

Good environmental status in the Baltic Sea through regional coordination and capacity building via economic and social analysis

Introduction

The unique characteristics of the Baltic Sea mean that its marine environment is highly sensitive, and human activity – causing eutrophication, overfishing, physical disturbance, hazardous substances, oil spills, and invasive species – are putting it under increasing pressure. Furthermore, shipping activity and large-scale infrastructure developments (e.g. offshore wind parks and installation of gas pipes and cables) will only intensify this pressure in the coming years.

Policy context

The Marine Strategy Framework Directive (MSFD), adopted in 2008, is the EU framework for action in the field of marine environmental policy. The MSFD sets targets for achieving Good Environmental Status (GES) in European seas by the year 2020. The MSFD requires EU Member States to prepare initial assessments – including economic and social analyses – of their marine waters. The MSFD requires that the marine strategies created by countries be “coherent and coordinated across the marine region or sub-region concerned”.⁴

Estonia, Finland, Latvia, and Sweden initiated the EU Central Baltic INTERREG-funded project, Good Environmental Status through Regional Coordination and Development (GES-REG) to help harmonize the implementation of the MSFD in the central and north-eastern Baltic Sea. Project partners exchanged information and experiences, and analysed the economic and social aspects of marine water use, improved the information base for the development of business as usual (BAU) scenarios, and assessed the costs of degradation. The results of the project provide input into the analysis of the cost-effectiveness and socio-economic impact of measures under the MSFD. This policy brief summarizes the main findings from the project, and makes recommendations for developing cost-effective and efficient Programmes of Measures (PoMs) to achieve Good Environmental Status by 2020.

Comparison of economic and social analysis (ESA) of the use of marine waters in Initial Assessments

Our comparative analysis⁵ evaluated the coherence of ESA methodologies in the four countries, and identified barriers to and opportunities for harmonization. The analysis looked at



Swan with oil on its feathers off the coast of Estonia

Key findings

- Cooperation between Estonia, Finland, Latvia, and Sweden on the central and north-eastern sub-regions of the Baltic Sea has laid the groundwork for increased harmonization under the EU Marine Strategy Framework Directive (MSFD). One of the requirements of the MSFD is to carry out Economic and Social Analysis (ESA) of the new measures developed under the MSFD to achieve Good Environmental Status of marine waters by 2020. From the perspective of international coordination, it is important to build a common understanding of general principles for conducting the ESA and to exchange experience and information on the role of ESA, the range of potential approaches to it and its practical applications.
- In practice, environmental and economic information in countries will largely determine the approaches for ESA of new measures. Given that there are gaps in information and data, it will be possible only to do limited quantitative analysis of new measures for the first Programmes of Measures. Thus, in order to provide information to help prioritise and select new measures, the approaches will combine qualitative assessments, including expert judgements, with quantitative evidence in a methodologically structured manner.
- Valuation studies were conducted in Estonia¹ and Latvia² in order to fill the knowledge gap on the value of the ecosystem services that marine waters provide, and to contribute information for a cost-benefit analysis for a Programme of Measures within MSFD. These valuation studies assessed peoples’ attitudes towards the environmental quality of marine waters. The results reveal that Estonian population may be willing to pay more than EUR 11 million extra annually to reach Good Environmental Status (GES) related to oil-spill risk, water quality, and non-indigenous species as compared to a business-as-usual (BAU) scenario, while Latvians might be willing to pay up to EUR 3.8 million per year more to reach GES in relation to marine biodiversity, water quality, and preventing introduction of invasive species. The willingness to pay can be considered recognition of the value of benefits gained from improvements in the marine waters. The results of these studies show potential welfare benefits for meeting the GES policy targets set by the MSFD by 2020 in both countries.
- A study of baseline policies³ evaluated more than 60 international policy frameworks and their associated measures, addressing key pressures on the Baltic Sea environment. Results showed that although these policy frameworks are well known, implementation status differs among them. Improved implementation of the existing policies may reduce the need for new measures to be included into the Programme of Measures.

approaches that countries selected (i.e. ecosystem services, marine accounts, or both); the economic sectors and/or ecosystem services analysed; the economic and social indicators used; the methods applied to estimate the benefits of the use of marine waters; and the methods used to identify the links between economic activities, ecosystem services and pressures.

We found that the structure, content and depth of the ESA reports varied, although all reports covered some basic issues. The main difference was the approach that the countries took: Latvia and Sweden took an ecosystem services approach, while Estonia and Finland took a marine accounts approach. We recommend that countries utilizing the same analytical approaches should further harmonize their methodologies, in terms of identifying significant pressures, indicators and economic activities, and developing the links between them. We also found that in using the ecosystem services approach, there is a need to harmonize the classification of ecosystem goods and services (e.g. CICES, MEA – see Garpe, et al. 2008). We also recommend that neighbouring countries coordinate the development of their national environmental accounting systems.

