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Background

In the approved preliminary plan for HOLAS III, in line with the wishes expressed by the Contracting Parties, all technical development work and improving of infrastructure needed to support the State of the Baltic Sea report takes place prior to the start of the actual HOLAS assessment process (outlined in document 5-2 to GEAR 22-2020). This development work is clustered under a HOLAS III preparatory phase. The preparatory phase is structured along three distinct but interlinked projects outlining the main stands identified as requiring further work: consolidation and development of indicators, establishing and improving data flows, and refining and further developments of the assessments. The preparatory phase is proposed to run from the beginning of 2020 to the end of 2021, in a staggered structure. The project plans for the development of indicators and improving data flows have been approved in HOD 54-2018, and HOD 57-2019 respectively. Following the approval of the provisional plan for HOLAS III, including the preparatory work, at HELCOM 41-2020, the work on drafting the project plan for the third step of the preparatory phase has commenced, as contained in this document.

To support the development work under the third step GEAR 20-2019 invited the Secretariat and the relevant Expert Groups to prepare more specific information on identified gaps and development needs for the various assessment, namely the indicator driven integrated assessments, Cumulative Impacts assessment, and economic and social analyses, as identified in the HOLAS II process or in subsequent work. GEAR 21-2019 agreed to continue the discussion in GEAR 22-2020 with the intention to develop a concrete proposal for how to take this work forward, building on the work done for indicators and dataflows, for consideration at HOD 58-2020.

The outline and aim of the HELCOM Holistic Assessment Methodology Development (MetDev) Project, including preliminary work package information, as presented in this document was presented for input to GEAR 22-2020 and will be presented to STATE&CONSERVATION 12-2020. It will then be shared with HOD 58-2020 for information, with the intention that the full project plan be submitted to the autumn meetings of the relevant groups for endorsement and HOD 59-2020 for approval, enabling the work to start in early 2021.

This document contains the draft project plan as presented in document 5-4 rev.1 to GEAR 22-2020. Please note that the content is likely to change significantly as the process continues.

Action requested

The Meeting is invited to take note of the draft project plan for HELCOM Holistic Assessment Methodology Development Project regarding HEAT tool in work package 3. The Meeting is invited to provide further input and elaboration to the plan.

PROJECT DESCRIPTION

1. Title of Project

HELCOM Holistic Assessment Methodology Development Project (HELCOM MetDev), 2021

2. Project Manager(s)

HELCOM Secretariat, Professional Secretary.

3. Proposing Party

Contracting Party —

Commission _____

Subsidiary body X

Heads of Delegation _____

Executive Secretary _____

4. The body supervising the project

State and Conservation Working Group and Professional Secretary

5. Target and activities

Background

Early planning for the HOLAS III process has been identified as important for the successful implementation of the next holistic assessment, but also for a number of related HELCOM processes. The provisional plan for HOLAS III divides the work into two main work phases, the preparatory work and the holistic assessment. The preparatory work is intended to review the current status and improve infrastructure to support the next holistic assessment, to ensure that critical components are fit for purpose, and to maintain the continued policy relevance of the work. The preparatory work has been structured along three distinct but interlinked projects: consolidation and development of indicators (HELCOM Indicators), establishing and improving data flows (HELCOM DataFlow), and refining and further developing the assessments (HELCOM MetDev) (as illustrated in figure 1). The preparatory phase is proposed to run from the beginning of 2020 to the end of 2021, in a staggered structure where each project provides information to and helps guide the consequent projects throughout the preparatory phase (as illustrated in figure 2).

