

BOOS Annual meeting

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New monitoring and assessment activities of HELCOM and the possible role of BOOS in the operational processes

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BOOS has a perfect possibility to show its excellence in coordinating operational monitoring activities in the Baltic Sea and making operational environmental products to HELCOM as a customer.

HELCOM Assessment procedures

Assessment procedures of HELCOM are changing from compilation of comprehensive periodic assessments towards an operational process. HELCOM MONAS has defined a core set of 'indicators' which are based on variables in the COMBINE Monitoring Programme. An indicator should be simple and understandable also to the public and it should indicate main problems of the Baltic Sea environment or natural background forcing.

Based on data on indicators in the HELCOM Database (at ICES) and additional data/information, a series of indicator reports will be produced. The indicator reports contain easy graphics and explanatory text. According to the present plans of HELCOM MONAS, the indicator reports will be produced and updated annually. The indicator reports will be published mainly in the Internet, at the HELCOM's website.

HELCOM is also developing its web based environmental information system to include more frequently (daily-weekly-monthly) updated information on the state of the Baltic Sea marine environment. This system should be based on active network of operational institutes.

A tentative list of indicators covering the coastal and open sea, defined by HELCOM MONAS 3/2001, is attached to this document (*Attachment 1*).

The seventh meeting of the Heads of Delegation requested HELCOM MONAS to elaborate material for a short periodic assessment covering the years 1999-2002 based on the indicator reports decided by HELCOM MONAS 3/2001. HOD 7/2002 further requested the Secretariat to compile the information to a popular version to be finalized in due time before the Ministerial Meeting in 2003. A list of tentative items for this assessment has been compiled by the Secretariat as contained in *Attachment 2* to this document.

GEF Baltic Sea Regional Project

Within the framework of the Joint Comprehensive Environmental Action Program for the Baltic Sea (JCP), the Governments of the recipient countries requested Global Environment Facility (GEF) assistance through UNDP and the World Bank for a regional project to support the objectives of the JCP. The Project preparation is supported by the GEF Block B Grant, which commenced February 2000. A brief project description is in *Attachment 3*.

The BSRP Core Group is composed of members from the commissions, ICES, IBSFC, and HELCOM, which will execute the project on behalf of the recipient countries, with assistance from UNDP, the World Bank, Baltic21, NOAA, and WWF. The Core Group has now developed the framework and required documentation. The budget for the BSRP for the period 2002 - 2007 will be 40 million US\$ of which the GEF contribution will be 18 million US\$. During its March 2001 meeting the GEF approved the project and their financial support. The Core Group

is now securing additional funds and the first 2-years period of project will start during the second half of 2002.

Most of the institutes in BOOS are the same which are collecting data and compiling assessment products for HELCOM and ICES. Under the framework of BOOS, the operational procedure from sampling to indicator reports and other assessment products could be rendered more effective.

Most of the BSRP activities listed in *Attachment 4*, contain elements that are of high relevance and common interests for both HELCOM/BSRP and BOOS. However, activities number 4, 5 and 11 may be of highest priority to coordinate and start cooperation on.

The Annual BOOS Meeting is invited to consider an active role in the above above-mentioned process, e.g.

- **To coordinate part of the operational data acquisition, indicator production and information compilation,**
- **To plan, test and produce relevant indicators to cover various temporal and spatial scales,**
- **To actively participate in the HELCOM Information Network.**

Representatives from the [Alq@line](#) at the FIMR (during the BOOS meeting) and/or the authors will be able to present detailed information and documents regarding the BSRP in general and specifically of the tree mentioned activities.

We are looking forward to receiving your possible reactions and general comments.

