
Editorial: Short sea shipping in a globalised world

Ana Cristina Paixão Casaca*

Grupo de Estudos em Logística,
Negócios e Engenharia Portuária (GELNEP),
Federal University of Maranhão,
Avenida dos Portugueses, 1966,
Bacanga, São Luís-Maranhão, 65080-805, Brazil
Email: anaccasaca@sapo.pt
*Corresponding author

Tsz Leung Yip

Department of Logistics and Maritime Studies,
The Hong Kong Polytechnic University,
Hung Hom, Kowloon, Hong Kong
Email: t.l.yip@polyu.edu.hk

Paul Tae-Woo Lee

The One Belt One Road Research Lab,
School of Business IT and Logistics,
RMIT University,
Building 80, Level 8, 445 Swanston Street,
Melbourne, Vic 3000, Australia
Email: paultwlee2030@gmail.com

Alexander M. Goulielmos

Business College of Athens,
4 Dimitressa Str.,
115 28, Athens, Greece
Email: am.goulielmos@hotmail.com

Biographical notes: Ana Cristina Paixão Casaca sailed as a Deck Officer. She received her Bachelor degree in 1995 from the Portuguese Nautical School, MSc in International Logistics from the University of Plymouth in 1997 and PhD in International Transport/Logistics from the University of Wales-Cardiff in 2003. Presently, she is a researcher associate at the Logistics, Port Engineering and Business Studies Group (GELNEP), Federal University of Maranhão (Brazil), the Technical and Quality Director of ESPRIM – Centro de Acostagens, Amarrações e Serviços Marítimos, Lda (Portugal). She is a member of the Institute of Chartered Shipbrokers and of International Association Maritime Economists. Since 2003, she has been invited by the European Commission to review transport related projects and to evaluate transport related proposals.

Tsz Leung Yip is currently an Associate Professor at the Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University. He received his BEng and PhD from the University of Hong Kong and MBA from the University of Manchester. He is practicing as Engineering Consultant in the discipline of logistics and transportation. His research interests include engineering management and risk management related to logistics and transportation. He has authored more than 30 journal papers. His publication appears in *European Journal of Operational Research*, *International Journal of Production Research*, etc.

Paul Tae-Woo Lee is a Professor at School of Business IT and Logistics and Leader of The One Belt and One Road Research Lab in RMIT University in Australia. He received his PhD from Cardiff University in UK. He was a Visiting Scholar at, among others, the Faculty of Economics and Politics in Cambridge, University of Plymouth, Hong Kong Polytechnic University, and Dalian Maritime University. He has been involved in advising and consulting jobs for several governments, major shipping lines and container ports in the world. His research interests include maritime economics and maritime logistics. He is Editor-in-Chief of *Journal of International Logistics and Trade* and an Associate Editor of *Transportation Research Part E: Logistics and Transportation Review* and *Journal of Shipping and Trade*.

Alexander M. Goulielmos is a graduate of Athens Economic University and of the University of North London-postgraduate diploma, full member of UK Institute of marketing; holder of a PhD from Brunel University in the Economics of Shipping. He was elected as Associate Professor in Marine economics (1992) by the University of Piraeus Dept. of Maritime Studies and in 1998 Full Professor, while at end 2008 retired. In 2015, he was appointed as Professor and Head of the Shipping Division of Business College of Athens, where he resigned in May 2016 and remained tutor. He worked for shipping banking, shipbuilding, marine insurance and shipping (14 years) as departmental manager and manager. He is the author of 12 books in Greek, three in English and 63 blind reviewed papers. He applied theory of chaos into shipping.

Short sea shipping (SSS), formerly known as international cabotage, international coastal trade or international coastal shipping, and often defined as the movement of freight and passengers by sea without crossing an ocean, i.e., in a restricted geographical area, has been important in all epochs of humankind. Although much attention has been given to SSS at a European Union level, the fact is that SSS is also important in other areas of the world. In fact, SSS is indispensable in countries with long coastlines (China, Norway, Brazil, and the USA), within confined waters (the Baltic Sea, the Black Sea, the Mediterranean, the Red Sea, and the Persian Gulf) and within limited open sea areas.

The Portuguese and the Spanish discoveries, followed by the British, the French and the Dutch, have positively influenced the development of SSS. Its growth has been reinforced by the internationalisation and globalisation of the world economic activities. In spite of this, and unlike its deep-sea shipping counterpart, the SSS segment has to compete for the same cargo and passengers against a set of transport operators, which include road, rail, air and even deep sea shipping services able to call at the secondary ports often served by SSS vessels.

Under such competitive market pressures, the industry freight rates more often than not go down to the level of production costs, and in this regard this market segment has

been forced to renew its business approach by promoting the development of new ship technologies and by creating new types of services (standard vs. dedicated services). In certain countries of the world, it is also seen different policy approaches where some countries or regions have liberalised their cabotage services and where others still adopt a protectionist policy measures as a means to protect their shipping industry.

At this point, it is important to say that different authors and institutions consider the SSS industry from different perspectives such as the type of vessel, the vessel dimension, the type of cargoes carried, the geographical area, and the regulatory framework. There is a unanimous agreement that SSS is not an ocean crossing and that there is a difference between SSS and cabotage. In fact, cabotage is one type of SSS markets, the others being the feeder market, the pure intra-regional market, where different types of service can be offered.

