



Danube Transnational Programme
DBS Gateway Region

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Regional Action Plan for the Port of Novi Sad Region

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1 Port of Novi Sad Region

1.1 Definition of the Port Region

The Port of Novi Sad is situated at 45°20'N and 19°51'E, in the central part of the Autonomous Province of Vojvodina in northern Serbia. The port is located at km 1254 at the left bank of the Danube, in the Novi Sad-Savino Selo canal (part of the Danube-Tisa-Danube (DTD) Canal network) at its km 0.4-1.2. The Port of Novi Sad covers an area of 24ha, and it's situated at the TEN-T Rhine-Danube Corridor (former Pan-European Corridor VII), as well as at former Pan-European Corridor X, which is projected to be a part of the TEN-T Orient/East-Med Corridor (Figure 1).



Figure 1. Position of the Port of Novi Sad

The Port of Novi Sad is located in the Novi Sad city which belongs to a group of Danube cities. The Novi Sad city, thanks to its geographical position in Province of Vojvodina and good traffic connections, represents the economic and business center of Vojvodina. The Port of Novi Sad serves a region with a diameter of 60km in which live approximately 600.000 inhabitants. Although the port handles several dominant types of goods, where each of them has specific origin and destination of their flows which implies that the size and shape of hinterland is different in relation to the type of transported goods, however it could be said that the basic hinterland of the Port of Novi Sad is South Bačka district (region within 60km), while the competition margin cover almost the whole range of Vojvodina (Figure 2). The Port of Novi Sad is mainly port for bulk cargo where the main exporting goods are cereals (mostly transported to Constanta and to a lesser extent to Germany) and scrap iron transported to Constanta. Transport activity in the port hinterland are realized mostly by road transport. The imported goods are coal and coke (import from Russia), fertilizers (import from Russia, Romania and Austria) and road salt (import from Egypt).

The Port of Novi Sad is situated in the Autonomous Province of Vojvodina which is agricultural region of Serbia and dominantly handles bulk agricultural products. Analysis point out that this type of cargo flows will continue to dominate in the future and that the flows should increase. Beside

those bulk goods, the main export freight flows in the region of Vojvodina are chemical products, food and beverage, rubber and plastic products, electrical machines and apparatus, etc.

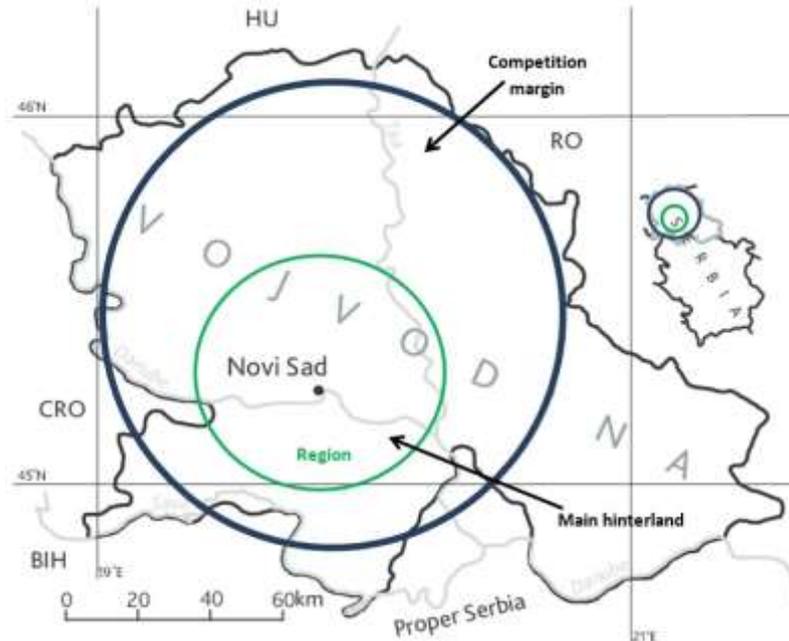


Figure 2. Hinterland of the Port of Novi Sad

1.2 Overview of recommended measures

Generally, all proposed measures are realistic and most of them do not require high financial investments. All of measures have long or medium implementation time frame. When measures were chosen, a balance between different fields of intervention was taken into consideration, so there are two measures from the field "Infrastructure", two measures from the field "Service", and one measure from the following fields: "Legal framework", "Technology", "Danube-affine business development", and "Organization and cooperation". All proposed measures are oriented towards increasing port service capability and attracting new cargo flows to the Port of Novi Sad.

