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BALTIC SEA PARLIAMENTARY CONFERENCE

Eutrophication of the Baltic Sea

BSPC 2017



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The Baltic Sea Parliamentary Conference (BSPC) was established in 1991 as a forum for political dialogue between parliamentarians from the Baltic Sea Region. BSPC aims at raising awareness and opinion on issues of current political interest and relevance for the Baltic Sea Region. It promotes and drives various initiatives and efforts to support a sustainable environmental, social and economic development of the Baltic Sea Region. It strives at enhancing the visibility of the Baltic Sea Region and its issues in a wider European context.

BSPC gathers parliamentarians from 11 national parliaments, 11 regional parliaments and 5 parliamentary organisations around the Baltic Sea. The BSPC thus constitutes a unique parliamentary bridge between all the EU- and non-EU countries of the Baltic Sea Region.

BSPC external interfaces include parliamentary, governmental, sub-regional and other organizations in the Baltic Sea Region and the Northern Dimension area, among them CBSS, HELCOM, the Northern Dimension Partnership in Health and Social Well-Being (NDPHS), the Baltic Sea Labour Forum (BSLF), the Baltic Sea States Sub-regional Cooperation (BSSSC) and the Baltic Development Forum.

BSPC shall initiate and guide political activities in the region; support and strengthen democratic institutions in the participating states; improve dialogue between governments, parliaments and civil society; strengthen the common identity of the Baltic Sea Region by means of close co-operation between national and regional parliaments on the basis of equality; and initiate and guide political activities in the Baltic Sea Region, endowing them with additional democratic legitimacy and parliamentary authority.

The political recommendations of the annual Parliamentary Conferences are expressed in a Conference Resolution adopted by consensus by the Conference. The adopted Resolution shall be submitted to the governments of the Baltic Sea Region, the CBSS and the EU, and disseminated to other relevant national, regional and local stakeholders in the Baltic Sea Region and its neighbourhood.

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1. Introduction



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After air, water is our most important resource. Yet water is wasted in unbelievable ways and seas have become our landfills. Globally, most water is used for agriculture. Water, particularly clean water, is a very political topic all over the world. Due to global warming and climate change, we may have to face a range of challenges such as drought, scarcity of fresh water, and lack of clean habitats and a healthy environment.

A clean sea is an important piece of the ecological puzzle. The Baltic Sea is one of the most vulnerable and polluted seas in the world. Eutrophication, which is mainly caused by nitrogen and phosphorus loads from land-based sources, is the main cause of the Baltic Sea's currently challenging status. We now know that the condition of the Baltic Sea involves several major challenges in addition to eutrophication. For example, climate change, toxic substances and marine litter are aggravating the problems we already have.

I have been named as the BSPC rapporteur regarding eutrophication of the Baltic Sea. From my viewpoint, this task includes:

- distributing existing information on the eutrophication of the Baltic Sea
- introducing the latest research data as a topic of discussion
- introducing the latest interaction from HELCOM meetings and other events concerning the condition of the Baltic Sea
- underlining some hot topics that should be addressed and
- presenting a few possible solutions for consideration

The status of the Baltic Sea remains alarming, despite all the strategies, programmes, commitments and funding implemented within the Baltic Sea Region since the 1980s. Much work still lies ahead of us in ensuring that our children have the opportunity to enjoy and sustainably benefit from the Baltic Sea that unites us all.

2. Background

The Baltic Sea is a young, small, stressed and sensitive ecosystem. A semi-enclosed sea and one of the largest brackish water basins in the world, it is located between Scandinavia and mainland Europe. The Baltic Sea is linked to the North Sea by a very narrow and shallow passage, which creates challenges in terms of inflows of salt water and the renewal of water masses.

The sea is critical to all coastal states located in the drainage basin. The ecological condition of the Baltic Sea affects not only our natural heritage, but also the wellbeing, livelihood and health of the 85 million people living on its shores. However, the most dramatic environmental load and pressure on the Baltic Sea are the results of human action.

From an economical viewpoint, the condition of our waters can be viewed as a market failure impacting on people's lives. Water pollution can in fact be regarded as an external cost, which requires action from the governments concerned.

2.1. Eutrophication

The most serious environmental problems affecting the Baltic Sea are the result of eutrophication. Much effort has been put into improving this situation; however, we have been unsuccessful in getting these waters back into good condition. The Baltic Sea is still affected by eutrophication, despite a decrease in the amount of phosphorus and nitrogen.

Nutrients cause eutrophication; enrichment of nutrients is leading to excessive growth of algal and plant life, and therefore eutrophication, in most of the Baltic Sea.