Indicators decided by HELCOM MONAS 3/2001

HELCOM MONAS 3/2001 noted that the long term monitoring in the Baltic Sea provides a good basis for HELCOM to prepare products, which have sound scientific basis and thus good quality. The work should be organized in such a way that duplication of efforts is avoided and various products/reports can be utilized for the periodic assessments as well. The Meeting noted that when selecting the parameters/indicators one should be realistic and to start with few carefully selected ones and later on when some more experience has been gained the set of parameters could be reconsidered and expanded.

The Meeting decided to include the following indicators to be tested in 2002 covering indicators for 1. Eutrophication Eutrophication, and 2. Contaminants.

1. Indicators for eutrophication

In general, for each indicator time series plots will be presented. Figures will be given for six sub-basins of the Baltic Sea.

1.1. Nutrients

1.1.1. Sea

- Surface winter concentrations of inorganic $\text{NO}_3 + \text{NO}_2$ and PO_4
- Contracting Parties to select the representative stations, which they consider important and from which they will be able to submit the necessary data. The information on stations should be included in the discussion database by 30 November 2001.
- Contracting Parties to forward data (whole time series or update until 2001) to ICES not later than 1 May 2002. The whole time series will be presented, but for later stages statistical analyses should start from a common basic year (e.g. 1986/decided averages 1991 – 2000, 1981 - 1990).
- ICES together with Denmark will elaborate the indicators before the MONAS meeting in autumn 2002

1.1.2. Riverine and direct load

- Total N and total P and discharge (run-off); time series until 2000
- The total bars are divided in inorganic and organic part
- The data will be included in the PLC-4 database (SYKE) during spring 2002
- The PLC-4 project group together with the PLC-water consultant (SYKE) will elaborate the indicators during a project group meeting in May 2002

1.1.3. Airborne load

- Time series of sum of calculated nitrogen deposition (reduced and oxidized) from 1996 to 2000
- The EMEP-centres hold the data
- EMEP centres will provide preliminary data with a brief explanatory text

1.1.4. Chlorophyll:

- Summer mean chlorophyll concentrations defined as the mean of July-August measurements.
- Chlorophyll should be given for the same representative stations as nutrients
- Same data delivery and data processing procedures as for nutrients should be applied
- It should be considered to include ships-of-opportunity data (Finland and Estonia)
- Further the possibility to include remote sensing data from Stockholm University on the occurrence and extent of (?) cyanobacteria blooms should be investigated (Sweden).

- Chlorophyll composites (monthly means, spring/summer, 1998 – 2000) derived from satellite data should be included (EC/JRC).

1.1.5. Oxygen

- It is proposed that ICES together with Denmark and Sweden look for possibilities for developing a robust oxygen indicator in relation to eutrophication. Other Contracting Parties are welcomed to participate in this work. Oxygen measurements are already submitted to ICES. A proposal should be presented to the next meeting of HELCOM MONAS.

1.1.6. Phytobenthos

- Changes in depth range and distribution of Bladder wrack (*Fucus vesiculosus*) and Eel grass (*Zostera marina*).
- Responsible country suggestion: Estonia and Denmark

1.2. Deadlines proposed by HELCOM MONAS 3/2001

- the reports should be presented at the MONAS meeting in the autumn 2002
- delivery of data to ICES, according to the report, deadline February 2003
- data processing and report drafting by ICES, deadline June 2003
- finalizing of the report by HELCOM experts, deadline Sept. 2003
- approval by HELCOM MONAS in the autumn 2003.

1.3. Hydrographic background forcing

1.3.1. Riverine runoff

- For the 6 sub-basins of the Baltic Sea
- For the year 2001
- Compared with the long time series
- Responsible institute is SMHI,
- The deadline for the indicator is 15 September 2002.

1.3.2. Sea surface temperature

- For the Baltic Sea
- Maps showing anomalies; winter, summer
- Data and information via BOOS-channels
- Responsible institute is SMHI, and
- The deadline for the indicator is 15 September 2002.

1.3.3. Water exchange with the North Sea

- Budget via the sills
- Effects in the deep basins
- Responsible institute is Baltic Sea Research Institute (BSRI/IOW), and
- The deadline for the indicator is 15 September 2002.