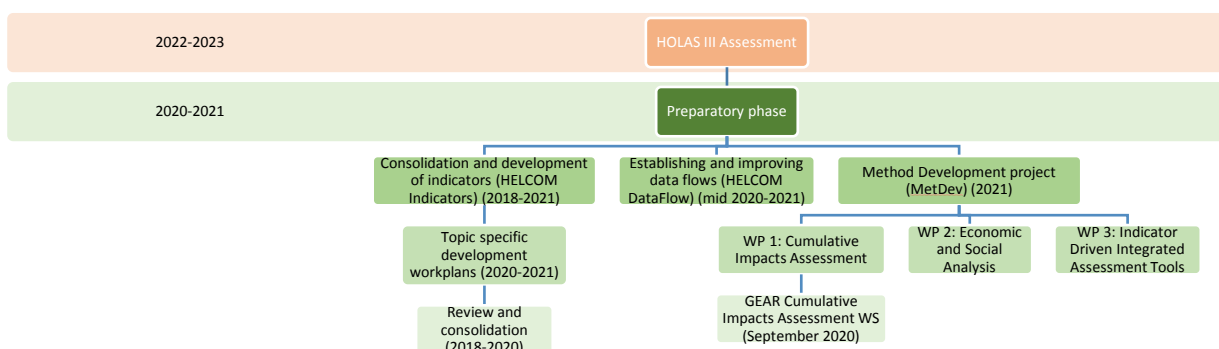


Figure 1. The preparatory work has been structured along three distinct but interlinked projects: consolidation and development of indicators (HELCOM Indicators), establishing and improving data flows (HELCOM DataFlow), and refining and further developing the assessments (HELCOM MetDev).

| | 2020 | | | | 2021 | | | | 2022 | | | | 2023 | | | |
|--|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Indicator development/consolidation (HELCOM Indicators) | | | | | | | | | | | | | | | | |
| Establishing and ensuring dataflows (HELCOM DataFlow) | | | | | | | | | | | | | | | | |
| Refining and further developments of assessments (HELCOM MetDev) | | | | | | | | | | | | | | | | |
| HOLAS III Assessment | | | | | | | | | | | | | | | | |

Figure 2. The preparatory phase is proposed to run from the beginning of 2020 to the end of 2021, in a staggered structure where each project provides information to and helps guide the consequent projects throughout the preparatory phase

The MetDev project would be targeting the third and final step of the preparatory phase, namely improving the indicator driven integrated assessment tools (HEAT, BEAT and CHASE) as well as other tools or methods such as cumulative impacts and methods used for analysis of economic and social aspects, which underpin the holistic assessment of the Baltic Sea environment. Consequently, the HELCOM MetDev project is proposed to consist of three distinct work packages, corresponding to the three work strands for which further development would be beneficial:

- **Work package 1: Cumulative impacts assessment**
- **Work package 2: Economic and social analyses**
- **Work package 3: Indicator driven integrated assessment tools (HEAT, BEAT and CHASE)**

The aim of the project is to ensure that the tools and methods used are fit for purpose and fully operational for the Third State of the Baltic Sea Assessment (HOLAS III).

The project would be building on lessons learnt from the Second State of the Baltic Sea report (HOLAS II 2018) as well as link closely and contribute to the work done under the two other preparatory projects, HELCOM Indicators and HELCOM DataFlow. It is likely that modification and refinements of the integrated assessment tools are needed following the incorporation of new data strands stemming from step two (HELCOM DataFlow) and possible new or consolidated indicators stemming from step one (HELCOM Indicators) in the overall process. The project would also work closely together with organizations hosting and/or maintaining some of the HELCOM assessment tools, e.g. ICES. GEAR 20-2019 invited the Secretariat and the relevant Expert Groups to prepare more specific information on identified gaps and development needs for the various work strands not covered by the indicator work, as identified in the HOLAS II process or in subsequent work. This information, together with input received through the HOLAS II Lessons Learned survey have been considered when outlining the work under the respective work packages presented in this project plan.

Activities

Work package 1: Cumulative Impact assessment

Project staff: project researcher (located at Secretariat), data developer

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 distribution of the anthropogenic pressures affecting the marine environment, as well as to identify and quantify their impacts on the Baltic Sea ecosystem. If each of the pressures is considered individually, they may appear to be at sustainable levels. However, in reality, at any given point multiple pressures are affecting the species and habitats of the marine environment and causing cumulative impacts. When summed together, the total impact of these pressures may be considerable, especially when their temporal and spatial distribution overlap, or furthermore when acting on sensitive habitats or species.

