



Notes from the Kick-off Meeting of the ad hoc HELCOM Platform on sufficiency of measures (SOM Platform 1-2019)

28 February-1 March 2019, Helsinki, Finland

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Introduction

01. The Kick-off Meeting of the *ad hoc* HELCOM Platform on sufficiency of measures (SOM Platform 1-2019) was held on 28 February – 1 March 2019 at the HELCOM Secretariat premises in Helsinki, Finland. All Contracting Parties as well as Observers BFFE, CCB and WWF took part in the meeting. The list of participants is contained in **Annex 1**.

0.2 Ms. Monika Stankiewicz, HELCOM Executive Secretary, welcomed the participants to the HELCOM SOM Platform that will support the update of the Baltic Sea Action Plan by analysing the sufficiency of measures to reach good environmental status in the Baltic Sea. She expressed her appreciation to the Chairs and Vice-Chairs of the Working Groups and expert groups for their attendance and noted that the Meeting represents a good blend of expertise comprising both natural scientists, environmental economists and managers. Topics to be covered by the SOM Platform are input of hazardous substances, marine litter, underwater sound, non-indigenous species, and biodiversity aspects that are not covered by Marine Protected Areas (MPAs). The aim of the kick-off meeting of the SOM Platform was in particular to:

- consider and further develop a proposal for a framework to carry out the analyses of sufficiency of measures,
- identify the need for data and information to support the analyses and propose how to collect the information,
- propose how to organize the implementation of analyses for the respective topics to be covered by the Platform,
- identify topics for development of syntheses to support the analyses and the identification of potential new HELCOM actions and come up with the format of syntheses,
- prepare a time-plan for further work in accordance with the work plan for the BSAP update.

1 Adoption of the Agenda and Election of Chair

Documents: Background and Provisional Agenda

1.1 The Meeting adopted the agenda as contained in document Background and Provisional Annotated Agenda.

1.2 The Meeting elected Mr. Urmas Lips, Estonia, as Chair and Ms. Soile Oinonen, Finland, as Vice-Chair of SOM Platform.

2 Introduction to the BSAP update, tasks of the SOM Platform

Documents: Document 1, Document 2

2.1 The Meeting took note of the Work plan for the update of the Baltic Sea Action Plan (document 1, presentation 1) and the Terms of reference for the HELCOM SOM Platform (document 2, presentation 1).

2.2 The Meeting noted that the analysis of sufficiency of measures is a key activity of the BSAP update with the aim to evaluate how far already agreed measures in the region can contribute to achieving the good environmental status of the Baltic Sea, and, if found not sufficient, such analyses can support the

selection of new HELCOM actions to reach a good status. The analyses will be carried out by HELCOM SOM Platform and the HELCOM co-ordinated HELCOM ACTION project which is co-financed by the EU.

2.3 The Meeting noted that while the HELCOM SOM Platform and the HELCOM ACTION project are two separate work strands, they are set up to provide complementary and coordinated input to the analyses of sufficiency of measures to support the BSAP update, and they will work based on a common methodological framework. The Meeting further noted that SOM Platform has a leading role in overseeing the analysis of joint effect of measures and to prepare for HELCOM Working Group meetings and thematic HELCOM workshops that will be convened during the BSAP update process. The Meeting took note that joint meetings of the SOM Platform and the HELCOM ACTION project will be arranged to ensure joint planning and implementation of methods, to exchange information on the project activities and help the coordination.

3 Proposed approach for carrying out the analyses of sufficiency of measures

Documents: Document 3

3.1 The Meeting took note of the proposal for the SOM approach (document 3, presentations 1 and 2) which has been developed by the HELCOM ACTION project based on the previous HELCOM SPICE project and deliberations by the HELCOM ESA network. The Meeting noted that the approach is based on establishing a Business-as-usual-scenario (BAU) to estimate the state of the environment if all existing measures that can contribute to improve the Baltic Sea are implemented, taking into account the projected development of human activities over the time-frame of the BAU.

3.2 The Meeting discussed that it is unlikely that the BAU state is the same as good environmental status (GES), but that for some topics this could be the case. The Meeting furthermore noted that while a potential gap between the BAU state and GES may be caused by lack of implementation of existing agreements, the aim of the SOM analyses is to identify a potential gap in policy where the updated BSAP can contribute to reaching GES in the Baltic Sea by taking new actions.

3.3 The Meeting clarified that the assumption in the analyses will be that all decided measures (implemented, partially implemented and planned to be implemented) are implemented in the time frame of the BAU, however noting that information of level of implementation is important and that such information will be available for HELCOM actions from the BSAP, Ministerial Declarations, and from HELCOM Recommendations that infer direct measures to reduce pressure to the Baltic Sea or protect its biodiversity.

3.4 The Meeting discussed how time lags are considered in the SOM approach. The Meeting clarified that the term “time-lag” in relation to measures refers to the time-lag in the effect of measures. The time-lag can furthermore take place in two phases; a time-lag in the reduction of a pressure, and a time-lag for recovery of the ecosystem after a reduction in pressure has taken place. Time-lags in the effect of measures on the pressure are taken into account in the BAU scenario. Time lags in the recovery of the ecosystem regarding eutrophication and selected hazardous substances and biodiversity aspects are considered in the ACTION project as part of work package 5.

3.5 The Meeting underlined the importance of keeping a good documentation of assumptions made during the development of the BAU scenario and to make clear the uncertainties in the different steps of the analyses as well as in the final results.

3.6 The Meeting noted that setting of pressure targets is a separate process in HELCOM, but that the SOM analyses can likely contribute to the setting of targets.

3.7 The Meeting noted that with regard to reduction of input of nutrients there is no need to go into details in measures under the Water Framework Directive (WFD) since WFD measures, including supplementary measures, will be assumed to be fully implemented and that it is assumed that there is information on the subsequent load reduction. WFD measures and their effect on nutrient inputs can thus be treated as a whole in the analysis. Gaps between WFD targets and HELCOM reduction targets will be

estimated in the ACTION project work package 4 on eutrophication and form the basis for identifying the potential need for additional measures to reach the HELCOM targets.

3.8 The Meeting noted that it will be difficult to assess the cumulative effects of measures to reduce contaminants under the WFD. This would require input from national experts that can provide qualitative estimations on the effect of measures.

3.9 The Meeting recognized that the SOM-process highly depends on quantitative information which are not always available, but through the BSAP update process, knowledge gaps will be identified and that those should be well documented so that they can be tackled, in HELCOM or elsewhere, thereby ensuring that the knowledge base for conducting analyses of sufficiency of measures will be better in the future.

Time frame for the SOM analysis

3.10 The Meeting discussed the time frame of the analysis (end year of BAU) and clarified that the end year of BAU does not affect the agreed target years of implementing existing measures or the target year of the updated BSAP.

3.11 The Meeting took note that the ACTION project proposed 2033 as the end year of BAU to link with the time frame of the Marine Strategy Framework Directive (MSFD) cycle.

3.12 The Meeting pointed out that end year 2030 would concur with the target year for the majority of the UN Sustainable Development Goals (SDGs) and 2033 with the EU MSFD cycle. However, the Meeting also recalled that there are other target years for different topics under these policies. The Meeting discussed that while the uncertainty of the analysis increases further along the time there is not a large difference in uncertainty for the end year 2030 and 2033.

3.13 The Meeting suggested that 2030 or 2033 would be the most suitable option for the BAU time frame.

Geographical scale of the analysis

3.14 The Meeting discussed the geographic scale of the analyses and noted that the analyses need to ultimately yield results at the Baltic Sea scale, and further noted, however, that it would be useful, depending on the topic, to start the analyses at finer scales (e.g. sub-basins level) to support national purposes. The relevance of using a higher resolution (following the HELCOM assessment levels) will need to be considered per topic.

