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Working Group on the State of the Environment and Nature
Conservation

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Background

This document contains the draft updated Terms of References and Work Plan (Annex 1) for the HELCOM-Baltic Earth Expert Network on Climate Change (EN CLIME) for 2022-2024. The draft ToR and WP have been reviewed and revised by the ninth meeting of the Expert network, held on 9 September 2021.

Action requested

The Meeting is invited to approve the draft updated Terms of Reference and Work Plan of EN CLIME.

ToRs for Joint HELCOM/Baltic Earth Expert Network on Climate Change (EN CLIME)

Background

HELCOM and Baltic Earth joined forces in late 2018 through the establishment of a climate change network (EN CLIME), which encompasses scientists from a vast field of disciplines related to climate change in the Baltic Sea area. The network produced the first Climate Change Fact Sheet summarizing recent research on climate change impacts on the Baltic Sea, published in 2021. The Climate Change Fact Sheet is the first publication of iterative reports, and the planned interval for publishing the Fact Sheets is about seven years.

Prior to the establishment of EN CLIME, HELCOM released two major thematic climate change assessments in cooperation with Baltic Earth (formerly called BALTEX): the first in 2007 followed by one in 2013.

Characterisation of different pressures on the natural and human-shaped environment of the region, such as climate change, and synthesis of the state of scientific knowledge about their causes and impacts, has been a core goal of BALTEX in their climate change assessments (BACC I and II). BALTEX was succeeded by [Baltic Earth](#), which in turn inherited the scientific legacy and researcher network. Baltic Earth represents a new, more holistic perspective on the Baltic Sea region, encompassing processes in the atmosphere, on land and in the sea, as well as processes evoked by and feeding back on human activity.

The Baltic Earth Grand Challenges (GCs) are the central topics around which the science encompassed by Baltic Earth revolves. These topics reflect current issues which scientists feel have a strong relevance for the scope and vision of Baltic Earth. Dedicated Working Groups form the working level of the Grand Challenges focusing on the following overarching topics:

1. Salinity dynamics in the Baltic Sea
2. Land-Sea biogeochemical linkages in the Baltic Sea region
3. Natural hazards and extreme events in the Baltic Sea region
4. Sea level dynamics in the Baltic Sea
5. Regional variability of water and energy exchanges
6. Multiple drivers for regional Earth system changes

In addition, Working Groups on the “Coupled Regional Climate System Models”, “Outreach and Communication” and “Education” are in place within the organization. New Baltic Earth Grand Challenges and updates to existing ones shall be implemented in the course of 2022, while regional climate change and its impacts will remain a central topic in Baltic Earth.

Baltic Earth Assessment Reports (BEARs) are comprehensive assessment reports for the Grand Challenge topics. A special case is the publication on “Climate Change in the Baltic Sea Region: A summary”, which represents what generally is expected to be BACC III. This, however, would largely follow the format of the other BEARs, i.e., not a full book format, but a comprehensive assessment of new information on the subject since BACC II, in the format of a peer-reviewed article in a scientific journal *Earth System Dynamics*. The BEARs are expected to be published in 2021/2022.

The Baltic Earth Science Steering Group (BE SSG) and the Baltic Earth Science Advisory Board (BE SAB) have taken note of the HELCOM plans, and further participation of Baltic Earth in the proposed expert network on climate change was very much endorsed by both groups.

Following the HELCOM 2013 Ministerial decision to make the assessment of regional climate change and its implications on the Baltic Sea ecosystem a regular activity and based on the groundwork work by the State and Conservation Working Group and Baltic Earth through 2017-2018, the HELCOM HOD 55-2018 approved the proposed work process, the establishment of the Expert Network on Climate Change and its ToRs.

Purpose

The purpose of EN CLIME is to function as a coordinating framework and a platform to harness the expertise of leading scientists on both direct and indirect effects of climate change on the Baltic Sea environment, and to make this expertise available to and open up for closer dialogue with policy makers. Through this, the aim is to ensure that new scientific findings on climate change and its impacts on oceans and seas should be visible in HELCOM, as well as find their way into HELCOM decision-making and the day-to-day work.

The main goal is to condense the large body of scientific research into a form that is directly utilizable in developing HELCOM core indicators, updating and implementing the BSAP, and in preparation of future HELCOM assessments on climate change.

The Expert Network will handle the operational production and delivery of the scientific products of the dedicated work on climate change, e.g., the iterative climate change fact sheets and supporting material, as well as other tasks agreed by the HELCOM State and Conservation Working Group and the Baltic Earth Science Steering Group.

Scope

The overall scope of the group is to facilitate the regional cooperation in relation to climate change and its impacts, including transferring quality assured science to end users, and to provide clear guidance on the level of confidence in the presented information. The work can also vicariously support the identification of knowledge gaps and identification of possible future research priorities.

