



Multi-stakeholder dialogue/capacity building partnership event, 24-25 January 2019, UN Headquarters

“The Baltic Sea as a time machine for the future coastal ocean”

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Distinguished participants,

The Baltic Sea

I would like to start by introducing the Baltic Sea.

The Baltic Sea has some unique features. In the summer it can resemble a tropical island. While in the winter, large parts of it will be covered with ice. It is almost a land locked sea, connected to the greater ocean only with narrow straits.

Its brackish environment limits the number of species. A particular concern for the Baltic Sea is the wide and increasing distribution of areas with poor oxygen conditions.

There are no areas in the Baltic Sea that fall beyond national jurisdiction. There are nine coastal countries and some 85 million people living in the drainage area.

But the Baltic Sea is actually a small sea compared to open ocean.

Due to the natural characteristics, input of pollution will affect and become visible in the Baltic Sea much faster than for example in the Pacific Ocean.

Restoring the marine environment of the Baltic Sea is particularly challenging. Many other semi-enclosed seas and coastal areas in the world face a similar challenge.

HELCOM

HELCOM is an intergovernmental organization based on a regional treaty for the Baltic Sea environment protection – the Helsinki Convention, signed in 1974.

There are ten Contracting Parties of the Convention – nine coastal countries and the EU. HELCOM is a policy-maker, and its mandate to act covers the whole sea area and pollution sources that may influence the sea.

HELCOM cooperates with its sister organizations around the world under the umbrella of UN Environment and its Regional Seas Programme.

In the long term, the underlying success of our regional cooperation has been the willingness of the countries to consider a regional approach and the strong emphasis on the use of the best available science.

Quite recently HELCOM celebrated 40th anniversary. We in HELCOM believe life gets better after 40, as says our anniversary slogan.

Second holistic Assessment of the Baltic Sea

HELCOM “State of the Baltic Sea” report has been finalized this year. It provides a latest and holistic view of the status of the marine environment and pressures and impacts from human activities at Baltic Sea scale. It is our second integrated assessment.

The assessment relates to most of the SDG 14 targets, as well as to many water-related targets under other SDGs, and is being used to support and contribute to the preparation of the WOA II.

The report is the outcome of a large-scale collaboration among Baltic Sea countries. Over 300 national experts and managers from all coastal countries took part in the preparation of the assessment in the course of 4 years.

Some 30 core indicators with regionally agreed quantitative threshold values form the basis for the HELCOM assessment. The threshold values indicate a boundary between good and poor status. Having such quantitative threshold values made it possible to produce so called integrated assessments.

The results of integrated assessments are summarized here, for selected pressures and components of biodiversity.

The results are showing the proportion of area of the Baltic Sea (in square kilometres) covered by different assessment status categories - from not good (which is in red colour) to good (green colour). Exception is commercial fishing, where the summary is for fish stocks.

The integrated assessments show that in general the majority of ecosystem components of the Baltic Sea are still not in a healthy state.

But there are also signs of improvement in the marine environment, confirming that actions and measures do bring the desired effect, such as reduction in input of nutrients and the improvement of several seal populations.

Economic and social analyses

The report includes economic and social analyses to show the importance of the Baltic Sea marine environment to society.

The results illustrate the contribution from the use of marine waters to the economies and the impact of the state of the marine environment on the welfare of citizens

Better social and economic analysis is a missing piece of the puzzle in further integrating the marine policies and sectorial policies, and also to link implementation of different Sustainable Development Goals.

In the Baltic Sea, losses in recreational values due to the deterioration of the marine environment are estimated to be 1-2 billion euros annually.

Eutrophication if reduced, is estimated to result in annual economic benefits in the order of 4 billion euros that are spread across various sectors. These results are derived from the peer reviewed scientific articles.

Lessons learnt

I would like to offer some lessons learnt from HELCOM processes, and in particular those related to the assessment.

Policy relevance has to be a major consideration when doing the assessment. In the Baltic Sea it has been important the assessment can directly serve various requirements and policy needs the member countries have, whether stemming from regional, European or global processes.

Engagement of the coastal countries in regionally coordinated monitoring activities, data reporting and the assessment process has been very much motivated by this promise of doing the assessment once while serving many purposes.

Ensuring policy relevance requires frequent interactions between scientists and managers – in case of the Baltic Sea HELCOM provides such as policy-science interface.

Both natural scientists and environmental economists need to be engaged in the process to be able to cover all important aspects of integrated assessments.

The main challenge for reaching conclusions on whether good status has been achieved will be how to relate to the non-assessed aspects.

Continuous and incremental development of indicators and assessment methods should be foreseen.

This may result in limited comparability of results over time. The problem of moving baselines or targets can be partly alleviated by building a solid and forward looking framework for indicators and their assessments.

With time and particularly in areas where many measures will have been taken, it will no longer be sufficient to only know what the status of the marine environment is, or how much pollution has been reduced but also inform how far from a good status we are.

For the future we also have to consider how climate change will influence these issues.

Even in times when only simple indicators existed, this did not prevent taking actions and measures. Lack of knowledge and data at a given time should not be seen or become an obstacle to take action.

Regional cooperation and discussion is vital – Regional Sea Conventions and Actions Plans and other regional bodies help to translate global requirements to national implementation.

Update of the HELCOM Baltic Sea Action Plan

The assessments are produced to make an impact, to influence policy-making in a concrete way.

One has to also be prepared to immediately act and answer the questions that will follow: What are the reason for not achieving the good environmental status yet? To what extent the existing commitments have been accomplished?, and offer ideas for new solutions and further actions.

This has to be coupled with a robust follow-up system, to measure progress in short and long-term, and an increased understanding of conditions affecting reaching the environmental goals, including impacts of climate change.

The results of our assessment led to a ministerial level decision to update the HELCOM Baltic Sea Action Plan, our major programme of measures. The aim of the update of the Action Plan is to adjust actions based on the newest scientific knowledge about the ecosystems and utilizing SDGs as a framework. The update is also take the foreseen climate change impacts into account.

Baltic Sea as a time machine

Why the title “The Baltic Sea as a time machine for the future coastal ocean” for my presentation? I have borrowed it from the recent scientific paper by Thorsten Reusch and other scientists from the BONUS projects (by Reusch et al., Science Advances 2018; 4: eaar8195), and which was also used to publish an article in the Washington Post and the New York Times a couple of weeks ago concluding that the Baltic Sea offers a preview of what’s to come with global warming.

The authors argue that today the Baltic Sea ecosystem is affected by levels of warming, deoxygenation and combination of multiple pressures that mimic those expected for many coastal areas in the future.

The Baltic Sea is also one of the most intensely studied coastal area with long data series, underpinning coordinated and science based management that started already in the 70s.

Several of the detrimental trends have been reversed thanks to the cooperation.

Thus the Baltic Sea could be an example for other regions in the world to look back and study successes but also the pitfalls and challenges of coastal management.

Thank you.