



Co-funded by the
European Maritime and
Fisheries Fund of the
European Union

Recommendations on developing a framework for economic and social analyses in maritime spatial planning

NOVEMBER 2019



Published by:
Pan Baltic Scope

www.panbalticscope.eu

This report has been developed under the Pan Baltic Scope project, co-financed by the EU and coordinated by HELCOM.

For bibliographic purposes this document should be cited as:
“Pan Baltic Scope 2019. Recommendations on developing a framework for economic and social analyses in maritime spatial planning.”

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Activity 1.2.5 Recommendations on developing a framework for economic and social analyses in maritime spatial planning

Ecosystem-based approach and economic and social analyses

Sustainable use and conservation of marine resources requires integrated marine management, and consideration of the interaction between the marine ecosystem and the socio-economic system. Ecosystem-based approach (EBA) is an interdisciplinary and integrated strategy for accounting for the complexity of the ecosystems and their relationship with the socio-economic systems. Socio-economic systems include the benefits to human well-being derived from ecosystems and their goods and services (Maes et al. 2013).

The EBA is advocated as an overarching principle in maritime spatial planning. It calls for the management of human activities to meet conservation goals and ensure the sustainable use of marine goods and services by present and future generations (HELCOM and VASAB 2010). Economic and social analyses have a major role to play in assessing the interaction of the ecosystem with the socio-economic system. This is acknowledged in the HELCOM-VASAB guideline for EBA in maritime spatial planning, which requires identifying ecosystem services to assess the socio-economic effects when developing maritime spatial plans in the Baltic Sea area (HELCOM and VASAB 2016). The 12 Malawi principles for the ecosystem approach, outlined in the Convention of Biological Diversity (CBD), recognise that ecosystems need to be understood in the context of economic systems, and there is a need for considering economically valuable goods and services provided by ecosystems (CBD Secretariat 2004).

Economic and social analyses of the marine ecosystem are called for in the key European Union marine policies, the Maritime Spatial Planning Directive (MSPD, 2014/89/EU) and the Marine Strategy Framework Directive (MSFD, 2008/56/EC). The MSPD requires countries to make maritime spatial plans considering economic, social and environmental aspects, and the MSFD requires economic and social analyses pertaining to the use of marine waters, cost of degradation, and the costs and benefits of new measures to improve the state of the marine environment.

Economic analyses and maritime spatial planning

One of the key aspects of ecosystem-based management is the interaction of the ecosystem with the socio-economic system. Economic and social analyses provide a set of tools for examining how the status and processes in the (marine) ecosystem affects human welfare. For example, they include analyses of

- how human activities and sectors using the marine environment produce revenue and employment that contribute to the economies,
- the cost-effectiveness of measures and policies to improve the state of the environment to reveal the least-cost way of achieving the environmental objective (or alternatively, the largest change in the environment that could be accomplished with given resources),
- the value of ecosystem services and environmental benefits of achieving a healthy marine ecosystem to assess how changes in the environment due to policies affect citizen's well-being,
- and cost-benefit analysis, where the costs and benefits of a policy are identified and monetized and finally compared to each other to assess the economic efficiency of the policy and support decision-making.

In relation to maritime spatial planning, there are several uses of economic and social analyses (see e.g. Börger et al. 2014), including

- Revealing the (relative) importance of different sea uses and ecosystem services in economic and social terms (e.g. revenue, employment, recreation and existence values)
- Highlighting hidden environmental and ecosystem service values (in addition to commercial/market values)
- Revealing trade-offs (and synergies) between marine uses, activities and ecosystem services
- Enhancing public participation in the planning through valuation of ecosystem services
- Enabling comparisons of the benefits and costs under alternative planning solutions at national, regional and local levels.

Hence, by the use of economic and social analyses, planners can increase and support understanding of the trade-offs between alternative spatial plans, different sea uses and ecosystem services, as well as links between activities and ecosystem services and environmental status, and make different types of impacts comparable when they are expressed using the same (monetary) measure.

Previous experiences in regional economic and social analyses in the Baltic Sea

HELCOM has previously developed a regional framework for economic and social analyses for the second holistic assessment of ecosystem health (HOLAS II, see HELCOM 2018a [State of the Baltic Sea report](#)), which included the economic contribution from the use of marine waters and the cost of degradation from not achieving good environmental status of marine waters. The framework was operationalized in 2018 for the HOLAS II and the use of marine waters and cost of degradation analyses covering all Baltic Sea coastal countries were finalized, providing regional estimates (see HELCOM 2018b). The work also supported Contracting Parties being EU member states in their implementation of the EU Marine Strategy Framework Directive. The HELCOM work on economic and social analyses for HOLAS II provides the basis for the current recommendations, showing that regional approaches for the economic and social analyses are both feasible and useful to support marine policies. HOLAS II did not integrate economic and environmental assessments, but this work is taken forward in the HELCOM Baltic Sea Action Plan update and associated regional sufficiency of measures analysis.

Draft recommendations on developing a framework for economic and social analyses in maritime spatial planning

Thus far, various approaches have been used for assessing the economic and social aspects of maritime spatial plans in the Baltic Sea region. Having a regional framework in place for the economic and social analyses for the MSP is foreseen to result in enhanced regional cooperation and increased coherency of methods, and hence improve the comparability of approaches and outputs across countries. Work towards a regionally coordinated framework for incorporating economic and social analyses in maritime spatial planning could also aid national and other authorities in their work.

