Document title	Updated Baltic Sea Action Plan and associated actions relevant for the HELCOM-VASAB MSP WG
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Agenda Item	3 - Development of the regional MSP framework
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Reference	List of Decisions of the Ministerial Meeting of the Helsinki Commission

Background

During the 2021 HELCOM Ministerial Meeting, the Helsinki Commission adopted the updated HELCOM Baltic Sea Action Plan (cf. List of Decisions of the Ministerial Meeting of the Helsinki Commission, para 5.1).

As noted in the preamble of the updated BSAP, the Regional Maritime Spatial Planning roadmap 2021-2030 is one the document which was also considered adopted along the updated BSAP. The updated BSAP is available on the HELCOM website. More information on the associated action documents can be found here.

This document presents an extract of additional information on the actions in the updated Baltic Sea Action Plan relevant to the HELCOM-VASAB MSP WG.

The Annex 1 of this document presents the overall list of actions. The actions coloured in blue in Annex 1 were included in the extract (cf. below).

The follow-up of the implementation of these actions will be made possible with the update of the HELCOM Explorer based on the actions adopted in the updated BSAP. The Secretariat is currently working on updating the HELCOM Explorer.

Action requested

The Meeting is invited to:

- Take note of the information,
- Consider the updated Baltic Sea Action Plan and the associated action documents and supporting documents as appropriate in planning the future work of the Working Group.
- discuss if additional actions from the Annex 1 (i.e. overall list of actions) should be added to the list of relevant actions for HELCOM-VASAB MSP WG and to consider the implementation.

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Additional information on the actions in the updated Baltic Sea Action Plan relevant for the HELCOM-VASAB MSP WG

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Introduction

This document presents only the actions relevant for the HELCOM-VASAB MSP WG. The overall list of actions is available as Annex I.

The Baltic Sea Action Plan, or BSAP, is HELCOM's strategic programme of measures and actions for achieving good environmental status of the Baltic Sea. The Baltic Sea Action Plan originates from 2007 and the updated Action Plan was adopted on 20 October 2021. The updated BSAP includes five segments – Biodiversity, Eutrophication, Hazardous substances and litter, Sea-based activities, and Horizontal actions – which each have a comprehensive list of actions to be implemented by 2030.

This document provides the following additional information on the actions to facilitate the implementation and keeping track of the accomplishment of actions:

- **Code** – All actions are coded to ease referencing to the actions, also across the segments.
- **Target year** – The target year for implementation of the action is included in the "Target year" column. The actions that do not have an earlier target year are to be implemented by 2030. There are also actions that involve ongoing cooperation with other organizations and do not have a target year due to the nature of the actions.
- **Type of action** – All actions are categorized as either "measure" or "supporting action". Measures have a direct impact by reducing the pressures or improving the state of the Baltic Sea. Supporting actions do not have a direct effect but are often crucial steps for implementing the measures.
- **Rationale** – The rationale describes why the action is needed and, in some cases, also clarifies the terminology used or the intended scope for the implementation of the action.
- **Potential effect** – Information on the potential effect has been collected only for the measures. This column describes the potential of the measures to reduce pressures or improve the state of the Baltic Sea.
- **Implemented by** – The actions are implemented either nationally or jointly. Joint implementation would mean e.g. creating a joint regional document while national implementation would mean e.g. transposing such regional document into national regulation. Some actions include elements that are implemented both nationally and jointly.
- **Overseeing WG/EG** – This column informs which HELCOM Working Groups or expert groups oversee the implementation of the action.
- **Criteria for achievement** – Criteria for achievement clarifies the expected outcome of the action. The criteria are used in keeping track of whether the action is accomplished or not. The actions may have several criteria for achievement, e.g. if the action includes multiple consequent steps to achieve the final outcome. For actions that are implemented both nationally and jointly and actions that include an element

of a supporting action and a measure, it has been clarified which criteria apply for the supporting action/measure or the national/joint implementation.

- **Cross-reference to actions in other segments** – The actions that are closely linked have been cross-referenced across the segments by utilizing the codes of relevant actions.

Actions in the Biodiversity segment

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
Theme: Conservation of species									
Topic: Conservation of birds									
B12	By 2023 and onwards with new findings use the maps on sensitivity of migratory birds to threats in environmental impact assessment (EIA) procedures with the aim to protect migratory birds against potential threats arising from new offshore wind farms and other installations with barrier effect.	2023	Measur e	The information contained in the sensitivity maps can help inform assessment procedures by illustrating negative impacts to relevant species as well as spatial and temporal overlaps between the planned activities (including cumulative impacts) and sensitive areas. In relation to migration the scope of the action is delineated to focus on migration and displacement routes of migratory bird species affecting, or affected by, the Baltic Sea environment and/or human activities taking place at sea.	Incorporating the information on the maps in environmental impact assessment (EIA) procedures should ensure improved protection for migratory birds against potential threats arising from new offshore wind farms and other installations with barrier effect.	National	HELCOM-VASAB MSP; STATE & CONSERV ATION	Proportion of relevant EIA procedures (those related to offshore wind farms and other installations with barrier effect) which have incorporated bird sensitivity maps has been assessed.	
B13	To by the next update cycle of the maritime spatial plans seek to incorporate the maps on sensitivity of migratory birds to threats in the work concerning maritime spatial planning to avoid that maritime activities impair birds and their habitats.	Next cycle of nation al mariti me	Measur e	The information contained in the sensitivity maps can help decision-makers to arrange effective area management and planning e.g. by the restriction of specific activities to ensure that negative impacts are minimised/avoided where spatial and	Use of the produced maps for maritime spatial planning (MSP) and marine protected area (MPA) management would secure Baltic Sea wide effect of the measure. Maps can also be used on a local scale, e.g. to improve individual MPA management	National	HELCOM-VASAB MSP	Proportion of relevant maritime spatial plans which incorporate spatial and/or temporal measures to protect birds (e.g. IBAs, SPAs, migration routes).	HT13, HT14

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
		spatial plans.		temporal overlaps between these activities and sensitive areas exist. In relation to migration the scope of the action is delineated to focus on migration and displacement routes of migratory bird species affecting, or affected by, the Baltic Sea environment and/or human activities taking place at sea.	plans. With regard to bird migration/flyways, to ensure ecological relevance the action should be implemented on a Baltic-wide scale. The produced maps can serve as a tool to support MSP.				

Actions in the Sea-based activities segment

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Underwater noise									
S58	Study by 2026 the impacts of continuous underwater noise from the installation, operation and decommissioning of offshore windfarms on marine biota, including cumulative effects of multiple windfarms. Based on the results, take relevant action, if necessary, in developing appropriate mitigation measures for the continuous underwater noise generated by offshore wind farms by 2029.	2026, 2029	Measure/ Supporting action	There are ambitious plans regarding the significant increase of offshore wind farms fields in the Baltic Sea to reach a capacity of 32GW in 2050 compared to the existing 2GW. The impacts of continuous noise from the installation, operation and decommissioning of offshore windfarms on marine biota in the Baltic Sea needs to be studied to facilitate making decisions on relevant action, if necessary, to develop appropriate mitigation measures. The impacts of impulsive underwater noise from installation or decommissioning of offshore windfarms is not part of the scope of this action, nor is the operation of vessels servicing windfarms or taking part in the installation or decommissioning operations. While continuous underwater noise from offshore windfarms is largely associated	Reduced pressures on marine biota from continuous underwater noise.	Joint	PRESSURE; HELCOM-VASAB MSP; EN-Noise; EG MAMA	By 2026 study on the impacts of continuous underwater noise from offshore windfarms, including cumulative effects of multiple windfarms, is conducted. If appropriate, by 2029 relevant action is taken to develop appropriate mitigation measures.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				with their operation, such continuous noise may also arise from installation and decommissioning when e.g. cutting deep foundations such as monopiles using underwater abrasive jet cutting methods and using reverse vibro piling methods.					

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Seabed loss and disturbance									
S64	Enforce and implement by 2025, in line with the update of the marine protected area (MPA) management guidelines, effective management plans and/or conservation measures to not allow destructive and exploitative activities related to the seabed that may compromise the conservation objectives of MPAs.	2025	Measure	Limiting the impact of pressures through regulation of human activities is a cornerstone of marine protected area (MPA) management and an important measure to secure progress towards the conservation objectives of protected areas. The action is also in line with Guidelines annexed to HELCOM Recommendation 19/1 which states that permits for marine sediment extraction shall not be granted for: c) Areas to be included or which are proposed to the European ecological	Reduction of the negative impact on the seabed that could compromise the conservation objectives of MPAs.	National	STATE & CONSERVATION; FISH; HELCOM-VASAB MSP; EN DREDS	Effective management plans, conservation rules or other equivalent systems to not allow for destructive and exploitative activities related to the seabed compromising the conservation objectives of MPAs are implemented and enforced.	B3

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				NATURA 2000 network according to the EC Habitats and Birds Directives (92/43/EEC and 79/409/EEC) except when the procedure of Art. 6 of the Habitats Directive is followed.					

Actions in the Horizontal topics section

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
Theme: Monitoring									
HT7	The validity of HELCOM Monitoring and Assessment Strategy and Data and Information Strategy should be reviewed within two years after updating the BSAP and revised as needed.	2030	Supporting action	The Data and Information Strategy benefits from periodic review, to ensure the strategy is up to date and fit for purpose.	N/A	STATE & CONSERVATION; PRESSURE; FISH, MARITIME; AGRI; HELCOM-VASAB MSP; GEAR	Joint	Reviewed and, as necessary, updated monitoring and assessment strategy is available by 2023. Reviewed and, as necessary, updated data and information strategy is available by 2023.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Maritime spatial planning									
HT12	Utilize maritime spatial planning (MSP) applying an ecosystem-based approach to support BSAP objectives and targets and contributing to sustainable sea-based activities.	2030	Supporting action	Maritime spatial planning (MSP) applies an ecosystem-based approach to contribute to sustainable use of marine resources and the protection of the marine environment. MSP can thus support the achievement of the BSAP goals and targets. MSP is a process and tool for spatial governance/steering of sea-based human activities. Through this steering MSP can influence anthropogenic pressures, pressures resulting from human activity, on marine habitats and species.	N/A	National/ Joint	HELCOM-VASAB MSP	Evaluation of progress can be based on the follow-up of respective actions of the Regional MSP Roadmap, e.g action 1.2.	
HT13	Use maritime spatial planning (MSP) as a tool to signal areas of high nature value as identified by responsible environmental authorities.	2030	Measure/Supporting action	Maritime spatial plans (MSP) steer the use of the sea-areas by prioritising or limiting human activities in particular areas. In addition to the direct steering, MSP can influence the use of sea areas in indirect ways. One important mean for indirect steering is that the maritime spatial plans and accompanying documents can indicate locations	Steering and limiting human activities e.g. in areas with high natural values.	National/Joint	HELCOM-VASAB MSP	Evaluation of progress can be based on the follow-up of respective actions of the Regional MSP Roadmap, e.g action 3.4	B1, B13

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				of areas with high natural value and existing protected areas. The MSP documents can, furthermore, propose to take precaution in the use of these areas.					
HT14	Implement maritime spatial plans with the aim of steering sea-based activities away from areas where they can cause serious damage or disturbance.	2030	Measure/Supporting action	Maritime spatial planning (MSP) steers the use of sea-areas for different sea-based activities. This can be done by allocating areas exclusively or conditionally to certain activities or by giving general provisions for conducting human activities in sea areas. Avoidance of serious damage or disturbance to habitats and species should be a guiding principle in the steering of sea-based activities in MSP. Furthermore, preparation of the maritime spatial plans should consider single and cumulative effects of human activities on habitats and species as well as apply a precautionary approach pursuing the protecting of high natural values from potential harm.	Steering and limiting human activities e.g. in areas with high natural values.	National/Joint	HELCOM-VASAB MSP	Evaluation of progress can be based on the follow-up of respective actions of the Regional MSP Roadmap, e.g. action 3.5. and 3.6.	B1, B13

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Economic and social analysis									
Topic: Enabling ecosystem-based management									
HT17	By 2030, integrate quantitative and qualitative economic values of the environment into the management of human activities and maritime spatial planning.	2030	Supporting action	Quantitative and qualitative economic values (valuation) of the marine environment will improve national capacities to proceed with ecosystem accounting which most likely be in place by 2030 in Europe. The process will show gaps and possibilities in data and knowledge in general and to increase the awareness of national key stakeholders.	N/A	National	PRESSURE; FISH; HELCOM VASAB MSP; STATE & CONSERVATION; AGRI; EN ESA	Quantitative and qualitative values of the marine environment are expressed in relevant documentation/documents for the management of human activities and maritime spatial planning	

Annex I. Overall list of the actions under the updated BSAP

This Annex contains the overall list of actions included in the updated BSAP. The actions coloured in blue were extracted to provide the Extract of relevant actions for the HELCOM-VASAB MSP WG (cf. page 6).

Division of the actions per segment:

Actions in the Biodiversity segment

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
Theme: Spatial conservation measures									
B1	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 (MPAs), supported by those other spatial conservation measures, under alternative regimes for marine protection, which can contribute to the coherence of the network. Where scientifically justified, special attention should be given to offshore areas beyond territorial waters. The network of marine protected areas will: - cover at least 30% of the marine area of the Baltic Sea, of which at least 1/3 will be strictly protected. Other Effective Area-based Conservation Measures (OECMs) could be counted towards the 30% targets only if they, as a minimum, comply with	2030	Measur e	Marine protected areas (MPAs) are recognized as a major management strategy to help conserve marine features such as species, habitats, ecosystem processes, and cultural heritage, and to achieve the vision of obtaining a healthy Baltic Sea environment with diverse biological components. The implementation of MPAs is also regarded as a key policy measure and a management tool to address multiple threats in a given area with strict protection having repeatedly been shown to be the most effective tool to restore and conserve biodiversity. The regional definition of strict protection should be in line with the guidance provided by the EU under the umbrella of the Biodiversity Strategy. Areas of particular importance for biodiversity and ecosystem resilience, such as unique habitats, foraging grounds, spawning aggregations and nursery areas, play a crucial role in sustaining populations and maintaining ecosystem function and should	A well-connected and well-managed network of marine protected areas (MPAs) that is ecologically representative for the Baltic Sea's habitats and species will have Baltic Sea wide effects. It will help to conserve biodiversity and mitigate the effects of climate change by increasing resilience and providing ecosystem services such as carbon and nutrient sequestration and turbidity filtration, e.g. through the filtration done by bivalves. When appropriately placed and well-managed, MPAs contribute to: • Conserving biological diversity and associated ecosystems. • Protecting critical spawning and nursery habitats. • Protecting sites with minimal direct human impact to help them recover from stresses. • Protecting settlement and growth areas for marine species	National/Joint	STATE & CONSERV ATION	The HELCOM MPA network is resilient. (Joint measure) The HELCOM MPA network is regionally coherent. (Joint measure) The HELCOM MPA network is effectively and equitably managed. (Joint measure) The HELCOM MPA network, together with OECMs complying with the CBD criteria, covers at least 30% of the marine area of the Baltic Sea. (Joint measure) At least 1/3 of the area covered by the HELCOM MPA network is strictly protected. (Joint measure)	HT13, HT14

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
	the OECM criteria agreed by the Convention on Biological Diversity (CBD). - where scientifically justified, consider including no-use zones within marine protected areas, which can also serve as scientific reference areas. - expand conservation efforts to actively include areas 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 and broad habitat types, but which may not necessarily be rare or threatened.			therefore be considered in MPA network design.	and spillover benefits to adjacent areas. • Focal points for educating the public about marine ecosystems and human impacts upon them. • Nature-based recreation and tourism. • Providing undisturbed control or reference sites that serve as baselines for scientific research and for designing and evaluating other areas.			Conservation efforts target and include areas of particular importance for biodiversity and ecosystem resilience, irrespective of threat status, as outlined in the action. (National measure)	
B2	By 2022 come to a common understanding of the Other Effective Area-based Conservation Measures (OECMs) criteria and their use in HELCOM, based on definitions agreed in the Convention on Biological Diversity (CBD) and the EU, and define how OECMs can support	2022, 2025	Supporti ng action	Other Effective Area-based Conservation Measures (OECMs) represent an opportunity to recognize biodiversity conservation potential from a wider range of spatial management measures than before. For the marine environment there are a number of existing measures which show potential as	N/A	National/ Joint	STATE & CONSERV ATION	By 2022 a common understanding of OECMs criteria and their use in HELCOM has been achieved. (Joint supporting action) By 2022 a definition of	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
	the coherence of the Baltic Sea marine protected area (MPA) network. By 2025 identification of OECMs in the Baltic Sea region.			OECMs, including sites of historic or cultural importance. The potential within the fisheries sector has also been highlighted, where many area-based fisheries management measures already aim to meet sustainability together with broader ecosystem management and biodiversity conservation goals and are well poised to meet the OECM criteria. In order to be able to follow up on OECMs, and their contribution to conservation efforts, there is a need to come to a common understanding on a regional level to guide the HELCOM approach to OECMs.				how OECMs can support the coherence of the MPA network and the spatial conservation target of protecting 30% of Baltic Sea marine area has been established. (Joint supporting action) By 2025 OECMs in the Baltic Sea region have been identified. (National supporting action)	
Topic: Spatial conservation management									
B3	By 2030 strengthen the management of the Baltic Sea marine protected area (MPA) network by introducing key elements into management efforts, including but not limited to those highlighted here, to increase effectiveness of protection, including by providing support to Baltic Sea MPA managers through capacity building e.g., through annual workshops.	2023, 2025, 2030	Measur e/Suppo rting action	The decline of biodiversity has highlighted concerns over the quality and effectiveness of marine protected areas (MPAs). Adaptive management means using the best available information to develop the MPA network and incorporating monitoring and evaluation systems to systematically test the effectiveness of management methods and refine them over time. Appropriate resources and investments for effective and	The measure is oriented towards reaching effective marine protected areas (MPAs) both at single site and whole network level. It addresses key elements which support management effectiveness and allow for monitoring of these and update of management, following adaptive management principles. It addresses all the marine and coastal habitats and species covered by MPA's through	National/Joint	STATE & CONSERV ATION	By 2030 improved key elements are introduced into MPA management to increase the effectiveness of protection. (National measure) By 2023 the HELCOM Guidelines for MPA Management are updated. (Joint	S42, S47, S54, S57, S65

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
	By 2023 update, and by 2025, apply HELCOM MPA management guidelines with focus on: a) Assessments and evaluation methodology and structures for management effectiveness; b) Setting quantitative conservation objectives; c) Effective conservation measures that reduce pressures; d) Establishment of indicators to monitor management performance and status of conservation features; e) Establishment of a common monitoring strategy and evaluation of conservation features and pressures; f) Adaptive management.			adaptive management, as well as monitoring in MPAs is urgently need. Management needs to be both suitable, adaptive and effective for reaching and/or maintaining the conservation objectives of the respective areas in order to ensure that an area reaches its full potential and thus provides optimal contribution to the network as a whole. The lack of management effectiveness data leaves a significant gap in our ability to determine whether legislative protection translates to genuine protection for biodiversity.	implementation of the Habitat Directive, Bird Directive and Marine Strategy Framework Directive, but also other ecologically relevant conservation features. Impact of the action is expected at the Baltic wide MPA network level.			supporting action) Annual workshops for MPA managers are carried out, contributing to building capacity. (Joint supporting action) By 2025 the HELCOM MPA Management Guidelines are applied. (National supporting action)	
B4	By 2026 nationally ensure that marine protected area (MPA) management plans and/or measures are legally binding and ensure appropriate structures are in place to enforce compliance in order to achieve their conservation objectives.	2026	Measur e	Much of the success of marine protected areas (MPAs) rely on management actions, the type of restrictions and their efficient enforcement, yet these are often insufficiently implemented. While MPAs represent a necessary and effective measure across multiple components of the marine ecosystem, they are only effective if the infrastructure (management plans and/or measures) needed to	Proper enforcement has been shown to produce significant ecological outcomes when compared to areas lacking/with inadequate enforcement. Highly and moderately regulated areas exhibited higher biomass and abundance of threatened species and biodiversity overall, e.g. fish species, whereas fish abundance and biomass in weakly regulated	National	STATE & CONSERV ATION	On a national level, MPA management plans and/or other legal provisions are binding. Structures to ensure compliance with management plans and/or measures are in place nationally.	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
				manage the human activities causing deterioration are in place. The implementation and enforcement of the conservation measures are a prerequisite for reaching the conservation objectives of MPAs.	areas differed little from unprotected areas.				
B5	Develop, implement and share information on effective management measures, including measures to ensure compliance/control measures, to reduce the impact of fisheries inside marine protected areas (MPAs) in order to contribute to achieve their conservation objectives.	2030	Measur e	Further development, implementation and information sharing of management measures for fisheries inside marine protected areas (MPAs), including exclusion zones for specific fishing gears, such as mobile bottom contacting gear or static nets, and no-take zones, is needed. It would also be important to document the fisheries management in the HELCOM MPA Database.	Improved fish stocks and biodiversity within MPAs.	National/Joint	FISH	Management measures for fisheries inside MPAs, contributing to the area's conservation objectives, are more widely in place. (National measure) Fisheries measures are documented in the HELCOM MPA Database. (Joint supporting action)	S42, S47, S54
Topic: Coherence of the marine protected area (MPA) network									
B6	The coherence of the marine protected area (MPA) network will be periodically assessed at least every ten years, with the next such assessment to be carried out by 2025. By 2027 the results from the coherence	2025, 2027, 2030	Measur e/Suppo rting action	Ecological coherence describes how well a collection of marine protected areas (MPAs) provide protection to certain features, such as species, habitats, landscapes and ecological processes, both individually and as a network. Coherence is an essential	When well-planned and managed as a network, a collection of sites can deliver more benefits than unconnected individual marine protected areas (MPAs) can provide on their own, increasing effectiveness and the	National/Joint	STATE & CONSERV ATION	The assessment of coherence of HELCOM MPAs is completed by 2025. (Joint supporting action) Possible spatial	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
	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.			process to consider in the design and assessment of MPAs. To help maintain and restore marine populations and communities MPAs should form ecologically coherent networks, where groups of MPAs deliver more benefits than unconnected, individual MPAs. Such networks should be biologically functional, i.e. have the capacity to sustainably protect target populations. The purpose of assessing coherence of MPAs is to follow up on the development of the MPA network in the Baltic Sea, to identify where further development of the network is needed.	added value of individual MPAs. Coherent MPA networks provide important spatial links needed to maintain ecosystem processes and connectivity, as well as improve resilience by spreading risk in the case of localized disasters, climate change, failures in management or other hazards, and thus help to ensure the long-term sustainability of populations better than single sites.			conservation expansion to improve coherence are identified by 2027. (National measure) The HELCOM MPA network is fully coherent including with respect to adequacy, connectivity (incl. migration), replication and representativity, taking into account the changing climate, in 2030. (Joint measures)	
B7	Ensure that by 2030 the HELCOM marine protected area (MPA) network amongst other things provides specific protection to species and biotopes listed as regionally threatened or near threatened in the HELCOM Red Lists.	2030	Measur e	If managed well, marine protected areas (MPAs) have an important role to play in protection of ecosystems and enhancing or restoring threatened populations and habitats. For many threatened species this extends beyond the protection of the species itself and should include consideration of habitats necessary for various life stages, such as spawning sites and nursery areas, or sites supporting vital resources for survival, such as foraging grounds, all of which play a crucial role in sustaining populations and are a	Improved status of threatened species, habitats and biotopes through protection under the MPA network.	National	STATE & CONSERV ATION; EG MAMA; EN BENTHIC; JWG BIRD	HELCOM MPAs' management plans or equivalent conservation measures include measures targeted at improving status of species and biotopes assessed in the HELCOM Red Lists as regionally threatened or near threatened.	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
				prerequisite for improving the status of a species.					

