



## Baltic Marine Environment Protection Commission

HELCOM expert network on economic and social analyses  
meeting

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### Guidance for providing available cost data on proposed/new BSAP measures

#### Background

As part of the proposal of new measures to the BSAP update and sufficiency of measures analysis, any available cost or effectiveness data on the proposed measure is being requested. This document contains the draft guidance for this process.

#### Action requested

The meeting is invited to

- take note of the information as background for the discussion in the meeting

## Guidance for providing available cost data on proposed/new BSAP measures

### 1. Background and general guidelines for providing cost data for new measures

This document provides guidance for reporting *cost* data on proposed/new BSAP measures. This data can be used to analyze the cost effectiveness of new measures to achieve good environmental state in Baltic Sea. The cost-effectiveness analysis for new measures builds on an assessment of sufficiency of existing measures to reach good environmental state in Baltic Sea. If the existing measures are not sufficient to close the gap between the current and the good state, then new measures are required, and their cost-effectiveness needs to be analyzed.

In principle, measure costs and effects are separate inputs to the cost-effectiveness analysis, but we are also interested in existing models and their results that take both costs and effects into account (for example the [Displace model](#)). In general we are only interested in available cost data that can be applied to analyze cost effectiveness, and therefore we ask you not to start estimating any new cost values.

If one wishes to take part in the cost estimation, please consult us to ensure that the methodology applied for cost estimation is compatible with our approach.

Provided cost data can include anything from the description of different agents and institutions that are affected by the measure implementation to the actual measure cost estimates. In addition to cost estimates for new measures we are interested in the available cost estimates that have been used in the previous analyses for MSFD, BSAP, WFD and other relevant policies. Any references to such documents are appreciated.

The reported cost data can be used in the cost effectiveness analysis as such or as an input for cost calculation. The cost data used in the analysis may further be validated by an expert evaluation. To harmonize the analysis among measures we will choose what costs related to measures are included in the analysis. Therefore we ask you to provide as disaggregated cost data as possible for each measure. Further instructions for disaggregated cost reporting are given in section 3.

### 2. Short introduction to different types of costs

The costs of measures can be defined from different perspectives. From the perspective of a whole economy, the **economic costs** are assessed based on the impact on total welfare of a society, whereas for an individual agent (e.g. firm), an institution (e.g. body responsible for implementing a measure) or a sector (e.g. agriculture) the costs do not include the economic effects encountered by others.

**Opportunity costs** refer to costs of foregone opportunities. For example a measure that restricts fishing in a certain area can decrease the profitability of fishing sector, and this economic loss is an opportunity cost resulting from such measure. Fishing restrictions can also impose **out of the pocket (financial/accounting) costs** for the institution that is implementing the measure. These include **direct costs** like labor costs of monitoring and fish stock assessment, and **indirect costs** such as overhead costs of the whole institution or depreciation costs of general multipurpose monitoring equipment. The distinction between direct and indirect costs is that direct costs can be traced to the measure, whereas indirect costs are more difficult to allocate to specific cost objects. The costs for the same types of measures are often similar. For example the common cost types related to marine protected areas are listed in Table 1 (Naidoo et al. 2006).

**Table 1.** Example cost types and descriptions for marine protected areas.

Cost type	Description
Direct/Indirect, Capital cost	Acquirement of property rights for protected areas
Direct/Indirect	Management of a conservation program.
Transaction Direct/indirect	Negotiating an economic exchange of property rights
Opportunity cost	Damages to economic activities arising from conservation program
Opportunity cost	Foregone commercial opportunities

**Capital costs** are fixed one-off expenses incurred by the purchase of some tangible or intangible goods that can be used over a longer time period. For example a capital cost can be the cost to purchase a boat for fishing monitoring. **Discount rate** is needed in order to estimate the net present value of costs resulting from a measure extending over multiple years (or some other longer time period). It is a rate that is used to discount future costs to present value. Especially for measures whose implementation require one-off capital costs, or if the measure costs are unequally distributed over the assessment period (unequal annual costs) the discount rate can have a significant impact on the net present cost value.

**Taxes, subsidies and interest on borrowing** are direct transfers between agents and institutions of an economy and do not therefore constitute an economic cost. However, we are interested in all economic incentives used for measure implementation and thus they should also be reported.

### 3. Possible formats for providing available information on measure costs

Table 2 can be used as a format for reporting measure costs for new measures. An example of using the format of Table 2 on a sub-measure of a measure is provided in Table 3. The same format can also be used to provide available data on existing measures based on for example available cost-effectiveness analyses. However, this can be time consuming and thus reports on cost data for existing measures can also be reported as references and their short summaries.

The steps to estimate costs related to a certain measure using Table 2 include:

**A. Definition of what is included in a measure.** Can a measure be divided into more detailed sub-measures? Costs can be broken down to separate tables by sub-measure.

