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<b>Document title</b>	Update of the Roadmap for continued HELCOM work on economic and social analyses (ESA)
<b>Code</b>	5-2
<b>Category</b>	DEC
<b>Agenda Item</b>	5 – Activities of relevant HELCOM projects or processes
<b>Submission date</b>	16.10.2019
<b>Submitted by</b>	Secretariat and EN-ESA
<b>Reference</b>	Outcome of HOD 51-2016, para. 6.47; Outcome of GEAR 20-2019, para. 5.33

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## Background

The original Roadmap for HELCOM work on economic and social analyses was agreed by HOD 51-2016 ([Outcome of HOD 51-2016](#), para. 6.47). The roadmap outlined the development of HELCOM economic and social analyses (ESA) for HOLAS II until 2018 and potential further activities for developing ESA. Since the completion of HOLAS II and taking into consideration the ongoing ESA work in the Baltic Sea region, there is a need to update the roadmap. GEAR 20-2019 invited EN ESA to consider the revision and update of the ESA roadmap into a more structured and detailed document ([Outcome of GEAR 20-2019](#), para. 5.33).

This document presents a proposal for the updated roadmap for continued HELCOM ESA. The update has been discussed and developed at several EN ESA meetings in 2019 (EN ESA [5-2019](#), [6-2019](#) and [7-2019](#)).

The updated roadmap is included in two attachments: Att.1 with track changes and Att.2 as a clean version without track changes.

## Action requested

The Meeting is invited to consider and agree on the updated roadmap for HELCOM ESA work.

Roadmap for continued HELCOM work on economic and social analyses (ESA) ~~(agreed by HOD 51-2016)~~

Update October 2019

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## Roadmap for continued HELCOM work on economic and social analyses (ESA)

### Rationale and aim of HELCOM economic and social analyses

Economic and social analyses (ESA) provide a set of tools to examine for examining how the marine environment affects human welfare, e.g. in terms of 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 is the value of marine ecosystem services?
- What are the minimum costs of achieving a healthy marine ecosystem?
- What are the economic benefits of achieving a healthy marine ecosystem? higher than its costs?

Answers to these questions by comprehensive eEconomic and social analyses are needed to fully apply ecosystem-based management of in the Baltic Sea, building on and show understanding of the linkages between the ecosystem and the socio-economic system. The analyses y-can provide valuable information for in marine management, maritime ne spatial planning, pollution mitigation, as well as for supporting information and nd implementation of national and regional policies better integration of policies and their implementation.

HELCOM Ministerial Declaration from Copenhagen, 2013, recognized a this gap in economic and social analyses and includes an agreement to "initiate or intensify the work to attribute economic value to marine and coastal ecosystem services and their contribution to societal, cultural and ecological well-being, [...] with a view to starting more comprehensively embracing an ecosystem accounting approach". Contracting Parties also decided "to cooperate with institutions having leading expertise on economic and social analysis of the use of the Baltic Sea and the cost of degradation of the marine environment in order to contribute to the holistic assessment's socio-economic analysis".

HELCOM Ministerial Declaration from Brussels, 2018, agreed to "further develop and carry out coordinated regional economic and social assessments, including mapping, valuation, and analysis of ecosystem services and natural capital accounting", as well as to "encourage further coordinated research to support cost of degradation analyses, cost-effectiveness analyses of regional measures, and assessment of cost and benefits related to achieving GES covering the entire Baltic Sea region".

### Previous HELCOM work on economic and social analyses

Economic and social analyses for the second holistic assessment of ecosystem health (HELCOM HOLAS II) involved developing a framework for regional analyses of the use of marine waters and cost of degradation, as well as operationalizing this framework by collecting relevant data. The work was done in two EU-funded projects: HELCOM TAPAS in 2016 and HELCOM SPICE in 2017, and built on previous work by the BalticStern network as well as several BONUS projects.

In the use of marine waters analysis, comparable data on the economic contribution from selected marine activities (fish and shellfish harvesting, aquaculture, tourism and recreation, energy production and transport) were collected, mainly from national and regional statistics, complemented with non-market

values for coastal and marine recreation. Additionally, an approach was developed for assessing the impact from activities on ecosystem services, as well as the dependence of activities on ecosystem services.

