

# Maritime and Logistics Perspectives on Short Sea Shipping Sustainable Solutions to Road Congestion

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**ABSTRACT:** The paper presents the European Union's approach to promote the advantages of short sea shipping as efficient and sustainable alternative solution to the global issues of road congestion. European Commission has made Short Sea Shipping one of the major priorities for European transport and maritime industries have made it one of their key areas for development. Short Sea Shipping plays an important role in reaching the objectives of the European Transport Policy, as it can help curb the forecasted substantial increase in heavy goods vehicle traffic, rebalance the modal shares and bypass land bottlenecks. In the paper are presented the advantages of Short Sea Shipping and the measures adopted by the European Union in order to better promote the use of this mode. Short Sea Shipping needs to be developed within an integrated and participatory approach, with the reliable involvement of stakeholders from the entire sector in order to fulfil its economic, commercial, social and environmental role.

## 1 INTRODUCTION

While the administrative structures of countries hindered the creation of an efficient transport network, the global phenomenon of congested road system must be considered and tackled similarly through inland infrastructure development and alternative approaches, like the European Union's programs of promoting the advantages of short sea shipping as efficient alternatives to road transport. Short Sea Shipping is a concept actively promoted by the European Union as an efficient alternative to road congestion and bottlenecks. This mode of transport has many other advantages, like being environmental-friendly and economic.

## 2 SHORT SEA SHIPPING DEFINITION

There is no universally accepted definition to describe Short Sea Shipping. In general, the term of Short Sea Shipping is referring to the use of vessels to carry cargo or people to or from a destination that is not across an ocean. Short Sea Shipping involves the movement of cargo or passengers by water over relatively short distances and it can be made within lakes and river systems, and along coastlines. The European Commission defines Short Sea Shipping as the movement of passengers and cargo by sea within Europe, both inside and outside the EU, as well as to and from all ports in the Mediterranean, the Baltic and the Black Sea. Short Sea Shipping is the waterborne transport of cargo and passengers by sea or inland waterways as part of the logistic transport chain in Europe and the regions connected to Europe.

Short Sea Shipping is a sustainable transport link in the door-to-door supply chain and an integrated part of the logistic transport chain between supplier and user. It accounts more than 40% of intra-Community traffic and it forms an integral part of the European transport system given. Short sea shipping also offers significant potential for passenger transport. Short Sea Shipping generally refers to the movement of cargo and passengers by water between points situated within relatively close proximity to one another. This may include domestic as well as international maritime transport along coastlines, to and from nearby islands, or within lakes and river systems. Domestic, coastal or inland shipping are terms used to describe Short Sea Shipping.

### 3 SHORT SEA SHIPPING APPROACH FOR SUSTAINABLE TRANSPORT

A total of 40 % of all trade within the European Union is now carried by sea, surpassed only by road transport. But the potential of Short Sea Shipping is much greater, due to the fact that it could take substantial volumes of goods traffic off Europe's congested roads and ease major road bottlenecks.

Sea transport is an efficient solution to the problems from road haulage. Short sea Shipping produces fewer polluting emissions than any other mode of transport and, for passengers, has a death rate only a fraction of those of other modes.[1]. Maritime transport is a fully integrated component of door-to-door intermodal transport services and a major contributor to sustainability, cohesion, and competitiveness. Specifically, Short Sea Shipping has the potential to accommodate much of the anticipated growth in freight without increasing pressure on Europe's already crowded roads.

A major issue that we are confronting today is global warming and water transport is considerably more environmentally friendly and sustainable than motor vehicle transport. Road transport accounts for almost 80 per cent of transportation related greenhouse gas emissions. The emission rates per ton kilometre of cargo carried by water are attractive from the point of view of dealing with climate change. Maritime traffic has a distinct energy-saving advantage over competing modes of transportation. Congestion reduces the efficiency of vehicles and correspondingly increases the amount of pollution emissions from the atmosphere. The sea transport involves a low emission of environmental non-friendly gases compared with train and road transport. Nicole Trepanier, in the study „Le TMCD en Europe: un enjeu environnemental?“ [2] presents the following statistics concerning the gas emissions from the means of transport. Carbon emissions (CO) from maritime transport are 2.4 times lower than the emissions from train transport and 5.5 times lower than the emissions from road transport. Emissions of CO<sub>2</sub> from maritime transport are 3.4 times lower than the emissions from train transport and 6.3 times lower than the emissions from road transport. The emissions of NO<sub>x</sub> in maritime transport are twice lower than the emissions resulting from train transport and 3.1 times lower than the ones resulting from road transport.