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
Theme: Conservation of species									
B8	By 2022 at the latest, specify knowledge gaps on all threats to the Baltic Proper harbour porpoise population, and by 2023 for the western Baltic population, including by-catch and areas of high by-catch risk, underwater noise, contaminants and prey depletion. Knowledge gaps related to areas of high by-catch risk are to be addressed and by 2028 at the latest additional areas of high by-catch risk for both Baltic Sea populations are to be determined. To strengthen Baltic harbour porpoise population, by 2025 identify possible mitigation measures for threats other than by-catch and implement such measures as they become available.	2022, 2023, 2025, 2028	Measur e/Suppo rting action	The two harbour porpoise populations in the Baltic Sea are assessed as vulnerable (the Western Baltic, the Belt Sea and the Kattegat population) and critically endangered (Baltic Proper population) in the 2013 HELCOM Red List, respectively. For the harbour porpoise by-catch is the greatest source of mortality. Identification of high-risk areas for by-catch and by-catch estimates can be used to evaluate the level of pressure on non-target populations from the fisheries industry and/or identify areas where monitoring of by-catch needs to be intensified.	Improved understanding of spatial distribution, magnitude and cumulative effects of pressures on harbour porpoise support effectiveness of measures. By-catch is the greatest source of mortality for the species. The measure would reduce pressure on the harbour porpoise populations by preventing or controlling the adverse impacts on the species from both direct and indirect pressures.	National/ Joint	STATE & CONSERV ATION; EG MAMA	By 2022 knowledge gaps on all threats to the Baltic Proper harbour porpoise population have been specified and listed. (Joint supporting action) By 2023 knowledge gaps on all threats to the western Baltic population have been specified and listed. (Joint supporting action) By 2025 possible mitigation measures are identified and implemented as they become available. (National measure) By 2028 knowledge gaps related to areas of high by-catch risk are addressed. (Joint supporting action)	S43, S44, S45, S46, S47, S48

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
								By 2028 year, at the latest, additional areas of high by-catch risk for both Baltic Sea populations have been determined. (Joint supporting action)	
B9	By 2024 assess the status of the Haploops species and the biotopes, as well as key threats and, if relevant based on the assessment, by 2026 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 2028.	2024, 2026, 2028	Measur e/Suppo rting action	HELCOM has redlisted two species of haploops - Haploops tenuis and Haploops tubicola - as well as the biotope - Baltic aphotic muddy sediment dominated by Haploops spp. In the two HELCOM Recommendations (37/2 and 40/1) aimed at protecting both redlisted species and redlisted biotopes, Contracting Parties are obliged to evaluate the need for new legislation or other forms of protection such as conservation plans or measures to ensure adequate protection for the species/biotopes. Haploops are in decline in HELCOM waters, and are found in waters (Kattegat and previously the Sound) where a joint management effort, rather than national efforts, could be more effective and relevant.	The purpose of the measure is to both increase knowledge of status of haploops today, the drivers affecting haploops biotopes and knowledge of effective management tools. Furthermore, if relevant, the purpose is to implement management measures to better protect the biotope with the aim to eventually remove species and biotopes from the HELCOM list of threatened and declining species and biotopes. Protecting haploops would also have positive consequences for other species and biotopes, which are found connected to the biotope, or on the muddy seafloor along with haploops species. These adjacent species include a number of HELCOM redlisted species.	National/Joint	STATE & CONSERV ATION	By 2024, updated assessment of the status of the species and the biotope, as well as key threats is ready and publicly available. (Joint supporting action) If and where relevant, based on the status assessment, by 2026 development of a joint conservation plan to improve the status of haploops species and biotopes, including jointly agreed measures, has been completed. (Joint supporting action) By 2028, if and where relevant, based on the status assessment, development of a joint	

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								conservation plan to improve the status of haploops species and biotopes, including jointly agreed measures, has been adopted. (Joint supporting action) If and where relevant, joint conservation plan to improve the status of haploops species and biotopes, including jointly agreed measures, has been implemented. (National measure)	
B10	Include information on functional and life history traits for the species in the HELCOM Biodiversity Database, by 2024.	2024	Supporti ng action	Traits define species in terms of their ecological roles - how they interact with the environment and with other species. Functional diversity (the number and replication of functions in an ecosystem) is of high ecological importance because it is capable of influencing several aspects of ecosystem functioning like ecosystem dynamics, stability, nutrient availability, etc. Information on the type, number and distribution of traits across the Baltic Sea will be available to support assessments of e.g. connectivity, climate change,	N/A	Joint	STATE & CONSERV ATION	Trait information has been added for the species listed in the HELCOM Checklist of Macro species and the HELCOM Biodiversity database.	

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				diversity and give an indication of resilience.					
Topic: Conservation of birds									
BE11	Maintain an updated map of the sensitivity of birds 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. By 2025 further develop these maps by incorporating new data, post-production investigation information and addressing the subject of cumulative effects from these activities in space and time.	2022, 2025	Supporting action	Wind and wave energy affect migratory and, in some cases, breeding birds. Direct collision with wind turbines or displacement from previously used habitat have been identified as threats to staging and migratory birds. This action supports the identification of negative effects on birds from wind and wave energy production at sea and makes it available to support management of human activities so as to minimize the negative impact on the relevant species. In relation to migration the scope of the action is delineated to focus on migration and displacement routes of migratory bird species affecting, or affected by, the Baltic Sea environment and/or human activities taking place at sea.	N/A	Joint	STATE & CONSERVATION; JWG BIRD Migration	By 2022 there are publicly available bird maps that include staging areas, migration routes and where possible migration densities, sensitivity, as well as overlap with possible threats exists, including information on confidence and uncertainty. Bird sensitivity maps are regularly updated in line with the action, the first update to be ready by 2025.	
B12	By 2023 and onwards with new findings use the maps on sensitivity of migratory birds to threats in environmental impact assessment (EIA) procedures with the aim to protect migratory birds against potential threats	2023	Measure	The information contained in the sensitivity maps can help inform assessment procedures by illustrating negative impacts to relevant species as well as spatial and temporal overlaps between the planned	Incorporating the information on the maps in environmental impact assessment (EIA) procedures should ensure improved protection for migratory birds against potential threats arising from new offshore	National	HELCOM-VASAB MSP; STATE & CONSERVATION	Proportion of relevant EIA procedures (those related to offshore wind farms and other installations with barrier effect) which have incorporated bird	

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	arising from new offshore wind farms and other installations with barrier effect.			activities (including cumulative impacts) and sensitive areas. In relation to migration the scope of the action is delineated to focus on migration and displacement routes of migratory bird species affecting, or affected by, the Baltic Sea environment and/or human activities taking place at sea.	wind farms and other installations with barrier effect.			sensitivity maps has been assessed.	
B13	To by the next update cycle of the maritime spatial plans seek to incorporate the maps on sensitivity of migratory birds to threats in the work concerning maritime spatial planning to avoid that maritime activities impair birds and their habitats.	Next cycle of national maritime spatial plans.	Measure	The information contained in the sensitivity maps can help decision-makers to arrange effective area management and planning e.g. by the restriction of specific activities to ensure that negative impacts are minimised/avoided where spatial and temporal overlaps between these activities and sensitive areas exist. In relation to migration the scope of the action is delineated to focus on migration and displacement routes of migratory bird species affecting, or affected by, the Baltic Sea environment and/or human activities taking place at sea.	Use of the produced maps for maritime spatial planning (MSP) and marine protected area (MPA) management would secure Baltic Sea wide effect of the measure. Maps can also be used on a local scale, e.g. to improve individual MPA management plans. With regard to bird migration/flyways, to ensure ecological relevance the action should be implemented on a Baltic-wide scale. The produced maps can serve as a tool to support MSP.	National	HELCOM-VASAB MSP	Proportion of relevant maritime spatial plans which incorporate spatial and/or temporal measures to protect birds (e.g. IBAs, SPAs, migration routes).	HT13, HT14
B14	By 2027 assess the effectiveness of conservation efforts to protect waterbirds against threats and pressures.	2027	Supporting action	Assessment of the effectiveness of current conservation efforts is carried out in order to identify possible gaps or weaknesses to inform management and guide further measures.	N/A	Joint	STATE & CONSERVATION; JWG BIRD	Assessment, including information about effectiveness of conservation efforts and the needed measures to protect	

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								waterbirds against threats and pressures is publicly available.	
Topic: Conservation of fish									
B15	Develop and coordinate monitoring and assessment methods, where ecologically relevant, for specified representative coastal fish species, 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 2023. Based on the results of the assessment, develop and implement management measures with the ambition to maintain or improve the status of coastal fish species, including migratory species by 2027.	2023, 2027	Measur e/Suppo rting action	Assessing the state supports monitoring effectiveness of existing measures and identifying the need for further measures to ensure good environmental status. Successful implementation requires involvement of experts from all Contracting Parties, and improved monitoring. Coordinated methods and monitoring efforts ensure that assessment can be done at a scale and resolution which is ecologically relevant and can support management and the implementation of measures. Concrete management measures are needed.	Results of a status assessment can be used to identify the need for further measures and/or indicate the effectiveness of existing measures. Data stemming from coordinated monitoring would improve the assessment results and ensure consistent, data-driven information of high confidence is available to guide further measures and/or indicate the effectiveness of existing measures. Measures to manage human activities or prevent increased mortality detrimental to coastal fish stocks are likely to improve the status of stocks, the resilience of the coastal food web and, for those species which are threatened or declining, improve the conservation status.	National/ Joint	STATE & CONSERV ATION; FISH; FISH Pro	By 2023 assessment, presenting information in a format that contributes to the effective implementation of measures is ready and publicly available. (Joint supporting action) Interval for the next assessment is agreed by 2023. (Joint supporting action) Where ecologically relevant, data and assessment of coastal fish is available by 2023 for the full distribution of the species, at a resolution suitable for management and the implementation of measures. (Joint supporting action)	S53

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Overseein WG/EG	Criteria for achievment	Cross-reference to actions in other segments
								By 2027 appropriate management measures have been implemented with the ambition to maintain or improve the status of coastal fish species. (National measure)	
B16	To strengthen native strains and to reinstate migratory fish species: -By 2023 identify rivers where management measures for migratory fish species, including eel, would have the greatest positive impact. -Starting from 2023, in line with relevant international commitments, iteratively review and prioritize effective mitigation measures in the identified rivers and/or dams, including removal of dams and migration barriers where relevant and possible, especially in small waterways. -Develop and implement habitat restoration plans of spawning sites for anadromous species in relevant rivers by 2025.	2023, 2024, 2025	Measur e	Eel populations in the Baltic Sea region are in critical state and mitigation measures to improve migration need to be prioritized and implemented urgently. The action is intended to address strengthening of native strains as well as reintroductions in potential habitat rivers for migratory fish species. It should be up to Contracting Parties to decide which rivers are in need of restoration plans. Informing of the relevant rivers should be part of reporting on implementation of the action. Priority rivers have already been agreed as part of Recommendation 32-33/1 for salmon and sea trout, but such priority lists are not available for other migratory fish species.	Increased numbers of out-migrating eels from the Baltic Sea region and strengthened eel stock. Strengthened native strains of migratory fish as well as reintroduced populations in potential habitat rivers for migratory fish species.	National	FISH; FISH-M	By 2023 rivers, where management measures for migratory fish species, including eel, would have the greatest positive impact, have been identified. Mitigation measures are widely in place including removal of dams and migration barriers where relevant. Where this is not possible, mitigation measures at dams (e.g. in connection with hydropower plants), especially in small waterways are being	

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				While the migratory fish populations breed in/inhabit specific rivers, the populations are Baltic Sea populations (as opposed to populations of a specific Contracting Party). Therefore, having HELCOM as a platform for following up and considering the work already being conducted on the national level provides added value in considering prioritisation of measures and where to focus resources at a level that best benefits the populations as a whole.				prioritized and applied by 2023. By 2025 national habitat restoration plans in relevant rivers are in place, in order to strengthen native strains and to reinstate migratory fish species. Migration barriers have been removed or mitigated by 2024 in at least three rivers of each Baltic Sea coastal countries, as applicable.	
B17	With the aim to protect and restore eel population, determine which measures set out in the Convention on the Conservation of Migratory Species of Wild Animals (CMS), EU Eel Regulation and other relevant instruments would benefit from regional cooperation on a Baltic-wide level. Finalize by 2024 and implement by 2025 a Baltic	2024, 2025	Measur e/Suppo rting action	Eel populations in the Baltic Sea region are in critical state and a HELCOM programme is needed to ensure successful eel migrations from the Baltic Sea drainage basin to their spawning grounds by late 2021 with implementation starting by 2022 and intermediate assessments e.g. in 2024 in order to identify problems and address them.	Increased numbers of out-migrating eels from the Baltic Sea region and a strengthened eel stock	National/Joint	FISH; FISH-M	A coordinated programme of protective measures ensuring successful eel migrations, aligned with CMS, the EU Eel Regulation and other relevant instruments is in place by 2024 (Joint supporting action) and being implemented by	

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	coordinated programme of such measures.			The effectiveness of the programme could be followed up by a monitoring and post-evaluation process of levels of pressures affecting eel that begins no later than 2024. BALTFISH involvement is relevant in implementation of the programme.				2025 (National measure).	
B18	Restore functional populations of Baltic sturgeon by 2029 implementing the HELCOM Baltic Sea Sturgeon Action Plan.	2029	Measur e/Suppo rting action	The Baltic sturgeon was an integral part of the Baltic fauna until the middle of the 20th century. The species is an anadromous, migratory fish spending most of its life in marine waters while returning to its native river for reproduction. Populations of the species have dramatically decreased during the last centuries. Subsequently, the species became extinct in the Baltic range states during the second half of the 20th century. The aim of the action is to prevent the Baltic sturgeon from full extinction, and in the mid-term, to re-establish viable populations of the Baltic sturgeon in its historic range.	Sturgeon remediation extends beyond a recovery measure for a single species. The complex life cycle, its long life span, late maturity and the utilization of diverse habitats in this diadromous species render it both an indicator and an umbrella species for the quality of habitats as well as the effectiveness of management for sustainability. Thus, this measure would also make an important contribution to protecting and maintaining biodiversity.	National/Joint	STATE & CONSERV ATION; FISH	Consistent ex-situ conservation programme is implemented, taking advantage of the specimens already secured. (National measure) In situ conservation programme is implemented and enforced, preventing further loss of the remaining specimens. (National measure) A strategic long-term monitoring programme	

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								for population development and habitat use, to support adaptive management, is in place in all relevant countries. (National supporting action) A dedicated programme on habitat protection and rehabilitation has been developed, in order to ensure that spawning and nursery sites meet the needs of the species and are accessible for the respective life cycle stages. (Joint supporting action) A dedicated programme on habitat protection and rehabilitation, ensuring that spawning and nursery sites meet the needs of the species and are accessible for the respective life cycle stages, has been implemented where	

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								relevant. (National measure) Successful, self-sustaining, re-introduced population of Baltic sturgeon is in its potential spawning rivers and in key areas of its former natural range. (National measure)	
Topic: Conservation of seals									
B19	By 2023 finalise and implement national or local conservation and/or management plans for grey seals.	2023	Measur e/Suppo rting action	National or local management plans are recognised as an integral part of the measures needed to safeguard the long-term viability of the Baltic seal populations.	A finalised plan is needed in order to start implementation. Implementation of the management plans should secure good environmental status for the population, however implementation will be an ongoing process and will be initiated but not completed by the target year.	National	STATE & CONSERV ATION; EG MAMA	National or local management plans (or a comprehensive set of conservation measures) are finalised and reviewed by EG MAMA, in accordance with the ToRs and the Recommendation 27-28/2. (National supporting action) National or local management plans (or a comprehensive set of conservation measures) are implemented. National measure)	

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B20	By 2023 finalise and implement of national conservation and/or management plans for ringed seals.	2023	Measur e/Suppo rting action	National or local management plans are recognised as an integral part of the measures needed to safeguard the long-term viability of the Baltic seal populations.	A finalised plan is needed in order to start implementation. Implementation of the management plans should secure good environmental status for the population.	National	STATE & CONSERV ATION; EG MAMA	National or local management plans (or a comprehensive set of conservation measures) are finalised and reviewed by EG MAMA, in accordance with the ToRs and the Recommendation 27-28/2. (National supporting action) National or local management plans (or a comprehensive set of conservation measures) are implemented. (National measure)	
B21	By 2025 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.	2025	Measur e	The estimated numbers of ringed seal in the Gulf of Finland have decreased and there is no sign of recovery. Climate change is of particular concern for the southern distribution range (Gulf of Riga, Gulf of Finland and Archipelago Sea), where mild winters have already significantly affected the reproductive success of these populations, which are adapted to ice breeding. Other threats include entanglement in fishing gear (by-catch), a wide range of disturbances and increasing shipping, such as ice	Implementing measures to protect the population would improve the conservation status of the population.	National	STATE & CONSERV ATION; EG MAMA	Sufficient conservation measures are in place.	

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				breaking vessels destroying the pack ice habitat.					
Topic: Red listed species									
B22	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.	2024	Supporting action	Red list assessment functions as a tool to follow up on the status of species and by extension the effectiveness of existing measures and informs decision processes for new measures. In order to identify changes in threat status of species, there is a need to repeat the Red List assessment at regular intervals. This allows the assessment to catch changes in status while still enabling adaptive management of human activities to safeguard species identified as in need of further conservation action. An up-to-date list can help focus resources and efforts where they is most needed.	N/A	Joint	STATE & CONSERVATION; EG MAMA; JWG BIRD; EN BENTHIC; FISH PRO	Red list assessment and supporting information (data, species information sheets etc) is published and publicly available.	
B23	By 2025 develop, and by 2027 implement, and enforce compliance with, ecologically relevant conservation plans or other relevant programmes or measures, limiting direct and indirect pressures stemming from human activities for threatened and declining species. These will include joint or regionally agreed conservation measures for	2025, 2027	Measure/Supporting action	Dedicated conservation plans, or other relevant measures, are recognised as an integral step to safeguard the long-term viability of threatened and declining species. The results of the HELCOM Red lists and other relevant sources of information are to be used to identify the species in need of conservation plans or other relevant programmes or environmental	Improved conservation status of threatened species.	National	STATE & CONSERVATION	By 2025 conservation plans or relevant programmes and measures are developed and ready to be implemented. (National supporting action) By 2027 ecologically relevant conservation	

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	migrating species.			measures to address both anthropogenic and, where relevant and to the extent possible, natural pressures and causes of mortality.				plans or other relevant programmes or measures are implemented, including joint or regionally agreed conservation measures for migrating species. (National measure)	
B24	Develop tools for, and regularly assess, the effectiveness of other conservation measures for species, besides marine protected areas (MPAs), the first assessment to be done by 2025 as well as assess effect on species through risk- and status assessments by 2029.	2025, 2029	Supporti ng action	While the efforts to conserve species are intrinsically bound to the spatial conservation of the habitat on which they depend this does not represent the only type of conservation measures available. These include e.g. temporal bans and restrictions, measures regulating exploitation, measures that support migration, reintroduction and restoration. In order to get a holistic overview of the effectiveness of the overall conservation effort it is necessary to also assess non-MPA related conservation measures.	N/A	Joint	STATE & CONSERV ATION	By 2025 tools for assessment of effectiveness of conservation measures for species, other than MPAs, have been developed. By 2025 the first assessment of effectiveness of other conservation measures for species, besides MPAs, is ready and publicly available. By 2029 the effect of conservation measures for species, other than MPAs, on species has been evaluated through risk- and status assessments.	

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Theme: Conservation of habitats and biotopes									
B25	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.	2025	Supporting action	An ecosystem service is any positive benefit that species or the ecosystems provide to humans, either directly or indirectly. These services are regulating, provisioning and supporting the needs of the human population, but for the Baltic Sea relatively little is known about the services, their distribution and their link to particular species, including key ecosystem components. The protection of biodiverse areas with high ecosystem services has been identified as a priority in the EU Biodiversity strategy. Information on ecosystem services provides guidance on where to address efforts such as designation of MPA or implementation of specific measures inside or outside MPAs.	N/A	Joint	STATE & CONSERVATION; EN ESA; EN BENTHIC	Regional list of ecosystem services connected to key ecosystem components as well as spatial distribution of these ecosystem services is publicly available. Regional maps presenting current and potential distribution of key ecosystem components are prepared and publicly available.	
B26	Protect key ecosystem components including habitat forming species by 2030, by: - assessing the state of, and threats to these key ecosystem components by 2023 - implement effective and relevant threat mitigation measures based on the threat	2023, 2025, 2030	Measure/Supporting action	In general, species diversity increases with habitat diversity, therefore the greater the variety of habitats protected, the greater the biodiversity conservation. By increasing abundances of key ecosystem components, including habitats, and thus e.g. restoring the three-dimensional complexity of	Results of a status assessment can be used to identify the need for further measures and/or indicate the effectiveness of existing measures. Effective mitigation measures, strategically identified based on the results of a status assessment, targeting the main sources of threat will	National/ Joint	STATE & CONSERVATION	By 2023 currently prioritized conservation features have been complemented with a list of key representative ecosystem components identified based on function for the	

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	and state assessments, including restricting human activities associated with causing physical loss or disturbance, by 2030 - identifying suitable measures and types of habitats, biotopes and key ecosystem components for passive or active restoration by 2025 and implementing programmes for restoration as outlined in the HELCOM Restoration Action plan by 2030.			benthic ecosystems, species can again fulfil their ecosystem functions, promoting a diverse and resilient ecosystem. Assessing the state supports monitoring of the effectiveness of existing measures and the identification of the need for further measures to ensure good environmental status. Mitigation measures which are strategically identified based on assessment results and confirmed gaps in current measures are more likely to be both effective and efficient.	stop further deterioration of the status of ecosystem components, increase the added value of the existing marine protected area (MPA) sites and of the network as a whole as well as the contribution of spatial conservation measures towards achieving good environmental status. The measure would help to: - update information about key functional ecosystem components and habitats that may be common but have an important role in sustaining the biodiversity and resilience of the Baltic Sea. - mitigate effects of climate change and would, by increasing coherence of the network, also provide flexibility in the face of climate change and its effects on habitats and species distribution. Impact of this measure would be regional.			ecosystem/provisioning of ecosystem services. (Joint supporting action) By 2023 an assessment, is ready and publicly available. (Joint supporting action) By 2030 effective measures are in place to mitigate threats and pressures, to improve the status of the identified key ecosystem components. (National measure) By 2025 suitable areas for restoration of the key system components, including habitat forming species, have been identified. (Joint supporting action)	

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B27	By 2025 develop and by 2026 start implementing a HELCOM Action Plan for habitat and biotope restoration, including qualitative and quantitative regional targets, a prioritized list of actions, and an associated implementation toolbox outlining best practices and methods for restoration in the Baltic Sea region.	2025, 2026	Measure/Supporting action	Habitat loss, fragmentation, and degradation impacts have been identified as the most direct threat to biodiversity globally. The goal of habitat restoration is to identify disturbed habitats and biotopes and restore presence and abundance of the native species which occur, or have historically occurred there, by extension restoring ecological structure (including the three-dimensional complexity of benthic ecosystems), maintaining ecosystem functions and ensuring resilience and ecosystem services. It should be noted that different measures may be advisable in different areas, depending on community composition and key species, local characteristics and what local key impacts that are identified, and that a combination of measures is likely to be the most effective in many cases. The measure is only effective provided that the pressures originally causing the deterioration are removed.	Successful restoration habitats and biotopes have the potential to improve ecosystem structure and several ecosystem functions, such as habitat-forming, supporting biodiversity, fish nursery areas, CO2 sinks, coastal protection through wave-dampening and sediment stabilisation, sequestration of nutrients and organic matter, etc.	National/ Joint	STATE & CONSERVATION	By 2025 qualitative and quantitative regional targets for habitat and biotope restoration have been established. (Joint supporting action) By 2025 a prioritized list of restoration actions has been developed and is publicly available. (Joint supporting action) By 2025 a HELCOM Action Plan for habitat and biotope restoration has been developed and is publicly available. (Joint supporting action) By 2025 an implementation toolbox outlining best practices and methods for restoration has been developed to support the implementation of the HELCOM Action Plan for habitat and biotope	S52

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								restoration (Joint supporting action) By 2026 the implementation of the HELCOM Action Plan has commenced. (National measure)	
Topic: Red listed habitats and biotopes									
B28	Update the HELCOM Red List Assessments by 2024, including identifying the main individual and cumulative pressures and underlying human activities affecting the red listed biotopes and habitats.	2024	Supporting action	Red list assessment functions as a tool to follow up on the status of habitats and biotopes, and by extension the effectiveness of existing measures and informs decision processes for new measures. In order to identify changes in threat status of habitats and biotopes, there is a need to repeat the Red List assessment at regular intervals. This allows the assessment to catch changes in status while still enabling adaptive management of human activities to safeguard species identified as in need of further conservation action. An up-to-date list can help focus resources and efforts where they are most needed.	N/A	Joint	STATE & CONSERVATION; EN BENTHIC	Red list assessment and supporting information (data, species information sheets etc) is published and publicly available.	
B29	By 2025 develop, and by 2027 implement, and ensure compliance with, ecologically	2025, 2027	Measure/Suppo	Dedicated conservation plans, or other, relevant measures, are recognised as an integral step to	Improved conservation status of threatened habitats and biotopes.	National	STATE & CONSERVATION	By 2025 conservation plans or environmental measures are	

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	relevant conservation plans or other relevant programmes or measures, limiting direct and indirect pressures stemming from human activities for threatened and declining biotopes and habitats.		rting action	safeguard the long-term viability of threatened and declining habitats and biotopes. The results of the HELCOM Red lists and other relevant sources are to be used to identify the biotopes/habitats in need of conservation plans or other relevant programmes or environmental measures. Dedicated conservation plans, or other, relevant measures, are recognised as an integral step to safeguard the long-term viability of threatened and declining habitats and biotopes.				developed and ready to be implemented. (National supporting action) By 2027 conservation plans or other relevant programmes or measures are implemented. (National measure) Negative status trends are turned, in the long-term securing favourable status of the relevant habitats and biotopes. (National measure)	
B30	Develop tools for, and regularly assess, the effectiveness of other conservation measures for habitats and biotopes, besides marine protected areas (MPAs), the first assessment to be done by 2025 as well as assess effect on biotopes and habitats through risk- and status assessments by 2029.	2025, 2029	Supporting action	Spatial conservation does not represent the only type of conservation measures available for habitats and biotopes. Other measures include e.g. temporal bans and restrictions, measures regulating exploitation, reintroduction and restoration. In order to get a holistic overview of the effectiveness of the overall conservation effort it is necessary to also assess non-MPA related conservation measures.	N/A	Joint	STATE & CONSERVATION	By 2025 tools for assessment of effectiveness of conservation measures for habitats and biotopes, other than MPAs, have been developed. By 2025 the first assessment of effectiveness of other conservation measures for habitats and	

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								biotopes, besides MPAs, is ready and publicly available. By 2029 the effect of conservation measures for habitats and biotopes, other than MPAs, on species has been evaluated through risk- and status assessments.	

