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## Background

The attached document contains the new version of the draft updated Baltic Sea Action Plan that has been further developed by the Ad hoc Drafting Group for the Updated Baltic Sea Action Plan (DG BSAP) and DG BSAP Segment Teams based on the [guidance](#) by HOD 59-2020.

### Overarching preamble and introduction

HOD 59-2020 agreed that the overarching preamble and introduction is to be further considered and developed by DG BSAP 5-2021, based on the guidance from HOD 59-2020 and comments received in the review processes in 2020. DG BSAP 5-2021 further considered and developed the overarching preamble and introduction and agreed to continue discussion on the new proposals, including two additional paragraphs to the overarching preamble on climate change proposed by Sweden, at HELCOM 42-2021. The changes to the overarching preamble which are under discussion, including the new paragraphs on climate change modified by Sweden based on comments by DG BSAP 5-2021, are presented in square brackets and highlighted in yellow.

As requested by DG BSAP 5-2021, Sweden provides the following background information regarding their proposal for the new climate change paragraphs:

*At the UNFCCC COP21 in Paris, a group of countries initiated the “Because the Ocean” initiative to strengthen the ocean aspects of the climate negotiations at the UNFCCC. The initiative has since held a number of workshops around the world that also led to a decision in 2019 at COP25 to hold dialogues on the issue within the context of UNFCCC. An aspect that has gained more attention is the fact the countries can, on a voluntary basis, include adaptation measures in the Nationally Determined Contributions (NDC). More than 60 countries have already included ocean related climate adaptation measures in their NDCs. In addition, the UNFCCC has set up a platform (<https://climateaction.unfccc.int>) to allow “countries, regions, cities, companies, investors and other organizations” to register and showcase how they contribute to the Paris agreement. By framing the HELCOM registry as an in-official BSAP-NDC it is clear what it is, that HELCOM is not a party to the Paris agreement and this registry therefore just an unofficial registry while HELCOM will have a clear format for the registry. This will also open for including both mitigation measures related to blue carbon as well as adaptation measures. With this in mind, the proposal called 11ter in the document serves three purposes for HELCOM.*

1. To showcase on the global level what actions HELCOM is implementing that contribute to the Paris agreement. This would be an excellent example of how a regional seas convention can contribute to

- strengthen the resilience of the marine ecosystem to climate change and to secure a marine ecosystem that can deliver food security and other ecosystem services also in a changed climate.*
2. *On the regional level both EU and Russia have NDCs that are due to be updated by 2025. By updating the HELCOM BSAP-NDC in 2024 and every five years thereafter it will serve as a registry of mitigation and adaptation measures that result from the BSAP. If parties at some point in the future decide to include ocean related adaptation measures in their NDC/NAPs (National adaptation plans) this will be a convenient source of information.*
  3. *For the internal HELCOM work such an BSAP-NDC will be a framework for the HELCOM climate work where HELCOM highlights existing agreed actions that not only contribute to improving the present environmental status of the Baltic Sea but also serves to secure a well-functioning ecosystem in a future changed climate. Such a registry would also further underline the importance of the BSAP actions and be an added argument for the importance of the BSAP actions.*

In addition to the proposed changes to the overarching preamble in this document, [document 4-2](#) contains proposals for including the adoption of associated and supporting documents into the overarching preamble.

### **Segment introductions**

HOD 59-2020 agreed, noting the study reservations by Estonia and Denmark regarding the content of the segment introductory texts, that the introductions to all four segments are to be further considered and developed by the Segment Teams, based on the guidance from HOD 59-2020 and comments received in the review processes in 2020. It was further agreed that the segment introductions should be reviewed by DG BSAP 5-2021. HOD 59-2020 also agreed that the introduction to the horizontal actions segment is to be further considered and developed by DG BSAP 5-2021.

#### *Biodiversity, eutrophication, hazardous substances and litter, and sea-based activities segments*

The attached document contains the introductions to the biodiversity, eutrophication, hazardous substances and litter, and sea-based activities segments that have been updated by the Secretariat based on the guidance by DG BSAP 5-2021. As part of the guidance, DG BSAP 5-2021 recommended to simplify the tables in the introduction to the Eutrophication segment and place them together with other technical aspects related to implementation of the HELCOM nutrient input reduction scheme in an annex either to the segment or to the BSAP. This information is now included as an annex to the Eutrophication segment.

Germany and Russia proposed adjustments to the objectives for the Sea-based activities segment in DG BSAP 5-2021. DG BSAP 5-2021 recalled that HELCOM 41-2020 agreed on the set of HELCOM objectives for the updated BSAP, taking note that there may be need for adjustments to individual objectives or proposals on additional objectives as found relevant in the further BSAP update process. DG BSAP 5-2021 agreed that the proposals by Germany and Russia on adjusting the objectives should be revisited at HELCOM 42-2021 while recalling that HOD 59-2020 agreed that the main focus of the drafting in spring 2021 should be on the actions. The proposals by Germany and Russia are included in the introduction to the Sea-Based activities segment presented in brackets and highlighted in yellow.

The Climate Change Fact Sheet is submitted to HELCOM 42-2021 for adoption and it will be a supporting document for the updated BSAP. It is proposed that the climate change key messages would be linked to the biodiversity, eutrophication, hazardous substances and litter, and sea-based activities segment by including the icons used in the Climate Change Fact Sheet representing the direct and indirect effects of climate change in the text boxes in the introductions to these segments. In the attached document, the relevant direct and indirect effect of climate change are included in the text boxes as text but an example with the icons is contained in a separate attachment that includes a draft layout for the introduction to the biodiversity segment.

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*Horizontal actions segment*

The introduction to the section on climate change in the horizontal actions segment has been pending the adoption of the Climate Change Fact Sheet to be used as a basis for the drafting. Now that the Fact Sheet has been submitted for adoption to HELCOM 42-2021, the introduction drafted based on the Fact Sheet has been added to the climate change section of the horizontal actions segment. Sweden submitted proposed wording on climate change to DG BSAP 5-2021. DG BSAP 5-2021 provided comments on the proposals and invited Sweden to submit updated versions to HELCOM 42-2021. The revised proposals by Sweden are included in the climate change section both in the introduction (highlighted in yellow) and as part of the actions (coded: HAN9-10).

DG BSAP 5-2021 took note of the comments by Denmark and Germany on the financing section of the horizontal actions segment and agreed to continue the discussion on the proposed changes at HELCOM 42-2021. The proposed changes are included in track changes and the comments by Denmark and Germany are presented as footnotes.

DG BSAP 5-2021 considered the inclusion of actions related to hot spots and awareness raising under dedicated topics in the horizontal actions segment, as proposed by Russia and Estonia respectively. DG BSAP 5-2021 invited Russia, with the assistance of the Secretariat, and Estonia to draft proposals on how these topics could be included in the horizontal actions segment and submit the proposals to HELCOM 42-2021 for consideration. Short introductions to the proposed hot spots and awareness raising sections are included in this document in the horizontal actions segment.

According to the Estonian proposal, knowledge exchange and awareness raising could be further conducted under thematic measures on a more detailed level and in accordance with thematic needs. A well-thought communication strategy should define target audience, most effective methods to deliver the message, as well as monitoring of the uptake of the information. The Estonian proposal does not mean to exclude knowledge raising measures from other segments, but this is an addition to provide a full coverage for all the segments.

**Operative section: Actions**

HOD 59-2020 agreed, noting the study reservations by Denmark, Latvia and Russia, that the actions are to be further considered and developed in the Segment Teams, based on the guidance from HOD 59-2020 and comments received in the review processes in 2020. HOD 59-2020 also agreed that the actions are to be presented for review at DG BSAP 5-2021 and provisional agreement at HELCOM 42-2021. DG BSAP 5-2021 noted that Latvia can lift the reservation on the actions concerning marine litter.

DG BSAP and the Segment Teams considered the actions and agreed that the formulation of some of the actions is already satisfactory (coloured green in this document and in the Excel attachment). These actions are proposed for provisional agreement by HELCOM 42-2021. The aim of provisional agreement of actions with satisfactory formulation is to use the resources and the remaining time efficiently. Thus, DG BSAP and the Segment Teams would no longer work on the formulation of these actions but rather focus their efforts on the actions which are identified as being in need of further work. However, proposals for suitable target years can and will still be discussed for all actions. For action EE06, Denmark has proposed via correspondence a minor change in order to lift their study reservation on the action. The proposed change to this action is presented in square brackets.

The actions that are coloured yellow in the attached document or in the Excel attachment are still under discussion. For most of these actions, intersessional work to draft new proposals has been decided on. This document and the Excel attachment contain the actions coloured yellow using the formulation such as presented for DG BSAP 5-2021 although intersessional work for some of these actions has since progressed. The only exceptions to this are the actions related to nutrient recycling. For the actions on nutrient recycling the result for the intersessional work is already presented in this document to ensure consistency with

[document 5-8](#) on the draft Baltic Sea Regional Nutrient Recycling Strategy. DG BSAP and the Segment Teams will continue the drafting of the actions coloured yellow in their next meetings. The actions that are not coloured have not yet been considered by the Segment Teams or DG BSAP and will be included in the upcoming work of DG BSAP and the Segment Teams.

DG BSAP 5-2021 and DG BSAP EUTRO 3-2021 proposed actions that should not be included in the updated BSAP. These actions (coded: EN19, HAN01, HAN03) are not included in the attached document but they are included in the Excel attachment (coloured red). Also, DG BSAP HZ 2-2021 proposed that actions HLN14-17 and HLN19-20 (coloured red in the Excel attachment) should not be included in the BSAP but in the revised Regional Action Plan on Marine Litter. The drafting group for the revision of the Regional Action Plan on Marine Litter met on 20-21 January 2021 and agreed to integrate these actions in the revised RAP ML.

DG BSAP 5-2021 took note that there are actions on of an ongoing nature (e.g. cooperation with other organizations), which do not have a target year and acknowledged the importance of these actions. DG BSAP 5-2021 agreed that the actions on ongoing cooperation under all segments should be placed at the beginning of the operative section to separate them from the actions that have a clear target year.

DG BSAP 5-2021 agreed that the cross-referencing of actions in different segments of the BSAP will be handled by coding the actions and including the relevant codes for reference, both in the lists of actions in the BSAP itself and as part of the supplementary information. DG BSAP 5-2021 invited the Secretariat to make the first proposal on the cross-references to be reviewed by DG BSAP. Currently, the actions are coded by including the first letter of the relevant segment, the letter "E" or "N" depending on whether the actions is an existing or a new one and a number (e.g. EE04 is an existing action in the eutrophication segment). However, it is proposed that in the final updated BSAP a simplified coding not indicating whether the action is existing or new is used (e.g. E04 for an action under the eutrophication segment).

#### **Additional information on the actions (Annexes)**

HOD 59-2020 discussed the proposal for the structure of the annexes to the updated BSAP that are to provide additional information on the actions and the different proposals on where to place the additional information. The alternative options discussed at HOD 59-2020 were including all additional information in the annex (see the annex to [document 5-8](#) from HOD 59-2020) a proposal on not including any annexes in the updated BSAP but instead transferring the information on the rationale and the target years to the segments to further describe the actions ([document 5-14](#) from HOD 59-2020), as well as a proposal to include the supporting actions in the annexes and only include the measures with a direct effect to the segments ([document 5-13](#) from HOD 59-2020).

HOD 59-2020 agreed that the Working Groups are to collect this supplementary information on the actions in spring 2021 and that HELCOM 42-2021 is to continue discussion on where to place the information. HOD 59-2020 acknowledged the close link between the information collected for the annexes and the HELCOM Explorer and noted that information on the activities and pressures related to the actions and the implementing Working Groups is also needed for the Explorer and should be collected. The information agreed to be collected is included in the annex to [document 5-8](#) from HOD 59-2020. The collection of the additional information is ongoing.

#### **Action requested**

The Meeting is invited to:

- take note of the second draft of the updated Baltic Sea Action Plan (BSAP) noting that the drafting will continue in the Ad hoc Drafting Group for the Updated Baltic Sea Action Plan (DG BSAP) and DG BSAP Segment Teams based on the guidance by HELCOM 42-2021;

- consider the overarching preamble and introduction and provide guidance to DG BSAP for further drafting;
- consider the segment introductions, decide on whether to change the objectives under the sea-based segment according to the proposals in this document, and provide guidance to DG BSAP and the Segment Teams for further drafting;
- take note of the progress in developing the actions in the Segment Teams and DG BSAP 5-2021, consider the actions for which the DG BSAP and the Segment Teams found the proposed wording satisfactory (coloured green) and agree in principle on the inclusion of these actions in the updated BSAP;
- agree that DG BSAP and the Segment Teams will no longer work on actions they proposed not to be included in the updated BSAP (coloured red in the Excel attachment);
- discuss and agree on where to place and how to present the additional information on the actions.

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# Baltic Sea Action Plan

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## Preamble

1. We, the Ministers of the Environment of the Baltic Sea coastal states and the Commissioner for the Environment of the European Commission, assembled in Lübeck, Germany, on XY October 2021, on the occasion of the Ministerial Meeting of the Helsinki Commission:
2. **RECALL** the provisions of the 1992 Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention);
3. **REITERATE** the commitment of the Contracting Parties to the Helsinki Convention to restoring a thriving and resilient Baltic Sea ecosystem, as expressed in the HELCOM vision of “a healthy Baltic Sea environment, with diverse biological components functioning in balance, resulting in good environmental status and supporting a wide range of sustainable human economic and social activities”;
4. **ACKNOWLEDGE** that the work of HELCOM has led to significant environmental improvements in many areas and specifically that progress in implementing the 2007 Baltic Sea Action Plan (BSAP) has contributed to preventing further deterioration of the environment of the Baltic Sea;
5. **NOTE** with great concern, however, that the goals of the 2007 BSAP were not achieved by 2021 as envisioned, and that the Baltic Sea area is still heavily affected by multiple pressures caused by human activities;
6. **NOTE**, in particular, that: (a) eutrophication, which results from excess nutrient loading to the sea and, partly due to the time lag between measures and effects, continues to heavily impact on the Baltic Sea; (b) levels of hazardous substances are still elevated [or unknown] and a cause for concern; (c) invasive alien species are still being introduced into the Baltic Sea; (d) marine litter is a pressure of special concern; (e) around half of the seabed is potentially disturbed by human activity ; (f) other pressures such as underwater noise disturb marine life; (g) overall the unfavourable conservation status of Baltic marine biodiversity is widespread as a result of human activities, with several species still in danger of becoming extinct, a poor status of most of the assessed habitats and various biotopes and habitats at risk of disappearing, as well as food webs showing signs of deterioration;
7. **REITERATE**, moreover, that the effects of climate change on the Baltic Sea are already evident and that climate change will continue to have an increasingly significant impact on the Baltic Sea ecosystem, necessitating even more stringent action, among other things in the global framework established by the United Nations Framework Convention on Climate Change and the Paris Agreement, as well as continued research and adaptive management to mitigate the effects, of and strengthen the resilience of the Baltic Sea to climate change;
8. **UNDERScore** that we must continue to strive for good environmental status since the current state of the Baltic Sea marine environment remains unsatisfactory as a result of pressures from land- and sea-based human activities and that recovery is not yet sufficient to achieve the goals of the BSAP;
9. **[STRESS the continued need to safeguard the safety of navigation and with a view to prevent accidents and pollution from ships]**
10. **RECALL** the decision by the 2018 Brussels Ministerial Meeting to update the BSAP by 2021 at the latest, with the aim of elaborating a robust action plan that will retain at least the level of ambition of the 2007 plan and will address new issues in addition to the existing commitments to be fulfilled by 2021 and will be aimed at achieving the agreed HELCOM vision of a healthy Baltic Sea marine environment;