Business-as-usual scenario (BAU)

A comparison of results from the Initial Assessments done by project countries indicated considerable differences in national approaches for the development of the BAU and its results.⁶ The comparative analysis and discussions among specialists from the countries suggested that coherence could be improved by applying common general principles to development of the BAU.



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The Round Goby - an aggressive invasive species found in the Baltic Sea

The role of the BAU is to assess how the marine environment might evolve over time. The main elements to be considered in its development are 1) trends in marine uses and 2) implementation of existing and forthcoming policies that impact on the marine environment (except the MSFD). Moreover, it is important to assess the links between activities, pressures, impacts, and state (characterized by GES descriptors and indicators) in order to identify expected changes in the state due to change in marine uses and the implementation of existing policies.

The GES-REG recommendations also address issues related to applying common principles to the BAU development.⁷ These include drivers of changes in marine uses and pressures that could commonly be taken into account in the analysis for BAU, as well as principles for identifying significant pressures and marine uses for which future developments are analysed. We recommend that future development is analysed for all pressures (and their drivers) that add to the risk of failing to reach GES, as well as the pressures that are expected to increase considerably in the future.

Cost of degradation of the marine environment

We compared ESAs of the Cost of Degradation (COD) of the marine environment for the Initial Assessments in Sweden, Finland, Latvia and Estonia.⁸ The comparative study identified several important issues for harmonizing national approaches and assessments. For example, in the COD analyses the link between costs and MFSO descriptors should be more clearly specified so as to ensure the usefulness of the COD to policy-making, or, in this case, the development of the Programme of Measures to meet GES by 2020. The comparison also identified gaps in the COD analyses. For example, an ecosystem services approach to ESA analysis would support the MSFD objective of developing an ecosystem-based approach to governance of marine waters. However, there is a lack of data on water use and the value of ecosystem services in all of the participating countries. For example, Statistics Estonia's public data is not specific enough for an analysis based on the ecosystem services approach.

Studies on valuing the benefits of improving the marine environment

We conducted two studies in Estonia¹ and Latvia² in order to provide better information on the welfare benefits to society from improving the state of the marine environment. The aim was for this improved information to be used as input for the cost-benefit analysis to be conducted for the Programme of Measures. The studies assessed peoples' attitudes to the environmental quality of their respective marine waters, as well as their preferences for policy options to improve quality. The studies also enabled a financial estimate of peoples' willingness to pay (WTP) for various improvements in the environmental quality of the Baltic Sea.

The results for the both studies show that most respondents considered issues of environmental quality to be problematic. Furthermore, the results reveal that the Estonian population might be willing to pay up to EUR 11.2 million more annually to reach GES targets on the risk of oil spills, water quality, and non-indigenous species, as compared to the BAU scenario. The estimated WTP of Latvians for achieving GES above the BAU in relation to marine biodiversity, water quality, and preventing the introduction of invasive species is up to EUR 3.8 million per year. In the Estonian study, for all of the valued problems the WTP for GES is larger than for BAU. However, the increase in WTP was most substantial for risk of oil spills, and lowest with non-indigenous species. In the Latvian study, the WTP for achieving GES exceeds WTP for the BAU for two of the valued problems – improving water quality for recreation and preventing the establishment of new invasive species.

The willingness to pay can be considered the value of benefits gained from these improvements, or, put another way, a cost in terms of benefits foregone due to degradation. The results of these studies support the need to fulfil the policy targets set by the MSFD by 2020 in both countries, because people support policy change to improve the environmental situation and to avoid the loss of benefits to society. Because the Latvian and Estonian valuation studies were to some extent coordinated, the results were to some extent comparable in terms of issues of water quality and invasive and non-indigenous species, both of which are cross-border issues affecting ecosystem services. Comparability of results supports better design of policy measures to achieve GES, in terms of accounting for both the affordability of the measures and the value of the sea to society.

Analysis of policy measures for the MSFD programme of measures

EU Member States must develop their Programmes of Measures for reaching GES by the end of 2015. The MSFD requires the PoMs to include existing and forthcoming policies and measures that have an impact on the marine environment, and assess their potential contribution to achieving GES. These policies are considered as part of the BAU scenario. Where a gap is expected between the BAU scenario and GES, additional measures need to be included in the PoMs to close the gap.