**B. Description:** Identification of agents affected and institutes involved by the implementation of a measure.

**C. Description:** Identification of agent activities (preferably from MSFD activity list) affected and institutional involvement required by a measure

**D. Cost type:** Determination of cost types related to activities and involvement.

What kind of involvement is required? How is the activity of an agent affected? Are the costs direct, indirect, opportunity costs, capital costs, or costs of some other type?

**E. References:** Assessment of data sources that can be used to estimate the costs. What kind of data there is available? Are there available cost estimates? Are there other data available that can be used to estimate these cost estimates?

**F. Estimate:** What are the estimated costs? If there is a cost estimate available. Provide it here.

Also provide the currency and time unit (per year or other) and possible uncertainty of the cost estimate.

**G. Time aspects:** Definition of temporal scope of the costs. Are the costs annual or are they non-recurring such as capital costs? What is the life-time of the cost estimate/measure? If existing measure is reported, provide also the year of estimation.

**H. Notes and methodology:** Description of methods used to estimate the costs, if an estimate for costs is provided.

What was the method use to estimate the cost? What is included in the cost estimate? What was the discount rate used for estimation? Is the cost estimate national, regional or for sub-basin or some other geographical unit?

**I.** Add all available data on taxes, subsidies and other economic incentives that may be used for the implementation of the measure at the end of the table.

**It is important to identify different costs that can be associated to a measure, even if their estimated values are not available!**

**Table 2.** Format on reporting the measure costs

Cost type	Description	Estimate	Time aspects	References	Notes and Methodology

The example presented in Table 3 shows how the costs have been estimated for a (sub) measure included in the Swedish MSFD POM: Introducing new fishing regulation to protect threatened coast spawning stocks inside trawling boundaries (measure): a ban on cod fishing inside the trawling boundary in Skagerrak and Kattegat (sub-measure) for a 4-year period (Vretborn, 2016). In this example the data sources vary across the costs, but for some measures there may already exist cost evaluation reports that can be used as uniform sources (for an example see Bacher and Albrecht (2013) on Evaluating the costs arising from new maritime environmental regulations).

For available cost estimates that have been used in the previous analyses for MSFD, BSAP, WFD and other relevant existing policies, the references for reports and other documents can be provided simply by writing a short summary of the report/document and providing a reference/link to it. We are also interested in reports that have been written in other languages than English.

**Table 3.** Costs of Swedish POM sub-measure 4: a ban on cod fishing inside the trawling boundary in Skagerrak and Kattegat for a 4-year period

Cost type	Description	Estimate	Time aspects	Reference	Notes and methodology
Opportunity cost	Decrease in commercial fishing	700 x 10 <sup>3</sup> SEK/year	Annual, for 2016-2020 (?) Estimated in 2016	The 2014 Annual Economic Report on the EU Fishing Fleet.	Decrease in value added of commercial fishing.
Opportunity cost	Decrease in recreational fishing	8 000 x 10 <sup>3</sup> SEK/year	Annual, for 2016-2020 Estimated in 2016	SCB (2013). Fritidsfisket i Sverige 2013.	Decrease in consumer surplus from recreational fishing
Direct/indirect	Recreational fishing monitoring	4 800 x 10 <sup>3</sup> SEK/year (range: 3200-6400 x 10 <sup>3</sup> SEK/year)	Annual, for 2016-2020 Estimated in 2016	Interview survey on monitoring of recreational fishing	
Direct/Indirect	Commercial fishing monitoring	Not available			
Capital Direct/Indirect	New fishing regulation	350 x 10 <sup>3</sup> SEK/year	Annual, for 2016-2020 Estimated in 2016	Estimate based on previous experience	
Direct/Indirect	Analyses of fish stocks	200 x 10 <sup>3</sup> SEK/year	Annual, for 2016-2020 Estimated in 2016	Estimate based on previous experience	

**References:**

Vretborn, M. (2016). Underlagsrapport till God Havsmiljö 2020, åtgärdsprogram för havsmiljön: konsekvensanalys. Havs- och vattenmyndigheten. Available at:

<https://www.havochvatten.se/download/18.45ea34fb151f3b238d8f2c91/1453119402382/underlagsrapport-godhavsmiljo-ekonomi.pdf>

Bachér, H., & Albrecht, P. (2013). Evaluating the costs arising from new maritime environmental regulations. *Trafi publications*, 24, 2013. Available at:

[https://arkisto.trafi.fi/filebank/a/1392997036/640155e8ece18c8cca5abcc18d8c9c31/14262-Trafi\\_Publications\\_24-2013\\_-\\_Evaluating\\_the\\_costs\\_arising\\_from\\_new\\_maritime\\_environmental\\_regulations.pdf](https://arkisto.trafi.fi/filebank/a/1392997036/640155e8ece18c8cca5abcc18d8c9c31/14262-Trafi_Publications_24-2013_-_Evaluating_the_costs_arising_from_new_maritime_environmental_regulations.pdf)

Naidoo, R., Balmford, A., Ferraro, P. J., Polasky, S., Ricketts, T. H., & Rouget, M. (2006). Integrating economic costs into conservation planning. *Trends in ecology & evolution*, 21(12), 681-687.