3.15 The Meeting noted that some existing HELCOM actions are related only to certain areas of the Baltic Sea, e.g. the protection of species that are only present in certain sub-basins.

Measures

3.16 The Meeting discussed which measures are to be included in BAU and suggested to include all decided national measures (implemented, ongoing and planned).

3.17 The Meeting took note that there will be two alternative analyses on the HELCOM actions (BSAP, Ministerial Declarations, recommendations): one analysis will take into account only measures that have been fully implemented, based on available reporting by countries, and the other analysis including also all planned measures with the assumption that they will be implemented and have full effect on pressures in the time frame of the BAU .

3.18 The Meeting took note that measures that have been implemented a long time ago and are assessed not to have any time lag in their effect on pressures will be excluded from the analysis since their effect is already visible in the current state. How to define this set of measures needs further clarification in the SOM process.

3.19 The Meeting took note that measures will be grouped by pressures and activities.

3.20 The Meeting suggested to include in the analysis all types of measures except those related to promotion of research and some administrative measures (i.e. monitoring, coordination, developing

indicators, setting targets, developing information systems/tools etc.), which have no direct effect on environmental status.

3.21 The Meeting discussed how to deal with time lags of the effect of measures on the state of the sea. The Meeting suggested to identify measure-pressure and pressure-state combinations with time lags and assume that the effect of measures on pressures is realized fully by the BAU end year. Time lags in the response of the ecosystem are not part of the BAU scenario but will be considered when interpreting the results.

3.22 The Meeting took note that the analysis of the effect of measures will consider pressure reduction for each measure group. The Meeting also took note that literature, studies, project and model outputs will be utilized for the analysis. The Meeting further took note that expert evaluation will be needed to establish or validate the effect of measures on pressures and that this will take place in fall 2019.

3.23 The Meeting took note of the need to identify and estimate joint effects of measures on pressures and pressures on state to avoid over-optimistic assessment of effects of measures.

Activity-pressure links

3.24 The Meeting discussed the links between activities and pressures.

3.25 The Meeting took note that existing studies that link activities and pressures can be used for the purpose of the BSAP update, e.g. the activity-pressure linkage framework used in HOLAS II, while the prioritization of activities and pressures having a major impact on the Baltic Sea will need expert-based input. An estimation of relative contribution of activities to pressures is also needed.

State components and descriptors

3.26 The Meeting suggested that the same major pressure themes and biodiversity components as in the State of the Baltic Sea report (HOLAS II) as well as in other HELCOM agreements should be used for the BAU.

Pressure-state links

3.27 The Meeting discussed how to estimate the impact of reduced pressures on the state. The primary approach would be to assess state improvement (%) associated with each level of pressure reduction (%). The Meeting took note that when the GES threshold is known this will reveal how much the pressure needs to be reduced to reach GES. The Meeting pointed out that expert evaluation will be needed to establish or validate many pressures-state linkages.

3.28 The Meeting discussed and recognized the challenge to cover those topics in the SOM analysis for which threshold values for GES or pressure targets or both have not been established so far. The Meeting noted that the methodology for BAU would need to be flexible and that analysis should adapt to the level of available information.

3.29 The Meeting recognized that for such cases BAU can still be carried out, including an analysis of effectiveness of existing measures, and thus make it possible to compare reduction in pressures with the current situation for chosen parameters, e.g. amount of litter on beaches. The Meeting agreed that this could be a starting point for considering and proposing pressure targets for SOM analysis by the SOM platform. The Meeting also proposed a tiered approach or to establish an interval inside which the GES will be reached with high probability.

Projected development of activities and pressures

3.30 The Meeting discussed the projection of the development of activities and pressures which is needed as one input component to the BAU.

3.31 The Meeting took note that BAU will be assessed using two approaches to development projections: 1) no change, and 2) most likely change in main activities and pressures based on existing data.

Arrangement of contributions to the SOM analyses

3.32 The Meeting took note that the collection of required data and information to the BAU will under the SOM Platform be carried out by topical teams. Such teams are planned to consist of a Lead country, co-lead countries, ESA expertise, and making best use of existing HELCOM expertise such as HELCOM expert groups and networks (see document [Background and Provisional Annotated Agenda](#), SOM Platform 1-2019). The SOM analyses, i.e. to run the conceptual model with input data and information collected by the topical teams, will be carried out by SYKE, Finland, in their role as lead partner on this activity in the HELCOM ACTION project and as participants to the SOM Platform.

3.33 The Meeting took note that the role of lead countries is to coordinate, plan for and contribute to the work in the respective topical team, e.g. setting up intersessional activities and meetings, and propose in what steps to engage expert groups. Planning is to take place in communication with the Secretariat e.g. to check that the time-table is consistent with the needs for the SOM analyses and BSAP the update. Secretariat can also support with presentation of tasks to expert groups and networks to be engaged in the work.

3.34 The Meeting split into groups to discuss how to arrange the work for topical teams for hazardous substances, non-indigenous species, marine litter, underwater sound, and biodiversity. The groups also considered if there is a need to group the analyses for the respective topic as well as the relevant geographic scale for analyses. An overview of proposals is presented in **Annex 2, Table 1**. The groups furthermore discussed the availability of data required for the SOM analyses i.e.; pressure-activity linkages, relative contribution of activities to pressures, pressure-state response, effectiveness of measures, and time-lags in response of measures. The outcome of the respective discussion group is included in **Annex 2**. Participants to the discussion groups does not necessarily reflect the anticipated composition of topical teams.

3.35 The outcome of groups was discussed in plenum with the following comments.

Hazardous substances

3.36 The Meeting recalled that Denmark has offered to co-lead the work on hazardous substances and welcomed that Sweden and Finland can support the work.

3.37 The Meeting took note that several BONUS projects could provide relevant information for the work and that HELCOM is cooperating with EU Strategy for the Baltic Sea Region Policy Area Hazards to gain input from the several projects relating to hazardous substances.

Non-indigenous species

3.38 The Meeting took note that there is not yet a lead country for non-indigenous species.

3.39 The Meeting took note of the suggestion to include also invasive species on land into the analysis due to their effect on biodiversity, e.g. the impact of raccoon dogs on bird populations.

3.40 The Meeting also took note that additional vectors to introduce invasive species could be e.g. inland waters and release of live animals from restaurants.

Marine litter

3.41 The Meeting welcomed the offer by Estonia to lead the work on marine litter. Co-leads to support the work are welcome.

3.42 The Meeting noted that the group discussion dealt with the top litter items, and the other option is in reference to the type of material.

3.43 The Meeting pointed out that there are currently no threshold values determined for marine litter indicators. The Meeting took note that one possibility is to initiate the work by analysing how much the amount of marine litter can be reduced with the existing measures and decide on a target at a later stage.

3.44 The Meeting highlighted the need to take into account the Regional Action Plan on Marine Litter in the work. The Meeting however pointed out that the SOM analysis is focused on measures that have a direct effect on reducing pressures and thus actions to increase knowledge, which are also included in the RAP ML, are not considered.

3.45 The Meeting took note that there is a lot of information compiled through the work on the Regional Action Plan on Marine Litter, such as for abandoned, lost and otherwise discarded fishing gear, on waste management and on the need to update HELCOM Recommendations on waste management to address microplastics. This information can be used to identify whether there is a need for additional measures addressing specific sources of litter.

3.46 The Meeting discussed that regarding measures to reduce marine litter, there are many new measures that have been put in place recently (on global, European and national level) and it will be useful and quite timely to find out the effect of those measures and implementation gap by the time of the BAU.

