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Baltic ports benefit from collaboration and planning in waste management

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Collaboration is one of the key-enablers in the pursuit of efficiency and enhanced operation performance. This holds true also in the case of Baltic Sea ports, on which we wrote a scientific paper with Irina Svaetichin (2017) some years ago. The article focused on waste management in four main ports located in Denmark, Estonia, Finland, and Sweden. The paper was to consider collaborative and legal arrangements of waste management and port profiles. We asked what kind of wastes and dischargeable items they process and accept. We focused on cruise ships as they produce extensive amounts of different types of waste and their popularity was on continues upswing at the time.

Our study indicated that ports have clear and distinct profiles on what types of waste they handle and how they see the future. We also looked at the pricing options for different waste types and their discharge volumes. Ports have of course several tools to influence the types of waste that ships leave. They may require specific recycling and support specific methods of waste handling. This can be motivated with fee reductions e.g. with proper sorting of passenger generated waste.

Wastewater discharging is the most unevenly distributed waste fraction in the Baltic ports. There are clear and identifiable differences in the discharging of black and grey waters. Ports can determine the fee rates and amounts that they accept to receive causing variations. In our study, ports of Helsinki and Stockholm received the largest amounts of wastewater and the main reason was in port policies (e.g. no extra charging for larger volumes). Both ports have also sophisticated system integration to municipal wastewater system enabling efficient wastewater management at berth.

Port statistics verify the differentiation between ports in their waste handling volumes and contents. Specialization is one of our main recommendations. This is important, as the Baltic Sea is a small and shallow sea with very high traffic volumes. The broadness of the mix of different shipping companies, vendors, and other operators is extensive. The diversity of business combined with the ever-increased demand (before the outbreak of Covid-19 pandemic) for cruise shipping and leisure travel in the Baltic Sea created a continuous need for improving the waste handling, both in ships and in ports.

The small physical size of the Baltic Sea causes that all major ports are relatively close to each other. Thus, the time of accumulating waste in ships is rather limited and the vessels are not holding their waste amounts for excessive periods. In the near future, when the pandemic subdues, these demands continue to increase. Waste and other forms of environmental management has to keep up with the future waking travel volumes after the pandemic. As such, IMO regulations have implemented in order to tackle and at least maintain the delicate condition of the Baltic Sea. Fundamentally, environmental and cost efficiency bring in the need for the mentioned collaboration. Small distances aid efficient formation of different modes of collaboration.

The future demand for port specialization is likely to increase. This entails several interesting topics, on which there already is some empirical research. At the University of Turku, we have conducted specific qualitative studies on Finnish ports and their short and long-term perspectives on digitalization and open data potentials (e.g. Inkinen et al. 2019; 2021). Particularly, environmental improvement and the simultaneous development of blue and green technologies to support livable Baltic Sea. These developments have also an impact on waste and environmental management.

To conclude, waste management is a tangible and well justifiable example of a port operation that requires smooth and well-functioning sea-port-land integration. Forthcoming studies need multidisciplinary approaches and purposeful methodological mixes. Qualitative and quantitative methods and their innovative combinations are in high demand in order to obtain a colorful, versatile, and meaningful picture of the future development of the Baltic Sea. ■



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