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Theme: Enabling ecosystem-based management									
B31	Identify by 2022 data needs for spatial pressure and impact assessment of human activities, including cumulative impacts, 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.	2022, 2024	Supporting action	Human activities in the Baltic Sea and its catchment area create a variety of potential pressures. To support ecosystem-based management of human activities and to provide a system that enables linking the quality of the environment to its management there is a need to identify relevant activities and quantify intensities and spatial distribution of the anthropogenic pressures affecting the marine environment, as well as to identify and quantify their impacts on the Baltic Sea ecosystem. This requires dedicated spatial data, as well as further improved methods that address the shifting needs of management.	N/A	Joint	STATE & CONSERVATION	Data needs for spatial pressure and impact assessment of human activities, including cumulative impacts, are identified by 2022. Data needs for spatial pressure and impact assessment of human activities, including cumulative impacts, are addressed and long term dataflow plans have been established by 2024. Latest improved methods for mapping and assessment of adverse effects on the ecosystem of human activities in the Baltic Sea region are implemented and results made publicly available by 2029.	
B32	Update the HELCOM Underwater biotope and habitat (HUB) classification where gaps have	2024, 2025	Supporting action	A classification system creates a common understanding of the underwater biotopes in the Baltic	N/A	Joint	STATE & CONSERVATION;	By 2024 gap analysis for HELCOM HUB-classification scheme	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Oversee in WG/EG	Criteria for achievment	Cross-reference to actions in other segments
	been identified by 2024, and by 2025 develop a fully functioning translation matrix between HUB, Marine Strategy Framework Directive (MSFD) broad habitat types, Habitats Directive habitats and the European Nature Information System (EUNIS), in co-operation with the European Marine Observation and Data network (EMODnet).			Sea. This common understanding is especially important when managing underwater environments and when using the information collected through national mapping exercises to provide an overview at a regional or ecologically relevant scale. The basis when developing any classification system is recognising the pattern and the environmental variables that delineate biotopes most accurately. As additional data is collected it can become possible to further specify habitats and biotopes, as well as to include habitats and biotopes for which information was not previously available.			EN BENTHIC	has been performed. By 2024 HELCOM HUB-classification is updated, where gaps have been identified. By 2025 a fully functioning translation matrix between HUB, MSFD broad habitat types, HD habitats and EUNIS is developed.	
Topic: Indicators									
B33	By 2024 develop a roadmap to fill gaps to enable a holistic assessment for all relevant ecosystem components and pressures and, by 2030 at the latest, develop and fully operationalise a set of indicators fulfilling HELCOM's needs, including the need to provide a regional platform for the Marine Strategy Framework Directive (MSFD).	2024, 2030	Supporting action	The HELCOM indicators are a critical component of the Baltic Sea Action Plan (BSAP) and its approach to the assessment of good environmental status in the marine environment. The indicators provide a mechanism to address the effectiveness of the measures put in place to reach the goals and objectives of the BSAP, by regularly synthesising common regional monitoring data into an evaluation of progress towards these goals and the BSAP vision. Without a	N/A	Joint	STATE & CONSERVATION; GEAR	By 2024 a Roadmap for how to fill gaps for both ecosystem components and pressures is developed. By 2030 a fully operational set of indicators enabling an ecologically relevant holistic assessment of the Baltic Sea is available	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Oversee in WG/EG	Criteria for achievment	Cross-reference to actions in other segments
				comprehensive portfolio of ecologically relevant indicators, it is not possible to follow up on the real world effect of HELCOM policies and measures.					
B34	Develop core indicators, and 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.	2026, 2030	Supporting action	The HELCOM indicators are a critical component of the Baltic Sea Action Plan (BSAP) and its approach to the assessment of good environmental status in the marine environment. The indicators provide a mechanism to address the effectiveness of the measures put in place to reach the goals and objectives of the BSAP, by regularly synthesising common regional monitoring data into an evaluation of progress towards these goals and the BSAP vision. Food webs are an important conceptual tool for illustrating the feeding relationships among species within a community, revealing species interactions and community structure, and understanding the dynamics of energy transfer in an ecosystem. Thus, food web indicators address functional aspects of ecosystems whereas species specific indicators address a species group's position within the ecosystem structure. Without a comprehensive portfolio of ecologically relevant indicators, it is not possible to follow	N/A	Joint	STATE & CONSERVATION; CG FOODWEB	By 2026 a minimum of one indicator has been established with an agreed threshold value to evaluate the status of food web in a holistic way. By 2030 a holistic assessment of food webs is available.	

Code	Action	Target year	Type of Action	Rationale	Potential effect	Implemented by	Oversee in WG/EG	Criteria for achievment	Cross-reference to actions in other segments
				up on the real world effect of HELCOM policies and measures.					
B35	By 2024 operationalize a set of indicators for the assessment of fish population health, including size and age distribution, where applicable, and, by 2029, for any remaining relevant species.	2024, 2029	Supporting action	The HELCOM indicators are an important component of the follow-up of the Baltic Sea Action Plan (BSAP) and HELCOMs approach to the assessment of good environmental status in the marine environment. The indicators provide a mechanism to address the effectiveness of the measures put in place to reach the goals and objectives of the BSAP, by regularly synthesising common regional monitoring data into an evaluation of progress towards these goals and the BSAP vision. A portfolio of ecologically relevant indicators makes it possible to follow up on the effect of HELCOM policies and measures.	N/A	Joint	STATE & CONSERVATION; FISH PRO	By 2024 indicators for the assessment of fish population health are available, including indicators for size and age distribution. By 2029 health, size and distributional indicators are available for all relevant species.	S40, S48

Actions in the Eutrophication segment

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Follow-up of the implementation of nutrient input targets									
E1	Submit an account listing, as detailed as possible, the planned and implemented measures in different sectors and catchments alongside an estimation of their effectiveness to HELCOM by 2023 in order to demonstrate whether national net nutrient input ceilings can be achieved with these measures.	2023	Supporting action	Better information on measures and their cost-effectiveness will allow improvements in coordination to achieve the BSAP targets in terms of input of nutrients. For the EU Member States the account list should include relevant measures from the Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD) and other EU policies as well as global treaties for all Contracting Parties. The list will be used in an analysis of effectiveness of measures and contribute to the related work of PLC-8	N/A	National/ Joint	PRESSURE; REDCORE DG	Lists of measures and available knowledge on costs and effects is submitted by each Contracting Party. (National) PLC-8 thematic report on effectiveness of measures to reduce nutrient inputs is published. (Joint)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				project. The analysis will guide Contracting Parties to what further measures are necessary to achieve the BSAP nutrient input targets.					
E2	Assess progress towards maximum allowable inputs annually and national input ceilings every second year, to follow up implementation of regional and national targets for inputs of nutrients.	Annually, every second year	Supporting action	The BSAP nutrient reduction scheme includes maximum allowable inputs (MAI) per sub-basin and the corresponding nutrient input ceiling (NIC) for countries/sources to fulfil in order to achieve the goal of a Baltic Sea unaffected by eutrophication. Regular follow-up informs whether nutrient inputs will be reduced in time to fulfil MAI and NIC by the agreed deadlines. Information on nutrient losses from individual catchments can be also used for analysis of	N/A	Joint	PRESSURE; REDCORE DG	Annual core indicator on progress toward MAI including assessment data is published. Policy message on progress towards NIC including technical annexes and assessment data is published every second year.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				river basin management plans.					
E3	Provide timely sufficient and consistent data on nutrient loads to the Baltic Sea, ensuring reliability of the follow-up system, by maintaining and enhancing monitoring programmes and networks striving for harmonized methods to estimate nutrient inputs, including from unmonitored areas.	Annually	Supporting action	Timely delivered datasets on annual inputs of nutrients are a prerequisite for timely assessments of progress towards maximum allowable inputs (MAI) and nutrient cnput Ceilings (NIC). Updated PLC guidelines shall ensure monitoring programmes and quantification of inputs from unmonitored areas provide consistent, comparable data on nutrient inputs to the Baltic Sea covering the entire catchment area, and standardised assessment methodology.	N/A	National/ Joint	PRESSURE; REDCORE DG	The PLC database is updated annually. (National/joint) Baltic Sea Environmental Fact Sheet (BSEFS) on waterborne nutrient inputs and annual BSEFS on atmospheric nitrogen inputs are published annually. (Joint)	
E4	Strengthen cooperation with river basin management authorities of non-HELCOM countries through	2030	Measure	Transboundary waterbourne nutrient inputs constitute a	5561 tons of waterborne nitrogen and 930 tons of	National/Joint	PRESSURE	Agreements addressing transboundary	HT26

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	official agreements addressing transboundary waterborne nutrient inputs from non-Contracting Parties.			substantial part of the nutrient inputs to the Baltic Sea and need to be addressed to reach the HELCOM nutrient input reduction targets. The purpose would be also to ensure integrating work towards HELCOM's targets at all relevant levels of water management.	waterborne phosphorus since the reference period (1997-2003) assuming that non-Contracting Parties take the same responsibility to reduce nutrient input as the Contracting Parties			waterborne nutrient inputs from non-Contracting Parties are adopted. (National) Common workshops/expert meetings are arranged and all levels of river management are included in this cooperation (National/joint)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Agriculture									
E5	Implement and enforce the provisions of part 2 of Annex III "Prevention of pollution from agriculture" of the 1992 Helsinki Convention.	2030	Measure	Part 2 of Annex III of the Helsinki Convention sets out provisions for prevention of pollution from agriculture. By 2021 the provisions have yet not been implemented by all HELCOM countries.	Implementing the provisions of the annex on plan nutrients, plant protection products and environmental permits will reduce the input of	National	AGRI	Provisions of part 2 of Annex III "Prevention of pollution from agriculture" of the Helsinki Convention are implemented and enforced nationally.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
					nutrients and hazardous substances.				
E6	Establish site specific buffer zones to reduce nutrient losses from agricultural land, for example on parts of fields where surface run-off and erosion occurs, along ditches or at surface water inlets.	2030	Measure	A site-specific buffer zone (perennial crop such as grass) can be established and maintained on parts of the agricultural land where erosion and surface runoff frequently occur. It can, for example, be on erosion-prone parts of a field, along ditches, streams and lakes or at surface water inlets to the drainage system. The location, size and shape of the buffer zone is adapted to the specific site.	Buffer zones reduce the risk of nutrient losses caused by soil tillage close to ditches and watercourses and fertilizers being unintentionally spread outside the field or directly into the water. The effectiveness is higher in places where there is a high risk of erosion or runoff.	National	AGRI	Relevant regulation or support scheme is in place for establishing site-specific buffer zones. Advice and/or modelling is available for farmers to find suitable sites.	
E7	Balance fertilization rates site specifically and promote precision fertilization practices to improve nutrient use efficiency and reduce nutrient losses.	2030	Measure	Balanced fertilization means consideration of conditions for the specific site, year and crop when deciding fertilization rates. For nitrogen, relevant techniques can include application of nitrogen in multiple doses, unfertilized plots, N-sensors and remote sensing data. For phosphorus, information on the soil phosphorus content	The measure can reduce over-fertilization and thus nutrient losses. The effectiveness of the measure depends greatly on how efficiently nutrients are currently used, i.e. how much efficiency can be improved.	National	AGRI	Relevant regulation, support scheme or advice is in place to support farmers in site-specific fertilization and precision farming.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				is utilized to target the fertilization site specifically.					
E8	Develop by 2025 and apply by 2027 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.	2025, 2027	Measure	A large proportion of phosphorus losses from clay soils are in particulate form and measures that improve soil structure and increase aggregate stability have potential to reduce phosphorus losses from these soils. Incorporation of structural lime (mix of CaO and Ca(OH)2 with CaCO3) or gypsum ($CaSO4 \cdot 2H2O$) into the topsoil are measures which immediately improve the soil structure. There could be also other measures to improve soil structure with justified environmental effect.	Studies on structural liming have showed 0-60% reduction of phosphorus losses from clay soils. Studies have demonstrated that gypsum amendment of fields reduces phosphorus loads from clay fields by around 50%. Gypsum contains sulphate, which is gradually flushed away from soil to nearby waterways, and thus gypsum can only be utilized in arable fields along waterways running into the sea.	National/Joint	AGRI	By 2025 best practices to improve soil structure and aggregate stability on clay soils to reduce phosphorus losses from agricultural lands are compiled in a regional document. (Joint) By 2027 the best practices are applied nationally in areas where the measures are applicable e.g. with the help of support schemes, regulation or guidelines. (National)	
E9	Promote organic farming to increase its proportion to at least 25% of agricultural land by 2030.	2030	Measure	The main difference between organic and conventional farming systems are significant restrictions for the use of fertilizer and pesticides on organic farms. Additionally, the import of fertilizers, fodder, manure, pharmaceuticals, cleansing	Organic farming can reduce nutrient losses. For example, a German study shows that conventional farming emits on average 27.3 kg N/ha, while organic farming emits only 17 kg N/ha. Organic farming also reduces phosphorus losses	National	AGRI	The proportion of organic farming is 25% of the utilized agricultural land.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				agents and stocking densities are limited. Therefore, organic farming has a high potential to contribute to the protection of the Baltic Sea. It reduces the emissions of nutrients, pesticides and veterinary medical products, thereby protecting surface and groundwaters and the Baltic Sea. There can also be added benefits for the biodiversity and human health.	through a reduction in erosion. In organic farming erosion was reduced by 26% compared to conventional farming. Due to a prohibition of the use of chemical-synthetical pesticides in organic farming their input is reduced to zero.				
E10	Discourage application of manure and other organic fertilizers in the autumn at fields without green plant cover in winter.	2030	Measure	Timing of manure use is one of the most important aspects for ensuring a high utilization effect of manure, and field trials document that leaching risk is highest for manures that are applied in autumn.	Reducing the post-harvest application of manure is an effective way of addressing nutrient loss as most nutrient leaching occurs during winter, when soils are frozen, water saturated, and plant growth is minimal.	National	AGRI	Relevant regulation or support scheme is in place and advice available to discourage application of manure and other organic fertilizers in the autumn at fields without green plant cover in winter and to promote nutrient-balanced fertilization at fields with winter green crops.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
E11	Improve knowledge exchange by establishing dialogue between farmers, authorities and decision makers.	2030	Supporting action	Improved knowledge exchange from farmers to the decision makers and vice versa is important for making decisions that are applicable in the farming practices and communicating the reasoning behind the decisions in an understandable way is important to make them better acceptable among farmers. Direct contacts should be promoted for communication between scientists, policymakers and farmers.	N/A	National/Joint	AGRI	Regular Baltic Sea regional forum to exchange knowledge between farmers, authorities and decision makers is organized. (Joint) Ways or means for regular exchange of knowledge nationally are ensured. (National)	
E12	Enhance mutual learning among farmers on best practices and innovative technologies.	2030	Supporting action	Transfer of innovations and mutual learning among farmers across several Baltic Sea region countries can be one of the effective and relatively cost-efficient measures that could help to disseminate and adopt nutrient abatement sensitive technologies for less price and at the same time save spending in other cost categories.	N/A	National	AGRI	Farmer mutual learning groups, cross visits, demonstration activities, collaboration with researchers, advisors and technology companies are utilized in disseminating and introducing new technologies.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
E13	Develop by 2025 recommendations for Best Available Technology (BAT)/Best Environmental Practice (BEP) to reduce ammonia and greenhouse gas emissions from livestock housing, manure storage and spreading.	2025	Measure	Certain technologies and practices for handling and spreading manure have long been surpassed by newly developed technologies in terms of environmental performance. These outdated practices are often still used because they are cheaper or easily accessible. Utilizing the best available technologies is needed to reduce the emissions.	Utilizing the Best Available Technologies and Best Environmental Practice will reduce the emissions of ammonia and greenhouse gases.	Joint	AGRI	Regional document on BAT/BEP to reduce ammonia and greenhouse gas emissions from livestock housing, manure storage and spreading is developed.	
E14	Develop by 2025 recommendations for manure management specifically for horses, sheep, goats, and fur farming.	2025	Measure	There is no consistent approach to manure management for horses, sheep, goats, and fur farming across the Baltic Sea region. The situation regarding these animals (number of animals and current regulation) varies in different Baltic Sea region countries.	Improving the manure management for these animal groups will reduce the nutrient emissions especially if the number of animals is large and there is currently no proper management.	Joint	AGRI	Regional document such as Recommendation or guideline for manure management specifically for horses, sheep, goats, and fur farming is developed.	
E15	Apply as a minimum the updated EU's Best Available Techniques (BAT) Reference Document and	2030	Measure	The EU BAT reference document (BREF) presents the Best Available Technologies for intensive rearing of poultry and pigs.	Implementing BAT will reduce nutrient emissions. The possibility to prevent or reduce nutrient emissions by using BAT is described in	National	AGRI	The EU BREF or similar national document is utilized when permitting	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	Conclusions on BAT for intensive rearing of poultry and pigs, especially for the facilities located within areas critical to nutrient losses.			Utilizing BAT especially within areas critical to nutrient losses is important to minimize nutrient emissions.	the document for different technologies.			intensive rearing of poultry and pigs.	
E16	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.	2030	Measure	The revised palette of measures for reducing phosphorus and nitrogen losses from agriculture adopted at the Ministerial Meeting 2013 is intended to support the implementation of the part II of Annex III of the 1992 Helsinki Convention "Prevention of pollution from agriculture". The Palette contains technical, managerial and legislative measures, based on best available knowledge and sought to help in implementation of the aforementioned provisions.	Implementing the measures can reduce nutrient inputs from agriculture. The potential effect of the different measures is included in the palette of measures.	National	AGRI	Review national and voluntary agri-environmental measures. Measures included in the palette of measures are implemented into regulation or voluntary measures based on the review, if found relevant.	
E17	Agree on national level by 2023 on measures to reduce nutrient surplus	2023	Measure	A large nutrient surplus in fertilization practices increases the risk of nutrient	Reducing the nutrient surplus in fertilization practices will decrease the	National	AGRI	Agreement on national level on measures to reduce nutrient surplus in	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	in fertilization practices to reduce nutrient losses.			losses. There are several measures, technologies and restrictions that can be applied to reduce the nutrient surplus.	risk of nutrient losses. The potential effect of some of the possible measures that can be utilized is included in the palette of measures.			fertilization practices to reduce nutrient losses is in place. Information on measures for reducing nutrient surplus, e.g. limits for surplus is provided.	
E18	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.	2024, 2030	Measure	Financial instruments such as taxes or payments can be utilized to incentivise making better use of nutrients available in manure and other organic fertilizers, thus reducing mineral fertilizer use, enhancing nutrient recycling and reducing nutrient losses.	Potential effects will be investigated as part of the action.	National/Joint	AGRI	By 2024 a HELCOM report on experiences in the Baltic Sea region countries and the effects of financial instruments such as taxation of mineral fertiliser and/or taxation of nitrogen surplus and/or payments for agri-environment measures to enhance nutrient recycling and reduce nutrient losses is published. (Joint) Suitable measures are implemented nationally building on the experiences available in	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
								various countries. (National)	
E19	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.	2030	Measure	Upgrading and renovating agricultural drainage systems is currently topical in many Baltic Sea region countries. Applying 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, can reduce nutrient losses.	Innovative water management measures can reduce the input of nutrients from agriculture. The potential effect of some of the proposed measures is included in the palette of measures.	National	AGRI	Relevant legislation, advice and/or support scheme is in place to support the application of innovative water management measures.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Atmospheric nitrogen emissions									
E20	Revise by 2023 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 Best Available Technology (BAT) and Best Environmental Practice (BEP).	2023	Measure	According to the EMEP assessment of emissions of nitrogen in the region and its deposition on the Baltic Sea water area, proportion of nitrogen emissions from agriculture has increased and it has been acknowledged that some countries are at risk to exceeding national ammonia emission ceilings of the National Emission reduction Commitments (NEC) directive. It has been agreed that the Recommendation 24/3 is outdated and requires revision.	The revised HELCOM Recommendation 24/3 will be a tool to reduce ammonia emissions in the Baltic Sea region.	Joint	AGRI	Revised HELCOM Recommendation 24/3 on "Measures aimed at the reduction of emissions and discharges from agriculture" is adopted, ensuring reduction of agricultural ammonia emissions and considering relevant BAT and BEP.	
E21	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	2030	Measure	Airborne deposition contributes almost a third of the total nitrogen input to the Baltic Sea.	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	National	PRESSURE	Reduction commitments of the Gothenburg Protocol and the EU NEC-Directive 2016/2284 are achieved as a minimum requirement. Demonstrate or justify that, when relevant,	

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Theme: Atmospheric nitrogen emissions									
	2016/2284 for those HELCOM Contracting Parties that are also EU Member States. HELCOM Contracting Parties 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.				Emissions Ceilings (NEC) Directive.			measures to reduce nitrogen emissions are tailored to contribute to the reduction of the nitrogen deposition on the Baltic Sea.	
E22	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	2030	Supporting action	The Gothenburg Protocol is a tool to reduce nitrogen emissions. Considering protection of the Baltic Sea Marine ecosystem in the revision of the reduction targets for nitrogen emissions facilitates achieving of the maximum allowable input of nitrogen to the Baltic Sea. Higher reduction of airborne nitrogen input to the Baltic Sea could be achieved, if the Contracting Parties to the	N/A	Joint	PRESSURE	A memorandum of understanding as well as procedures to exchange technical expertise between HELCOM and UNECE CLRTAP have been set. (Joint, as far as applicable)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Atmospheric nitrogen emissions									
	the Gothenburg Protocol.			Gothenburg Protocol would strengthen national commitments to reduce nitrogen emissions. Focus of the cooperation should initially be on NHx as it has a short range of transport and is an increasing problem.					