2. Indicators concerning contamination

For all contaminants time series are presented on maps for the six sub-basins of the Baltic Sea.

The following details and timetables were agreed:

2.1. Waterborne inputs

- Hg, Pb and Cd (t/year)
- Time series for the period 1994-2000
- The data for the year 2000 will be included in the PLC-4 database (SYKE) during spring 2002
- The PLC-4 project group together with the PLC-water consultant (SYKE) will elaborate the indicators during a project group meeting in May 2002

2.2. Atmospheric deposition

- Hg, Pb, Cd and lindane deposition (t/year; based on model calculations)
- Time series from the period 1996-2000 for metals and 1970-1998 for lindane
- For lindane both deposition and re-emission (e.g. as staged bars) will be presented
- EMEP/MSC-E and EMEP/CCC will provide the HELCOM Secretariat with preliminary data together with a brief explanatory text by 10 August 2002

2.3. Concentration in biota

- Hg, Pb, Cd, lindane and CBs (7 congeners) in Baltic herring
- Time series from the period 198x-2000
- 2000 data submitted to ICES by 1 September 2001
- Data processed by ICES and figures included in the HELCOM database by the end of June 2002; report drafting by HELCOM experts by 1 August 2002

Tentative topics to be covered in the Public Version of Assessment “State of the Baltic Sea Marine Environment in 1999-2002”

1. Hydrographic background

1.1. Freshwater inflow/Riverine runoff

- For the six sub-basins of the Baltic Sea
- Time series up to 2001
- Responsible institute: SMHI

1.2. Water exchange between the Baltic Sea and the North Sea

- Major events, effects to the overall salinity
- Responsible institute: IOW

1.3. Stratification of waters

- Temperature, salinity
- Oxygen in the deep basins
- Responsible institutes: SMHI, FIMR

2. Eutrophication

2.1. Airborne load of nutrients

- Time series of nitrogen deposition covering the period up to 2000
- Responsible institute: EMEP Centres

2.2. Riverine and direct load of nutrients

- Time series of runoff of total nitrogen and phosphorus up to 2000
- Responsible institute: PLC-4 Project Group and SYKE

2.3. Nutrient concentrations

- Regional distribution of winter surface concentrations of $\text{NO}_3+\text{NO}_2\text{-N}$ and $\text{PO}_4\text{-P}$ (map)
- Time series of surface winter concentrations of $\text{NO}_3+\text{NO}_2\text{-N}$ and $\text{PO}_4\text{-P}$ at representative stations
- Responsible institute: ICES

2.4. Phytoplankton

2.4.1. Biomass distribution

- Summer mean (July-August) concentrations at representative stations
- Responsible institute: ICES
- Spring bloom concentrations/summer concentrations using the ship-of-opportunity data
- Responsible institutes: EMI and FIMR

2.4.2. Blue-green algal blooms

- Satellite images showing the distribution of surface accumulations
- Responsible institutes: JRC and SYKE

2.4.3. Change in blue-green algal abundance

- Time series of *Nodularia* and *Aphanizomenon* abundance in the main basins
- Responsible institute: FIMR

2.5. Benthic animals

- Dead bottoms

- Time series of biomass at selected stations
- Responsible institute: FIMR

3. Harmful substances

3.1. Oil spills

- Maps of annual oil spills
- Responsible institute: BSH

3.2. Atmospheric deposition

- Hg, Pb, Cd and lindane deposition up to 2000 [Co, Zn]
- Responsible institute: EMEP Centres

3.3. Riverine and direct load

- Hg, Pb, Cd inputs up to 2000 [Co, Zn, organic contaminants]
- Responsible institute: SYKE

3.4. Concentrations in biota

- Hg, Pb, Cd, lindane and CBs in Baltic Herring [Co, Zn, organic contaminants]
- Time series covering the sub-basins up to 2000
- Responsible institute: ICES
- Dioxins in fish
- Responsible institute: ICES

