trend of Ro/Ro traffic and the relationship with the GDP growth in Western Europe/Scandinavia, which are the destinations of the principal ferry services.

(8) Containers

Most of the container cargo trade is related to various European countries. The estimation of the container cargo volumes in the target years at Klaipeda Port was obtained as follows:

- For export container cargoes, the volume was based on correlating the per capita GDP of the EU with the container cargo volume to Western Europe
- For import container cargo, the volume was based on correlation with Lithuania's per capita GDP

(9) Other cargoes

Other cargoes were estimated using the ratio between the total cargo volume without oil and the volume of other cargoes. This was because the contents of most other cargoes were not clear and were difficult to confirm.

3.5 Transit Cargo Volumes

3.5.1 Procedure of Transit Cargo Forecast

The transit cargo volumes at Klaipeda Port in the target years were estimated based on the following procedure:

- Identifying the major trade cargo items that may pass through Klaipeda Port as transit cargoes (major transit cargo items), broken down by the hinterland countries and their trade partners
- Estimating the volumes of major transit cargo items by individual country
- Selecting the transport route for major transit cargo items by individual country
- Totalling the volumes of major transit cargo passing through Klaipeda Port

3.5.2 Estimation of Major Transit Cargo by Hinterland Country

(1) Kazakhstan

Exports

- Grains: The annual average export growth rate was calculated from the past export data of Kazakhstan grain. The export volumes for the target years were also derived using this growth rate. Volumes were distributed among trade partner countries according to their export records.
- Crude iron: Using the correlation between the actual production volume and GDP, the production volumes for the target years were estimated. It is possible to estimate the domestic consumption in Kazakhstan for the target years by combining the per capita consumption of crude iron with an elasticity value of per capita GDP. Differences between the production and the consumption represent export volume, which were distributed amongst trade partners according to the actual records.

Imports

- Sugar: The imported sugar in the target years was forecast using the correlation between per capita import volume and per capita GDP and multiplying the estimated population in the target years with the per capita supply of sugar.

(2) Ukraine

Exports

- Fertilisers: The export volumes in the target years for Ukraine's major trade partners were estimated based on the ratio of actual imports (by major trade partners) and the export growth rate of Ukraine (by their major trade partners). Volumes were distributed amongst trade partners according to the actual records.
- Crude iron: Production in Ukraine for the target years was estimated using a correlation between actual production volume and GDP in Ukraine. Consumption in Ukraine for the target years was derived using a correlation between per capita consumption of crude iron and per capita GDP in Ukraine. The difference between Ukraine's production and consumption is the export volume, which was distributed amongst trade partners according to the actual records.

- Semi-finished and finished iron and steel products: The production volume in the target years was estimated using a correlation between actual production volume and GDP in Ukraine. For the Case 1 (low) scenario, the export volume of these products in the target years was obtained from the ratio between the actual growth in production and actual exports, and then distributed amongst trade partners according to the actual export records. For the Case 2 (high) scenario, the export volume in the target years was estimated using a time-series analysis and distributed amongst trade partners.

(3) Belarus

Exports

- Petroleum products: Destinations of Belarus' petroleum product exports are mainly the CIS and Western European countries. It is assumed that the former will go overland either by pipeline or rail. It was estimated that exports to Western Europe through Klaipeda port would grow slowly from 2.8 million tons in 2001 to 3.35 million tons by 2015 and 3.8 million tons by 2015.
- Fertilisers: The export volumes for the target years (by trade partners) have been estimated using the ratio of actual growth rates of import fertilisers for their trade partners, distributed amongst partners by the actual export records.

Imports

- Sugar: The import sugar in Belarus has been forecast using the correlation between the per capita import volume of sugar and per capita GDP. The GDP in Belarus has been estimated using the GDP growth rate as projected by OECD.

(4) Russia

Exports

- Grains: Import volumes of trade partners for the grain exports from Russia in the target years have been estimated by time-series and using a correlation with its population. The export volumes in the target years have been estimated using Russia's grain export growth rates.
- Iron and steel: Russia's iron and steel production volume in the target years has been derived by a correlation analysis with GDP. Iron and steel consumption volumes in the target years have been obtained from the ratio of the rate of per capita GDP growth to the rate of per capita iron and steel consumption growth. The volumes of iron and steel exports have been estimated as the surplus of production over consumption.

