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Agenda Item	5 – Further development of HELCOM eutrophication assessment methodology (WP3)
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Background

The EUTRO-OPER project has been tasked to continue to improve the quality of the existing eutrophication status core indicators, filling in gaps identified in the present eutrophication indicator coreset through development of new indicators. EUTRO-OPER -2014 agreed to begin development of six potential core indicators: Total nitrogen, total phosphorus, nutrient ratios, oxygen consumption, spring bloom based on chlorophyll-*a* and cyanobacterial surface accumulations. EUTRO-OPER 4-2015 omitted nutrient ratios from the list, and was of the opinion that the nutrient and phytoplankton indicators were at a stage to be proposed as core indicators.

HELCOM STATE&CONSERVATION 2-2015 conducted a technical review on the presented indicators, and proposed their endorsement as PRE-CORE indicators. The meeting was of the opinion that further development was needed before including them among CORE indicators, taking note of a study reservation made by Germany.

HELCOM GEAR 11-2015 supported the proposal of STATE&CONSERVATION.

On 10-11 June HELCOM HOD 48-2015 will make a decision on the endorsement of new indicators.

Action required

The Meeting is requested to take note of the information.

Technical endorsement of new eutrophication indicators

HELCOM STATE&CONSERVATION 2-2015 proposed to introduce the four indicators to pre-core status, with the following comments. See Annex 1 for explanation of indicator status definitions.

1) Total nitrogen and 2) phosphorus concentrations

The Meeting welcomed the development of indicators on total concentration of nitrogen and phosphorus and agreed that they should be shifted in category to pre-core indicator and proposed that they will be considered for shift to core indicators when GES-boundaries are presented.

The Meeting recommended that the indicator should be based on means of annual concentration of total N and P for open sea waters while in coastal water both summer and annual means could be considered.

3) Cyanobacterial surface accumulations

The Meeting agreed to a shift in category to pre-core indicator noting the view of Sweden that further consideration is needed e.g. to clarify the role of nutrients as drivers of cyanobacterial surface accumulations, and the reservation from Germany regarding the current uncertainly if the indicator will be applicable in western parts of the Baltic Sea.

The Meeting noted that Finland will be able to supply processed EO-data for the indicator for the entire HELCOM area and that the data flow arrangement developed through EUTRO-OPER will allow data to be included into the eutrophication assessment data flow, which is under preparation by EUTRO-OPER.

The Meeting found it important to develop the indicator to the direction of including more than only bloom events, e.g. adding cyanobacteria biomass information as a new parameter to the indicator. The Meeting welcomed the proposal of EUTRO-OPER and the PEG group to investigate the possibilities.

4) Phytoplankton spring bloom intensity based on chl-a

The Meeting agreed to a shift in category to pre-core indicator noting the reservation from Germany regarding the current uncertainly if the indicator will be applicable in western parts of the Baltic Sea.

The Meeting noted that this indicator has a role in expressing eutrophication, through being able to detect the spring bloom, which in many sub-basins dominates the annual succession of phytoplankton in terms of biomass. The Meeting noted the question raised by Germany whether this indicator is really essential for eutrophication assessment or should rather be continued as Baltic Sea Environmental Fact Sheet.

The eutrophication core indicators published on-line in 2014 can be viewed as examples (e.g. DIN: http://helcom.fi/baltic-sea-trends/eutrophication/indicators/nutrients-nitrogen/).

Annex 1. HELCOM indicator definitions

Core indicator

Core indicators are commonly agreed indicators among the HELCOM Contracting Parties. A core indicator measures the progress towards a BSAP objective and/or an MSFD criteria. A core indicator describes a scientifically sound phenomenon and is based on measurements, observations or validated models. Core indicators are Baltic wide whenever ecologically relevant, and the area of applicability is expressed through HELCOM assessment units.

Core indicators are either state- or pressure indicators. Pressure core indicators measure an anthropogenic pressure directly, and measure the progress towards an environmental target. State core indicators measure the progress towards a GES-boundary. The environmental target and/or the GES-boundary are described in detail in an operational core indicator, as well as the assessment methods and rationale. State core indicators are indirectly linked to anthropogenic pressures, and the link is described either qualitatively or quantitatively as appropriate.

Operational core indicators are to be regularly updated by CP's through agreed long-term data handling arrangements and the updated result is published on the HELCOM web-page. The aim is that the parameters required for the core indicators are monitored by all Contracting Parties when ecologically relevant, through HELCOM coordinated monitoring that will be described through the HELCOM Monitoring Manual.

Pre-core indicator

Pre-core indicators have been identified as necessary by the HELCOM Contracting Parties for BSAP and MSFD purposes. The indicator has not been adopted as a core indicator e.g. because some aspects of the indicator may be under-developed and/or agreement on the indicator among the CP's may be intermediate. Contracting Parties should aim to monitor the parameters relevant for the pre-core indicator, with the understanding that the pre-core indicators can be based on compilations of data from sources other than coordinated HELCOM monitoring data.

Candidate indicator

Candidate indicators include indicators on which there is not yet a common understanding on the concept but a need for the indicator has been identified to cover gaps in the requirements of the BSAP or the MSFD. The stage of development of the content of the indicator is completely or severely lacking and/or there is no common agreement on the indicator among the CP’s. The candidate indicator list is a living document.