3.47 The Meeting took note of the position by CCB on the need to set a tangible target for marine litter in the updated BSAP and the view that also cargo generated waste from shipping could be a topic for consideration.

Underwater sound

3.48 The Meeting recalled the offer by Denmark to lead the work on underwater sound.

3.49 The Meeting recalled that HELCOM Ministerial Meeting 2018 agreed to establish an action plan on underwater sound by 2021.

3.50 The Meeting pointed out that expertise of HELCOM EG MAMA could support the evaluation of pressure-state relationships, i.e. the effect of noise on species.

3.51 The Meeting took note of the suggestion to investigate the noise levels in MPAs.

Biodiversity

3.52 The Meeting took note that there is yet no lead country for biodiversity or any aspects thereof.

3.53 The Meeting took note of the proposal to consider an alternative approach for assessing the pressure-state relationship with regards to response of biodiversity components (**Annex 2**, Biodiversity). The Meeting agreed that the proposed approach should be further explored.

3.54 The Meeting took note of the comment by CCB that impacts from fisheries should also be addressed in the analyses. The Meeting noted that the HELCOM ACTION project will specifically address the impact of fisheries on seabed habitats and that food web interactions can potentially also be analysed in the ACTION project.

3.55 The Meeting noted that SYKE, leading the work on SOM analyses in the ACTION project, supported in general the idea that the pressure-state relationship for pelagic habitats could be excluded from the analyses with the assumption that eutrophication is the major pressure on pelagic habitats and that pelagic habitats will accordingly reach good status when pressure targets for input of nutrients have been met, bearing in mind recovery time for the ecosystem. For benthic habitats, however, the pressure-state relationships have to be established for all relevant pressures since benthic habitats are significantly affected by additional pressures than eutrophication. HELCOM work on the pre-core indicator “Cumulative impacts on benthic biotopes” will be considered in the analyses.

3.56 The Meeting concluded that in particular those elements related to species and habitats which already have been used in the HOLAS II process should be used.

3.57 The Meeting proposed to make also use of HELCOM red lists of species and biotopes/habitats/biotope complexes, respectively, in order to evaluate pressures and human activities which affect threatened species and biotopes.

3.58 The Meeting was of the view that restocking of fish for purpose to compensate for e.g. hydropower dams are not to be considered as part of measures to improve the state of fish species in the Baltic Sea region.

3.59 The Meeting took note of the position by WWF that biodiversity should be highlighted more strongly in the updated BSAP, including to address the impact of bottom trawling on seabed habitats.

3.60 The Meeting took note of the comment by CCB on the importance of addressing the issue of genetic diversity in breeding and restocking activities and to address this in the updated BSAP.

Guidance for requests to topical teams

3.61 The Meeting took note that guidance for the collection of required data and information by the topical teams will be provided.

3.62 Regarding the prioritization of activities and pressures to be included in the analysis and relative contribution of activities to pressures, information on links between activities and pressures and initial prioritization will be provided by the Secretariat together with ACTION project in March 2019. The Meeting also took note that input from the HELCOM experts is expected in April 2019 on prioritization and relative contribution of activities to pressures based on structured questions.

3.63 Regarding the responses of indicators and state components to changes in pressure, initial proposals on links and guidance will be provided by the Secretariat together with ACTION project in April 2019. The Meeting also took note that the HELCOM experts are invited to provide literature, studies and project outputs by end of June 2019 on pressure-state linkages.

3.64 Regarding information on effects of measures on activities, pressures and state, a list of relevant policies, measures as well as guidance will be provided in May 2019. The Meeting also took note of the invitation for topical teams to provide literature, studies, project and model outputs by end of June 2019 on the effects of measures.

3.65 The Meeting further took note that complementary expert evaluations and validation of the input to the SOM analyses will take place in fall 2019, e.g. via Working Groups, Expert Groups and networks regular meetings or dedicated online meetings.

3.66 The Meeting took note that, concerning information on possible time lags in the effect of measures on environmental state, a list of relevant policies and measures and guidance will be provided by the Secretariat together with the ACTION project in May 2019 and that HELCOM experts are invited to provide information by end of June 2019 on whether there are time lags in the effect of measures on state.

4 Syntheses to support the planned analyses and ideas for topics

Documents: Document 4

4.1 The Meeting took note of the information on the preparation of syntheses on tentative new measures to support the BSAP update (document 4) and a proposal for a format as presented by the Secretariat to the Meeting. The Meeting noted that the purpose of such synopses is to summarize existing information in a format that can be used as background information for BSAP update workshops and Working Group meetings and also to provide data and information that can be used to incorporate the potential new measures as part of an updated SOM analyses.

4.2 The Meeting supported the proposed format for the synopses and amended it as included in **Annex 3**. The Meeting also suggested that more detailed guidance should be given on how to report information on the costs and cost-effectiveness for new measures and strengthening of existing measures. This guidance will be developed by the HELCOM ACTION project. SOM Platform, topical teams and HELCOM Working Groups will be informed when the guidance is prepared.

4.3 The Meeting supported that synopses could be submitted by countries, HELCOM subsidiary bodies, international projects, and Observers. An indicative list of topics for the synopses are given in document 4 to the meeting.

4.4 The Meeting discussed how to ensure that the information submitted is objective and how to evaluate that it addresses relevant aspects and how to deal with potential contradictory results with regard to the effect of the measures. The Meeting agreed that authors should be requested to justify the choice of background material. The Meeting also pointed out that the expertise of the working groups will review the syntheses and can thereby also identify if there is a need for complementary information.

5 Time plan for further work in accordance with the work plan for the BSAP update and meeting frequency and date of the next physical meeting

Documents: none

5.1 The Meeting supported the time plan for SOM analyses (**Annex 4**), including major steps of the process, meetings of SOM Platform, coordination with the HELCOM ACTION project, and in which steps and when that HELCOM Working Groups will be consulted in the work.

5.2 The Meeting recalled the proposal to assess the benefits of the updated BSAP (Outcome of HOD 55-2018, para 3.29, Outcome of EN ESA 2-2018, para 4.5), based on the methodology developed for the State of the Baltic Sea report (HOLAS II) and new and ongoing studies on the benefits of achieving good environmental status in Contracting Parties. The Meeting noted that such analyses could be carried out towards the end of the 2020, pending resources, and agreed to come back to the proposal at a later stage.

5.3 The Meeting took note that an updated version of the SOM approach will be submitted by end of March to the SOM Platform participants for comments before submission for endorsement of the approach by GEAR 20-2019.

5.4 The Meeting proposed that the 2nd meeting of the SOM Platform will take place 16-17 September 2019.

5.5 The Meeting proposed that the 3rd meeting of SOM platform will be held jointly with the work package leaders and work package 6 of ACTION project in March 2020. A 4th meeting has been indicated for September 2020.

5.6 The Meeting took note that the topics for consideration at next meeting will include inter alia the progress of work of SOM Platform and ACTION project, the approach for analysing cost-effectiveness of potential new HELCOM actions, preparations for WG meetings, e.g. the planned validation of input to the SOM analyses as well as plan for how to arrange or group HELCOM thematic workshops in spring 2020.

6 Conclusions and further steps

Documents: none

6.1 The Meeting noted the lack of lead countries on many central topics for the analyses and recognized the importance of providing national support to the planned work. The Meeting noted that it is possible to also take the lead on partial analyses, e.g. on certain components of biodiversity (e.g. coastal fish, seals) and on groups of hazardous substances.