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Wastewater sector									
E23	Strengthen the HELCOM Recommendation 28E/5 on municipal wastewater treatment by 2027.	2027	Measure	There has been significant improvement in the wastewater treatment technology since the adoption of the Recommendation 28E/5. New technologies, which are already in use in some countries, allow for higher nutrient removal rates that are required by the current Recommendation and more efficient removal of hazardous substances and microplastics. Implementation of the measure could involve discussions e.g. on the need of size of treatment plants to be addressed, and whether percentage reduction requirements should also be expressed as a threshold concentration (at the wastewater treatment plant outlet).	Tightening the requirements for nutrient removal from wastewater will further reduce nutrient inputs from wastewater treatment plants. It will also serve to minimize releases of hazardous substances and microlitter.	Joint	PRESSURE	Revised or new Recommendation with stricter requirements is adopted.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
E24	Facilitate exchange of information on best available treatment techniques for wastewater treatment plants through cooperation with existing regional digital platform(s) acting as a hub for the best knowledge in the wastewater management sector.	2030	Supporting action	There is a large number of various wastewater treatment technologies which increase wastewater treatment efficiency. Exchange of information on these techniques and available practices allows for tailoring the most efficient and economically feasible solutions for various types of sewerage systems.	N/A	Joint	PRESSURE	A regional digital platform acting as a hub for the best knowledge in the wastewater management sector is established and actively used in the Baltic Sea region.	
E25	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.	2030	Supporting action	Scattered dwellings and individual houses which do not have proper sewerage systems are significant sources of nutrient load to the Baltic Sea, which needs to be addressed. Raising awareness and exchange of knowledge on the available solutions enhance their application in this sector. In this relation, the role of non-governmental	N/A	National/Joint	PRESSURE	New initiatives implemented in educational cooperation using digital platform(s) (National and joint).	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				organizations is very important.					
E26	Cooperate with relevant Policy Areas of the EU Strategy for the Baltic Sea Region (EUSBSR) regarding e.g. 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.	2030	Supporting action	Policy Areas Nutri and Bioeconomy are intended to promote measures and practices to enhance effectiveness of nutrient management and thus contribute to the achievement of the BSAP goals. Policy Areas support regional projects and processes facilitating transfer of respective knowledge and involving broad stakeholder community in the implementation of HELCOM regional policy.	N/A	Joint	PRESSURE	HELCOM participates in the Policy Areas' steering committees. The Policy Area coordinators participate in HELCOM meetings and outcomes of projects and processes supported by Policy Areas are considered at relevant HELCOM Working Group meetings.	
E27	Target the elimination of phosphorus in laundry detergents for consumer use as soon as possible, but not later than by 2024.	2024	Measure	The use of phosphorus free detergents contributes to overall reduction of phosphorus load to the aquatic environment. The elimination of phosphorus in laundry detergents for consumer use means that phosphorus can only be	Reduction of phosphorus input to the Baltic Sea.	National	PRESSURE	All countries have introduced regulations for laundry detergents for consumer use in which the phosphorus concentration has been reduced and where possible eliminated.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				present in the form of phosphonates and the introduction of a maximum limit for total phosphorus content with a limit value/maximum level of 0.2% to 0.5% of phosphorus by weight (as in HELCOM Recommendation 28E /7).					
E28	Build a 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 builders, especially on their use, environmental effects and effectiveness.	2025	Supporting action	While action has been taken in both HELCOM and EU level on phasing out phosphorus in laundry detergents for consumer use, further efforts are needed to reduce phosphorus in detergents for industrial use. Further information is needed on best available techniques, alternative builders, especially on their use, environmental effects and effectiveness for these detergents.	N/A	Joint	PRESSURE	HELCOM report on best available techniques (BAT), alternative builders, especially on their use, environmental effects and effectiveness to target the reduction of phosphorus in detergents for industrial & institutional use.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
E29	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.	2030	Measure	The use of phosphorus free detergents for industrial and institutional use contributes to the overall reduction of phosphorus load to the aquatic environment.	Reduction of phosphorus input to the Baltic Sea.	National/ Joint	PRESSURE	New HELCOM instrument (recommendation or guidelines) based on outcomes of action E28 is adopted. (Joint) All countries have introduced regulations, in line with the HELCOM Recommendation or guidelines, for laundry and dishwasher detergents for industrial and institutional use in which the phosphorus concentration has been reduced and, where possible, eliminated. (National)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Nutrient recycling									
E30	Implement adequate measures, especially in agriculture and wastewater management, to achieve the objectives of the Baltic Sea Regional Nutrient Recycling Strategy by 2027.	2027	Measure	The Baltic Sea Regional Nutrient Recycling Strategy includes six objectives: Baltic Sea region as a model area for nutrient recycling, reducing environmental impacts, safe nutrient recycling, knowledge exchange and awareness raising, creating business opportunities, and improving policy coherence. The Strategy includes a list of possible measures and the BSAP includes priority actions on nutrient recycling.	Implementing the adequate measures to achieve the objectives of the Strategy will reduce the nutrient inputs to the Baltic Sea and minimize the input of hazardous substances.	National	AGRI; PRESSURE	The actions on nutrient recycling in the BSAP are implemented as well as any other relevant measures to reach the objectives of the Strategy.	
E31	Create legal and institutional tools to advance towards introducing annual field-level fertilization planning and farm-gate nutrient balancing for nitrogen (N) and phosphorus (P) as a requirement for all farms in the Baltic Sea Region to reduce nutrient surplus on		Measure	In areas critical to nutrient losses, making a field-level fertilization plan before sowing and farm-gate nutrient balance after harvesting are tools to follow the nutrient use efficiency of the farm and help reduce overfertilization and	Reducing the nutrient surplus and increasing nutrient use efficiency reduces the risk of nutrient emissions.	National	AGRI	Legal and institutional tools to advance towards making annual field-level fertilization planning, and farm-gate nutrient balancing for nitrogen (N) and phosphorus (P) have been created, where relevant according to the nutrient load.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	farmlands to the highest possible degree in a cost-effective way.			nutrient surplus that increases the risk of nutrient losses to the environment. Nutrient balances can be also made on the field level to follow the nutrient flows even more precisely. These tools are already in use in some of the Baltic Sea Region countries and they are important in all areas, except with areas of low nutrient loading, to reduce the risk of nutrient losses from farms.					
E32	Enhance the use of recycled nutrients in agriculture making use of best available technologies and fertilize according to crop needs.	2027	Measure	To increase nutrient recycling, the use of recycled nutrients should be enhanced, and the use of mineral fertilizers reduced.	Making use of the best available technologies for recycling the nutrients and fertilizing according to crop needs reduces the risk of nutrient losses by ensuring high nutrient use efficiency.	National/ Joint	AGRI; PRESSURE	Support schemes and advice are in place to enhance the use of recycled nutrients in agriculture making use of best available technologies and fertilizing according to crop needs. (National) Evaluation of substitution of mineral fertilizers by	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
								recycled nutrients is carried out. (Joint)	
E33	Develop by 2027 safety requirements for recycled fertilizer products and minimise the occurrence of harmful compounds in these products to comply with the requirements.	2027	Measure	Developing safety requirements for recycled fertilizer products is a tool to ensure safe nutrient recycling by minimizing the release of hazardous substances.	Requirements for the safety of recycled fertilizer products will reduce the release of hazardous substances to the environment.	National/Joint	AGRI; PRESSURE	Regional document on the safety requirements for recycled fertilizer products is developed. (Joint) Compliance with the requirements is ensured nationally. (National)	
E34	Increase the knowledge and promote education and advisory services on nutrient recycling.	2027	Supporting action	To increase nutrient recycling, there is a need to increase knowledge and promote education and advisory services on nutrient recycling. The topic is still not widely known and there are many misconceptions on what it means.	N/A	National	AGRI	Matters about nutrient recycling are integrated into the relevant education and training programs. Information and communication campaigns about nutrient recycling are conducted.	
E35	Improve the conditions for the development of a market for recycled fertilizer products by setting incentives with the aim of making the use of such products equally attractive to	2027	Supporting action	Currently, mineral fertilizers can be more attractive to farmers than recycled fertilizers products due to e.g. lower prizes and	N/A	National	AGRI; PRESSURE	Incentives are set to improve the conditions for the development of a marked for recycled fertilizers.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	farmers as the use of mineral fertilizers.			familiarity. To reallocate nutrients from regions where there is an excess of nutrients to other regions, the excess nutrients can be processed to recycled fertilizer products and there should be a market for these products. Incentives such as support for the use or production of such products could facilitate creating the market.					
E36	Enhance cooperation and share experiences between sectors and actors to create a holistic view on sustainable food systems including nutrient recycling across sectors.	2027	Supporting action	Nutrient recycling requires a system change in the society. A holistic view on the sustainable food system is needed across various sectors.	N/A	National/ Joint	AGRI; PRESSURE	Identification of sectors and organizations that should be part of the national discussion on nutrient recycling. (National) Baltic Sea regional and national conferences, webinars, visits, collaboration with researchers etc. are organized to share experiences and exchange knowledge between	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
								sectors and actors. (National and joint)	

Actions in the Hazardous substances and litter segment

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Hazardous substances									
HL1	Develop a regional strategic approach and, on the basis of that approach, an action plan for HELCOM work on hazardous substances by 2024.	2024	Supporting action	The current HELCOM framework for hazardous substances is mainly based on a limited number of priority contaminants and a list of measures to prevent their input to the marine environment compiled on an ad hoc basis. The HELCOM's strategy to implement objective for hazardous substances was updated in 2010 (Recommendation 31E/1) and there are 15 specific Recommendations to limit emissions or discharges from different industrial and use categories. However, a framework based on a holistic and coordinated approach to the problem of contamination of the marine environment by hazardous substances is	N/A	Joint	PRESSURE	Regional strategic approach on hazardous substances is developed. Regional action plan on hazardous substances is adopted.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				needed and will be applied. The regional policy document on hazardous substances (2021) will be used as a background for this work. According to the policy document, HELCOM work requires substantial improvement by 1) strengthening the role of HELCOM in the regional policy landscape, 2) modernizing tools constituting the management cycle for chemicals and 3) organizational structure.					
HL2	Develop national programmes with a particular focus on hazardous substances which are not adequately regulated by other policies.	2030	Supporting action	National programmes may be necessary for hazardous substances identified as relevant within the HELCOM work on hazardous substances if not regulated by other policies. National programmes will contain necessary actions to lower the input of hazardous substances of regional concern.	N/A	National	PRESSURE	National implementation plans for regionally relevant substances are developed where needed.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
HL3	Submit to HELCOM by 2023 an account listing, as detailed as possible, the planned and implemented measures to reduce releases of hazardous substances in the environment, including available knowledge on their effects.	2023	Supporting action	Better information on measures and their cost-effectiveness will allow improvements in coordinated work on hazardous substances. For the EU Member States the account list should include relevant measures from Water Framework Directive (WFD), Marine Strategy Framework Directive (MSFD) and other EU policies as well as global treaties for all Contracting Parties. The list will be used in an analysis of effectiveness of measures.	N/A	National/Joint	PRESSURE	Lists of measures and available knowledge on costs and effects is reported to HELCOM. (National) An analysis of the reported information is published by HELCOM. (Joint)	
HL4	Strengthen and update HELCOM recommendations for industrial releases of hazardous substances by applying information produced under the EU Industrial Emissions Directive and other sources in order to	2030	Supporting action	Important information and recommendations produced in other fora such as the Industrial Emissions Directive (IED) and European Pollutant Release and Transfer Register (E-PRTR) frameworks could be used to improve knowledge and potentially limit industrial release of hazardous substances further when	N/A	Joint	PRESSURE	New or updated HELCOM Recommendations are adopted.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	sufficiently protect the Baltic Sea environment.			necessary. The action is intended to complement but not duplicate the EU regulation as well as influence related EU regulation with respect to hazardous substances of regional concern for the Baltic Sea.					
HL5	Decrease 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.	2030	Measure	A large number of chemicals are used in small scale businesses which are connected to municipal wastewater treatment plants. These chemicals are often not removed from wastewater and contaminate sewage sludges when precipitated. The action is aimed at reduction of input of contaminants at sources through reduction of the use of the chemicals of high concern and their responsible handling by small businesses.	Significant reduction of releases of pollutants of high concern can be achieved at sources.	National/Joint	PRESSURE	Regional guideline on best practices for smart chemical management for small-scale emitters e.g. municipal entities, businesses and private households is published. (joint) Awareness-raising campaigns and information materials on chemical-smart procurement and purchasing strategies for preventing releases of hazardous substances is communicated with households, municipal	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
								entities and businesses. (national) If feasible, arrange a study illustrating awareness raising among citizens before and after campaigns to prove their effectiveness. (national)	
HL6	Establish a chemical product register to be built upon, e.g. the EU REACH (EC1907/2006) framework, by 2025.	2025	Supporting action	Chemical product registers can provide statistics on the use of chemicals, which can complement other information needed for development of efficient measures.	N/A	National	PRESSURE	National product registers are in place.	
HL7	Launch educational and information campaigns by 2025 to raise public awareness regarding responsible handling of hazardous substances in household chemicals and articles to prevent their release into the environment.	2025	Measure	A large number of chemicals are used by population in households. Responsible handling of household chemicals includes voluntary minimization of the use of chemicals containing compounds of high environmental concern together with responsible	Significant reduction in releases of pollutants of high concern can be achieved at sources.	National/Joint	PRESSURE	Regional guidelines/ recommendations for general public and visual outreach material encouraging environmentally responsible selection of products and handling of chemicals in households are published. (Joint)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				utilization of unused chemicals in accordance with existing best environmental practices. The action is partly overlapping with HL5 and HL25.				National or local education and outreach campaigns for general public encouraging environmentally responsible selection of products and handling of chemicals in households are arranged based on the guidelines/ recommendations. (National) Reporting can be partly done jointly with action HL5 and HL25.	
HL8	Introduce requirements regarding content of chemicals of high regional environmental concern in public procurement procedures by 2025 and provide support for follow-up.	2025	Measure	Introduction of environmental requirements in the public procurement procedures can reduce releases of hazardous substances of high concern. The target group for this action is authorities responsible for organization of procurement procedures. The action is partly overlapping with HL5.	Significant reduction in releases of pollutants of high concern can be achieved at sources.	National/Joint	PRESSURE	Regional guidelines/ recommendations for green procurement procedures are published. (Joint) National or local guidelines/ recommendations for green procurement procedures are issued, if needed. (National)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
								Reporting can be partly done jointly with action HL5.	
HL9	Establish procedures by 2025 to utilize information obtained under various policies and policy frameworks addressing the use of chemicals (e.g. Stockholm Convention, SAICM successor, REACH Regulation, Water Framework Directive, Industrial Emissions Directive etc) to prioritize measures targeting regional contaminants and to identify emerging pollutants of high concern.	2025	Supporting action	Coordinated procedures are needed to make work related to hazardous substances as efficient as possible. This action is part of the implementation of HL1 and HL11. The action is linked also with action HL2.	N/A	Joint	PRESSURE	Analysis of measures implemented under other policies, including their effectiveness is conducted. Summary of international work and identified measures on contaminants of emerging concern, e.g screening campaigns, is presented every two years for Pressure Working Group and for other relevant HELCOM bodies for planning and prioritizing further the HELCOM work on hazardous substances.	
HL10	Establish a mechanism for managing the HELCOM list of priority substances starting from 2025 and	2025	Supporting action	A structured approach is needed to manage the list of priority substances since an ad hoc substance by substance	N/A	Joint	PRESSURE	A group working in collaboration with relevant other actors (e.g. global treaties, OSPAR, EU	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	respond to screening and assessment results pointing out regional challenges for the Baltic Sea environment and contaminants of emerging concern.			approach is too inefficient in order to function adequately. This action is part of the implementation of action HL1.				NORMAN network) aiming to further risk-based prioritisation tools for the needs of Regional Seas Conventions is formally established. A prioritisation mechanism, which is used for continuous update of the priority list based on reported data and prioritisation criteria is in place.	
HL11	Organize continuous follow-up of the work on hazardous substances under various global and EU policies as well as in Regional Sea Conventions (RSCs) starting from 2024, and actively influence these processes by promoting international actions identified as necessary to improve the environmental status with		Supporting action	Efficient work on hazardous substances demands improved cooperation with respective processes in other international fora to actively influence these processes including promotion of international actions beyond the HELCOM area.	N/A	Joint	PRESSURE	Joint HELCOM initiatives are proposed to relevant global or upstream Conventions to reduce inputs of hazardous substances to the HELCOM Convention area.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	respect to hazardous substances in the Baltic Sea.			This action is part of the implementation of action HL1.					
HL12	HELCOM participation starting from 2023 as member in Strategic Approach to 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.	2023	Supporting action	Improved cooperation with respective processes in other international fora is needed for efficient work.	N/A	Joint	PRESSURE	Membership in SAICM HAA.	
HL13	By 2028 develop further relevant monitoring for the biological effects of hazardous substances in order to facilitate a reliable ecosystem health assessment.	2028	Supporting action	In order to better assess the impacts of hazardous substances, it is suggested to further develop monitoring of biological effects. Biological effects including possible mixture effects will be	N/A	National/Joint	STATE & CONSERVATION; EN HZ; CG PHARMA	Monitoring produces sufficient data to enable a reliable ecosystem health assessment by integration of multiple components, considering already existing candidate and pre-core indicators of	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				investigated and a need for action can be assessed.				biological effects of hazardous substances.	
Topic: Legacy pollutants									
HL14	Encourage the use of alternative less toxic metals and other materials to replace lead in fishing gear and shooting bullets with the aim to minimize harmful use of metallic lead.		Measure	Large areas of the Baltic Sea remain in bad status in terms of lead. Loss of fishing equipment to the Baltic Sea as well as spreading of lead from ammunition is a direct emission source, which causes unacceptable effects on the marine life. Input of lead must be stopped on a regional scale. This concerns both professional and recreational activities. Alternatives are partially already available on the market, but in some cases, they are not yet an equivalent substitute.	Reduction of lead input to the aquatic environment in the Baltic Sea region.	National/Joint	PRESSURE; FISH	Regional guidelines and recommendations on substitution of lead in fishing gear and ammunition are adopted. (Joint) National guidelines and recommendations on substitution of lead in fishing gear and ammunition are issued. (National) Related regional and national outreach campaigns are arranged. (Joint and national)	
HL15	In order to decrease dioxin emissions, establish information campaigns	2025	Measure	Dioxin is one of the most toxic organic compounds generated by low temperature	Reduction of dioxin emissions.	National	PRESSURE	National information materials to minimize dioxin emissions from	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	and other instruments which focus on the quality and species of firewood, and what is burned in small-scale combustion appliances, by 2025.			combustion. Small scale combustion appliances are broadly used in many countries and are a significant source of dioxins in case of using chlorine containing fuels due to low temperature of combustion process.				small scale combustion appliances are published where relevant.	
HL16	Enhance implementation of the UNEP 2013 Minamata Convention on Mercury by those Contracting Parties that are parties to this Convention and encourage its ratification by HELCOM countries that are not yet parties to the Convention.	2030	Supporting action	Baltic Sea remains in not good status in terms of mercury contamination. The Minamata Convention is one of the key global tools tailored to cease the use of mercury and its subsequent release to the environment. Not all HELCOM countries have ratified the Convention. Early ratification of the Convention by all HELCOM countries along with the implementation of its requirements is the way to a mercury-free Baltic Sea region.	N/A	National	PRESSURE	The Minamata Convention is ratified by all countries. Provisions of the Minamata Convention are transposed to national legislation.	
HL17	Undertake all possible measures to reduce	2028	Measure	Two major sources of global mercury emissions are artisan gold recovery using mercury, and combustion of fossil fuels	Reduction of mercury	National	PRESSURE	Measures are taken to reduce mercury emissions from fuel combustion in the energy sector and	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	mercury emissions from energy sector by 2028.			and biomasses. Since there is no such gold recovery in the Baltic Sea region, combustion of fuels remains one of the main sources of mercury emissions, as indicated e.g. in the HELCOM core indicator report on metals (Pb, Cd and Hg, 2018) and the Baltic Sea Environment Fact Sheet on atmospheric emissions of heavy metals in the Baltic Sea region (2020). Annual total emissions of mercury are officially reported to the UN ECE Secretariat by HELCOM Contracting Parties, in the framework of UN ECE Convention on Long-Range Transboundary Air Pollution (CLRTAP) Protocol on Heavy Metals.	deposition to the Baltic Sea.			national reports demonstrate further reducing of mercury emissions from this sector.	
HL18	Control concentration of mercury in dredged material and undertake possible measures to prevent its release during dredging operations and	2030	Measure	Mercury remains in the Baltic Sea ecosystem buried in sediments. Dredging and depositing operations at sea might resuspend fine grained sediments contaminated by	Prevention of reintroduction of mercury to trophic chains in the Baltic Sea	National	PRESSURE	National requirements to monitor mercury in sediments to be dredged including using either national or regionally harmonized action list	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	handling of dredged material.			mercury in the water column. This causes reintroduction of mercury to food chains.	marine ecosystem.			levels for mercury concentration in marine sediments are set in respective environmental permits, as defined in the HELCOM Guidelines for Management of Dredged Material at Sea, to be used for implementing the Recommendation 36/2.	
HL19	Introduce the ban of the use of mercury-based amalgam in dentistry by 2030, except when deemed strictly necessary.	2030	Measure	Dentistry is one of the sectors where mercury is still used. Its use cannot be ceased completely at present due to absence of alternative solutions for some medical conditions.	Reduction of input of mercury.	National	PRESSURE	The ban on the use of mercury-based amalgam in dentistry is a legal requirement in all Baltic Sea countries, except when deemed strictly necessary.	
HL20	Establish by 2023 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).	2023	Measure	Despite substantial efforts to substitute mercury in goods and products, some of them still contain this metal. Utilization of mercury containing wastes in a way which prevents the release of mercury to the environment should be mandatory in all Baltic Sea countries.	Reduction of input of mercury.	National	PRESSURE	Legal requirements for handling mercury containing wastes, including respective public information.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
HL21	Introduce by 2027 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.	2027	Measure	The listed substances are included in the HELCOM priority list and have been proven to have a toxic environmental effect. Scarcity of data on the presence of these substances in the marine environment and on their input to the Baltic Sea delays an agreement on measures targeting these substances. The improvement of knowledge base should enable the development of such measures.	Reduction of input of listed hazardous substances to the aquatic environment.	Joint	PRESSURE	A regional report on the state of the Baltic Sea with regard to the listed groups of chemical compounds is published. Regional measures to prevent the release of these contaminants to the aquatic environment are developed.	
Topic: Contaminants of emerging concern									
HL22	Improve knowledge base on occurrence of pharmaceutical substances in the environment, their persistence and harmful effects and ensure availability of this information for broad expert community by 2025.	2025	Supporting action	Pharmaceuticals are an important group among contaminants of emerging concern for the Baltic Sea. Information about properties and findings in the marine environment are available but often the information is national and scattered. As information is the basis for further work to prevent the	N/A	Joint	PRESSURE	Information for a broad expert community about available information sources (e.g. Background document /internet platform/database that compiles available information sources) is published.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				release of pharmaceuticals in the environment, it is a crucial step to improve the knowledge base to support measures, research and further actions.					
HL23	Identify priority pharmaceuticals by 2024 utilising the best available knowledge on their releases into the aquatic environment, environmental effects and available data on their use in the region, for efficient risk reduction and for subsequent integration of these substances to HELCOM assessments, as indicators of the state of the Baltic Sea and environmental pressure.	2024, 2030	Supporting action	To take into account regional conditions (e.g. uses, sales, prescriptions etc) as well as the special vulnerability of the Baltic Sea with regard to effects of hazardous substances it is crucial to identify priority pharmaceuticals. The integration of these substances is important to assess the status and the effectivity of risk reduction measures. The action is linked with action HL10 and HL22.	N/A	Joint	PRESSURE	By 2024 priority pharmaceuticals for the Baltic Sea region are identified. Available information about effects, releases, uses and efficient risk reduction is compiled. Priority pharmaceuticals are utilized for the assessment of the Baltic Sea state, including as indicators.	
HL24	Develop guidance for the environmental monitoring and analysis of	2025	Supporting action	Coordinated monitoring is central for the HELCOM assessment which is the basis	N/A	Joint	STATE & CONSERVATION; PRESSURE	Guidance for environmental monitoring and analysis is published.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	pharmaceuticals identified as indicators of the state of the Baltic Sea by 2025.			for sound decisions to protect the Baltic Sea.					
HL25	Organize an information campaign on what not to flush by 2025 (addressing chemicals, pharmaceuticals and litter).	2025	Supporting action	A large amount of chemicals, pharmaceuticals as well as products containing plastic and microplastic are used in households. The information campaign is aimed to foster their handling in households to reduce the input at source. This action is linked with action HL5.	N/A	National	PRESSURE	Information on "what not to flush" or alternatively "what to flush" is delivered to e.g. households and water utilities in municipalities. If feasible, to arrange a study illustrating awareness raising among citizens before and after campaigns to prove their effectiveness.	
HL26	Strengthen the collection of unused pharmaceuticals from the public in the Baltic Sea region by 2026.	2026	Measure	The aim is to avoid inputs of pharmaceuticals to the environment from unused pharmaceuticals which are not properly disposed of. The action also concerns pharmaceuticals purchased via internet.	Minimise the release of pharmaceuticals in the environment.	National	PRESSURE	A collection system of unused pharmaceuticals is in place.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
HL27	In cooperation with health care institutions, increase awareness and knowledge of consumers about pharmaceuticals containing substances that are persistent and harmful for the environment, when scientifically justified information is available.	2030	Measure	A number of medical substances which are available in pharmacies without prescriptions have been found in the marine environment. Some of them, such as pain killers, are known due to their adverse effect on the ecosystem. Information campaigns targeting medical compounds with proven adverse effect should target overconsumption of these medical substances based on the best available scientific knowledge (action HL23). The information is aimed at enhancing the prudent use and disposal of pharmaceuticals and conveying the importance of, when possible, using pharmaceuticals that are not persistent and less harmful for the environment. Health care institutions to be involved are e.g. prescribers and pharmacies.	Minimizing the input of pharmaceuticals.	National	PRESSURE	A dialogue with medical product agencies, health care institutions, including prescribers and pharmacies is established to convey scientifically justified advice to consumers about the prudent use and disposal of pharmaceuticals and the importance of, when possible, using pharmaceuticals that are not persistent and less harmful for the environment.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
HL28	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.	Starting from 2021	Supporting action	The aim of the action is to identify substances previously unknown in the Baltic marine environment which occur in elevated concentration. The aim is also to follow up on the occurrence and trends of substances of emerging concern to identify substances of relevance for the Baltic Sea in a timely manner. The results of the screening campaigns can support European and international work on chemical regulation as findings in the marine environment are important indications about behaviour and properties of substances.	N/A	Joint	PRESSURE	The HELCOM hazardous substances screening project is implemented.	
HL29	Limit the use of firefighting foam containing per- and polyfluoroalkyl substances (PFAS) at sea and in the catchment area and promote sustainable alternatives by 2027.	2027	Measure	Per- and polyfluoroalkyl substances (PFAS) are identified as toxic and very persistent synthetic organic compounds with high accumulation ability. They are used in fire foams, the application of which is one of the sources of direct input of	Reduction of the input of PFAS.	Joint	PRESSURE; MARITIME	HELCOM Recommendation limiting the use of PFAS in firefighting foams at sea. HELCOM Recommendation limiting	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				these compounds to the aquatic environment.				the use of PFAS in firefighting foams in catchment area. Regional report on sustainable fluorine free alternatives to PFAS in firefighting foams. HELCOM proposal to IMO to limit the use of firefighting foam containing PFAS at ships. Communication with ECHA to facilitate the development of related restrictions at the EU level.	
HL30	Minimize the release of biocides from antifouling products to the marine environment, and preferably by 2027 replace	2027	Measure	According to the International Convention on the Control of Harmful Anti-fouling Systems on Ships, the use of certain harmful biocides (i.e.	Reduction of releases of biocides from antifouling products.	Joint	PRESSURE; MARITIME	Revised or new HELCOM Recommendation on antifouling is adopted, addressing both biocidal and biocide-free practices.	S8, S9, S10