HELCOM has used in its previous holistic assessments, HOLAS I in 2012 and HOLAS II 2018, the Baltic Sea Pressure Index (BSPI) and the Baltic Sea Impact Index (BSII) as one means of expressing an integrated ecosystem-based assessment. The indices, which have been evolving over time, bring together spatial information on the distribution and intensity of activities/pressures and their potential (cumulative) impacts on ecosystem components.

For the HELCOM State of the Baltic Sea 2018 report, pressures from human activities were broadly categorized into inputs of substances (including for example nutrients and hazardous substances), inputs of energy (underwater sound), biological pressures (including for example extraction of fish and disturbance to species), and physical pressures (physical loss and physical disturbance to the seabed). The data for the 2018 State of the Baltic Sea assessment represented a wide range of human activities and potential pressures of relevance to the region. In all, thirty-nine original data sets were aggregated into eighteen aggregated pressure layers representing broad overviews across the marine region. The layers are described in more detail in the relevant [Thematic assessment](#). The Baltic Sea Pressure Index depicts the distribution of potential pressures in the Baltic Sea, based on these aggregated pressure layers. It should be noted, however, that the intensity of the pressures in relation to the impacts they may cause on the environment is typically not incorporated. Additionally, thirty-six ecosystem component data layers, which represent the distribution of species and habitats, were included for assessing cumulative impacts using the Baltic Sea Impact Index. The cumulative impact was estimated by combining the information on species and habitats with the information on the distribution of pressures, using estimates of the sensitivity of species and habitats to the different pressures. The sensitivity of the various ecosystem component layers was estimated by sensitivity scores, which were obtained from a survey answered by over eighty selected experts representing marine research and management authorities in seven Baltic Sea countries. The results were evaluated for compatibility with a literature review study on physical loss and disturbance of benthic habitats, and assessed in relation to a self-evaluation of the experts on their confidence in their replies.

In addition to the relevance for HELCOM's work on implementing ecosystem based management, HELCOM Contracting Parties which are also EU Member States, via Directive 2008/56/EC (MSFD) are obliged to take the main cumulative and synergetic effects of the predominant pressures and impacts, including human activity, into account when assessing environmental status. The 2017/848 outlines that these relevant anthropogenic pressures include biological pressures, physical pressures and substances, litter and energy.

Following an invitation from GEAR 20-2019 to prepare more specific information on identified gaps and development needs for HOLAS III, a proposal for improving cumulative impacts assessment in HOLAS III was presented to GEAR 21-2019 (Document 5-5). The proposals were primarily based in the input received during HOLAS II process, taking into account that further development work of the indices had taken place following HOLAS II, primarily under the [Pan Baltic Scope project](#). GEAR 21-2019 considered the proposals and took note that the HOLAS II assessment output had been utilised differently between the Contracting Parties. The

meeting acknowledged that, should the detail of the maps be further improved they could also further act as a valuable tool for Maritime Spatial Planning (MSP) at a local level.

The GEAR meeting concluded that BSPI/BSII should be included as part of HOLAS III, but in what capacity and format is still to be considered. There is a clear need to continue discussions on regional cumulative impacts assessment for HOLAS III. Consequently, the meeting agreed to organize a workshop focusing on how to tackle cumulative impacts assessment in the Baltic Sea region.

Details and guidance on development work will be discussed in the workshop. The following is what was identified as part of the work to review the methods used in HOLAS II and identified gaps and development needs for HOLAS III, as presented to GEAR 21-2019 and based on further evaluation by the Secretariat. The contents of the following sections will be modified as needed based on the outcome of the WS.

The following have been identified as priority areas for ESA in HOLAS III:

- A. Overall improvement to the indices
- B. Improvements to BSPI
- C. Improvements to BSII
- D. Ecosystem components

Although listed separately, the priority areas are interlinked, and will be developed in parallel. The work on further development of the cumulative impact assessment approach is closely tied to data availability and as such Work Package 1 is especially tightly linked to the work done under the HELCOM DataFlow project and a dynamic and close cooperation between WP1 and a number of the activities under the DataFlow project are foreseen.