The five of the eight proposed measures already exist in some form in some of the strategic documents on the local, regional or national level (measures I252, S10, I251, L58, and B15). However, these measures weren't specified in full manner in given strategies (they were described too general and imprecise), therefore here are they specified in a more detailed way. Also, all already existing measures require priority status in the process of their implementation. The rest of the measures are newly proposed (measures S11, T23, and C36).

Measures I251 and I252 will provide an adequate terminal infrastructure (modernizing handling equipment and storage facilities) within the Port of Novi Sad towards its transformation into a functional logistics and intermodal hub. Measures S10 and S11 are oriented towards widening the ports functionalities by adding new services to the ports portfolio. The measures I251, I252, S10, and S11 all together are completely interconnected, mutually dependent and complementary between each other, oriented towards further affirmation of agro production industry and

development of stronger connection between the port and SME from the agricultural production. They work together in strengthening both the Port of Novi Sad and its hinterland. After their implementation logistic operations in agricultural production could become significantly more efficient.

With implementation of the measure I252, agricultural producers in the hinterland of the Port of Novi Sad would get a modern facility for storing and keeping their products, which could be the driver of further improvement of agricultural production in the whole region as well as increasing the efficiency of export activities. Measure S10 could contribute to a stronger connection of the Port of Novi Sad with stakeholders in maritime container chains, on the one hand, as well as with business subjects in the port's hinterland, on the other. Also, this measure would encourage the development of liner container transport on the Danube (regards the repositioning of empty containers), which would impact the resolution of the global container repositioning problem, while simultaneously promoting the container transport in the region. The measure „development of handling capacities for containerization of bulk goods“ is a logical continuation and expansion of measures I252 and S10, because the proposed silo can be equipped with appropriate handling equipment for filling bulk goods into containers. Therefore, the concentration of empty containers in the Port of Novi Sad can accelerate their use for loading of bulk goods and transport in the direction of their repositioning route (containers would return loaded to the direction of import markets).

Measures L58 will provide incentives for eco-friendly behaviour through ensuring competitive prices for shipping in order to make IWWT more competitive. This measure is oriented toward strengthening the Danube as the backbone of the DBS region. Measure T23 will ensure uptake of innovation in IWT and ports in the DBS region. By introducing the proposed software solution, better control, planning and management of resources in logistic processes will be enabled in the whole DBS region. Measure B15 will support companies during business settlement process and provide special services to support companies using IWT.

Measure C36 considers stronger connections of the port with companies located in its hinterland. The measure was chosen because currently there is no communication of this type in Serbia. Ports as the local logistic hubs should be involved in transport and logistics development strategies at the state level, and should also be included in the development plans of other stakeholders in the logistic industry and market, since only full integration can create benefits for all stakeholders in a supply chain. That integration primarily means strengthening cooperation between transport chain stakeholders in identification of different transport and logistics problems.