11. **RECALL** also the Declaration adopted by the Ministers of the Environment, Maritime Economy, Agriculture and Fisheries of EU Baltic Sea Member States and of the Commissioner for 'Environment, Oceans and Fisheries' on September 28, 2020 committing to jointly boosting efforts to bring the Baltic to a good environmental status;

11bis. **[REITERATE our commitment from the 2018 Helcom Ministerial declaration to increase HELCOM's preparedness to respond to climate change impacts, by taking foreseen climate change impacts into account when updating the BSAP and by exploring the needs and possibilities to further adapt HELCOM's policies and recommendations.]**

11ter. **[AGREE to compile all climate mitigation and adaptation measures resulting from the BSAP [in an unofficial HELCOM BSAP- NDC][that contribute to the Paris agreement] to be published on the UNFCCC-NAZCA portal and the HELCOM homepage in 2024 and thereafter updated every 5 years as part of the climate ambition mechanism.]**

12. **AFFIRM** that, in order to address all relevant aspects of the ecosystem and the emerging challenges of marine management, the goals underpinning the updated BSAP are a "Baltic Sea unaffected by eutrophication", a "Baltic Sea unaffected by hazardous substances and litter", supporting "environmentally-sustainable sea-based activities", all of which will lead to a "healthy and resilient Baltic Sea ecosystem";

13. **ACKNOWLEDGE** the significant cost implications of not taking action against the varied threats to the Baltic Sea ecosystem and **NOTE**, for example, that according to the most recent "State of the Baltic Sea" report losses in recreational values alone due to the deterioration of the marine environment are estimated to be 1-2 billion euros annually and that a significant amelioration of the undesirable status regarding eutrophication, is estimated to result in annual economic benefits in the order of 4 billion Euros across all relevant sectors of the economy;

14. **UNDERScore**, therefore, the socio-economic benefits good environmental status of the Baltic Sea and of implementing the measures and actions contained in the BSAP with a view to achieving good environmental status;

15. **STRESS** that the achievement of good environmental status for the Baltic Sea will require major efforts and transformational change in all sectors of the economy affecting the sea, including agriculture, fisheries, tourism, logistics, transportation and manufacturing, and necessitates among other things an increase in efficiency in the use of resources and a transition to a clean and sustainable circular economy and carbon neutrality;

16. **UNDERScore** the need to integrate environmental objectives with social and economic as well as socio-economic goals in order to advance sustainable development and **STRESS** the need for coherent spatial planning of human activities at sea across the region, applying an ecosystem-based approach;

17. **STRESS** the continued need for strong regional and cross-sectoral cooperation in working towards achieving good environmental status, involving relevant international, European and national organizations, financing **[and insurance]** institutions, scientific and research institutions, civil society and the private sector;

18. **ACKNOWLEDGE** the positive contributions made by intergovernmental organisations and non-governmental organisations towards preserving and protecting the Baltic Sea Area and working towards a prudent utilisation of its marine goods and services and

19. **NOTE** with gratification that the updated BSAP was developed in a participatory and transparent way at the, involving all appropriate stakeholders

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20. **WELCOME** that it is based on the ecosystem approach, the precautionary principle, and relevant scientific research, enables knowledge sharing between science and policy across all levels, and gives due consideration to economic and social impacts of the measures to be taken to meet its objectives;
  21. **REITERATE** the determination of HELCOM Contracting Parties to implement the 2030 Agenda for Sustainable Development as well as the post 2020 Global Biodiversity Framework adopted under the Convention on Biodiversity and to engage with other relevant regional and global processes and **STRESS** the role of HELCOM in leading the regional efforts to this effect and as an important and recognized contributor in the context of international ocean governance;
  22. **REITERATE** the need to coordinate and harmonize the work in the context of the HELCOM BSAP, our strategic programme of measures and action, with various political and instruments and ongoing initiatives at the international, European, regional and national levels, including in particular the EU Marine Strategy Framework Directive and the European Green Deal, as well as all other pertinent EU legislation and programmes and all pertinent legislation and policies of the Russian Federation, including the Maritime Doctrine and the Strategy for development of maritime activities until 2030 of the Russian Federation;
  23. **AGREE** that the effectiveness of action taken shall continue to be evaluated by using appropriate indicators to measure the progress towards the targets, allowing for the adjustments needed to ensure that the objectives are achieved;
  24. **ACKNOWLEDGE** that the environmental targets in the various segments of the present plan are based on best available knowledge at the time of its elaboration and that, in line with the principles of adaptive management, the targets should be periodically reviewed and revised using a harmonised approach and the most up-to-date information;
  25. **STRESS** the continued validity of existing HELCOM Recommendations also after adoption of the present BSAP;
  26. **AGREE** to realize all actions and commitments in the updated BSAP by the dates specified in the plan, with a view to finalizing implementation of the BSAP as a whole by 2030 at the latest;
  27. **WITHOUT PREJUDICE TO**, and seeking synergies with, national legislation, international agreements and the legislation of the European Union, as well as the legislation of the Russian Federation;
  28. **ADOPT THE FOLLOWING UPDATED BALTIC SEA ACTION PLAN, AIMED AT ACHIEVING GOOD ENVIRONMENTAL STATUS IN THE BALTIC SEA**

# About

The Baltic Sea Action Plan, or BSAP, is HELCOM's strategic programme of measures and actions for achieving good environmental status of our sea, ultimately leading to a Baltic in a healthy state.

Initially adopted by the HELCOM Contracting Parties – the nine Baltic Sea countries plus the European Union – on 15 November 2007 during the HELCOM Ministerial Meeting held in Krakow, Poland, the original BSAP had set 2021 as the target year for achieving its ecological objectives – which weren't fully met by then as indicated by various HELCOM assessments.

But because the BSAP has, nonetheless, delivered unprecedented results and considerably improved the ecological state of the Baltic Sea, the HELCOM Contracting Parties decided to update the plan. The revised BSAP was consequently adopted during the HELCOM Ministerial Meeting held in Lübeck, Germany on 20 October 2021.

The updated BSAP is based on the initial plan, maintaining the same level of ambition and retaining all previously agreed on actions that are still to be implemented.

The update is also an opportunity to include new actions and measures to strengthen existing efforts and to address emerging or previously unaddressed challenges such as marine litter, pharmaceuticals, underwater noise, disturbance to the seabed, and the effects of climate change.

Guided by the HELCOM vision of *“a healthy Baltic Sea environment with diverse biological components functioning in balance, resulting in a good ecological status and supporting a wide range of sustainable economic and social activities”*, the updated BSAP is structured in four segments, each with its specific goals (Figure 1):

- **Biodiversity**, with its goal *“Baltic Sea ecosystem is healthy and resilient”*,
- **Hazardous substances and litter**, with its goal *“Baltic Sea unaffected by hazardous substances and litter”*,
- **Sea-based activities**, with its goal of *“Environmentally sustainable sea-based activities”*, and
- **Eutrophication**, with its goal of *“Baltic Sea unaffected by eutrophication”*.

Each segment further contains a number of ecological objectives depicting a desired state to be attained, as well as a number of management objectives and concrete measures and actions to be implemented by 2030 at the latest.

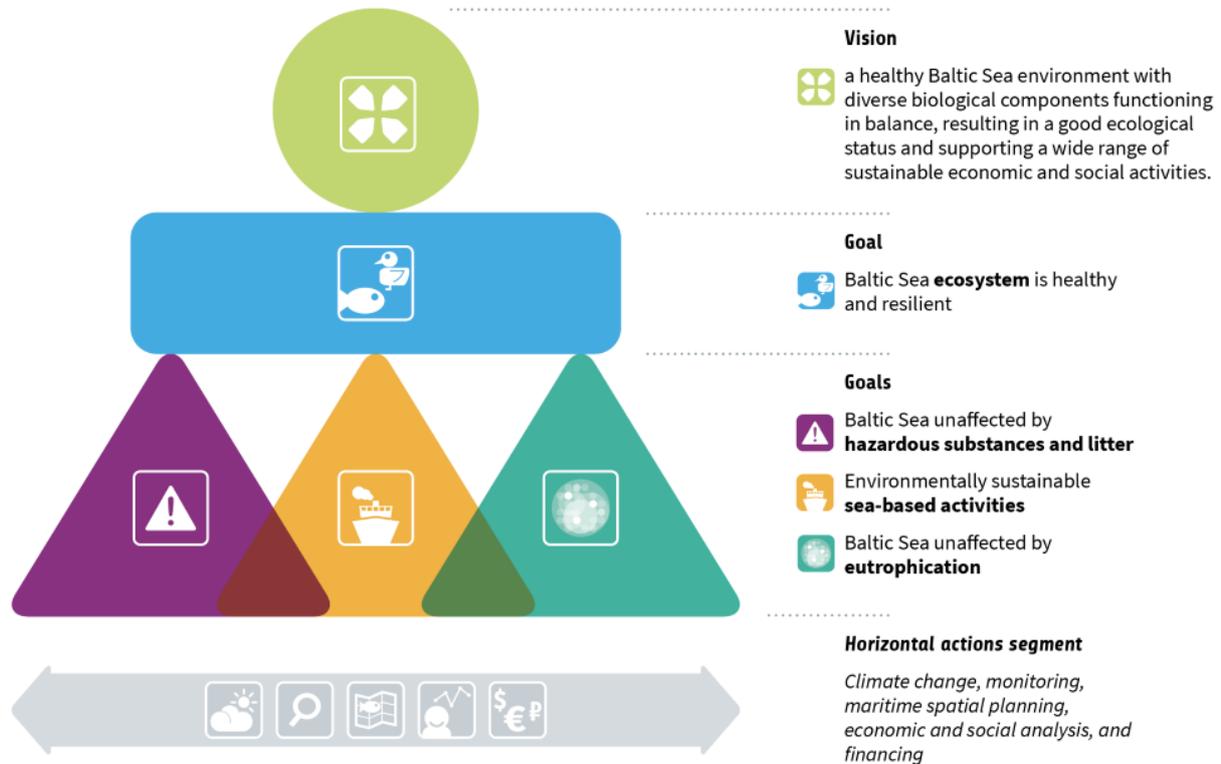
The division of the main segments seeks to reflect the pressures stemming from land (“Eutrophication”, and “Hazardous substances and litter”) and from our activities at sea (“Sea-based activities”), as well as the state of the environment (“Biodiversity”).

These segments are interconnected, as the pressures on the Baltic Sea directly influence the state of the environment. In consequence, attaining the goal under the biodiversity segment also relies on the successful implementation of the actions included under the three pressures segments.

A cross-cutting issue affecting all segments, climate change features prominently in the updated BSAP, in the horizontal actions segment. Because other human-induced pressures already weaken the marine ecosystem, the Baltic Sea is particularly vulnerable to changes in the climate. Measures are therefore needed within all

segments to strengthen the overall resilience of the Baltic Sea to be able to respond to the effects of climate change.

In addition, the horizontal actions segment also contains actions and measures on monitoring, maritime spatial planning, economic and social analysis, and financing, all having an incidence on the four main segments.



**Figure 1:** The structure of the updated BSAP including its vision and goals

The actions in the updated Baltic Sea Action Plan will be included in the HELCOM Explorer, which is an online tool for following up the implementation of HELCOM actions. The first reporting on the implementation of actions will take place in [2025] and the second reporting in [2029].

*[Information on the annexes and the link to status assessment and some overview of foreseen status assessments taking place under the updated BSAP (HOLAS, PLC, RedList, MPA coherence etc) could still be added.]*

## Biodiversity segment - The Baltic Sea ecosystem gets (becomes, will be) healthy and resilient

Visualization/text box to be added to include the following information:

<p><b>Goal:</b> Baltic Sea ecosystem is healthy and resilient.</p> <p><b>Links to climate change</b> (<i>from the Climate Change Fact Sheet, to be reviewed</i>)</p> <p><u>Direct effects</u></p> <p>Air temperature  Water temperature  Sea ice  Solar radiation and cloudiness  Salinity and saltwater inflow  Stratification and ocean circulation  River run off  Oxygen  Carbonate chemistry  Riverine nutrient loads and atmospheric deposition  Sea level  Waves</p> <p><u>Indirect impacts</u></p> <p>Microbial community and processes  Benthic habitats  Coastal and migratory fish  Pelagic and demersal fish  Water birds  Marine mammals  Ecosystem function  Marine protected areas  Blue carbon storage capacity  [Non-indigenous species]  [Nutrient concentrations and eutrophication]</p> <p><b>SDG targets addressed</b></p> <ul style="list-style-type: none"> <li>- 14</li> </ul> <p><b>Pressures addressed</b> (<i>to be reviewed</i>):</p> <p>-</p> <p><b>Tentative activities addressed</b> (<i>to be reviewed</i>):</p> <ul style="list-style-type: none"> <li>- Marine Protected Areas;</li> <li>- Restoration of habitats;</li> <li>- Reintroduction of species;</li> <li>- Conservation and management plans.</li> </ul>
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**Cross reference with other segments:**

- A healthy and resilient Baltic Sea ecosystem is the ultimate objective of the Baltic Sea Action Plan against which its entire performance is measured<sup>1</sup>;
- Achieving the goal of a “Baltic Sea ecosystem is healthy and resilient” requires that the goals of all other segments are met.

**Description of current state**

Biodiversity in the Baltic Sea is deteriorating as a result of pressures from various human activities, the effects of which are further pronounced by climate change. Many widely distributed or long-lasting pressures have had far-reaching impacts on both individual species and ecosystems. Although recently implemented measures may lead to an improvement in the coming years, continued and intensified efforts to improve the status of biodiversity are of key importance. All actions targeting eutrophication, hazardous substances and litter, as well as sea-based activities are critical for improving the state of biodiversity in the Baltic Sea. Given the increasing overall pressures and legacy effects of many human activities in the Baltic Sea, many species and habitats are in urgent need of protection and enhanced conservation actions are needed along with reduction of pressures. A central overarching aspect in this regard is the ecosystem approach, accounting for the existence of multiple pressures and species distribution.

Despite the progress in the implementation of policy responses and actions to conserve nature and manage human activities during the past decades, they have not been sufficient to stem the direct and indirect pressures and halt the deterioration of biodiversity.

Most species of fish, birds and marine mammals, as well as benthic and pelagic habitats in the Baltic Sea are currently not in a healthy state. Almost 100 macro-species in the Baltic Sea (approximately 3,5%) are regarded as being in danger of becoming regionally extinct, and signs of deterioration at food web and ecosystem level are becoming more wide-spread and frequent. An incremental degradation of various near shore habitats, which are important to most Baltic Sea species during at least some part of the life cycle, and the wide distribution of areas with low oxygen conditions close to the seabed are particular causes for concern. The impacts on biodiversity also extend to limit prospects for socioeconomic benefits from the Baltic Sea ecosystem.

**Connection to other treaties**

HELCOM commitments are well aligned with the Sustainable Development Goals of the United Nations Agenda 2030, with the long-term 2050 vision of the Convention on Biological Diversity, and with the EU Biodiversity Strategy, which in turn is an integral part of the EU Green Deal. This holds true even in those cases where HELCOM commitments predate these processes.

**Description of desired state**

The ultimate goal of the Baltic Sea Action Plan with respect to biodiversity and ecosystems is that the **Baltic Sea ecosystem is healthy and resilient**.

This is described through the mutually supportive and interlinked ecological objectives of attaining:

- Viable populations of all native species
- Natural distribution, occurrence and quality of habitats and associated communities
- Functional, healthy and resilient food webs

<sup>1</sup> Note that this sentence is a proposed rewrite of the what was written in the original document 2-4 to HOD 56-2019. Original text was: Biodiversity serves as a holistic controlling element for the performance of the whole Action Plan.

