ENPI 2011 / 264 459

Logistics Processes and Motorways of the Sea II

in Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan

LOGMOS Master Plan – Annex 6

Part I

TRACECA Inland Waterways – Dnepr Case Study

October 2013

This project is funded by
the European Union

A project implemented by
Egis International / Dornier Consulting

TABLE OF CONTENTS

LIST OF TABLES

1 GENERAL PERSPECTIVE FOR EXPLOITING TRACECA INLAND WATERWAYS

The Danube (ports of Reni, Izmail and Ust-Dunaisk) and the Dnepr are recognized as rivers of international importance in the Ukrainian inland waterway system. While the potential of Danube is well covered by various technical studies as a result of more developed Danube shipping market, the Dnepr role remains not so well investigated.

The purpose of this report is to highlight the role of the Dnepr in the transport system of Ukraine and to define its importance for TRACECA taking into account on the one hand the European experience and voluntary policy to promote the use of river transport and on the other hand the current trends in the region.

For Ukraine, at the state level, the Dnepr River should play an important role in connecting the central part of the country including Kiev to the Black Sea. For TRACECA, the inland waterways of Ukraine constitute a major part of its European inland waterway network in the former USSR.

Being an international inland waterway of category E the Dnepr River is open for call to foreign vessels. This factor allows the Dnepr to provide optimum distribution of traffic flows from the Central and Eastern Europe to the Black Sea ports. Provided corresponding logistics infrastructure is developed and navigation conditions are improved, the Dnepr may play an important role in logistics chains connected to Danube, Black and Mediterranean seas. Through the Sea of Azov, the Don and the Volga-Don canal vessels may reach ports of the Volga River, Caspian Sea and Baltic Sea.

The European experience demonstrates that to provide successful development of the inland waterway potential and their optimum involvement into multimodal transport logistical chains the following factors should be considered:

Reduction of Land Transportation Costs: Container river ports located upriver close to the hinterland markets have potential of taking over certain market share from those ports located on the coast. This trend results from the shippers/forwarders' intention to minimize landside transport costs by choosing river ports located inside the country.

Targeting Multi-modal Transport Market Shares: Despite inland waterways are an absolutely vital part of the multi-modal system, specifically in the case of bulk/liquid commodities, the global trend is that they are losing market shares to the road transport. Taking into consideration the general tendency towards containerization in the international transport market and the possibility to take an active part in intermodal inland traffic, and in order to maintain a position in these markets, the inland waterway transport industry has to offer those services that are in line with the modern requirements of the supply chain (reliability, intermodal capacities, regularity, security).

Viability of Container-on-Barge Services: Container-on-barge services in Europe have become an essential link in transporting containers between hinterland markets and coastal ports. This solution could be considered for TRACECA as well, of course bearing in mind existing technical barriers along its waterways. This is also connected to the overall containerisation situation in TRACECA. Container-on-barge services require sustainable flows of international maritime containers between the corresponding international ports and inland regional markets at present and in future.

Reliable Scheduled Services: The waterway system should provide regular, rapid and reliable transportation. For this, proper navigation conditions, container facilities and orders for transportation on short/medium distances are needed. The experience in Europe shows that high frequency and level of service are the key elements for river transport to compete with road transport.

Modal Shift Policies and Mechanisms: It is the policy of the European Union to implement a modal shift from trucks to rail and waterways. For instance, the progressive internalization of

traditionally external costs such as emissions and traffic congestion are used as leverage to push the market to take traffic off the highways and on to the waterways. Policies, incentives and subsidies should become important tools directed at development of logistics in TRACECA, meaning utilisation of the inland waterway potential in the supply chains.

Marketing, Communication with Shippers, Carriers and Ports: To establish an expedient relationship with shippers that are looking for reliable alternative ways of transporting cargo it is important to implement a marketing policy that highlights and promotes certain segments of the network.

Innovations and Technology: The use, reliability and efficiency of the waterway system are enhanced through application of modern technologies and innovations.

Although these changes cannot be implemented overnight, the lessons learned do serve to paint a vision of how the inland waterways system can reach its full potential and outlines the steps needed to do this.

2 SECTOR ORGANISATION, CONDITION OF PORTS AND THE FLEET

The State Sea and River Transport Policy Department of the Ministry of Infrastructure of Ukraine is the main regulatory body for the river transport in Ukraine. In the following subchapters the regulatory issues are discussed in greater detail.

The major players of the Dnepr transportation include:

- Ukrrichflot: The main river carrier and port owner offers a large range of transportation services on the inland waterways of Ukraine. In addition, the company maintains shipbuilding and ship-repairing entities.
- Ukrvodshliakh: The state-owned 'Waterways Enterprise' is responsible for the development of the public inland waterways and aims to create the conditions required to guarantee safe navigation. The state has made this enterprise responsibile for the implementation of policies relating to transport, technical requirements and the environment in the operation of the waterways and navigable locks in Ukraine.
- River Information Service of Ukraine (RIS): RIS services the Dnepr basin from Kizomys to Vyshgorod and Danube section of waterways and has operated since 2012. This organisation is a branch of the state enterprise Delta-Lotsman, it is included in the state enterprise 'Administration of Seaports of Ukraine' (ASPU) and was created by order of the Ministry of Infrastructure of Ukraine of 25.02.2011 No.7 'On Complex of Measures for the Establishment of River Information Service for Inland Waterways of Ukraine'. RIS' main responsibilities include: the improvement of the level of safety of vessel traffic; managing the efficiency of shipping by inland waterways and environmental protection; the improvement of interaction with other modes of transport by providing vessels' owners and all authorised users of official the RIS web-site (http:ukrris.com.ua) with real-time information on shipping, the condition of the inland waterways of Ukraine and any other relevant factors that may affect navigation in RIS zones in the Dnepr and Danube rivers.

Dnepr River ports are located on inland waterways (IWW) of category E international importance. They are located at nodes where the majority of Ukraine's industrial and agricultural potential is concentrated.

The total throughput of the cargo terminals is currently less than 50 Mt per year (in the 1990s it was 150 Mt M/year). This results from the fact that the lifting equipment at the river ports is technically outdated or physically worn out and requires replacement; part of it is dismantled or featured for the cargo no longer transported on the River.

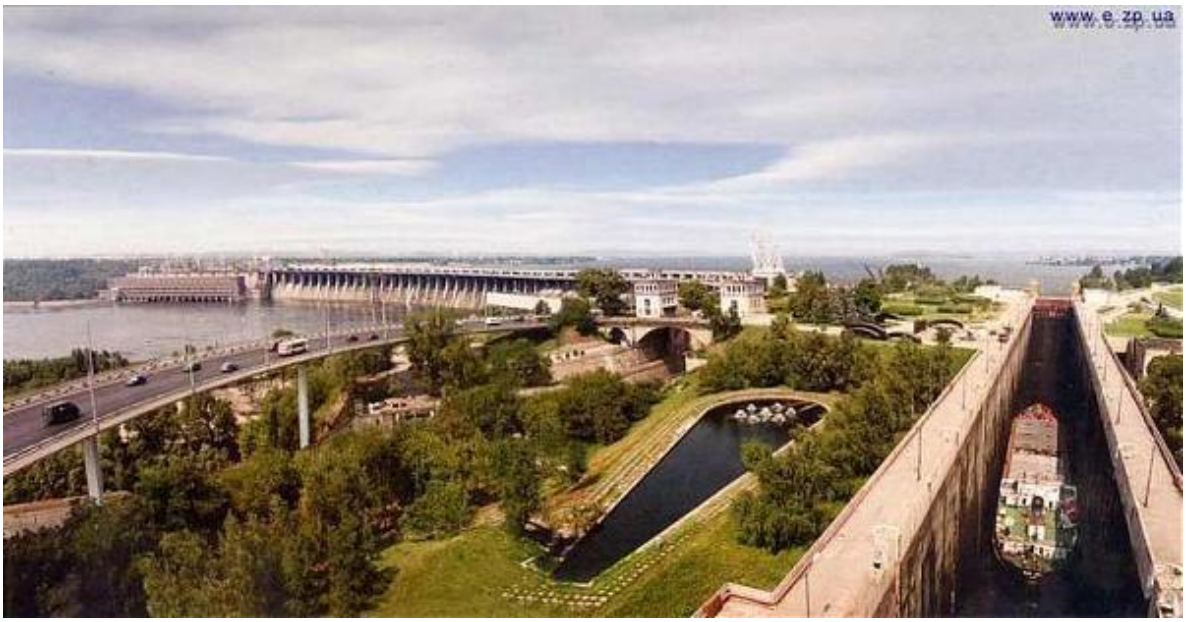
At the moment, neither the size of the navigable waterway network, nor the potential or capacity of the ports can represent growth for the inland waterways shipping market, the share of which is considerably lower than the shares of any other mode of transport in Ukraine (about 2% in the total volume of transportation). The potential of river transport remains untapped, mainly due to the following reasons.

Natural Reasons

At this stage the following substantial limitations should be taken into consideration:

- The Dnepr has a tortuous river bed making it the long distance of 850 km from Kherson to Kiev. This compares unfavourably with 510 km Odessa-Kiev by road and 713 km (tariff distance) Odessa-Kiev by railway.

- Navigation on the Dnepr River means passing a number of locks, including Zaporozhe single lock (with a water drop of 37.5 m in the lock), which is the 3rd highest lock in the world[1].



Zaporozhe single lock, source – Wikimapia

At the same time the main commercial inland Western European waterways, such as Rhine, Seine, Rhone, Elbe and Schelde, have no locks (except at the mouth of the rivers where there is a tide, to keep the water level even).

- More importantly, the Dnepr, like other rivers situated in the easternmost part of Europe, is subject to freezing over winter, which reduces its availability by 3 or 4 months per year[2]. Using ice breakers could prolong the navigation period but it is not a guarantee of uninterrupted transportation.

It is obvious that these particularities considerably increase the cost of investments in infrastructure and maintenance (including safety and environment).

Furthermore, the creation of a stable transport system that operates all year round and is based mainly on the river (especially for urgent and costly cargo transported in containers – these are consumer and light industry goods) calls for the implementation of a fully-fledged co-modal network, where alternative modes of transport (railway and road) can take over from the river when it is closed.

- The average distance from the Dnepr estuary in the Black Sea, West of Kherson, to the closest deep sea ports (Iliychevsk, Odessa or Yuzhniy) is more than 100 km. This distance does not allow river vessels to reach these deep sea ports.

[1] The world deepest lock (at 42 m) is situated in in the Republic of Kazakhstan on the Irtysh River in the city of Őskemen (Ust-Kamenogorsk).