- A. Overall improvement to the indices (Project researcher, Data developer)
 - Improvements to confidence assessment.
 - Further development of the online tool.
- B. Improvements to BSPI (Project researchers)
 - The relative contribution of an activity to the resulting pressures should be incorporated into the indices.
- C. Improvements to BSII (Project researchers)
 - Adjust the magnitude of a given pressure to the resulting impact. Work towards establishing thresholds should be continued, to make the layers comparable, and different means of balancing (such as weighting) should be discussed if or where this not possible.
 - Review and, if needed, finetuning sensitivity scores of the ecosystem components.
- D. Ecosystem components (Project researcher)
 - Development and incorporation of further ecosystem component layers, developing data driven layers wherever possible to account for spatio-temporal changes, and that the layers could be updated.
 - Improved habitat maps (both in spatial scale and reliability) using improved data and modelling techniques would be beneficial.
 - Improved (data driven) information on species distribution (all available species, not only threatened).
 - Data driven information on biodiversity.

- Trait diversity maps.

Work package 2: Economic and Social Analyses

Project staff: Project researcher (located at Secretariat)

The economic and social analyses (ESA) for State of the Baltic Sea report in HOLAS II covered the entire Baltic Sea region but were limited to selected human activities (use of marine waters) and environmental themes/ecosystem services (cost of degradation). Furthermore, although a conceptual framework for linking the use of marine water and cost of degradation analyses was developed, they were conducted separately in HOLAS II due to lack of suitable data, approaches and resources, and the link between the environmental status assessment and ESA was missing. An important development area is the improved integration within the components of ESA, and between ESA and environmental assessments, which enables a meaningful evaluation of how the marine environment affects human welfare and ensures improved relevance of the assessment for future management.

Following an invitation from GEAR 20-2019 to prepare more specific information on identified gaps and development needs for HOLAS III, a proposal for ESA in HOLAS III was presented to GEAR 21-2019 (Document 5-1). GEAR 21-2019 supported the proposal and the integration of ESA to other work strands in HOLAS III, and took note that priorities and ambition level of the work needs to be adjusted depending on the resources (Outcome, paras 5.29-5.31). The following is based on that earlier proposal for ESA in HOLAS III.

The aim of the work package on ESA within HELCOM MetDev is to further develop regional methods and results for economic and social analyses (ESA) to support the holistic assessment of the marine environment by addressing some of the shortcomings and development needs identified in previous ESA work. It builds on previous HELCOM experiences and work on ESA for State of the Baltic Sea report in HOLAS II (TAPAS and SPICE projects, 2016-2018), maritime spatial planning (Pan Baltic Scope project, 2018-2019) and BSAP update (ACTION project, 2019-2020), as well as reflects the ToR for HELCOM EN ESA and Roadmap for continued HELCOM work on ESA. Implementing ESA for HOLAS III as proposed here would meet some of the aims of the ESA roadmap.

The following have been identified as priority areas for ESA in HOLAS III:

- A. Improved integration of ESA and environmental assessments
- B. Improved implementation of the ecosystem services approach
- C. Assessment of economic benefits due to marine protection
- D. Cost-benefit analysis of policy measures
- E. Pilot assessment of the prospects of marine ecosystem accounting

Although listed separately, the priority areas are interlinked, and will be developed in parallel. The work entails some conceptual development, in particular related to items A and E, and development of approaches, data collection and analyses for regional assessments. In addition to regional approaches, the outcomes of the work are aimed to support national ESA assessments, e.g. related to EU MSFD Programmes of Measures.

To achieve its objectives, the work package works closely together with the other work strands in MetDev and the two other preparatory projects, HELCOM Indicators and HELCOM DataFlow. This activity can also support the development and operationalization of the causal framework in the state/pressure indicators process.