The two main nutrients affecting the Baltic Sea are nitrogen and phosphorus. According to HELCOM's Updated Fifth Baltic Sea Pollution load Compilation (2015), the total nutrient input in 2010 was 977,000 tons of nitrogen and 38,300 tons of phosphorus. If the numbers are adjusted to take account of inter-annual variation and meteorology effects, the inputs are lower: 802,000 tons of nitrogen

and 32,200 tons of phosphorus. The largest quantities of nutrients originate from three countries: Poland, Russia and Sweden.

2.2. Cooperation in the Baltic Sea Region

We all share this unique sea. Nine countries have a coastline on the Baltic Sea: Finland, Sweden, Russia, Estonia, Latvia, Lithuania, Poland, Germany and Denmark. The catchment area is even wider, including states such as Belarus, the Czech Republic, Norway, Slovakia and Ukraine. Overall, the Baltic Sea affects the lives of tens of millions of people.

International cooperation is vital to decreasing the eutrophication of the Baltic Sea. International documents such as the EU Marine Strategy, the Baltic Sea Action Plan of the Baltic Marine Environment Commission and the EU Strategy for the Baltic Sea Region create a framework for political decision-making regarding the Baltic Sea, and thus form a basis for activities related to improving its condition.

The Baltic Sea Action Plan (BSAP) is an ambitious programme adopted by the EU and all coastal states of the Baltic Sea in 2007. The plan aims to achieve a healthy Baltic Sea by the year 2021 and provides the basis for the work of HELCOM (the Helsinki Commission).

To achieve the joint goal, set by the coastal states, for a healthier Baltic Sea the Action Plan would have to be fully implemented on an urgent basis.

The EU Strategy for the Baltic Sea Region (EUSBSR) is an agreement between the EU member states and the Commission to deepen cooperation in the Baltic Sea region. The Strategy aims to improve cooperation between member states and to allocate funds to projects in the most beneficial manner possible. The overall goal of the Strategy is to solve the region's problems and take better advantage of existing opportunities.

The implementation of the EUSBSR is based on three objectives; 1. Save the sea, 2. Connect the region, 3. Increase prosperity. No funding has been allocated for the Strategy, but the idea is to align existing funding with the jointly agreed actions and projects. The member states are cooperating on the implementation of the plan with

the Commission, other member states, regional and local authorities, and inter-governmental and non-governmental bodies.

The European Union Marine Strategy requires that member states develop strategies to achieve a good environmental status by 2020. The aim of these strategies is to protect the marine environment and prevent any further damage caused by human activities. It underlines the need for cooperation between the countries involved. The EU Marine Strategy also requires member states to assess the environmental status of their marine waters, set targets and create a programme, which includes various measures. Evaluation and monitoring are also required.

3. Latest research data on eutrophication

We have some good news regarding the status of the Baltic Sea – but still not enough. The condition of the Baltic Sea has changed dramatically in recent decades. As the sea is semi-enclosed, it suffers from a lack of inflow of saltwater. Indeed, the inflow of nutrients is one of the main causes of the Baltic Sea's present condition. The two main nutrients affecting the sea are nitrogen and phosphorus. Enrichment by these nutrients leads to excessive growth of algal and plant life.

Nutrient inputs to the Baltic Sea have, in fact, been reduced during the last decades. According to the latest HELCOM Baltic Sea pollution load compilation (2015), the amount of nitrogen input has fallen by more than 200,000 tons and phosphorus input by 7,000 tons per year.

Eutrophication is still affecting the Baltic Sea, despite the fall in the amount of phosphorus and nitrogen. The nutrient input has not been decreasing as planned and a deterioration has occurred in the condition of three quarters of Finnish coastal waters, for example.

Agriculture is the main source of nitrogen and phosphorus that cause eutrophication. Whereas nutrient loads from urban agglomerations have been decreasing – mainly thanks to improved waste water systems – the nutrient load from agriculture has remained the same. In some countries, the nutrient load caused by agriculture has even increased.

A significant step in implementing the Baltic Sea Action Plan took the form of a decision made by the Helsinki Commission HELCOM in March 2016 when, at its Annual Meeting, HELCOM agreed to submit a proposal for a Baltic Sea Nitrogen Oxide Emission Control Area (NECA). The proposal was submitted to the International Maritime Organization IMO in autumn 2016. IMO agreed to limit Nitrogen Oxide (NO_x) emissions from ships' exhaust gases in the Baltic Sea as proposed by HELCOM countries. Since emissions from shipping cause most airborne deposition of nitrogen into the Baltic Sea, it is anticipated that NECA will lead to a significant reduction in nitrogen pollution.

