

Joint BONUS-HELCOM Conference: Research and Innovation for Sustainability

6 November 2018, Park Inn by Radisson, Copenhagen Airport

The 7th BONUS Forum and the 8th HELCOM Baltic Sea Action Plan Stakeholder Conference

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On the day unanswered questions answered below:

- 6 Nov, 10:45am

What are the major weaknesses in HOLAS II? Is there a risk that the weaknesses influence policy in the wrong way?

Andrea Weiss German Environment Agency answers: HOLAS II reflects our current state of scientific knowledge. Confidence evaluations accompany the assessments and support their interpretation. Evidently, gaps in knowledge remain. It is also clear that adaptive management based on the precautionary principle benefits the marine environment by reducing pressures on marine ecosystems, and is modified when more knowledge becomes available.

- 6 Nov, 10:46am

Are HELCOM in contact with The Stockholm and The Minamata konvention om reducing The contaminant load in The Baltic

Jannica Haldin HELCOM answers: Yes, HELCOM follows work under both conventions, both through the Contracting Parties and within HELCOMs own work (e.g. investigating the intersection of Minamata with already existing HELCOM commitments).

- 6 Nov, 10:54am

What can HELCOM and OSPAR learn from each other?

Jannica Haldin HELCOM answers: There are a lot of potential connecting points across the two conventions and sharing of experiences and best practices is already ongoing for some of them. Expanding on would be beneficial for both organisations, especially on topics which both conventions are planning future work on.

Andrea Weiss German Environment Agency answers: HELCOM and OSPAR are both committed to base their assessments and management actions on best scientific knowledge of the marine environment as well as of impacts and effects of pressures thereon. Both organisations are already cooperating and exchanging knowledge on a number of topics. They are currently seeking further opportunities for closer cooperation.

- 6 Nov, 10:56am

How is climate change included in the work of OSPAR?

Andrea Weiss German Environment Agency answers: OSPAR commits in its North-East Atlantic Environment Strategy 2010-2020 to monitor and assess the nature, rate and extent of the effects of climate change and ocean acidification on the marine environment and consider appropriate ways of responding to those developments. Considerations of the impacts of climate change and ocean acidification, as well as the need for adaptation and mitigation, are to be integrated in all aspects of OSPAR work. The OSPAR Commission works with partner organisations (such as the International Council for Exploration of the Sea (ICES), the Intergovernmental Oceanographic Commission (IOC) and the Arctic Council) to enhance the knowledge on these issues. The Intermediate Assessment 2017 provides an updated overview of current knowledge on how climate change links to OSPAR pressure indicators and on climate change impacts on marine biodiversity.

• 6 Nov, 11:21am

Can you expand a bit more on what are the main challenges regarding the network of MPAs in the Baltic Sea and what are the best next steps in your opinion?

Erik Bonsdorff Åbo Akademi University answers: There are numerous aspects that would need attention, but #1 is their legal status (i.e. how do we ensure that they actually are protected, and not just marked as such), and #2 is that they really are representative, and I think there is a growing awareness of this, so that aspects such as connectedness and connectivity and true "blue corridors" are taken into account. Modelling efforts have proven to be good, and there are some recent papers indicating that science can and should play an important role when selecting and delineating MPA's.

• 6 Nov, 11:36am

Should we focus more on reducing known problems (pressures), when we know ecosystems will recover in complex ways, and be less concerned about the state we want

Erik Bonsdorff Åbo Akademi University answers: Yes, that is a nice way to put it: giving the ecosystem a real chance/opportunity to recover through its own successional pathways to the state it gradually achieves is perhaps a more realistic and eco-friendly way that forcing an entire ecosystem into a state we define based on past experience. Thanks for asking!!

• 6 Nov, 11:40am

Is the Baltic Sea an example that proves that more science and more knowledge, does not necessarily mean better management and stewardship?

Erik Bonsdorff Åbo Akademi University answers: No, I would not say so. We will always need more and better science ("better" meaning based on an increasing accumulated level of knowledge). But environmental decision-making should and can be based on current knowledge also. The Baltic Sea is in many ways in such a bad ecological state (and so many aspects of it are threatened), that governance, management and stewardship can be performed already now. The decision-making should, however, adapt to new scientific findings (e.g. the genetic finding about endemic populations of numerous species in the Baltic Sea that cannot be preplaced by importing other stocks of, say, cod). So the answer must be that science and stewardships must go and develop hand-in-hand supporting each other!

Andris Andrusaitis BONUS EEIG answers: The Baltic Sea, doubtlessly, has one of the best management and stewardship systems in the world. This is the situation because of a political commitment by the states and because of a lot of science. It is because of science that we also know that our management attempts are not always efficient and sufficient.

Monika Stankiewicz HELCOM answers: Easy (and less costly) measures have largely already been implemented (for instance to tackle eutrophication), bringing us closer but not yet resulting in achieving Good Environmental Status. The closer to the targets and GES we are, the more science is needed to understand how to go an extra mile or two.