Cost of degradation analysis entailed assessing the consequences to human well-being from the degradation of the marine environment, based on the benefits forgone or damages resulting from not achieving good environmental status (GES). Cost of degradation was assessed in monetary terms for selected degradation themes/descriptors of GES (eutrophication, selected biodiversity aspects) and ecosystem services (recreation), using information from multi-country economic valuation studies on the benefits of improving the state of the Baltic Sea.

The approaches and results of the analyses were reported as part of the HOLAS II 'State of the Baltic Sea' report and in a supplementary report on economic and social analyses in 2018.

In addition to the use of marine waters and cost of degradation analyses for HOLAS II, the HELCOM SPICE project covered additional topics, including ecosystem services, integrated assessment of activities, pressures, state and impact, and the principles for developing regional business-as-usual (BAU) scenarios (reports available online).

### Ongoing HELCOM work on economic and social analyses

Currently, economic and social analyses are developed as part of two work strands:

- 1) sufficiency of measures analyses to support the update of the Baltic Sea Action Plan (BSAP), carried out by coordinated activities in the HELCOM ACTION project and ad hoc HELCOM Platform on sufficiency of measures (HELCOM SOM Platform); and
- 2) economic and social analyses in maritime spatial planning in the Pan Baltic Scope project.

The ACTION project (2019-2020) contributes to the sufficiency of measures (SOM) analysis by developing an approach for evaluating the sufficiency of existing measures to achieve GES, to construct a business-as-usual scenario and identify whether there is a gap to GES and need for new measures. In the approach, measures are linked to activities, pressures and environmental state to evaluate their effectiveness and sufficiency. Additionally, the development of main human activities and their effect on pressures and state will be considered. ACTION also develops an approach for the regional cost-effectiveness analysis of measures and conducts this analysis for new and not yet implemented measures. The analysis is built on the SOM approach and business-as usual scenario, and thus it also considers the effects of existing measures and applies the data collected for the SOM analysis.

The SOM Platform acts as an interdisciplinary platform to harmonize the approach on analysis of sufficiency of measures and ensure coherency and coordination across topics (see Terms of Reference for SOM Platform). The SOM Platform focuses its work on complementary topics to the ACTION project, i.e. hazardous substances, non-indigenous species, marine litter, underwater noise, and biodiversity aspects not covered by the ACTION project. The analysis will be implemented through a model that will be run for all topics by SYKE, Finland, based on the data and information collected under the SOM Platform, ACTION project, and expert-based evaluations. The analysis identifies where new measures are likely needed and supports identifying what kind of new measures are likely needed to reach GES.

The HELCOM work in the Pan Baltic Scope project (2018-2019) involves producing recommendations for developing a framework for economic and social analyses in maritime spatial planning (MSP). The recommendations are based on previous experiences in regional work for economic and social analyses in HOLAS II, a literature review on the assessment of economic, social, cultural and ecosystem service impacts in MSP, and an expert survey on how these impacts are considered in MSP in the Baltic Sea region.

### Economic and social analyses in HOLAS II

The development of regional economic and social analyses in the Baltic Sea region for HOLAS II was covered with two EU funded projects: TAPAS in 2016 and SPICE in 2017. has in 2016 been taken forward with the use of resources of the EU-funded TAPAS project. The work includes The main components of the work were analyses on 1) the use of marine waters and 2) cost of degradation. Additional topics covered were

ecosystem services, integrated assessment of activities, pressures, state and impact, and the principles for developing regional business-as-usual (BAU) scenarios.

#### 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.

In TAPAS, the selected 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 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. Pending resources to the ESA network or external funding, the analysis will be expanded 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 for HOLAS II could be assessed for the following descriptors and ecosystem services:

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

In the TAPAS project, the analysis is limited to an example for the cost of degradation resulting from eutrophication. The cost of degradation estimates are expressed at the national and Baltic Sea region level. The aim is to include additional descriptors/ecosystem services in the HOLAS II report.

### **Rationale for further development of economic and social analyses in HELCOM**

Economic and social analyses 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.