As part of the EU Marine Strategy Framework Directive, EU countries are required to control the cost-efficiency of any new measures taken. It is important to note that the cost-efficiency evaluation of measures taken to end the eutrophication of the Baltic Sea may not be reasonable in some cases. This observation was made in a report examining the cost-efficiency of measures taken under the Finnish marine strategy.

Eutrophication is a major problem in the Baltic Sea and repairing the damage is a complex and time-consuming task. The results may become visible only after a long period of time. In their report, Oinonen et al point out that account should be taken of this when evaluating strategies.

3.1. HELCOM's 'State of the Baltic Sea' report

According to HELCOM's Assessment of 2010, the environmental status of the Baltic Sea can be regarded as 'impaired' in general. Although steps have been taken towards reducing the nutrient input, only one or two areas of the Baltic Sea are currently unaffected by eutrophication.

The HELCOM report also states that point-source inputs of nitrogen and phosphorus to the Baltic Sea decreased by 60 percent and 68 percent between 1990 and 2000, and total inputs of nitrogen and phosphorus were reduced by 30 percent and 45 percent between 1990 and 2006. However, atmospheric nitrogen deposition may even have increased during the same period, making the net reduction much smaller. Shipping, which is a crucial contributor to atmospheric nitrogen deposition, is increasing in the Baltic Sea.

HELCOM published the first version of its latest 'State of the Baltic Sea' report in July 2017, which provides scientific information regarding the environmental status of the Baltic Sea. Besides presenting an assessment of the current status and the pressures and impacts on the Baltic Sea marine environment, the report includes analyses of various social and economic impacts. The related data was prepared in close cooperation with Baltic Sea countries in 2015-2017. The timeline covered by the report is 2011 to 2015.

The first version of the report is now available for consultation and the final version will be published after an update in June 2018, when new and complementary data will be added.

For the HELCOM report, the eutrophication status of the Baltic Sea has been evaluated using core indicators. These core indicators are still under development and some new ones have been added since the previous status report. The indicators assessed have been divided on the basis of three criteria: nutrient levels and the direct and indirect effects of eutrophication.

The key findings of the report can be divided into three topics: 1) eutrophication, 2) hazardous substances and 3) biodiversity. In this report, I will focus only on the findings regarding the eutrophication of the Baltic Sea.

Eutrophication affects over 95 percent of the Baltic Sea region. In comparison to the previous HELCOM report, the eutrophication status has improved in two out of seventeen open-sea assessment units – whereas the situation has deteriorated in seven units.

The report shows how net inputs of nitrogen and phosphorus into the Baltic Sea sub-basins have changed over recent years. There has been a significant reduction: nitrogen inputs have decreased by 13 percent in total and phosphorus inputs have decreased by 19 percent. Most remarkable is the reduction of phosphorus in the Gulf of Finland, where a change of 50 percent occurred between 1997-2003 and 2012-2014. The only increase in net inputs to sub-basins is a 3.2 percent increase in the phosphorus load into the Gulf of Riga.

However, despite falling nutrient loads from land areas, there has been no improvement in the Baltic Sea's environmental status in general, at least not yet. Positive outcomes may take time to appear. "Although signs of improvement can be seen in some areas, the effects of past and current nutrient inputs still predominate in terms of the overall status," the report states.

According to the comprehensive report by HELCOM, the targets set in the Baltic Sea Action Plan will not be achieved on time. This is the case, despite improvements in management.

Eutrophication has a cost. The HELCOM report states that the total annual loss of benefits from eutrophication in the Baltic Sea region totals around 4,000 million euros. This shows how much the welfare of citizens living around the sea would increase if a better eutrophication status were achieved.

3.2. Special Report by the European Court of Auditors (ECA)

According to a recent Special Report by the European Court of Auditors (ECA, 2016), our work towards creating a healthier Baltic Sea lacks implementation and targeting. Actions by Member States have resulted in only limited progress and investments have not been as effective as hoped.

Between 2007 and 2013, the EU provided 4.6 billion euros in co-funding for waste water collection and treatment projects in the Member States. Funding towards agricultural development projects, including water protection programmes, totalled 9.9 billion euros.

In its report, the ECA criticises the lack of action taken by the EU Member States. Measures taken towards placing agriculture on a more sustainable basis are inadequate, given the pressure the sector is imposing on the Baltic Sea. More defined programmes and effective measures are needed. The ECA also reminds readers of the report that Member States are ultimately responsible for drawing up programmes involving the actions necessary to cleaning up their waste waters.

