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<b>Document title</b>	Social and economic analyses and MSP
<b>Code</b>	4-1
<b>Category</b>	CMNT
<b>Agenda Item</b>	4 – Ecosystem-based approach in MSP
<b>Submission date</b>	27.10.2016
<b>Submitted by</b>	HELCOM Secretariat
<b>Reference</b>	

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## Background

Economic and social analyses (ESA) and information had previously only occasionally been included in HELCOM assessments and work. More recently, the need for further development of ESA was highlighted, for example, in the Ministerial Meeting in 2013. During the last year HELCOM has intensified the work on economic and social analyses for the purposes of HOLAS II (Second Holistic Assessment of Ecosystem Health in the Baltic Sea). The aim is to develop a framework for regional economic and social analyses in the Baltic Sea area, including the use of marine waters and cost of degradation, and evaluate data availability and present examples for these analyses. Needs for further development of the analyses and analytical framework are also being identified. This work is carried out with the support of the [TAPAS project](#), which runs in 2016 and is co-financed by a direct grant from the EU. The work is carried out by (environmental) economists from the Baltic Sea countries within the regional ESA network.

This document contains information on social and economic analyses and identifies possible use also for maritime spatial planning purposes.

Some further background material on the regional ESA work can be found in here: [HELCOM TAPAS ESA WS 1-2016](#) and [HELCOM TAPAS ESA 2-2016](#).

## Action requested

The Meeting is invited to

- take note of the information,,
- exchange information on how countries deal with socio-economic analysis including socio-economic impact assessments in MSP,
- discuss possible involvement of the HELCOM-VASAB MSP WG in the future joint development as well as use of social and economic analysis.

## Marine spatial planning and economic and social analyses

### Economic and social analyses of the marine environment

Economic and social analyses (ESA) provide a set of tools to examine the benefits from the use of marine waters, and the costs and benefits of achieving a healthy marine ecosystem. They support a sustainable blue economy and use of marine resources. Economic and social analyses provide answers to questions such as the following:

- What is the Baltic Sea's input to economic growth and human well-being?
- How much does the degradation of the marine environment cost us?
- What are the minimum costs of achieving a healthy marine ecosystem?
- Are the economic benefits of achieving a healthy marine ecosystem higher than its costs?

Economic and social analyses are needed to fully apply ecosystem-based management in the Baltic Sea. They can provide valuable information in marine management, marine spatial planning, pollution mitigation and better integration of policies and their implementation.

### Economic and social analyses in HOLAS II

The development of regional economic and social analyses in the Baltic Sea area for HOLAS II includes analyses on 1) the use of marine waters and 2) cost of degradation. The work is also set to support a coherent MSFD ESA reporting by Baltic EU member states in 2018.<sup>1</sup>

#### Use of marine waters

The use of marine waters analysis describes the economic importance of human activities and sectors present in the marine environment to illustrate the benefits derived from the use of marine waters. The analysis is connected to the assessment of activities and pressures within HOLAS II, as the ESA component complements the existing spatial information on pressures and activities in the Baltic Sea region by linking economic and social data to these activities.

The use of marine waters analysis attempts to collect regionally comparable data on the economic importance of marine uses for the Baltic Sea and connect this to the activity-pressure assessment. At this stage, the data on the pressures and activities are spatially detailed, and related economic and social data is presented at the country level. Later, there are possibilities to present the economic and social indicators also in spatially detailed manner when such data are available.

The regional framework for the use of marine waters analysis utilizes the marine water accounting approach, gathering economic indicators and data for the activities and sectors from national and regional statistics. The focus is on sectors that:

- create significant pressure to the marine environment
- derive significant benefits from the use of marine waters, and/or
- are dependent on the environmental state of the Baltic Sea.

These sectors include fish and shellfish harvesting, aquaculture, tourism and recreation, energy production and transport. Economic indicators, e.g. gross value added and employment, are used to describe the activity in terms of the economic benefits. Statistics are complemented with non-market values when possible as

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<sup>1</sup> Economic and social analyses (ESA) requested by the MSFD Article 8 include two components: use of marine waters and cost of degradation. The evaluation of the MSFD Article 8 reporting in 2012 revealed a strong lack of coherence by EU Member States in the Baltic Sea region. The economic and social analyses were carried out using various approaches and from national perspectives, whereas the regional viewpoint was missing.

suggested in the ecosystem services approach. In addition to the economic indicators, the use of marine waters analysis describes the dependence of the sectors on the state of the marine environment and assesses trends in the activities over time based on national strategies for these activities.

The framework is complemented with examples using Finnish and Estonian data. The aim is to expand this analysis to the regional scale for the HOLAS II report by mid-2017.