The following recommendations build on a review of existing literature and a survey sent to national authorities in the Baltic Sea countries on the assessment of economic and social impacts and ecosystem services in national MSP. Both of these activities were conducted as part of Activity 1.2.5 on Economic and Social Analyses in the Pan Baltic Scope project. Furthermore, the recommendations are based on collaboration within Work Package 1.2 on the Ecosystem-Based Approach in the Pan Baltic Scope project, as

well as on previous experiences in regional economic and social analyses, mainly in HELCOM HOLAS II.

Overall recommendations for developing the framework

1. Aim for an overarching assessment, including the assessment of impacts and effects on economic, social, cultural, environmental and ecosystem services aspects, to obtain an overall picture of the effects that spatial plans may have on the environment and society.
2. Support the application of the ecosystem-based approach, as stated in the MSP Directive, and allow for integrated analysis of the ecosystem and social and economic system, describing interlinkages between human activities, state of the environment and human welfare. Identify and strengthen links to other approaches and assessments that contribute to the implementation of the ecosystem-based approach in MSP, such as cumulative impact assessments, strategic environmental assessments and green and blue infrastructure.
3. Build the assessment on previous work and experiences of integrated analyses in HELCOM projects and assessments, as well as national work.
4. Include the assessment of:
 - a. the contribution from all sea uses to the economy and human welfare in monetary terms, including activities such as recreation
 - b. how activities may lead to pressures and further affect the state of the marine environment
 - c. the relationship between the state of the marine environment and the provision of ecosystem services
 - d. impacts on human welfare from changes in the status of the marine environment and/or provision of ecosystem services, in monetary terms if possible
 - e. the long term economic and social impacts of maritime spatial plans, including both the economic benefits and costs.
5. Build on existing frameworks for the integrated assessment of ecosystem and social and economic systems, applying and adjusting the data and approaches for MSP purposes. Useful frameworks include:
 - a. Ecosystem services cascade model¹
 - b. DPSIR (drivers – pressures – state – impacts – response)²
6. Develop approaches, data and results to support spatial analyses of the components of the framework. This is particularly needed for the provision of ecosystem services and effects on human welfare from changes in the environmental state/ecosystem services, for which spatially explicit information is often lacking.

¹ [Haines-Young & Potschin \(2010\)](#).

² E.g. [Atkins et al. \(2011\)](#).

- a. New spatially explicit and internationally coordinated valuation studies on selected environmental themes/ecosystem services would improve the knowledge base for assessing welfare impacts in connection to spatial planning. These could be implemented in all coastal countries or in selected countries representing the diverse conditions of the Baltic Sea countries, which would allow results to be transferred to other countries for regional estimates.
 - b. Spatially explicit research on the value of ecosystem service and environmental impacts relevant to MSP should be promoted.
 - c. Spatial distribution of benefits and costs should be assessed.
7. Develop common indicators for assessing economic, social and cultural aspects of relevance to MSP.
 8. Enable and support regional cooperation and the development of coherent approaches to evaluate the impacts on economic, social and ecosystem services aspects in connection to MSP to improve the international comparability of the data, approaches and findings, enable region-level analyses and results, as well as support national assessments and implementation of the EU MSPD.

How to develop the framework in practice

9. Develop the framework in international collaboration, with representation from all coastal countries in the Baltic Sea region and both environmental and social sciences. To this end, assigning the task of development to a specific group or platform would be beneficial.
10. Involve and engage stakeholders and policy-makers in the development work.
11. Identify specific needs of planners and policy-makers for the assessment of economic, social, cultural and ecosystem service impacts and target the framework to fulfil the needs.
12. Groups and parties that could participate in developing the framework
 - a. PBS Planning Forum and continuation Capacity4MSP
 - b. HELCOM-VASAB maritime spatial planning working group (HELCOM-VASAB MSP WG)
 - c. HELCOM expert network on economic and social analyses (EN ESA)
 - d. Research community
13. Ensure continuation and develop institutional memory of the work, to support progress and adaptive learning.
14. Develop expertise and allocate resources for the economic and social analyses.
15. Establish a common terminology and understanding of economic and social analyses to support MSP.
16. Find synergies and commonalities between MSP and other marine and environmental policies where economic and social aspects are considered, listed in the EU guidance on integrating ecosystems and their services into decision-making (European Commission 2019).

17. Ensure the framework is flexible to allow for differences across geographic areas.

Resource and data needs to move towards implementing the framework

The main challenge for regional economic and social analyses in the MSP context is the lack of spatially explicit harmonized data on economic and social impacts and ecosystem services across countries. Thus, major efforts are needed to develop coherent data to allow for regionally coordinated approaches and results, but there is also a need to develop and improve the use of existing data on economic and social impacts and ecosystem services for the marine environment in MSP, e.g. with results from economic valuation studies on environmental and ecosystem services.

Main knowledge needs identified include:

- a. Spatially explicit data on the provision of ecosystem services
- b. Spatially explicit and internationally comparable data on changes in environmental/ecosystem service values
- c. Spatially explicit data on economic and social indicators (e.g. gross value added)
- d. Spatial and social distribution of the costs and benefits of maritime spatial plans
- e. Increased understanding of the links between the state of the marine environment and the economic contribution from activities
- f. Increased understanding of the links between the state of the marine environment and the provision of ecosystem services

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