[2] Directive terms of opening and closing navigation in 2013 are:

- Via Zaporozhe single lock: opening – 01.03.2013; closing – 27.11.2013
- Via Kakhovka lock: opening – 01.03.2013; closing – 29.11.2013

Structural and Technical Reasons

- Only certain ports have significant volumes of transshipment. In general, river transport handles less than 10% of the potential traffic.
- Kherson lacks a suitable transshipment base for transshipping cargo between river- and sea-going vessels.
- The vessels have to pass five locks on the route from Kiev to the Black Sea. In addition, several low bridges require lifting to allow for the passage of vessels.
- In most ports, the facilities are not fully used, the equipment and the infrastructure are obsolete and often decommissioned. River ports lack suitable handling equipment for containers (the only operational river container facility is located in Dnepropetrovsk).
- The maintenance of the infrastructural facilities has generated high costs, however, the existing facilities are not being used to a significant extent. This brings about high operating expenses and high market prices. As a result, the internal river transport system can hardly compete with other modes of transport.
- In general, river transport, ports and the infrastructure are used for transportation of the low-cost bulk cargo (sand, scrap metal, ore, metal, etc.).
- This mode of transport suffers from a lack of integration within the Ukrainian intermodal transportation network. This is mainly attributable to its substantial inefficiency in transit cargo transportation as well as inadequate infrastructure.
- Before the GEC of 2008, almost no new vessels were added to the existing obsolete fleet. Only JSSC Ukrrichflot implemented an operating fleet upgrade programme, and in 2009 started the construction of its own mixed navigation ('sea-river') fleet to transport the general and bulk cargo of the private joint-venture company 'Nibulon'. This situation meant halving the commercial fleet of river ports. Furthermore, the number of tug fleet units dropped by a factor of 1.5, and the service and auxiliary fleet decreased by a factor of 4. The lack of fleet replacement contributed to aggravate its technical obsolescence. The average age of vessels exceeds 25 years.
- River ports are no longer properly equipped for bunkering.
- Most ports are situated in city centers, which means development or expansion is either difficult or outrightly impossible.
- Proper maintenance is no longer ensured for dredging or for aids to navigation (buoys, lights, landmarks).
- Maintenance of locks and dams is inadequate. This hampers navigation and constitutes a serious environmental hazard for the population living along the river. For instance, a possible failure of the 50 m-high lock/dam in Zaporozhe may lead to a manmade disaster and cause severe consequences for the population.

Despite the substantial physical wear and tear of the infrastructure and the obsolescence of port facilities (hydraulic engineering structures, transport and warehousing equipment, transshipment equipment, etc.) the current operating capacity could allow use of the river ports in the network of international transport corridors. In view of the economic benefits, energy savings and environmental advantages of river transport, as well as the range and volumes of traffic in the basin, is an option that could apply exclusively to bulk cargo.

Economic Reasons

- In the 1990s the collapse of the USSR and the disruption of traditional commercial relations with neighboring countries and cargo-generating and consuming regions, at both international and national levels, entailed drastic economic consequences.
- Erratic privatisation has led to the breach of a common vision and an amrked lack of cooperation between the regions of Ukraine and Ukrainian enterprises. Furthermore, these enterprises now belong to different owners, sometimes from foreign countries, with different priorities.
- All river ports on the Dnepr are privatised.
- Since 2008 Ukraine has been severely hit by the worldwide crisis.

The economic crisis continues to affect inland water transportation negatively. The river fleet is mainly used for the transportation of low-tariff cargo. This mostly includes local construction materials, such as sand, crushed rock, stones, slag, etc. Sand is the main cargo transported by fleets of the local ports. Global trends did not change cargo patterns on the Dnepr.

- A large part of the Dnepr fleet was designed for bulk cargo, mainly sand and ore. Therefore most units are inappropriate for general cargo and containers.
- A major overhaul and upgrade of the out-of-date domestic fleet is not realistically feasible. For this reason, this strategy cannot be regarded as a way out of the current situation. It substantially hampers the competitiveness of inland waterways in comparison to other means of transport.
- The reduced volumes of traffic and low returns pushed most shipping companies toward suspending their commercial activities or moving them elsewhere.
- Still, private investment projects are being implemented due to the development of the agricultural sector.

For instance, an investment project of Agricultural JV Nibulon worth USD 470 M is aimed at reviving navigation on Ukrainian rivers. It provides for the construction of 57 self-propelled and non-propelled vessels with the total deadweight of 200,000 t, including 14 sea and river tug boats, as well as grain elevators, including 10 river terminals with elevators on the Dnepr, the Southern Bug, and other rivers. Nibulon is planning to transport 2,000,000 t of grain cargo per year along the Dnepr River. Several river crafts have already been constructed and are in operation. These comprise of:

- 28 non-propelled vessels (total deadweight 131.08 thousand t);
- 4 tug boats (model: POSS-115) built and 3 purchased (total capacity 11280 kW);
- A modern dredge ship Watermaster Classic IV made in Finland;
- The floating crane Saint Nicholas for loading and unloading operations all year round in a clamshell-type of mode with weight-lifting capacity of 45 t and with hook – up to 60 t on inland waterways, Azov sea and 20-mile coastal Black Sea zone.

The floating crane Saint Nicholas upon arrival in Nikolayev July 30, 2013 – source: Nibulon

Nibulon has already built 64 river terminals on the Dnepr River. In 2011 EBRD granted them a loan of USD 50 M for the construction of five grain elevators, including river grain elevators with a total capacity of about 300,000 t of grain.

These examples are very important, because they support Ukraine's move towards specialised transportation in accordance with international trade requirements, and confirm the competitiveness of transportation through Ukraine's inland waterways.

Status of the Regulatory Framework, the State Management of the Sector, and Human Resources

The distinction in legal nature of the sea and river transport is a specific feature of Ukrainian legislation in the field of water transport.

According to Ukrainian law, the state regulates river transportation and also acts as the single regulator for the sector. The provisions of tariff and tax policy by the state are, therefore, essential for an efficient operation of the river ports and the development of the traffic.

For instance, as per Resolution of the Cabinet of Ministers of Ukraine No. 1548 of 25 December 1996 'On Setting out Authority of Executive Agencies and Executive Bodies of City Councils Regarding the Regulation of Prices (Rates)', the Ministry of Infrastructure of Ukraine is to set the charges for the use of river port hydraulic engineering facilities and fees for specialised services provided at river ports (on terminals) of Ukraine (berthing, vessels attendance, anchorage and administrative services) in co-ordination with the Ministry of Economy and the Ministry of Finance.

The following points need to be addressed to answer the requirements of the users of the transport system:

- Introduction of a clear procedure to enable the transfer of state-owned property under commercial management;
- Inclusion of the contracts concluded with regional departments of the State Property Fund of Ukraine for the operation of state-owned hydraulic engineering facilities into legal framework;

- Development of the procedure for the introduction of investments into the construction and the major overhaul of hydraulic engineering facilities and clear distribution of spheres of responsibility;
- Putting in place mutual responsibility and feedback between companies in charge of the operation and the modification (deepening) of inland waterways and the State Enterprise Ukrvodshliakh, which is responsible for the condition thereof (i.e., the responsibility to the State);
- Integration of EU regulations into the field of river transportation. This sector will require specific legal regulation in the future since the currently applicable legislation is either ineffective or missing;
- Removal of the fragmented character of Ukraine's regulatory framework in the field of inland waterways; focusing legal framework on solving major issues of sector functioning and creation of modern conditions for its sustainable operation and development;
- Identification and inclusion into economic development programmes of overall interactions of the river potential with industrial facilities and territories, inclusion of river transport into the concept of city development;
- Increasing the level of transparency in the questions of interaction between public authorities and the owners of private ports and terminals;
- Elimination of non-transparent setting of rates and other charges associated with considerable costs and corruption.

In view of limited administrative capacity, the State Sea and River Transport Policy Department of the Ministry of Infrastructure of Ukraine needs institutional and financial support in order to ensure adequate functioning of the river transport sector.

The privatisation of the river transport sector resulted in the fact that all functions and strategic infrastructure maintenance duties of the state were transferred to the private sector.

The following structural difficulties are currently observed in this respect:

- Private companies are financially unable to perform technical maintenance duties without endangering their own stability; furthermore
- They are unable to compete with the special ‘anti-crisis’ railway tariffs offered by Ukrzaliznytsia and non-transparent road tariffs; and
- Further suspension of duties in sector operation by the state authorities could eventually result in the irreversible degradation of inland waterways and the complete shutdown of traffic.

Specialised Academic Institutions

Currently there are no specialised educational institutions in Ukraine for training river transport personnel. In the Soviet Union, and until a certain time in Ukraine, the Kiev River School trained the command personnel for river fleet. Today this school has been transformed into Kyiv River Transport Academy, which trains seamen in conventional maritime professions. No command personnel is trained in Ukraine for self-propelled barges, tug-boats, pusher tugs, etc. (This means combined professions that are in demand specifically in river fleet e.g. captain-mechanic, mate-mechanic, etc.). Requirements for combined profession diplomas for river vessel personnel are still there. However, Ukrainian river-related documents do not comply with international standards.

Special Attention is Required to Analyse the Problems of Container Transportation Sector of Ukraine.

In 2012 containers transshipment at Ukrainian ports did not reach the volumes of 2011. Container turnover decreased by 4.8% (the first fall in volume since they started recovering after the crisis) at 735,606 TEU, which represented no more than 30% of the total capacity of container terminals of Ukraine (2.7 M TEU). The declared capacity is much higher than forecast cargo flow, even when considering the most optimistic scenario. At the same time there is an increase in potentially not needed container infrastructure.

The volume of containers in transshipment in 2012 amounted to a mere 11,706 TEU. This situation happened in spite of amendments to the Cargo Transit Law in 2010, which aimed to develop cargo transshipment opportunities at Ukrainian ports.

This last figure represents about 1.6% of the total annual container volume handled at Ukrainian ports. In the explanatory memorandum to the draft law prepared by the Ministry of Infrastructure at that time (2009), the prospect of attracting a volume of up to 400,000 TEU for transshipment was mentioned. This corresponded to 30% of the total volume of containers handled in the 2008 record year and would have generated an additional USD 50-60 M in revenue.

However, today the prospects appear completely different as new large terminals have opened in other ports of the Black Sea outside of Ukraine. Due to these ports being connected by direct ocean service to the container carriers, there is much less need for transshipment via Ukraine.

There is a clear tendency among shipping lines to concentrate their transshipment in cheaper/easier ports of Marmara Sea (Istanbul) where container vessels call anyway on their Northern and Southern routes to and from the Black Sea. Still, potentially container transshipment could take place at the ports of Odessa region:

- to/from Ukrainian secondary ports (mainly in Azov Sea);
- to/from river ports; and
- to/from long-haul destinations, starting with the Far East.

The following elements have been identified as causes for low traffic flows:

1. Although the procedures of customs clearance of containers at the ports are simplified and regulated by a time period (standard time period for customs control of transit containers on the territory of sea ports is reduced to 4 hours), the general volume of control before release remains rather complicated:

a. The procedures include up to 12 control services, duplicating each other (in the EU there are only two or three services).