1.3 Description of recommended measures

Recommendation Construction of storage - increase of the temporary storage capacity for bulk cargos (I252)	
Description	In order to meet the growing demand for handling of bulk agricultural products as well as for attracting new customers, the port of Novi Sad needs to increase its temporary storage capacities for bulk cargoes. Construction of such facilities will reduce the number of actors in the grain transportation chains which could lead to reduction of the costs. Also, it would allow the direct export of the grain to foreign markets, which is very important for raising the competitiveness of the small and medium agricultural producers in the region of Vojvodina.
Beneficiaries	The proposed measure is directly related to the idea of transforming the Port of Novi Sad into a functional multimodal logistic center that should provide benefits for all logistic service providers as well as for the all customers of the port. Also, the proposed measure is oriented towards strengthening the port region through improving connections between the port and small and medium agricultural producers in its hinterland.
Responsible institution	The Port of Novi Sad should be responsible for implementation of the recommended action, whereas the Municipality of Novi Sad, the Province of Vojvodina and the Ministry of Construction, Transport and Infrastructure should provide technical and financial support.
Steps	A preliminary analysis shows that a storage of a 20.000 t capacity is needed. In order to asses and evaluate the real needs and to prove and validate the measure, a feasibility study should be performed including technical, financial, operational and environmental aspects. After the feasibility study and before to the construction of the storage, a business plan and an implementation plan should be developed.
Horizon for implementation	Long term
Budget	Estimated necessary budget: <ul style="list-style-type: none"> • Implementation (non-recurring costs)-these cost depend of the storage type (warehouse or silo), but preliminary assessment goes to 2.000.000 €. • Operation (yearly costs) - about 750.000 €.
Good practice example	The similar measure is proposed by Bulgaria (I258 and I278).

Recommendation Transformation of the ports in Vojvodina to logistic centres – development of a container terminal at the Port of Novi Sad (S10)	
Description	Problem of empty container repositioning is one of the most challenging in global container shipping. One of the repositioning strategies assumes existence of inland container depots where empty containers are stored, maintained, and cleaned. Currently, in Serbia there is no functional container depot. Development of one in the Port of Novi Sad (development of inland container depot - ICD) would require equipment for handling and temporary storage of empty containers and an ICD status given by the ocean carrier. The ICD should be an initial step in the container terminal development. The second steps should be increase of depo capacity and purchase of additional handling equipment to reach the requirements of a modern container terminal. Construction of such a terminal would represent a precondition for the following measures I251 and S11.
Beneficiaries	Initially, this would be a new logistic service that would improve service for the customers of the Port of Novi Sad allowing them to pick up or return empty containers inland. This would also enable customers to obtain empty containers to load at their inland location on short notice. After the entire container terminal is constructed, beneficiaries would be all involved parties in container transport chains, such as shipping lines, sea and inland ports, container leasing companies, shippers, and inland carriers.
Responsible institution	The Port of Novi Sad should be responsible for implementation of the recommended action, whereas the Municipality of Novi Sad, the Province of Vojvodina and the Ministry of Construction, Transport and Infrastructure should provide technical and financial support.
Steps	The ICD status of a river port has to be market driven based on the container flows volume that is generated in the port hinterland. Hence, the needed actions should be: <ul style="list-style-type: none"> • Container flows analysis (full and empty containers) • Conceptual design regards depot size and participation of companies interested in this service (exploring possibilities of repositioning empty containers by IWT) • Coordination with development of similar ICD in the DBS region • The Master plan and Feasibility study (technical, financial, operational, environmental) • Preliminary and detailed design study (project) • Construction
Horizon for implementation	Long term

Budget	<p>Estimated necessary budget:</p> <ul style="list-style-type: none"> • Implementation (non-recurring costs) – depends of depot and container terminal size. Preliminary estimated costs for the ICD are up to 850.000 € and for the entire container terminal are up to 4.000.000 €. • Operation (yearly costs) – depends of container traffic volume. Preliminary estimated costs for empty containers handling are 15 €/TEU and for the full containers 30 €/TEU.
Good practice example	The similar measure is proposed by Austria (I226); Slovakia (I231); and Bulgaria (I261, I272).