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
	use of biocidal antifouling products with biocide-free alternatives on structures, equipment and recreational craft in cases not already subject to the International Convention on the Control of Harmful Anti-fouling Systems on Ships when available and environmentally and technically feasible.			organotins and cybutryne) is globally banned. However, other biocides released from antifouling products, can also have adverse effects and can accumulate in the marine environment. This measure therefore focuses on ways to minimize the use of biocides, in cases not already covered by the convention. The measure aims to minimize the release of all biocides, and focuses specifically on releases from equipment and structures, such as equipment used in aquaculture, navigational aids, and recreational crafts. Avoidable releases may occur both during active use (for example due to higher biocidal release rates than necessary) and at end of service-life (for example while removing biocidal paint layers). To address this, one example could be conducting efficiency tests aiming to ensure that				HELCOM Roadmap towards biocide free antifouling in the Baltic Sea region is developed.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				authorised biocidal antifouling paints do not contain more active substance (e.g. copper) than needed. In addition, a regional guideline could be proposed on best practices for hull cleaning that could reduce the biocidal releases during paint removal. Biocide free alternatives are already available and their fields of application need to be promoted (i.e. through information campaigns) and their use facilitated by establishing infrastructure to improve antifouling practices and maintenance work, e.g. in marinas.					

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
Theme: Marine litter									
HL31	Improve the evidence base on the impact of marine litter on the Baltic Sea region in order to develop and agree on new measures by 2025.	2025	Supporting action	Information on the overall influence that marine litter has on the environment and society is a key component of informed decision making and ensuring targeted and effective measures. However, information on the impact of marine litter, both environmental and societal is not collated, it is often not fully supported by concrete data and evidence, and it is not easily accessible.	N/A	STATE & CONSERVATION; PRESSURE; EN-Marine Litter	Joint	The evidence base has been improved by addressing identified knowledge gaps and the information has been published.	
HL32	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, such as the Technical Group on marine litter under the Marine Strategy Framework Directive.	2022, 2026	Supporting action	The HELCOM indicators are a critical component of the follow-up of the Baltic Sea Action Plan (BSAP) and HELCOM's approach to the assessment of good environmental status in the marine environment. The indicators provide a mechanism to address the effectiveness of the measures put in place to reach the goals and objectives of the BSAP, by regularly synthesising common regional monitoring data into an evaluation of progress towards these goals and the BSAP vision. Without a comprehensive	N/A	STATE & CONSERVATION; PRESSURE; EN-Marine Litter	Joint	Fully developed core indicators are available by 2026. Harmonised monitoring methods are agreed through the development and approval of regional monitoring guidelines by 2026.	

				portfolio of ecologically relevant indicators, it is not possible to follow up on the real world effect of HELCOM policies and measures.					

Actions in the Sea-based activities segment

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Maritime activities									
Topic: Discharges from offshore platforms									
S1	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.	2026	Measure	The Action Plan for the protection of the environment from offshore platforms to apply a "zero-discharge" principle for the oil and gas offshore platforms in the Baltic Sea was agreed as part of the 2007 BSAP. HELCOM 31-2010 adopted a system of "red" and "black" chemicals with discharge prohibited from oil and gas offshore platforms. The list is set out in HELCOM 31-2010 document 3-1 Corr. where it is stated that it could still be revised and amended, if necessary, and should not be treated as an ultimate list. If new chemical substances occur, they shall be evaluated and classified accordingly. Decommissioning of oil and gas offshore platforms is included in the scope of this measure through provisions in Annex VI of the Helsinki	Discharges of oil and chemicals from oil and gas offshore platforms eliminated, also during the decommissioning of such platforms.	Joint	MARITIME	HELCOM Offshore Action Plan is updated to include the "zero-discharge" principle for all chemicals.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				Convention, Regulation 8, and the Offshore Action Plan itself.					
Topic: Maritime safety									
S2	Take actions to ensure the completion of the re-surveys for Category I and II areas used by navigation by 2030 at the latest.	2030	Supporting action	Systematic re-surveying of major shipping routes and ports in the region according to the HELCOM-Baltic Sea Hydrographic Commission (BSHC) Re-survey Scheme is aimed at ensuring that safety of navigation in the Baltic Sea region is not endangered by inadequate source information. All areas used for navigation (Category, CAT, I and II) have not yet been re-surveyed (86% by August 2019). Re-surveys will cover areas used by shipping where old or otherwise inadequate depth information currently exists and leads to safer shipping and boating, increases the protection of the marine environment as well as flood prevention and oil recovery contingency. Accurate and reliable full bottom coverage / full seafloor search of surveys allow for more flexible route	N/A	National	MARITIME ; SAFE NAV	All CAT. I and II areas have been re-surveyed, as specified in the revised re-survey scheme.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				planning, more precise navigation and more flexibility to utilise the increased loading of ships, and thus increasing the economic efficiency of shipping. During the re-surveys, critical new shallows or shoals not previously known are found allowing appropriate actions to be taken.					
S3	Ensure the completion of the re-surveys for near shore areas and other areas used typically for safe boating, environmental protection, GIS data purposes and oil recovery contingency (also called Category III areas), by the time specified in the revised Baltic Sea Hydrographic Commission (BSHC)-HELCOM Revised Baltic Sea Harmonized Hydrographic Re-Survey Scheme.	By the time specified in the revised Baltic Sea Hydrographic Commission (BSHC)-HELCOM Revised Baltic Sea Harmonized Hydrographic Re-Survey Scheme	Supporting action	Systematic re-surveying of major shipping routes and ports in the region according to the HELCOM-BSHC Re-survey Scheme is aimed at ensuring that safety of navigation in the Baltic Sea region is not endangered by inadequate source information, and thereby also minimize accidental pollution from maritime transport, recreational boating and other related activities. All Category (CAT) III areas, covering other areas than CAT I and II which are not primarily for safety of navigation purposes, e.g. for environmental protection as well as flood prevention and oil recovery contingency have not yet been re-surveyed.	N/A	National	MARITIME ; SAFE NAV	All CAT. III areas have been re-surveyed, as specified in the revised re-survey plan.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				Accurate and reliable full bottom coverage / full seafloor search of surveys allow for more flexible route planning, more precise navigation and more flexibility to utilise the increased loading of ships, and thus increasing the economic efficiency of shipping. During the re-surveys, critical new shallows or shoals not previously known are found allowing appropriate actions to be taken.					
S4	Further work with regard to the regional HELCOM Automatic Information System (AIS) and also new systems such as VHF Data Exchange System (VDES) and other e-navigation services by 2027 in order to increase safety of navigation and gain environmental benefits.	2027	Supporting action	Data on ship movements in the Baltic Sea can be used for various purposes aiming at inter alia increasing maritime safety, decrease accidents and accidental pollution incidents, prosecute offenders, and collection of fisheries data. The HELCOM Automatic Information System (AIS) benefits from continuous development and new systems, such as VHF Data Exchange System (VDES) and other e-navigation services should be explored in order to improve data availability and comprehensiveness.	N/A	National/Joint	MARITIME; AIS EWG	Data availability and quality on ship movements and use of such data, e.g. through making use of VDES or other e-navigation services has been improved (Joint and national).	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
S5	Further strengthen co-operation with the International Maritime Organization (IMO) and regional co-operation in the field of safety of navigation in the framework of the HELCOM Maritime Group, as appropriate, in particular recognizing the need for the exchange of technical expertise regarding risk assessment to avoid shipping accidents in the Baltic Sea.	Ongoing	Supporting action	Numerous measures to improve maritime safety have been implemented in different parts of the Baltic Sea, including routing measures and new ship reporting systems as agreed e.g. in the 2001 HELCOM Copenhagen Declaration. However, increasing maritime traffic and associated risks call for further, improved and tailor-made safety and environmental risk reduction procedures. It is recognized that IMO is the body regulating navigational safety. It has further been recognized that close and enhanced cooperation and especially exchange of technical expertise on navigational safety is needed in the Baltic Sea. The appropriate forms for this cooperation should be considered by the Group of Experts on Safety of Navigation (SAFE NAV) and Maritime Working Group, 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.	N/A	Joint	MARITIME ; SAFE NAV	Concrete cooperation has taken place in the field of safety of navigation between HELCOM and IMO within the framework of SAFE NAV and Maritime Working Group, as well as cooperation on the regional level between Contracting Parties. Significant new developments can be linked to the cooperation, inter alia new traffic management measures, updated risk assessments, risk control measures and new measures to increase safety of winter navigation.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
S6	Continue close technical cooperation with the European Maritime Safety Agency (EMSA) in collection and analysis of maritime data relevant for the development of safer shipping in the Baltic Sea, such as EMCIP and explore possibilities for future cooperation on the provision of data to EMSA, including on drug/alcohol abuse as a cause of accidents as well as data on linked spills and cargo losses to the environment.	Ongoing	Supporting action	Comprehensive data, and analysis of the data, on shipping accidents and their causes is needed for the planning of appropriate measures aiming at decreasing the number, risk and impact of accidents. Data on shipping accidents is collected by HELCOM through the EMCIP system (for those Contracting Parties that are also EU Member States) in order to avoid duplication of effort in such reporting. Therefore, close cooperation with EMSA is needed.	N/A	Joint	MARITIME ; SAFE NAV	Improvements are made in the availability, quality, collection and analysis of data on shipping accidents, their causes and their consequences, by e.g. the addition of new or more precise data points.	
Topic: Non-indigenous species									
S7	Establish by 2024 and subsequently implement the early warning system in case of the introduction of invasive species in ports.	2024	Measure	An early warning system (EWS) facilitates timely communication of findings of non-indigenous species (NIS) to all relevant authorities in the Baltic Sea region and international shipping in the Baltic Sea.	The measure will facilitate informed and quick decision-making in order to minimize further introductions of NIS and undertake possible eradication measures.	National/Joint	MARITIME ; JTG BALLAST & BIOFOULING	An early warning system (EWS) is established and being implemented (Joint and national).	
S8	Work for the harmonized implementation of the International Maritime	Ongoing	Measure	Biofouling is one of the main vectors for introductions and spread of non-indigenous species to and within the	Harmonized implementation of the IMO Biofouling	National/Joint	MARITIME ; JTG BALLAST &	Ongoing harmonized implementation of the IMO Biofouling Guidelines and	HL30

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	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.			Baltic Sea. However, no legally binding international regulations exist to reduce such introductions. The proposed Biofouling Management Roadmap can be seen as a tool for harmonized implementation of the IMO Biofouling Guidelines and Guidance, taking into account the conditions in the Baltic Sea. It was also noted that the Biofouling Roadmap can support the work in IMO to review the Biofouling Guidelines.	Guidelines and its possible future developments would reduce the risk of spreading non-indigenous fouling organisms in the Baltic Sea and beyond, as well as reducing the input of biocides and microplastics from antifouling systems and as an indirect effect also reducing the energy consumption of ships.		BIOFOULING	Guidance in the Baltic Sea and ongoing active contribution of HELCOM or HELCOM Contracting Parties to the work carried out in the IMO. Implementation of the IMO Biofouling Guidelines and Guidance is harmonized between the HELCOM Contracting Parties.. Contribution to work carried out in IMO (e.g. submission of proposals developed within or based on HELCOM work, incorporation of HELCOM approaches to IMO Guidelines or Conventions etc.) has taken place.	
S9	Promote the development and use of effective, environmentally sustainable biofouling management techniques and antifouling systems on ships and recreational craft, including biocide-free alternatives to	Ongoing	Supporting action	Biofouling is one of the main vectors for introductions of non-indigenous species to the Baltic Sea. However, no legally binding international regulations exist to reduce such introduction. Also, apart from international regulations prohibiting the use of organotin compounds and	N/A	National/Joint	MARITIME; JTG BALLAST & BIOFOULING	Research and development activities related to the development and use of effective, environmentally sustainable biofouling management techniques and antifouling systems, including biocide-free	HL30

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	prevent biofouling by supporting related research and development activities in the Baltic Sea region.			cybutryne in antifouling systems (AFS), there is no standard or consensus on which biofouling management techniques or AFS are considered the most appropriate and effective. Promotion of the use of environmentally sustainable biofouling management options which are already on the market, and the development of new tools and products would help minimizing both biosecurity and pollution risks.				alternatives, are ongoing and the results are communicated with users/shippers through appropriate channels (joint and national).	
S10	Strengthen cooperation with stakeholders in the development and implementation of sustainable biofouling management options by 2026 to minimize the introduction of invasive aquatic species, the release of hazardous substances and microplastics from anti-fouling systems, as well as enhancing energy efficiency.	2026	Measure	Biofouling is one of the main vectors for introductions of non-indigenous species to the Baltic Sea. In addition to being effective, biofouling management options need to be sustainable with minimal release of hazardous substances and microplastics and increased energy efficiency. Due to the prohibition of antifouling systems (AFS) containing organotin compounds and cybutryne, there is still a need for new, effective and sustainable solutions that work for various ship types in a range of conditions. The cooperation of all concerned stakeholders (such as shipowners/operators, paint and	Reduced introductions of non-indigenous species to the Baltic Sea via biofouling. Reduced harmful effects on the environment through release of hazardous substances, microplastics and increased energy efficiency of ships.	National	MARITIME; JTG BALLAST & BIOFOULING	Cooperation with stakeholders in the development and implementation of sustainable biofouling management options in place, by e.g. networks and communication channels (outreach) established.	HL30

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				equipment manufacturers, shipyards etc.) is the central prerequisite to achieve development and use of sustainable biofouling management options. Thereby, practical applicability is considered from the start of their development.					
S11	Implement the Joint Harmonised Procedure for the Contracting Parties of OSPAR and HELCOM on the granting of exemptions under the Ballast Water Management (BWM) Convention, Regulation A-4, and keep the Ballast Water Risk Assessment Tool up to date with data from conducted port surveys.	Ongoing	Supporting action	The Joint Harmonized Procedure (JHP) and Risk Assessment (RA) Tool provide the means for a harmonized and informed decision making in granting exemptions in accordance with the BWM Convention. Harmonization is important in order to maintain a level playing field among HELCOM and OSPAR Contracting Parties, while ensuring that exemptions do not increase the risk of species invasions and at the same time taking a pragmatic approach from the point of view of the shipping industry. Furthermore, up to date data in the RA Tool is essential for making informed decisions on exemptions. Contracting Parties may still issue an exemption based on the “Same Risk Area” concept as described in “Guidelines for risk assessment under	N/A	National/Joint	MARITIME; JTG BALLAST & BIOFOULING	The JHP is implemented among Contracting Parties. Evaluation of the sufficiency of the data from port surveys in the Ballast Water Exemptions Decision Support Tool has been carried out.	

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				regulation A-4 of the BWM Convention "(G7).					
S12	Continue close cooperation with OSPAR on the implementation of the Ballast Water Management (BWM) Convention and the issue of biofouling management at the regional and inter-regional level.	Ongoing	Supporting action	In order to effectively prevent introductions of non-indigenous species (NIS) to the Baltic Sea, coordinated implementation of the Ballast Water Management (BWM) Convention and the International Maritime Organization (IMO) Biofouling Guidelines and Guidance is needed between HELCOM and OSPAR. NIS that have been introduced in the North Sea pose a significant risk of invading also the Baltic Sea.	N/A	Joint	MARITIME; JTG BALLAST & BIOFOULING	Progress in implementing this ongoing action can be reviewed through assessing what new recommendations, guidelines, tools, principles or publications related to the implementation of the BWM Convention or the Biofouling Guidelines have been developed between HELCOM and OSPAR through JTG BALLAST & BIOFOULING.	
Topic: Recreational boating									
S13	Promote environmentally sustainable recreational boating, including the use of best environmental practices through education and raising awareness of boat users and the personnel of marinas and guest harbours. Promote also "green" marinas and guest harbours by e.g. introducing eco-labelling of marinas and	2025	Supporting action	Although individual pleasure boats have a limited effect on the environment, the boats being used in the Baltic Sea may have various harmful effects on the Baltic Sea environment. Best practices, guidance, education and various incentives are therefore needed to address the different types of impacts that boats, marinas and guest	N/A	National/Joint	MARITIME; JTG BALLAST & BIOFOULING	Best practices for pleasure boating, marinas and guest harbours are adopted and promoted. (Joint) Awareness raising campaigns are implemented. Increased number of eco-labelled "green" marinas and guest	

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	developing guidance and best practice documents by 2025 as a help for the marinas to reach criteria.			harbours may have on the environment. Eco-labelling of green marinas, as referred to in this action, refers to existing systems of eco-labelling and the need to increase the number of such marinas and guest harbours in the Baltic Sea region.				harbours are in place. (National)	
Topic: Pollution from ships									
S14	Carry out a study and impact assessment by 2025, 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 by 2027 on whether to widen the scope of the Baltic Sea Special Area regulations under the International Convention for the Prevention of Pollution	2025, 2027	Measure	The Baltic Sea was the first sea area in the world to receive the status of special area under MARPOL Annex IV (sewage). These regulations for sewage discharges still apply only for passenger ships. The current MARPOL Annex IV regulations applicable to other than passenger ships do not include requirements to reduce nutrients from sewage to be discharged into the sea. A study and impact assessment is needed, including taking into account lessons learned from the implementation of the MARPOL	Reduced nutrient input to the Baltic Sea from ships' sewage.	Joint	MARITIME	By 2025 study and impact assessment has been conducted. If appropriate, by 2027 relevant action is taken to widen the scope of the MARPOL Annex IV special area regulation to cover also sewage discharges from cargo ships.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	from Ships L Convention (MARPOL) Annex IV to cover also sewage discharges from cargo ships.			Annex IV special area for passenger ships, adequacy of port reception facilities as well as technical feasibility for ships, in order to make an informed decision on whether sewage from cargo ships should be regulated more stringently in the Baltic Sea. The study and impact assessment should include also volumes and composition of sewage discharged from cargo ships into the Baltic Sea as well as their impacts on the environment.					
S15	Carry out study and impact assessment by 2027, 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 by 2029 on whether and how to manage grey water discharges from ships.	2027, 2029	Measure	Annex IV of the MARPOL Convention sets ambitious standards for sewage discharges for passenger ships, but discharges of grey water into the sea is not regulated for any ships. Discharges of grey water are nevertheless known to contain food wastes, detergents etc. contributing to both nutrient and chemical input to the Baltic Sea. In order to assess the impacts of such discharges in the vulnerable Baltic Sea, a study is needed to facilitate making an informed decision on relevant actions to be taken on whether and how to manage grey water discharges from ships. The study should include also	Reduced nutrient and chemical input from ships in the Baltic Sea.	Joint	MARITIME	By 2027 a study and impact assessment are conducted. If appropriate, by 2029 relevant action is taken to regulate grey water discharges from ships in the Baltic Sea.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				volumes and composition of grey water discharged from ships into the Baltic Sea and consider also the adequacy of port reception facilities and technical feasibility for ships, taking also into account, as appropriate, relevant lessons learned from the implementation of the MARPOL Annex IV special area.					
S16	Carry out a study and impact assessment by 2026 to estimate and evaluate the volumes and impact of discharges of residues of noxious liquid substances contained in cargo tank washing waters under the International Convention for the Prevention of Pollution from Ships (MARPOL) Convention Annex II into the Baltic Sea. Based on the results, take relevant action by 2028 on whether and how to further limit discharges of residues of noxious liquid substances contained in cargo tank washing waters	2026, 2028	Measure	MARPOL Annex II allows certain discharges of residues of noxious liquid substances from cargo tank washing waters. The aim of the action is to identify the most relevant noxious liquid substances (categories X, Y and Z) and assess their volumes and impacts to allow informed decision making on whether and how to limit such discharges.	Reduced discharges of noxious substances in the Baltic Sea.	Joint	MARITIME	By 2026 study and impact assessment are conducted. If appropriate by 2028, relevant action is taken to limit discharges of cargo tank washing waters containing residues of noxious liquid substances in the Baltic Sea.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	under MARPOL Annex II into the Baltic Sea.								
S17	Study the adequacy and use of port reception facilities (PRF) for the International Convention for the Prevention of Pollution from Ships (MARPOL) Convention Annex V cargo residues by 2024 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 by 2027.	2024, 2027	Measure	In accordance with MARPOL Annex V, cargo tank washing waters with dry bulk cargo residues may be discharged to the sea if the cargo was not classified as harmful to the marine environment, but only if adequate port reception facilities (PRF) to receive such waters are not available. Cargoes not classified as harmful may nevertheless include nutrients and other substances that have harmful effects on the sensitive Baltic Sea environment. The adequacy of PRF in Baltic Sea ports should be studied and relevant actions taken to ensure that ships do not discharge such tank washings into the Baltic Sea	Reduced input of nutrients and other substances with harmful effects on the Baltic Sea environment.	Joint	MARITIME ; CP PRF	By 2024 a study on PRF adequacy is conducted. By 2027 adequate PRF in relevant ports are in place and being used by ships to discharge washing waters containing dry bulk cargo residues.	
S18	Develop a Roadmap to minimize the discharges of food waste into the Baltic Sea and subsequently develop by 2025 a HELCOM Recommendation to encourage voluntary agreements on delivering all	2025	Measure	According to MARPOL Annex V food waste may be discharged into the Baltic Sea from ships en route more than 12nm from the nearest land. Food wastes, however, contains nutrients that contribute to the eutrophication of the Baltic Sea. Through the envisaged Recommendation, environmental	Reduced discharges of food waste into the Baltic Sea, and thereby reduced nutrient input.	Joint	MARITIME	HELCOM Recommendation to encourage voluntary agreements on delivering all food waste from ships to port reception facilities is adopted.	