Veterinary Control requires the original veterinary certificates for the goods in the container no later than 24 hours before vessel call. Environmental Control insists on the radiological control of containers in transit, which is not logical since the goods are not imported in Ukraine. The regulatory documents that govern the work of each of these 12 services do not provide a clear distribution of duties or responsibilities between them.

b. 20-50% of the transit containers are scanned, inspected and weighed. Until very recently it was the case for 100% of the imported containers (in the EU – 1% and 5% respectively).

c. The actions of the controlling agencies in combating smuggling, paralyzes the work of terminals that don't properly take into account European experience in terms of risk management. In the working process the police, the Security Service of Ukraine, Tax Police, etc. can interfere at any time and bring the operation of a port to a complete standstill, which occasionally happens.

d. At the same time it is virtually impossible in practice to establish the degree of responsibility of each of these services for the delays during the containers inspection.

e. Because of the unpredictable results of customs operations, insurance companies do not include risks of losses into insurance compensation.

2. Transshipment is not possible for excise goods because of the restrictions set in the Cargo Transit law (with changes introduced in 2010 and 2012).

3. The total amount for port fees and charges for vessels' service during stay at Ukrainian ports, possible hubs (reflected in disbursement accounts), is much higher than the cost of call to other Black Sea ports[3].

4. There are limitations for domestic (cabotage) transportation, i.e. the transportation of containers on board small tonnage feeder vessels between Ukrainian ports on the Dnepr River and the Azov and Black Sea ports. The Port of Odessa, JSSC Ukrrichflot, and the Customs developed and agreed upon the necessary technological and administrative steps to be followed and presented them for consideration to the Ministry of Justice in 2010. Should this document be adopted in the nearest future, the prospects of developing domestic (cabotage) transportation of containers between the river and sea ports of Ukraine will become realistic.

It is only fair to mention that recently some events took place in Ukraine that influenced the transport of containers:

- In 2011 Ukraine joined the International Convention on Simplification and Harmonisation of Customs Procedures. The convention recommended the use of a Single Window approach. 'Single Window – Local Solution' technology in the zone of Southern Customs activity and the ports of Odessa region was implemented.
- It is now possible to process vessels in the mode of 'free practice' on the basis of electronic and not hard copy of documents. Resolution of the Cabinet of Ministers of Ukraine of 29 February 2012 No.156 'On Introduction of Amendments into Procedure of Movement of Goods at Border Entry Points Located on the Territory of Sea Ports of Ukraine during Container Transportation in Direct Intermodal Traffic' (approved by the Resolution of the Cabinet of Ministers of Ukraine No.320 of 2 April 2009).
- The Law of Ukraine 'On Introducing Amendments to some Legislative Acts of Ukraine due to Adoption of Customs Code of Ukraine' came into force on 13 March 2012. According to article 20 of the above mentioned Law of Ukraine 'On Cargo in Transit' the words 'dangerous cargo' was replaced by 'dangerous waste', practically removed limitations related to declaration of dangerous cargo. Dangerous cargo clearance, except for dangerous waste, in the mode of transshipment can be done

[3] Comparison of Disbursement Accounts for Mother Container Vessel, September 2011

Parameters of the vessel: LOA 294.13 m / Beam 32.2 m / Depth moulded 17.45 m / Draft 13.5 m, GRT 53,000, Volume 165,628.71 cbm, Nominal container capacity: 5,300 TEU

Port	**Ambarli**	**Constanza**	**Iliychevsk**	**Odessa**
TOTAL IN EUROS PER PORT	**25,187.45**	**36,447.4**	**47,192.72**	**43,636.86**
% to the sum in Constanta	-30.9%		+29.5%	+19.7%
In case of call to both Ukrainian ports -30.9%			+49.2%	

as for other cargo according to the Convention on Facilitation of International Maritime Traffic of 1965.

- The Law 'On Sea Ports of Ukraine' came into force on 13 June 2013.
- The New Customs code of Ukraine came into force on 1 June 2012. Among positive changes it is worth noting there is a reduction of time for goods customs clearance (in the Code it is envisaged to be no longer than four hours); the possibility of performing customs clearance of cargo at any customs point regardless of the place of registration of the importer; and the introduction of responsibility for harm resulting from the unlawful actions of Customs and other governmental agencies.
- From the 1 February 2013 Customs in Odessa started to use only electronic delivery orders and stopped receiving them as hard copies. According to the decision of the intergovernmental working group, electronic delivery order has been functionning in test mode at the port since October 2012.
- According to the Resolution of the Cabinet of Ministers of Ukraine of 3 July 2013 No.553 (which introduced amendments into Resolution of the Cabinet of Ministers of Ukraine of 21 May 2012 No.451), port community information system have been introduced in Ukraine. The participants of this community are: the port administration, public bodies authorised to provide certain types of control at border entry points, port operators, agent organisations (maritime agents) and forwarders, other economic agents that carry out their activity at sea port on transportation or processing of cargo, containers and vehicles. Business partners of the port will be able to exchange, check, and organise clearance of goods, make settlement and transfer any information, documents sufficient for control and clearance of goods and vehicles electronically for providing border, customs and other types of control and clearance of goods and vehicles.
- Cabinet of Ministers of Ukraine simplified the procedure of customs clearance at border entry points for container railway traffic (decision of the Government No.381 of 19 June 2013). These changes will allow providing release and customs clearance of goods in containers in railway traffic on the territory of container terminal of railway station Odessa–Liski of Odessa railway without customs control of goods in containers at border crossing at the port of Odessa, Iliychevsk, and Yuzhniy. This method can be taken as the foundation for simplification of the transshsipment procedures at IWW.

3 BARRIERS TO SHIPOWNERS/AGENTS/FORWARDERS OPERATIONS ON THE RIVER DNEPR AND AT THE SEA PORTS OF UKRAINE

3.1 Tariff Policy of Sea and River Ports and other Entities of Waterways Infrastructure of Ukraine

The situation in this sphere is characterised by the following:

- There is no form of incentive for Ukrainian-flag vessels. In January 2005 discounted port charges for Ukrainian-flag vessels were cancelled, and in April 2008 discounted port charges and service fees for vessels of foreign shipping companies that have the status of national shipper were cancelled.
- The status of 'international carrier' has been in effect under the resolution of the Cabinet of Ministers of Ukraine for all vessels, including Ukrainian ones, since 2009, envisaging certain tax benefits. In respect to water transport, a vessel is considered an international carrier if at the moment of sailing it actually has cargo or passengers on board. In this case, it is not subject to VAT on tonnage, canal and light dues. At the same time a vessel that is heading in ballast for loading is not considered an international carrier and therefore is subject to VAT to the full extent. In accordance with all canons of maritime industry, the next voyage of a vessel starts immediately after unloading is completed, i.e. it often includes an in-ballast passage to the place of loading (especially for vessels carrying bulk cargoes). In other words, a lot of (Ukrainian) ship owners have to incur additional expenditures just because the commodities exported in bulk constitute the basis for the Ukrainian foreign trade and for their transportation an empty positionning on ballast is needed.
- Ukrainian-flag vessels pay 20% VAT for all port charges and services, including an agent fee which is taxed at zero rate for foreign vessels.
- Local port tariffs are artificially inflated under the pretence of ensuring navigation safety.

In regards to the ports:

- Vessels, transferred to inner roads, as per the order of the port administration, when pulling anchor heading to open sea, have to use the harbor tug for manoeuvering regardless of the prevailing weather conditions, size and construction particularities of the vessel (two screws, availability of steering nozzles or lateral thrusting propeller). Additional ship owner's expenditures, exclusive of extra charges for work at night time and during days off, range between USD 100-300;
- By resolution of the Cabinet of Ministers of Ukraine of 24/12/2003 No. 1989 'Issues of Passage Across the State Border of Automotive, Water, Railroad and Air Means of Transport of Shippers and Cargo Carried by Them' the obligation to deliver members of commissions and representatives of controlling organisations to the place of control and back is put on the port administration or marine agent. In practice, the expenditures for bringing the commissions on board are incurred solely by ship owners especially when the vessel is at anchorage. In summer such transport costs ship owners USD 50-150 and in icy conditions up to USD 1,500;
- In violation of the provisions of the 'Convention on Facilitation of International Maritime Traffic of 1965', which was ratified by Ukraine in 1993 and stipulates free of charge work of state agencies, unreasonably high rates are applied for registration of arrival/departure of vessels by the Inspection of the State Inspectorate of the Port. The official cost of such operation is USD 100-360,

excluding illegal payments, which remain a serious problem. Users report this malpractice often complicates the operational process.

3.2 Procedures of Registration of Arrival/Departure of Vessels at the Points of State Border Crossing

The procedures are too complicated and they hinder the development of transport logistic chains via the territory of Ukraine.

- The provisions of the Convention on Facilitation of International Maritime Traffic are infringed as far as free pratique is concerned (arrival of the vessel at the port and start of cargo handling operations). Despite timely presentation of all necessary official information in written form, free pratique by radio in Kherson is not granted.
- The amount and composition of documents required from a vessel significantly exceeds the norms established by the aforenamed Convention.
- The Resolutions of the Cabinet of Ministers of Ukraine of 24/12/2003 No. 1989, of 02/04/2009 No. 320 and of 29/02/2012 No. 156 envisage granting of free pratique without commission's presence on board of the vessel. In theory this should significantly facilitate and accelerate the working process. However, as the decision on application of such simplified form of control is made by executives of controlling bodies (checkpoint, customs office, etc.) at a local level, this norm, in practice, is not applied. It would be necessary to develop a clear and transparent scheme defining in which cases free pratique must be granted without participation of the commission on board and in which ones the formalities should be completed in accordance with the usual procedures. Otherwise there is a clear possibility of aggravating the already mentioned corruption issues.
- The idle time for going through formalities can sometimes extend to up to one day.
- The number of members of the commission is often equal to that of the vessel's crew (agent – 1, sanitary inspector – 1, border guards – 2-6 persons + dog (one or up to 3), customs – 1-3 persons). All of them have to be accommodated and provided with conditions to perform their functions.
- Each service participating in the work of the commission requires from the ship owner or its agent complete information presented in written form in advance noting the prospective arrival or departure of the vessel with several subsequent adjustments of time. In addition, such information shall be presented by a ship owner's representative or agent in person in the form of the original application with the ‘wet’ stamp (in Kherson only border guards get applications electronically, all other services get them in hard copy). Sometimes the term for submission of the application is up to 10 days before the port call. Despite the communication technology available today, applications (as well as any other correspondence) sent by fax or email are not considered. Standardising the procedure of submission of the necessary information to the controlling bodies using these modern means (email) would help to avoid the unnecessary waste of working time and money and improve the coordination between all the participants in this process. Also, taking into account that the time of sea-passage between many ports in the Black Sea, Sea of Marmara and Mediterranean Sea is 1-4 days, the submission of information 10 days in advance is most often unfeasible.
- The working schedules (shifts) of all controlling services in the ports should be harmonised. Currently in Kherson because of non-coordination of shift changes

between various services, the work of the commission stops from 07:30 to 10:00 and from 17:00 to 19:00, causing unproductive idle time for vessels and ports.