The ECA auditors visited Poland, Latvia and Finland, whereas questionnaires were sent to Sweden, Lithuania, Estonia, Germany and Denmark. The auditors found that, at the time of the inspection (2012), the input of nutrients was even higher in some cases than compared with the 1997-2003 average. Nitrogen inputs were high in the case of Finland, Estonia, Lithuania and Latvia.

Agriculture is still the main source of nutrient input to the Baltic Sea. A report by the European Court of Auditors (ECA) reveals that we have failed to target our measures at the most problematic areas, where the nutrient flow into the Baltic Sea is significant.

One problem lies in the inadequacy of the area identified as a nitrate vulnerable zone. Secondly, because agri-environmental schemes offer limited compensation payments to farmers, the farms causing most pollution do not apply for them.

Despite significant EU funding for waste water collection and treatment projects, the execution of the waste water directive has been delayed. The Court also notes that the European Commission has not acted firmly enough when breaches have been detected: the Commission must ensure that measures are implemented in

accordance with what has been agreed at European level, and must be ready to take legal action more quickly against non-compliant member states.

According to the ECA, EU co-funding (44 million euro between 2001 and 2014) for the waste water collection and treatment infrastructure in Russia and Belarus is cost-efficient, but implementation is slow and resources are very limited compared to what is required.

In its report, the ECA suggests that the Baltic Sea region states raise the ambition of their nutrient reduction plans and add appropriate indicators in order to achieve their targets. To improve the effectiveness of actions combating eutrophication in the Baltic Sea, the Court of Auditors makes a number of recommendations for the European Commission and Member States:

The Commission should:

- require that Member States designate the appropriate nitrate vulnerable zones
- decrease the time needed to assess compliance with the urban waste water treatment directive
- continue to promote projects aimed at reducing the flow of nutrient loads into the Baltic Sea from Russia and Belarus
- The Member States should:
 - target agri-environmental schemes and funding at areas where the nutrient flow into the Baltic Sea is significant
 - establish nitrate action programme rules based on the most recent scientific evidence
 - plan and construct their waste water infrastructure as efficiently as possible

4. Eutrophication is not the only threat to the Baltic Sea

There are a number of threats to the Baltic Sea besides eutrophication. These include oil spills, hazardous substances and chemicals, noise, overfishing, shipping and the reduction of biodiversity, all of which pose various problems and challenges to the wellbeing of the Baltic Sea.

In this report, I have decided to raise two of the main concerns which I feel the BSPC should focus on, alongside eutrophication, in its efforts to achieve a healthier Baltic Sea.

4.1. Climate change

Expert bodies such as the Finnish Environment Institute (2015) believe that global climate change is affecting the climate in the northernmost parts of the world. Unfortunately, climate change will only worsen the problems caused and threats posed by eutrophication.

Surface waters will become warmer as average temperatures rise, particularly during the summer. This will have multiple impacts, leading, for example, to further changes in the habitats and reproduction of species and organisms living in the Baltic Sea.

Another predicted consequence is an even higher amount of rainfall, particularly during the winter months. As a result, the salinity level will decrease even further, intensifying the effects of eutrophication. As the quantities of nutrients, rainfall and flooding increase and the amount of oxygen in the sea decreases, water will be “deposited”.

Global climate change will therefore significantly amplify the effects of nutrient load. Growth and the sinking of organic matter will further increase the oxygen uptake of solids, leading to the release of sediment-bound phosphorus back into the water, which will further increase eutrophication.

4.2. *Marine litter*

Eutrophication has been the main cause of the problems affecting the Baltic Sea for decades. However, it is not the only threat to the Baltic. Frustratingly, marine litter, which is an emerging environmental threat in the area, is the result of our own negligence.

Marine litter is now a very topical subject. Such litter, particularly in the form of micro plastics, was mentioned by many of the Baltic Sea area countries attending the HELCOM meeting in Helsinki in February 2017. The countries discussed matters such as whether the use of micro plastics in cosmetics should be banned in the near future. Of course, the problem is much wider than this.

We simply cannot afford to use our sea as an underwater landfill. Regardless of this, millions of tons of refuse, mainly plastic, end up in the Baltic Sea every year. According to recent research, the amount of refuse in coastal areas has increased, particularly on urban beaches. Despite this, most litter is hidden from sight on the seabed.

In rough terms, we could say that 70 percent of marine litter is lying at the bottom of the sea and only 15 percent can be found on the shores where it remains visible. Up to 80 percent of marine litter comes from land. Although rivers are the main source, in winter, for example, litter is literally poured into the sea within snow cleared from roads, which many coastal cities still dump onto the sea ice.