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	food waste from ships to port reception facilities.			awareness should be raised and ships are to be encouraged to implement higher standards than those required under MARPOL and deliver all food wastes to port reception facilities. Taking into account possible technical and/or legal challenges regarding the receiving of food waste by land-based facilities, a Roadmap should be developed to investigate and analyze whether existing regulations are sufficient or if regulatory amendment to MARPOL Annex V is needed and if so, prepare a joint submission to the International Maritime Organization (IMO). Adequacy of port reception facilities and application of the no-special-fee system for food waste should also be ensured in Baltic Sea ports.				Adoption of a Roadmap to minimize the discharges of food waste into the Baltic Sea.	
S19	Enforce the requirements of the Baltic Sea Special Area under the International Convention for the Prevention of Pollution from Ships (MARPOL) Convention	Ongoing	Measure	The Baltic Sea special area under MARPOL Annex IV will take effect for the majority of passenger ships on 1 June 2021. Particular attention is therefore needed on the enforcement of the associated requirements and	Reduced nutrient input from ships to the Baltic Sea.	National/ Joint	MARITIME ; CP PRF	Availability and adequacy of port reception facilities for sewage in passenger ports (information available through annual PRF Overview) has been	

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	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".			ensuring that adequate port reception facilities are in place.				improved. Port State control statistics show decreased violations against the MARPOL Annex IV requirements in the Baltic Sea.	
S20	Ensure the no-special-fee system for marine litter applies to all passively fished waste by 2024.	2024	Measure	Recommendation 28E/10 addresses marine litter caught in fishing nets, to be included in the no-special-fee system. However, this provision of the Recommendation is currently not implemented effectively around the Baltic Sea. In order to reduce marine litter in the Baltic Sea, it needs to be ensured that fishing vessels deliver all waste materials and litter passively fished to port reception facilities without incurring any additional costs.	Reduced marine litter in the Baltic Sea.	National	MARITIME; CP PRF	The no-special fee system for marine litter applies to all passively fished waste discharged in ports normally used by fishing vessels in the Baltic Sea area by 2024.	
S21	Develop and introduce best technologies, techniques and practices (BAT/BEP) to minimize nutrient losses from dry bulk fertilizer storage and	2024	Measure	Nutrients lost in the storage and handling of dry bulk fertilizers in Baltic Sea ports represents a substantial source of nutrient pollution which is insufficiently addressed.	Reduced input of nutrients into the Baltic Sea.	Joint	MARITIME	BAT/BEP is in place to minimize nutrient losses from dry bulk fertilizer storage and handling in relevant Baltic Sea ports.	

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	handling in ports in the Baltic Sea region by 2024.								
S22	Develop a Roadmap by 2025 to reduce the input of pollutants from Exhaust Gas Cleaning System discharge waters, as a minimum in line with existing legislation, taking into consideration the precautionary principle and the outcome of the work of the International Maritime Organization (IMO).	2025	Supporting action	After introduction of more stringent sulphur limits for ships' fuel through MARPOL Annex VI, the use of Exhaust Gas Cleaning Systems (EGCS) has become more common. EGCS discharge water can have negative impacts on sensitive Baltic Sea ecosystems which is indicated in a number of studies, showing that discharge water contains heavy metals such as vanadium, nickel, copper, zinc and lead. In addition, EGCS discharge water contains oil residues and polycyclic aromatic hydrocarbons (PAHs). Possible steps to be included in the Roadmap could be for example: − Actively engage in the International Maritime Organization (IMO) negotiations with all relevant stakeholders on the issue and make sure that differences between sea areas are taken into account in the negotiations	N/A	Joint	MARITIME	The roadmap is developed and adopted.	

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				− Gather information and produce research on the impact of discharge water on the Baltic Sea environment − Based on the gathered information and the IMO process, consider the need for future steps and eventually identify concrete actions on reducing negative effects of discharge water from EGCS in the Baltic Sea Area in order for the Roadmap to have any effect.					
S23	Develop a Roadmap to strengthen the implementation and enforcement of the Baltic Sea NOx Emission Control Area (NECA) by 2023 based on experience and lessons learned.	2023	Supporting action	The Tier III NOx emission standard of MARPOL Annex VI applies in the Baltic Sea NECA (NOx Emission Control Area) for new ships constructed from 1.1.2021. A Roadmap should be developed to monitor NOx reduction and its effects on the environment, and to strengthen the implementation and enforcement of the regulations. The Roadmap should also include the goal of NOx reductions by incentives for existing ships, if technically and or economically feasible.	N/A	Joint	MARITIME	The Roadmap to strengthen the implementation and enforcement of the Baltic Sea NECA is adopted.	
S24	Enhance the use of alternative fuels and sources of energy in shipping as well as recreational boating, as	2027	Measure	In order to reach the targets of the initial International Maritime Organization (IMO) strategy (2018) on reduction of greenhouse gas (GHG)	Reduced greenhouse gas emissions from	National/Joint	MARITIME; GREEN TEAM	Use of alternative fuels and sources of energy, as well other technological innovations are enhanced	

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	well as enhance the use of digitalization and other innovations in technology by 2027 to optimize energy efficiency in the Baltic Sea area with the view to reduce emissions of both greenhouse gases and air pollutants.			emissions from ships, it is crucial to enhance the use of alternative fuels and sources of energy such as Liquefied natural gas (LNG) (as a transitional fuel) advanced biofuels, wind energy, green hydrogen, battery technology and fuel cells. Likewise, it is crucial to utilize the full potential of new technology, digitalization and data economy to scale the results globally. Close regional co-operation is needed to maintain a level playing field and ensure an infrastructure and operational environment that encourages the transition to low-carbon or zero-carbon propulsion. Research and development need to be promoted as well as the use of alternative fuels and other propulsion methods, which are carbon-free or low-carbon, or which act as a pathway to the ultimate goal of carbon-free shipping. Measures that could be considered include e.g. enhancing and harmonizing port facilities (e.g. availability of alternative fuel	ships in the Baltic Sea and beyond.			to increase energy efficiency in Baltic Sea shipping. (National) Pathway forward to achieve carbon free Baltic Sea shipping by 2100 in line with the target of IMO has been agreed. (Joint)	

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				bunkering stations onshore power, digitalization and optimization of port operations), promotion and use of electrically powered vessels on frequently operated short distances typical to the Baltic Sea, both in international and domestic voyages, reduced fees for ships implementing emission reduction measures beyond the applicable regulations and enhancing the role of digitalisation of shipping (e.g. through Just-In-Time arrival in Baltic Sea ports).					
S25	Actively follow and contribute to the discussions at the International Maritime Organization (IMO) on greenhouse gas (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 by 2030 while at the same not impairing efforts on reducing air	2030	Measure	Through HELCOM and its Green Team, Contracting Parties should work on ways of meeting the IMO targets to reduce greenhouse gas (GHG) emissions from shipping while avoiding other negative effects on the environment as a result. Active contribution is also needed in the context of IMO negotiations to ensure that the special conditions of the Baltic Sea, such as ice conditions, are taken into account in the development of tools to reduce GHG emissions from ships on the global level.	Reduced greenhouse gas emissions from ships in the Baltic Sea and beyond, while avoiding other negative effects on the environment or ship safety in Baltic Sea conditions.	Joint	MARITIME ; GREEN TEAM	Baltic Sea shipping meets IMO's greenhouse gas emission reduction targets by 2030. Contributions to the discussions at the IMO have been made (document submissions by Contracting Parties or HELCOM, or other input for consideration by relevant IMO Committees, Sub-Committees, Working Groups and Correspondence Groups) with the aim to ensuring that Baltic Sea conditions	

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	pollution or other environmental effects.							are taken into account in IMO work on reducing greenhouse gas emissions.	
S26	Work towards securing ship financing and innovation funding to support more sustainable shipping and to ensure maritime transport components in applicable funding mechanisms.	2030	Supporting action	Development of new environmental regulations for shipping reduces the burden of shipping activities on the marine environment but often requires investments from ship owners. A number of technological solutions are available or under development, both for existing ships and newbuilds, entailing, however, additional investment costs. Funding for such green technologies used onboard ships could be made available e.g. as follows: -Contracting Parties that are also EU Member States encourage relevant banks in their countries to sign the European Investment Bank´s (EIB) Green Ship Guarantee programme - All Contracting Parties explore other similar preferential arrangements for environmental ship investments.	N/A	National	MARITIME; GREEN TEAM	Ship financing and innovation funding for green technologies is in place in all HELCOM Contracting Parties.	
S27	Enable onshore power in the Baltic Sea region by promoting onshore power	2027	Measure	By enabling ships to utilize onshore power supply (OPS) while in port,	Reduced emissions from ships in ports, leading to reduced	National	MARITIME	Onshore power supply (OPS) is widely available in Baltic Sea Ports. Incentives	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	supply availability and ensuring initial economic incentives for the use and supply of onshore power by 2027.			ships are able to turn off their engines. Measures to consider in achieving more widespread use of onshore power could include: - Reduced or removed tax rates on OPS in ports; - Reduced port fees for ships using OPS in ports; - Funding or subsidies from governments or other relevant institutions to ports for the installation of OPS infrastructure; - Promoting the use of electric power from renewable sources of energy in ports like wind, solar or hydro power; and - Promoting a green port certification scheme for ports which offer OPS for ships by renewable sources of energy.	input of NOx, SOx, PM and greenhouse gases. Further effects are reduction of health hazards to populations in port cities through cleaner air and reduced noise from ships' engines.			are in place for ships to utilize OPS.	
S28	Develop and facilitate implementation of feasible and effective economic incentives to reduce pollution	Ongoing	Measure	Recommendation 28E/13, as amended, has not yet been implemented by most Contracting Parties. However, economic incentives	Reduced pollution from ships (emissions, discharges etc.).	National	MARITIME; GREEM TEAM	Increased number of feasible and effective economic incentives to reduce pollution from	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	from ships, taking into account HELCOM Recommendation 28E/13 as amended 19 June 2019.			have a significant potential to reduce pollution from ships, beyond what is required by the existing regulatory framework.				ships is in place in the Contracting Parties.	
S29	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.	Ongoing	Supporting action	This action supports actions S24, S25 S26, S27 and S28 in emphasizing the need for an active dialogue between HELCOM and its Contracting Parties, 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, safe and low-carbon shipping.	N/A	Joint	MARITIME ; GREEN TEAM	Active joint work of Contracting Parties, other regional governmental and non-governmental organizations, the industry and research community is in place with regard to promoting the development and use of green technologies and alternative fuels.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Over-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Response									
S30	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.	2027	Supporting action	To lower the impact of oil spill accidents, authorities need ample warning to be able to take sufficient measures. Such an early warning system depends heavily on both accurate weather forecasts and accurate ocean current forecasts, including the effects of waves. Despite its importance, modelling and observations of the coastal sea is still a neglected area which can be improved by integrating live data to SeaTrack Web and according to the requirements of Contracting Parties, taking into account e.g. annual SeaTrack Web licence fees for Contracting Parties. The measure provides the foundation for making pollution response operations significantly more effective and will support response operations at sea.	N/A	Joint	RESPONSE	Operational version of SeaTrack Web supporting live feed of current data is in place. Options are available for integrating SeaTrackWeb to CleanSea Net satellite detection service.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Over-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
S31	Conduct a feasibility study by 2022 for, and as appropriate, undertake a risk analysis for oil and hazardous and noxious substances (HNS) pollution of the marine environment in the Baltic Sea area by 2025.	2022, 2025	Supporting action	The most recent Baltic Sea wide risk assessment on maritime pollution risks (BRISK) is outdated and therefore a new and forward-looking risk assessment is needed, since many of the factors that affect the risk for shipping accidents and pollution of the marine environment in a given area have changed. Also, pollution response on the shore needs to be taken into account in the new risk assessment and in the recommendations following the assessment. The feasibility study and risk assessment should address oil as well as relevant hazardous and noxious substances (HNS), as defined in the OPRC-HNS Protocol (2000). The risk assessment could be synchronized with similar risk assessment needs identified by other Regional Agreements.	N/A	Joint	RESPONSE; SHORE Network; MARITIME	Updated risk analysis for oil and HNS pollution in the Baltic Sea has been conducted.	
S32	Develop a framework for holistic/integrated management of marine pollution incidents to enable coordinated response operation at sea and on shore by 2025.	2025	Measure	A framework for holistic/integrated management of marine pollution incidents would enable a coordinated response operation at sea and on shore, both on national level and in the region-wide cooperation.	The measure will enable improved response capabilities at sea and on shore.	Joint	RESPONSE; SHORE Network; EWG OWR; IWGAS	Amendments have been made in the HELCOM Response Manual with improved integration of holistic management of pollution incidents at	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Over-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
								sea, on shore and cross-sectoral cooperation between sea and shore.	
S33	Strengthen mutual assistance for oiled wildlife response in the Baltic Region by 2025.	2025	Measure	Mutual assistance mechanisms are well established for response operations at sea, but for shoreline response and wildlife response the mechanisms need further development. This measure aims to strengthen the development of regional oiled wildlife preparedness that is based on HELCOM's mutual assistance mechanism, building on the EUROWA framework. The proposed activities aim to further integrate quality standards into national preparedness systems and facilitating regional exchange, cooperation and exercises.	The measure will enable strengthened oiled wildlife response in the Baltic Sea region.	National /Joint	RESPONSE; EWG OWR; HEDMOT	Adoption and integration of the EUROWA framework at regional and national levels, as appropriate. (Joint and national) Regional implementation of mutual assistance mechanisms, standards and procedures, as described in Chapter 7 of the HELCOM Response Manual. (Joint) Oiled wildlife response is fully integrated into the national and regional response	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Over-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
								framework. (Joint and national) A multi-year exercise agenda has been set for different exercise categories (Alpha, Bravo, Charlie, Delta), and rotation between Contracting Parties to organise, where possible integrated with oil spill exercises. (Joint)	
S34	Develop Best Environmental Practice (BEP) for comprehensive risk assessment of munitions, wrecks and hazardous submerged objects by 2025 and implement the Best Available Techniques (BAT) for environmentally sound and safe management by 2028.	2025, 2028	Supporting action	Submerged conventional and chemical munitions corrode and subsequently release their content to the Baltic Sea ecosystem including the risk of entering into the marine food web. Shipwrecks from the 20th century onwards, containing oil and various cargo, release hazardous substances to the surrounding water. Munitions, wrecks and other hazardous submerged objects also pose physical obstacles on the sea-floor and a risk factor for maritime workers and risks for the	N/A	Joint	RESPONSE; SUBMERGED; STATE & CONSERVATION	By 2025 BEP/BAT and control of threats posed by munitions, wrecks and other hazardous submerged objects in the Baltic Sea are in place and by 2028 are being implemented for environmentally sound and safe management.	

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				environment, offshore economy, fishing and tourism. BEP for managing and remediating such objects are therefore needed. The action will facilitate improving the state of the entire Baltic Sea, as the large numbers of point sources of munitions, wrecks and other hazardous submerged objects are widely dispersed throughout all Contracting Parties' waters. Furthermore, adherance to BAT and BEP will enable the Contracting Parties to perform remediation while minimizing environmental impact.					
S35	Maintain the HELCOM thematic assessment on hazardous submerged objects as a living document, including munitions and wrecks and regularly update the information in the HELCOM Map and Data Service by 2024.	2024	Supporting action	Coordinated and up to date information on hazardous submerged objects in the Baltic Sea will provide decision makers with the ability to address hazards posed by such objects, including the identification of munitions and wrecks, monitoring of affected sites and ultimately the elimination of the threats in a systematic manner.	N/A	Joint	RESPONSE, SUBMERGED	Up to date HELCOM Submerged Assessment is published. Updated information in the HELCOM Map and Data Service is published.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Over-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
S36	Implement the Multi-Regional Marine HNS Response Manual in operational response to spills involving hazardous and noxious substances as well as exercises by 2025.	2025	Measure	The Multi-Regional Marine HNS Response Manual, adopted by HELCOM 42-2021, replaces the previous HELCOM Response Manual Volume 2. Implementation of the new Manual is required, and applying it also in exercises, based on the HELCOM Response Manual, Chapter 8 (Exercises), will strengthen its implementation, taking into account the planned HNS response capacities of Contracting Parties.	The measure will enable improved HNS response capabilities at sea and on shore.	National /Joint	RESPONSE	The Joint Multi-Regional Marine HNS Response Manual is implemented by all HELCOM Contracting Parties as a replacement to Volume 2 of the HELCOM Response Manual (National and joint).	
S37	Commit to testing the procedures of the Multi-Regional Marine HNS Response Manual at BALEX 2022.	2022	Supporting action	The Multi-Regional Marine HNS Response Manual, adopted by HELCOM 42-2021, replaces the previous HELCOM Response Manual Volume 2. Implementation of the new Manual is required, and applying it also in exercises will strengthen its implementation, taking into account HNS response capability of Contracting Parties.	N/A	National	RESPONSE	The Joint Multi-Regional Marine HNS Response Manual is used in conducting BALEX 2022.	
S38	Undertake monitoring and pollution risk assessment regarding species and habitats in the Baltic Region by 2026.	2026	Supporting action	In order to prevent and minimize damage from marine pollution incidents, including polluted (e.g. oil) animals, reliable data on environmental sensitivity should be available in the command centre	N/A	National	STATE & CONSERVATION; RESPONSE	An analysis of data stemming from existing monitoring to determine vulnerable species, vulnerable areas, vulnerable	

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				that can be used to plan, direct and optimize response operations. The action will contribute to pollution response planning and make it possible for authorities to take sensitive areas and populations into account already in the planning phase. This may significantly reduce the effects of an incident, if vulnerable areas and bird populations can be protected from contamination and will help wildlife response planners correctly scale their response.				times of the year is conducted. Results are presented in a format which fulfils the needs of an operational manager, e.g. seasonal maps with risk indications, scale indications. etc. A risk analysis as to how response activities could also impact certain species and habitats in areas, seasons, or certain circumstances is conducted.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Fisheries management									
S39	Develop guidance by 2026 in cooperation with the Regional Coordination Groups within the EU Data Collection Framework and the International Council for the Exploration of the Sea (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.	2026	Supporting action	By improving the data collected from recreational fisheries the impacts of such fisheries can be better evaluated. This in turn will facilitate planning and implementing relevant measures to reduce these impacts.	N/A	Joint	FISH; EG Fishdata	Guidance on how to improve data collected on recreational fisheries, taking into account the requirements on data collection in the EU Control Regulation, is adopted.	
S40	Identify by 2024 fish species for which there is a need for better data for identified purposes, such as setting threshold levels. Utilise dedicated programmes and projects to facilitate recording and reporting of data for these species by 2025 to support the identification and implementation of measures to achieve good environmental status.	2024, 2025	Supporting action	There are still gaps in recording and reporting of data for certain fish species, including non-target fish species, in particular from small fishing vessels and recreational fishermen. Such data is, however, needed in order to facilitate identification and implementation of measures to achieve good environmental status.	N/A	Joint	FISH; EG Fishdata	By 2024 fish species for which there is a need for better data for identified purposes have been identified. By 2025 programmes or projects are in place to facilitate recording and reporting of data from commercial and recreational fishermen on catch	B35

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
								of non-target fish species	
S41	Further elaborate cooperation between the Baltic Sea Fisheries Forum (BALTFISH) and relevant HELCOM working groups by 2023 to facilitate a wide range of actions to achieve good environmental status.	2023	Supporting action	BALTFISH and other fisheries management bodies work with many of the same topics as HELCOM. An improved cooperation between HELCOM and fisheries management bodies can facilitate ecosystem-based management in line with the objectives of the BSAP and fisheries management measures in place.	N/A	Joint	FISH	A more structured or formalized cooperation and coordination between HELCOM and BALTFISH is elaborated. Such cooperation and coordination is carried out through practical means such as sharing meeting agendas, and feeding in to the appropriate processes between organizations.	
S42	Update and harmonize by 2024 the 2016 BALTFIMPA decision-support tool approach with ongoing initiatives e.g. in the International Council for the Exploration of the Sea (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-	2024	Supporting action	The BALTFIMPA generic tool developed under the BALTFIMPA Project is designed to evaluate the impact of fishing gear on habitats and species at a detailed spatial scale, using a best knowledge-based approach and to evaluate sustainability of each fishing gear and alternatives, if available, proposed to support managing decisions. The tool should be	N/A	Joint	FISH	BALTFIMPA decision support tool is updated.	B3, B5

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	effective way, including in marine protected areas (MPAs).			updated to 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, and be harmonized with ongoing initiatives e.g. in ICES.					
Topic: By-catch									
S43	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 by 2024, especially the Baltic proper population of harbour porpoise by 2022.	2022, 2024	Measure	By-catch of mammals, birds and non-target fish species continues to be a threat to a number of species in the Baltic Sea. The Roadmap on fisheries data, adopted by HELCOM 41-2020, will contribute to achieving this action which outlines a suite of possible actions, that can contribute to achieving this action. The action entails a process that spans from collecting data on by-catch to developing and implementing management measures to reduce by-catch. Technical measures such as acoustic deterrent devices should not compromise national security or defence capability.	The action is intended 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	Joint	FISH	The action is of an ongoing nature and will be followed up by assessment of by-catch within regional assessments.	B8

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				Development and implementation of measures should to the degree possible be supported and done in cooperation with the fishing industry.					
S44	Invite the competent authorities 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.	2022	Measure	Long-term by-catch mitigation measures both within and outside marine protected areas in areas of more than occasional harbour porpoise occurrence are urgently needed to protect the genetically distinct, morphologically divergent, and ecologically separated management unit of harbour porpoises in the Baltic Proper to reverse the imminent risk of extinction and in the long term achieve a good environmental status of the species.	Drowning in fishing gear is a major pressure for the harbour porpoise with by-catch being the greatest source of mortality. The measure would reduce pressure on the harbour porpoise populations from by-catch by preventing or controlling the adverse impacts of fishing.	National	FISH	Mitigation measures are implemented, and Baltic proper by-catch of harbour porpoise has been significantly reduced.	B8
S45	Invite the competent authorities to implement operational conservation measures for the Belt Sea population of harbour porpoise by 2024 such as permanent and/or spatial-temporal closures for relevant fishing métiers in	2024	Measure	Long-term by-catch mitigation measures both within and outside marine protected areas in areas of more than occasional harbour porpoise occurrence are needed to protect the ecologically separated management unit of harbour	Drowning in fishing gear is a major pressure for the harbour porpoise with by-catch being the greatest source	National	FISH	Mitigation measures are implemented where conservation goals have not been met.	B8