- At sea/river border crossing points the following time periods are established by the Decree of the State Customs Service of Ukraine of 17/09/04 No. 678 'On Approval of the Instruction on Organization of Customs Control and Customs Registration of Vessels and Goods Transported by Them' and Decree of the State Customs Service of Ukraine, Administration of the State Border Service of Ukraine, Ministry of Transport and Communication of Ukraine, Ministry of Health Care of Ukraine and other related Ministries No. 1167/886/824/643/655/424/858/900 of 28/11/05 'On Approval of Time Standards for the Performance of Control Operations by Officials Exercising Control of Persons, Goods and Means of Transport at the Points of State Border Crossing of Ukraine':

Types of control	Time standards		
	Person	Transport	Goods
Border	up to 2 min	up to 1 hour (up to 2 hours considering time for conducting a thorough inspection)	up to 1 hour (up to 2 hours considering time for conducting a thorough inspection)
Customs	Up to 3 min	up to 1 hour (up to 2 hours considering time for conducting a thorough inspection)	Up to 6 hours
Sanitary and epidemiological	If needed up to 30 min	If needed up to 30 min	If needed up to 30 min
Ecological (for closing the border) (radiological)		Up to 30 minutes (together with the customs bodies and bodies of the state border guard)	If needed up to 30 minutes

- In accordance with these timings, the time for processing a vessel carrying for instance, import containerised cargo (provided each container contains a different kind of goods) will be at least 12 hours, depending on the number of containers on board.
- Furthermore, users generally emphasise a high level of greed among all controlling services. Surreptitiously, authorities may reportedly demand on side compensation, just for the normal and unbiased performance of their duties.

The work of commission at Kherson port (according to the information of vessels agents) ideally may last:

1) 20 min for organising all the persons
2) 20-25 min to travel to Kherson harbor
3) 1-1.5 hours of commission work
4) 20-25 min going from the boat to the river bank

5) 10 min taking the members of commission back

i.e. a minimum of 2 hours.

3.3 Navigation on the Dnepr

The following infrastructural and technical factors limit navigation on the Dnepr:

- Nonsystematic maintenance of mid-channel dimensions, dredging operations are not performed at the proper required level;
- Passage of heavy-tonnage loaded vessels of the 'sea-river' type is possible only up to Dnepropetrovsk. Further up the Dnepr River the depths do not allow passage of these vessels for fully-fledged freight traffic; the vessels with a draft of up to 3.80-4.00 m may sail up to Dnepropetrovsk (depending on the water level), while the fairways in the section between Dnepropetrovsk and Dneprodzerzhinsk HPP have depths of 2.40 m and in case of water discharge 3.00 m;
- Navigational aids (buoys, section lines, landmarks) are worn out and in bad condition. Furthermore, lighting is sometimes weak or not operational and landmarks are destroyed;
- Passing the bridges with limited dimensions (Dnepropetrovsk two-tier and Kremenchug) entails vessel's delays and unreasonable expenditures for ship owners. It would be possible to change the scheme of financing the bridge lifting (including fees for both ship owners and cargo owners who are interested in vessel passage, along the same lines as with ice dues) and work out a more convenient and flexible schedule of lifts. Currently, the schedule is compiled by the railway management at the beginning of the year for the year ahead (while it is hardly possible to figure out a schedule a year in advance for vessels, especially when they are not plying regular services, which is the case for nearly all the tonnage afloat on the Dnepr). One passage under the lifted bridge in Dnepropetrovsk costs from USD 850-2,500 (as per railway management's desiderata); during the navigation period in 2012 it amounted to UAH 9125 (around USD 1,140);
- The service of vessels at ports (namely, the removal of oil-contaminated and waste water and garbage) in accordance with the requirements of International Convention for Prevention of Pollution from Ships (MARPOL73/78) is practically absent, there are no collector vessels (except for Dnepropetrovsk) but even there there is a lack of facilities for the elimination of waste;
- Compliance with provisions of the 'Guidelines of the Procedures of Collection and Jettisoning of Water Load in Water Areas of Inland Waterways of Ukraine No. 461' is impossible because of the absence of technological infrastructure.

3.4 Mandatory Pilotage

Mandatory pilotage along the Black Sea basin in general and Dnepr-Bug estuary channel and Kherson seaway channel is monopolised by the state via the not very transparent state enterprise Delta-Lotsman. Delays of vessels because of the unavailability of pilots are frequent.

4 CONTAINER TRAFFIC POTENTIAL ON THE DNEPR RIVER

The 'Transport Strategy of Ukraine till Year 2020' document, the State programme for the development of inland waterways for the years of 2014-2021, and the EU project documents 'Support of Integration of Ukraine in Trans-European Transport Network TEN-T' (further TEN-T Project) define a package of system reforms and measures that include:

- Legislative reforms;
- Administrative reforms;
- Operational reforms;
- Infrastructural reforms and human resourcing.

According to forecasts made by the EU-funded TEN-T Project in 2010 on the basis of data of pre-crisis period (including 2008), the following tonnages could be achieved for the main types of goods carried on the river, if the reforms were put into effect (Table 1).

Table 1: Commodity Structure of the Potential Cargo Base for River Transport till 2015 (Kt)

Cargo	2008 (actual)	2010	2011	2012	2013	2014	2015	Increase 15/08
Sand	9,500	8,000	8,250	9,250	9,500	10,500	12,000	2,500
Iron ore, raw materials	2,356	7,500	8,800	9,900	11,500	11,500	11,500	9,144
Manganese ore, coke and ferroalloys	695	700	700	750	800	900	950	255
Ferrous metals	1,236	5,000	5,500	6,000	6,900	7,880	7,880	6,644
Grain	172	3,850	5,000	6,200	6,900	7,050	7,150	6,978
Coal	187	1,100	1,100	1,100	1,100	1,600	1,600	1,413
Total	**14,146**	**26,150**	**29,350**	**33,200**	**36,700**	**39,430**	**41,080**	**26,934**

Source: TEN-T Project Research Team, 2010

A potential market niche for container traffic on the Dnepr is associated with regional cargo flows to/from the 6 regions presented in the Table 2. This traffic could be shifted in the future from road to river transport. The TEN-T project assessment is that river traffic could reach 411,800 TEU (188,800 TEU imports and 223,000 TEU exports), mainly via Dnepropetrovsk and Zaporozhe river ports.

Table 2: Regional Structure of the Potential Container Traffic via Dnepropetrovsk or Zaporozhe River Port (TEU)

Oblast (area)	Imports		Exports		Total	
	TEU	%	TEU	%	TEU	%
Dnepropetrovsk	36,771	19.47	62,471	28.02	99,242	24.10
Donetsk	43,048	22.80	66,531	29.84	109,579	26.61
Zaporozhe	53,827	28.50	38,295	17.17	92,122	22.37
Lugansk	13,985	7.41	16,300	7.31	30,285	7.35
Poltava	13,440	7.12	14,482	6.49	27,922	6.78
Kharkov	27,766	14.70	24,904	11.17	52,670	12.79
Total	**188,837**	**100.00**	**222,983**	**100.00**	**411,820**	**100.00**

Source: TEN-T Project Research Team

The potential volume of the container traffic via Kiev River Port could reach 347,600 TEU, i.e. 177,400 TEU upstream and 170,000 TEU downstream (Table 3), which would ensure a balanced trade.

Table 3: Regional Structure of the Potential Container Traffic via Kiev River Port (TEU)

Oblast (area)	Imports		Exports		Total	
	TEU	%	TEU		TEU	%
Zhitomir	13,917	7.84	12,179	7.16	26,096	7.51
Kyiv	137,602	77.55	136,455	80.20	274,057	78.85
Sumy	12,757	7.19	11,634	6.84	24,391	7.02
Chernigov	13,167	7.42	9,877	5.81	23,044	6.63
Total	**177,443**	**100.00**	**170,145**	**100.00**	**347,588**	**100.00**

Source: TEN-T Project Research Team

The total volume of containers transported on the river could therefore amount to 759,400 TEU, out of which 366,300 TEU is upstream and 393,100 TEU is downstream, with a potential annual growth of 5 to 10%, which is in line with the global container traffic growth trend observed at the time.

To plan development and investments into container service on the Dnepr River, and in order to remain on the safe side, taking into account the enduring economic crisis in Ukraine, it is necessary to revise and downsize the forecasts of the TEN-T project on the bases of the recent changes in GDP and actual container cargo flows in Ukraine.

5 PRESENT EXAMPLES OF RIVER PORT LOGISTICS CONCEPTS AND BUSINESS SOLUTIONS

5.1 Kherson

Location: 15-25 km upstream from the estuary of the river Dnepr

Kherson is the main port on the major inland waterway (Dnepr) with the largest industrial and agricultural regions of Ukraine situated on its banks. Direct deliveries 'to the door' to Eastern and Central Europe via Danube river, as well as to the Black and Mediterranean Seas can be carried out by river and river-and-sea vessels, while exports to more distant countries is possible by means of direct transshipment from river barges to sea-going vessels.

Eight regions on the Dnepr River produce almost half of Ukraine's total grain crop: their yearly average production exceeds 18 Mt or 46% of the total average annual production of Ukraine. To implement the instruction of the President of Ukraine of 25 March 2011 No.1-1/566, which was the result of his business trip to the Kherson region, and corresponding instruction to the Cabinet of Ministers of Ukraine in regards to the development of Kherson region and renewal of traffic along inland waterways, Kherson Region State Administration started working on the development of a feasibility study for dredging the navigable part of the Dnepr Delta and establishing Kherson Intermodal Transport Logistics Centre in the estuary of the Dnepr River.

This explains why there are a great number of proposals for the development of river traffic, as well as solutions, designs and concepts for cargo container terminals.

5.1.1 JSC Kherson Shipyard

This shipyard is operating now and handles the TAVRIA-LINE container traffic.