Whatever the SSS service to be provided and on very exceptional occasions (i.e., the tanker and the dry bulk trades), SSS needs the support of the other transport modes, namely road and rail, if it aims at delivering a door-to-door transport service rather than a port-to-port transport service thus contributing to a reduction of the transport external costs.

Taking into account, this complex market background this special issue aims at analysing SSS from different perspectives and to learn from the experience and knowledge gained from the different authors that have participated in this issue. From a geographical perspective, this issue covers Brazil, Europe, Malaysia and the Taiwan Strait, and from a technological perspective, it addresses the concept of green routes as a means to reduce the impact of SSS emissions into the atmosphere.

The paragraphs that follow present a summary of the accepted works in this special issue.

Arof and Nair analyse inter-state Ro-Ro SSS operations within the geographic region of Brunei, Indonesia, Malaysia and the Philippines East Asean Growth Area (BIMP-EAGA) since the use of Ro-Ro services contribute to improve the intra-regional physical connectivity. In fact, the region is dependent on maritime transport for most interisland connection. The BIMP-EAGA is a sub-regional economic cooperation initiative deal to accelerate economic and social development in the above-mentioned countries, which is dependent on maritime transport services for its inter-island connection. The authors have conducted the analysis by means of a two-round Delphi survey with the participation of regional SSS experts in order to identify any new factors and to assess their opinions on the relative importance of all the factors involved. The study identifies eight key success factors which are particular to this region and which sustain the development of the SSS segment to the extent that in the opinion of the authors they can contribute to a viable interstate Ro-Ro SSS operations.

Paixão Casaca et al. analyse the Brazilian cabotage. The Brazilian economy and the dimension of its coastline offer a potential to expand its existing cabotage services, and the target is to promote a modal shift from road to sea. By means of an e-mail survey questionnaire, the paper investigates the perceptions of cabotage users and their respective priorities to integrate the existing cabotage services into multimodal/intermodal transport systems. The study characterises the Brazilian cabotage market and analyses respondents' perception of cabotage services relatively to its competitors (road and rail). Using factor analysis, the study identifies 11 factors, which are critical for multimodal/intermodal transport chains comprising a sea leg. The authors

conclude that both the European SSS and the Brazilian cabotage markets depend upon the cooperation of maritime and land logistics. However, the difference between the two markets rests upon the development stage in which they find themselves which explains why the Brazilian cabotage is still targeting at eliminating the existing logistics' (physical) bottlenecks rather than concentrating on more strategic issues.

Gan et al. analyse ferry transport in the Taiwan Strait between China and Taiwan. The development of harmonious cross-strait relations between China and Taiwan, which resulted in the implementation of direct shipping and direct flights since 2008, has witnessed an increase in the movement of passengers and cargo, where passengers generally choose air transport as their preferred mode of transport. Within the scope of this background, the paper aims at identifying the key factors that passengers use in their process decision making to be used by ferry transport operators in order to design reasonable competitive strategies to customise ferry transport services and to increase the proportion of passengers that choose ferry transport in the short sea tourist transport. The authors use a comprehensive methodology; first, they use factor analysis to analyse the outcome of the survey questionnaires completed by passengers who travelled by ship, then discuss the evaluation and the gap between the expectations and perceptions of ferry transport characteristics. The study shows that the provision of free food and beverages has become one of the most critical measures for improving the service level of ferry transport, and suggests some improvements that contribute to customise ferry transport services.

Freire Seoane et al. research work aims at determining the ports in which new or reinforced SSS initiatives can be analysed in order to maintain the port's throughput growth rates or to recover eventually the lost ones. To accomplish this objective, the authors use the classic, the homothetic and the spatial shift-share decompositions applied to the 2006 to 2014 throughput dataset of the 57 European Atlantic Arc main ports. The benefit of this paper rests on its methodology; so far, no works related to the calculation of the optimum SSS routes for a given set of ports have considered using this approach to identify SSS growth vectors between the ports and their neighbours. This is an important step in research since the methodology helps defining profitable SSS services, which will have considerable implications in terms of defining the future motorways of the sea; the definition of the profitable SSS services results from the economic feasibility of establishing a business link between two ports. The paper identifies the Atlantic Arc ports that have a good chance for keeping its growth and for overcoming their decay by being able to determine their market position, to fix their competitiveness or attractiveness issues and to detect their SSS opportunities.

Wen et al. present an energy efficiency operational index algorithm, whose calculations of the CO₂ emissions are based on the information provided by the AIS messages. Based on this algorithm, the authors establish an EEOI optimisation model. To solve the model, the authors use the discretisation method, divide one single voyage into several voyage segments and consider different speed along the different voyage segments. Consequently, the objective of this model is to improve the efficiency of the ship energy and to reduce the GHG emissions from ships, and based on this information design optimised SSS routes, which the authors define as green routes. The results of the numerical experiments, which considered a bulk carrier as an example, have shown that the EEOI values which used the optimised navigation method are lower than those which have not used any optimised navigation method than that green route design can effectively improve the energy use efficiency of ships.