A healthy and resilient ecosystem is one which can maintain its species and communities over time in the face of external stress. This includes that populations have age- and spatial distributions in line with their natural limits and key ecosystem functions and processes are upheld naturally, in an interacting network of species and habitats. In turn a prerequisite to securing the vitality and long-term survival of these species and populations is ensuring adequate quality, distribution and occurrence of natural habitats that support the communities associated with them. Each of these key elements strengthen the functionality, health and resilience of the food webs, ultimately securing the integrity and long-term sustainability of the ecosystem as a whole.

**Reaching desired state: strategic approaches**

In order to reach the desired state the following management objectives have been identified for biodiversity:

- Effectively managed and ecologically coherent network of marine protected areas
- Minimize disturbance of species, their habitats and migration routes from human activities
- Human induced mortality, including hunting, fishing, and incidental bycatch, does not threaten the viability of marine life
- Effective and coordinated conservation plans and measures for threatened species, habitats, biotopes, and biotope complexes
- Reduce or prevent human pressures that lead to imbalance in the foodweb

Achieving the biodiversity goal and the ecological objectives in a sustainable way requires management actions which limit the number and intensity of pressures affecting the ecosystem. This is achieved by managing the underlying human activities and by protecting and restoring the environment. Restored and properly protected marine ecosystems bring substantial health, social and economic benefits to coastal communities and the region as a whole.

As part of the work it is foreseen that existing HELCOM commitments closely linked to the management objectives are reviewed and amended to ensure content is aligned with new regional action and global initiatives, and to further strengthen the objectives and level of ambition. This includes to:

- by [2023] review and amend Recommendation 35/1;
- by [2025] review and update as needed the HELCOM guidance on planning and designating [HELCOM] MPAs.

**Actions**

Attaining the goals and objectives for biodiversity is enabled by implementing the following actions:

Code	Actions
<i>Provisional theme: Spatial conservation measures</i>	
<i>Provisional topic: Spatial coverage of conservation measures</i>	
BE02/ BE03/ BE04/ BN02/ (BN01)	By (2030) at the latest, establish a resilient, regionally coherent, effectively and equitably managed, ecologically representative and well-connected system of [HELCOM] marine protected areas [supported by other spatial conservation measures under alternative regimes for marine protection, which can and should contribute to the coherence of the network]. Where scientifically justified, special attention should be given to offshore areas beyond territorial waters. The network of protected areas shall: <ul style="list-style-type: none"> <li>- cover at least 30% of the marine area of the Baltic sea, of which at least 1/3 shall be strictly protected [as defined by IUCN (categories)].</li> </ul>

Code	Actions
	- protect sites of particular importance for biodiversity and ecosystem resilience, including important ecosystem elements such as species or areas recognized to be ecologically significant based on function for the ecosystem/provisioning of ecosystem services, but which may not necessarily be rare or threatened.
BN03	Where scientifically justified designate functionally meaningful scientific reference areas under MPAs, with human impact minimized as far as possible. Such areas will also count towards the target of 10% strict protection.  <i>Alternative:</i>  Where scientifically justified consider including no-use zones which can also serve as scientific reference areas as part of MPAs.
<i>Provisional topic: Other Effective Area-based Conservation Measures (OECM's)</i>	
BE06/ BE07	Agree on a definition of OECMs to be used in HELCOM, based on definitions agreed in CBD and the EU, and identification of OECMs in the BSR [by 2022].
<i>Provisional topic: Spatial protection management</i>	
BN04/ BE12	By [2030] strengthen the management of the Baltic Sea MPA network by introducing key management elements to increase effectiveness of protection. Update and apply HELCOM MPA management guidelines by [2023, 2025] with focus on: a) Assessments and evaluation structures b) Quantitative conservation objectives c) Measures that reduce pressures d) Indicators to monitor management performance and status of conservation features e) Common monitoring strategy and evaluation of conservation features and pressures f) Common methodology for ME assessment g) Adaptive management h) Capacity building for Baltic Sea MPA managers e.g., through annual workshops.
BE13	By [2026] nationally ensure that MPA management plans and/or measures are legally binding and ensure appropriate structures are in place to enforce compliance.
BE14	Develop, implement and share information of effective management measures to reduce the impact of fisheries inside marine protected areas.
<i>Provisional topic: Coherence of the MPA network</i>	
BE08/ BE09/ BE10	The coherence of the MPA network shall be periodically assessed at least every 10 years, the next such assessment to be carried out by [2025]. By [2027] the results from the coherence assessment are to be used to take appropriate actions to ensure conservation and resilience of biodiversity, and to identify possible spatial conservation expansion needs to improve coherence.
BE11	Ensure that by [2030] the HELCOM MPA network inter alia provides specific protection to species and biotopes listed as regionally threatened or near threatened in the HELCOM Red Lists.

Code	Actions
<i>Provisional theme: Conservation of species</i>	
<i>Provisional topic: Conservation of seabirds</i>	
BE15/ BN05	Maintain an updated map of the sensitivity of seabirds to threats such as wind energy facilities, wave energy installations, shipping and fisheries. Complete, as a first step, the mapping of migration routes, staging, moulting and breeding areas based on existing data by [2022], [e.g through collating and making accessible information on spatial and temporal distributions and movements of seabirds, as well as knowledge on drivers that control these patterns, including compiled description of the effects on selected migratory bird species from wind and wave energy production at sea, based on existing knowledge from the Baltic Sea]. Further develop maps of sensitivity of seabirds, incorporating new data, post-production investigation information and addressing the subject of cumulative effects from wind and wave energy in space and time by [2025].

Code	Actions
BE16	By [2023] and onwards with new findings use the produced maps in EIA procedures with the aim to protect migratory birds against potential threats arising from new offshore wind farms and other installations with barrier effect
BE17	To by the next update cycle of the marine spatial plans seek to incorporate the produced maps in the work concerning maritime spatial planning to avoid that maritime activities impair seabirds and their habitats.
BE18	By [2027] assess the effectiveness of conservation efforts to protect seabirds against threats and pressures.
<i>Provisional topic: Conservation of harbour porpoise</i>	
BE19	By [2022] at the latest, specify knowledge gaps on all threats to the Baltic Proper harbour porpoise population, including bycatch, underwater noise, contaminants and prey depletion, identify possible mitigation measures and implement such measures as they become available.  By [2022] at the latest, identify gaps in knowledge to determine high risk areas such as data on distribution and abundance, address these knowledge gaps by [2026] and by [XXXX] expand the determination of high-risk areas for by-catch of harbour porpoise to entail the entire HELCOM area include the maximum extent of the populations which data can support.
<i>Provisional topic: Conservation of fish</i>	
BE20/ BE21/ BE22	Develop and coordinate monitoring and assessment methods, where ecologically relevant, of coastal fish populations and communities by [2023]. Based on these assessment methods, to regularly assess the state of the coastal fish community through selected coastal fish species and groups, including threatened species, by at latest [target year of next FISH-PRO assessment]. Base on the results of the assessment implement management measures to maintain or improve the status of coastal fish species, including migratory species by [2027].
BE23/ BN06/ BN07	Inventory and identify rivers where management measures for eel and other migratory fish species would have the greatest positive impact and use this information to prioritise mitigation measures in the identified rivers, including removal of dams and migration barriers where relevant, as well as where this is not possible prioritising and applying mitigation measures at dams (e.g. in connection with hydropower plants), especially in small waterways.
BE24	Initiate implementation by 2022 of a Baltic coordinated programme of protective measures ensuring successful eel migrations, aligned with CMS, the EU Eel Regulation and other relevant instruments
BN08	Restore functional populations of Baltic sturgeon by [2029] implementing HELCOM Baltic Sea Sturgeon Action Plan
<i>Provisional topic: Conservation of seals</i>	
BE25/ BE26	Finalisation and implementation of national management plans for grey seals by [XXXX]
BE27/ BE28	Finalisation and implementation of national management plans for ringed seals by [XXXX].
BE29	Protect the ringed seal in the Gulf of Finland, including to significantly reduce by-catch and to improve the understanding of the other direct threats on the seals, and urge transboundary co-operation between Estonia, Finland and Russia to support achieving a viable population of ringed seals in the Gulf
<i>Provisional topic: Conservation of benthic species</i>	
BN09	By [XXXX] assess the status of the Haploops species and the biotope, as well as key threats and, if relevant based on the assessment, by [XXXX] develop a joint conservation plan for Haploops species including jointly agreed measures to improve the status of the species and biotopes, to be implemented by [XXXX].
<i>Provisional topic: Data and information to support species conservation measures</i>	
BE30	To include information on functional and lifehistory traits for the species in the HELCOM Biodiversity Database, by [XXXX].

Code	Actions
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<i>Provisional theme: Conservation of habitats and biotopes</i>	
BE31	Map ecosystem services and the present and potential spatial distribution of key ecosystem components, including habitat forming species such as bladder wrack, eelgrass, blue mussel and stoneworts Baltic-wide, by [2025].
BE32/ BE33/ BE34/ BE35	To assess the state of key ecosystem components including habitat forming species as well as their main threats by [2023]. By [2025] identify suitable areas for restoration of habitats, including key ecosystem components. By [2030] implement effective mitigation measures, in accordance with the results of the assessed state and the identified level and main sources of threat, including cost-effective programmes for restoration as outlined in the HELCOM Restoration Action Plan. These should be done in co-operation between countries when feasible.
BN10	To, by [XXXX], protect biogenic habitats and structures on the seafloor such as e.g. blue mussel reefs by restricting all human activities associated with causing physical loss or disturbance in areas where such structures can be found.

Code	Actions
<i>Provisional theme: Red listed species and habitats/biotopes</i>	
BE36	To update the HELCOM Red List Assessments by [2024], including identifying the main individual and cumulative pressures and underlying human activities affecting the red listed species, biotopes and habitats
BE 37/ BE38/ BE39	If not already done then by 2020, by [2025] develop, and by [2024] implement and enforced compliance with, ecologically relevant conservation plans or other relevant programmes or environmental measures (e.g. habitat restoration, MPAs), limiting direct and indirect pressures stemming from human activities for threatened and declining species, including joint or regionally agreed conservation measures for migrating species.  If not already done then by 2020, by [2025] develop, and by [2024] implement and enforced compliance with, ecologically relevant conservation plans or other relevant programmes or environmental measures (e.g. habitat restoration, MPAs), limiting direct and indirect pressures stemming from human activities for threatened and declining biotopes and habitats,
BE40	Develop tools and regularly assess the effectiveness of other conservation measures, besides MPAs, the first assessment to be done by [XXXX] as well as assess effect on species, biotopes and habitats through risk- and status assessments by [XXXX]

Code	Actions
<i>Provisional theme: Habitat restoration</i>	
BE41	Develop and implement habitat restoration plans (including spawning sites and migration routes) in relevant rivers by 2025 to strengthen native strains and to reinstate migratory fish species
BN11a- BN11l	By [XXXX] develop and by [XXXX] implement a HELCOM Action Plan for Habitat and Biotope Restoration, including an associated implementation toolbox outlining best practices and methods for habitat restoration in the Baltic Sea region.

Code	Actions
<i>Provisional theme: Enabling ecosystem-based management</i>	
<i>Provisional topic: Indicators, general</i>	
BE42	By [2024] develop a roadmap to fulfil the needs of a holistic assessments for all relevant ecosystem components, food webs and pressures and by [2030] at the latest develop a fully operationalise a set of indicators fulfilling HELCOM's needs, which include the need to provide a regional platform for the MSFD.
BE43	Develop common indicators, threshold values to evaluate the status of food webs by [2026], where applicable and implement a holistic assessment of food webs no later than [2030].
<i>Provisional topic: Spatial pressure and impact assessment</i>	

BE44	To identify by [2022] data needs for quantitative cumulative assessment of human activities and implement by [2024] at latest methods for mapping and assessment of adverse effects on the ecosystem of human activities in the Baltic Sea region
<i>Provisional topic: Support for developing habitat maps</i>	
BE45	Develop a fully functioning translation matrix between HUB, MSFD broad habitat types, HD habitats and EUNIS, in co-ordination with EMODNET by [2025]
BE47	Update the HUB-classification where gaps have been identified, by [2024]
<i>Provisional topic: Ecosystem Based Management</i>	
BN12	Joint action to form a common understanding of ecosystem based management by 2023
BN13	Public awareness of potential impact of human activities on coastal ecosystems
<i>Provisional topic: Status of fish populations</i>	
BN14	Conclude a complete set of indicators for the assessment of fish stock health, also including size and age distribution

## Eutrophication segment - A Baltic Sea unaffected by Eutrophication

Visualizations/text boxes to be added to include the following information:

<p><b>Goal:</b> Baltic Sea unaffected by eutrophication</p> <p><b>Links to climate change:</b> <i>(from the Climate Change Fact Sheet, to be reviewed)</i></p> <p><u>Direct effects</u>  Water temperature  Stratification and ocean circulation  Carbonate chemistry  Riverine nutrient loads and atmospheric deposition  Oxygen</p> <p><u>Indirect impacts</u>  Nutrient concentrations and eutrophication  Ecosystem function  Aquaculture</p> <p><b>SDG targets addressed:</b></p> <ul style="list-style-type: none"> <li>- SDG2 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.</li> <li>- Some targets from SDG 6 are also relevant.</li> <li>- 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</li> </ul> <p><b>Pressures addressed</b> <i>(to be added):</i></p> <p><b>Activities addressed by HELCOM actions</b> <i>(to be added):</i></p> <p><b>Cross reference with other segments:</b></p> <ul style="list-style-type: none"> <li>- Reaching the objectives for eutrophication is a necessity to meet the goal of a 'Baltic Sea ecosystem is healthy and resilient';</li> <li>- Reaching the goal and objectives for sea-based activities is a requirement for reaching the goal for eutrophication.</li> </ul>
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### Description of current state

Eutrophication is a condition where high nutrient concentrations stimulate the excessive growth of primary producers resulting in an imbalanced functioning of the aquatic ecosystem. In the Baltic Sea, symptoms of eutrophication include intense algal growth, increase in oxygen consumption and oxygen deficiency. Eutrophication contributes to the depletion of oxygen on the bottom of the sea, leading to vast areas with anoxic or hypoxic conditions in the Baltic Sea and affecting the functioning of the entire ecosystem.

Despite of the observed slight long-term improvement, 96% of the region is still below good eutrophication status, including all of the open sea area and 86% of the coastal waters (assessment years 2011-2016).

Further, the eutrophication status has deteriorated lately in four of the 17 sub-basins, which might be attributed to temporal variability in climate and hydrography.

Eutrophication is caused by excessive input of nutrients to the aquatic environment. Total input of nutrients to the Baltic Sea consists of natural background and input originating from various human activities on land and at sea. Nutrients reach the Sea via water and air. Waterborne input includes transport by rivers and direct discharges from point sources. The riverine input is dominating for both nitrogen and phosphorus, constituting [69 and 95] percent respectively. Airborne transport plays a significant role for the input of nitrogen contributing [27] percent of the total load. The remaining is supplied by direct sources that play only a minor role and contribute 3 percent of nitrogen and 5 percent of phosphorus. Excessive anthropogenic nutrient inputs to the Baltic Sea in the past have led to accumulation of a considerable amount of phosphorus in the bottom sediments. When phosphate is released from the sediments under hypoxic conditions it contributes to the total nutrient load on the marine ecosystem, thereby fuelling the vicious circle of Baltic Sea eutrophication.