6.2 The Meeting took note that the Secretariat will set up a workspace for the SOM platform, including a list indicating national offers to lead the work, and where contributions of ACTION project and the Secretariat is expected. The Meeting encouraged the Contracting Parties to offer to lead or co-lead the topics, or components of topics, where this is currently missing. The Meeting noted that the required ESA

expertise need to be appointed to each of the topical teams as well and invited the Contracting Parties to also assign ESA experts accordingly.

6.3 The Meeting invited the Secretariat to notify the SOM platform when there are updates within the topics e.g. lead country offers or when meetings of topical teams are planned. The Meeting took note that there is a need for continuous information flow in order to allow all Contracting Parties via SOM to contribute to the process. The information exchange on the progress of the SOM analyses will also take place via HELCOM Working Groups.

6.4 The Meeting recognized that clarifications on existing national measures may be required and that information on effectiveness of measures may be available only in national languages. The Meeting agreed to inform the Secretariat (susanna.kaasinen@helcom.fi) on a national contact point that can allocate tentative request for such information nationally **by 22 March 2019**.

6.5 The notes of the meeting were prepared by the Secretariat and circulated for comments in writing.

Annex 1. List of participants

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Annex 2. Notes from groups discussion

Table 1. Overview of outcome of group discussion with regard to lead parties, organization of work, proposals to group or focus the analyses, and the suitable geographic scale.

Topic	Lead parties	Organization of work	Focus/Grouping of analyses	Geographic scale
Biodiversity	No lead country No ESA expert assigned	Working Groups: State and Conservation, Fish HELCOM expertise to involve: <ul style="list-style-type: none"> - HELCOM EG MAMA - HELCOM Migratory fish task force - HELCOM FISH-PRO III (coastal fish) - ICES/OSPAR/HELCOM JWG Birds - HELCOM EN benthic - PEG, ZEN, in some of the expert-based evaluations that are foreseen. - RETROUT project (HELCOM partner) Working mode not proposed due to lack of lead.	<ul style="list-style-type: none"> - Birds; functional groups as used in the HELCOM bird indicators. - Mammals: by species (grey seal, harbor seal, ringed seal, harbor porpoise) - Fish: coastal fish as group, for migratory fish focus is proposed to be placed on selected species e.g. salmon, sea trout, sturgeon, eel - Benthic habitats: HUB level 5 	Ecologically relevant scale as used for HELCOM core indicators
Hazardous substances	DK co-lead FI and SE can support ESA expert (tentatively SE)	Working Groups: Pressure and State and Conservation. HELCOM expertise to be involve: <ul style="list-style-type: none"> - EN-Hazardous Substances - CG PHARMA - MORS - EN-DREDS - CG Aquaculture (antibiotics) Several projects and PA Hazards are also relevant to approach. Working mode: primarily on-line meetings and correspondence. Occasional physical meetings, possibly back-to-back with scheduled meetings of expert groups.	Divide substances into manageable groups (initial ideas presented in notes)	Scale will vary between substances. Possibly use sub-basins and aggregations thereof.
Marine litter	EE co-lead No ESA expert assigned	Working Group: Pressure Group Expert groups to involve: <ul style="list-style-type: none"> - EN Litter. 	By the current core indicators; beach litter, litter on the seafloor. For beach litter, possibly group by top litter items.	Tentatively sub-basins
Non-indigenous species	No lead country No ESA expert assigned	Working Groups: Maritime, Pressure (antifouling) Expertise to be involved: <ul style="list-style-type: none"> - TG Ballast - Expert Group on target species list may be included as well. - CG Aquaculture to consider the aquaculture vector. - Pressure and State & Conservation to be involved, as necessary. 	Group by vectors (ballast water, biofouling, aquaculture...).	Baltic Sea

Topic	Lead parties	Organization of work	Focus/Grouping of analyses	Geographic scale
		<p>The Inter-reg project COMPLETE, with HELCOM as partners, is also relevant. Working mode: Proposed to be carried out mainly by correspondence and if needed by online meetings.</p>		
Underwater sound	DK lead No ESA expert assigned	<p>Working Groups: Pressure, Maritime Expertise to be involved: - EN Noise.</p> <p>Working mode: Correspondence and online meetings used as working mode and at least one physical meeting is envisaged.</p>	By activities producing noise affecting specific receptor group (marine mammals, fish).	Sub-basins

Notes from the breakout group Biodiversity

Persons attending the discussions:

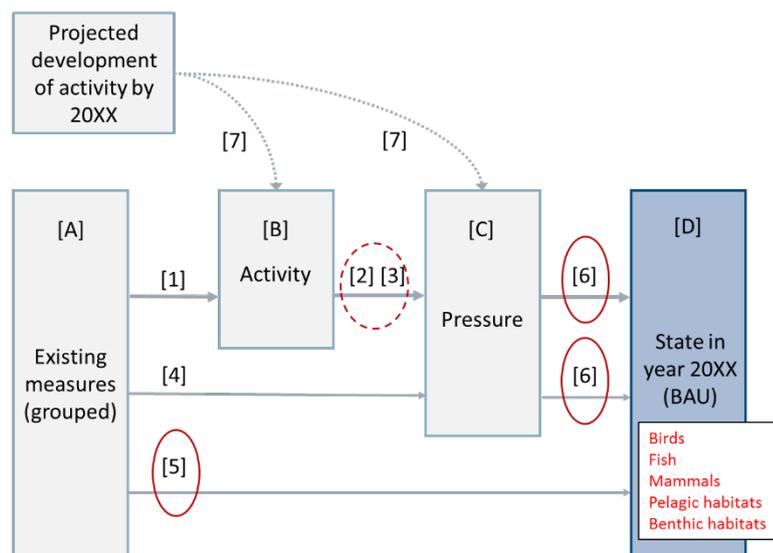
Dieter Boedeker
 Henri Jokinen
 Jannica Haldin
 Marianne Goffeng Raakil
 Turo Hjerpe
 Norbert Häubner
 Rikard Korkman
 Urmas Lips
 Monika Stankiewicz
 Ulla Li Zweifel

Biodiversity aspects to be covered by SOM Platform

The group discussed which aspects of biodiversity that are not directly addressed by the ACTION project and should thus be covered by the SOM Platform.

- Effect of changes in pressure on status; (arrow 6 in the conceptual model)
- Effect of measures that act directly on state of biodiversity (arrow 5 in the conceptual model)
- Biodiversity expertise could also contribute to evaluate) activity-pressure link and relative contribution of activity to pressure (arrow 2 in the conceptual model) for activities having a direct impact on biodiversity e.g. extraction of species

With regard to the task to prioritize activities and pressures; information on pressures having a major impact on biodiversity is available from red list reports, indicator reports, BSII etc. The existing material could be used as a basis and complemented with expert validation.



Measures acting directly on biodiversity and information on effects of such measures

The group discussed potential existing measures to improve the state of the environment directly and from where information of effects of such measures could come from.

- **Restoration of habitats** – effect from coastal shallow bays will be considered by ACTION, river habitats partly covered by RETROUT (inter-reg project with HELCOM as partner)
- **Reintroduction of declining/lost species** – effect of reintroduction of sturgeon available from German/Polish experts
- **No use zones** (e.g. unspecific restrictions to activities) – no immediate idea on where information on effects could be found, possibly from other sea areas.
- **Restocking for biomanipulation purposes** (e.g. increase predatory fish). Not likely many cases where such measure has been used in the Baltic sea region, but information on effects is available from test cases.
- **Compensatory restocking** (e.g. release of salmon) – is this to be considered as measure to improve the state?

Open issues:

Conservation plans – how to include the effect of conservation plans in the model? A conservation plan can include several measures e.g. reduction in pressure, restoration of habitat etc to protect a specific species or habitat. Needs special attention.