3.5. Selected hazardous substances

- Pesticides listed in Recommendation 19/5
- Legal status of selected pesticides up to 2000/2001
- Responsible institute: HELCOM Project Team on Hazardous Substances

4. Maritime transport

- Increase in transport up to 2001
- Ship accidents
- Implementation of the Baltic Strategy
- Adequacy of response capacity
- Responsible institute: Secretariat

5. Nature conservation and biodiversity

- Seal populations
- Harbour porpoises
- Wild salmon
- Commercial fish stock
- Responsible institute: ICES

6. Other possible topics

Time schedule

The decision by HOD 7/2002 reflects to the time schedule for the preparation of the indicator reports in order to make the Final Report ready in due time before the HELCOM 24/2003 Ministerial Meeting in June 2003.

The Secretariat proposes the following schedule:

1. April 2002: the first examples for the indicator reports should be presented in the MONAS Discussion Database
2. June 2002: the draft indicator reports should be presented in the MONAS Discussion Database

3. October 2002: HELCOM MONAS 4/2002 to consider and accept the indicator reports
4. January 2003: Update of indicator reports according to data availability
5. March 2003: Draft Report to HELCOM 24/2003
6. March 2003: Adoption of the Draft Report
7. May 2003: Final Report "Environment of the Baltic Sea Area 2000/2001"
8. June 2003: HELCOM 24/2004.

The first example indicator reports do not have to be based on real data. The purpose is just to define the type of graphs, maps, tables etc. to be used in the final reports. The draft reports should be based on real data that is available at the time of production. MONAS 4/2002 should adopt the indicator report templates and results.

GEF Baltic Sea Regional Project

HELCOM/IBSFC/ICES

Recipient Countries: Estonia, Latvia, Lithuania, Poland, and Russian Federation

Chair/Coordinator: Jan Thulin

Background. Continued degradation of the Baltic Sea ecosystem has affected the water quality, modified the biodiversity of the ecosystem, and impacted regional fisheries. The Baltic Sea is now an ecosystem under extreme stress. In response to this situation, the littoral countries initiated a Joint Comprehensive Environmental Action Program for the Baltic Sea (JCP). The JCP, as adopted in 1992, strengthened and updated in 1998, constitutes a "Strategic Action Plan" for the Baltic Sea region. It provides an environmental management framework for long-term restoration of the ecological balance of the Baltic Sea ecosystem through a series of preventive and curative actions to be undertaken in phased manner in the region. Within this framework, the Governments of the recipient countries requested Global Environment Facility (GEF) assistance through UNDP and the World Bank for a regional project to support the objectives of the JCP.

The Project. The objective of the GEF Baltic Sea Regional Project (BSRP) is to introduce ecosystem-based assessments to strengthen the management of Baltic Sea coastal and marine environments through regional cooperation and targeted, transboundary marine and watershed activities, with a view to reducing impacts from non-point sources of pollution and to increasing sustainable biological production. The proposed Project supports the JCP and provides linkages with country activities. It is consistent with GEF global environmental policy to contribute significantly to "reducing stress to [the] international waters environment" by integrating sound land and water resource management strategies through a more favourable political and regulatory climate and activities that promote sustainable development. The Project's long-term goal is for the three international commissions- HELCOM (the Helsinki Commission), the International Baltic Sea Fishery Commission (IBSFC), and the International Council for Exploration of the Sea (ICES)-to utilize project-developed management tools for sustainable ecosystem management, and to contribute to the improvements in the social and economic benefits of the ecosystem to the coastal fishing and farming communities in the recipient countries.