Inputs of nutrients have decreased significantly to almost all sub-basins. Maximum allowable inputs (MAI) for both nitrogen and phosphorus have been achieved in the Bothnian Sea, the Kattegat and the Danish straits, though, further improvements in some local coastal water bodies are still needed. Nonetheless, remaining reductions for the whole Baltic Sea are still 13 percent of MAI for nitrogen and 38 percent for phosphorus. The highest reduction requirements remain for the Baltic Proper.

Most of the reduction so far has been achieved through measures addressing direct point sources, such as wastewater treatment facilities and industries. No significant reduction of diffuse loads has been achieved in the last two decades, though, diffuse nutrient run off contributes almost 35 percent of the riverine input. Agriculture is the main contributor to the diffuse load of nutrients to the Baltic Sea, and this sector has also the highest reduction potential. There is still a reduction potential for point sources, especially in upper parts of river basins, and for scattered dwellings. Reductions of the deposition of airborne nitrogen, which constitutes almost a third of the total nitrogen load, have mainly been achieved in the energy and transport sectors but further reductions in particular from shipping are still required. Emissions of ammonia remain at the same level and have even increased recently, indicating a need for more effective emission reduction measures in the agricultural sector.

#### [STRATEGIC DECISIONS / NUTRIENT INPUT REDUCTION SCHEME]

The management objective of the Baltic Sea Action Plan in respect to eutrophication is to minimize inputs of nutrients from human activities. Significant reductions, [14%] for nitrogen and [24%] for phosphorus, have been achieved by all HELCOM Contracting Parties in the past two decades. Nevertheless, the original nutrient input targets, set by the Baltic Sea Action Plan adopted in 2007, [will not be] achieved by 2021.

The regional targets to reach good environmental status of the Baltic Sea are the maximum allowable inputs of nutrients (MAI) - indicating the maximal level of inputs of water and airborne nitrogen and phosphorus to Baltic Sea sub-basins. The maximum input to the Baltic Sea that can be allowed so that good environmental status regarding eutrophication can still be reached is 792,209 tons of nitrogen and 21,716 tons of phosphorus. The maximum allowable inputs of nitrogen and phosphorus to the Baltic Sea sub-basins, based on the most recent available data on fluxes in the marine ecosystem, are given in the table.

Baltic Sea Sub-basin	Maximum Allowable Inputs (MAI)	
	<i>TN, tonnes</i>	<i>TP, tonnes</i>
Kattegat	74,000	1,687
Danish Straits	65,998	1,601
Baltic Proper	325,000	7,360

Bothnian Sea	79,372	2,773
Bothnian Bay	57,622	2,675
Gulf of Riga	88,417	2,020
Gulf of Finland	101,800	3,600
<b>Baltic Sea</b>	<b>792,209</b>	<b>21,716</b>

Net nutrient input ceilings define maximum inputs via water and air to achieve good status with respect to eutrophication for Baltic Sea sub-basins for each country. They are calculated as shares of the maximum allowable inputs to each sub-basin using the proportions of nitrogen and phosphorus inputs in the reference period 1997- 2003. The agreed net nutrient input ceilings (NIC) are given in the table. Nitrogen and phosphorus input ceilings are also calculated for non-HELCOM countries in the Baltic Sea catchment area, other countries with airborne input (OC), Baltic Sea shipping (BSS) and North Sea shipping (NOS).

*Net input ceilings for nitrogen (t/year)*

	BOB	BOS	BAP	GUF	GUR	DS	KAT
DE	947	3920	34077	1645	1747	23647	4661
DK	280	1148	9025	421	462	28067	28538
EE	113	404	1478	11334	13099	22	24
FI	35087	28700	1827	20457	295	76	89
LT	108	495	25878	305	8820	66	80
LV	73	330	6457	246	43074	31	34
PL	668	3125	151997	1407	1596	1480	1443
RU	839	1993	10317	61503	3296	238	245
SE	17718	32633	30690	626	525	6056	32799
BY	1375	5008	26947	2986	2188	4933	4502
CZ			13456		12820		
UA			3551				
OC			1693				
BSS	284	1141	5180	675	345	651	701
NOS	131	475	2427	196	150	729	884

*Net input ceilings for phosphorus (t/year)*

	BOB	BOS	BAP	GUF	GUR	DS	KAT
DE			109			401	
DK			21			979	815
EE			9	225	185		
FI	1683	1246		315			
LT			703		175		
LV			167		1061		
PL			4291				
RU			242	2909	99		
SE	811	1133	318			116	753
BY			349		407		
CZ			57				
UA			47				

Net nutrient input ceilings for each country and sub-basin incorporate national shares in the nutrient inputs via transboundary rivers. Thus, nutrient input ceilings were also computed for these rivers and national shares in their total inputs. Nutrient input ceilings for transboundary rivers are given in the Annex to this segment.

The input ceilings for nitrogen and phosphorus are based on current scientific knowledge and are subject to uncertainties. Thus, following the precautionary principle, inputs of nitrogen or phosphorus to a basin should not increase until both MAI and [good status with respect to eutrophication] have been reached, even in basins where inputs are already below the input ceilings.

#### Connection to other treaties

The achievement of good environmental status in relation to eutrophication in the Baltic Sea also relies on additional reduction of inputs from third parties including waterborne input from non-Contracting Parties and airborne input of nitrogen from shipping and long-range transport by 2030 as follows:

- 52758 tons of airborne nitrogen since the reference period (1997- 2003) assuming full implementation of the Gothenburg Protocol of the UNECE Convention on Long-range Transboundary Air Pollution and National Emissions Ceilings (NEC) Directive,
- 5561 tons of waterborne nitrogen and 930 tons of waterborne phosphorus since the reference period (1997-2003) assuming that non-Contracting Parties take the same responsibility to reduce nutrients input as the Contracting Parties,
- 16803 tons of airborne nitrogen from shipping due to the implementation of the IMO decision to establish a NECA in the Baltic Sea and North Sea.

In addition to the above mentioned policies implementation of the EU Marine Strategy Framework Directive, Water Framework Directive, Nitrates Directive, Urban Wastewater Treatment Directive and the Industrial Emissions Directive, as well as the Water Code and Law on Environment protection of the Russian Federation are prerequisites to the achievement of the goal for this segment of the Baltic Sea Action Plan.

#### Description of desired state

The desired state of the Baltic Sea regarding eutrophication is described by the ecological objectives.

- Concentrations of nutrients close to natural levels
- Clear waters
- Natural level of algal blooms
- Natural distribution and occurrence of plants and animals
- Natural oxygen levels

In order to achieve this desired state, inputs of nutrients should be reduced to the maximum allowable nutrient inputs in all sub-basins, and the work continuous including revision of maximum allowable inputs and input ceilings based on the best available scientific knowledge and accounting climate change effects.

Such reduction can be achieved through full implementation of the Annex III to the Convention and other innovative agri-environmental measures bearing in mind the delayed effect of measures applied to diffuse sources. Sewerage systems in scattered dwellings and individual houses should be modernized across the whole catchment area, together with modernization of all municipal and industrial waste-water treatment plants to comply HELCOM requirements. Large waste-water treatment facilities should start introduction of innovative water treatment techniques achieving higher nutrient removal level than it was set in the existing HELCOM Recommendations which paved the way for their revision and strengthening. Aquaculture in the

region should comply to HELCOM Recommendation and fish farms apply BAT/BEP to minimize nutrient losses. Targets for reduction of nitrogen emissions set under various policies should be achieved.

Implementation of the Regional Nutrient Recycling Strategy, supplementing the Baltic Sea Action Plan, builds up smart nutrient management system when nutrients are used efficiently within the production systems, preventing their air and water losses and reducing the demand of imported virgin raw materials.

Continuous cooperation with the River Basin Authorities ensures that river basin management plans consider the nutrient input ceilings set by the HELCOM Baltic Sea Action Plan. River basin management authorities within transboundary river basins should cooperate addressing waterborne nutrient inputs from non-Contracting Parties and harmonizing measures to achieve the targets set for transboundary rivers.

It should also be acknowledged that achieving of the maximum allowable inputs to all sub-basins does not imply an immediate achieving of all objectives with respect to eutrophication. The ecosystem, which has been under anthropogenic pressure for more than a century, may require from a few up to several decades to recover after nutrient inputs have been reduced. [Thus, measures to manage internal nutrient reserves might be applied utilizing the best available scientific knowledge and minimizing potential risks through application of the HELCOM risk assessment framework for management of internal nutrient reserves].

### Actions

To achieve the set objectives, the following actions will be taken:

Code	Action
<i>Provisional theme: Follow-up of the implementation of nutrient reduction requirements</i>	
EE11	All necessary nutrient input reduction actions in the catchment area should be fully implemented latest [by 2027], as these actions have a delayed effect on the input reduction at sea
EE12	A detailed account list of planned and implemented measures in different sectors and catchments alongside an estimation of their effectiveness should be submitted to HELCOM by [2023] in order to share practical information demonstrating how country-wise nutrient inputs ceilings can be achieved.
EE13	Regular assessments of implementation of the Scheme should be performed - annually for MAI and every 2 years for input ceilings to follow up implementation of regional and national targets for inputs of nutrients based on the most recent monitoring data of riverine nutrient loads, the data on air deposition of nutrients, transboundary loads and national data on inputs from direct point sources including sea-based aquaculture.
EE14	National monitoring networks should be maintained in up-to-date state and striving for harmonized methods to estimate nutrient inputs from unmonitored areas and to provide timely sufficient and consistent data on nutrient loads to the Baltic Sea (HELCOM Recommendations 37-38/1 and 37-38/2) in order to ensure reliability of the follow-up system.
EE10	As the maximum allowable inputs and nutrient input ceilings are based on the best available scientific information, they are subject for reviewing as necessary using a harmonized approach when new scientific knowledge is available.
EE09	Strengthen cooperation with river basin management authorities of non-HELCOM countries through official agreements addressing transboundary waterborne nutrient inputs from non-Contracting Parties

Code	Actions
<i>Provisional theme: Agriculture</i>	
EE03	Implement and enforce the provisions of part 2 of Annex III "Prevention of pollution from agriculture" of the 1992 Helsinki Convention
EN01	Establish site specific buffer zones to reduce nutrient losses from agricultural land, for example on parts of fields where surface runoff and erosion occurs, along ditches or at surface water inlets
EN02	Optimize fertilization rates site specifically and promote precision fertilization practices in order to increase nutrient use efficiency and reduce nutrient losses

EN03	Develop and apply the best practices to improve soil structure and aggregate stability on clay soils to reduce phosphorus losses from agricultural lands, for example by using soil structure lime or gypsum
EN04	Increase organic farming by at least [25%] of agricultural land to reduce the inputs of nutrients and hazardous substances to the Baltic Sea
EN05	Discourage application of manure and other organic fertilizers in the autumn without sowing winter crops
EN06	Improve knowledge exchange by establishing dialog between farmers, authorities and decision makers
EN07	Enhance mutual learning among farmers on best practices and innovative technologies
EN08	Develop BAT/BEP for reducing ammonia and GHG emissions from livestock housing, manure storage and spreading
EN09	Develop recommendations for manure management specifically for horses, sheep, goats, and fur farming
EE01	Apply as a minimum the updated EU's BREF document and Conclusions on BAT for intensive rearing of poultry and pigs, especially for the facilities located within areas critical to nutrient losses
EE02	Review national regulation and voluntary measures and – if relevant – implement further or revised measures, as compiled in the revised palette of measures for reducing phosphorus and nitrogen losses from agriculture
EE04	Agreement on national level by 2023 on measures to reduce nutrient surplus in fertilization practices to reduce nutrient losses
EE05	Investigate opportunities for taxation of mineral fertiliser and/or taxation of nitrogen surplus and/or payments for agri-environment measures [by 2024], and implement them building on the experiences available in various countries.
EE06	Apply innovative water management measures [where appropriate], for example, lime filter ditches, sediment traps and controlled drainage, and nature-based solutions, such as two-level ditches and constructed wetlands, when upgrading and renovating agricultural drainage systems <i>DK study reservation, can support if "where appropriate" is added</i>

Code	Actions
<i>Provisional theme: Atmospheric nitrogen emissions</i>	
EE15	HELCOM Contracting Parties will continue to reduce the deposition of atmospheric nitrogen on the Baltic Sea through the implementation of the national nitrogen reduction commitments of the Gothenburg Protocol and the EU NEC-Directive 2016/2284 for those HELCOM CPs that are also EU Member States. HELCOM CPs will ensure that measures taken in transportation, combustion and agriculture are tailored to contribute to the reduction of the nitrogen deposition on the Baltic Sea.
EE16	Revise the HELCOM Recommendation 24/3 on "Measures aimed at the reduction of emissions and discharges from agriculture" ensuring reduction of agricultural ammonia emissions and considering relevant BAT and BEP
EE17	Enhance HELCOM cooperation with the UNECE Convention for Long-Range Transboundary Air Pollution in order to promote the inclusion of the protection of the Baltic Sea ecosystem as an additional criterion in the process of the revision of the emission targets for nitrogen in the Gothenburg Protocol.

Code	Actions
<i>Provisional theme: Nutrient recycling</i>	
EN11/ EE08	Implement adequate measures, especially in agriculture and wastewater management, to achieve the objectives of the Baltic Sea Regional Nutrient Recycling Strategy
EE07/ EN10a/ EN10b	Create legal and institutional tools to advance towards making annual field-level fertilization planning and farm-gate nutrient balancing for nitrogen (N) and phosphorus (P) a requirement for all farms in the Baltic Sea Region to prevent nutrient surplus on farmlands
EN12	Optimize the use of recycled nutrients in agriculture making use of best available technologies and fertilize according to crop needs
EN13	Develop safety standards for recycled fertilizer products and minimise the occurrence of harmful compounds in these products to comply with the standards
EN14	Increase the knowledge and promote education and advisory services on nutrient recycling

EN15/ EN17	Create a market for recycled fertilizer products to support their production and use by setting incentives and making their use equally attractive to farmers as the use of mineral fertilizers
EN16	Enhance cooperation and share experiences between sectors and actors to create a holistic view on sustainable food systems including nutrient recycling across sectors

Code	Actions
<i>Provisional theme: Waste water sector</i>	
EN18	Strengthening of HELCOM Recommendation 28E/5 on MUNICIPAL WASTEWATER TREATMENT
EE18	Facilitate exchange of information on best available treatment techniques (WWTP) through cooperation with existing regional digital platform(s) acting as a hub for the best knowledge in the wastewater management sector
EE19	Encourage educational cooperation with involvement of relevant non-governmental organizations utilizing such regional digital platform(s) to solve problems of municipal sewage in smaller municipalities and scattered settlements
EE20	Cooperate with relevant PAs of the EU SBSR regarding wastewater treatment plants (under “save the sea” objective of the EUSBSR) as well as other regional policies to engage a wider network of stakeholders into cooperation to achieve the BSAP targets through e.g. supporting flagship projects and processes
EE21	Target the elimination of phosphorus in laundry detergents for consumer use as soon as possible, but not later than by [20XX]
EE22	As the first step to build knowledge base to target the reduction of phosphorus in detergents for industrial & institutional use. By 2025, develop and publish a HELCOM progress report about best available techniques, alternative builder, especially on their use, environmental effects and effectiveness.
EE23	Undertake efforts to reduce and where possible eliminate phosphorus in detergents for industrial & institutional use, in particular for institutional use of laundry and dishwater detergents [no later than by 2030] based on the knowledge on best available techniques compiled at the first step

## Annex to the Eutrophication segment

### Input ceilings for transboundary rivers and other sources; accounting for extra reductions

Almost half of the waterborne input of nutrients enters the Baltic Sea via transboundary rivers, which requires setting nutrient input ceilings for 9 major transboundary rivers, addressing inputs from the whole river catchment areas, separately from other sources.

