Document title	Projects supporting Eutrophication data flows and assessment
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Agenda Item	4 - Upcoming HELCOM projects relevant to eutrophication assessment
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Background

To prepare for the Third State of the Baltic Sea report and to in general develop the data flow arrangements of HELCOM indicators and assessment, HELCOM Secretariat has initiated project proposals. This document summarizes information on the proposals.

The meeting is requested to:

- take note of the information

Baltic Data Flows project (2019-EU-IA-0115)

The HELCOM Secretariat was informed in fall 2019 about a potential project call by INEA (CEF-TC-2019-2: Public Open Data) which could be utilized to strengthen current HELCOM data collation and creation of public regional data products such as indicator datasets. The Secretariat requested State & Conservation contacts to explore the possibility of relevant national institutes/organizations that are responsible of collecting and making available environmental monitoring data to HELCOM to signal their interest in drafting a project proposal for this call.

The project proposal, coordinated by HELCOM Secretariat, gathered 6 partners from 4 HELCOM CPs (Finland, Latvia, Sweden, Denmark (ICES)) was approved for applying by HELCOM HODs and was successfully reviewed and Grant Agreement was signed in August 2020. The project period is 1.10.2020-30.9.2023. The project kick-off meeting was held on 12 October. Project website https://helcom.fi/helcom-at-work/projects/baltic-data-flows/

The project consists of eight activities (Table 1).

Tables 1. Activities (Works packages).

Activity number	Activity title	Indicative start date	Indicative end date
1	Increase of capacity at national data host institutes	01/10/2020	30/09/2023
2	Further development of existing data sharing platforms	01/10/2020	30/09/2023
3	Development and implementation of data harvesting	01/01/2021	30/09/2023
4	Addition of new datatypes to existing data flows	01/10/2020	30/09/2022
5	Further development of data processing and software used in hazardous substances assessment	01/10/2020	31/03/2022
6	Development of data processing and software to be used for biodiversity assessment	01/10/2020	31/03/2022
7	Dissemination and impact assessment	01/10/2020	30/09/2023
8	Project management	01/10/2020	30/09/2023

Activities 1-3 are relevant for IN-Eutrophication since those will look into developing existing data sharing platform of both HELCOM and ICES and also to implement data-harvesting based reporting together with partner organizations SYKE and SMHI.

The Activity 4 on "Addition of new datatypes to existing data flows" is developing further the eutrophication assessment in a data-driven approach and by developing and making publicly available eutrophication assessment data products. Detailed activity description is defined below:

Activity 4: Addition of new datatypes to existing data flows

This activity will generate data products on marine environment by combining raw data from different monitoring methods (classical in-situ monitoring, ferrybox - automatic measurement devices on board commercial ships, and earth observation data). The activity analyses and makes use of suitable data products and services available from EU Copernicus programme Sentinel

Satellite series (e.g. SYKE downstream service for the Baltic Sea, Copernicus Marine Environment Monitoring Service - CMEMS).

Overall, activity 4 will be led by SYKE with the participation of SMHI, ICES and HELCOM.

The activity encompasses the following tasks:

Task 4.1 – Definition of ferrybox data products for assessment

The task includes:

- The analysis of ferrybox data and data products stemming from available national and international services (e.g. CMEMS);
- Identifying the optimal information and workflow for different ferrybox data types and required data processing steps from data to assessment:
    - Ferrybox water sample data: like in-situ data;
    - Ferrybox flow-through data: trajectory type of data.
- Defining and implementing quality control procedures for ferrybox datasets.

This task will be led by SYKE, with the participation of SMHI and ICES

Task 4.2 – Definition of earth observation data products for assessment

The task includes:

- Analysis of data products stemming from available earth observation data services and products (e.g. from CMEMS) and existing national data products produced by SYKE and SMHI;
- Defining specification of data products (e.g. gridding, optimal resolution) considering indicator data requirements (Chlorophyll-a, Cyanobacterial bloom index indicators);
- Identifying the optimal information and workflow for earth observation data processing steps from data to assessment data products.

This task will be led by SYKE, with the participation of SMHI and ICES

Task 4.3 – Implementing tools for creating indicator data products

The task includes:

- Specification of algorithms/scripts for creating eutrophication indicator data products by combining three different data types: from in-situ, ferrybox and earth observation data based existing indicator data requirements and possibly extending existing data requirements;
- Implementation of an automated eutrophication indicator data product creation at the eutrophication dataview hosted by ICES, based on outputs of tasks 4.1 and 4.2.

The task will be performed with close cooperation and dialogue with the relevant HELCOM expert group (HELCOM IN-Eutrophication and State & Conservation).

This task will be led by SYKE, with the implementation of ICES and participation of SMHI.

Task 4.4 – Making assessment data products FAIR

The task includes:

- Publishing all scripts used for indicator calculation and integrated assessment in GitHub under open public license, where applicable;
- Creating metadata records for the relevant in-situ, ferrybox and earth observation datasets in national open data portal by SYKE and SMHI, utilising existing national platforms;
- Making assessment data products accessible and establishing a procedure for assigning a digital object identifier (DOI) to the assessment of datasets;
- Making available harmonised regional assessment products by creating metadata records for the dataset, by making the dataset accessible for assessment and by assigning a DOI to the dataset (related to activity 2, task 2.1).

This task will be led by SYKE, with the participation of SMHI, ICES and HELCOM.

Other costs within this activity include travel costs in relation to two internal workshops:

- First one to map requirements for both data types;
- Second one for creating harmonised data products.

The activity will result in the following output(s):

- Specifications of data products;
- Completion of ferrybox data access;
- Completion of earth observation data access;
- Documentation of the process and lessons learnt for wider dissemination within the community.

Timeline of each task under activity 4.

Activity number		Activity / Taks	2020			2021				2022				2023			
4		**Adding new datatypes to eutrophication data flow**															
	4.1	Definition of ferrybox data products for assessment															
	4.2	Definition of earth observation data products for assessment															
	4.3	Implementing tools for creating indicator data products															
	4.4	Making assessment data products FAIR															

HELCOM MetDev project

HELCOM MetDev project was presented to the HELCOM State & Conservation in October 2020. https://portal.helcom.fi/meetings/STATE%20-%20CONSERVATION%2013-2020-779/MeetingDocuments/4J-8%20Draft%20HELCOM%20MetDev%20project%20to%20support%20HOLAS%20III.pdf

Work package 3 of the suggested project will focus on development of existing indicator driven integrated assessment tools, however most of the project focus will be towards Economic and Social Analyses (ESA) and Cumulative Impact Assessment (CIA).

State & Conservation (Outcome. para 4J.50-543) reviewed the updated project plan for MetDev (document 4J-8), as presented by the Secretariat. The Meeting noted that part of the financing can likely be secured from the HELCOM budget and invited the CPs to consider providing additional national funding to ensure that the necessary development can take place prior to the start of HOLAS III.

The Meeting welcomed the inclusion of development of driver indicators in the project. The Meeting noted that a Swedish project is ongoing where the driver topic (DPSIR) is looked at in relation to MSFD and that this information could be useful for the proposed work on developing driver indicators for HOLAS III. The Meeting highlighted the need to align aggregation of indicator results under the integrated assessment tools with the aggregation rules under MSFD.

The Meeting invited the Contracting Parties to provide further comments to the proposal to the Secretariat (Jannica.haldin@helcom.fi) by 14 October 2020 in order to submit the revised plan for endorsement to GEAR 23-2020 by the deadline on 19 October 2020. Detailed comments will be provided by Sweden and Germany.