HELCOM Ministerial Declaration from Copenhagen, 2013, recognized this gap and includes an agreement to *"initiate or intensify the work to attribute economic value to marine and coastal ecosystem services and their contribution to societal, cultural and ecological well being, [...] with a view to starting more comprehensively embracing an ecosystem accounting approach"*. Contracting Parties also decided *"to cooperate with institutions having leading expertise on economic and social analysis of the use of the Baltic Sea and the cost of degradation of the marine environment in order to contribute to the holistic assessment's socio-economic analysis"*.

### **Proposed roadmap for further economic and social analyses**

The aim of HELCOM economic and social analyses and the work of the HELCOM expert network on economic and social analyses (EN ESA) is to inform and advance the consideration of economic and social aspects in marine policies and enhance the regional cooperation on the economic and social analyses related to the Baltic Sea marine environment (see Terms of Reference for EN ESA). The active involvement of all Contracting Parties in the ESA network and project work on ESA is considered crucial. The economic and social analyses should provide region-level approaches and results, as well as support national assessments and implementation of EU directives for those Contracting Parties being member states of the EU.

The following themes are proposed as priority areas for future ESA work. All of them can support the implementation of the ecosystem-based approach, as well as the update of the BSAP, third holistic assessment of ecosystem health (HOLAS III) and maritime spatial planning in the Baltic Sea region. The themes are classified under four broad categories: i) Integration and continuity, ii) Developing methodologies, iii) Approaches and assessments for policy analysis, iv) Building information base.

#### i) Integration and continuity

- 1. Integrate economic and social analyses to other HELCOM work strands** to support the implementation of the ecosystem-based approach and allow for more comprehensive assessment of the linkages between the ecological and socio-economic systems.
- 2. Secure continuation and develop institutional memory** of national and regional economic and social analyses to enable improved integration of research outcomes from the Baltic Sea region. This should entail collecting and maintaining continuous economic and social ESA data to support HELCOM work. The HELCOM EN ESA is important for this, as well as setting up a dedicated open-access HELCOM website on ESA projects and results tailored to the use and dissemination of knowledge to topic experts.

## ii) Developing methodologies

- 3. Continue developing integrated approaches for assessing the marine environment, linking the ecosystem and socio-economic system to assess how the marine environment affects human welfare and how human activities and measures affect the marine environment. The work should build on the approaches and results developed in the HELCOM SPICE, HELCOM ACTION and previous and ongoing BONUS projects, SOM analysis for the BSAP update, BSPI and Symphony tools, as well as other relevant work.**
- 4. Continue developing the ecosystem services approach for the economic and social analyses of the marine environment (including use of marine waters and cost of degradation) to improve the consideration of ecosystem services and linkages between the marine environment and human welfare. This work would support the integration of ecosystem and socio-economic assessments.**
- 5. Continue developing regional frameworks for economic and social analyses in maritime spatial planning. The work can build on the results of the Pan Baltic Scope and other relevant MSP projects, including BONUS projects.**
- 6. Develop approaches and data for marine ecosystem accounting to describe and quantify the interactions between the economy and the marine environment, and to quantify the economic value of the Baltic Sea ecosystems. Building on the rich data, methods and expertise in the HELCOM ESA network, pilot marine accounts for the Baltic Sea can be developed. This entails working with the national statistical agencies to provide data in standard format, e.g. on the economic benefits derived from the use of marine waters.**
- 7. Develop approaches for linking cost of degradation assessment to state assessment, including adjusting the results of existing valuation studies to correspond to baseline and target environmental state.**
- 8. Formulate and develop economic and social indicators that cover economic growth but also a range of benefits and costs of using the marine environment.**

## iii) Approaches and assessments for policy analysis

- 9. Continue to support the assessment of sufficiency of measures for the update of the BSAP and identification of the need for new measures by contributing to the SOM Platform work.**
- 10. Continue developing approaches and results for regional cost-effectiveness and cost-benefit analyses to support policy evaluation and national work on programmes of measures for those Contracting Parties being member states of the EU.**

## iv) Building information base

- 11. Develop approaches, data and results for spatially explicit analysis of economic and social impacts of the marine environment to enable assessing the spatial distribution of the economic contribution from human activities, ecosystem services, and benefits from ecosystem services and environmental changes to support maritime spatial planning and other marine policies.**
- 12. Conduct regionally coordinated economic valuation studies of ecosystem services and/or environmental benefits to provide comparable information on the benefits of reaching GES to support cost of degradation and cost-benefit analyses. This would enable covering additional environmental topics and ecosystem services. The studies should enable evaluating the spatial distribution of benefits to support maritime spatial planning. Finland, Sweden and Germany have or**

are currently implementing a similar study to value the benefits of achieving GES, using identical survey material in all countries.