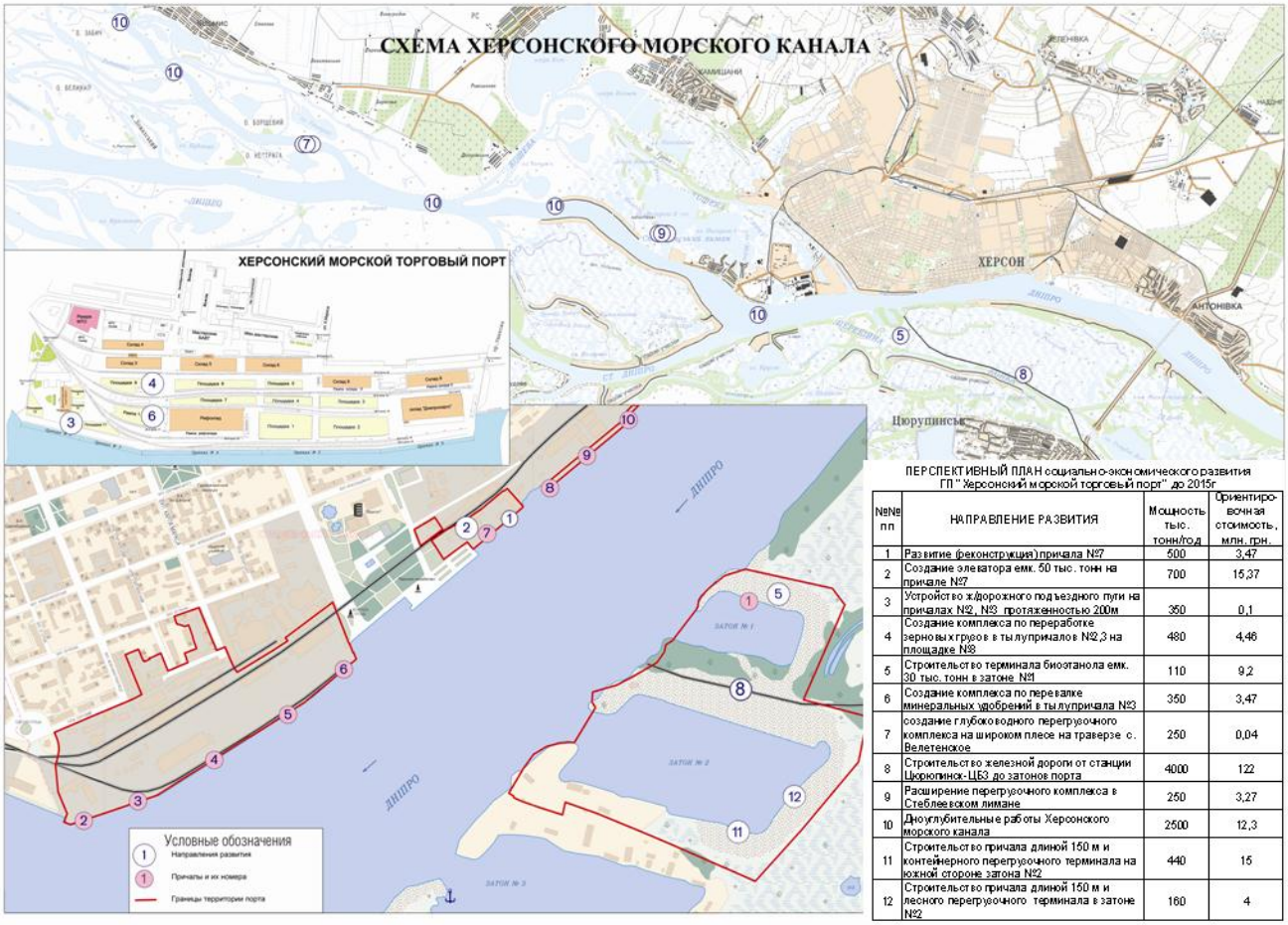
Source: TAVRIA-LINE

JSC Kherson Shipyard provides year-round services for the handling of various types of cargoes, including containers, out-of-gauge parcels, arriving by waterway, railway and road. Its 365m-long mooring berth is equipped with two gantry cranes, each with a 100/16 t lifting capacity and a 10 t lifting capacity crane. It can receive vessels with a maximum length of 200 m and 6.6 m draft. The adjacent railways can accommodate 100 railway wagons. The berth

includes an open storage yard of 19,000 sqm and covered warehouses over an area of 1,700 sqm.

5.1.2 State Enterprise Kherson Commercial Sea Port

The Sea Port is contemplating the possibility of independent implementation of seven investment projects that envisage the infrastructure development of the port on both banks of the Dnepr River.



№№ пп	НАПРАВЛЕНИЕ РАЗВИТИЯ	Мощность тыс. тонн/год	Ориентировочная стоимость, млн. грн.
1	Развитие (реконструкция) причала №7	500	3,47
2	Создание элеватора емк. 50 тыс. тонн на причале №7	700	15,37
3	Устройство ж/дорожного подъездного пути на причалах №2, №3 протяженностью 200м	350	0,1
4	Создание комплекса по переработке зерновых грузов в тылу причалов №2,3 на площадке №8	480	4,46
5	Строительство терминала биоэтанола емк. 30 тыс. тонн в затоне №1	110	9,2
6	Создание комплекса по перевалке минеральных удобрений в тылу причала №3	350	3,47
7	создание глубоководного перегрузочного комплекса на широком плесе на траверзе с. Велетенское	250	0,04
8	Строительство железной дороги от станции Цюрюпинск-ЦБЗ до затонов порта	4000	122
9	Расширение перегрузочного комплекса в Стеблеевском лимане	250	3,27
10	Дноуглубительные работы Херсонского морского канала	2500	12,3
11	Строительство причала длиной 150 м и контейнерного перегрузочного терминала на южной стороне затона №2	440	15
12	Строительство причала длиной 150 м и лесного перегрузочного терминала в затоне №2	160	4

Layout of the prospective plan for the Socio-economic Development of Kherson Commercial Sea Port till the Year 2015, presented by port administration.

One of these projects is a container terminal on the south side of the back-water No.2 on the left bank of the Dnepr River, opposite its existing facilities.

The projected capacity of the terminal is 22,000 TEU at a cost of USD 15 M (plus another USD 122 M for the construction of a 12.5 km-long railway track, which is a separate project). The pay-back period is 4.1 years.

The plan of development for this container terminal project includes:

1. Carrying out 20,000 cbm bottom deepening works;

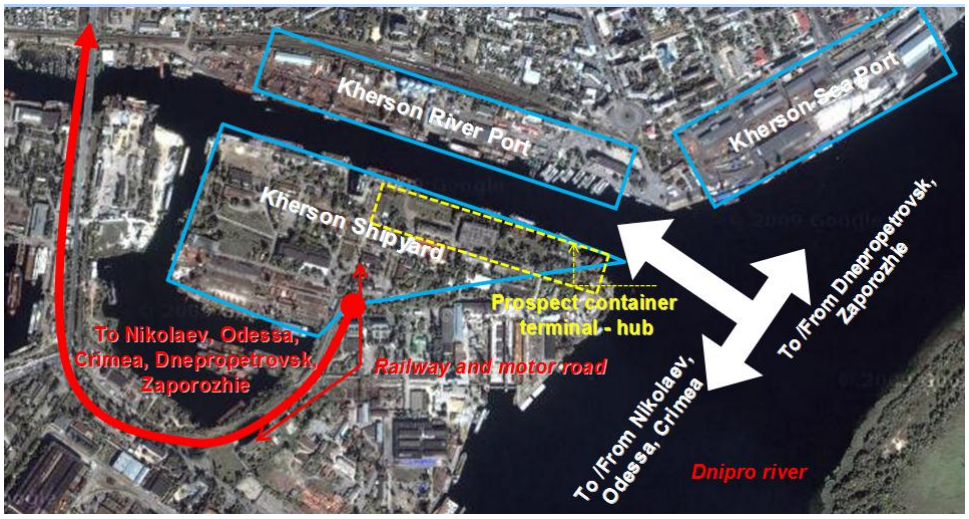
2. Construction of a 150 m-long quay;

3. Building of 2,500 sqm warehouse areas; and

4. Erection of engineering facilities and network structures.

5.1.3 Kherson Shipyard, Ukrrichflot

Kherson Shipyard is located along the river Kosheva as Kherson river port. Since operation at the shipyard is currently very limited, Ukrrichflot intends to turn it into a container terminal. However, the existing facilities do not offer any real berth (only short quay sections). In addition, it would be necessary to knock down numerous buildings and constructions (workshops, platforms, warehouses etc.) to implement the project. The fact that area is locked by the city and does not offer efficient connection to regional road/rail networks creates additional obstacles.



Project parameters of the terminal are:

Length – 575 m

Width – 105 m

Depth at the berth - 7.6 m

Development area – 6 ha

Annual capacity – 60,000 TEU

Layout of the design of a container terminal on the premises of Kherson Shipyard.
Source: JSSC Ukrrichflot

5.1.4 Kherson River Terminal (Logistic Centre)

The Government of the Kherson Region is promoting a large project of new port hub to be located on the right bank of the Dnepr River a few kilometres upstream of Kherson city, on a greenfield territory of 200ha. The Project envisages a Public-Private Partnership setup whereby all business plans should be elaborated by a private investor for a specific private operator and designed to meet its requirements.

The project has been designed to cope with the following annual cargo throughputs:

- 250,000 TEU in the short term (1.1 M TEU in the long term);
- 50,000 Ro-Ro units;
- 1 Mt of metals and general cargo;
- 1 Mt of grain;
- 1.5 Mt of vegetable oil.

It also includes a large industrial park and business area.

The terminal has a direct connection to the highway network east of Kherson, next to the bridge providing access to Crimea. There is an existing railway line under operation at the entrance to the site. The site faces motor roads E-97 (M-24) and E-58 (M-14) going around the city of Kherson. Railroad and highway (Antonovsky) bridges across the Dnepr are located nearby.

Table 4: Specialisation of the Main Operations of Kherson River Terminal

Speciality	Containers	Metal & general freight	Grain	Ro-Ro	Vegetable oil	Total
Design capacity, Per year	250,000 TEU	1 Mt	1 Mt	50,000 units	1,5 Mt	
Complex total area, ha	50	30	6	13	8	107
Length of quay, m	800	750	360	180	180	2270
Capital investments M USD	120	20	30	15	15	200

Decisions by promoters of this terminal project correspond to the results of the market study and recommendations of the project 'Support of Integration of Ukraine into Trans-European Network' (TEN-T). Still, promoters will have to attract not only cargo but also container lines, which, owing to the prevailing market situation, are looking to reduce their operational costs. This is probably one of the most important challenges of such a project, in part, owing to the fact that Ocean Carriers already seriously question the current need to have their mother vessels calling at two container terminals in Ukraine (Odessa and Iliychevsk), which are only 25 km apart from each other.

The functional organisation of the terminal can be improved. It would also require a phased development.

Situational Diagram of Kherson River Terminal, provided by Kherson City State Administration

The availability of an estuary intermodal terminal (hub) in Kherson would provide an opportunity for the competitive further relay of containers up the Dnepr with specialised cost-efficient river container vessels. On the basis of the European experience it is possible to use specialised vessels with a capacity ranging from 200 to 470 TEU.

Kherson Intermodal Terminal is destined to become an example and provide the necessary experience for the establishment of a network of small river container terminals on a stage-by-stage basis along the Dnepr River between Zaporozhe and Kiev. It will encourage the development of the necessary infrastructure and the creation of a large number of jobs in these regions.

Kherson Intermodal Terminal could be a catalyst for the resumption of navigation on the Dnepr River and provide Ukraine with an opportunity for fully-fledged participation in the European NAIADES and MARCO POLO 2 programmes.

The success of such a project greatly depends upon the ability of Kherson state administration to attract private investors/terminal operators and to present them a clear transparent scheme. Yet, this should be easier thanks to the progress made in Ukrainian legislation with the recently adopted Law on Seaports and Law on Concessions. This project is also an opportunity to implement the first real PPP in port infrastructure in Ukraine ('private' terminals in Odessa and Iliychevsk tend to follow the PPP pattern after years of struggle and uncertainty in the legislative vacuum that prevailed until 2012).