The National net nutrient input ceiling for each sub-basin is the sum of the national share in the transboundary river ceiling and ceiling for remaining sources of input to the respective sub-basin. The input ceilings for transboundary rivers are not additional requirement but an integral part of the national net input ceiling and, thus, countries are free to implement measures where they are most appropriate to meet their net input ceilings.

Nutrient input ceilings for transboundary rivers and input ceilings for national parts of transboundary river catchments, are given in the tables below.

*Waterborne nitrogen input ceilings for transboundary rivers and national shares within transboundary river basins (t/year):*

River	Basin	NIC	DE	FI	LT	LV	PL	RU	BY	CZ	UA
NEMUNAS	BAP	29338			18934				10404		
BARTA	BAP	957			427	530					
VENTA	BAP	6033			2896	3137					
LIELUPE	GUR	15864			7255	8608					
DAUGAVA	GUR	38801			1103	22243		2634	12820		
ODER	BAP	49298	179				43951			355	
VISTULA	BAP	74808					70062		3052		1693
PREGOLYA	BAP	5494					2498	2995			
NEVA	GUF	43462		4856				38620			

*Waterborne phosphorus input ceilings for transboundary rivers and national shares within transboundary river basins (t/year):*

RIVER	BASIN	NIC	DE	FI	LT	LV	PL	RU	BY	CZ	UA
NEMUNAS	BAP	914			628				285		
BARTA	BAP	25			5	20					
VENTA	BAP	106			20	86					
LIELUPE	GUR	302			135	167					
DAUGAVA	GUR	942			40	395		99	407		
ODER	BAP	1554	38				1459			57	
VISTULA	BAP	2350					2240		63		47
PREGOLYA	BAP	147					51	96			
NEVA	GUF	1398		20				1379			

### Accounting for extra reductions of nutrient inputs

As reductions of nutrient inputs in sub-basins may have effects on other sub-basins, extra reduction – reduction below the national input ceiling for a sub-basin - can be accounted for, in proportion to the effect on a neighbouring basin, by the countries in reaching their input ceilings for nitrogen and phosphorus,

respectively. The application of the mechanism for reallocation of extra reduction is to be based on the following principles:

**1. Accounting should be based on countries individually**

This implies that countries can plan and implement measures across basins at their own discretion as long as it results in conforming to CART after accounting of extra reduction is performed.

**2. Countries could claim accounting for missing reductions even if MAI is exceeded due to inputs from other countries**

No country should need to wait for any other country before claiming themselves fulfilment of CART.

**3. Any relocation of measures should lead to at least the same environmental improvement as if CART were implemented**

This is imperative for the GES to be achieved eventually. Inevitably, using extra reductions will lead to less inputs than MAI as seen as a total for the Baltic Sea, but its distribution need to be such that GES will be achieved everywhere.

**4. The effect of extra reductions on neighboring basins with missing reductions should be estimated given that these are minor deviations from MAI**

The Baltic Sea is a strongly perturbed system and hence, functioning quite different today compared to how it will function when measures been implemented and status approach GES. The whole calculation of MAI is taking this into account and when deviations to MAI are to be analysed, it should be done assuming that we are close to GES.

**5. Accounting for extra reductions in connection with CART follow-up assessments are to be performed in a uniform way supervised by RedCore DG**

Accounting for extra reductions should be included in the regular CART assessment using a common and harmonized methodology. RedCore DG is the forum that supervises development of methodology and, after appropriate approval, implementation of this in the assessment.

**6. The Archipelago Sea phosphorus input reductions should be accounted in the Finnish CART for Gulf of Finland (cf. BSAP 2007)**

Already in BSAP 2007, Finland pointed out that models failed to separate the Archipelago Sea from Bothnian Sea and that this should be taken into account at a later stage. Also in the 2013 revision of the nutrient reduction scheme, model limitations failed to address separate MAI calculations for the Archipelago Sea. However, within the context of accounting for extra reduction can be an opportunity to take into account separately the nutrient inputs to Archipelago Sea from the remaining Bothnian Sea inputs.

**7. In the context of extra reduction accounting, reductions of phosphorus to Baltic Proper could be accounted as input reduction in Gulf of Finland**

In the calculations of MAI, the most limiting targets affecting the distribution of MAI for phosphorus were the winter nutrient concentrations in the Baltic Proper. Strictly following the principle of “maximum” inputs, led to a situation where this gave an optimal solution resulting in removal of virtually all phosphorus inputs to the Baltic Proper and barely any reductions to Gulf of Finland. This solution clearly violated the principle of cost-efficiency so additional calculations based on cost functions for phosphorus input reductions were performed to distribute reductions between Baltic Proper and Gulf of Finland in a cost-efficient way. The obtained MAI results in conforming to phosphorus target in Baltic Proper, but in Gulf of Finland the resulting phosphorus concentrations will be significantly less than target. In line with this, it could be argued for states having phosphorus inputs both to Baltic Proper and Gulf of Finland, that *extra reductions* to Baltic Proper

could be deducted from missing reductions in Gulf of Finland with 100% efficiency. However, one should keep in mind that the MAI for nitrogen to Gulf of Finland was determined from applying the HEAT approach, balancing nitrogen and phosphorus concentrations, so if MAI for phosphorus to Gulf of Finland is not achieved fully additional reductions on nitrogen inputs might be necessary.

**8. Following the precautionary principle, re-allocation of extra reductions cannot be used to purposely increase inputs to a neighbouring basin.**

Following the precautionary principle, extra reductions achieved in a specific basin cannot be used to purposely increase inputs to a neighbouring basin beyond the national input ceilings for basins with reduction targets and beyond the inputs in the reference period 1997-2003 for basins without reduction targets, taking statistical uncertainties into account.

Possible use of extra reductions to increase inputs up to the national input ceilings within a basin are not within the scope of the re-allocation principles. This issue is to be further discussed.

Although the re-allocation methodology is based current scientific knowledge and modelling, it comes with significant uncertainty and will sooner or later be subject of improvement. Therefore, it would be a risk for the environment to increase inputs to neighbouring basins based on this methodology. In addition, a prerequisite for the calculations here is an environment close to GES.

## Hazardous substances and litter segment - A Baltic Sea unaffected by hazardous substances and litter

Visualizations/text boxes to be added to include the following information:

<p><b>Goal:</b> Baltic Sea unaffected by hazardous substances and litter</p> <p><b>Links to climate change</b> (from the Climate Change Fact Sheet, to be reviewed)  <u>Direct effects:</u>            Precipitation            River run off</p> <p><b>SDG targets addressed:</b>            14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</p> <p><b>Pressures addressed</b> (to be added):</p> <p><b>Activities addressed</b> (to be added);</p> <p><b>Cross reference with other segments:</b></p> <ul style="list-style-type: none"> <li>- Reaching the objectives for hazardous substances and litter is a necessity to meet the goal of a 'Baltic Sea ecosystem is healthy and resilient';</li> <li>- Reaching the goal for sea-based activities is a requirement for reaching the goal for hazardous substances and litter.</li> </ul>
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### Description of current state

#### Hazardous substances

Based on indicators representing selected heavy metals, organic contaminants and radioactive substances, the Baltic Sea remains heavily impacted by hazardous substances.

Inputs to the Baltic Sea are decreasing for many substances, and some of the most toxic compounds are banned today. However, several persistent legacy contaminants remain in the ecosystem and new chemicals with unknown effects are being used and released into the aquatic environment. However, numerous prevailing substances are not assessed.

Recent assessment of the contamination status shows that hazardous substances are a cause for concern in all parts of the Baltic Sea. In particular, levels remain too high in the assessed biota for PBDEs, mercury and cesium-137. Nonetheless, scarcity of data on contaminants of emerging concern as well as on some substances already used as indicators and their inputs to the marine environment does not allow obtaining of a comprehensive picture of the contamination of the Baltic Sea.

The current monitoring of hazardous substances tells only little about the thousands of potentially hazardous substances emitted to the environment, or their combined effects. The current risk assessment of chemicals is not adequate for conclusively identifying what hazardous substances should be regulated and monitored which calls for a broader perspective in chemicals management.

Hazardous substances originating from a wide range of human activities on land and at sea pose a severe threat to the Baltic Sea environment. Thousands of chemicals and synthetic materials are used in households. Sewage treatment systems are their primary pathways to the aquatic environment. Urban storm water and

agricultural run-off also contribute to the overall contamination of the Baltic Sea. Industries use chemical compounds in technological processes or as a raw material and their emission through air or water pose a certain environmental risk. Finally, a large group of hazardous substances are by-products of the combustion of fossil fuels, wood or wastes as well as fuels used in various types of transport.

Pharmaceuticals contain active ingredients, i.e. chemicals specifically designed to affect biochemical processes. This group of substances may enter the aquatic environment for example with wastewater, by inappropriate disposal of wastes, spreading manure, or leaching into water from sea-based fish farms. Pesticides and biocides are designed to exert a toxic effect on some target organisms and are applied on farmlands, forests or in aquaculture from where they can leak into the aquatic environment and may sometimes bioaccumulate in food webs. Many hazardous substances are volatile and can be transported in air before they are deposited, sometimes for long distances, and thereby contributing to the contamination of the Baltic Sea marine environment, even if their use in the region itself is prohibited.

Offshore sources include for example the leaching of chemicals from antifouling paints, discharge of polluted water from ships and off-shore installations, as well as accidental or intentional oil spills. Some legacy contaminants can also be resuspended and enter the food webs in the marine ecosystem as a result of dredging processes, depositing of contaminated sediments at sea, and dumped chemical and conventional munition.

#### *Marine litter*

Marine litter is so far only assessed descriptively at the Baltic Sea scale, as monitoring of marine litter is currently under development. However, beach data series already allow for the establishment of a baseline. Together the existing beach litter data together with available data on the proportion of marine litter items in bottom trawl hauls and microplastic particles found in sediments and marine organisms prove that marine litter is an alarming problem for the Baltic Sea. Most of the litter items found on beaches consist of plastics with the majority of items being single-use and attributed to eating, drinking, smoking, or industrial packaging. It is noteworthy that balloons or balloon-related items are found among the top ten items in several sub-basins. At sea, abandoned lost and discarded fishing gear constitute a severe threat to marine life. The problem is relevant for the entire region, though its magnitude depends mainly on the morphologic characteristics of various areas and the intensity.

Marine litter, including microlitter, originates from various human activities on land and at sea. Among land-based sources, recreational or tourism activities, especially on the seashore, together with construction and household-related waste, are the major contributors to littering of the sea. Micro litter including microplastics is primarily released in the aquatic environment with sewage waters, untreated or insufficiently treated storm waters and water from snow melting. It might also originate from disintegration of plastic litter items in the environment.

Ship traffic, fisheries, aquaculture and offshore installations are sources of litter at sea, for example, in case of accidental or intentional discharges of waste from shipping or pleasure vessels. Abandoned, lost or otherwise discarded fishing gear is the type of litter posing one of the major threats to marine life.

#### [STRATEGIC DECISIONS]

Due to the diversity of sources of hazardous substances and litter, achieving the ambitious goals for hazardous substances and marine litter is dependent on the implementation of various complementary policies in the region, as well as globally. An important role of HELCOM is to contribute to these processes and enhance their coherent implementation.

The BSAP brings added value to the EU-, Russian and global policies by fulfilling the need to quantify regional sources and input of hazardous substances and develop effective national or regional measures based on such information. Regular screening campaigns addressing contamination of the marine environment as well

as potential sources and pathways of contaminants to the sea are one of the tools to identify emerging contaminants of concern. The data obtained through the screening in combination with the information on substances used in industrial processes and consumption products create a basis for transformation of indicator-based evaluation to a more flexible status evaluation. This implies implementing mechanisms for regular update of the regional priority contaminants, monitoring and assessment targets, and taking a holistic approach that considers time trends in inputs to the sea and ecotoxicological effects with a clear link to the total load of contaminants. Such holistic approach strengthens the management cycle, enabling the follow-up of measures, assessment of their effects and tailoring these measures to target specific contaminants and their groups. Thus, the HELCOM framework for hazardous substances demands formulation of a new regional strategic approach that identifies a role for HELCOM that supports/complements but does not duplicate work to implement and further develop EU and global policies on chemicals and describes above mentioned mechanisms.

The HELCOM Regional Action Plan on Marine Litter is the main regional tool to work towards the goal that marine life in the Baltic Sea is not any longer harmed by litter and that a significant reduction is achieved by 2025. The Action Plan embraces various measures addressing sources of marine litter on land and at sea as well as educational measures including outreach campaigns and removal measures. Crucial next steps for the success of the joint effort of HELCOM countries towards a healthy Baltic Sea are defining regional threshold as a way to assess progress towards achieving good environmental status for marine litter and applying them as the basis for setting environmental targets. Monitoring of beach litter, litter on the sea floor and microlitter in the water column and in sediments based on regionally harmonized methodologies and regionally set threshold values is the tool to follow-up progress towards the BSAP goal for marine litter and evaluation of the state of the Baltic Sea. Available knowledge has improved since the first Action Plan on Marine Litter was adopted but further scientific and technological development is vital for achieving the BSAP objectives, especially with regard to microlitter.

### Connection to other treaties

Cooperation in the framework of HELCOM provides and enhances opportunities for synergies in national efforts in relation to various polices and treaties. Central directives and in relation to this segment are the EU Single Use Plastic Directive, EU Marine Strategy Framework Directive, EU Water Framework Directive, EU Urban Wastewater Treatment Directive, EU Sewage Sludge Directive, EU Industrial Emissions Directive, among others, and the recently communicated European Green Deal, as well as the Water Code and Law on Environment protection of the Russian Federation. Key global treaties are those concluded under the IMO, the Minamata, Basel, Rotterdam, Stockholm Conventions, the Convention on the Protection and Use of Transboundary Watercourses and International Lakes.

### Description of desired state

#### **Hazardous substances (proposal by Germany and Sweden)**

The desired state of the Baltic Sea regarding hazardous substances is described by the ecological objectives:

- Concentrations of hazardous substances are close to natural levels
- All sea food is safe to eat
- Marine life is healthy
- Minimal risk to humans and the environment from radioactivity.

In order to reach this desired state, the management objective requires to minimize input and impact of hazardous substances from human activities. A number of actions have already been agreed (existing actions) and new actions are being proposed to achieve the management objective. The actions can be distinguished by legacy pollutants, which HELCOM already addresses such as heavy metals, dioxins etc., and actions on contaminants of emerging concern such as PFAS and pharmaceuticals. Since the topic of hazardous

substances covers a large variety of substances, sources and pathways, HELCOM commits to develop an action plan for hazardous substances as a part of the regional strategic approach describing mechanism to set priorities and identify gaps.

### Marine Litter (proposal by the Secretariat)

The desired state of the Baltic Sea regarding marine litter is described by the ecological - **No harm to marine life from litter** - and management objectives:

- Prevent generation of waste and its input to the sea, including microplastics
- Significantly reduce amounts of litter on shorelines in the sea

Implementation of the Regional Action Plan on Marine litter led to significant reduction of marine litter in the Baltic sea by 2025 and progress to achieving the BSAP objectives. Threshold values for the major groups of litter are set and regional monitoring system is in place, which enable follow-up of the progress towards the BSAP goals and evaluation of the effectiveness of implemented measures. Crucial litter items as abandoned, lost and discarded fishing gear or single use plastic are addressed by measures covering the whole lifecycle of the products from production to utilization. Input of microliter is minimized through both measures at source and end-of-pipe solutions. Targeted educational programmes and public campaign such as beach cleaning are systematically integrated in national environmental activities. Active cooperation between regional sea conventions and global treaties is set to address third parties beyond the region.