**13. Engage with different BONUS and other relevant projects to utilize valuable ESA research and resources and identify potential knowledge gaps that could be filled with a regional study.**

**1.**

TAPAS ESA activities will end in December 2016. An immediate further need is to contribute to HOLAS II beyond 2016 and until mid-2018.

Further, the ESA outcomes in HOLAS II will offer a foundation for a continuous and joint development work, based on national needs and with the aim to deliver advanced ESA for marine management that can also be utilized for e.g. maritime spatial planning. Year 2021, five years from now, could serve as a suitable timeframe for further developing the economic and social analyses in HELCOM.

The TAPAS project has developed a conceptual framework for the regional ESA with the focus on the use of marine waters and cost of degradation approach (Table 1), which can also support the reporting of MSFD Article 8<sup>4</sup>. The project has aimed to operationalize the framework and tested it using available data sets and existing research results. Data have been collected for selected countries, sectors (use of marine waters) and descriptors of GES (cost of degradation). The further work is needed to supplement these data to cover all Baltic Sea countries and additional sectors and descriptors. The aim is to conduct as much of the work as possible by mid-2017, however it can already be foreseen that the efforts need to continue by mid-2018 for the updated HOLAS II.

**Table 1. Supporting HOLAS II until mid-2018: Conceptual framework for social and economic analysis.**

Questions to which different economic analyses provide answers	By the end of 2016 (TAPAS project)	First HOLAS II by mid-2017 (Part time project researcher in the Secretariat and {SPICE project proposal})	Updated HOLAS II by mid-2018 ({SPICE project proposal})
Article 8.1	Conceptual framework	Regional data	Updates, additions
Use of marine waters	Examples using marine water accounting approach	Regional scaling of data for few selected sectors and applying the results in the HOLAS II report	Updating data and covering additional activities of importance
Cost of degradation	Example analysis (eutrophication) for all contracting parties using stated preference and benefit transfer methods	Regional scale data on few additional selected descriptors/ themes and applying all the results in the HOLAS II report	Updating data and covering additional descriptors/themes

**2.**

**Other actions that could be started in 2017 to support HOLAS II and the regional ESA**

**3. Develop and agree on common principles for the regional ESA**

The TAPAS project has developed a conceptual framework for regional ESA. The aim has been to support HOLAS II analysis, but the framework also corresponds well to the MSFD Article 8. A lesson learnt at the TAPAS work is that the operationalization of the framework was only partly possible. Thus, an essential step for future work is to agree on common principles for the regional ESA in the Baltic Sea region.

<sup>4</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.

Work with the national statistical agencies to provide data in standard format on the economic benefits derived from the economic sector's use of marine waters. After the common principles have been agreed, a common data collection according to standard format would be possible. Collaboration with national statistical agencies could facilitate this. This would support e.g. use of marine waters analysis.

#### **4. Develop a common understanding on baseline**

An essential part of a common regional analysis is to agree on a regional baseline (how the state of the marine environment will develop in the future), including the time frame of the analysis and certain key assumptions underlying the ESA. This would support e.g. cost of degradation analysis.

#### **5. Establish team with pressure impact researchers and ESA network**

ESA is an interdisciplinary exercise. Paramount for the work is to understand how the economic sectors are using the sea and how a change in the state of the Baltic Sea feeds back to the economic sectors and affects human well-being.

#### **6. BONUS projects are conducting valuable research for ESA work. Ways to utilize this new knowledge should be explored. This would reveal some knowledge gaps that could be filled with a regional study.**

Tasks in table 1 and tasks 1-5 are considered priority.