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	risk areas where technical mitigation measures are insufficient to reach conservation goals.			porpoises of the Western Baltic, the Belt Sea and the Kattegat population in the Baltic Sea to reverse current threat status and in the long term achieve a good environmental status of the Western Baltic porpoise population.	of mortality. The measure would reduce pressure on harbour porpoise populations from by-catch, by preventing or controlling the adverse impacts of fishing.				
S46	Promote effective mitigation measures to minimize by-catch of harbour porpoises in the Baltic Sea area inter alia via cooperation with the Baltic Sea Fisheries Forum (BALTFISH), and evaluate and promote adjusted measures as needed by 2025.	2025	Measure	Acoustic deterrent devices (ADD) in relevant fisheries could serve as an interim measure until efficient alternative fishing gear or other mitigation measures become available. In marine protected areas (MPAs), which are important for harbour porpoise, effective by-catch mitigation should preferably be established by other means than ADDs, such as e.g. permanent or temporary exclusion of certain gear types or no take zones and promotion of alternative gears. Technical measures such as ADDs should not compromise national security or defence capability.	This action is expected to lead to reduced by-catch of harbour porpoise.	Joint	FISH	Effective mitigation measures to reduce by-catch of harbour porpoise in the Baltic Sea have been promoted inter alia in cooperation with BALTFISH.	B8

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
S47	Continually test, promote and introduce new technical and operational by-catch mitigation measures such as alternative and seal safe gears in cooperation with competent authorities with the aim to, as appropriate, replace fishing gear proven to be problematic with respect to by-catch, with evaluation of measures every five years starting in 2023, and regularly update the HELCOM questionnaire on trials of alternative fishing gears and fishing techniques.	Starting 2023	Measure	By-catch of mammals, birds and non-target fish species continues to be a threat to a number of species in the Baltic Sea. Developing new and improved mitigation measures and efficient alternative fishing gear, as well as evaluation of them, is therefore needed, in cooperation with competent authorities and relevant stakeholders. Implementing the action could also involve launching pilot projects to test the effectiveness of possible measures to reduce by-catch (using of kites, limiting the fishing periods, leaving fishing nets at night, etc.) of wintering birds to better understand the ecology of seabirds and their behaviour during the day. Information on trials of alternative fishing gears is also available through the reporting requirements of Regulation EU 2019/1241. The information collected in the HELCOM questionnaire can be complemented by relevant information received from the European Commission, based on	Implementation of this action is in the long run expected to reduce by-catch of mammals, birds, and non-target fish species.	National/Joint	FISH	Ongoing tests of new technical and operational by-catch mitigation measures are evaluated every five years, starting in 2023. (Joint) New efficient alternative fishing gear have been developed and are used as appropriate. (National) HELCOM questionnaire on trials of alternative fishing gears and techniques updated regularly, at least every two years, starting in 2022 making also use, as applicable, of information collected through the reporting	B3, B5, B8

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				the reporting under Regulation EU 2019/1241.				requirements of Regulation EU 2019/1241. (Joint)	
S48	Develop and implement an effective data collection for more reliable data on incidental by-caught birds and mammals and fishing effort consistent and fully in line with the data needs identified by the International Council for the Exploration of the Sea (ICES). Relevant sources of data are e.g. EU basic control Regulation and additional national or regional coordinated data collection programmes or projects for filling data-gaps outlined in the HELCOM Roadmap on fisheries data.		Supporting action	There is still insufficient data on incidental by-catch data and fishing effort, in particular from small fishing vessels. Such data is, however, needed in order to facilitate ecosystem-based management and identification and implementation of measures to achieve good environmental status, as incidental by-catches are one criterion which may affect the state of a species.	N/A	Joint	FISH	An effective system is in place for data collection of by-catch of birds, mammals, and fishing effort, taking into account data needs identified by ICES and data gaps outlined in the HELCOM Roadmap on fisheries data, as well as the requirements on data collection in the EU Control Regulation.	B8, B35
S49	Maintain, develop and extend regulatory or voluntary schemes to protect key seabird areas and seasons by establishing appropriate fisheries measures in line with conservation objectives and to monitor incidental catches of seabirds by 2025. Extend	2025	Measure	By-catch of seabirds continues to be a threat to a number of species and populations. Appropriate spatial and seasonal fisheries measures are therefore needed, as well as improved data on by-catches.	The action is intended to minimize unwanted by-catch of seabirds.	National/Joint	FISH	Regulatory or voluntary schemes are in place and being implemented, as appropriate, to protect key seabird areas and seasons	

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	and develop outreach programmes for the fisheries sector concerning their possible impacts on seabird populations.							by establishing appropriate fisheries measures in line with conservation objectives. (Joint and national)	
Topic: Fish stock management									
S50	Competent authorities to jointly further develop protective measures for Baltic Sea salmon to support the development of a new regional salmon management plan, and nationally establish salmon management plans by 2023, where appropriate. These management plans should be implemented by 2025 to achieve the set targets, including but not limited to smolt production, genetic diversity and distribution throughout the river habitat. In addition, nationally ensure that granting permits for activities in and near rivers does not compromise the ability to reach set river specific fish population targets.	2023, 2025	Measure	Recommendation 32-33/1 contains measures and targets for restoration of Baltic salmon and sea trout populations that have not been fully implemented yet. This action is intended to enhance the implementation of the Recommendation through the establishment of long-term national salmon management plans, where applicable. The measure could also support the development of a regional multi-annual management plan.	Salmon populations reach set target levels, with regard to inter alia smolt production, genetic diversity and distribution throughout the river habitat.	National/Joint	FISH; FISH-M	Protective measures for Baltic Sea salmon to support the development of a new regional salmon management plan have been further developed by 2023. (Joint) Long-term national management plans for salmon stocks are in place by 2023 and being implemented by 2025 and at least 10 threatened salmon rivers have active	B16

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								conservation. (National) National procedures are in place to ensure that granting permits for activities in and near rivers does not compromise the ability to reach set river specific fish population targets. (National)	
S51	Competent authorities to improve data related to sea trout stocks and to improve populations of sea trout stocks by implementing national measures at the latest by 2025 with the view to achieve good ecological condition in sea trout streams.	2025	Measure	Recommendation 32-33/1 contains measures and targets for restoration of Baltic salmon and sea trout populations that have not been fully implemented yet. This action is intended to enhance the implementation of the Recommendation through the establishment of long-term national management plans or other equivalent instruments with the view to achieve good ecological condition in sea trout streams.	Sea trout populations reach set target levels, with regard to inter alia recruitment status, genetic diversity and distribution throughout the river habitat.	National	FISH; FISH-M	Active management, including effective conservation measures of sea trout stocks, including habitat restoration, are in place in each Baltic Sea coastal country and being implemented.	B16

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
S52	Define necessary complementary measures by 2024 in relevant policy (fisheries, environment etc.) areas to improve the size/age structure for fish stocks, including cod.	2024	Measure	Fisheries management, including setting fishing opportunities often do not set goals for improvement of size/age range of targeted stocks. However, considering especially the decline of the cod, complementary measures are needed. Fishing and by-catch are not the only pressures affecting the stocks, which is why ecosystem-based management is required, including focusing on food web dynamics, taking into account also linkages with other measures in the BSAP. Defining and implementing such complementary measures requires cooperation not only between Contracting Parties but also between national authorities and relevant stakeholders.	Improve size/age-range and populations, improving food-web dynamics and bottom integrity. Improvement of production/ spawning success.	National/Joint	FISH; STATE & CONSERVATION	Complementary measures are defined and can be implemented, in order to improve size/age structure, to reach healthy fish stocks, including cod.	B27
S53	Implement measures to restore coastal fish communities, including establishment of no-take areas, seasonal closures and catch regulations, as appropriate by 2026 for the specific coastal area.	2026	Measure	To restore coastal fish communities, measures can aim to either support fish production (recruitment and/or growth) or reduce mortality. However, cumulative pressures typically impact coastal areas and different	Restored coastal fish communities (local level). Increased abundance of large predatory fish leads to improvements of	National	FISH	Measures are in place in specific coastal areas, as appropriate, including establishment of no-take areas, seasonal	B15

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				sets of pressures may predominate in different sub-areas. Based on species presence and locally identified need of measures, different actions may be advisable. Hence, for improving and sustaining the status of coastal fish in the Baltic Sea, a set of measures should be implemented, as appropriate for the specific coastal area. This action represents part of a set of measures for coastal fish. The measures can be implemented individually or together, as deemed most appropriate, noting however that implementing more than one of the measures in one area is expected to lead to synergistic effects and increase efficiency. It is considered important to follow up the effects of the set of measures in specific areas, as well as sharing the results with relevant meetings and stakeholders.	the food web, increased capacity of the ecosystem to buffer other environmental impacts such as symptoms of eutrophication.			closures and catch regulations.	
S54	Share information among Contracting Parties, the Baltic Sea Fisheries Forum (BALTFISH) and Baltic Sea Advisory Council (BSAC) on non-lethal mitigation measures or other ways to manage seals-fisheries interactions and	2025	Measure/ Supporting action	While various non-lethal mitigation measures or ways to manage seals-fisheries interactions exist, they might be only locally used and known. This action could be implemented e.g. by creating a	Reduced by-catch of seals and reduced impact of seals on fisheries.	National/Joint	FISH	HELCOM-BALTFISH toolbox, or other means of sharing information on non-lethal mitigation measures or ways to	B3, B5

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Ove-seeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	implement those measures by 2025, as appropriate.			HELCOM-BALTFISH toolbox on non-lethal mitigation measures, involving relevant stakeholders, and by undertaking an overview of what actions are suitable within the existing legal framework aiming to implement these measures, as appropriate.				manage seals-fisheries interactions are in place (Joint supporting action) and such measures are being implemented, as appropriate. (National measure) Overview of actions that are suitable within the existing legal framework.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Underwater noise									
S55	Identify at the latest by 2025, as well as regularly update every two years, mitigation measures according to Best Environmental Practice and Best Available Technique for continuous underwater noise in the Baltic Sea and implement thereafter in line with recommendations and regulations of the international Maritime Organization (IMO).	2025	Measure	Technical and operational mitigation is a way to immediately reduce pressures by noise emissions on individual organisms affected. This action aims at the identification and implementation of Best Available Technique (BAT) and Best Environmental Practice (BEP) for activities which produce continuous underwater noise.	Reduce pressures by noise emissions on individual organisms affected.	Joint	MARITIME; PRESSURE, EN-Noise	BAT and BET are identified and implemented at the latest by 2025.	
S56	Actively support and contribute to the ongoing discussions on underwater noise at the International Maritime Organization (IMO) by, amongst other things, working towards regionally coordinated implementation of actions by 2028.	2028	Supportin g action	Commercial shipping is internationally regulated through the International Maritime Organization (IMO), but although noise has been recognized as a pollutant by the United Nations (IISD 2018), there is currently no legally binding international regulation in force. The IMO released a non-mandatory guideline in 2014 for reducing noise from ships mainly by design criteria and technical measures, as well as suggesting operational measures and re-routeing to avoid	N/A	Joint	MARITIME; EN-Noise	Connected action n. 30 in the Regional Action Plan on Underwater Noise is implemented.	

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				sensitive areas (MEPC.1/Circ.833). A new output related to underwater noise has been proposed for inclusion in the agenda of IMO's Marine Environment Protection Committee (MEPC) and should be considered in the context of this action. HELCOM has an important role to support, as well as inform the ongoing IMO process through different measures and actions at different levels.					
S57	Start working as soon as possible 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: a) Supporting a swift implementation of the	2026, 2027	Measure/ Supporting action	Achievement of HELCOM Ministerial Meeting (2018) objectives on underwater noise: to develop a Regional Action Plan on underwater noise, preferably by 2021, and regionally coordinated actions on underwater noise, whilst safeguarding the potential of the Baltic Sea for sustainable human activities; to continue fruitful cooperation between European Regional Seas Conventions and other relevant fora including UNEP Regional Seas Programme; and to continue regional work in developing scientifically sound threshold	Reduce pressures by noise emissions on individual organisms affected.	National/Joint	PRESSURE; MARITIME; EN-Noise	Implementation of the Regional Action Plan on Underwater Noise. (Joint and national) In the Baltic Sea region, at least one pilot project has been initiated by the end of 2026 to study efficacy of vessel slow down, rerouting and other operational measures, on noise emissions and responses of target species. Results of such studies have been	B3

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	Regional Action Plan on Underwater Noise b) Initiating and supporting pilot projects to study efficacy of vessel slow down, rerouting and other operational measures, on noise emissions and responses of target species by the end of 2026. Results are to be communicated to the International Maritime Organization (IMO) for follow-up and further action. c) By 2027 Mapping the contribution of recreational craft 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			values for underwater noise that are consistent with good environmental status (GES) for species identified as sensitive to noise in the Baltic Sea.				communicated to the IMO. (Joint measure) Information on the contribution of recreational craft (including the use of echo sounders and fish finders) to underwater noise in the marine environment is available. Discussions with the industry and relevant standardization bodies have been established, aiming at developing industry and/or application standards for underwater noise emissions of engines with respect to recreational craft, echo-sounders and fish finders, which can be utilized for national regulation of activities in marine protected areas (MPAs) and other noise sensitive areas in the Baltic Sea. (Joint supporting action)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	to reduce impact on sensitive species. Simultaneously, establishing a discussion with the industry and relevant international standardization bodies and aiming at developing industry or/and application standards for underwater noise emissions of engines with respect to recreational craft, echo-sounders and fish finders, which can be utilized in national regulation of activities in marine protected areas (MPAs) and other noise sensitive areas in the Baltic Sea.								
S58	Study by 2026 the impacts of continuous underwater noise from the installation, operation and decommissioning of offshore windfarms on marine biota, including cumulative effects of multiple windfarms. Based	2026, 2029	Measure/ Supporting action	There are ambitious plans regarding the significant increase of offshore wind farms fields in the Baltic Sea to reach a capacity of 32GW in 2050 compared to the existing 2GW. The impacts of continuous noise from the installation, operation and	Reduced pressures on marine biota from continuous underwater noise.	Joint	PRESSURE; HELCOM-VASAB MSP; EN-Noise; EG MAMA	By 2026 study on the impacts of continuous underwater noise from offshore windfarms, including cumulative effects of multiple windfarms, is conducted. If appropriate, by 2029 relevant action is taken	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
	on the results, take relevant action, if necessary, in developing appropriate mitigation measures for the continuous underwater noise generated by offshore wind farms by 2029.			decommissioning of offshore windfarms on marine biota in the Baltic Sea needs to be studied to facilitate making decisions on relevant action, if necessary, to develop appropriate mitigation measures. The impacts of impulsive underwater noise from installation or decommissioning of offshore windfarms is not part of the scope of this action, nor is the operation of vessels servicing windfarms or taking part in the installation or decommissioning operations. While continuous underwater noise from offshore windfarms is largely associated with their operation, such continuous noise may also arise from installation and decommissioning when e.g. cutting deep foundations such as monopiles using underwater abrasive jet cutting methods and using reverse vibro piling methods.				to develop appropriate mitigation measures.	
S59	Reduce the impact of impulsive underwater noise on marine biodiversity.	2030	Measure	The negative impact of underwater noise on several cetacean, fish and invertebrate species has been shown and	Reduce impulsive noise impact on	National/Joint	PRESSURE; STATE & CONSERVAT	Regional and national mitigation measures for the activities generating impulsive noise are in place	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				documented, thus the reduction of underwater noise is an urgent issue that needs to be addressed with consequent measures.	individual marine organisms.		ION; EN-Noise	as defined in the Recommendation on the Regional Action Plan on Underwater Noise. (Joint and national)	
S60	Identify at the latest by 2023, as well as regularly update every two years, mitigation measures according to Best Environmental Practice and Best Available Technique for impulsive underwater noise in the Baltic Sea and implement thereafter without delay.	2023	Measure	Impulsive noise may have a negative impact on marine animals and should be handled or mitigated based on Best Available Technique (BAT) and Best Environmental Practice (BEP).	Reduce the impact of impulsive noise individual marine organisms.	Joint	PRESSURE; STATE & CONSERVATION; EN-Noise	BAT/BEP guidelines for impulsive noise sources are updated.	
S61	Develop and implement guidelines for the design and use of acoustic deterrent devices to avoid detrimental impacts on the environment from underwater noise by 2024.	2024	Measure	The action aims at the establishment of common HELCOM guidelines for the design and use of acoustic deterrent devices (ADD). Such guidelines should include a list of contexts where deterrent devices have been demonstrated to be efficient in mitigating other impact on marine mammals, or proven to be efficient in preventing undesired behaviour of marine mammals (in particular	Despite well-documented undesired effects of some of these deterrent devices (so called scarers), such as risk of inflicting damage to the hearing of marine mammals, excessive disturbance of non-target	Joint	FISH	Guidelines for the design and use of acoustic deterrent devices are in place and implemented in all Contracting Parties.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				depredation and destruction of fishing gear). The guidelines should include specifications for recommended frequency ranges, maximum source levels and other relevant parameters, separated into the different uses of the devices and target species, with the aim of maintaining their efficiency and reducing potential harmful effects to the environment. The use of ADDs should not compromise national security or defence capability.	species, and use of the devices in cases in which the positive effects are undocumented, there are no upper limits to how loud these devices can be and where and when they can be used. On the other hand, there are numerous studies, which have demonstrated large unintended effects of, for example, seal scarers on harbour porpoises, and there are several suggested changes to the design, which could alleviate the unintentional				

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
					effects. This includes changing the frequency range and decrease the source level of the signals.				
S62	Develop and implement threshold values and assessment methods for adverse effect of impulsive and ambient noise for marine life, in cooperation with OSPAR, the EU and other relevant expert groups, by 2023 at latest for marine mammals and by 2026 for other relevant species groups.	2023, 2026	Supporting action	The HELCOM indicators, consisting of a regionally agreed threshold value and assessment methodology, are a critical component of the follow-up of the Baltic Sea Action Plan (BSAP) and HELCOM's approach to overall assessment of status in the marine environment. Ecologically relevant threshold values provide a concrete, consistent way of evaluating progress over time. The indicators provide a mechanism to address the effectiveness of the measures put in place to reach the goals and objectives of the BSAP, by regularly synthesising common regional monitoring data into an evaluation of progress towards these goals and the BSAP vision. Without a comprehensive portfolio of ecologically relevant indicators, it is not possible to	N/A	Joint	STATE & CONSERVATION; PRESSURE; EN-Noise	By 2023 threshold values and assessment methods for adverse effect of impulsive and ambient noise for marine mammals have been developed and implemented. By 2026 threshold values and assessment methods for adverse effect of impulsive and ambient noise for other relevant species groups have been developed and implemented.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/EG	Criteria for achievement	Cross-reference to actions in other segments
				follow up on the real world effect of HELCOM policies and measures.					
S63	Implement regular and regional harmonized monitoring of ambient and impulsive noise by 2023 to follow up effects of mitigation measures.	2023	Supporting action	Regionally coordinated monitoring ensures comparable and current data is available across the entire Baltic Sea, it increases the added value of the individual national monitoring exercises and has the potential to increase both the effectiveness and efficiency of the monitoring. Regionally coordinated monitoring is also a requirement under Article 11 MSFD for those Contracting Parties who are also EU Member States.	N/A	National	STATE & CONSERVATION; PRESSURE; EN-Noise	Regular and regional harmonized monitoring of ambient and impulsive noise is in place.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Seabed loss and disturbance									
S64	Enforce and implement by 2025, in line with the update of the marine protected area (MPA) management guidelines, effective management plans and/or conservation measures to not allow destructive and exploitative activities related to the seabed that may compromise the conservation objectives of MPAs.	2025	Measure	Limiting the impact of pressures through regulation of human activities is a cornerstone of marine protected area (MPA) management and an important measure to secure progress towards the conservation objectives of protected areas. The action is also in line with Guidelines annexed to HELCOM Recommendation 19/1 which states that permits for marine sediment extraction shall not be granted for: c) Areas to be included or which are proposed to the European ecological NATURA 2000	Reduction of the negative impact on the seabed that could compromise the conservation objectives of MPAs.	National	STATE & CONSERVATION; FISH; HELCOM-VASAB MSP; EN DREDS	Effective management plans, conservation rules or other equivalent systems to not allow for destructive and exploitative activities related to the seabed compromising the conservation objectives of MPAs are implemented and enforced.	B3

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				network according to the EC Habitats and Birds Directives (92/43/EEC and 79/409/EEC) except when the procedure of Art. 6 of the Habitats Directive is followed.					
S65	By 2026 implement a common approach to address and where possible minimize the loss of and disturbance to seabed habitats caused by human activities.	2026	Measure/Supporting action	Loss and disturbance to the seabed is caused by human activities that inflict permanent changes or temporary disruptions to the physical habitat and hence to benthic habitats/biotopes	Implementing a common approach for addressing loss and disturbance to seabed would support an improved understanding of the impact of the pressures and consequently	National/Joint	STATE & CONSERVATION; EN BENTHIC; EN DREDS	A common approach to addressing loss and disturbance to seabed habitats has been developed and regionally agreed. (Joint supporting action) A common approach to addressing loss and	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				and species. Some activities may affect the seabed directly, but activities may also cause indirect effects, for example by increasing the level of turbidity or dispersal of sediments. Whether an activity leads to a permanent loss or a temporary disturbance of the seabed depends on many factors, such as the duration and intensity of the activity, the technique used, and the sensitivity of the area affected. There is currently no commonly agreed approach for addressing and minimizing the loss and disturbance to the seabed and the adverse effects on the marine	support and facilitate identification and implementation of improved measures to minimize adverse effects.			disturbance to seabed habitats has been implemented. (National measure)	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				environment stemming from these pressures.					
S66	Regularly update and improve the HELCOM Recommendation and Guideline for handling dredged material at sea using the best available knowledge to minimize environmental impact of these activities further developing Best Environmental Practice (BEP) and Best Available Technique (BAT) for dredging and depositing operations.	2030	Supporting action	Dredging takes place all over the Baltic Sea and needs to be assessed in relation to its environmental impacts. By applying, and continuously updating and improving The HELCOM Guidelines for management of dredged material at sea, Contracting Parties can minimize possible impacts as new knowledge becomes available. This includes developing BEPs and BATs and providing requirements for reporting related data for regular	N/A	Joint	PRESSURE; EN DREDS	HELCOM Recommendation and Guideline for handling dredged material at sea are improved and maintained up to date. BAT/BEP to minimize environmental impact of dredging/depositing operations is developed.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				HELCOM assessments and for London Convention/London Protocol.					
S67	Define the characteristics of benthic habitats, develop core indicators and undertake an integrated assessment of the status of benthic habitats, including their structure, function, distribution and extent of loss, no later than 2023, leading to the identification of measures to reduce adverse effects where needed. Work should be done in close cooperation with work undertaken by Contracting Parties in other relevant fora, taking into account activities in EU Technical Group on seabed habitats and sea-floor integrity (TG Seabed), and considering the ICES advice on a sea-floor assessment process.	2023	Supporting action	The HELCOM indicators, consisting of regionally agreed threshold values and assessment methodologies, are a critical component of the follow-up of the Baltic Sea Action Plan (BSAP) and HELCOM's approach to overall assessment of status in the marine environment. An ecologically relevant assessment provides a concrete, consistent way of evaluating progress over time. The indicators and assessments provide a	N/A	Joint	STATE & CONSERVATION; EN BENTHIC; EN DREDS	Characteristics of benthic habitats have been defined. HELCOM indicators evaluating the status, structure, function and distribution of benthic habitats has been developed and operationalized. HELCOM indicator evaluating the extent of loss of benthic habitats has been developed and operationalized. Assessment of benthic habitats has been undertaken. Where needed measures to reduce	

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				mechanism to address the effectiveness of the measures put in place to reach the goals and objectives of the BSAP, by regularly synthesising common regional monitoring data into an evaluation of progress towards these goals and the BSAP vision.				adverse effects have been identified.	
S68	Develop a map service for lost and disturbed habitats under HELCOM Map and Data Service by 2024	2024	Supporting action	Spatial representation of lost and disturbed habitats is an important tool to illustrate distribution of the pressures, identify underlying causes in various areas of the Baltic and to help guide management efforts and the focus of implementation of	N/A	Joint	STATE & CONSERVATION	A map service illustrating lost and disturbed habitats has been developed under HELCOM Map and Data Service.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				measures to ensure improved efficiency.					