Discussions among specialists from the project countries revealed a need for recommendations on how to coordinate the principles that are used to select the policies to be included in the BAU. To meet this need, we conducted a study³ evaluating more than 60 existing and forthcoming international policy frameworks, and their measures that address key pressures on the Baltic Sea environment. The resulting database of policy frameworks and measures, as well as the list of international policy frameworks, are suggested for the analysis as part of the BAU aim to support countries in developing the PoMs.

This study showed that although the policy frameworks are common to many countries, their characteristics, in terms of legal status, the extent to which measures have been implemented, and obstacles to implementation, differ between them. These characteristics determine whether relevant actors are sufficiently aware of the measures, and whether there is sufficient certainty around their implementation that their effect could be accounted for in BAU. The study suggests that there is a need to analyse the status of the measures in terms of na-

tional implementation. As part of the study, we developed and demonstrated an approach for such an analysis, using Latvia as an example. Furthermore, the assessment of uncertainty about measures, and/or their implementation, can also support analysis of how effectively existing policies are being implemented, and reveal significant gaps in implementation. Improving the implementation of the existing policies would bring further improvements in the marine environment, and it would also reduce the policy gap that the new measures are intended to close.

The MSFD prescribes specific analysis for potential new measures to underpin their inclusion in the PoMs. The analyses should cover the technical feasibility assessment, the cost-effectiveness analysis and Impact Assessment, as well as the cost-benefit analysis. The ESA of new measures will overall require an assessment of their costs, cost-effectiveness, benefits and other relevant socio-economic impacts. In practice, the ESA will depend on these various assessments in the national policy and decision-making process for developing the PoMs (e.g. based on effectiveness and efficiency criteria by which the new measures are prioritized and selected). Thus, the practical ESA approaches may differ among EU member countries. From the perspective of international coordination it is important to build a common understanding of general principles for conducting the required ESA, to exchange experience and information on the role of ESA and the range of approaches to it, as well as examples of practical applications.

In practice the ESA approaches will largely be determined by available environmental information and assessments (e.g. on environmental targets or the environmental effectiveness of

potential new measures). It is expected that due to gaps in this information, only limited quantitative ESA of new measures will be possible for the first PoMs. However, both the cost-effectiveness analysis and the cost-benefit analysis do not necessarily have to be fully quantified (or monetized) to provide relevant information for decision-making. Recommendations developed as part of the GES-REG project suggest that literature, expert knowledge, and consultations with stakeholders are important sources of information and can serve as a basis for the assessments. Furthermore, it is recommended that the ESA approach should combine qualitative assessments, including those based on expert judgement, with available quantitative evidence in a methodologically structured manner.⁹