It is proposed that economic and social analyses in the Baltic Sea region will continue beyond the release of the updated HOLAS II. The work on items 2-5 above would need to continue to fully operationalize the regional conceptual ESA framework for future use in the regional assessments. The future work would also focus on developing additional socio-economic tools for regional policy analysis, contributing to the economic and social analyses related to the costs and benefits of measures to improve the state of the marine environment. For Contracting Parties being EU Member States, this would contribute to cost-effectiveness and cost-benefit analyses of the Programmes of Measures required by the EU MSFD Article 13. The work should also focus to link cost of degradation and use of marine waters when more data becomes available.

#### **Potential further activities for developing economic and social analyses to be further developed**

~~Investigate the possibilities to conduct regionally coordinated valuation studies. Currently, benefit information that covers the entire Baltic Sea region is available for very few descriptors and ecosystem services.~~

~~Coordinated valuation studies would provide comparable information on the benefits of reaching GES to support cost of degradation and cost-benefit analysis, and also marine spatial planning. Currently, benefit information that covers the entire Baltic Sea region is available for very few descriptors and ecosystem services.~~

#### ~~**Conduct analysis on regional business as usual (BAU) scenarios to be used as baselines for the future development of the state of the Baltic Sea and the sufficiency of measures (SOM)**~~

~~BAU scenarios are useful for assessing the sufficiency of existing measures to achieve good environmental status, and thus identify the need for new measures. The work would entail collecting information on existing measures and their effectiveness, compiling information on the development of human activities, and assessing the effect of measures and activities on pressures and further on the state of the marine environment. The work would support the update of the Baltic Sea Action Plan.~~

#### **7. Conduct cost effectiveness analysis of measures to improve the marine environment**

The work would include identifying a transboundary set of collective measures (regional scale) to improve the state of the marine environment and performing cost-effectiveness analysis of the measures. This is important for finding the least cost ways to improve the state of the Baltic Sea, and would support programmes of measures analysis.

#### **8. Conduct cost-benefit analysis for selected descriptors/themes**

Cost-benefit analysis could be performed of commonly agreed themes when there is information on both the benefits and costs of collective improvement measures. Cost-benefit analyses would also support analyses related to the programmes of measures.

It is foreseen that new research projects are needed to support points 6-8.

**Table 2. Timing of potential next actions for developing regional economic and social analyses**

Potential action	Potential time frame
Regionally coordinated valuation studies	2018-2020
<u>Business-as-usual scenarios and sufficiency of measures</u>	<u>2019-2020</u>
Identifying a transboundary set of measures and cost effectiveness analysis	2019-2020/18-2019
Cost-benefit analysis	2020-2021-

#### Resources for addressing economic and social analyses

The work carried out thus far has been possible thanks to several individual projects (TAPAS, SPICE, ACTION, Pan Baltic Scope). The expert network on EN ESA has provided additional support and an important forum for regional collaboration also for those Contracting Parties that have not participated in the projects. Continuous funding would be needed to secure institutional memory and continued development of regional ESA to support HELCOM work and national analyses. Involvement of all Contracting Parties to the ESA work is encouraged.

~~The work carried out so far has been possible thanks to the TAPAS project, ending 2016. Further, the ESA network has been established under the HOLAS II project.~~

~~The ESA network has so far been project-based and could be further strengthened by participation of all Contracting Parties who could nominate their experts to the network, building an interdisciplinary team. Terms of Reference for the network is under development. The network will continue to be responsible for the ESA development work within HELCOM.~~

~~No funding or other resources have been allocated yet to the ESA work beyond the TAPAS except for part-time employment of Project Researcher in the Secretariat (until mid 2017).~~

~~A new HELCOM project proposal SPICE, if approved for financing by EU, would make it possible to supplement the use of marine waters and cost of degradation analyses for HOLAS II and start work on points 2-4 in this document (work with the national statistical agencies, develop a common understanding on baseline, establish team with pressure impact researchers and ESA network, and engage with BONUS projects).~~

## Roadmap for continued HELCOM work on economic and social analyses (ESA)

### Rationale and aim of HELCOM economic and social analyses

Economic and social analyses (ESA) provide a set of tools for examining how the marine environment affects human welfare, e.g. in terms of 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?
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- What are the economic benefits of achieving a healthy marine ecosystem?