### Actions

To achieve the set objectives, the following actions will be taken:

Code	Actions
<i>Provisional theme: Hazardous substances</i>	
HLN06	Develop a [regional strategic approach] to HELCOM work on hazardous substances by [2024]
HLE04	Develop national programmes with a particular focus on hazardous substances which are not adequately regulated by other policies
HLE05	Submit to HELCOM by [2023] a detailed account list of planned and implemented measures, including examples of best practices for different sectors, pathways and geographical areas in order to share practical information
HLN04	Strengthening and updating HELCOM recommendations for industrial releases of hazardous substances by applying information produced under the EU Industrial Emissions Directive and other sources in order to sufficiently protect the BS environment
HLN05	Decreasing the emissions of hazardous substances from small scale emitters in urban areas (municipal entities, businesses and private households) by chemical-smart purchasing strategies, substitution and awareness raising campaigns
HLN12	Information campaign on what not to flush (addressing chemicals, pharmaceuticals and litter).
HLE12	Establishment of chemical product registers to be built upon e.g. the EU REACH (EC1907/2006) framework
HLE13	Assess possibilities for private consumers to reduce emissions of hazardous substances in general and for specific substance groups.
HLE14	Launch educational and information campaigns to raise public awareness regarding responsible handling of chemicals in households to prevent their release into the environment.
HLE15	Introduce requirements regarding content of chemicals of high regional environmental concern in public procurement procedures and provide support for follow up.

HLE16	Establish procedures to utilize information obtained under various policies addressing the use of chemicals (e.g. REACH, WFD, IED, Stockholm Convention etc) to prioritize measures targeting regional contaminants and to identify emerging pollutants of high concern.
HLE18	Establish a mechanism for HELCOM to manage the list of priority substances [starting from 20XX] and respond to screening and assessment results pointing out regional challenges for the Baltic Sea environment and contaminants of emerging concern
HLE19	Organize continuous follow up of the work on hazardous substances under various global and EU policies as well as in RSCs, and actively influence these processes by promoting international actions identified as necessary to improve the environmental status with respect to hazardous substances in the Baltic Sea.
HLE20	HELCOM participation as member in Strategic Approach on [International Chemicals Management High Ambition Alliance (SAICM HAA)] to support international cooperation on global chemical challenges that influence the state of the Baltic Sea. Identification of global challenges that are of importance for the Baltic Sea that HELCOM will put on the [SAICM HAA] agenda.
HLE21	By [XXXX] develop further relevant monitoring for the impact of hazardous substances and, as needed, pathogens on animal health, in order to facilitate a reliable ecosystem health assessment
<i>Provisional topic: Legacy pollutants</i>	
HLN01	Promote the use of alternative metals to replace lead in fishing gear and [shooting bullets] with the aim to minimize harmful use of metallic lead.
HLN11	Best practice for removal of antifouling paints from ships and leisure boats
HLE02	[in order to decrease dioxin emissions] we agree to perform information campaigns and other instruments that focus on the quality and species of the firewood, and what is burned in the small-scale combustion appliances
HLE06	Ratification of the UNEP 2013 Minamata Convention on Mercury
HLE07	Enhance implementation of the UNEP 2013 Minamata Convention on Mercury
HLE08	Undertake all possible measures to reduce mercury emissions from energy sector
HLE09	Control concentration of mercury in dredged material and undertake possible measures to prevent its release during dredging operations and handling of dredged material
HLE10	Introduce the ban of the use of mercury-based amalgam in dentistry by [2030], except when deemed strictly necessary
HLE11	Establish and maintain procedures (rules) to handle mercury containing wastes to prevent entering of the contaminant to the environment, including public information on the procedures (rules)
HLE17	Introduce measures based on the best available scientific knowledge and technologies to restrict the use and prevent releases of perfluorinated alkyl substances, phenolic compounds with endocrine disrupting effects and chlorinated paraffins
<i>Provisional topic: Contaminants of emerging concern</i>	
HLN02	Implement restrictions on over-the-counter pharmaceuticals that are persistent and have an impact on the environment by making prescription by physicians compulsory
HLN03	Prioritization of pharmaceuticals in the Baltic Sea region for efficient risk reduction
HLN09	Investigate how databases (new or existing) on the environmental impact of pharmaceuticals can better support stakeholders in making informed decisions
HLN10	Develop a guideline for the environmental monitoring and analysis of pharmaceuticals
HLN13	Strengthening collection of obsolete pharmaceuticals from public in the Baltic Sea region
HLE01	Identify priority pharmaceuticals utilising the best available knowledge on their releases into the aquatic environment, environmental effects and data on the use in the region with subsequent integration of these substances to HELCOM assessments as indicators of the state of the Baltic sea and environmental pressure.
HLN07	Phase out biocide antifouling paint use on leisure boats and limit the use on commercial vessels by 2030
HLN08	Limit the use of firefighting foam containing PFAS at sea and in the catchment area and promote sustainable alternatives
HLE03	Address substances of emerging concern by commencing recurrent screening campaigns [starting from 2021] including broad analytical techniques such as suspect screening and non-target screening methods.

Code	Actions
<i>Provisional theme: Marine litter</i>	

HLN21-27	<p>To achieve the marine litter ecological and managerial objectives we agree to implement the updated HELCOM Regional Action Plan on Marine Litter, this includes to ensure there are measures in place to address the most commonly found and harmful litter items found in the Baltic Sea region by:</p> <ul style="list-style-type: none"> <li>- reducing the impact of ALDFG on the marine ecosystem in a systematic way by developing HELCOM guidelines and recommendations,</li> <li>- significantly reduce the consumption of single use plastics including phase out of unnecessary single use plastics which is prone to become litter,</li> <li>- preventing littering from all sources,</li> <li>- minimizing inputs of microplastics through measures both at source and end-of-pipe solutions,</li> <li>- being aware of new and emerging issues related to marine litter generation and act if needed and</li> <li>- promote and actively work for a global agreement to reduce input of marine litter and microplastics.</li> </ul>
HLN18	Reduce the impact of ALDFG on the marine ecosystem in a systematic way by developing HELCOM guidelines and recommendations
HLE22	Improve the evidence base on the impact of marine litter of the BS region in order to define/agree on new measures
HLE23	Develop common indicators, threshold values to evaluate quantities, composition, and distribution, and sources (including riverine input) of marine litter, including microlitter, by [2022], where applicable and for the rest no later than [2026]. Work should be done in close coordination with work undertaken by Contracting Parties in other relevant fora.
HLE24	Agree on core indicators and harmonised monitoring methods to evaluate quantities, composition, distribution and sources (including riverine input), of marine litter, including microlitter, by [2022], where applicable and for the rest no later than [2026]. Work should be done in close coordination with work undertaken by Contracting Parties in other relevant fora.

## Sea-based activities segment - Environmentally sustainable sea-based activities

Visualization/text box to be added to include the following information:

<p><b>Goal:</b> Environmentally sustainable sea-based activities</p> <p><b>Links to climate change</b> (from the Climate Change Fact Sheet, to be reviewed)</p> <p><u>Direct effects:</u></p> <p>Air temperature  Water temperature  Sea ice  Solar radiation and cloudiness  Salinity  Precipitation  Oxygen  Sea level  Wind  Waves  Sediment transportation and erosion</p> <p><u>Indirect impacts:</u></p> <p>Shipping  Tourism  Coastal protection  Fisheries  Aquaculture  Offshore wind farms  Non-indigenous species  Coastal and migratory fish  Pelagic and demersal fish  Marine mammals  Waterbirds  Benthic habitats</p> <p><b>SDG targets addressed</b> (to be completed)</p> <ul style="list-style-type: none"> <li>- 12</li> <li>- 13</li> <li>- 14</li> <li>- [15.8]</li> </ul> <p><b>Pressures addressed</b> (to be reviewed based on actions):</p> <ul style="list-style-type: none"> <li>- Input of nutrients;</li> <li>- Input of hazardous substances;</li> <li>- Input of marine litter;</li> <li>- Loss and disturbance to the seabed;</li> <li>- Disturbance of species;</li> <li>- Extraction and mortality of species (e.g. extraction of target species, incidental catches);</li> <li>- Introduction of non-indigenous species;</li> <li>- Introduction of underwater noise.</li> </ul>
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**Tentative activities addressed by HELCOM actions** *(to be reviewed based on actions):*

- Shipping (e.g. transport and transport infrastructure);
- Production and transport of energy (e.g. operational wind farms, transmission cables);
- Tourism and leisure infrastructure and activities;
- Extraction of living resources (e.g. fishing, hunting, marine plant extraction);
- Extraction of non-living resources (e.g. mineral extraction, oil and gas extraction);
- Restructuring of coastline and seabed morphology (e.g. dredging);
- Aquaculture, marine (including infrastructure).

**Cross reference with other segments:**

- Reaching objectives for sea-based activities a necessity to meet the goal of a 'Baltic Sea ecosystem is healthy and resilient';
- Reaching the goal for sea-based activities is a requirement for reaching the goal for eutrophication and hazardous substances and litter.

### Description of current state

Sustainable management of sea-based activities is essential for achieving good environmental status of the Baltic Sea. Sea-based activities comprise all human operations and constructions at sea, from commercial shipping and recreational boating, construction work and dredging, energy production to fisheries and the extraction of minerals, oil and gas. Achieving the overall strategic goal of the segment thus requires cooperation on a wide range of topics and involves several objectives and actors.

Emissions and discharges from shipping continue to have harmful impacts on the Baltic Sea environment, despite the reinforced international regulations concerning maritime traffic. Energy efficiency of ships is improving, and a downward trend is also evident for other types of emissions and discharges. Nevertheless, shipping still contributes to roughly 300.000 tonnes of nitrogen oxides, 10.000 tonnes of sulphur oxides and 10.000 tonnes of particulate matter to the Baltic Sea, leading to pollution of the marine environment. Further, shipping can cause adverse environmental effects from inter alia underwater noise, biofouling and grey water discharges which are not yet covered by mandatory international regulation.

Oil spills observed by aerial surveillance have been decreasing in both numbers and size, and while preparedness and response to spills of oil and hazardous noxious substances at sea and on shore is rather advanced in the Baltic Sea, there is still a need for improvement. Annual reports show an increasing number of spills of unidentified chemical substances and novel fuel types, for which response options need development, in particular considering the increasing likelihood of accidents as a result of increased traffic and extreme weather conditions due to climate change.

Fishing takes place in large areas in the Baltic Sea, with direct effects on target species as well as on protected species and habitats. Currently, only three out of nine Baltic fish stocks are in good status with respect to both biomass and fishing mortality. Physical disturbance to the seabed from bottom trawling and bycatches of birds, marine mammals (mainly from gillnet fisheries) and non-target fish species constitute pressures on the ecosystem, which need to be reduced. Further, intensive fishing results in shifts in the food web, alterations in size-age distribution, as well as reductions in reproductive capacity and resilience of both fish and other marine organisms.

In addition to shipping and fishing, direct activities such as mineral extraction, dredging, installation of offshore wind farms, other forms of marine energy production, and laying of underwater cables and pipelines cause physical disturbance and loss of the seabed. As a result of these multiple activities, about 40% of the Baltic Sea seabed is estimated as potentially disturbed, with many underwater biotopes and species in

unfavourable conservation status. Together with submerged hazardous objects (sea-dumped munitions, warfare materials and wrecks filled with oil), activities causing disturbance to the seabed contribute to the potential release of harmful substances that may affect the marine environment and activities in the Baltic Sea. Submerged hazardous objects besides being sources of pollution also pose physical obstacles on the seafloor and a risk factor for maritime workers. The above mentioned activities, including the operation of offshore windfarms, also affect organisms through the effects of noise and may also cause hazards and disturbance to sea birds and other marine life.

Although there has been significant progress in many areas of sea-based activities, it is clear that further actions are needed. The expansion of sea-based activities through emerging maritime sectors further results in several pressures for which regulatory frameworks are either nascent or not in place.

### Connection to other treaties

Relevant treaties to be reflected in bullet form (e.g. Various IMO conventions, MSFD, CFP, ASCOBANS/CMS, WTO, CBD, EU Biodiversity Strategy, OSPAR, NASCO etc.)

*[other relevant examples to be added as well?]*

National and regional recommendations and regulations developed within HELCOM are important in complementing the international regulatory frameworks.

### Description of desired state

The desired state of the Baltic Sea regarding sustainable sea-based activities is described by the ecological objectives:

- No or minimal disturbance to biodiversity and ecosystem
- Activities affecting seabed habitats do not threaten the viability of species' populations and communities
- No [or minimal] harm to marine life from manmade noise

In order to reach this desired state, the following management objectives are to be met:

- Minimize loss and disturbance to seabed habitats
- Minimize noise to [acceptable] levels that do not adversely [seriously] affect marine life
- No introductions of non-indigenous species
- Minimize the contribution to eutrophication and [the input of] hazardous substances and litter
- Enforce international regulations – no illegal discharges
- Safe maritime traffic without accidental pollution
- Effective emergency and response capabilities
- Minimize harmful air emissions
- Zero discharges from offshore platforms
- Ensure sustainable use of the marine resources

Implementing the actions of the sea-based activities segment is one of the key factors for enabling the vision of the Baltic Sea Action Plan to reach a healthy Baltic Sea environment, and for supporting a wide range of activities in the Baltic Sea region that does not compromise ecological, societal, and economic sustainability. HELCOM has the ambition to work continuously for the Baltic Sea to be a forerunner in the field of environmentally sustainable sea-based activities, including shipping, fisheries, offshore wind farms and infrastructure. Apart from implementing the actions set out in the Baltic Sea Action Plan, this will also require

implementation of inter alia the Regional Action Plan on Underwater Noise and enforcement of applicable national, regional and international regulations in the field of sea-based activities.

### Actions

While the Baltic Sea Action Plan predominantly contains concrete measures and actions to be implemented by 2030 at the latest in order to fulfil its various objectives, there are also important actions focusing on close cooperation with other organizations and that are to be continuously implemented by HELCOM and its Contracting Parties.

HELCOM continues the close cooperation with other organizations with the following actions:

Code	Actions
SE04	Further strengthen co-operation with IMO in the field of safety of navigation and take follow-up actions for strengthening regional cooperation in maritime safety in the framework of the HELCOM Maritime Group and the SAFE NAV Expert Group and consider the appropriate forms for this cooperation, recognizing the need for the exchange of technical expertise in the field of maritime safety, especially in risk assessment to avoid shipping accidents in the Baltic Sea, and taking into account the work of IMO
SE05	Continue close technical cooperation with EMSA including collection and analysis of maritime data relevant for the development of safer shipping in the Baltic Sea, such as EMCIP and data including drug/alcohol abuse as a cause of accidents as well as data on linked environmental impacts (oils spill, loss of containers, ...)
SE08	Implementation of the Joint Harmonised Procedure for the Contracting Parties of OSPAR and HELCOM on the granting of exemptions under the BWM Convention, Regulation A-4, and keep the Ballast Water Risk Assessment Tool up to date with data from conducted port surveys
SE10	Continue close cooperation with OSPAR on the implementation of the BWM Convention and the issue of biofouling management at the regional and inter-regional level

To achieve the set objectives, the following actions will be taken:

Code	Actions
<i>Provisional theme: Maritime activities</i>	
<i>Provisional topic: Discharges from offshore platforms</i>	
SE01	Update the Action Plan for the protection of the environment from offshore platforms to put into practice the “zero-discharge” principle in respect of all chemicals and substances used and produced during the operation of offshore platforms by [2026].
<i>Provisional topic: Maritime safety</i>	
SN01/SE03	Ensure the completion of the re-surveys for Cat. III areas near shore and other areas used typically for safe boating, environmental protection, GIS data purposes and oil recovery contingency by the time specified in the revised BSHC HELCOM Re-Survey Scheme.
SE02	Take actions to ensure the completion of the re-surveys for Cat. I and II areas used by navigation by 2030 at the latest.
SE06	Further work with regard to the regional HELCOM AIS system and also new systems such as VDES and other e-navigation services in order to increase safety of navigation and gain environmental benefits
<i>Provisional topic: Non-indigenous species</i>	
SN02a/ SN02b	Work for the harmonized implementation of the International Maritime Organization (IMO) Biofouling Guidelines and Guidance, taking into account e.g. the proposed Biofouling Management Roadmap, and further contribute to the work carried out in the IMO.