5.2 Zaporozhe

Location: 308 km from the estuary of the river Dnepr

5.2.1 JSC Zaporozhe Automobile Building Plant (ZAZ)

ZAZ is the only enterprise in Ukraine carrying out the complete cycle of passenger cars production. It is the main consignee of goods in containers in Zaporozhe region. ZAZ Customs Complex offers the services of customs broker, cargo-handling operations and provision of temporary storage warehouse (for non-food products).

Cargo Customs Complex, a permanent subdivision of Zaporozhe Customs, carries out customs clearance of goods in a 'single window' and as a result in the shortest possible time.

The total area covers 1.4 ha, the terminal's zone of customs control area 15,400 sqm and the bonded warehouse 859.4 sqm.

The prospects of development of the Customs Complex of ZAZ include: increasing the terminal area; installation of electronic truck scales; installation of the unified electronic registration system for goods and vehicles; services of temporary storage warehouse, including enclosed premises for food products and service of customs bonded warehouse. The prospects of development include road and railway connections only.

5.2.2 Port of Zaporozhe, Ukrrichflot

Area: 39.7 ha

Districts: 2 cargo handling areas (13 berths) and 1 passenger area (2 berths)

Technical equipment: 37 gantry cranes (of 20, 16, 10, 5 t lifting capacity), 3 floating cranes (of 16 t lifting capacity), 2 wheel-mounted cranes (of 36 t lifting capacity), 1 crane-logger.

The Port of Zaporozhe handles a wide range of cargo: ore, coke, coal, metal scrap, metal products, fertilisers, clay, sand, ferroalloys, and bauxites. Its capacity is 6 Mt annually. An investment project in a grain silo construction with a storage capacity of about 30,000 tonnes (6 bins of 5,000 tonnes) is currently implemented at the Port.

The Port accepts 'sea-river' vessels with a length of up to 180 m and draft up to 4 m.

Cargo areas where containers will be handled are:

1st cargo area:

- Berths 1 to 6: currently accessible by railway and road; an area has been prepared to start working on berth number 6.
- Berth number 7: close to the area where the future grain terminal will be built.

2nd cargo area:

- The Krivaya (curve) bay - Zaporozhe Shipyard (shipbuilding and ship repair). The planned berth is on the territory of the Zaporozhe shipyard, currently accessible by railway and road.

Main problems: all areas have a limited possibility for development and are enclosed in the city limits. The 1st district is too far from the possible ZAZ berth and can only be reached through the Zaporozhe lock. ZAZ transferred all customs processing divisions in the territory of the plant.

Development area – 6 ha

Length of the mooring berth – 300 m with further development up to 700 m

Depth at the mooring berth – 3.75 m

Layout of the design of a container terminal on the premises of Zaporozhe Shipyard (provided by JSSC Ukrrichflot)

Access and connection points to the main transport network:

- The railway track is connected to the railway node of Zaporozhe River Port;
- There is a direct access to the intercity highway.

Annual project capacity is 20,000 TEU.

Ukrrichflot's plans of are not linked to the ZAZ's similar plans. Zaporozhe Shipyard is not yet ready for the implementation of the project.

5.3 Dnepropetrovsk

Location: 393 km from the estuary of the river Dnepr

5.3.1 Port of Dnepropetrovsk, Ukrrichflot

Area: 20.8 ha

Districts: 2 cargo handling areas (13 berths) and 1 passenger area (7 berths)

Technical equipment: 2 floating cranes ('board to board', 16 t lifting capacity), 2 floating cranes ('board to board', 5 t lifting capacity), 2 pneumatic cranes (40 t lifting capacity), 29 gantry cranes.

The port of Dnepropetrovsk specialises in processing a wide range of cargo: rolled metal products, high capacity containers, heavyweight cargoes, coal, coke, sand, pellets, mineral and building materials, grain and pipes. An investment project in a grain silo construction with a storage capacity of about 30,000 tonnes (6 bins of 5,000 tonnes) has been implemented at the Port.

Cargo operations with containers in Dnepropetrovsk River Port, JSSC Ukrrichflot

The port of Dnepropetrovsk handled some containers but stopped the operation. Currently, containers are being handled by another terminal to the north of the river port territory, also on the left bank.

Handling rates:

Loaded containers 100-110 TEU/day

Empty containers 150-170 TEU/day

Lifting of railway bridge: 1 time per day, enough for operating the vessel belonging to TAVRIA-LINE, which carries a maximum of 112 TEU on-board.

The productivity is, however, low for the bigger sea-river vessels belonging to Ukrrichflot (DESNA Class 168 TEU BUG Class 331TEU).

River ports handle containers by pairing conventional cranes, which is inadequate and unsafe and may result in container breakage.

However the river port (Ukrrichflot) is planning a redevelopment of container business, on the same area, which is well connected to road and rail networks.

Development area – 3.21 ha

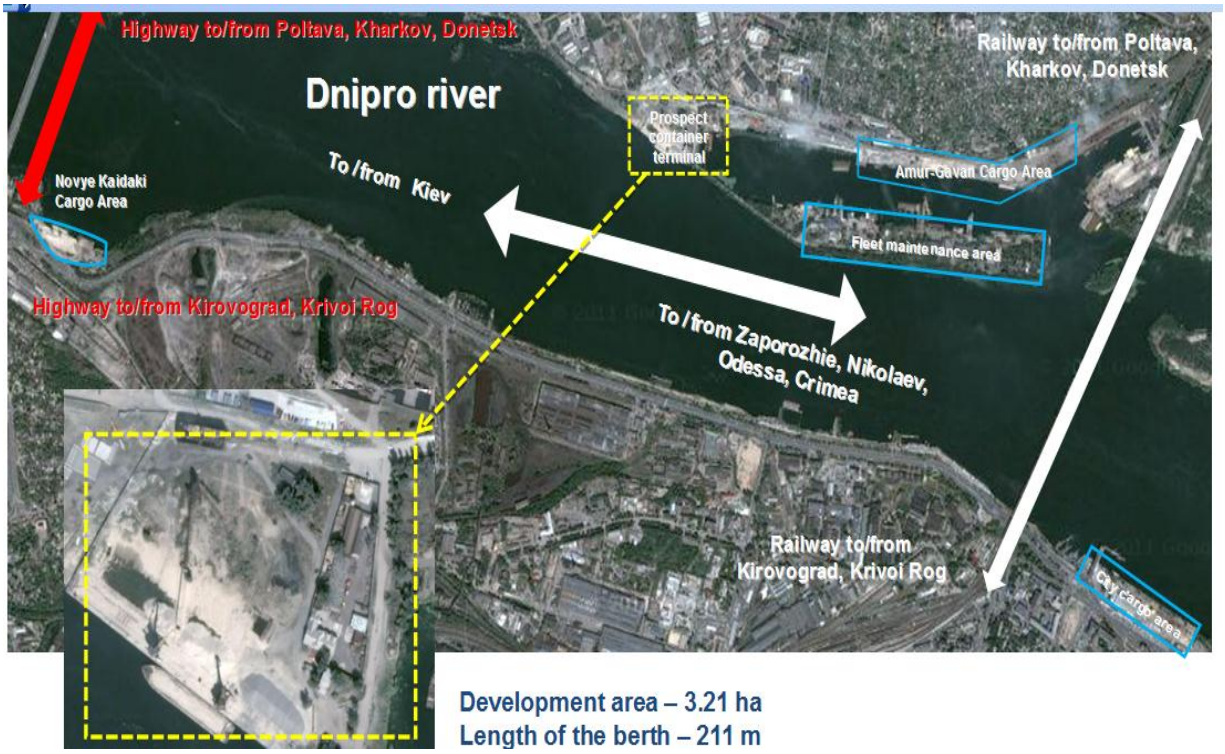
Length of the berth – 211 m

Depth at the mooring berth – 3.5 m

Transportation:

- The railway track is connected to the railway node of Dnepropetrovsk River Port.
- There is direct access to the intercity highway.

Annual project capacity is 20,000 TEU.



Layout of the design of a container terminal on the premises of Dnepropetrovsk River Port (provided by JSSC Ukrrichflot)

Cargo operations with containers in Dnepropetrovsk River Port, JSSC Ukrrichflot

5.3.2 Aquarelle Ltd. Cargo Terminal (TAVRIA-LINE)

This is a private container terminal on the left bank upstream of Amur Harbour in Dnepropetrovsk.

At the moment, the intermodal terminal is a miniature logistic centre that includes:

Road, railway and river connections, a bonded warehouse, covered storage, its own truck park, its own container line, its own forwarder, provision for cargo transportation in its own containers and in the line containers.

The port capacity is up to 10,000 TEU per year.

The terminal provides service for its own and chartered ships of a river- sea class with general cargo and containers and other sea-river going ships (during the Experts' mission the terminal unloaded general cargo on pallets).

Aquarelle Ltd. Cargo Terminal Port Facility

Since 1999 TAVRIA-LINE has performed container and general cargo transportation between Black and Marmara Sea ports and along the river Dnepr. In 2010 TAVRIA-LINE opened a new service from Constanta (Romania) to Dnepropetrovsk, together with Container Carrier CSAV Norasia. Later, in the framework of Romanian service, an agreement was concluded with another Global Carrier, CMA-CGM, which allowed for the expansion of the geography of ports served all over the world.

In 2013 TAVRIA-LINE renewed regular voyages to the Turkish port of Ambarli. This service caters for transportation of cargo in TAVRIA-LINE containers as well as for general and out-of-gauge/project cargo.

During the winter period when the river is closed, TAVRIA-LINE uses the JSC Kherson Shipyard berth and crane.

Port complex Aquarelle (Dnepropetrovsk) resources:

Railway side-track

115 m-long quay

Bridge crane Kranbau Tukan, of 40 t capacity

Gantry crane KC-50-42, of 50 t capacity

The park of container roadtrains (11 units in total)

6 dump trucks with 30 t capacity

Truck crane with a 35 t capacity

3 diesel fork lift trucks

Tank system for bulk cargo (600 cbm)

Dry covered storehouse with a 3000 t capacity

Truck weighbridge for trucktrains of up to 80 t

Container area (customs zone) S=2,600 sqm.

Yards for bulk and general cargoes

Customs zone and bonded warehouse at the port complex Cargo Terminal Ltd. Aquarelle (photo Company Aquarelle)

CSAV-NORASIA and **CMA-CGM** are shipping companies that do not transport along the Dnepr. They cover deep-sea legs to/from Constanta where they provide transshipment.

At the same time, due to the strong cooperation of TAVRIA-LINE with these lines, Dnepropetrovsk city and the river Dnepr are now included in the world network of container traffic.

The key commercial factors include:

400-500 TEU/month – import from China

150 TEU/month – export worldwide

Cargo transportation is performed by two TAVRIA-LINE vessels, with possibility to charter a 3rd ship during the peak seasons.

Furthermore, the above mentioned container lines provide TAVRIA-LINE special beneficial conditions (i.e. free demurrage time – more than 20 days, amongst others) for the return of the lines' equipment to the Black Sea terminals. This compares with the time needed by rail for delivery of full inland and empty return and is sufficient for the return of container equipment to the hub port.