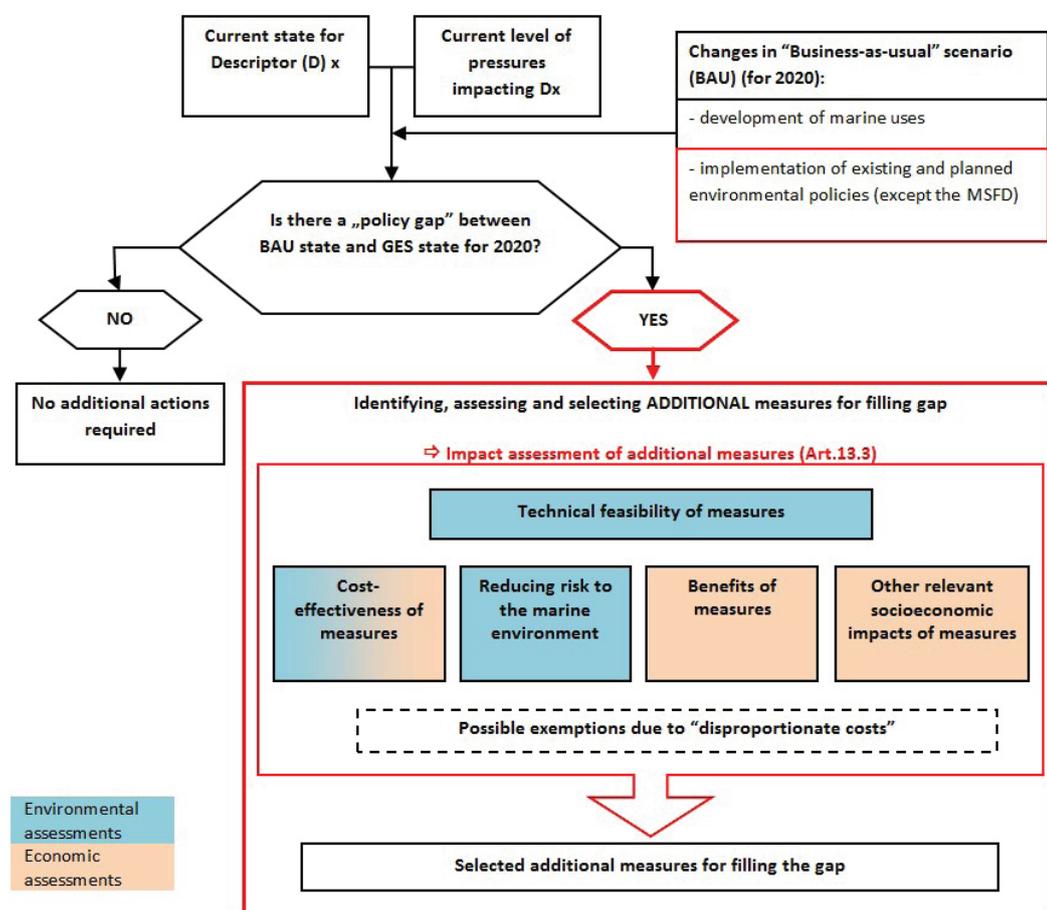


Figure 1: Overall analytical process for assessing and selecting measures for the MSFD program of measures

(Source: K. Pakalniete, GES-REG project.)

Policy considerations

- The development phase of the national Programmes of Measures (through 2015) should include further cross-border coordination among national authorities on the measures and their effectiveness. There should be continual coordination on cross-border issues through the upcoming rounds of Initial Assessments (the next one is due in 2018).
- Countries using the same analytical approaches for Economic and Social Analyses should further agree on the methodological principles behind the choice of priority issues (e.g. pressures, indicators, uses) and developing the links between them. It is also necessary to harmonize ecosystem service classifications to build a common understanding among responsible authorities of neighbouring countries, and ensure their systematic use.
- When selecting the baseline policies for national business-as-usual scenarios, it is important to evaluate the national implementation status of existing and forthcoming policies and their measures, as well as their expected effects within the given timeframe (up to 2020).
- In order to support the kind of overall ecosystem-based approach to the management of the marine waters that the MSFD promotes, an ecosystem services approach is also recommended for the economic and social analysis (ESA) of the cost of degradation of marine environment. This approach allows the costs of environmental degradation caused by human actions to be calculated when MSFD is not implemented. This can then be compared to the Good Environmental Status scenario. It is, however, acknowledged that this would be resource and time intensive for those countries that lack baseline studies.
- Valuation studies should be carried out jointly by countries bordering the Baltic Sea in order to allow results that can be compared. This supports better design of policy measures to achieve Good Environmental Status, in terms of accounting for both the affordability of the measures and the societal value of the sea.

Endnotes

- 1 Tuhkanen, H., Urbel-Piirsalu, E., Nõmmann, S., Karlõševa, A. and Nõmmann, T. (2013). Valuing benefits of reaching MSFD targets by applying choice experiment. Estonian study report. Report from GES-REG project. SEI Tallinn.
- 2 Pakalniete K. et.al (2013). Valuing benefits of reaching MSFD targets by applying "Choice Experiment" method. Latvian study Report. Report of the GES-REG project. AKTiivs Ltd.
- 3 Pakalniete K., Muraško A. (2013). Harmonising the 'business-as-usual scenario' development of the MSFD: A study on the 'baseline policies'. A study report. Report of the GES-REG project. AKTiivs Ltd.
- 4 Directive 2008/56/EC of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) within the Community [2008] OJL164/19.
- 5 Nõmmann, S., Nõmmann, T., Karlõševa, A., and Urbel-Piirsalu, E. (2013) The Comparison of the approaches of the Economic and Social Analyses of the Use of Marine Waters in the National MSFD Initial Assessment Reports: Sweden, Finland, Latvia and Estonia. Study Report from GES-REG project. SEI Tallinn.
- 6 Pakalniete K., Muraško A. (2012). Comparative analysis of the BAU development results in the national "Initial Assessments" of the project's countries. Study Report. Report of the GES-REG project. AKTiivs Ltd.
- 7 Pakalniete K. (2013). Harmonising the BAU development for the MSFD in the project's countries: Recommendations report. Report of the GES-REG project. AKTiivs Ltd.
- 8 Urbel-Piirsalu, E. and Nurmik, M. (2013). The Comparison of the Economic and Social Analyses of the Cost of Degradation in the National MSFD Initial Assessment Reports: Sweden, Finland, Latvia and Estonia. Study Report from GES-REG project. Estonian Ministry of Environment and SEI Tallinn.
- 9 More information on recommended principles and practical approaches for the ESA of new measures, as well as illustrations from practice can be found in the report Pakalniete K. (2013) Harmonising the Economic and Social Analysis for the MSFD Program of measures in the project's countries. Recommendations report. Report of the GES-REG project. AKTiivs Ltd.

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