Benefits

The principal benefits of EN CLIME are to have:

- a) stronger links between leading partners on climate change in the region, and a recognized authoritative voice on marine climate change issues
- b) improved transfer of valuable information
- c) a clear mechanism for demonstrating organizational commitment to addressing climate change
- d) a swift transfer of research results and products between partners and to the policy level
- e) improved advice on necessary actions and measures and on how HELCOM's policies could be adapted in order to support the climate change resilience of the Baltic Sea

Objectives

The objectives of EN CLIME are to:

1. Develop concepts for scientific products as requested or identified by the HELCOM State and Conservation WG and Baltic Earth Science Steering Group
2. Oversee the production of HELCOM climate change science outputs (fact sheet; supporting material)
3. Identify, where needed, additional scientific experts who are most appropriate to provide input to the scientific evidence base for products
4. Develop ideas for the format and style of final deliverables

5. Develop briefing material for contributing authors
6. Ensure that the messages provided in the scientific products are concise and easily understandable by the intended target audience
7. Contribute to proof reading of final products
8. To collaboratively frame user requirements for the next set of regional climate projections, and ensure their usability in the policy context

Reporting

The Co-Chairs of the EN CLIME will report back to the State and Conservation Working Group and the Baltic Earth Science Steering Group on the activities of the network. For State and Conservation WG this will take the form of an agenda item at WG meetings. For all scientific products, EN CLIME will present a production plan for sign off by the State and Conservation WG and the Baltic Earth Science Steering Group. Once the production process is completed, State and Conservation WG and the Baltic Earth Science Steering Group will be requested to endorse the final products for publication.

Membership

The EN CLIME consists of representatives of HELCOM and Baltic Earth in the form of topic experts. The membership is based on nominations from both organizations.

Baltic Earth nominations primarily consist of the assigned lead authors for the Grand Challenges.

The involvement of other expertise is further explored as the work progresses. The HELCOM Secretariat together with the EN CLIME Co-Chairs evaluate the coverage of required technical expertise and communicate with the respective organisation on any additional need for expertise in the group. The aim is to ensure sufficient expertise for all tasks to be covered. The Expert Network will work in close collaboration with relevant other HELCOM Working Groups, such as Pressure and Maritime, and Expert Groups, as well as potential other partners. The network is open to Observers according to HELCOM procedures.

The EN CLIME lead authors and Co-Chairs will liaise with the outside experts for the peer review process to provide quality assurance to scientific products, ensuring they are based upon the best available science and presented in a balanced way.

The Co-Chairs of EN CLIME will commit to assisting the HELCOM and Baltic Earth Secretariats and partaking in dissemination activities.

Workplan

A separate workplan, in the form of a living document, is developed in parallel with the ToRs and Annexed to this document. The work plan is valid for a three-year period at a time. The workplan is to be subjected to review and, as appropriate, revision by the expert network.

The workplan, as well as any consequent changes to an approved workplan are to be subjected to review and approval by the HELCOM State and Conservation Working Group and the Baltic Earth Steering Group.

Validity of ToRs

The work of the group is open ended. The Terms of References were approved by the Baltic Earth Steering Group and HELCOM Heads of Delegations in 2018 [and updated in 2021].

The revised ToRs are to be subjected to review and, as appropriate, revision by the expert network, and approval by the HELCOM State and Conservation Working Group and the Baltic Earth Steering Group.

Organization of work

The network will report to and receive guidance from the State and Conservation Working Group and the Baltic Earth Science Steering Group. The EN can request inputs from the State and Conservation WG and the Baltic Earth Science Steering Group as appropriate.

The mode of work for the expert network will include correspondence and online meetings facilitated by the HELCOM Secretariat, with physical meetings taking place as needed. Sub-groups have been established and Lead Authors nominated in order to work more thematically. Co-Chairs will be elected by the members of EN-CLIME every three years. The products will be handled at HELCOM Meeting Portal workspaces dedicated to this purpose. The HELCOM Secretariat will provide administrative support to the network and will design and publish the fact sheets.

In the current plan no additional resources are foreseen to be required at the HELCOM Secretariat. This could require re-evaluation once the next iteration of the fact sheet will commence.

Annex 1. Work Plan of EN CLIME, 2022-2024

This work plan is valid for a three-year period (beginning January 2022) and is to be reviewed and revised by the network and approved by the HELCOM State and Conservation Working Group and Baltic Earth Science Steering Group.

Action	2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Annual meeting, online in February The meeting will elect co-Chairs and will have a specific workshop session for scoping needs and ideas for future work of EN CLIME												
Online HELCOM Stakeholder Conference on climate change in the Baltic Sea region in cooperation with Baltic Earth and Germany Online during week 10 in March												
Dissemination of the CCFS												
Baltic Earth Science Conference 30 May-3 June, possible side event on furthering missing parameters from the CCFS (such as Pelagic habitats, Harmful algal blooms (HABs) Pollution and hazardous substances, Ecotoxicology, Human health, Pathogens)												
Possible contribution to HELCOM work (e.g., potential MPA project, Red List work, reviewing BSAP actions related to climate change, etc.)												
Annual (thematic) meeting, physical in February sharing knowledge on recent research, mitigation and adaption measures, planning update of selected key messages etc.												
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Update of selected and preparation of additional (e.g. harmful algal blooms) key messages of the CCFS, steered by dedicated Ws												