The company deploys the following vessels:

m/v ALKOR

124 TEU

IMO: 8811651

Owner: AQUARELLE LTD

Built: 1988

Port of registry: Kherson

Flag: Ukraine

m/v ATLAS

92 TEU

IMO: 8521866

Owner: AQUARELLE LTD

Built: 1985

Port of registry: Kherson

Flag: Ukraine

The success of TAVRIA-LINE rests solely on the utilisation of their own resources: vessels, ports, warehouses, vehicles, etc. It allows avoiding unforeseen expenses for the clients and it enables highly complex transport tasks to be fulfilled by implementing the 'door-to-door' concept in full. The operation of this line is taken into account in the plans of development of the port of Constanza (Romania).

5.4 Kiev

Location: 856 km from the estuary of the river Dnepr

The Kiev Development Strategy till 2025 does not foresee the establishment of a river multimodal facility and the city administration does not conduct negotiations with Ukrrichflot for developing multimodal opportunities involving the inland waterways.

The position and plans of Ukrrichflot's management in regards to the prospects of developing container traffic along the Dnepr is as follows:

The future investment projects of the company are meant to cover 20% of the segment (about 100,000 TEU per year) through Dnepropetrovsk (20,000 TEU per year), Zaporozhe (20,000 TEU per year), Kherson (60,000 TEU per year), using their current fleet of sea-river vessels Desna and Bug.

Dnepropetrovsk and Zaporozhe terminals are able to provide efficient logistics service to Dnepropetrovsk, Donetsk, Zaporozhe, Poltava, Kirovograd, Sumy, Chernigov, Cherkassy and Kharkov regions. Kherson container terminal can provide the same service to Kherson, Nikolayev and Autonomous Republic of Crimea. This actually makes it possible to cover about 33% of the regional container market (including regions close to Kherson, Zaporozhe and Dnepropetrovsk).

Based on volumes that they consider commercially achievable, Ukrrichflot favour the idea of organising comparatively small terminals on the territory of the existing ports and shipyards.

In 2011-2012 the company conducted the experimental operation of the First Ukrainian Container Line UCL1 along the route Dnepropetrovsk - Mardash (Istanbul) - Dnepropetrovsk. The service was provided by their vessel, Mechanic Cherevko (Desna type), and carried a combination of general cargo in holds and from 5 to 20 full containers on deck.

The carrying capacity of this vessel is 188 TEU with the possibility to load 20' and/or 40' DV/HC/OT/FR containers.

Cargo operations with containers UCL1 at Dnepropetrovsk river port (the photo is presented by JSSC Ukrrichflot)

The volume of containers shipped during the 2012 period of navigation was only 121 TEU. The initial priorities at the time were to study the market of container transportation along this route, assess the transit times and work out the customs clearance procedure in Kherson. The vessel was carrying import and transit cargo in standard 20' and 40' containers belonging to Ukrainian State Centre of Transport Service Liski (UZUU, a subsidiary of Ukrzaliznytsia, the National Railways of Ukraine).

Whilst promoting its activity on the river Dnepr, the company concluded a number of export/import contracts for shipping rolled metal products to/from Dnepropetrovsk and Zaporozhe, for example with metallurgical complex Zaporozhstal to transport over 360,000 t to Black and Mediterranean Sea ports in 2012. 5,000 t batches of rolled metal in coils were delivered to Diliskelesi (Turkey) and Thessaloniki (Greece). Turkish steel was also shipped to Dnepropetrovsk in full vessel loads.

Ukrrichflot underlines that in a number of cases (upon the combined transport of containers and rolled metal products) the electronic central customs database, where the information about all cargoes crossing the state border of Ukraine is entered, requires customs inspection of this or another cargo. In the vast majority of cases it is not possible to inspect containers on board and necessary to unload them on the quay. Additional expenses for cargo handling plus vessel idling time make it impossible to forecast either the cost of voyages or transit time.

Unfortunately the container shipping line proved inefficient because of administrative difficulties and customs procedures. However, from a technical point of view the company is ready to carry containers from Turkey and Romania as well as from the ports of the region of Odessa.

Ukrrichflot participates in the working group organised under the auspices of the Ministry of Infrastructure for the development of container transport with its own programme for the carriage of containers in cabotage regime.

6 THE EU CONTRIBUTION

Since the beginning of the 1990s the EU has constantly supported Ukraine in regards to the revival of inland waterway transport. The first EU-funded project was entrusted to BCEOM in 1994 under the Tacis programme ('Medium-Term Strategy for Inland water Transport in Ukraine'), while the most recent project was achieved by Corporate Solutions in 2009-2010 ('Support to the Integration of Ukraine in the Trans-European Transport Network, Waterway Policy Paper').

The report issued in 1995 by BCEOM had already highlighted some key points, such as the need to direct the inland waterway transport industry towards a market economy, the need to make the ports and the fleet more suitable for container traffic and the advantages of developing exchanges between Black Sea ports and Dnepr ports. Unfortunately, very few of these recommendations became actual action points.

In 2009-2010 the documented Strategy of marine and river transport was developed and issued by Corporate Solutions in the frame of the European Union's Programme for Ukraine (Integration of Ukraine in the Trans-European Transport Network). It proposed an updated action plan aimed at preparing the basic conditions for re-development of transportation on the Dnepr, which consisted of two key steps:

- Improve, strengthen and enforce the draft 'Law of Ukraine on Inland Waterway Transport'. The paper notably foresees introduction in this future Ukrainian law of the legislation of European Union on river transport related to marketing systems, access to profession, safety of navigation and river information services.
- Set up a 'Directorate for Inland Waterways' or 'River Transport Directorate' within the existing Department of State Maritime and River Transport Policy in Ministry of Infrastructure of Ukraine, in order to:

1) Provide increased autonomy for implementation of the various river transport functions, performance and selection of types of activities;

2) Reposition the role of the Administration by focusing on legislation, coordination and control;

3) Modernise river transport through the introduction of commercial plans for the management of the river and adjacent territories; and

4) Provide incentives for innovations in all sectors related to river transport.

However, it seems that no practical steps directed at the implementation of this policy were taken, which is regrettable.

On the 27 December 2010 an agreement was concluded between the European Union and Ukraine on funding the programme 'Support for the Implementation of Transport Strategy of Ukraine'. The overall target of this programme is the introduction of strategic priorities in the development of the transport sector, the strengthening of cooperation between Ukraine and EU as per the priorities defined in the agenda of the Association Agreement between Ukraine and EU and other bilateral agreements.

The concrete goals of the programme are to support the implementation of sectoral institutional reforms and improvements to the transport infrastructure. This will promote further convergence and alignment of Ukrainian legislation with the EU legislation, international norms and standards.

This programme foresees a total financial contribution by the EU of EUR 65 M into a special fund within the State budget of Ukraine. Provision of financial assistance is planned over a period of four years if the Government of Ukraine fulfils certain conditions. The EU supports the

reforms that result in modernization of all modes of transport, sea ports and inland waterways in Ukraine.

The Consultant noticed that:

- There was an inland waterway section in the 'Transport Strategy of Ukraine for the Period of up to 2020' adopted in 2011, but in this section only the principles of future work are presented;
- Preparation of the State programme of inland waterway transport development for the years 2014-2021 is ongoing;
- This document has a mainly declarative character without forecast of freight base of river ports for the period of up to 2015-2018-2021, without forecast of introduction of new capacities in river ports for the period of up to 2015-2018-2021, without performance indicators of implementation of the Programme;
- In this document the groundworks and recommendations of EU projects are not used.

7 RECOMMENDATIONS

The political map of Europe has changed, as new countries joined the European Union. As Ukraine is in the process of preparing to sign the Association Agreement with the EU there is a need for revision of the previous concept of determination of corridors including TRACECA and the measure for their development. TRACECA promotes the economic development and integration processes of Ukraine into the EU. The inclusion of the Dnepr River into the TRACECA corridor routes proves founded as this fulfils of the main requirements for transportation.

Price. Lengthening the transport corridor by 400 km through the waterway creates a cheaper link due to the use of the deep section of the river Dnepr up to Dnepropetrovsk. This leads to an overall reduction in costs (reduction of transport costs in the final cost of the goods) and enhances the competitiveness of TRACECA (guaranteed depth of 3.65 m provides the possibility of using sea-river/coaster vessel types without transshipment at sea ports).

Reliability. The river is a link with fairway dimensions guaranteed for the entire period of navigation including depth (unlike the Danube). Depths correspond to the vessels draft for the available volume of traffic. It will allow the traffic-load on the road and railway networks to be balanced according to the seasons of the year (seasonal traffic) and will secure transportation of heavy containers as well as project cargo.

Ensuring full use of the corridor is necessary, not only between end points but within it.

The volume of containerised and potentially containerizable cargo is rather high, prospects of growth are good and tonnage capacity is suitable.

Environment. Improving the eco-friendliness of the Corridor.

The plans of Ukraine with respect to inland waterways (reflected in the 'Transport Strategy of Ukraine' for the period up to 2020) and the State programme of development of inland waterway transport for the years 2014-2021 lay the foundation for future work. The implementation of the plans suggested in these documents, however, requires strong mobilisation and, therefore, strong political support. Regarding exchanges between Danube, the Black Sea ports and Dnepr ports, the Policy is not ambitious enough in the Consultant's opinion. A large number of sea-river vessels could be transferred for operating on routes between the Black Sea and the hinterland, which will first require improved border-crossing procedures in the river mouth regions. Efforts are also required to facilitate transshipment operations in Kherson.

First of all Ukraine has to eliminate any legal and organisational obstacles, by:

- adopting the Law on inland waterways of Ukraine (taking into consideration the recommendations of EU experts);
- developing and introducing a simplified customs regime for cabotage applicable as well to container and project cargo carriage between Ukrainian ports;
- introducing a customs procedure that recognises river port of destination/origin as border-crossing point for the foreign voyage of a vessel carrying containers.
- adopting a special Law on container transportation (in addition to the Law 'On Sea Ports').

Concerning container trade a master plan of river transport development should be elaborated, forecasting the volumes and lapses of time necessary for shifting cargo-flows from road to IWW. This plan should be based on the logical split of the Dnepr basin into several regions, which would each be served by a local logistics distribution centre developed on the basis of fully

intermodal container terminals. So in order to reach this target it will be necessary to take into account not only the prevailing competition but also the potential complementarities of road and rail transport with river transport and determine the best ways to achieve an efficient synergy between all three.

Currently, Ukraine is not a transit state in spite of its geographical position. Rather, as far as logistics processes are concerned, Ukraine is mainly an export country or an end-point cargo recipient. The volume of transit including high-value cargo is minimum. The Ukrainian river transport complex still rests on technologies of the 1990s while the concept of logistics is still very much restricted to the somewhat outdated and simple notions of warehousing, storage and (further) delivery. Since that time the transportation of cargo (especially high-value consumer and light industrial containerised cargo) has changed a lot. Goods, today, primarily move as fast as possible, and in fact, just-on-time within logistics networks and between networks of logistics centres. Warehousing, storage, stockpiles in today's business world mean costly working capital tied up in inventory and therefore reduced profits. The availability of logistics networks and nodes is the most appealing factor for transit-flows. In order to become an active member of the European Transportation Network, Ukraine should establish West-European-standard logistics centres that are able to attract the interest of international key players of the logistics industry.