Answers to these questions by comprehensive economic and social analyses are needed to fully apply ecosystem-based management of the Baltic Sea, building on understanding of the linkages between the ecosystem and the socio-economic system. The analyses can provide valuable information for marine management, maritime spatial planning, pollution mitigation, as well as for supporting information and implementation of national and regional policies.

HELCOM Ministerial Declaration from Copenhagen, 2013, recognized a gap in economic and social analyses and includes an agreement to *“initiate or intensify the work to attribute economic value to marine and coastal ecosystem services and their contribution to societal, cultural and ecological well-being, [...] with a view to starting more comprehensively embracing an ecosystem accounting approach”*. Contracting Parties also decided *“to cooperate with institutions having leading expertise on economic and social analysis of the use of the Baltic Sea and the cost of degradation of the marine environment in order to contribute to the holistic assessment's socio-economic analysis”*.

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achieving good environmental status (GES). Cost of degradation was assessed in monetary terms for selected degradation themes/descriptors of GES (eutrophication, selected biodiversity aspects) and ecosystem services (recreation), using information from multi-country economic valuation studies on the benefits of improving the state of the Baltic Sea.

The approaches and results of the analyses were reported as part of the [HOLAS II 'State of the Baltic Sea' report](#) and in a [supplementary report](#) on economic and social analyses in 2018.

In addition to the use of marine waters and cost of degradation analyses for HOLAS II, the HELCOM SPICE project covered additional topics, including ecosystem services, integrated assessment of activities, pressures, state and impact, and the principles for developing regional business-as-usual (BAU) scenarios ([reports available online](#)).

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- 2) economic and social analyses in maritime spatial planning in the Pan Baltic Scope project.

The [ACTION project](#) (2019-2020) contributes to the sufficiency of measures (SOM) analysis by developing an approach for evaluating the sufficiency of existing measures to achieve GES, to construct a business-as-usual scenario and identify whether there is a gap to GES and need for new measures. In the approach, measures are linked to activities, pressures and environmental state to evaluate their effectiveness and sufficiency. Additionally, the development of main human activities and their effect on pressures and state will be considered. ACTION also develops an approach for the regional cost-effectiveness analysis of measures and conducts this analysis for new and not yet implemented measures. The analysis is built on the SOM approach and business-as-usual scenario, and thus it also considers the effects of existing measures and applies the data collected for the SOM analysis.

The SOM Platform acts as an interdisciplinary platform to harmonize the approach on analysis of sufficiency of measures and ensure coherency and coordination across topics (see [Terms of Reference for SOM Platform](#)). The SOM Platform focuses its work on complementary topics to the ACTION project, i.e. hazardous substances, non-indigenous species, marine litter, underwater noise, and biodiversity aspects not covered by the ACTION project. The analysis will be implemented through a model that will be run for all topics by SYKE, Finland, based on the data and information collected under the SOM Platform, ACTION project, and expert-based evaluations. The analysis identifies where new measures are likely needed and supports identifying what kind of new measures are likely needed to reach GES.

The HELCOM work in the [Pan Baltic Scope project](#) (2018-2019) involves producing recommendations for developing a framework for economic and social analyses in maritime spatial planning (MSP). The recommendations are based on previous experiences in regional work for economic and social analyses in HOLAS II, a literature review on the assessment of economic, social, cultural and ecosystem service impacts in MSP, and an expert survey on how these impacts are considered in MSP in the Baltic Sea region.

### Proposed roadmap for further economic and social analyses

The aim of HELCOM economic and social analyses and the work of the HELCOM expert network on economic and social analyses (EN ESA) is to inform and advance the consideration of economic and social aspects in marine policies and enhance the regional cooperation on the economic and social analyses related to the Baltic Sea marine environment (see [Terms of Reference for EN ESA](#)). The active involvement of all Contracting Parties in the ESA network and project work on ESA is considered crucial. The economic and social analyses should provide region-level approaches and results, as well as support national assessments and implementation of EU directives for those Contracting Parties being member states of the EU.