Recommendation Procurement of new transshipment equipment –development of handling capacities for containerization of bulk freight (I251)	
Description	The containerization of bulk commodities has been a growing trend in shipping markets. The use of containers for the carriage of bulk freight could be effective and popular method of exporting grain products in the region, which will attract a number of small and medium size exporters to use IWT. To facilitate such kind of supply chain, appropriate equipment, and appropriately trained staff should be ensured. Development of handling facilities for bulk freight containerization is connected with improving the overall port services portfolio, especially with development of container traffic.
Beneficiaries	Usage of containers for bulk freight would enable smaller producers that usually cannot fulfill the vessels with their exporting capacities to use IWT and to get competitive prices of IWT through consolidation of their cargo with other cargo types in the same vessel. The proposed measure fruitfully joins both efforts oriented toward transformation of the port into a logistic center and efforts oriented toward development of the Danube as the backbone for IWW connection between Black Sea ports and Central Europe through possibilities of establishment of regular container service.
Responsible institution	The Port of Novi Sad should be responsible for implementation of the recommended action, whereas the Municipality of Novi Sad, the Province of Vojvodina and the Ministry of Construction, Transport and Infrastructure should provide technical and financial support.
Steps	The physical network for grain container shipping consists of moving grain from production site to silo facilities, and filling containers (including weighing, inspection, certification, etc.); and finally load onto a track, train or vessels. To form such a system, the needed actions are:

	<ul style="list-style-type: none"> • Feasibility study (technical, financial, operational, environmental) • Preliminary and detailed design study (project) • Construction
Horizon for implementation	Medium term
Budget	<p>Estimated necessary budget:</p> <ul style="list-style-type: none"> • Implementation (non-recurring costs) – Preliminary estimated costs are 300.000 €. • Operation (yearly costs) – Preliminary estimated costs are 40 €/TEU.
Good practice example	The similar measure is proposed by Austria (S020).
Recommendation Development and installation of facilities for frigo containers and storage for agro products in the Port of Novi Sad (S11)	
Description	In 2016 Serbia exported 670,000 tons of fresh and frozen fruits. Export of these fruits and vegetables was dominantly from the hinterland of the Port of Novi Sad to Russia by road transport. Development of facilities for frigo containers in the Port of Novi Sad could enable attracting part of these cargo flows from road to water transport. Equipping the Port of Novi Sad for operating with frigo containers is one of the activities within group of measures aimed to transform the port into logistic center.
Beneficiaries	By implementing this measure, the Port of Novi Sad could offer services for cold supply chains of agricultural and food products from Serbia. This measure is complementary with the measures I251, I252, S10 because all of them are oriented towards strengthening the port regions through improving connections between the port and small and medium agricultural and food producers in its hinterland, which are the main beneficiaries.
Responsible institution	The Port of Novi Sad should be responsible for implementation of the recommended action, whereas the Municipality of Novi Sad, the Province of Vojvodina and the Ministry of Construction, Transport and Infrastructure should provide technical and financial support.
Steps	<p>The concrete steps are:</p> <ul style="list-style-type: none"> • Feasibility study (technical, financial, operational, environmental) • Preliminary and detailed design study (project) • Construction
Horizon for implementation	Long term
Budget	<p>Estimated necessary budget:</p> <ul style="list-style-type: none"> • Implementation (non-recurring costs) – Preliminary estimated costs, based on the assumption that a container

	<p>terminal will be constructed and that storage for frigo will be only a part of it, are 100.000 €.</p> <ul style="list-style-type: none"> • Operation (yearly costs) - Preliminary estimated costs are 55 €/TEU.
Good practice example	The similar measure is proposed by Austria (I223).