Code	Actions
SE07	Establishment [by 2024] and subsequent implementation of the early warning system in case of the introduction of invasive species in ports.
SE09	Promote the development [and use] of effective, environmentally sustainable biofouling management techniques and antifouling systems on ships and pleasure craft, including biocide-free alternatives to prevent biofouling by supporting related R&D activities in the region
SE11	Strengthen cooperation on ship hull fouling solutions with regard both to preventing the introduction of invasive alien species and to hazardous substances in anti-fouling systems, as well as energy efficiency aspects on the basis of the proposed Biofouling Management Roadmap
<i>Provisional topic: Pleasure boating</i>	
SE16	Promote by 2025 environmentally sustainable pleasure boating and the development of “green” marinas/guest harbours and the use of the best ecological practice, including education and raising awareness of the personnel and boat owners of key marinas/guest harbours, by e.g. introducing eco-labelling of marinas and developing guidance and best practice documents as a help for the marinas to reach criteria
<i>Provisional topic: Pollution from ships</i>	
SN03/SN04	Carry out a study and impact assessment, assessing the possible ways for cargo ships to deliver sewage to port reception facilities (PRF) or take treatment measures, using onboard treatment plants, before discharging it into the sea. Based on the results, take relevant action in making a decision on whether to widen the scope of the Baltic Sea Special Area regulations under MARPOL Annex IV to cover also sewage discharges from cargo ships.
SN05/SN06	Carry out study and impact assessment, assessing the volume and potential harmful effects of grey water and the possibilities for ships to deliver it to port reception facilities or take treatment measures using onboard treatment plants, before discharging it into the sea. Based on the results, take relevant action in making a decision on whether and how to manage grey water discharges from ships.
SN07	Develop a Roadmap to reduce the input of pollutants from Exhaust Gas Cleaning System discharge waters, as a minimum in Ise13ine with existing EU legislation, taking into consideration the precautionary principle and the outcome of IMO work.
SN08/SN09	Enhancing the use of alternative fuels and sources of energy in shipping as well as enhancing the use of digitalization and other innovations in technology to optimize energy efficiency in the Baltic Sea area with the view to decarbonise and depollute ships at the same time. Actively follow and contribute to the discussions at IMO on GHG emission reduction and ensure that ice navigation and its special requirements are taken duly into account. Ensure, through the work of HELCOM Green Team, that shipping in the Baltic Sea area meets targets of the IMO GHG strategy while at the same not impairing efforts on air pollution reduction or on other environmental compartments.
SN10	Ensure the no-special-fee system for marine litter applies to all passively fished waste
SN11/SN12	Carry out a study and impact assessment to estimate and evaluate the volumes and impact of discharges of residues of noxious liquid substances contained in cargo tank washing waters under MARPOL Annex II into the Baltic Sea. Based on the results, take relevant action on whether and how to further limit discharges of residues of noxious liquid substances contained in cargo tank washing waters under MARPOL Annex II into the Baltic Sea.
SN13	Study the adequacy and use of port reception facilities (PRF) for MARPOL Annex V cargo residues and, based on this information, ensure adequate PRFs in Baltic Sea ports for cargo residues classified as non-HME substances under MARPOL Annex V and further ensure incentives for ships to use them.
SN14/SN15	Develop and adopt a HELCOM Recommendation to encourage voluntary agreements on delivering all food waste from ships to port reception facilities. Develop a Roadmap to minimize and, if appropriate, prohibit the discharges of food waste into the Baltic Sea
SN16	Introduction of best technologies, techniques and practices (BAT/BEP) to minimize nutrient losses from dry bulk fertilizer storage and handling in ports in the Baltic Sea region.
SN17	Work towards securing ship financing and innovation funding and to ensure maritime transport components in applicable funding mechanisms

Code	Actions
SN18	Enable onshore power in the Baltic Sea region by promoting onshore power supply availability and ensuring initial economic incentives for onshore power supply.
SE12	Develop and facilitate implementation of feasible and effective economic incentives to reduce pollution from ships, taking into account HELCOM Recommendation 28E/13 as amended 19 June 2019
SE13	Develop a Roadmap to strengthen the implementation and enforcement of the Baltic Sea NOx Emission Control area by [2023] based on experience and lessons learned. The roadmap should also include monitoring of NOx reduction and linked evolution of air pollution and sea eutrophication in the area as of 2025.
SE14	Enforce the requirements of the Baltic Sea Special Area under MARPOL Annex IV and continuously ensure the availability of adequate port reception facilities in passenger ports in the Baltic Sea Area taking into account the “Technical Guidance for the handling of wastewater in Ports of the Baltic Sea Special Area under MARPOL Annex IV”
SE15	Continue the dialogue established by the Baltic Sea Platform for Green Technology and Alternative fuels in shipping (HELCOM GREEN TEAM) and work jointly in co-operation with other regional governmental and non-governmental organizations, the industry and research community, to further promote development and use of green technologies and alternative fuels, in order to reduce harmful exhaust gas emissions and to strive for clean and low-carbon shipping

Code	Actions
<i>Provisional theme: Response</i>	
SN19/SN20/ SE17/SN18	Further develop regional preparedness and response related services by e.g. investigating options for upgrading SeaTrack Web to include live data feed in order to improve oil spill trajectory prognoses no later than by [2027]. Investigate options to prepare SeaTrack Web for integration with the Clean Sea Net satellite detection service.
SN21	Development of Best Environmental Practice (BEP) and control of threats posed by munitions, wrecks and other hazardous submerged objects in the Baltic Sea, including the preparation for the remediation of areas contaminated with munitions
SN22	Conduct a feasibility study for, and as appropriate, undertake a risk analysis for oil and HNS pollution of the marine environment in the Baltic Sea area. <i>DK study reservation</i>
SN23	Develop a framework for holistic/integrated management of marine pollution incidents to enable coordinated response operation at sea and on shore.
SN24	Undertake monitoring and pollution risk assessment regarding species and habitats in the Baltic Region.
SN25	Strengthening mutual assistance for oiled wildlife response in the Baltic Region.
SE19	Develop a HELCOM thematic assessment on hazardous submerged objects covering warfare materials and contaminated wrecks as a living document to be updated when more information on submerged hazardous objects in the Baltic Sea is received.
SE20	Keep information on submerged hazardous objects in the HELCOM Map and Data System up to date
SE21	Implement the Joint Inter-Regional Marine HNS Response Manual in operational response to spills involving hazardous or noxious substances as well as exercises by 2025
SE22	Commit to testing the procedures of the Joint Inter-Regional Marine HNS Response Manual at [BALEX 2022].

Code	Actions
<i>Provisional theme: Underwater noise</i>	
SE24/SN26	Identify and implement mitigation measures according to existing Best Environmental Practice and Best Available Technique for continuous and impulsive noise in the Baltic Sea as soon as they become available, but at the latest by [2023]
SN27	Actively support and contribute to the ongoing discussions on underwater noise at IMO.

SN28	<p>Work towards regionally coordinated actions on underwater noise, aiming in the long term towards addressing adverse effects of underwater noise on marine species identified as sensitive to noise, whilst safeguarding the potential of the Baltic Sea for sustainable human activities by:</p> <p>a) Supporting a swift implementation of the Regional Action Plan on Underwater Noise.  b) Initiating and supporting pilot projects to study efficacy of vessel slow down, re-routeing and other operational measures, on noise emissions and responses of target species by the end of [20XX]. Results are to be communicated to IMO for follow-up and further action.  c) Mapping the contribution of leisure boats to the noise in the marine environment; supporting studies on efficiency of mitigation measures, such as speed limitations and time-area restrictions; and  studies on impact from echo sounders and fish-finders. Based on available evidence and new results, developing guidelines for implementing regulation to reduce impact on sensitive species. Simultaneously developing common standards for underwater noise emissions of engines, echo-sounders and fish finders, which can be utilized in national regulation of activities in MPAs and other noise sensitive areas.</p>
SN29	Reducing the impact of impulsive underwater noise on marine biodiversity
SN30	Develop and implement guidelines for the design and use of acoustic deterrent devices to avoid detrimental impacts on the environment from underwater noise.
SE23	Develop and implement threshold values and assessment methods for adverse effect of impulsive and ambient noise for marine life, in cooperation with OSPAR and relevant EU expert groups, by [2023] at latest for marine mammals and by [2026] for other relevant species groups.
SE25	Implement regular and regional harmonized monitoring of ambient and impulsive noise [by 2023] to follow up effects of mitigation measures.

Code	Actions
<i>Provisional theme: Fisheries management</i>	
SN31	Further elaborate cooperation between BALTFISH and relevant HELCOM working groups to facilitate achieving of good environmental status [by supporting ecosystem-based sustainable fisheries.]
SE26	To update and harmonize the 2016 BALTFIMPA decision-support tool approach with ongoing initiatives e.g. in ICES on a seafloor assessment framework for the Baltic Sea. This tool should also provide options on how to reduce the possible negative impact of fisheries on conservation values in the most cost-effective way, including in marine protected areas
SE27	Develop guidance in cooperation with the Regional Coordination Groups within the EU Data Collection Framework and ICES on how to improve data collected on recreational fisheries in a cost-effective way, with a view to evaluate the impacts of recreational fisheries on the marine environment, where there is a need.
SE28	Identify fish species for which there is a need for better data for identified purposes, e.g. GES, and enable fishermen to record catches of relevant species in dedicated programmes
<i>Provisional topic: Fish stock management</i>	
SN35	Implement measures to restore coastal fish communities, including establishment of no-take areas, seasonal closures and catch regulations, as appropriate for the specific coastal area
SN36	Ensure that granting permits for activities in and near rivers does not compromise the ability to reach agreed river specific fish population targets, particularly for salmon as recognized by ICES or nationally
SE34	Competent authorities to establish long-term national management plans for salmon stocks by 2023 and implement them at the latest by 2025 so that they reach set targets, including but not limited to smolt production, genetic diversity and distribution throughout the river habitat
SE35	Competent authorities to improve data related to sea trout stocks with the view to establish and implement long-term national management plans for sea trout stocks at latest by 2025 so that they reach set targets, including but not limited to recruitment status, genetic diversity and distribution throughout the river habitat

Code	Actions
SE36	Define necessary complementary measures supporting the EU multi-annual plans of cod, sprat and herring (Regulation (EU) 2016/1139) for Contracting Parties which are also EU Member States, in order to improve cod size/age-range
SE37	Sharing of information and implementation among Contracting Parties, BALTFISH and BSAC on the implementation of non-lethal mitigation measures or ways to manage seals-fisheries interactions
<i>Provisional topic: Bycatch</i>	
SE29	Invite the competent authorities, such as BALTFISH, to immediately, but no later than 2022, implement mitigation measures in the Baltic proper, in order for by-catch of harbour porpoise to be significantly reduced with the aim to reach by-catch rates close to zero.
SE30	Continually test new by-catch mitigation measures, with evaluation of measures every 5 years starting in [2022], continually introduce new technical and operational by-catch mitigation measures, in cooperation with competent authorities and regularly update HELCOM questionnaire on trials of alternative fishing gears and fishing techniques
SE31/SN32	Develop at the latest by [2023] and implement an effective data collection [on large and small scale fishing vessels] for more reliable data on by-caught birds, mammals [, non-target fish species] and fishing effort taking into account data needs identified by ICES and data-gaps outlined in the HELCOM Roadmap on fisheries data, in order to assess incidental bycatches by [2025]
SE32	Invite the competent authorities to implement operational conservation measures for the Western Baltic population of harbour porpoise by [2024] such as permanent and/or spatial-temporal closures for relevant fishing métiers in risk areas where technical mitigation measures are insufficient to reach conservation goals
SE33	Reduce the negative impacts of fishing activities on the marine ecosystem and to this end, support the development of fisheries management including technical measures to minimize unwanted by-catch of fish, birds and marine mammals and achieve the close to zero target for by-catch rates of relevant species, e.g. harbour porpoise
SN33	Develop and promote the use of alternative fishing gear to replace gillnets with the aim of avoiding incidental by-catch of mammals and seabirds, and to be seal-safe
SN34	Cooperate with BALTFISH in order to promote the mandatory use of Acoustic Deterrent Devices or other effective mitigation measures to minimize bycatch of the Baltic Sea harbour porpoise ( <i>Phocoena phocoena</i> )

Code	Actions
<i>Provisional theme: Seabed loss and disturbance</i>	
SN37	Implement a common approach to assessing and addressing negative effects on the marine environment caused by loss and disturbance of the seabed building on and utilizing the ICES advice and work by relevant expert groups.
SN38	Improved regulation and reporting of small-scale dredging
SN39	Limit and preclude dredging/extraction near protected areas and increased buffer zones round sensitive areas
SN40	Updating the efforts to limit the impacts of dredging, sediment extraction and other bottom disturbing activities in the Baltic Sea
SN41	Adoption of a moratorium on seabed mining in the Baltic Sea, including a moratorium on developing additional permissive regulations and exploitation and exploration contracts.
SN42	Implement appropriate protective curtains for the dredging operations to prevent dispersal and spread of material
SE38	Develop common indicators, threshold values to evaluate the status of structure, function, distribution and loss of benthic habitats by [2022], where applicable and for any remaining topics no later than [2026]. Work should be done in close coordination with work undertaken by Contracting Parties in other relevant fora
SE39	To develop map service for lost and disturbed habitats under HELCOM MADS by [2024]
SE40	To develop methods and define benthic habitats for assessment and collect relevant data to assess the status of the seabed by [2029]

## Horizontal actions segment

### Introduction

The topics included in this segment are by their nature cross-cutting, or “horizontal”, thus potentially affecting the implementation of all elements of the Plan as a whole. The topics under BSAP which have been identified as cross-cutting are:

- Climate change
- Monitoring
- Maritime spatial planning (MSP)
- Economic and social analysis (ESA)
- Financing

Each of these five topics is relevant to the achievement of the goals of the updated BSAP. Monitoring and socio-economic analyses, for their part, serve to examine and quantify the direct and indirect effects of the implementation of, or failure to implement, the measures included in the Plan. MSP is a key and increasingly important instrument for ecosystem-based management and working towards GES. Finally, the successful implementation of the Plan is contingent on the availability of sufficient funding.

## Climate change

The challenges presented by marine climate change impacts are by their nature a regional and horizontal concern, covering aspects from science to high level policy, with climate change impacts already evident in the Baltic Sea: water temperature is rising, the ice extent has decreased, and annual mean precipitation has increased over the northern part of the region. These impacts affect the nature of the sea, its ecosystems as well as the human activities depending on it and the ecosystem services it provides. For example, many wintering birds have shifted their wintering range northwards, the numbers of warm water fish species, such as sticklebacks, are increasing, the risk of infection of human-pathogenic *Vibrio* spp. has increased through surface water warming, and trawl fishing now begins earlier in the year and has increased opportunities to operate in the northern Baltic Sea.