A. Improved integration of ESA and environmental assessments (EN ESA, Project researcher)

Activity A establishes conceptual and operational relationships between the marine environment and human welfare by linking measures/actions, human activities, pressures, state, ecosystem services and human welfare in a causal framework. It is necessary for developing a connection between ESA and other components of HOLAS III, and the elements within ESA (e.g. use of marine waters and cost of degradation analyses). The activity enables assessing the connections between economic activities, current and future

use of the sea, as well as human welfare and the state of the Baltic Sea. This activity is linked to developing the ecosystem services approach under activity B and uses inputs from the other activities in the work package.

Furthermore, this activity would directly support and provide added benefit for the application of the HELCOM indicators (e.g. those assessing State or Pressure). The methodology would enable trends and important factors to be extracted as data was processed within the devised approach, sections of which would have direct relevance to the indicator assessments. For example, changes in agricultural activity, amount or type, would have relevance for nutrient inputs and nutrient concentrations within a causal framework, the latter two being existing HELCOM indicator assessments of Pressure and State. With direct relevance to the HELCOM indicators, this information could be described and visualized to highlight trends and changes in human activities and drivers (brief supporting indicators) that help outline the root cause of the pressures or state monitored by HELCOM Contracting Parties. In doing so the HELCOM indicator catalogue would be better integrated into a causal framework and build structures that would enable improved follow up for the BSAP in the future.

The activity builds on the development of concepts, approaches and data in HELCOM SPICE, Pan Baltic Scope and HELCOM ACTION projects. Although being a part of the ESA work package, the work is interdisciplinary in nature and requires the involvement of economists, marine scientists and experts from other fields for successful assessment. To that end, regular planning and working meetings between the Work Packages under MetDev, as well as the other preparatory projects HELCOM Indicators and HELCOM DataFlow, ESA, relevant HELCOM EGs and other experts involved in the preparatory work for HOLAS III are organized.

This activity would start at the beginning of the project and run until the end of the project.

[B. Improved implementation of the ecosystem services approach \(Project researcher\)](#)

Activity B entails developing approaches and collecting background information for identifying and assessing marine and coastal ecosystem services, including how the marine ecosystem contributes to the provision of ecosystem services, and what benefits and socioeconomic values people derive from these ecosystem services. It is tightly linked to activity A and supports the integrated assessment of the marine environment by developing an approach and providing information on one of the linkages.

The activity builds on previous work on ecosystem services in HOLAS II and other assessments, such as BONUS projects. It collects information from existing assessments on the provision and value of Baltic Sea ecosystem services. It advances the use of ecosystem services approach in regional ESA.

[C. Assessment of economic benefits due to marine protection \(Project researcher\)](#)

Activity C advances the assessment of the economic benefits of marine protection, or in other words, the assessment of cost of degradation. Building on the approaches in HOLAS II for the regional assessment of cost of degradation, it develops methods for additional adjustments of existing valuation results that improve the accuracy of the regional benefit estimates, such as adjusting the value estimates for the extent of the environmental change.

This activity produces the benefit component for the cost-benefit analysis in activity D.

[D. Cost-benefit analysis of policy measures \(Project researcher\)](#)

Activity D develops a conceptual approach for a regional cost-benefit analysis of achieving good status of the marine environment. The cost-benefit analysis compares the costs and benefits of policies to improve the state of the marine environment and allows examining the economic efficiency of such policies. It builds on the approach for benefit assessment in activity C and the approach for the cost-effectiveness analysis in the HELCOM ACTION project.

E. Pilot assessment of the prospects of marine ecosystem accounting (Project researcher)

Activity E develops an approach for a marine ecosystem accounting pilot to describe and quantify interactions between the economy and marine environment. It describes how and to which extent the Baltic Sea provides benefits to people, as well as how social and governance factors affect the status and associated benefits. Ecosystem accounting provides an additional perspective for linking the ecosystem and socio-economic system in activity A. The work builds on the data, methods and expertise in the HELCOM EN ESA.