Recommendation Taxing external costs – introduction of incentives for development of IWT (L58)	
Description	The water transport represents the most environmentally friendly mode of transport. However, regulations in Serbia do not give sufficient importance to this fact and provide rather declarative but not real commitment to the environmental norms set by the EU. Therefore all fiscal payments to the state of all modes of transport: water, rail and road, must take into account environmental criteria and, in accordance with general tendencies in the EU, create a space for market competition in which water transport show its importance and benefits.
Beneficiaries	The main and direct beneficiaries are all IWT stakeholders in Serbia and the region. Indirect beneficiaries are companies, users of IWT.
Responsible institution	The Ministry of Construction, Transport and Infrastructure should be responsible for implementation of the recommended action.
Steps	<ul style="list-style-type: none"> • Analysis of existing national regulations and comparisons with EU standards in the field of transport in general, and in particularly in the context of the development of IWW and intermodal transport. Interested parties in the countries are the ministries of transport, economy and finance. • Based on the analysis, The Ministry of Construction, Transport and Infrastructure must develop a proposal of new regulations that are in compliance with the EU ones. • The proposed regulations should be corrected and verified through a public debate involving all interested stakeholders. • The results of the public debate should be formulated and shaped by the Ministry of Construction, Transport and Infrastructure in the new regulation through which will be defined the amount of ecological taxes that will give priority to more sustainable transport modes. • Legal control over the application of ecological tax.
Horizon for implementation	Long term
Budget	<p>Estimated necessary budget:</p> <ul style="list-style-type: none"> • Implementation – No special costs are required except administrative and promotional ones, which are difficult to estimate, approximately 20.000 EUR. • Operation (yearly costs) – No

Good practice example

The similar measure is proposed by Croatia (L051 and L056).

Recommendation Development and implementation of RIS TLS software for transport planning – IT networking of the Danube ports (T23)

Description

Networking of the ports in Serbia and in the DBS region, as well as networking of the ports with other participants in supply chains requires that all information flows (from inquiries, contacts, agreements, bids, bidding, billing, ...) between all subjects in a supply chain are performed via sophisticated and synchronized IT systems and cloud solutions. Such an IT solution, including River Information Services (RIS) and offering additional TLS (Transport Logistic Services) was developed and tested within the DaHar project.

Beneficiaries

Testing of this IT tool proved significant advantages that implementation of such a system would bring to the ports in DBS region and to the further development of the IWT. Additionally, application of such system would increase cooperation among the participants in supply chains and would increase reliability of the service creating benefits for all participants including also the users of the IWT.

Responsible institution

The Port of Novi Sad with other ports in DBS region should be responsible for implementing the recommended action, while national and regional governments should provide technical, administrative and financial support.

Steps

The following steps should be performed to ensure the full regional IT networking through the RIS TLS platform:

- Upgrade of the RIS TLS platform that was developed in the DaHar project, to ensure that it can accommodate estimated number of users.
- Ensure connection of the platform to the RIS system through the national RIS system managing authorities in the whole DBS region.
- Ensure connection of the platform to the administrative bodies, such as border crossings, police, customs, etc. in the whole DBS region.
- Creating the standard for the RIS TLS platform users regarding the hardware and software requirements.
- Creating the legal regulation defining rights and obligations of the users.
- Promotion of the platform to attract as many users as possible, as well as training for the use of the platform for all

	<p>potentially interested parties. The targeted users are: ports, port operators, logistic service providers, companies using IWT, etc.</p> <ul style="list-style-type: none"> Ensuring quality and reliable connection of all users to the platform.
Horizon for implementation	Medium term
Budget	<p>Estimated necessary budget:</p> <ul style="list-style-type: none"> Implementation (non-recurring costs) include networking and installation costs as well as the costs of synchronization of their existing IT system with the RIS TLS platform and should be approximately 20-30.000 EUR per port and up to 10.000 EUR per user. Operation (yearly costs) include system technical support and maintenance as well as system update and should be around 10.000 EUR per port and up to 5.000 EUR per user.
Good practice example	The similar measure is proposed by Austria (C030 and C042) and Bulgaria (C022).