However, the various effects of climate change are often not straightforward and can be difficult to distinguish from other anthropogenic pressures. Both climate and other human-induced pressures vary significantly between different regions in the Baltic Sea, making it unfeasible to find simple management solutions that work for the entire region. In order to mitigate these negative effects, policies thus need to account for these differences and utilise an adaptive management approach based on the best available science.

In order to support such adaptive management, climate change work within HELCOM will focus on long-term, multi-disciplinary approaches to understanding and communicating the implications of climate change for the marine and coastal environment, while keeping the lag time in transferring the quality assured science to the policy level as short as possible. HELCOM will function as the platform to bridge this knowledge to policy and practice, including through cooperation and communication with other instrument, e.g. the HELCOM cooperation to minimize negative impacts from shipping on the Baltic Sea environment includes cooperating and incentivising transition of the maritime sector. As part of this cooperation HELCOM will continue to support initiatives to reduce greenhouse gas emissions from shipping.

The ultimate aim of HELCOM work on climate change has been identified as increasing the resilience of the system of the Baltic Sea with regards to climate change impacts, thus all measures that strengthen the Baltic marine ecosystem resilience to changes induced by climate change should be regarded as climate adaptation measures.

Code	Actions
HAN09	HELCOM and its parties will continue to strive to develop the work at the HELCOM Secretariat and the organisation of HELCOM meetings so as to further minimize emissions of greenhouse gases
HAN10	HELCOM will promote research that identifies how mitigation by natural blue carbon processes can be maximised and implement suitable measures
HAE01	Using the HELCOM/Baltic Earth Joint Expert Network on Climate Change as a platform, improve access to the latest scientific information on the impacts of climate change together with multiple other pressures on the Baltic Sea marine environment through periodic updates of the HELCOM Climate Change Factsheet, and incorporate the possible effect of climate change into the holistic assessment of status as well as effectiveness of measures by [2030] at latest.
HAE02	Identify the needs and possibilities to further adapt HELCOM's policies and recommendations to account for effects and impacts on the environment under the changing climate and to develop and carry out a climate change policy review process as part of the work of HELCOM, starting e.g. with indicators and open recommendations.

## Monitoring

Monitoring is a well-established function of the Helsinki Convention, with coordinated monitoring of physical, chemical and biological variables of the open sea of the Baltic Sea carried out since 1979. The data stemming from these coordinated monitoring programmes provides the basis for understanding the state of the ecosystem and the impacts from human activities as well as the effects of measures addressing them.

The HELCOM Monitoring and Assessment Strategy sets out the basis for how the HELCOM Contracting Parties commit themselves to design and carry out their national monitoring programmes and work together to produce and update joint assessments. The HELCOM monitoring then provides the necessary data needed for the regular assessments of the state of the Baltic Sea, the human pressures and their impacts affecting the state. It also enables evaluations of the extent to which measures are effective and contributes to the implementation of the Baltic Sea Action Plan and the progress towards the visions, goals and objectives of the BSAP. For those CPs who are also EU member states the joint monitoring also contributes to fulfilling the requirements of the EU MSFD or WFD, HD and BD.

HELCOM monitoring can also be utilized to detect climate change and its impacts on the Baltic Sea marine ecosystem over time. Sites with relevant long-term data records are sustained, whilst accommodating improved data collection techniques where appropriate, thus maintaining long term data series needed to identify change over time. This can enable assessment of the ability of the marine environment to cope with, adapt to or recover from the effects of climate changes.

Code	Actions
<i>Provisional topic: Monitoring, general</i>	
HAE03	Regularly review, and as necessary revise HELCOM monitoring programmes (once per 6 years), including the level of regional coordination, in line with the MSFD reporting cycle, to adjust them to the latest technical and scientific developments for a cost-effective joint monitoring, which fully supports the indicator-based assessment approach and monitoring of the implementation of the HELCOM Baltic Sea Action Plan, and is in line with other international monitoring and reporting requirements
HAE04	The validity of HELCOM Monitoring and Assessment Strategy and Data and Information Strategy should be reviewed within 2 years after updating the BSAP and revised as needed.
HAE05	Ensure all HELCOM monitoring programs are regionally coordinated by [2026]
<i>Provisional topic: Monitoring of habitats and biotopes</i>	
HAE06	Map biotopes and habitats nationally based on regionally comparable classification systems, including key habitats and habitat forming species, and identify gaps in spatial coverage of mapping efforts, with the aim to produce Baltic-wide models, including production of maps, of distribution of habitats and biotopes by [2028].
HAE07	As a first step target the gaps identified in the HELCOM monitoring programmes of biotopes, habitats, including key habitats and key habitats forming species by [xxx] and operationalize continual Baltic-wide monitoring of those biotopes and habitats by [2030].
HAN02	Development of standards for quality of seafloor habitat mapping and products

## Maritime spatial planning

Maritime Spatial Planning is a process to support integrated management of sea-based human activities and thus reduce their negative impacts on various components of the marine environment, contributing to the achievement of goals and objectives of different BSAP segments. It should help safeguard biodiversity, promote sustainable use of marine resources and balances interests of stakeholders also considering international environmental commitments. As an integrated tool MSP contributes to climate change adaptation and mitigation increasing the climate resilience.

Maritime Spatial Planning has important added value to the BSAP as it is the only process that considers spatial perspective. Unlike marine protection measures that focus on single human activities or components of marine ecosystems, MSP is based on a comprehensive, coherent across borders and forward-looking analysis of marine space use with a purpose of identifying preferred and optimal locations for sea-based activities.

Maritime Spatial Planning supports sustainable development and sustainable blue/marine economy applying an ecosystem-based approach. It also considers social, economic, cultural and other relevant aspects and enhances marine nature values, facilitates nature conservation and improves marine ecosystem services.

<b>Code</b>	<b>Actions</b>
HAN04	Utilize Maritime Spatial Planning (MSP) applying an ecosystem-based approach to support BSAP-objectives and targets and contributing to sustainable sea-based activities
HAN05	Use MSP as a tool to signal areas of high nature value as identified in marine environmental management
HAN06	Implement MSPs with the aim to steer sea-based activities away from areas where they can cause serious damage or disturbance

## Economic and social analysis

Economic and social analyses of the environment can demonstrate the interaction between the ecosystem and the social-economic system. Further, economic and social analyses can be used to illustrate the importance of the marine environment in the Baltic Sea to the citizens and society, the well-being of current and future generations, and national and regional economies.

Economic and social analyses reveal the market and non-market benefits people obtain from the use and existence of marine and coastal areas. For instance, analyses show the economic values of human activities and the benefits people derive from the knowledge that the Baltic Sea ecosystem is healthy, and its species are thriving. They show what it costs to implement measures to improve the state of the environment, and help identifying the cost-effective way of achieving environmental goals, thus supporting the efficient use of society's limited resources. Combined information on the benefits and costs enables assessing the economic efficiency of policies and environmental objectives.

In recent years, economic and social aspects of protecting the Baltic Sea have been advanced within HELCOM by establishing the HELCOM expert network on economic and social analyses (ESA) and carrying out regional economic and social analyses of the use of marine waters, costs of degradation from not achieving a good status of the marine environment, and sufficiency, effectiveness and costs of measures. However, methodological and practical challenges and knowledge gaps remain, as existing economic and social analyses do not cover all the relevant and important aspects of how the marine environment and people are related.

The BSAP includes a commitment to use and further advance the regional economic and social analyses for policy support. The actions for economic and social analyses in the BSAP describe priority areas for developing and implementing these analyses for the Baltic Sea region. Implementing the actions supports the further integration of economic and social considerations to the protection of the Baltic Sea. The actions provide regionally coherent data and results to support ecosystem-based management, sustainable use of marine resources, and development of efficient regional and national policies, including the BSAP and maritime spatial planning.

Code	Actions
HAE08/HAE09	By [2023], integrate economic and social analyses in HELCOM work strands to support the implementation of the ecosystem-based approach and allow for assessment of the linkages between the marine environment and human wellbeing, including carrying out regionally coordinated economic and social analysis of the marine environment.
HAE10/HAE11	By [2028], improve the use of results from economic and social analyses in decision-making, including through establishing a set of indicators that describe the economic and social aspects of the marine environment.
HAE12	By [2030], integrate quantitative and qualitative economic values of the environment into the management of human activities and maritime spatial planning
HAE13/HAE14	By [2023], identify potential uses of ecosystem services assessment and valuation, further develop and apply regionally coordinated methods in support of analyses of ecosystem services and provide an initial demonstration of how they can be used in policy development.
HAE15	By [2028], apply the framework of ecosystem accounting to assess the contributions of marine ecosystems to economic activity (e.g. GDP) using values that are compatible with the system of national accounts and comparable with other economic sectors
HAE16/ HAE17/HAE18	By [2024] analyse existing tools for analysing sufficiency of measures, with the aim to plan monitoring and assessment of the effect and cost of measures, in order to further make use of the experiences when the need of new measures occurs. By [2028], further develop and apply regionally coordinated methods for analyses of sufficiency of measures as well as for cost-effectiveness of measures and costs and benefits to achieve good status of the Baltic Sea marine environment.
HAE19	By [2025] identify incentives to reduce pressures on the marine environment, including public and private economic and regulatory incentives, and by [2030] increase the use of incentives and fill possible gaps.

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<b>Code</b>	<b>Actions</b>
HAE20	By [2025] HELCOM should identify subsidies or incentives which are harmful for the marine environment and, by [2030] work, in cooperation with relevant international organizations, on phasing out such subsidies or incentives, the work should be done.

## Hot Spots

The Baltic Sea Joint Comprehensive Environmental Action Programme (JCP) was established in 1992 as the international environmental management framework for the long-term restoration of the ecological balance of the Baltic Sea. The major activity of the JCP was identifying and cleaning up pollution Hot Spots. The HELCOM Hot Spot list established in the frame of the JCP includes point sources, such as municipal facilities and industrial plants, agricultural areas and rural settlements, as well as sensitive areas such as coastal lagoons and wetlands where special environmental measures are needed.

Good progress has been made in the last three decades by cleaning up more than three quarters out of the total 162 HELCOM Hot Spots. Work still remains to tackle the remaining 40 pollution sites. In general, despite of the delayed implementation the Programme demonstrates its effectiveness for prioritization and tackling local environmental issues and, thus, contributing to the overall progress towards good environmental status of the Baltic Sea.

In the effort to renew “hot spots” as an international tool to address topical environmental issues in the region, the scope of the programme should be widened embracing also emerging challenges such as marine litter and underwater noise. Criteria for inclusion and removing of hot spots from the HELCOM list should be advanced and tailored for various types of sites and areas on land and at sea. These criteria should be transparent and applicable either for national or international financial instruments to develop investment programmes and follow-up their implementation. The tool is also to be utilized to strengthen cooperation with non-HELCOM countries in the Baltic Sea catchment area.

*Note: In the Excel attachment the draft actions on hot spots are still placed in the sheet “Eutrophication”.*

Code	Action
EN20	Designate “New Hot Spots” of nutrient input into the Baltic based on common methodology and subsequently identify targeted measures to reduce the input
EE25	Prioritize inclusion of HELCOM hot spots into investment programmes (national or international) or establish alternative financial mechanisms to eliminate remaining hot spots from HELCOM list by [2025]
EE26	Specify HELCOM criteria for deletion of hot spots from the list wherever it is needed
EE27	Apply HELCOM criteria for deletion of municipal/industrial, agricultural and other hot spots to justify results of the investment projects

### Knowledge exchange and awareness raising

Knowledge exchange and awareness raising are increasingly recognised as key factors facilitating the social, environmental and economic impacts of measures, thus improving the sustainable management of natural resources and the goods and services they provide, and in turn ensuring well-being of the people that depend on them. When done successfully knowledge exchange and awareness raising increase the likelihood that knowledge and evidence will be used in policy and practice decisions, thus increasing the success of those decisions in meeting their objectives. Delivering messages to stakeholders and general public, should be centrally coordinated to cover all important topics and avoid exclusion of information.

Code	Actions
HAN07	Knowledge exchange and awareness raising to increase public and stakeholder support and interest
HAN08	<p>Promote an understanding on the state of the Baltic Sea and threats to its environment, share experience and best practices on measures that have been implemented, as well as promote opportunities for general public to participate in citizen science.</p> <p>Activities may include issuing press releases, briefings and commentaries; disseminating reports, studies and publications; holding public meetings, conferences and workshops; and creating and contributing to educational materials; development of HELCOM map- and data services to provide coherent information on the status and pressures of the Baltic Sea.</p>

## Financing

The economic benefits of achieving a good status with regard to eutrophication, biodiversity and other aspects of the Baltic Sea ecosystem are evident and documented by impressive figures. Costs of protecting the Baltic Sea can be reduced by a cost-effective allocation of measures, and in many cases, benefits have been evaluated to exceed the costs.

In this respect, all Contracting Parties and HELCOM Observers shall investigate how to make available funding [\[i.e. financial and non-financial contributions\]](#)<sup>2</sup> for the implementation of the HELCOM Baltic Sea Action Plan, taking into account especially the need to connect priorities within the different sectors in which projects are being chosen for financing [in order to use synergies and make best use of limited \[financial\] resources.](#)-

It should be underlined that increased public and private investment is necessary<sup>3</sup> for actions according to the updated Baltic Sea Action Plan and to achieve a healthy Baltic Sea. Providing appropriate economic incentives ~~is~~ [would be](#) a central measure to incentivize such investments.

The private sector, financial institutions as well as non-profit foundations [and Non-Baltic Sea states](#)<sup>4</sup> are therefore invited to join in the efforts to restore the good environmental status of the Baltic Sea, which also supports a growing sustainable blue economy in the region.

Contracting Parties will [support](#) mobilis~~ing~~[e](#) available private and public funding sources to implement the BSAP [as appropriate] and where possible also [promote \(mobilising\)e](#) external funding in the context of *inter alia* the World Bank, the German Kreditanstalt für Wiederaufbau, The Blue Action Fund, the Nordic Investment Bank and others<sup>5</sup>.

The EU and those of its member states that are Parties to the Convention will [intend to](#) dedicate funding to the implementation of the updated HELCOM Baltic Sea Action Plan, notably [where funding is available](#) through programmes funded by the European Structural and Investment Funds in the 2021-2027 programming period and by funding adequate measures under the Common Agricultural [Policy and the Common Fishery](#) Policy. They commit to taking into account priorities of the revised Action Plan of the EU Strategy for the Baltic Sea Region (EUSBSR) and its Policy Areas aiming to save the Baltic Sea in the programming and implementation of post-2020 relevant programs;

In that context, the Baltic Sea Action Plan Fund hosted by NIB/NEFCO shall be a tool for supporting the implementation of the updated BSAP and Contracting Parties will<sup>6</sup> [voluntarily](#)<sup>7</sup> contribute to the Fund, with a view to replenishing the Fund so that it can provide funding to all actors interested in contributing to the aims and objectives of the Baltic Sea Action Plan.

<sup>2</sup> DE: For clarification: This also includes any kind of contributions, e.g. free use of logistic services if provided, material, ships, staff, etc.

<sup>3</sup> DE: How and when one can we get a kind of rough cost estimation? Who can take care of it?

<sup>4</sup> DE: The impact of the BSAP is not limited to the Baltic Sea states. (climate, upstream countries, fishery, etc., also benefit from the BSAP-implementation.;

<sup>5</sup> DE: not necessary; non-exhaustive list because of 'inter alia'

<sup>6</sup> DK: it does not look like DK will be able to contribute to the BSAP fund so we cannot support this wording of the text ("will").

<sup>7</sup> DE: Germany has stated that there will be very probably not contribution to this fund.