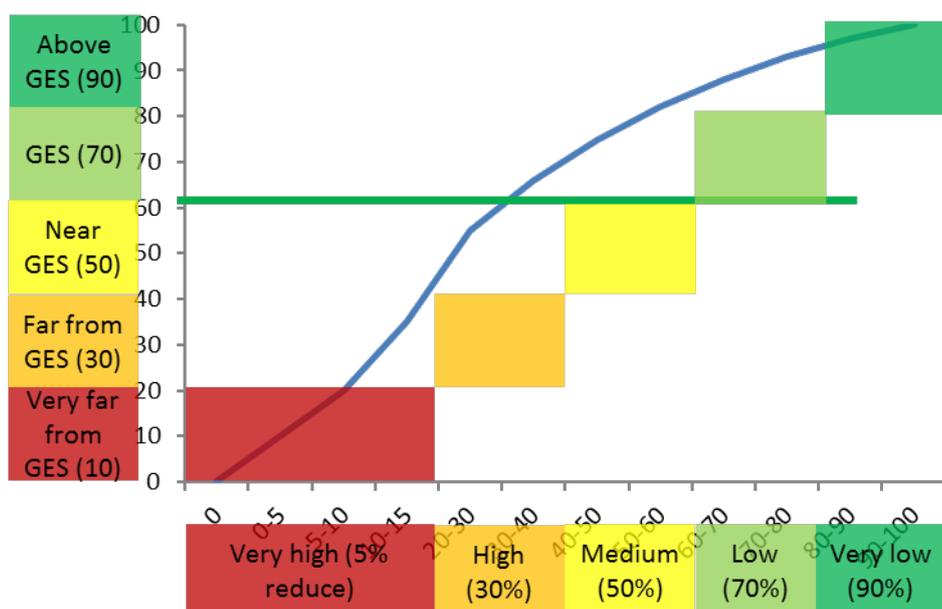
Response of indicators/state components to changes in pressures:

The group concluded that it is rarely known in relation to ecosystem components; the response-curve proposal as presented to the meeting not consider as a viable way forward. An alternative proposal was present; based on categorical expert-based evaluation.

When establishing pressure-state relationships, the sensitivity of species and habitats to specific pressures needs to be considered. Such information already exists, e.g. through the development of the Baltic Sea Impact Index, HELCOM Red list reports etc.

The challenge for most ecosystem components is to translate categorical pressure/state relationship to be translated into continuous pressure/state relationship in order to be used in the proposed model.

If the pressure/state relationship is unknown we assume a linear relationship



Then translate results to a model.

	Very high	High	Medium	Low	Very Low (0)
Above GES	0 %	0 %	0 %	0 %	0 %
GES	0 %	0 %	0 %	0 %	0 %
Near GES	25 %	20 %	20 %	20 %	0 %
Far from GES	45 %	40 %	20 %	20 %	0 %
Very far from GES	65 %	40 %	40 %	0 %	0 %

Consider use of other types of targets

The group proposed to also use HELCOM targets for threatened species and habitats in the “state” box in place of threshold values. Examples from BSAP 2007:

- By 2015, improved conservation status of species included in the HELCOM lists of threatened and/or declining species and habitats of the Baltic Sea area, with the final target to reach and ensure favourable conservation status of all species,
- By 2010 to halt the degradation of threatened and/or declining marine biotopes/habitats in the Baltic Sea, and by 2021 to ensure that threatened and/or declining marine biotopes/habitats in the Baltic Sea have largely recovered,

e.g. number of red listed marine species and biotopes should decline compared with latest HELCOM red list assessment

What is the meaningful level for carrying out the analyses in terms of biological state components:

- Birds; subgroups e.g. functional groups as used in the HELCOM bird indices.
- Mammals: by species (grey seal, harbor seal, ringed seal, harbor porpoise)
- Fish: coastal fish, migratory fish (salmon, sea trout, sturgeon, eel)

Reason for proposing species level for mammals and migratory fish – pressures (and also measures) are often species specific.

Pelagic habitats; the group discussed the possibility to exclude pelagic habitats from the pressure-state part of the analyses. This proposal was based on the assumption that if targets for input of nutrients is reached, then GES for pelagic habitat and community indicators will be achieved (+ certain time lag).

Benthic habitats; should optimally be analysed at HUB level 5. Input on pressure-state relationship is anticipated to come from ACTION project with regard to loss and disturbance to benthic habitats. With regard to eutrophication; it was discussed whether the same reasoning as for pelagic habitats could be used i.e. to expect achievement of GES for BQI and oxygen debt when pressure targets have been reached (+ certain time lag).

Geographic scale

Use an ecologically relevant scale as has been defined for the respective indicators.

Organization of work

No lead country at present; urgently needed.

No ESA expert assigned to the topic.

Expert groups that could be engaged;

- HELCOM EG MAMA
- HELCOM Migratory fish task force
- HELCOM FISH-PRO III (coastal fish)
- ICES/OSPAR/HELCOM JWG Birds
- RETROUT project
- HELCOM EN benthic
- [PEG, ZEN, although pelagic habitats is proposed to not to be included in the analyses, these projects could contribution with views on identifying pressures with major impacts on the pelagic habitats]

If requests or surveys are sent to expert groups; important to, as a minimum, set up an online meeting to clarify expectations and what the outcome will be used for.

Open questions:

How to treat the situation where a measure that is improving one ecosystem component may have a negative effect on the other? i.e. how to consider food web interactions?

How to include a sensitivity matrix based on categories into the Action matrix.

Notes for the breakout group on hazardous substances

Participants

Experts	ESA expert	Secretariat
Andrea Weiss (Germany) Lars Sonesten (Sweden) Tobias Porsbring (Sweden) Rene Reisner (Estonia) Peter Wilhelm Linde (Denmark) Martin Larsen (Denmark, online)	Max Vretborn (Sweden)	Owen Rowe Dmitry Frank-Kamenetsky

Aim of the breakout group

- Prepare a presentation based on discussions to plenum.
- The Secretariat will take notes of the discussion.

Issues discussed

Role of lead countries, co-lead countries

- Denmark has offered to co-lead the Hazardous Substances topic.
- NOTE no current other co-lead appointed (**Open issue**).
- Expertise from Denmark covers metals and PAHs and all matrix types (sediments, water, biota).
- Expertise in PCBs, dioxins, and emerging substances would be valuable addition from proposed co-leads.
- Sweden informed that they can support with associated work (e.g. expertise in organic pollutants and TBT), but cannot currently confirm related to role as co-lead.
- At the presentation session Finland expressed the willingness to support work of the group – though co-lead not currently possible.

Involvement of expert networks, contributions from expertise in HELCOM

- ESA expert involved? Yes, Max Vretborn.

Relevant HELCOM expert groups identified:

- EN-Hazardous Substances, CG PHARMA, MORS, also PRESSURE and State and Conservation.
- CG PHARMA – does this group address aquaculture (antibiotics use)? What is most relevant group?
- Noted at presentation that CG Aquaculture should also be included.
- PRESSURE group have some inputs of metals (e.g. EMAP) and also with pharmaceuticals.
- MARITIME – inputs from shipping (also noted that EN-HZ will discuss cleaning of transport tanks related to inputs of hazardous substances).
- EN DREDS – pollutants in dredged material.

Links with associated relevant groups also discussed:

- Links with PA HAZARDS (links to CW PHARMA) may be relevant. Priority substances, new indicator substances, summaries of data on micropollutants.
- Link to OSPAR INPUT with HZ could be valuable.
- Work from OSPAR HASEC meeting can be utilised here as will review lists of hazardous substances.