3.5.3 Major Transit Cargo by Transport Routes and Trade Partners

The transport routes for transit cargoes have been selected by approximating the transport costs from the operating costs by routes and cargo format (loose, bulk, containerised, etc), and by the cargo handling costs. The traffic volumes have been distributed by the different transport routes using a formula based on the relative proportion of the inverse of the total transport costs along them. As a result, the volumes by transport distances and transport units have considerably affected the transport costs. The distance of land transport largely affects transport costs although in this study the costs of infrastructure and time have not been included.

Final distribution of cargoes by routes involved a mixture of the transport costs formula, quality of road network conditions, competitiveness of sea routes and ship size, and opinions of users (such as cargo owners and operators). Within this context, it has been assumed that increasing congestion in the Bosphorus Strait will prevent vessels above 100,000 DWT from using the Black Sea.

3.5.4 Total Volume of Major Transit Cargo

The cargo volumes passing through Klaipeda Port under the above conditions and estimating methods have been totalled with the result deemed as representing the transit cargo volume at Klaipeda Port. A variety of totals have been produced as detailed in Tables 3.5 and 3.6 below. These include:

- Estimates for each commodity (both outbound and inbound) for 2001, 2015, and 2025 for both Case 1 and Case 2 scenarios
- Estimates of totals for each commodity for both Case 1 and Case 2 scenarios, and also the average total of the two cases
- Total cargo flows (outbound, inbound, total and average) for both scenarios for years 2001, 2015 and 2025

3.6 Cargo Volumes at Klaipeda Port in the Target Years

Based on the above estimation, the cargo volumes handled at Klaipeda Port in the target years are listed in the tables below.

Table 3.5 Summary of Traffic Volumes at Klaipeda Port in Target Years

(Units : Thousand Tons)

Destination	2001	Case 1		Case 2		Average	
		2015	2025	2015	2025	2015	2025
Outbound	12,629	26,064	33,242	27,568	36,050	26,816	34,646
Inbound	5,679	9,604	11,428	12,534	16,395	11,069	13,912
Total	18,308	35,668	44,670	40,102	52,445	37,885	48,558