The use of Short Sea Shipping can have a positive effect on climate change if some of the projected growth in freight and passenger traffic can be carried by the marine mode.

Among the benefits of an effective short sea shipping network is that increasing capacity is largely a matter of increasing the size or number of ships in a rotation. That means unlike adding road capacity, which often makes congestion worse for months or years while construction is under way, building new ships does not affect the service network in use.

The sea transport is suitable for transport in every part of the globe, for example in the Northern part of Europe, where usually train or road transport has no access on the ice perimeter. The goods can be transported with a large range of specialized ships. Depending on the characteristics of the freight, after arrival, they can be deposited in special places in the port perimeter or they can enter directly in the production cycle, in the factories near the port area.

Road infrastructure construction and expansion is expensive and disturbing for local residents whereas sea transport can accept more traffic without adding infrastructure with expensive costs.

The development of Short Sea Shipping is an opportunity to create a large number of jobs and employment in the maritime sector in the future and present period.

By fostering global trade, Short Sea Shipping also promotes the social and economic growth of third countries bordering the peripheral maritime regions and interested in links with the infrastructure of the European transport network.

All the advantages of the maritime transport indicate the great significance of this activity for the economic agents, national economies and the environment.

### 4 EUROPEAN UNION'S INITIATIVES FOR PROMOTING THE ADVANTAGES OF THE SHORT SEA SHIPPING

The European Union has carried out a substantial amount of work on the subject since the early 1990s resulting in Short Sea shipping becoming a key EU transport policy priority. EU institutions and industry launched a joint approach in 1992 on the promotion of Short Sea Shipping. In Europe the main focus has been on promoting Short Sea Shipping as a mean of relieving congestion on European roads and bypassing natural bottlenecks such as tunnels through mountain ranges. The density of the population and the presence of substantial river systems in Europe make Short Sea Shipping is a viable transportation alternative. In Europe the focus is on moving cargo from road to water and creating "Motorways of the Seas" primarily for the carriage of containers and Ro-Ro traffic.

The European Commission had an active policy to promote Short Sea Shipping. In 1999 it presented a Communication with a comprehensive approach to increase the use of the mode. Furthermore, the recent European Commission White Paper on European

Transport Policy for 2010 emphasised the role of Short Sea Shipping in maintaining an efficient transport system in Europe now and in the future.

In order to support Short Sea Shipping there were established a number of initiatives being advanced in the EU. They include integration of Short Sea into the logistical door-to-door transport chain, removing administrative bottlenecks such as customs forms that result from the variety of different countries in the Union, improving environmental performance, identifying suitable corridors, and studying the issue of greater standardization in handling ocean shipping containers.

## 5 OBSTACLES FOR FURTHER DEVELOPMENT OF SHORT SEA SHIPPING

A number of obstacles still impede the further development of Short Sea Shipping. [3] First, many commercial players still view it, wrongly, as an old-fashioned mode of transport. Second, full integration of Short Sea Shipping into door-to-door multimodality remains to be accomplished. Third, the complexity of documentary and administrative procedures in Short Sea Shipping is a fact that needs to be examined and tackled. Fourth, the efficiency of ports, port services and port-hinterland connections needs to be enhanced. The Community is in the process of pursuing solutions to a number of these obstacles.

According to several analyzed reports on short sea shipping, the European Commission is convinced that co-ordinated efforts at all levels (Member States, regional, local, industry and Commission) will substantially help accelerate the growth of Short Sea Shipping, alleviate obstacles and allow Short Sea Shipping to become a true success story of the 21st century. Even though the maritime and logistical industry is chiefly responsible for developing Short Sea Shipping, intervention on the part of European, national and regional institutions is nevertheless essential to create favourable conditions for such development. Until now, there have been some positive initiatives, such as the definition of national focal points, agreements on European Union legislation in relation to financing programmes and simplified IMO-FAL (International Maritime Organisation - Facilitation of international transport) forms required when ships enter or leave ports. The Commission is engaged in strategies to identify critical bottlenecks against the widespread use of Short Sea Shipping, as well as possible solutions. For example, the documentary and administrative procedures in this type of transport differ widely between Member States and between individual ports[4]. Furthermore, the Commission has proposed possible simplifications on customs rules for Short Sea Shipping.

Currently there are being developed several projects regarding investments for adaptation of terminals at each port, introduction of new and upgraded trailers for rapid loading and unloading, and improvement of a 'tracking and tracing' system for the exchange of consignment data with customers via electronic data interchange (EDI) or the Internet.