Work package 3: Indicator driven integrated assessment tools (HEAT, BEAT and CHASE)

Project subcontractors:

The foundation of the integrated assessments is the core indicators, which are based on the HELCOM coordinated monitoring programme and regionally agreed threshold values. Integrated assessments of biodiversity, eutrophication and hazardous substances, are made based on the core indicators using the BEAT, HEAT and CHASE assessment tools. The integrated assessments provide an overview of the status for major BSAP themes based on the independent indicator assessments by scaling all independent indicator results and building an overall assessment of status that integrates all the independent components. The integrated tools were also used in the initial holistic assessment in 2010 and were further developed in the second holistic assessment. The integrated assessments not only show whether good status is achieved or failed, but also indicate the distance to good status by use of categories; two representing good status and three representing not good status. The assessment is based on currently available core indicators. For some components or assessments, operational indicators are still lacking or limited, for example benthic and pelagic habitats, health of marine mammals and food webs. The further development of several core indicators, to reach a more complete assessment for the independent indicators is currently being advanced through the HELCOM Indicator project and the outcomes of these developments, and the other identified issues (e.g. identified during HOLAS II), need to be incorporated into developments of the integrated assessment tools in advance of HOLAS III. These integrated assessments help provide a broad overview of state that summarizes the overall Baltic Sea health and provides an opportunity to discuss the issue in the setting of a wider contextual scientific landscape

For the indicator driven assessment tools (HEAT, BEAT and CHASE) the need for further development is tightly linked to the inclusion of new data or new/modified indicators. The relevant HELCOM expert networks or experts have been invited to review the tools and have suggested further developments, as well as considered which of these are most urgently needed and feasible for HOLAS III. The resulting proposals are included in this Work Package.

A. HEAT (Possible external partner, IN EUTRO, Secretariat)

The following issues are known to exist, and some of them are currently being further developed by ICES as part of a HELCOM project, however, HELCOM Intersessional Network on Eutrophication (IN Eutrophication) will have further input and elaboration in May 2020.

1. Adding Shallow water oxygen indicator to HEAT

An indicator assessing the concentrations of near-bottom oxygen in shallow open-sea areas is under development. If successfully developed and approved for inclusion, this component would need to be incorporated into the HEAT.

2. Improving the aggregation rules of HEAT

The aggregation rules need to be more ecologically coherent, including grouping of secchi depth as an indirect eutrophication effect in basins where this indicator is mainly influenced by organic matter.

3. Improving the confidence assessment

The current approach needs to be adjusted to reach a data-driven multifaceted assessment, including both spatial and temporal aspects. Separate solutions are needed for spatial confidence of satellite and FerryBox data used in chlorophyll-a indicator, as well as for oxygen debt indicator.

The work is ongoing in IN Eutrophication. Work on how to aggregate the confidence of individual indicators to an overall confidence assessment has also been started.

B. BEAT (Secretariat, possible external partners)

The following issues are known to exist and the relevant experts, together with the Secretariat, will be invited to provide further proposals and elaboration by end of May.

Biodiversity assessment is currently the least developed of the indicator driven assessment tools, due to the complexity and heterogeneity of biological monitoring data. There is a need to develop data harmonization methods to facilitate the creation of harmonized regional indicator based products, including aggregation from monitoring data to assessment data product, to support the assessment of status of biodiversity in the marine environment. Currently there is also no way to display the outputs of the developed data processing tools a specific dataview tool. The aim of the work package is to create a transparent biodiversity assessment tool following FAIR principles for the data used in the assessment and documenting all steps. In this Work Package, the following actions will be carried out:

1. Developing methodology for integrated assessment (Possible external partners)
 - Applying biodiversity assessment tool for benthic and pelagic habitats assessment
 - Developing process for input of other biodiversity indicator data to assessment data processing
2. Developing biodiversity assessment tool dataviews (Possible external partners? Secretariat?)
 - Defining and developing online dataviews with defined indicator data extractions in cooperation with relevant HELCOM Expert groups and indicator leads
3. Assigning DOIs to assessment datasets (Possible external partner/Secretariat)
4. Publishing all scripts used for indicator calculation and integrated assessment in GitHub under open public license (Possible external partner/Secretariat)
5. Publishing metadata records of regional harmonized data products in European Data Portal (Secretariat, possible external partner)

C. CHASE

The following issues are known to exist, however, HELCOM EN-Hazardous substances (EN-HZ) will have further input in September 2020 at which point the development of indicator should be clearer.