- BONUS SHEEBA project – HZ emissions through shipping (leakages and black/grey water) could be relevant scenarios.
- Intereg platforms – BSR water project summary to pull together multiple projects into clear advice to management related to pollution.
- BONUS ROSEMARIE – can they be asked for support related to measures on this topic? Relevant measures and their effectiveness collated. Clarified at the presentation that project focus for HZ is mainly related to human health and less on ecosystem health – but will discuss further in project.
- BONUS CHANGE – project looking at anti-fouling treatments on leisure boating.

Working mode

- Web meetings and email correspondence will be major working mode.
- Occasional physical meetings, possibly back-to-back with an EN-HZ or other relevant group could be viable.
- Divide substances into manageable groups and the team work on assigned sections to gather relevant information (divisions to be made later).
- Use links with expert groups to gather missing information and evaluate gathered information.

Not said at meeting: but Secretariat can set up a workspace or such to facilitate this if needed. Same is true for regular online meetings as needed. Lead/co-leads to establish as needed.

Tentative need to focus/group the analyses within the topic

Discussion included:

- Knowledge on major pathways is available for many substances – but often can't be quantified – the pressure-state will not offer qualitative data.
- How to deal with dredged material – disposal can represent simple redistribution.
- A number of substances may be 'unknowns' in that effects, sources etc are not known. Also, with such manmade substances the emergence of new issues is always a potential.
- PFAS is national priority for Sweden, also noted by PRESSURE. PFOS as an example could be an issue even if mainly meeting GES now, as ongoing inputs could increase accumulation and may switch it to a failing scenario in future – i.e. substances (especially those where activity may, or is increasing) can be problematic in future despite not being now.
- Reviewing the lists of priority substances (HELCOM, WFD and Watchlist) was discussed in relation to the BSAP UP. Highlighted that linkages between pressure and activity could be explored via REACH, though not a straightforward work.
- Legacy contaminants not reaching GES can be due to level of implementation of measures, long ecological time lags, other unknown sources, and sources outside the control of HELCOM (global transport).

Possible relevant information sources or summaries:

- COHEBA document at PRESSURE (Dmitry) may offer relevant information in this process.
- WFD priority substances.
- HELCOM priority lists.
- Watchlist of contaminants.
- Pressures and actions for measures should come to PRESSURE 10-2019 (PRESSURE will also compare to EU legislation and compile information). Level of implementation and status will also be reported and collated. Draft expected by April 2019 from PRESSURE.

Questions raised:

- Is it valid to implement BAU scenarios for legacy pollutants? If banned what is added value of BAU since now no new substances should in theory enter ecosystem. Noted that they must be considered in general overview still as such substances can persist or re-emerge e.g. from ground source layers or alternative uses.
- If no known sources or no trend available then any reason to do BAU?

Possible categories to focus work:

- Known (i.e. indicators) - Legacy (banned substances) - Emerging (Nordic council of ministers have number of studies on emerging issues).
- HELCOM priority substances.
- Priority substances for other policies (Global e.g. Minamata, EU e.g. WFD).

Multiple division of substances into groups/sub-groups may be needed – i.e. initial broad category filled with smaller groups.

- Organics-(pharmaceuticals) - metals – radioactive.
- Point source vs widespread inputs.
- Manmade vs natural (i.e. those where you can control input with a ban vs those that can also occur naturally so not all entry avenues can be managed).
- Source categorisation: Sea-based, Land-based, WWTP, combustion, transport etc.
- Activity characterisation: characterisation by activity.

Proposed information gathering:

- Gather information in a table/matrix that covers where we have information on sources, monitoring and status.
- Matrix needs to be populated with activity-state-pressure information for relevant substances/groups.
- Matrix will help identify where we have data and where not.
- Extended matrix may enable information on the gaps to GES to be gathered.
- Matrix is important starting point also needs to include sources.
- National measures under WFD (planned and decided measures) for these substances/groups need to be included in matrix.
- Look at substances individually – then gather measures and aggregate after to give general overview.

Geographic scale

- Scale may differ between substances or groups.
- Critical that whole Baltic Sea scale is considered as main target, so need to be able to aggregate.
- Possibly using HELCOM scale 2 (17 sub-basins) and aggregated scale 2 units may be valid starting point.
- Point sources and local scales may also be highly relevant in some cases, for example to define hotspots or areas where environmental conditions may influence the behaviour of certain hazardous substances.
- Some substances can also be identified as global issues (e.g. Hg). It may however also highlight that global processes and measures need to be addressed/revisited too (Minamata Convention).

Availability of required information and ways of collecting the information

Topic not really discussed by group at current stage – below text is standard description

- The group discussed the availability of required information and discuss best way for how to carry out the collection of needed information, e.g. via literature reviews, official reporting, request to countries, expert surveys (cf. activity 2 of the ToR and document 4).
- The views' of the group is as follows in terms of **availability of information**:
 - a. **Effects of measures** on activity/pressure/state (depending on the measure). In document 4 it has been proposed that this will take place through a request for countries to submit information in combination with collection of information from literature. The group considered this approach appropriate. The group noted that the list of relevant policies/measures and guidance will be provided in May; literature on the effects of measures is to be provided by end of June 2019; expert input on validating and evaluating effects of measures is to be provided in fall 2019.
In terms of available information on the effects of measures (literature, studies, project and model outputs), the group was of the view that
 - b. **Activity-pressure: prioritization of activities and pressures to be included in the analysis, relative contribution of activities to pressures.** The group noted that information on links between activities and pressures and initial prioritization is to be provided in March and that expert input on prioritization is expected to be done in spring 2019. In terms of available information, the group was of the view that
 - c. **Time lags in the effect of measures.** The group noted that a list of relevant policies/measures and guidance will be provided in May. A preliminary categorical information on whether there are time lags in the effect of measures and state is to be ready by the end of June 2019. The group discussed in general availability of such information/models and was of the view that
 - d. **Pressure-state: Responses of indicators/state components to changes in pressures.** The group noted that information on links and guidance will be provided in May. Literature, studies, project outputs on pressure-state linkages is to be provided by the end of June 2019. Expert input on validating and evaluating pressure-state linkages is to be provided in fall 2019. The group discussed in general availability of such information/models and was of the view that
- It was clarified that in all cases, collection of information via literature, reports etc. will be complemented with expert-based evaluations as needed. Background information/guidance from Secretariat will be given to the teams on how to collect the information (e.g. by filling in protocols/surveys, by proving information on specific format).

Notes for the breakout group marine litter

Participants

Experts	ESA expert	Secretariat
Jacob Hagberg Mikhail Durkin Sanna Suikkanen Nina Oding	Kristine Pakalniete	Luke Dodd Laura Hoikkala Marta Ruiz

Lead countries

Estonia offered to co-lead marine litter after the breakout group session was held.

Involvement of expert networks, contributions from expertise in HELCOM and mode of working

EN Litter is a valuable resource for informing the work of SOM Litter group.

Working mode was undecided when there was yet no information of the lead country to facilitate.

Tentative need to focus/group the analyses within the topic

The current status of marine litter indicators is that there is 2 pre-core (beach litter, litter on the sea floor), and 1 candidate (microliter in the water column). The group discussed that the candidate indicator would not be included due to lack of pressure/state data. Further grouping is complicated as one indicator is a pressure and another state. Additionally, identified top litter items (HOLAS II) were discussed as an alternative to propose reduction targets.

