
Summary:

Data availability for traditional and environmental productivity and efficiency analyses of Norwegian ports

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This report reviews and rates 16 relevant data sources on port operations, before describing the selection, compilation, and management of data. The report concludes by presenting an overview of the two datasets that have been constructed for the empirical analyses of the research project entitled “Examining the Social Costs of Port Operations (EXPORT)”. This report concludes EXPORT’s Work Package 1.

This report responds to Tasks 1.2 and 1.3 of Work Package 1 of the research project entitled EXPORT. The report summarizes the outputs of Work Package 1, and its publication is one of the key milestones of the project. The report is tailor-made for researchers associated with the EXPORT project, but will also be of interest to stakeholders in the maritime sector in Norway and to the scientific community.

The report summarizes available data on port operations that facilitate undertaking traditional and environmental production analysis of Norwegian ports. It includes i) a description of the data selection process (including information on the project team’s communication with Norwegian ports and other key stakeholders), ii) a review and ranking of all relevant data sources, iii) a formal discussion and justification of the selection of ports and data to be analysed, and iv) an overview of how the data has been compiled and arranged for EXPORT’s subsequent empirical analyses. The data can broadly be classified into activity data, environmental data, and other data. In total, 16 relevant data sources were reviewed and rated by the project team before compiling and organizing the data.

We have utilized data for 25 ports included in Statistics Norway’s quarterly port statistics. The reasons for this is that they are the main ports in Norway and thus play a key role in promoting a mode shift to maritime transport, and because we have access to good data – comprising information about cargo type and throughput, the duration of the cargo handling, and ship type and size for each call taking place at these ports. The port statistics coupled with self-compiled data on port capacity makes up our activity data.

In a preceding EXPORT-report, Rødseth and Wangsness (2015) proposed that i) the dispersion of contaminated sediments, ii) emissions to air from ships at berth, iii) air and noise emissions from land-based port operations, and iv) soil, sediment, and water pollution due to accidental spills are the key externalities associated with port operations. Our compilation of environmental data has therefore been targeted at obtaining information about the occurrences of these

four categories of pollutants. We have found that the dispersion of polluted sediments and air pollutant emissions from ships at berth can be estimated using available tools and data. We have further reviewed a database on accidental oil spills to locate events that have taken place at the ports included in Statistics Norway's quarterly port statistics. The information on sediment pollution, ship emissions, and accidental spills can be connected to our port-level activity data. However, high-quality data on noise emissions from port operations are only available for Sjursøya and Ormsund container terminals located within the port of Oslo. Consequently, a separate case study needs to be undertaken to evaluate the relationship between port activities and noise pollution. This means that in total two datasets – one dataset on port-level activity and emissions data and one dataset on noise emissions and container handling activities in Oslo – has been constructed within EXPORT's WP1.