### Cost of degradation

Cost of degradation is defined as the consequences to human well-being from the degradation of the marine environment, and it can be assessed based on the benefits forgone or damages resulting from not achieving the good environmental status (GES). Cost of degradation can be presented in monetary, quantitative or qualitative terms.

In HELCOM HOLAS II work, the cost of degradation is assessed in monetary terms, using information from economic valuation studies valuing the benefits of improving the state of the Baltic Sea. The cost of degradation can be presented for selected degradation themes/descriptors of Good Environmental Status (e.g. eutrophication) and ecosystem services (e.g. recreation), depending on data availability. The results of the analysis illustrate what the consequences to human well-being from the degradation of the marine environment are in monetary terms.

The assessment of data availability has revealed that the cost of degradation could be assessed for the following descriptors and ecosystem services:

- eutrophication
- biodiversity and food webs
- non-indigenous species
- recreation (ecosystem service).

An example for the cost of degradation resulting from eutrophication has already been developed. The cost of degradation estimates are expressed at the national and Baltic Sea region level. Additional descriptors/ecosystem services can be included in the HOLAS II report.

### MSP and economic and social analyses

A regional approach for the economic and social analyses enhances comparability of data and approaches across countries and supports national work potentially also including MSP. Carrying out regional analyses is useful for developing methods and approaches for the national analyses and can provide data for national MSP work that are comparable among the countries. Regional level assessment will enhance the consistency of the economic and social analyses in the Baltic Sea region, especially in the long run.

There are several uses of economic and social analyses in marine spatial planning. Economic and social analyses may:

- Reveal the (relative) importance of marine uses and ecosystem services in economic and social terms (e.g. revenue, employment, recreation and existence values)
- Highlight hidden environmental and ecosystem service values (in addition to commercial/market values)
- Reveal trade-offs (and synergies) between marine uses, activities and ecosystem services
- Enhance public participation in the planning (valuation of ecosystem services)
- Enable comparisons of the benefits and costs of alternative marine spatial planning solutions

The main hindrances for the development of economic and social analyses to support MSP are related to data availability. First, although economic indicators and ecosystem service values would be available, the estimates are rarely location-specific. The indicators or values may be presented at the Baltic Sea level or sub-basin (e.g. the Gulf of Finland) level.

Second, some ecosystem goods and services provided by the marine environment are not traded in the markets and thus value information is not readily available. This is the case for example, for recreation, landscape and existence values. These values can be estimated using economic valuation methods that assess the value of changes in the environment and ecosystem services.

These hindrances for developing the economic and social aspects of MSP are becoming less significant in the future. The availability of spatially explicit economic information is increasing, which will enable presenting location-specific estimates. In addition, knowledge on the links between pressures and impacts, now becoming available, and research on the spatial distribution of ecosystem services values will allow more detailed analyses.

#### Extending the regional economic and social analyses to support MSP

The existing analyses on the use of marine waters and the cost of degradation can be extended to support marine spatial planning. At the current stage, information on the use of marine waters has been collected at the country level. The next step would be to assess whether there are spatially explicit data on economic indicators for marine uses (e.g. value of fisheries, aquaculture production and recreation), and possibly gather new data that would allow more detailed spatial analyses.

Development of the cost of degradation analysis to support marine spatial planning requires information on how marine uses affect the state of the marine environment and/or the provision of ecosystem services. This allows estimating the effects on the environment in monetary terms.

Some examples of the economic assessment of the current marine uses regionally include the following:

**Fisheries:** Given that there is region-wide spatial data on landings in the Baltic Sea and information on the value of landings, it would be possible to calculate the value of landings for specific areas.

**Aquaculture:** With information on the location and production numbers of aquafarms and data on the value of production, it would be possible to calculate the value of production per aquafarm or specific region.

**Recreation:** Value of Baltic Sea recreation in different areas could be assessed based on information on the number of recreation visits and value per visit. There is existing knowledge on the value of a Baltic Sea recreation visit. More data on recreation values in the Baltic Sea will be produced in the BONUS BalticAPP project.

**Marine protected areas:** The value of marine protected areas could be assessed based on economic valuation studies.

#### Conclusions

The added value from regional economic and social analyses for marine spatial planning would be development of approaches and data that would support national work, and increased coherence in methods, data and presentation of the results for the Baltic Sea region. Next steps could include a review of national progress, available information and information gaps, followed by gathering additional information and developing approaches for the regional economic and social analyses. Linking human activities, pressures and impacts to the environmental state would allow assessing how the marine environment would develop in the future as marine uses change, thus contributing to the analysis of MSP scenarios.