Geographic scale and availability of required information and ways of collecting the information

Geographic scale 2 was suggested but the feasibility is a concern from the ESA expert, particularly depending on the state/indicators chosen. Additionally, data is lacking for some countries for sea floor litter because data come from fish trawling (DATRAS database). Experts should be consulted concerning their opinions on the geographic scale in consultation with ESA experts. Data should be reviewed for indications of both scale and relevant activities.

Time lags for both measure-pressure and pressure-state are present and significant. Experts should be consulted.

Effect of measures is considered particularly challenging.

As no GES target exists, a 30% reduction was discussed in line with main litter item reduction recommendations from TG Marine Litter and EU level circular economy documents.

Resources:

<https://www.marelittbaltic.eu/>, <https://www.blastic.eu/>, ICES seafloor litter trawl data southern Baltic, beach litter data geographic spread in SPICE, water column microliter data in SPICE, UNEP marine litter strategy, litter expert survey from action plan implementation, IUCN marine litter Baltic sea (Baltic solutions to plastic pollution), European Chemicals Agency dossier on the possible restriction of microplastic, EU marine litter website

Notes from the breakout group non-indigenous species

Participants

Experts	ESA expert	Secretariat
Henrik Ramstedt Solvita Strake Susanne Heitmuller	Heini Ahtiainen	Markus Helavuori Manuel Sala Perez

Lead countries

There have been no offers of lead country yet for non-indigenous species (NIS). A request will be made at HELCOM 40-2019 (6-7 March 2019).

Involvement of expert networks, contributions from expertise in HELCOM and mode of working

Since Heini Ahtiainen will be away for 6 months there is a need for another ESA expert and thus nominations are needed.

The Maritime Working Group and HELCOM/OSPAR TG Ballast should be involved. The Expert Group on target species list may be included as well. CG Aquaculture, which is developing BAT/BEP for sustainable aquaculture, should consider the aquaculture vector. The COMPLETE project is also relevant. Matters related to anti-fouling systems (AFS) should be communicated to the Pressure Group. Consideration should be given to involvement by State & Conservation, as deemed appropriate.

The group agreed to work mainly by correspondence and if necessary by online meetings. The SOM matters related to NIS will, however, also be considered by the relevant working groups.

Tentative need to focus/group the analyses within the topic

The analysis should be grouped by vectors (ballast water, biofouling, aquaculture...).

Geographic scale

The matter of non-indigenous species should be considered on the full Baltic Sea scale.

Availability of required information

NIS are one of the major external stressors and can drive changes in marine ecosystems, the impacts of which are often unpredictable. Over 170 NIS and CS have been observed in the Baltic Sea (AquaNIS 2018). Trends in arrival of NIS is one of the HELCOM core indicators. Information on the presence and introductions of NIS is readily available for the Baltic Sea, however, uncertainties will always be present e.g. regarding introduction vectors, as well as the origin of cryptogenic species.

The group noted that the main activities considered by HELCOM, contributing to the spread of NIS, are shipping and aquaculture. There are measures in place for ballast water and aquaculture. For biofouling there are IMO Guidelines and a Baltic Sea roadmap for management of biofouling is being developed for the Baltic Sea within the COMPLETE project (for both commercial and leisure vessels).

Other activities contributing to this pressure such as aquarium and pet industry and stocking are not covered by HELCOM at present.

The group noted that eradication of already introduced NIS is generally not feasible, although may be possible especially if the introduction is discovered at an early stage. There are no eradication procedures or guidelines for aquatic NIS in the Baltic Sea.

For prevention of species introductions there are measures in place, most notably the IMO Ballast Water Management Convention. However, while the implementation of the BWM Convention is still being phased in until 2024, the group was of the opinion that it can be used as a BAU scenario.

The group also noted that through the implementation of the BWM Convention, and in particular through increased port baseline surveys and risk assessments needed for exemptions, more information about NIS presence and invasion status in the Baltic Sea will be available.

The group noted that the BONUS SHEBA and BalticLINES projects may have relevant information on the matter.

For aquaculture, the available measures to prevent NIS introductions is not as concrete as for ballast water. Recommendation 37/3 on Sustainable aquaculture in the Baltic Sea Region has a provision that the relocation and transport of cultured non-native species should be subject to special safety rules or permits according to respective national and EU legislation for EU Member States such as Regulation (EU) No708/2007 on the use of alien and locally absent species in aquaculture and Regulation (EU) No 307/2013 on the Prevention and Management of the Introduction of the Spread of Invasive Alien Species as well as the Recommendations of EIFAAC and ICES Code of Practice on the Introductions and Transfers of Marine Organisms.

Recommendation 25/4 on Measures aimed at the reduction of discharges from fresh water and marine fish farming also has very general provisions on “new species”.

Measures are also in place within the EU through Regulation (EU) 1143/2014 on invasive alien species (the IAS Regulation), which provides for a set of measures to be taken across the EU in relation to invasive alien species.

The ultimate goal within HELCOM is to minimize anthropogenic introductions of NIS into the Baltic Sea to zero. The core indicator threshold value between good status and not good status is ‘no new introductions of NIS per assessment unit through human activities during a six-year assessment period’. The group noted that secondary spread within the Baltic Sea is not addressed, although this is also a relevant issue.

The group noted that NIS are a pressure and that GES state can only be related to the introduction of new NIS. There group agreed that there is no time lag once the measures related to NIS are implemented.

The reduction of pressures for non-indigenous species also has impacts on biodiversity, with NIS having a potential to have extremely detrimental impacts on biodiversity.

Notes for the breakout group on underwater sound

Participants

Experts	ESA expert	Secretariat
Peter Sigary Agata Świącka Jakob Tougaard	Liisa Saikkonen	Marta Ruiz Florent Nicolas

Aim of the breakout group

- The lead country to prepare a presentation based on discussions to plenum.
- The Secretariat will take notes of the discussion.

Issues discussed

Role of lead countries, co-lead countries

- Denmark is the lead-country for the topic on underwater sound.
- Lead countries are anticipated to take on the role of planning the work, setting up intersessional activities etc. Initial planning can take place with the Secretariat to ensure that the time-table is consistent with the needs for the SOM analyses and BSAP the update.

Involvement of expert networks, contributions from expertise in HELCOM

- The group encouraged the involvement of expert network on underwater noise as they compile HELCOM expertise on the topic.
- The group was of the view that in terms of working mode correspondence and online meetings would be preferred and at least one physical meeting is envisaged. Communication will be established with ESA network to ensure their participation.

Tentative need to focus/group the analyses within the topic

- The group considered whether the analyses are suitable to be carried out for smaller components rather the topic as a whole. For example, for hazardous substances to carry out the analyses per substance groups.
- The group was of the view that the analyses should be carried out for different activities producing noise affecting specific receptor group (marine mammals, fish).

Geographic scale

- The geographical scale of the SOM analysis is aimed at supporting decisions from a regional Baltic Sea perspective. Still, the SOM analysis could be carried out at a smaller scale if found relevant, e.g. by sub-basins or a set of sub-basins.
- The group discussed the geographical scale for the underwater noise topic and was of the view that the EN-Noise has already indicated that the geographical scale to be used for noise is the assessment scale 2.

Availability of required information and ways of collecting the information

- The group discussed the availability of required information and discuss best way for how to carry out the collection of needed information, e.g. via literature reviews, official reporting, request to countries, expert surveys (cf. activity 2 of the ToR and document 4).
- The views' of the group is as follows in terms of **availability of information**:
 - e. **Effects of measures** on activity/pressure/state (depending on the measure). The group noted that the list of relevant policies/measures and guidance will be provided in May. The group is

to provide literature on the effects of measures by the end of June 2019. Expert input on validating and evaluating effects of measures is to be provided in fall 2019 from WG meetings. In terms of available information on the effects of measures (literature, studies, project and model outputs), the group shared the views in the slide.