Project Components. The Project has four major components and will be implemented as an integrated activity coordinated by HELCOM, as the principal executing agency:

The first Component, named Baltic Sea Large Marine Ecosystem Activities, will be managed by ICES and aims to enable (or facilitate) the following activities: ecosystem-based assessments and management for the Baltic Sea; coordination and integration of the regional monitoring and assessment capacity; improved management practices to increase and sustain fishery yields and biological productivity of the BSLME; in the long term, improvement of the Baltic marine environment as well as the economic benefits and standard of living of the fishing and coastal communities.

The second Component, named Land and Coastal Management Activities, will be managed by HELCOM in conjunction with the Swedish University of Agricultural Sciences (SLU), and aims to: increase awareness of environmental issues related to agriculture among farmers and communities; invest in and implement environmentally responsible farm management practices; undertake demonstration coastal zone management activities in priority areas linked with the activities for agriculture; in the long term, improve the economic welfare and standard of living within the farming and coastal communities while reducing non-point source agricultural impacts.

The third Component, named Institutional Strengthening and Capacity Building, is managed by HELCOM in cooperation with ICES and IBSFC and aims to: improve the valuation of ecosystem goods and services; strengthen local and regional decision-making and management capacity; achieve a more integrated approach to ecosystem-based management of the BSLME

The fourth Component, named Project Management, is managed by HELCOM in cooperation with ICES and IBSFC and aims to: successfully implement the BSRP to achieve the stated development objective; provide support for the project management; fulfill accounting, auditing and reporting requirements; perform project monitoring and evaluation for report to the World Bank;

Strengthened regional management and technical capacity will provide a series of beneficial outcomes, not only at the regional level, but also at the national and local levels, and will contribute to sustainable management of the Baltic Sea ecosystem.

Objectives of the Global Environment Facility / Baltic Sea Regional Project (BSRP)

GEF Baltic Sea Regional Project (BSRP) is a joint HELCOM/IBSFC/ICES project with HELCOM as the executing agency. The over all objectives of the project are to:

- (a) introduce ecosystem-based assessments and management for the Baltic Sea;
- (b) coordinate and integrate the regional monitoring and assessment capacity;
- (c) improve management practices to increase and sustain fishery yields and biological productivity of the Baltic Sea Large Marine Ecosystem (LME); and
- (d) in the long-term, improve both the marine ecosystem and the economic benefits and standard of living of the fishing and coastal communities.

The objectives of the LME component of the BSRP are as follows:

1. Strengthen institutional and technical capacity thereby improving national and standardized regional cooperation and coordination.
2. Expand the geographic coverage and improve the integration of open sea and near shore activities in the eastern Baltic Sea to fill the gaps in the current ICES monitoring network for both fisheries and environmental conditions, as mandated by ICES and HELCOM
3. Provide a tested set of indicators for assessing ecosystem recoveries related to improved agricultural practices.
4. Improve the quality of temporal and spatial coverage of hydrography and productivity monitoring and assessment of plankton especially in relation to fish.
5. In a cost effective way monitor and assess changes in the plankton communities and of environmental parameters by the use of Ships of Opportunity.
6. Support and coordinate simultaneous acoustic fish stock assessment surveys in the near shore (cutters) and open sea (research vessels) areas.
7. Conduct demonstration activities to encourage further habitat restoration for migrating fish and integrated management of coastal lagoons.
8. Implement some of the recommendations in the IBSFC Salmon Action Plan.
9. Enhance the local assessment capacity through improved technical resources and capacity building.
10. Introduce and operationalize a Baltic Sea Multiple Marine Ecological Disturbances (MMED) system.
11. Contribute to the development of integrated models for environmental and fisheries management to support local authorities decision making capacity for integrated coastal resource management.
12. Evaluate the socio-economic implications of reduced eutrophication in near shore habitats.
13. Develop the use of innovative methodologies for land-coastal-and open sea assessments to promote sustainable ecosystem based management actions to improve the economic benefits from the living marine resources of the Baltic Sea LME.
14. Promote alternative use of Baltic marine products for human consumption.