• 6 Nov, 11:49am

Why would seaweed decline due to temperature? Seaweed is abundant in southern Europe

Kerstin Johannesson BONUS BAMBI answers: Seaweed in the Baltic Sea are genetically very different from the southern Europe and not that tolerant to high temperatures. Even inside the Baltic Sea there are genetic differences between northern and southern seaweed populations (and local adaptation) so that moving a seaweed from south to north will cause one problem (the southern population is not tolerant to the low salinity in the north) while potentially solving another (the southern population will be more tolerant to higher temperatures expected in the future). Opposite, moving from north to south will cause a problem with temperature tolerance even if salinity will decrease in the south and make the north more adapted to that physical stress. Cross-breeding southern and northern populations generating new populations that are both tolerant to higher temperatures AND lower salinity may be an active solution ("assisted evolution") if we want to go in that direction instead of risk losing seaweeds of *Fucus* in the Baltic altogether.

A parenthesis is that brown macroalgae (seaweeds) are generally not so tolerant to high temperatures (they like it cold and do best in the winter). Brown macroalgae (*Fucus*, *Laminaria* etc) are losing ground in southern Europe, for example, along the Atlantic costs of Portugal-Spain there is heavy loss of macroalgal forests - and scientists think this is due to higher water temperatures.

- 6 Nov, 11:55am

Are spatial measures (MPAs) appropriate to protect local genetic populations if threats (e.g. pollution) are not spatially confined?

Kerstin Johannesson BONUS BAMBI answers: In a way “NO” because these threats are not left outside the MPAs, however, if the MPA can protect LARGE populations of a local population by hinder exploitation, overgrazing (due to removal of predatory fish that clean away isopod grazers that may graze away the seaweed, as one example) then the population will also maintain more genetic variation and be more tolerant towards selection (mortality) in the way that there will be an increasing chance that some genetic individuals can tolerate the pollution better than others and survive. This will lead to selection to increased tolerance for the pollutant. Examples of this include a small fish in Hudson River that evolved tolerance to heavy metals because the population was large enough with enough genetic variation.

But, of course, we must try to prevent pollution of any kind along with MPA measures.

My vision is that the whole Baltic Sea becomes a MPA, and in this way we have power to also stop pollution!! Small and local MPAs is not very helpful in the sea, I agree completely! (This is something that is different from land.) However, in some situation it helps - -we have the example of cod population in the Öresund - a small area without trawling has obviously been able to protect the last healthy cod - stock in the Baltic Sea.

- 6 Nov, 12:28pm

What is a good environmental Status? Cyanobacteria Are Not all anthropogen: so do we go for Natural it Most convenient

Jannica Haldin HELCOM answers: Good environmental status is a qualitative description of the state of the sea, and it represented by the combined state of the indicators, which in turn have quantitative thresholds for when good status for each individual indicator is reached. This is why it is so important which indicators we choose to follow up on, and that they need to represent the quality of the environment on a larger scale. Overall the idea behind Good Environmental Status is clean, healthy and productive seas functioning in balance, which are ecologically and biologically diverse, and dynamic.

- 6 Nov, 12:49pm

What are good practice examples from the Baltic that you would want to share with other sea basins?

Andris Andrusaitis answers: An indicator-based assessment (i.e. we know what we wish to achieve) as well as Baltic Sea Action Plan are good examples. Also the cross border approach to maritime spatial planning (MSP).

Jannica Haldin HELCOM answers: I agree with Andris’s answer, striving to set quantitative, scientifically justifiable, targets to support a qualitative goals has shown good results. However, I might add the efficient use of projects to support the efforts of developing both indicators (and the infrastructure needed to fully utilize them) and identify targets etc. has allowed HELCOM’s work to progress well.

- 6 Nov, 12:55pm

Are scientists and policy makers paralysed by the desire for certainty, when we could already take action on the most severe problems?

Andris Andrusaitis answers: Very general philosophic question the answer is yes and no. In several issues, indeed, we need political will, however, the scientific question of how to better solve the problems always remains.

Monika Stankiewicz HELCOM answers: Indeed, in the past less scientific evidence could still be considered sufficient to take action. On the other hand, civil society has nowadays much more possibilities to play substantial role and push environmental agenda forward.

- 6 Nov, 2:11pm

Which policy instrument should be used to achieve differentiated regulation?

Jens Christian Refsgaard BONUS SOILS2SEA answers: Spatially differentiated regulation is not linked to a particular measure or policy instrument. It is rather a principle – or a strategy – to apply different measures at different spatial locations within a catchment. It could for instance imply differences between fields with respect to:

- Crop type/cropping system
- Fertilisation norm
- Constructed mini wetlands
- Application of slurry from livestock
- Etc.