The following themes are proposed as priority areas for future ESA work. All of them can support the implementation of the ecosystem-based approach, as well as the update of the BSAP, third holistic assessment of ecosystem health (HOLAS III) and maritime spatial planning in the Baltic Sea region. The themes are classified under four broad categories: i) Integration and continuity, ii) Developing methodologies, iii) Approaches and assessments for policy analysis, iv) Building information base.

#### i) Integration and continuity

- 1. Integrate economic and social analyses to other HELCOM work strands** to support the implementation of the ecosystem-based approach and allow for more comprehensive assessment of the linkages between the ecological and socio-economic systems.
- 2. Secure continuation and develop institutional memory** of national and regional economic and social analyses to enable improved integration of research outcomes from the Baltic Sea region. This should entail collecting and maintaining continuous economic and social ESA data to support HELCOM work. The HELCOM EN ESA is important for this, as well as setting up a dedicated open-access HELCOM website on ESA projects and results tailored to the use and dissemination of knowledge to topic experts.

#### ii) Developing methodologies

- 3. Continue developing integrated approaches for assessing the marine environment, linking the ecosystem and socio-economic system** to assess how the marine environment affects human welfare and how human activities and measures affect the marine environment. The work should build on the approaches and results developed in the HELCOM SPICE, HELCOM ACTION and previous and ongoing BONUS projects, SOM analysis for the BSAP update, BSPI and Symphony tools, as well as other relevant work.
- 4. Continue developing the ecosystem services approach for the economic and social analyses of the marine environment** (including use of marine waters and cost of degradation) to improve the consideration of ecosystem services and linkages between the marine environment and human welfare. This work would support the integration of ecosystem and socio-economic assessments.
- 5. Continue developing regional frameworks for economic and social analyses in maritime spatial planning.** The work can build on the results of the Pan Baltic Scope and other relevant MSP projects, including BONUS projects.
- 6. Develop approaches and data for marine ecosystem accounting** to describe and quantify the interactions between the economy and the marine environment, and to quantify the economic value of the Baltic Sea ecosystems. Building on the rich data, methods and expertise in the HELCOM ESA network, pilot marine accounts for the Baltic Sea can be developed. This entails working with the national statistical agencies to provide data in standard format, e.g. on the economic benefits derived from the use of marine waters.
- 7. Develop approaches for linking cost of degradation assessment to state assessment,** including adjusting the results of existing valuation studies to correspond to baseline and target environmental state.
- 8. Formulate and develop economic and social indicators** that cover economic growth but also a range of benefits and costs of using the marine environment.

#### iii) Approaches and assessments for policy analysis

- 9. Continue to support the assessment of sufficiency of measures** for the update of the BSAP and identification of the need for new measures by contributing to the SOM Platform work.

- 10. Continue developing approaches and results for regional cost-effectiveness and cost-benefit analyses** to support policy evaluation and national work on programmes of measures for those Contracting Parties being member states of the EU.

iv) Building information base

- 11. Develop approaches, data and results for spatially explicit analysis of economic and social impacts of the marine environment** to enable assessing the spatial distribution of the economic contribution from human activities, ecosystem services, and benefits from ecosystem services and environmental changes to support maritime spatial planning and other marine policies.
- 12. Conduct regionally coordinated economic valuation studies of ecosystem services and/or environmental benefits** to provide comparable information on the benefits of reaching GES to support cost of degradation and cost-benefit analyses. This would enable covering additional environmental topics and ecosystem services. The studies should enable evaluating the spatial distribution of benefits to support maritime spatial planning. Finland, Sweden and Germany have or are currently implementing a similar study to value the benefits of achieving GES, using identical survey material in all countries.
- 13. Engage with different BONUS and other relevant projects** to utilize valuable ESA research and resources and identify potential knowledge gaps that could be filled with a regional study.

Resources for addressing economic and social analyses

The work carried out thus far has been possible thanks to several individual projects (TAPAS, SPICE, ACTION, Pan Baltic Scope). The expert network on EN ESA has provided additional support and an important forum for regional collaboration also for those Contracting Parties that have not participated in the projects. Continuous funding would be needed to secure institutional memory and continued development of regional ESA to support HELCOM work and national analyses. Involvement of all Contracting Parties to the ESA work is encouraged.