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The [HELCOM Monitoring and Assessment Strategy](#) contains in its Attachment 2 a description of the HELCOM Data and Information Strategy, which is applied to data stemming from HELCOM monitoring activities. HELCOM HOD 54-2018 supported the plan by the Secretariat to prepare a draft of the updated HELCOM Data and Information Strategy ([Outcome](#) para 4.63). Recent HELCOM State & Conservation meeting already considered and in principle agreed on submitting the draft data and information strategy to HOD 55-2018 for approval. HOD 55-2018 considered and in general approved the draft updated HELCOM Data and Information Strategy ([HOD 55-2018 Document 4-18](#)), and agreed that the updated Strategy should be communicated with all relevant HELCOM groups, striving to submit the HELCOM Data and Information Strategy for adoption to HELCOM 40-2019 ([Outcome](#), para 4.98).

This document contains draft version of updated HELCOM Data and Information Strategy. Paragraphs that have been modified compared to 2013 version are highlighted in yellow. The main modifications include:

- Explicit description of the HELCOM data policy for harmonized assessment datasets and data products;
- Technical description on how all HELCOM assessment data products and datasets are made available so that those can be re-used e.g. for other policy purposes; and
- A section outlining that not only assessment data should be public, but also any software code and scripts that are developed for performing the assessment.

## Action requested

The Meeting is invited to take note of the updated Data and Information Strategy to be submitted for adoption by HELCOM 40-2019.

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## **DRAFT HELCOM Data and Information Strategy**

### **0. Scope of the Strategy**

**The HELCOM Data and Information Strategy applies to data stemming from HELCOM Monitoring activities.**

#### **1. Principles**

1.1 The HELCOM data and information activities should make possible reliable assessment as described in the HELCOM Assessment system.

1.2 The HELCOM data and information activities should be based on open data and facilitate access of the general public to environmental information by enshrining basic principles such as:

- a) 'collect data once and use them for many purposes',
- b) 'data should be interoperable, accessible and free of restrictions on use' and
- c) 'data should be quality assured by the provider, quality controlled and quality flagged'

1.3 In order to avoid duplication of reporting by the HELCOM Contracting Parties the HELCOM data activities should be compatible with those of other international organizations such as ICES and data reporting activities of the European Union, to the fullest extent possible.

1.4 Basic activities in the HELCOM data management system should include:

- a) using commonly agreed formats and up-to-date tools for data exchange;
- b) implementing relevant quality control and validation procedures;
- c) making data and information available using harmonized standards and practices, following relevant international standards and practices, e.g. the Aarhus Convention and recommendations and guidelines and standards reflected in the INSPIRE directive,
- d) presenting data and information in suitable ways for indicator reports as well as thematic and holistic assessments to support policy formulation and decision-making.

#### **2. Collection of data**

2.1 HELCOM data and information system rely on data derived from publicly funded monitoring programmes carried out by Contracting Parties according to practices outlined in HELCOM Monitoring Manual. The Contracting Parties may also make available data collected by volunteer or private bodies, e.g. compliance monitoring related to environmental permitting.

2.2 HELCOM follows and influences relevant international marine-related monitoring and assessment programmes and data sharing and management initiatives at regional, European, and global levels and aims to avoid any duplication of data reporting and collection.

2.3 HELCOM contributes with its data and information system to availability and accessibility of high-quality spatial information relevant to Maritime Spatial Planning on status of the marine environment, pressures and human activities.

2.4. In order to automate the process of data flows, data harvesting or data service based reporting of data should be favored, when feasible.

### 3. Hosting of HELCOM databases

3.1 The HELCOM databases will be handled by the HELCOM Secretariat or by data centre(s), preferably thematic data centres, working in cooperation with national data providers and on contractual agreement with HELCOM. The data centres will be responsible for ensuring that

- a) adequate data exchange formats, data handling and access procedures are prepared and updated, as necessary,
- b) relevant quality control and validation procedures are in place including quality flagging of data,
- c) adequate inventories and compilations are prepared of the data sets, and
- d) HELCOM data product requirements are met.
- e) Resulting harmonized datasets and/or data products are made publicly accessible in agreed format

3.2 The role of national institutions as data providers, and capacity building at the national level should be given a priority attention.

### 4. Access to data and data products

4.1 All HELCOM monitoring data should be openly accessible online via web services or downloading functionality using common standards and ensuring that relevant quality control and validation procedures have been implemented to published datasets.

4.2 Access to data and data products is done using following tools/services:

- Thematic databases (observations/measurements) made available by data host or HELCOM Secretariat

- [HELCOM Map and Data service](#) for viewing spatial datasets and data products resulting from HELCOM assessments

- [HELCOM Metadata catalogue](#) for searching and downloading spatial datasets and data products resulting from HELCOM assessments

4.3 Thematic datasets will be made publicly available according to the format and data model as described by relevant HELCOM Group

4.4 Pointwise observation data or data containing sensitive information may need to be aggregated (e.g. by gridding to a standard grid) for publication.

4.5 Spatial datasets and data products made available in HELCOM Map and Data service and HELCOM Metadata catalogue will be made available according to following standards:

- Metadata records: INSPIRE (ISO 19115) compliant metadata record for each dataset and data service, enabling persistent URL reference to a metadata record

- Accessibility of metadata: Metadata records are served via INSPIRE compliant platform (CSW), which can be connected national, European or International metadata harvesting systems.

- View service: INSPIRE (OGC WMS) compliant view service as well as ArcGIS REST interface

- Download service: Direct download for each dataset / data product as zipped file package in respective metadata record enabling persistent URL reference to downloadable dataset

## 5. Data use policy

5.1 All monitoring data reported to a HELCOM database will be made publicly available as open data after quality assurance have been performed.

5.2 All monitoring data reported to a HELCOM database should be referred to as a HELCOM dataset. The metadata of each record should contain information on data originating institute/organization.

5.3 For each spatial dataset or data product originating from HELCOM monitoring and assessment activities, the data use conditions should be according to CC-BY license in order to allow copying, distributing, displaying and performing work on the data, given that the original HELCOM dataset is referenced as source.

5.4 For each spatial dataset and data product, data use conditions/restrictions are spelled out in the metadata record of the dataset.

## 6. Sharing of software developed for HELCOM data activities

6.1 HELCOM strive that for all software products (such as data processing scripts, data sharing tools) developed by HELCOM Secretariat for HELCOM assessment data processing or solutions for making data available, the used source code will be made available using [HELCOM Secretariat GitHub account](#)

6.2 All software products developed by HELCOM Secretariat will be licensed under GNU General Public License in order to guarantee freedom to share and change all versions of the developed software products to make sure it remains free software.