Source: Estimate by the JICA Study Team

Table 3.6 Traffic Volumes Handled at Klaipeda Port in the Target Years

Unit for cargo: thousand ton
for passenger:person

Commodity	Year	Transit cargo						Foreign trade cargo						Total		Average(Total)		
		Outbound		Inbound		Total		Export		Import		Total				Outbound	Inbound	Total
		Case1	Case2	Case1	Case2	Case1	Case2	Case1	Case2	Case1	Case2	Case1	Case2	Case1	Case2	-	-	
Metal	2001	1,505	1,505	0	0	1,505	1,505	0	0	0	0	0	0	1,505	1,505	1,505	0	1,505
	2015	2,072	2,109	0	0	2,072	2,109	0	0	0	0	0	0	2,072	2,109	2,091	0	2,091
	2025	2,724	2,816	0	0	2,724	2,816	0	0	0	0	0	0	2,724	2,816	2,770	0	2,770
Scrap	2001	0	0	0	0	0	0	511	511	0	0	511	511	511	511	511	0	511
	2015	0	0	0	0	0	0	700	700	0	0	700	700	700	700	700	0	700
	2025	0	0	0	0	0	0	900	900	0	0	900	900	900	900	900	0	900
Fertilizer	2001	467	467	0	0	467	467	2,374	2,374	839	839	3,213	3,213	3,680	3,680	2,841	839	3,680
	2015	3,367	3,757	0	0	3,367	3,757	5,200	5,600	1,807	1,946	7,007	7,546	10,374	11,303	8,962	1,877	10,839
	2025	7,168	7,980	0	0	7,168	7,980	5,200	6,100	1,807	2,850	7,007	8,950	14,175	16,930	13,224	2,329	15,553
Timber	2001	0	0	0	0	0	0	714	714	1	1	715	715	715	715	714	1	714
	2015	0	0	0	0	0	0	1,138	1,195	0	0	1,138	1,195	1,138	1,195	1,167	0	1,167
	2025	0	0	0	0	0	0	1,138	1,195	0	0	1,138	1,195	1,138	1,195	1,167	0	1,167
Grain	2001	222	222	44	44	266	266	23	23	0	0	23	23	289	289	245	44	289
	2015	1,051	1,185	0	0	1,051	1,185	167	167	0	0	167	167	1,218	1,352	1,285	0	1,285
	2025	1,792	2,020	0	0	1,792	2,020	167	167	0	0	167	167	1,959	2,187	2,073	0	2,073
Foodstuffs	2001	388	388	0	0	388	388	44	44	843	843	887	887	1,275	1,275	432	843	1,275
	2015	304	417	0	0	304	417	59	74	894	1,083	953	1,157	1,257	1,574	427	989	1,416
	2025	442	524	0	0	442	524	61	93	1,306	1,745	1,367	1,838	1,809	2,362	560	1,526	2,086
Others	2001	0	0	0	0	0	0	427	427	1,302	1,302	1,729	1,729	1,729	1,729	427	1,302	1,729
	2015	0	0	0	0	0	0	312	341	610	812	922	1,153	922	1,153	327	711	1,038
	2025	0	0	0	0	0	0	326	382	701	1,001	1,027	1,383	1,027	1,383	354	851	1,205
Container	2001	0	0	61	61	61	61	184	184	227	227	411	411	471	471	184	288	471
	2015	0	0	195	286	195	286	580	780	1,420	2,890	2,000	3,670	2,195	3,956	680	2,396	3,076
	2025	0	0	338	572	338	572	760	1,180	2,028	3,440	2,788	4,620	3,126	5,192	970	3,189	4,159
Ro-ro	2001	0	0	0	0	0	0	635	635	2,363	2,363	2,998	2,998	2,998	2,998	635	2,363	2,998
	2015	0	0	0	0	0	0	764	893	2,708	3,167	3,472	4,060	3,472	4,060	829	2,938	3,766
	2025	0	0	0	0	0	0	764	893	2,708	3,167	3,472	4,060	3,472	4,060	829	2,938	3,766
Oil and Oil products	2001	2,808	2,808	0	0	2,808	2,808	2,327	2,327	0	0	2,327	2,327	5,135	5,135	5,135	0	5,135
	2015	3,350	3,350	0	0	3,350	3,350	7,000	7,000	1,970	2,350	8,970	9,350	12,320	12,700	10,350	2,160	12,510
	2025	3,800	3,800	0	0	3,800	3,800	8,000	8,000	2,540	3,620	10,540	11,620	14,340	15,420	11,800	3,080	14,880
Total cargo	2001	5,390	5,390	104	104	5,494	5,494	7,239	7,239	5,575	5,575	12,814	12,814	18,308	18,308	12,629	5,679	18,308
	2015	10,144	10,818	195	286	10,339	11,104	15,920	16,750	9,409	12,248	25,329	28,998	35,668	40,102	26,816	11,069	37,885
	2025	15,926	17,140	338	572	16,264	17,712	17,316	18,910	11,090	15,823	28,406	34,733	44,670	52,445	34,646	13,912	48,558
Passenger	2001	-	-	-	-	-	-	-	-	-	-					48,244	52,933	101,177
	2015	-	-	-	-	-	-	-	-	-	-					108,046	104,099	212,145
	2025	-	-	-	-	-	-	-	-	-	-					148,285	142,868	291,153

Source: Estimate by the JICA Study Team

Figure 3.3 shows the relative growth in total and individual commodities based on the average volumes between the Case 1 and Case 2 scenarios.

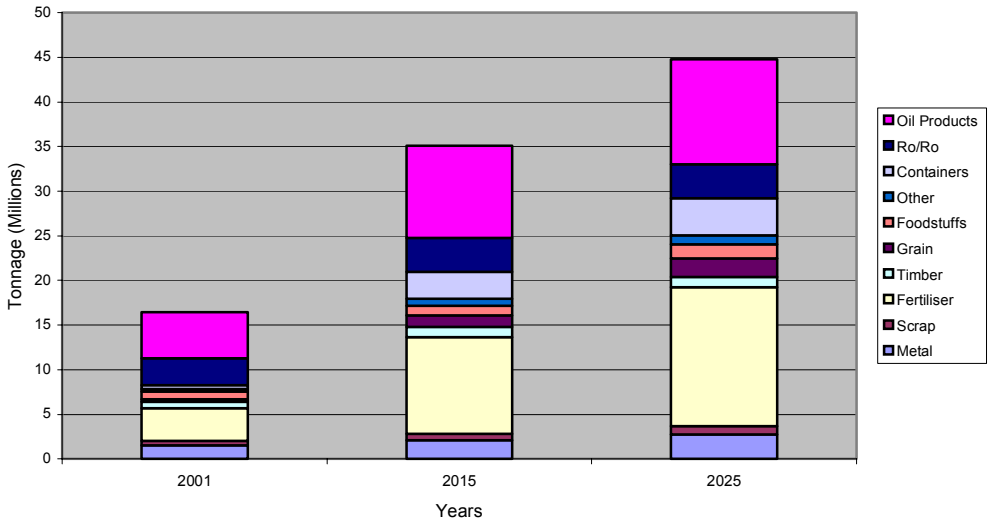


Figure 3.3 Summary of Forecast Growth at Klaipeda Port

From these forecast results the following conclusions can be made:

- Between 2001 and 2015, traffic levels are expected to more than double from 18.3 million tons to 35.7 million tons, leading to an underlying annual growth rate between 4.5% (for Case 1) and 5.3% (for Case 2). Thereafter, up to 2025 growth reduces slightly but traffic volumes still increase by another 27% to 45.4 million tons. The overall annual growth rate from 2001 to 2025 ranges from 2.3% (for Case 1) to 2.6% (for Case 2).
- The principal traffic growth is in outbound transit and Lithuanian exports (especially oil products and fertilisers). Outbound traffic as a proportion of the total grows from 69% in 2001 to 76% by 2025.
- Compared with the central 'average' forecasts, the Case 1 and Case 2 scenarios represent variations of +/- 5.7% (Case 1) and +/- 7.3% (Case 2).
- All commodities are forecast to increase although their growth rates vary significantly as a result of the underlying factors determining their growth. The lowest annual growth rate is for Ro/Ro traffic (at 1.0% from 2001 – 2025) and the highest growth rate is for containerised cargo (at 9.5% from 2001 – 2025). The four commodities that grow at the fastest rate are containers, fertilisers, grain and 'other' (principally cement and peat).
- In terms of volume (tons), the commodities forecast to increase the most are oil products (Lithuanian exports), containers (Lithuanian exports/imports and inbound transit traffic), fertilisers (Lithuanian exports/imports and outbound transit traffic), and grain traffic (outbound transit traffic). It is the growth in these commodities that will be the principal driving force behind the expansion of the port.

Whilst the forecasts for the Master Plan period (to 2025) are very close to the long-term forecasts prepared by the World Bank and by PKF for the EBRD, the time period is different. The previous forecasts reached the total of about 45.0 million tons by 2015 rather than by 2025. The current forecasts predict traffic growth of 35.1

million (with up to +/-1.9 million by Case) by 2015. There are a number of factors that account for the variation in the forecasts in the current study from those derived previously:

- In the PKF forecasts Ro/Ro traffic more than triples from 3.0 to 9.9 million by 2015. Whilst the current forecasts for the Short-term Plan and Master Plan predict some increase in Ro/Ro traffic it is considered substantial predicted growth in containerisation will reduce this growth. The historical statistics in Ro/Ro traffic have also shown that it is can be subject to significant changes.
- Steel/metal traffic forecasts are lower due to the diversion of much of the Russian traffic to their own ports as a result of the railway tariff policy. The PKF forecasts predicted significant growth in steel traffic from 2001 to 2005 with volumes more than doubling by 2015. The World Bank's forecasts were even higher. The growth rate underlying the Short-term and Master Plans is significantly lower than both previous forecasts.
- Whilst both the World Bank and PKF forecasts have included a very significant volume of 'other' traffic (more than 3 million tons), the 'other' traffic for the Short-term and Master Plans is based on the cargo information revealed in Table 3.2 and is significantly smaller. Even though the annual growth rates are similar to the World Bank and PKF, the much lower starting volumes lead to significantly lower future volume forecasts.
- Oil products are almost midway between the higher World Bank and the PKF forecasts. Therefore there is no significant variation between the different forecasts in oil products.
- The one area where the forecast traffic is significantly higher than predicted by the PKF forecasts is for fertilisers. Whilst both sets of forecasts have similar long-term underlying growth rates (6.2% to 6.6% per annum) the initial starting volume for the Short-term and Master Plans also includes the imports of raw materials for fertiliser production. It also extends over a longer period up to 2025.

3.7 Passenger Forecasts

Significant numbers of German visitors arrive into Klaipeda by ferry during the summer months. In addition there are a regular number of cruise ships that call at the recently refurbished terminal facilities on the edge of the old town of Klaipeda. The forecasts adopt a growth rate of 5.4% in the Short-term Plan and 4.5% in the Master Plan.

Table 3.7 Forecast Passenger Volumes

(Units : Thousand Passengers)

	2001	2015	2025
Departures	48.24	108.05	148.29
Arrivals	52.93	104.10	142.87
Total	101.17	212.15	291.16

Source : Estimate by the JICA Study Team