Editorial

Short Sea Shipping, Multimodality, and Sustainable Maritime Transportation

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Short sea shipping is an important research topic and is of practical interest for the shipping and transport industries in many regions across the globe. This concept was originally European and has been defined as the transportation of merchandises of all types and passengers, in national or international traffic, between ports inside geographical Europe or between these ports and non-European ports situated in the coasts of seas bordering Europe. However, if the reference to Europe is removed from this definition, one certainly concludes that it is readily applicable to many other geographical regions around the world. In fact, any region containing one or more nations agglomerated around a common sea, along a coastline or distributed throughout an archipelago, is suitable for taking advantage of the benefits offered by short sea shipping. The wide interest of this form of transportation is well demonstrated in the study of several Northeast Asian routes carried out in paper [1] in this Special Issue.

The benefits of this form of transportation have been significantly discussed in the literature, but there is still the need to involve the relevant stakeholders in this discussion, listening to their specific concerns when dealing with transport decisions and taking the opportunity to disseminate the advantages of short sea shipping, often combined with other transport modes, as has been carried out in paper [2] in this Special Issue. This paper used a strength-weaknesses–opportunities–threats analysis to identify strategies to enhance and improve the current rail and maritime corridors in order to attract more customers, thus enhancing cargo volumes and leading to the formation of the required critical mass for supporting long-lasting short sea shipping services. In fact, the importance of demand and its forecasting has been demonstrated within the context of liner services from Asia to Oceania in paper [3] in this Special Issue.

One of the significant advantages of short sea shipping is the economy of scale offered by ships. In fact, ships involved in these trades can carry much more cargo than other modes of transportation due to its much more significant cargo capacity. This advantage concur with significant economies in terms of greenhouse gases and pollutant emissions, and there is still plenty of room for further improvement (i.e., resorting to alternative fuels and increasing the use of abatement measures). In any case, as demonstrated in [4], ships remain highly competitive when emissions are quantified on the basis of the number of tons carried onboard, and abatement technology may contribute further in this direction.

The advantages of short sea shipping are not even restricted to decreased emissions, as it leads to significant decreases in land-based transportation (road or rail modes) in many cases, thus contributing to modal shifts. This alleviates congestion in the road network, reducing traffic accidents and noise emissions which often affect typically heavily populated areas along coastlines. In these regions, even rail infrastructure, when it exists, is often plagued by capacity issues and priority is given to passenger trains, hindering freight transportation. In some cases, railway lines are not yet electrified and emissions still remain an issue. In these cases, short sea shipping offers a cheap and handy solution for carrying large freight volumes. These effects are nowadays quantified using the concept of
the external cost of transportation; this, as well as the effect of the internalization of such costs, has been studied in [5].

However, it is important to consider that short sea shipping cannot operate in standalone mode as it requires other modes of transportation to cover the first and last mile. Integration issues with other modes are therefore highly important; as a result, transport chains need to be increasingly considered in an integrated manner. The impact of such transport chains, of multimodal or intermodal nature, on the transport cost and transit time between multiple pairs origin/destination has been the focus of paper [6], but the same integrated approach is also taken in papers [4,5], which deal with emissions and external costs. In these papers, the important corridor along the west coast of Europe has been considered in detail, with multiple alternative transport chains under study, and the results displayed modern geographic information system tools.

Finally, as mentioned, short sea shipping emissions remain an important topic of research and improvements are still required, especially when ports in the concerned geographical region are congested, leading to important queueing times. In such cases, important volumes of air pollution may be generated close to the densely populated areas that typically surround ports and these pollutants (SO\(_2\), NO\(_x\), and PM) have effects in human health and lead to important externalities. Therefore, it is clearly important and timely to conduct research on this topic and one paper [7] in this Special Issue presents numerical models for quantifying emissions, evaluating the probability of exceeding limit thresholds of such emissions, studying its dispersion along the port area and coastline, and providing relevant data for decision making on the best locations for ship queuing.

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**References**