1. Adding Cu to MIME and CHASE tools (Secretariat, possible external partners)

An indicator assessing the concentrations of copper (Cu) in the marine environment, likely a substance occurring due to offshore marine activities (e.g. shipping), is under development. If successfully developed and approved for inclusion then this component would need to be incorporated into the MIME evaluation script (ICES in cooperation with MIME expert (from OSPAR)) so that the indicator assessment can follow the automated system for all other indicators. Subsequently the evaluation would need to be tied to the CHASE integration approach also.

2. Adjusting CHASE to improve automation and include new or non-COMBINE data (Secretariat possible external partners)

The CHASE assessment tool will need to be adjusted to improved its automated data harvesting from the MIME tool end evaluation (i.e. the final automated individual indicator evaluation) and to find a good practical solution for incorporating the data/results from Radioactive Substances. In addition the incorporation of new aspects (e.g. Cu, above) also need to be addressed here.

3. Adjusting the confidence setting in CHASE (Secretariat, possible external partner)

In HOLAS II it was noted that improvements to the assessment of confidence in the integrated assessment were needed. The current approach needs to be adjusted to make it more specific so that

confidence is assigned based for example on the inclusion of multiple metals, not as is currently applied on a single metal in multiple sampling matrix types.

4. Explore the possibility to include biological effects information into the integration tool.

This aspect will be clearer once potential progress on biological effects indicators is clearer (post-September 2020 meeting of EN HAZ).

6. Expected results

The expected results are in the form of documents and operational data flows supporting HOLAS III Assessment, more explicitly:

Work package 1:

To be filled in following guidance received from the Cumulative Impacts workshop arranged by GEAR in September 2020.

Work package 2:

The expected results are in the form of approaches, tools and methods that support HOLAS III assessment and analysis:

1. Improved approach for integrating ESA to other components of HOLAS
2. Improved method for regional ecosystem services approach
3. Improved assessment of benefits of marine protection/cost of degradation
4. Approach for regional cost-benefit analysis
5. Approach for pilot marine ecosystem accounting assessment

Work package 3:

Improved operationalized indicator driven integrated assessment tools which incorporate any new or expanded data strands/types as well as consolidated or new indicators.

7. Consistency with HELCOM priorities

yes no

8. Timetable (including number of Project Team meetings)

The project will start in Q1/2021 (January) and will finish in Q1/2022 (March).

9. Budget (taking into account financial year from 1 July to 30 June)

9.1 Total Costs

The planned 27-33 man months would require an estimated XXXXXX Euros funding.

This is intended to be divided as follows:

- 4 man months for integrated assessment tool development (HEAT&CHASE);
- 4 man months for integrated assessment tool development (BEAT);
- 1 man months for integrated assessment tool development (CHASE)
- 6-12 man months for cumulative assessment development (HELCOM);
- 12 man months for development of methods for economic and social analyses (HELCOM).

9.2 Sources of financing divided per financial year

| Financial Year | Man Months |
|----------------|------------|
| 1/2021-6/2021 | XX |

| | |
|---------------|----|
| 7/2021-6/2022 | XX |
|---------------|----|

10. Additional requests (manpower, equipment, facilities, etc.)

10.1 From the Contracting Parties

The Project will possibly need specific information from and cooperation with national experts.

10.2 From the Secretariat

The Secretariat will ensure coordination of the project with other planned and ongoing HELCOM processes, including indicator development work, data flow development, facilities and equipment needed for the work, and in-house support for the development of tools and methods.

11. Procedure of nomination of the Project team members

Two project researchers and one data developer to be employed to the Secretariat.

The appointed staff will follow the HELCOM risk management procedure.

12. Signature of the Project Manager(s)

13. Opinion of the Chairs of the relevant body

14. Opinion of the Executive Secretary

15. Decision of the Heads of Delegation

(Reference is to be given to the relevant Minutes of the Heads of Delegation's Meeting)

_____ to establish _____ not to establish