For example, a two-year EU-sponsored project has shifted 18.25 million tonne-kilometres per year of heavy goods traffic off roads between northern Italy and Greece. The daily voyages in each direction offer cost reductions to customers in the chemicals, food-processing, machine-tool and consumer-goods sectors. This positive market response is likely to encourage similar operations, removing more trucks from long-distance routes.

Intermodality – the easy transfer of goods and passengers between road, rail, sea and air transport – is the key to the development of short sea shipping [5]. Sea transport is already highly competitive for long distances. But Short Sea shipping needs to become more attractive as an alternative for shorter journeys. If it is to fulfil its potential, partnerships with operators of other transport modes are vital, as the basis for intermodal transport service packages oriented to customers' changing needs. Short Sea Shipping in Europe needs to be integrated into logistics chains in order to offer door-to-door solutions to customers. Such logistics chains should be managed and commercialised by one-stop shops offering the customers a single contact point that takes responsibility for the completely intermodal chain. Further, the notion of competition between modes should be replaced with complementarity because door-to-door chains involves co-operation between modes of transport and a win-win situation.

The European Commission has actively supported the creation of Short Sea Shipping Promotion Centres (SPCs) in the Member States, providing one-off financial support for their establishment. Independent of individual regions or ports, the SPCs act in the interests of all cargo-movers – whether owners, shippers or operators. Funded by both public and private sectors, all share the mission of demonstrating that sea transport is reliable, safe, cost-effective and technically advanced. The Commission has also financed and supported the launch of the European Shortsea Network (ESN), which links the national SPCs to facilitate collaborations and the exchange of experience.

The emphasis of the role of maritime transport in the desired evolution of freight traffic in the European Union target are (1) to reduce the saturation of the road networks, (2) to improve access to peripheral and island regions and (3) to encourage more environmentally-friendly modes of transport (Gothenburg European Council in 1998). Trans-European Networks policy was developed gradually during the 1990s. In 1996, the European Parliament and the Council of Ministers adopted a decision setting out the guidelines for the development of the Trans-European Network in 2010. This decision was revised in 2001 to include sea and inland ports. The White Paper considered that one of the primary missions of the Trans-European Network for Transport (TEN-T) was to "relieve congestion on major routes".

## 6 FINDINGS AND ANALYSIS

Based on various readings of European reports, internet search, observations, documentary and

content analysis, the information and data generated have been noted and analyzed focusing on the advantages and challenges of short sea shipping.

Sustainability in maritime sector it's not just marketing. Environmental regulation becomes more comprehensive and more stringent. Ports, for example, could distinguish it more clearly from other industrial locations by focusing on energy efficiency, recycling of residual materials and carbon capture, storage and reuse – therewith promoting itself in the global landscape. Beside such solutions, using short sea shipping, where applicable, represents an efficient and sustainable alternative for road transport.

Short Sea Shipping is a successful mode of transport in the European Union. It is designed to increase the efficiency of the overall transport system in order to meet current and future demands arising from economic expansion, increased trade and population growth.

National governments and authorities, in cooperation with the industries involved, must provide the necessary support regarding the political, economic and financial aspects of Short Sea Shipping. Member States governments, including Romania, should establish policies, programs and regulations to help create an environment that enables Short Sea Shipping industry to operate efficiently. The authorities have to promote and support initiatives and partnerships with others having common interests and goals. There is a need to work together with the whole transportation industry and with other partners in order to build an integrated transportation system.

Time is money. This is also true for ports wherein a precise planning of processes and operations is even more important given the enormous impact of the tides and the costs for dockage. The Philippines, for example, is currently investing in land transportation to ensure goods are moved out of our ports and delivered to the end. There is plenty of room for consolidation in the local shipping and logistics industry. At present, the country has more than

12,000 domestic merchant vessels operated by thousands of companies and individuals, according to data from the Maritime Industry Authority. We see the benefits of consolidation, as it would entice companies to come together to form more efficient operations and offer better quality service in promoting sustainable transport solutions as Short Sea Shipping

## 7 CONCLUDING REMARKS

The authorities should investigate Short Sea Shipping opportunities and application in Romania or Philippines through regional studies (regarding congestion, bottlenecks, traffic flows, potential routes/corridors and potential ideas for service). There should be organized regional workshops to bring together parties with an interest in exploring Short Sea Shipping opportunities.

The ultimate success depends on how shippers and carriers respond to the challenge and whether the economics supports establishing such enterprises.

## REFERENCES

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