Recommendation Establishment of the One-stop-shop for investors – setting up Technical and Business Development Center (B15)	
Description	<p>Serbia is approaching to the EU and through this process new investment funds will become available. Full use of these funding sources for development of ports, business parks in their hinterland, and IWT, requires preparation related to the strategic planning and technical documentation for the development of logistic infrastructure and services, as well as support to business settlement process for Danube-affine companies. Analysis point out that there is a significant lack of know-how resources oriented to preparing of technical documentation that is needed for application for support at EU funds, as well as for support of ports in implementation of their development projects.</p>
Beneficiaries	<p>The main objective of this measure is establishment of a Technical and Business Development Center (TBDC), potentially positioned within the Port Governance Agency, which would have an extensive know how and enable on time preparation activities for further implementation of IWT development projects. The main (direct) beneficiaries are ports, Port Governance Agency in Serbia, investors, etc. Indirect beneficiaries are local communities, national and regional governments, researchers, stakeholders from the entire DBS region etc.</p>
Responsible institution	<p>The Port Governance Agency and the Ministry of Construction, Transport and Infrastructure should be responsible for implementing the recommended action.</p>
Steps	<p>The concrete steps are:</p>

	<ul style="list-style-type: none"> • The establishment of such a center should be presumed in the strategic documents of the Ministry of Construction, Transport and Infrastructure. • Formal establishment of TBDC. • Providing financial, technical and human resources for sustainable functioning; marketing actions. • Defining the particular business goals and tasks for TBDC • Proposing a list of priority projects and potential funding sources. • Ensure sustainability of TBDS through organizing meetings and consultations with ministries, ports, business chambers, logistics companies and all other interested stakeholders.
Horizon for implementation	Medium term
Budget	Estimated necessary budget: <ul style="list-style-type: none"> • Implementation (non-recurring costs) - 250.000 € • Operation (yearly costs) – 300.000 €
Good practice example	The similar measure is proposed by Austria (B018 and T026); Bulgaria (C052 and C054); and Croatia (I108).

Recommendation Development of stronger relationship between the Port of Novi Sad and logistic companies in their hinterland (C36)	
Description	In order to become modern logistic and intermodal node and local freight hub in the DBS gateway region, the Port of Novi Sad needs to establish stronger relationship with all relevant stakeholders in their hinterland. That relationship could range from simple sharing information between port and hinterland connection providers, through consultations and setting up cooperation platforms with all relevant logistics stakeholders in the region to the long term cooperation with biggest logistics service providers and business companies in creation logistic zones in their hinterland.
Beneficiaries	Development of logistic zones in Province of Vojvodina or Serbia shouldn't be discussed without Port authorities due to requirement of full transport chain integration from the Black Sea ports as the main entrance nodes in the DBS gateway region to the shippers and customers in the Danube ports hinterlands. This measure could be of particular importance for the Port of Novi Sad and all logistic companies in port's hinterland respecting the fact that full integration of the transport chain could create opportunities for all involved actors.
Responsible institution	The Province of Vojvodina and Chamber of Commerce and Industry of Serbia should be responsible for implementing the recommended

	action, whereas the Port of Novi Sad and the Ministry of Construction, Transport and Infrastructure should be involved.
Steps	<p>Concrete steps are:</p> <ul style="list-style-type: none"> • Ensure political commitment to secure sustainability and, strategic dimension and potentially legal framework • Selection a strong lead stakeholder (Chamber of Commerce and Industry?) • Set clear scope of the whole action as well as positioning it in the context of strategic regional logistic concept • Development of proper cooperation platform to facilitate various ways of sharing information, strategies, plans and to increase interaction between stakeholders • Keeping involved stakeholders engaged through sustainable and more formal relationships
Horizon for implementation	Medium term
Budget	<p>Estimated necessary budget:</p> <ul style="list-style-type: none"> • Implementation – No special costs are required but organizational and administrative, which are difficult to estimate, approximately 20.000 EUR per port • Operation (yearly costs) – approximately 5.000 EUR per port
Good practice example	The similar measure is proposed by Austria (C051), Hungary (C033); and Croatia (C059).