BAU and SOM for underwater noise

Good news

- Activities largely known
- Direct link between activities and pressures
- No lag time (state = pressure)
- Some national measures

Bad news

- No threshold for GES available
- Link between pressure and GES not available
- No HELCOM-agreements on measures

BAU: Essentially extrapolation of current situation. Except unit not clear

SOM: Impossible, as long as GES is not defined

Limited scenarios expressing changes in pressure can be created

There is information from the AQUO project that can be utilized (they have estimated noise reduction from, for example, moving one shipping line and speed). Also, there is information from the report on mitigation measures report as part of the BalticBOOST. Consider also restrictions in force in Belgium and the Netherlands, as well information available in the noise registry on the effects of the application of mitigation measures. There are good quality data on pile driving in the registry, where the scenario of running the bubble curtains as mitigation measure can be done, with the outcome of knowing the reduction of noise obtained from the use of the curtains.

- f. **Activity-pressure: prioritization of activities and pressures to be included in the analysis, relative contribution of activities to pressures.** The group noted that information on links between activities and pressures and initial prioritization is to be provided in March. The group is to provide expert input on prioritization in spring 2019. In terms of available information, the group shared the view's in the slide

Pressures, status and measures

Pressures	Activities	Status + development (preliminary assessment!)	Existing measures
Continuous noise	Ships	High, increasing	IMO guidelines
	Boats	High, increasing	None
	Construction	Moderate, increasing	Time/area planning
	Offshore renewables	Low, increasing	None
Impulsive noise (LF – intense)	Pile driving	Low, increasing	Bubble curtains , ADD , time/area planning
	Air guns	Low, stable?	Soft start, MMO's
	Military sonar	Moderate?, increasing?	None
	Other sonars etc.	Moderate?, increasing	None
	Explosions	Locally high , stable/decreasing?	Deterrence , MMO's
	ADD/AHD	Low, stable	None
Impulsive noise (MF/HF, abundant)	Echosounders	High, increasing	None
	Instruments	Low, increasing?	None

Updated with info from [TAPAS-project](#).

- g. **Time lags in the effect of measures.** The group noted that a list of relevant policies/measures and guidance will be provided in May. The group is to provide a preliminary categorical information on whether there are time lags in the effect of measures and state by the end of June 2019. The group discussed in general availability of such information/models and was of the view that in the case of underwater noise there is no time lag in the effects of measures.
 - h. Pressure-state: Responses of **indicators/state components to changes in pressures.** The group noted that information on links and guidance will be provided in May. The group is to provide literature, studies, project outputs on pressure-state linkages by the end of June 2019. Expert input on validating and evaluating pressure-state linkages is to be provided in fall 2019 from WG meetings. The group discussed in general availability of such information/models and was of the view that it is not currently available to their knowledge.
- It was clarified that in all cases, collection of information via literature, reports etc. will be complemented with expert-based evaluations as needed. Background information/guidance from Secretariat will be given to the teams on how to collect the information (e.g. by filling in protocols/surveys, by proving information on specific format).

Annex 3. Format for syntheses on potential new measures/actions for the updated BSAP

Both the Strategic Plan for the Baltic Sea Action Plan (BSAP) update and the ToR for the SOM Platform outline the production of syntheses as a step to support the update of the Baltic Sea Action Plan. One important type of syntheses/synopses is to support the selection of new, or strengthened actions, to be included in the updated BSAP.

The intention is that such syntheses/synopses will summarize existing information in a format that can be used as background information for BSAP update workshops and working group meetings. The information should also provide data and information that can be used to incorporate the potential new measures as part of the model that will be developed to analyse sufficiency of measures. They should thus be relatively short, but still provide technical information i.e. on the target of the measures (e.g. activity, pressure or state component) and information on the potential effect of the measure. References to scientific articles, project deliverables and/or reports should be given to allow the reader to find further information and justification on the potential of the measure to contribute to achieving good environmental status in the Baltic Sea.

Guidelines for preparation of synopses:

Topics: priority to be given to topics proposed by the SOM Platform (NB that initial list of topics is provided in document 4).

Focus: potential new measures/actions, strengthening or improvement of existing measures, to reduce pressures on the Baltic Sea or to protect biodiversity. “New measures” refer to measures that are new to HELCOM and could thus include measures that are already implemented at a national level.

“Strengthening” refers e.g. to setting stricter limit values, more stringent spatial restrictions to activities, to existing measures. “Improvement” refers e.g. to technical improvements of existing measures based on recent developments.

Length: the proposed length is one page per potential measure. In case the syntheses/synopses include information on a set of related measures, the length can be increased accordingly.

Disposition: the information provided should be evidence-based, objective and comprehensive i.e. to give factual information on the measure/action based on existing research and case studies, and to assemble information from several sources as relevant.

Proposal on content:

Submitted by:	e.g. country, HELCOM network, international projects, observers etc
Title:	Provide a title that gives immediate understanding of the measure (e.g. recycling of agricultural waste by use of on-farm anaerobic digestion, use of gypsum to reduce phosphorus loads from agricultural land, improved river restoration for migratory fish)
Short description of the measure:	Indicative length 100 words
Activity that the measure is addressing	As relevant, according to predefined list
Pressure that the measure is addressing	As relevant, according to predefined list
State component that the measure is addressing	According to predefined list and specified as needed
Extent of measure:	Include, as relevant, information on the extent of the measure, e.g. if the impact is local, within coastal

	waters, sub-basins, Baltic wide scale. Provide physical units if possible.
Effectiveness of measure [NB that guidance will be provided on the desired format for information on effectiveness of measures]	Indicative length 300 words. Summary of results of testing/implementing the measure and any quantitative information on its effectiveness. In the case of conservation measures; indicate which species, habitats, functions etc that the measure will contribute to preserving. Include if available estimations on the effect of implementing the measure on a region-wide scale.
Costs, Cost-effectiveness of measure [NB that guidance will be provided on the format for information on cost and cost-effectiveness]	Provide information as available
Follow-up of measure	Optional: indicate potential or existing follow-up system for the measure, e.g. indicators, monitoring programme
Feasibility:	Optional: provide views on feasibility of implementing the actions e.g. technical, economic, social
Background material:	Clarify choice of background material for the synopses, e.g. does it represent a comprehensive overview of results with regard to the measure or a sub-selection.
References:	As many references as needed to support the information summarized in the document

Annex 4. Timetable for SOM analyses

YEAR	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Indicative steps								
Approach	ACTION/ SOM proposal 2nd version end of March	GEAR agreement 15-17 May 2019						
Collation of data and information input to analyses		SOM Platform/ ACTION End of June						
Synopses on potential new measures		Lead countries, international projects, NGOs	Lead countries, international projects, NGOs	Lead countries, international projects, NGOs				
2 nd meeting SOM Platform			Week 16-20 September 2019					
Expert-based input to SOM analyses. review of synopses			WGs, EGs, (SOM Platform, ACTION project)	WGs, EGs (SOM Platform, ACTION project)				
Running BAU on existing measures				SOM Platform/ ACTION				
3 rd SOM Platform meeting					March 2020 (joint meeting ACTION WP6)			
Thematic workshops, to discuss results and propose potential new actions						WGs, EGs, experts May/June 2019		
Assess status with potential new HELCOM actions							SOM Platform/ ACTION	
Cost-effectiveness analyses							SOM Platform/ ACTION	
4 th SOM Platform meeting							September 2020	
Continued elaboration and endorsement of new/strengthened HELCOM actions							WGs	WGs
[Benefits of the BSAP as a whole]							SOM Platform	SOM Platform