On the Dnepr the functioning model of such logistics centre is the port complex 'Cargo Terminal Aquarelle Ltd' in Dnepropetrovsk. The success of this operation confirms that its parameters have been properly identified and the strategy well designed. Programmes of development in private companies are pragmatic. They are not fully accounted for in global prospects of the country development as far as they are not a visible stimulating factor for the development of cargo flows, still they actually realise it. The existence and implementation of such programmes are positive factors.

The development of logistics centres within the existing river ports is constrained by their location in the centres of the respective cities.

Kherson River Terminal (KRT) project supported by Kherson City State Administration is an example of future development. This project represents the most comprehensive solution both for the city of Kherson and for the traffic on the Dnepr in general. If the project is implemented, KRT will enhance the attractiveness of the TRACECA corridor through Ukraine; it is however advisable to develop the terminal in progressive stages so as to maintain the same pace as the development of traffic whilst gradually increasing the depths of the approach channel.

The State strategy should concentrate on joining efforts with private business for the establishment of maximum of 3 tri-modal distribution /logistics centres on the river Dnepr (e.g. Kherson, Dnepropetrovsk, Kiev) and their maximum integration with road and railway routes to EU countries and use of 'metallurgy wide gauge track' (LHS) from Ukraine to Slavkov in Poland. The use of railway is an important factor for increasing the capacity of river ports taking into consideration the difficulties of container shipment by road.

Unfortunately, at present State and private business operate separately. The win-win (and PPP) culture remains to be implemented in Ukraine. For example joint actions of State enterprise Ukrainian State Centre of Transport Service Liski and Ukrrichflot would prove most useful for container traffic development. In practice there are only (but at last) signs that a new, younger generation at Liski has started paying due attention to the questions of operation of their own containers rented to third party, development and promotion of easy procedures, new technologies and implementation of legal acts and documents making business processes mutually more efficient and profitable. These duties, so far, were resting completely with Ukrrichflot.

To implement the 'Motorways of the Sea' concept cargo flows should be concentrated at nominated hubs of appropriate capacity. The quality (not quantity) of infrastructure at these

ports and, to a greater degree, the service should be improved and the frequency of departures should be at least weekly for containers and at least twice a week for trucks.

In particular, it is recommended to use simplified clearance and control procedures at border crossings under the 'single window', electronic data exchange concepts and to work out special rates for containers and trucks in transit, especially for those on the borders of the European Union.

Doubtlessly, a hub (logistics centre/tri-modal terminal) would be a better fit for the goal of achieving synergy, improving efficiency of investments and also lowering the volume of financing.

The decision to place intermodal logistics centres along the Dnepr and develop schools for training workers qualified for the river transport industry must be made on the basis of the development of a State Concept of the Formation and Development of the Logistical Transportation and Distribution Structure of Dnepr Regions and the Human Resource Support thereto.

The existing projects and business practices confirm that Dnepropetrovsk is currently the optimal point on the Dnepr River for handling container trade based on distance and cost of transport and competitiveness versus road and rail transport.

Measures should also be taken to avoid conflicting container terminal projects at a given port, such as in Dnepropetrovsk. Since the area in which Ukrrichflot plans to develop container transshipment is very close to (in fact, it is only separated by a fence from the port) the Aquarelle Terminal (TAVRIA-LINE), it would be logical for both these companies to join efforts and projects. The same recommendations hold true for development projects in Zaporozhe (Ukrrichflot and ZAZ), where the latter could import parts and ship out cars via the river. It would also make sense to use Ukrrichflot's vessels in the overall project due to their larger container capacity and, accordingly, lower cost of transport, the better class of vessels and therefore higher reliability. Development of the existing cooperation and synergy between large cargo owners guaranteeing regular cargo flows and ship-owners is a must. The logistics chain does not amount to a berth and transshipment facility only; attention must be paid as well to logistics infrastructure and software (modern storage and processing areas, electronic records, and control of the cargo at all stages along the chain, multimodal logistics and distribution centres, etc.).

Notwithstanding an amorphous state policy, the main problems of river traffic in Ukraine are certainly the obsolescence of its port and river infrastructure and fleet but, above all, the absence of a minimum standardisation based on technologies and procedures equivalent to those used by its European neighbours and the disappearance of vocational training for river staff.

There is a clear need for a systemic governmental approach to cargo flow distribution to all modes of transport, defining the location of the terminals, taking into consideration the environmental and socio-economic aspects of the projects and their harmonious integration within development plans of the cities and regions, with a minimum negative result for the environment, an optimal financial performance, a clear outlook and opportunity for further development and integration in the logistics chain. This evidently calls for a permanent, active dialogue involving all key players and professionals from the national, regional and municipal public and private sectors under the leadership of the state.

In the perspective of the LOGMOS Master Plan the following recommendations can be made:

Sphere of application /actions at the level of master plan	Short description of recommendation	Mode of transport	Level of importance	Time frame	Level of responsibility
Legend: Sphere of application: infrastructure, institutional issues/ legislative –regulatory sphere, market/operations Level of importance: high, average, low Mode of transport: road, railway, marine, IWW, multimodal Time period: short (1-3years), average (3-7), long (More than 7 years) Level of responsibility: Private sector: IND-industry, SER- service companies, operators Public sector: REG-TRACECA, BLT-bilateral, NAT- at the level of one country, EU- with assistance of EU IFIs-international credit- financial institutes					
Legislative and regulatory sphere	Adopting: the Law on IWW of Ukraine, the Law on container transportation (taking into consideration recommendations of EU experts)	IWW, multimodal	High	Short term	NAT, EU
Legislative and regulatory sphere	Simplifying control and customs regime: to fix river port of destination/origin as border crossing points; to implement simplified procedure of cabotage and transshipment to inland waterway transport; simpler procedures of cargo customs clearance and control (including container) during transit	IWW, multimodal	High	Short term	NAT, EU
Legislative and regulatory sphere	State concept on formation and development of logistic transport distribution organization of Dnepr region and its professional support with the plan on cargo flow distribution according to modes of transport and development of river traffic	Multimodal, IWW, road, railway	High	Long term	NAT, EU

Sphere of application /actions at the level of master plan	Short description of recommendation	Mode of transport	Level of importance	Time frame	Level of responsibility
Legend: Sphere of application: infrastructure, institutional issues/ legislative –regulatory sphere, market/operations Level of importance: high, average, low Mode of transport: road, railway, marine, IWW, multimodal Time period: short (1-3years), average (3-7), long (More than 7 years) Level of responsibility: Private sector: IND-industry, SER- service companies, operators Public sector: REG-TRACECA, BLT-bilateral, NAT- at the level of one country, EU- with assistance of EU IFIs-international credit- financial institutes					
Legislative and regulatory sphere	Integration of IWW of Ukraine including the river Dnepr into trans-European transport network and TRACECA corridor	IWW, multimodal	High	Long term	Public sector: REG – TRACECA, NAT, EU
Institutional issues	Setting up IWW administration	IWW, multimodal	High	Short term	NAT, EU
Infrastructure	Organization of ‘single window offices’ with unified electronic data exchange systems	IWW, multimodal	Average	Short term	Private sector: IND, SER Public sector: REG – TRACECA, NAT, EU

Sphere of application /actions at the level of master plan	Short description of recommendation	Mode of transport	Level of importance	Time frame	Level of responsibility
Legend: Sphere of application: infrastructure, institutional issues/ legislative –regulatory sphere, market/operations Level of importance: high, average, low Mode of transport: road, railway, marine, IWW, multimodal Time period: short (1-3years), average (3-7), long (More than 7 years) Level of responsibility: Private sector: IND-industry, SER- service companies, operators Public sector: REG-TRACECA, BLT-bilateral, NAT- at the level of one country, EU- with assistance of EU IFIs-international credit- financial institutes					
Infrastructure	Setting up three LCs in Kherson, Dnepropetrovsk, Kiev	Multimodal	High	Medium term	Private sector: IND, SER Public sector: REG – TRACECA, NAT, EU, IFIs
Market/operations	Containerization of cargo flows	Multimodal	High	Long term	Private sector: IND, SER; NAT, REG – TRACECA; IFIs
Market/operations	Avoiding the implementation of conflicting projects, bringing together capacities and cargo flows.	IWW, multimodal	Average	Long term	Private sector: IND, SER; REG – TRACECA, IFIs

Sphere of application /actions at the level of master plan	Short description of recommendation	Mode of transport	Level of importance	Time frame	Level of responsibility
Legend: Sphere of application: infrastructure, institutional issues/ legislative –regulatory sphere, market/operations Level of importance: high, average, low Mode of transport: road, railway, marine, IWW, multimodal Time period: short (1-3years), average (3-7), long (More than 7 years) Level of responsibility: Private sector: IND-industry, SER- service companies, operators Public sector: REG-TRACECA, BLT-bilateral, NAT- at the level of one country, EU- with assistance of EU IFIs-international credit- financial institutes					
Market/operations	Modernization and standardization of river navigation	IWW, multimodal	Average	Short term	Private sector: IND, SER NAT, EU, IFIs
Market/operations	Announcing and promoting service and positive changes	IWW, multimodal	Average	Long term	Private sector: IND, SER; REG – TRACECA, IFIs
Infrastructure	Proper equipment for bunkering	IWW	Average	Medium-term	Private sector: IND, SER
Infrastructure	Receiving waste water and rubbish containing oil at the level of MARPOL requirements	IWW	High	Medium-term	Private sector: IND, SER

Sphere of application /actions at the level of master plan	Short description of recommendation	Mode of transport	Level of importance	Time frame	Level of responsibility
Legend: Sphere of application: infrastructure, institutional issues/ legislative –regulatory sphere, market/operations Level of importance: high, average, low Mode of transport: road, railway, marine, IWW, multimodal Time period: short (1-3years), average (3-7), long (More than 7 years) Level of responsibility: Private sector: IND-industry, SER- service companies, operators Public sector: REG-TRACECA, BLT-bilateral, NAT- at the level of one country, EU- with assistance of EU IFIs-international credit- financial institutes					
Infrastructure	Organization of passing under bridges with limited dimensions (Dnepropetrovsk double tier and Kremenchug)	IWW	Average	Long term	NAT, IFIs
Infrastructure	Deepening river bed in section Dnepropetrovsk - Dneprodzerzhinsk HPP to guaranteed 3.65 m	IWW	Average	Long term	NAT IFIs
Infrastructure	Eliminating costs resulting from delays to the vessels delay because of absence of free pilots	Marine, IWW	Average	Medium-term	NAT, IND
Legislative and regulatory sphere, infrastructure	Agreeing on unified standard schedule of work (shifts) for all controlling services of the port (commissions)	Marine, IWW	Average	Medium-term	NAT, IND
Legal / Institutional	Establishing vocational training for river transport	IWW	High	Medium-term	NAT, IND