If spatially differentiated regulation is used at field level (as in our study) or below, it will not be possible to make the decisions centrally in a ministry, because the necessary local scale data will not be available in government data bases. Instead, local information and data from farmers need to be utilised to make the most rational decisions. This puts requirement to actively involve farmers in some kind of co-governance in the practical implementation.

- 6 Nov, 2:16pm

Were authorities part of the consulted stakeholders in BONUS SOILS2SEA project? Just wondering about the feasibility of implementing differentiated regulation in reality

Jens Christian Refsgaard BONUS SOILS2SEA answers: Yes, authorities at different levels were involved. We had six local stakeholder workshops (two in Denmark, two in Sweden and two in Poland) in the first and third project year. Most of the participants at these workshops were farmers, but there were NGOs, other stakeholders (e.g. water works), scientists (mainly from SOILS2SEA) and local municipality officers at the workshops. Afterwards we had three regional workshops in Berlin (stakeholders from the entire Baltic Sea region), Gothenburg (mainly Swedish participants) and Olstyn (focus on Polish-Russian transboundary issues), with many participants from regional and national authorities. One of the ideas of these regional workshops were to test the feasibility of the ideas developed at the local workshops.

Regarding the feasibility of implementing differentiated regulation, I think it is fair to conclude that there was no clear unanimous answer. After recognising the potential gain it was realised that this was a new way of doing things, and that it was not straightforward to implement, but would require some changes in governance.

- 6 Nov, 2:41pm

Any plans for BONUS/HELCOM to sponsor projects associated to humans having a sustainable use of the sea, instead of more data on what is already known?

Andris Andrusaitis answers: This is exactly what BONUS is doing!

Jannica Haldin HELCOM answers: HELCOM doesn't sponsor open projects. HELCOM can take part in projects outside of the organizations or run internal work on a project basis, based on identified needs.

- 6 Nov, 3:28pm

The link between R&I and policy making is presented as key solution, but why don't we admit that 'interests' (economic, politic) should be added to the equation

Andris Andrusaitis BONUS EEIG answers: The answer to this lays in the ecosystem services approach – when we know their value to society (not always monetary), we will be able to include interests into the equation.

Monika Stankiewicz HELCOM answers: All Baltic Sea countries have agreed to implement the UN Sustainable Development Goals, so it is already widely acknowledged. There are 4 working groups consisting of sectorial ministries (shipping, agriculture, fisheries and maritime spatial planning) within HELCOM. Land-based activities need to be part of 'blue economy'.

- 6 Nov, 3:29pm

Do decision makers need scientists to produce more data or more insights on cause-effect relationships? This requires multi-disciplinary research

Jakob Granit SWAM answers: There is a key need to research the political economic governance and management frameworks in the region and at the country level to better design our institutional and policy frameworks for change. But I also understood at the conference that we need more data on ecosystem function and climate change impacts, so at the end there is a need for both basic and applied science, the latter with a focus on governance and management.

Mark Dickey-Collas ICES answers: Yes. We need more researchers that can cross disciplines and talk to society. Studies on the state of the ecosystem can be used to assess where we are, but we need to build a stronger evidence base to inform on the consequences of management action.

Jannica Haldin HELCOM answers: Both, depending on the area and/or topic. Data is needed both to substantiate future decisions and to allow for follow up of already instigated commitments, whereas insights into cause-effect relationships are very important to validate choosing one approach over another and to ensure that decision makers have a clear idea of the context of their decisions.

- 6 Nov, 3:29pm

Do we know what regional policies (e.g. On eutrophication mitigation) should look like to allow for more flexibility and local decision making?

Jens Christian Refsgaard BONUS SOILS2SEA answers: I am not sure I fully understand the question. What BONUS SOILS2SEA has worked with in relation to eutrophication mitigation is limited to nutrient loads to the sea, while we have not dealt with other aspects that may affect eutrophication. We have not dealt with regionalisation of policies, but our socio-political and ethnographic studies have shown that policies must be tailored to regional/national socio-economic/cultural/governance contexts that for historical reasons varies considerably throughout the Baltic Sea region.

With respect to flexibility and local decision making our stakeholder consultations indicate that co-governance approaches applied at a catchment /local level have the potential for building more productive working partnerships by allowing stakeholders to engage and in cooperation with government more effectively implement differentiated regulation strategies for nutrient mitigation. A key reason for this is that flexibility, where some decisions are made locally, is a prerequisite for engaging stakeholders, which again is necessary for making full use of local level data and knowledge required for fully exploiting the potential of spatially differentiated regulation.

- 6 Nov, 3:50pm

What are the not-yet-picked low hanging fruits for synergistic research/ policy in the 2 regional seas? Is it about process, or substance? Both?

Andris Andrusaitis BONUS EEIG answers: This is too big a question. I can give some examples, but do not wish to exclude others. The asker can be advised to look in the second part of the future programme outline document https://www.bonusportal.org/files/4699/BONUS_Publication_No_15.pdf