Actions in the Horizontal topics section

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
Theme: Climate change									
HT1	Using the HELCOM/Baltic Earth Joint Expert Network on Climate Change as a platform and through committed implementation of the HELCOM Science Agenda, improve the access of policy-makers to 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 Fact Sheet, and incorporate the possible effect of climate change into the holistic assessment of status as well as effectiveness of measures by 2030 at	2030	Supporting action	The first step that needs to be addressed in order to take effective and efficient climate mitigation and adaptation action is to have a clear picture of the implications of climate change for the marine and coastal environment. Simultaneously, the lag time in transferring the quality assured science to the policy level, including providing clear guidance on the levels of confidence, needs to be reduced to ensure that the most current information is accessible to support decision making. This knowledge allows advisors and experts supporting decision makers to narrow the range of possible expected outcomes and allows for more targeted and efficient measures to be put in place.	N/A	STATE & CONSERVATION; EN CLIME	Joint	The HELCOM Climate Change Fact Sheet is periodically updated. Possible effect of climate change have been incorporated into the holistic assessment of status of the Baltic Sea environment. Possible effect of climate change have been incorporated into the assessment of effectiveness of measures.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
	latest.								
HT2	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.	2030	Supporting action	Climate change have impacts on the marine environment of the Baltic Sea. This necessitates an intensified use of an adaptive management approach to ensure that the policies related to the environment remain current, and subsequent measures both effective and efficient. The Helsinki Commission has stressed the importance of taking concrete steps to, e.g. make the issue of climate change more prominent overall in HELCOM work, especially as it affects regional targets, and the need to use research and innovative approaches to develop new solutions and techniques to address climate change related issues and translate them into policies.	N/A	STATE & CONSERVATION; EN CLIME	Joint	Process for adapting HELCOM's policies and recommendations to account for effects and impacts on the environment under the changing climate is developed and agreed. Climate change review process is included as an integral part of all HELCOM policy review processes.	
HT3	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.	2030	Measure	Through increasing process efficiencies, notably by addressing the issues of travel and meetings by, where possible utilizing new working arrangements such as online meetings, the ecological footprint of physical meetings, in particular through CO2 emissions, is reduced, with a significant number of participants not needing to travel to attend the physical meetings. Due to the geography and travel infrastructure of the Baltic Sea region, most previous journeys were done by air – often short distance and contrary to the ecological principles HELCOM is mandated to uphold.	Limiting the CO2 emissions resulting from the work of the HELCOM.	Secretariat	Joint	Proportion of online meetings out of all meetings held under HELCOM within each year of the reporting period.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
HT4	Promote research that increases understanding of the role of the Baltic Sea land-sea system in the carbon cycle and identifies how mitigation by natural blue carbon processes can be maximised and implement suitable measures. Increased understanding should be utilised to enable consideration of additional management measures.	2030	Supporting action	Blue Carbon strategies, submitted within Nationally Determined Contributions of > 50 nations, at the heart of the Paris Agreement, are being used to mitigate climate change and improve coastal protection by restoring carbon sink habitats. Carbon is the currency that links the Baltic ecosystem to climate change. Globally, greenhouse gas emissions such as methane from lakes and reservoirs represent around one fifth of those from fossil fuel combustion. In order to make progress with climate change mitigation measures related to the Baltic Sea, such as increasing “blue carbon”, it is necessary to understand the carbon cycle in the Baltic Sea land-sea system and links between carbon dynamics (e.g. land-based input of organic carbon and outgassing of methane), eutrophication legacy (e.g. carbon in sediments, anoxia) and biodiversity (e.g. carbon sequestration).	N/A	STATE & CONSERVATION; EN CLIME	National/Joint	Understanding has been improved e.g. through the financing of relevant research projects. (National) The improved knowledge base has been utilized to review and, if relevant, identify additional management measures. (Joint)	
HT5	Develop a strategic approach to ocean acidification for the Baltic Sea with first steps addressing the knowledge gaps by 2025.	2025	Supporting action	Acidification is a vast trend in the global ocean and even though there seem to be buffers counteracting acidification in the Baltic Sea, the long-term trend is increased acidification, and decreases in pH are already occurring in areas that have intensified respiration of organic matter and hypoxia. In the global context, Ocean Acidification Alliance has called for development of (regional) ocean acidification action plans	N/A	STATE & CONSERVATION; EN CLIME	Joint	Knowledge gaps in relation to ocean acidification in the Baltic Sea have been identified. Identified knowledge gaps in relation to ocean acidification in the Baltic Sea have been addressed. A strategic approach to	

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				https://www.oaalliance.org/actionplans/ to better understand and respond to the threat of ocean acidification and their model could be utilized and adapted to develop an acidification action plan for the Baltic Sea.				ocean acidification for the Baltic Sea has been developed and adopted.	

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
Theme: Monitoring									
HT6	Regularly review, and as necessary revise HELCOM monitoring programmes (once per six years), including the level of regional coordination, in line with the Marine Strategy Framework Directive (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 Baltic Sea Action Plan, and is in line with other international monitoring and reporting requirements.	2030	Supporting action	As the monitoring methods and the data needs change over time it is necessary to review the monitoring programmes and revise them to ensure they remain current, provide targeted guidance and information, and are in line with relevant guidance to support national reporting under article 11 MSFD. Regionally, coordinated monitoring is also a requirement under Article 11 of the Marine Strategy Framework Directive for those Contracting Parties that are also EU Member States.	N/A	STATE & CONSERVATION; EN HZ; IN EUTRO; EG MAMA; EN-Marine Litter; EN-Noise; PEG; ZEN; JWG BIRD	Joint	Updated monitoring programmes are available every six years in line with what is specified in the action.	
HT7	The validity of HELCOM Monitoring and Assessment Strategy and Data and Information Strategy	2030	Supporting action	The Data and Information Strategy benefits from periodic review, to ensure the strategy is up to date and fit for purpose.	N/A	STATE & CONSERVATION; PRESSURE; FISH, MARITIME; AGRI; HELCOM-	Joint	Reviewed and, as necessary, updated monitoring and assessment strategy is available by 2023.	

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	should be reviewed within two years after updating the BSAP and revised as needed.					VASAB MSP; GEAR		Reviewed and, as necessary, updated data and information strategy is available by 2023.	
HT8	Ensure all HELCOM monitoring programs are regionally coordinated by 2026.	2026	Supporting action	Regionally coordinated monitoring ensures comparable and current data is available across the entire Baltic Sea, it increases the added value of the individual national monitoring exercises and has the potential to increase both the effectiveness and efficiency of the monitoring. Regionally coordinated monitoring is also a requirement under Article 11 of the Marine Strategy Framework Directive for those Contracting Parties who are also EU Member States.	N/A	STATE & CONSERVATION; EN HZ; IN EUTRO; EG MAMA; EN-Marine Litter; EN-Noise; PEG; ZEN; JWG BIRD; EN BENTHIC	National	All monitoring programmes fulfil the requirements for the category "regionally coordinated", as defined under the Marine Strategy Framework Directive and in the guidance for review of the HELCOM monitoring programmes.	
Topic: Monitoring of habitats and biotopes									
HT9	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	2028	Supporting action	Information on the distribution of habitats and biotopes in the Baltic Sea are at the core of HELCOM work and improved information, and consequent improved maps, are a prerequisite for ensuring increased confidence and ecological relevance of HELCOM assessments, improved incorporation of climate change, as well as improved efficiency and effectiveness of measures and management, ranging from restoration to maritime spatial planning.	N/A	STATE & CONSERVATION; EN BENTHIC	National/Joint	National mapping efforts are utilizing a regionally comparable classification system when mapping biotopes and habitats (National). Gaps in spatial coverage of mapping efforts have been identified. (Joint) Baltic-wide models for habitat and biotope distribution have been	

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
	distribution of habitats and biotopes by 2028.			Use of a regionally comparable classification system ensures that national mapping data can be used on a regional scale, thus increasing the usability and added value of the data.				developed. (Joint) Updated and improved Baltic wide maps of distribution of habitats and biotopes have been produced. (Joint)	
HT10	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 2024 and operationalize continual Baltic-wide monitoring of those biotopes and habitats by 2030.	2024, 2030	Supporting action	Regionally coordinated monitoring ensures that comparable and current data is available across the entire Baltic Sea, it increases the added value of the individual national monitoring exercises and has the potential to increase both the effectiveness and efficiency of the monitoring. Regionally coordinated monitoring is also a requirement under Article 11 of the Marine Strategy Framework Directive for those Contracting Parties that are also EU member states.	N/A	STATE & CONSERVATION; EN BENTHIC	National/Joint	By 2024 a full gap analysis is made for monitoring programmes of biotopes and habitats. (Joint) Gaps for monitoring programmes of biotopes and habitats are addressed and updated monitoring programmes and guidelines prepared by 2024. (Joint) Continual Baltic-wide monitoring of biotopes and habitats is operationalized by 2030. (National)	
HT11	Develop quality standards for seafloor habitat mapping and derived products by 2024.	2024	Supporting action	Regionally coordinated mapping quality standards ensure that collected information is comparable and can be collated across the entire Baltic Sea and increases the accessibility regional benefits of mapping products. It increases the added value of the individual national mapping exercises	N/A	STATE & CONSERVATION; EN BENTHIC	Joint	Standards for quality of seafloor habitat mapping have been developed and agreed Standards for quality of seafloor habitat mapping	

Code	Action	Target year	Type of action	Rationale	Potential effect	Overseeing WG/EG	Implemented by	Criteria for achievement	Cross-reference to actions in other segments
				and has the potential to increase both the effectiveness and efficiency of the mapping efforts.				products have been developed and agreed	

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Maritime spatial planning									
HT12	Utilize maritime spatial planning (MSP) applying an ecosystem-based approach to support BSAP objectives and targets and contributing to sustainable sea-based activities.	2030	Supporting action	Maritime spatial planning (MSP) applies an ecosystem-based approach to contribute to sustainable use of marine resources and the protection of the marine environment. MSP can thus support the achievement of the BSAP goals and targets. MSP is a process and tool for spatial governance/steering of sea-based human activities. Through this steering MSP can influence anthropogenic pressures, pressures resulting from human activity, on marine habitats and species.	N/A	National/ Joint	HELCOM-VASAB MSP	Evaluation of progress can be based on the follow-up of respective actions of the Regional MSP Roadmap, e.g action 1.2.	
HT13	Use maritime spatial planning (MSP) as a tool to signal areas of high nature value as identified by responsible environmental authorities.	2030	Measure/Supporting action	Maritime spatial plans (MSP) steer the use of the sea-areas by prioritising or limiting human activities in particular areas. In addition to the direct steering, MSP can influence the use of sea areas in indirect ways. One important mean for indirect steering is that the maritime spatial plans and accompanying documents can indicate locations	Steering and limiting human activities e.g. in areas with high natural values.	National/Joint	HELCOM-VASAB MSP	Evaluation of progress can be based on the follow-up of respective actions of the Regional MSP Roadmap, e.g action 3.4	B1, B13

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
				of areas with high natural value and existing protected areas. The MSP documents can, furthermore, propose to take precaution in the use of these areas.					
HT14	Implement maritime spatial plans with the aim of steering sea-based activities away from areas where they can cause serious damage or disturbance.	2030	Measure/Supporting action	Maritime spatial planning (MSP) steers the use of sea-areas for different sea-based activities. This can be done by allocating areas exclusively or conditionally to certain activities or by giving general provisions for conducting human activities in sea areas. Avoidance of serious damage or disturbance to habitats and species should be a guiding principle in the steering of sea-based activities in MSP. Furthermore, preparation of the maritime spatial plans should consider single and cumulative effects of human activities on habitats and species as well as apply a precautionary approach pursuing the protecting of high natural values from potential harm.	Steering and limiting human activities e.g. in areas with high natural values.	National/Joint	HELCOM-VASAB MSP	Evaluation of progress can be based on the follow-up of respective actions of the Regional MSP Roadmap, e.g. action 3.5. and 3.6.	B1, B13

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to actions in other segments
Theme: Economic and social analysis									
Topic: Enabling ecosystem-based management									
HT15	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.	2023	Supporting action	Environmental socio-economic (cost/benefit) analyses improve the understanding of the significance of a healthy marine environment for human wellbeing. Identifying and evaluating the socio-economic impacts of environmental actions on the lives and circumstances of people and communities, and accounting for them, assists in finding better ways not only to compare costs and benefits of such actions between various entities and countries, but also to reduce, remove or	N/A	Joint	GEAR; EN ESA	Regionally coordinated economic and social analyses which are integrated into environmental assessments such that changes in environmental condition can be linked to changes in welfare.	

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				prevent any related negative impacts.					
HT16	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.	2028	Supporting action	The analyses can provide valuable information for marine management, maritime spatial planning, pollution mitigation, as well as for supporting information and implementation of national and regional policies.	N/A	Joint	EN ESA	A set of indicators for measuring economic and social aspects of the marine environment has been established.	
HT17	By 2030, integrate quantitative and qualitative economic values of the environment into the management of human activities and maritime spatial planning.	2030	Supporting action	Quantitative and qualitative economic values (valuation) of the marine environment will improve national capacities to proceed with ecosystem accounting which most likely be in place by 2030 in Europe. The process will show gaps and possibilities in data and knowledge in general	N/A	National	PRESSURE; FISH; HELCOM VASAB MSP; STATE & CONSERVATION; AGRI; EN ESA	Quantitative and qualitative values of the marine environment are expressed in relevant documentation/documents for the management of human activities and maritime spatial planning	

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				and to increase the awareness of national key stakeholders.					
Topic: Ecosystem services									
HT18	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.	2023	Supporting action	Identifying potential uses of ecosystem services assessment and valuation is the first step for the application of ecosystem accounts, and in general for ecosystem-based solutions. Ecosystem accounts quantify ecosystems and their benefits for human well-being and could significantly contribute to the policy process.	N/A	Joint	GEAR; STATE & CONSERVATION; EN ESA	A few pilots where ecosystem services valuation results are integrated in the regional (Baltic Sea) policy development are developed.	
Topic: Ecosystem accounting									
HT19	By 2028, apply the framework of ecosystem accounting to assess the contributions of marine	2028	Supporting action	Different units of measurement for environmental and economic indicators do not allow to	N/A	Joint	GEAR; STATE & CONSERVATION; EN ESA	Pilot studies on physical and monetary ecosystem services as well as ecosystem asset	

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	ecosystems to economic activity (e.g. Gross domestic product (GDP)) using values that are compatible with the system of national accounts and comparable with other economic sectors.			compare trade-offs between different current or potential uses of the marine environment. The ecosystem accounting process will contribute to the development of a system which includes compatible marine and economic parameters.				accounts have been developed and/or compiled.	
Topic: Sufficiency and efficiency of measures									
HT20	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	2024, 2028	Supporting action	The currently developed method for assessing sufficiency of measures to achieve good environmental status of the marine environment still contains gaps. Thus, improvements in assessing effects, costs and benefits of measures and, in particular, regionally coordinated methods	N/A	Joint	GEAR; EN ESA	By 2024 existing tools for analysing sufficiency of measures, have been analysed. By 2028 updated, regionally coordinated methods and tools for analysing sufficiency of measures, cost-effectiveness of measures and costs and benefits to achieve good environmental status of the Baltic Sea	

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	sufficiency of measures as well as for cost-effectiveness of measures and costs and benefits to achieve good environmental status of the Baltic Sea marine environment.			for these issues are regularly needed.				marine environment have been created and tested. By 2028 regionally coordinated methods for analyses of sufficiency of measures as well as for cost-effectiveness of measures and costs and benefits to achieve good environmental status have been applied.	
Topic: Incentives and subsidies									
HT21	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.	2025, 2030	Measure/Supporting action	Economic tools can enhance opportunities to reach BSAP goals across themes. A positive incentive measure is an economic, legal or institutional measure designed to encourage beneficial activities. An analysis will be conducted on incentives reducing pressures on the marine environment, forming a joint	Incentives, e.g. subsidies, are useful and powerful tools, which can be used to influence behaviour or economy in a certain direction, e.g. promote growth in a sustainable way, overcome market failures, help	National /Joint	GEAR; EN ESA,	By 2025 a study on incentives to reduce pressures on the marine environment has been finalized, including proposals for action. (Joint supporting action) By 2030 the use of incentives should have been increased (at least one relevant example given). (National measure) These added incentives should preferably be filling a gap where this type of tool	

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				understanding within HELCOM, and in a second step relevant action will be taken. The analysis should include identifying any gaps; areas of marine management where this type of tool is missing. The actions should be aligned with the EU Biodiversity Strategy and CBD targets.	regions, sectors or groups of the population and can be used to promote environmentally sound technologies that are not yet competitive on the market. These incentives promote and accelerate shifts towards sustainable practices, thus alleviating pressures on the environment.			was missing. (National measure)	
HT22	By 2025 HELCOM should identify subsidies or incentives which are harmful for the marine environment and, by 2030 work, in	2025, 2030	Measure/Supporting action	Economic tools can enhance opportunities to reach BSAP goals across themes. Some measures, policies or	Environmentally harmful subsidies or incentives cause polluters to pass on	Joint	GEAR; EN ESA,	By 2025 finalize an analysis on what subsidies or incentives can be considered harmful and propose actions	

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	cooperation with relevant international organizations, on phasing out such subsidies or incentives.			practices induce behavior that is harmful for biodiversity, often as unanticipated side effects as policies are designed to attain other objectives. Such policies can include government subsidies or other measures which fail to take into account the existence of environmental externalities, as well as laws or customary practice governing resource use. In order to ensure the conservation of biodiversity and the sustainable use of its components, it is therefore important to identify policies and practices that generate harmful incentives and to consider their removal, phase out,	some of the costs of their production and consumption to society. Environmentally harmful subsidies and incentives also distort competition. This blocks environmental protection efforts and slows down the shift to sustainable patterns of production and consumption. Identifying and removing harmful subsidies and incentives have a positive effect on the			to reduce these. (Supporting action) By 2030 cooperative action should have been undertaken on phasing out such subsidies or incentives. (Measure)	

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				or reform, for instance by mitigating their negative impacts through appropriate means. An analysis will be conducted on harmful subsidies, forming a joint understanding within HELCOM, and in a second step relevant action will be taken. The actions should be aligned with the EU Biodiversity Strategy and targets of the Convention on Biological Diversity.	environment through limiting direct pressures, but also through removing barriers for e.g. environmentally sound and sustainable technologies, products and behaviours.				

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Theme: Hot spots									
HT23	Renew the effort to eliminate remaining hot spots identified by the Baltic Sea Joint Comprehensive Environmental Action Programme (JCP, 1992) by 2025.	2025	Measure	A list of significant pollution sites in the Baltic Sea catchment area– HELCOM Hot Spots – was established in 1992 in the framework of the Joint Comprehensive Environmental Action Programme (JCP). This HELCOM hot spots list 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. The list of hot spots has demonstrated its effectiveness for prioritising and tackling local environmental	Hot spots in the Baltic Sea catchment area are eliminated from the HELCOM hot spot list if measures are in place to remediate the significant pollution by nutrients and/or hazardous substances that stems from these sites. Thereby, the elimination of hot spots contributes significantly to lowering the inputs of nutrients and hazardous substances to the Baltic Sea.	National	PRESSURE	The remaining 40 hot spots identified by the Baltic Sea Joint Comprehensive Environmental Action Programme have been eliminated.	

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				issues and thus, contributing to the overall progress towards good environmental status of the Baltic Sea, in particular with respect to the pollution by nutrients and hazardous substances.					
HT24	Consider designating HELCOM hot spots by 2025 on the basis of identified additional sources of major negative impact on the Baltic marine ecosystem, starting with the development of specifying criteria for the designation and deletion of the hot spots by 2023, and based on those criteria, initiate and undertake targeted measures with the aim of eliminating where possible such new hot spots.		Measure/Supporting action	The current HELCOM list of hot spots has demonstrated its effectiveness for prioritising and tackling local environmental issues and mitigating pollution hot spots in particular with respect to nutrients and hazardous substances. The approach should therefore be continued based on revised HELCOM criteria that take the current situation into account and that incorporate	The designation of new hot spots with the ultimate aim of their deletion will contribute to reduce the pollution of the Baltic Sea by nutrients, hazardous substances and potentially litter.	National/Joint	PRESSURE	HELCOM criteria for designation and deletion of hot spots is established by 2023. (Joint supporting action) New hot spots are designated by 2025. (Joint/National supporting action)	

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				further sources of pollution, e.g. litter and potentially point sources in the sea.				Targeted measures are initiated to eliminate, where possible, the newly designated hot spots. (National measure)	
HT25	Prioritize inclusion of HELCOM hot spots into investment programmes (national or international) or establish alternative financial mechanisms by 2027 at the latest to eliminate hot spots from HELCOM list.	2027	Supporting action	A list of significant pollution sites in the Baltic Sea catchment area – HELCOM Hot Spots – was established in 1992 in the framework of the Joint Comprehensive Environmental Action Programme (JCP). In order to mitigate these hot spots as well as newly designated ones and remove them from the list, financial investments are required to undertake specific measures. Prioritising the	N/A	National	PRESSURE	Number of hot spots for which finances for their deletion have been secured.	

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				inclusion of HELCOM hots spots into investment programmes will ensure that the necessary finances are available to conduct the required measures that will lead to the deletion of the hot spots and consequently to pollution mitigation.					
HT26	Enhance cooperation with non-HELCOM countries in removing existing hot spots and designate new hot spots applying HELCOM criteria and facilitate undertaking all possible measures to eliminate them.	2030	Measure	There are currently still 6 hot spots from the list of significant pollution sites established in 1992 that are situated in non-HELCOM countries (Belarus, Ukraine, Czech Republic) and that contribute to the pollution of the Baltic	Hot spots are eliminated from the HELCOM hot spot list if measures are in place to remediate the significant pollution by nutrients and/or hazardous substances that stems from these sites. Thereby, the elimination of hot spots contributes significantly to lowering the inputs of	Joint	PRESSURE	Elimination of the remaining hot spots in non-HELCOM countries identified by the Baltic Sea Joint Comprehensive Environmental Action Programme.	E4

Code	Action	Target year	Type of action	Rationale	Potential effect	Implemented by	Overseeing WG/ EG	Criteria for achievement	Cross-reference to action in other segments
				Sea with nutrients and hazardous substances. An improved cooperation with those non-HELCOM countries would facilitate the deletion of these hot spots and would thereby lower the inputs of nutrients and hazardous substances to the Baltic Sea. The identification of new hot spots of significant pollution in non-HELCOM countries can contribute to further lowering the inputs of nutrients, hazardous substances and potentially also litter to the Baltic Sea.	nutrients and hazardous substances, and in the future potentially also litter to the Baltic Sea.			Designation of new hot spots in non-HELCOM countries and their possible deletion from the hot spot list.	

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Theme: Knowledge exchange and awareness raising									
HT27	Increase knowledge exchange and awareness raising to promote public and stakeholder support and interest in understanding the state of the Baltic Sea and threats to its environment as well as promote opportunities for the general public to participate in citizen science.	2030	Supporting action	Knowledge exchange and awareness raising are increasingly recognised as key factors in promoting the social, environmental and economic impacts of the measures for achieving good environmental status of the Baltic Sea. The action includes also increasing knowledge exchange and raising awareness on the potential impacts of human activities on coastal ecosystems.	N/A	National/Joint	All	Activities may include issuing press releases, briefings and commentaries; disseminating reports, studies and publications; holding stakeholder meetings related to the work of HELCOM, as well as 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.	

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HT28	Share experiences and best practices on measures that have been implemented.	2030	Supporting action	Sharing experiences and best practices on measures will facilitate the implementation of measures and allow the Contracting Parties to learn from each other.	N/A	National/Joint	All	Activities may include disseminating reports, studies and publications; conferences and workshops as well as information sharing at HELCOM groups.	