Marine litter is harming and endangering the ecosystem and diversity of the Baltic Sea. Marine litter – plastic refuse in particular – cause a range of problems. Plastic dumped into the oceans is broken down and smoothed into small particles which cannot be removed.

Animals living in the sea and on shorelines are affected by this in a number of ways – for example, they may become entangled in garbage and suffocate. It has been found that around 80 percent of northern fulmars living in the Northern Atlantic have plastic in their stomachs. It is not yet known what effects micro plastic and thus chemicals will have when ingested by wildlife, but they may well end up on the plates of humans eating fish.

Marine litter and micro plastics cause other problems in addition to those mentioned above. Refuse makes beaches ugly, thereby impacting on our opportunities to enjoy the nature.

To decrease the amount of litter, we need to ensure effective waste management, support good practices and consumer behaviour, and work towards decreasing the use of plastic in general.

5. Further discussion and possible solutions

5.1. Circular economy

Although eutrophication of the Baltic Sea has been widely researched, most studies of this kind have focused on the history and current situation in the Baltic Sea and had already been completed in the 90s. There would therefore seem to be a place for a future-oriented perspective on research on the Baltic Sea. Some fresh, academic, future-oriented discussion of ways to save the Baltic Sea is therefore sorely needed.

The circular economy, an economic model which involves creating added value through a smarter way of doing things, could provide an overall approach to achieving a healthier Baltic Sea. In the circular economy, the focus is on reusing materials and creating as little waste as possible, if any.

The circular economy is not about repairing damage that has already been done. Programmes and strategies would still be needed in order to reduce the eutrophication of the sea. However, the circular economy could lead to the adoption of a lifestyle that no longer causes pollution and damage.

The recently published European Commission Circular Economy package sets stricter targets for the use of natural resources and directs political decision-making towards achieving more sustainable outcomes.

One example involves recycling nutrients from agriculture for reuse, rather than burdening the environment. Happily, current government activities are also playing a major role in decreasing eutrophication caused by nutrient loading. A concrete example of this can be seen in the recycling of nutrients from agriculture.

The circular economy has huge potential to decrease eutrophication and restore trust between environmentalists and the agricultural lobby on a 'win-win' basis, which will undoubtedly facilitate further cooperation. Another important measure involves elevating the overall level of the recycling and reuse of everyday materials and products.

Expressed simply, the circular economy is a way of doing things more intelligently, which has the potential to benefit all parties when done properly. This would pave the way for an entirely new business ecosystem with the potential to create new jobs, new merchandise, wellbeing, bigger harvests and a healthier Baltic Sea.

Indeed, the circular economy has huge market potential. According to estimates by the Ellen MacArthur Foundation, on a global basis this represents an economic opportunity worth hundreds of billions dollars.

The main threats to the Baltic Sea – eutrophication and marine litter – could be tackled by adopting the circular economy in our business practices and lifestyles. What would this require from our state institutions, companies, society in general and international cooperation?

The difficulty is that effective and efficient utilisation of the circular economy requires a new way of thinking. First, we need to change the way we view materials, consumption and waste. There is a saying that fits well with the key idea underlying the circular economy; “a poor man cannot afford to buy cheap”. Natural resources will not last if we continue with our current lifestyle based on disposable goods. We should move towards maximising the utility of the materials we use, by choosing and using materials wisely and making products long-lasting.

To make the circular economy function properly, consumers must learn how (and be willing) to make sustainable purchasing decisions. Willingness to share, recycle and reuse products forms the basis of the circular economy. Education and information are needed so that everyone can participate. Recycling must be made easy for everyone on a very concrete level.

5.2. River basin management

The circular economy, recycling and better waste disposal are key elements in saving the Baltic Sea. Nutrients and litter originating on land are the key cause of the main problems; to address these issues, we must act in riverside areas in particular.

In its report of 2016, the European Court of Auditors (ECA) found several shortcomings in some of the river basin management plans audited. The report states that “The Commission and the Court have already highlighted similar weaknesses in other river basin management plans”. It also recommends that Member States become more consistent in assessing and monitoring the nutrients in river basins and nutrient inputs into the Baltic Sea. Naturally, lack of proper data is hampering evaluation of the measures’ cost-effectiveness.

Cooperation between the countries of the Baltic Sea region is important, since many of the great rivers flowing into the sea run through more than one country. According to Article 3 of the Water Framework Directive (WFD), international river basin districts must be created for river basins that cover the territory of more than one EU Member State. The International River Basin Commissions play an important role in coordinating the implementation of the Water Framework Directive.

River basin management areas play a key role in decreasing the nutrient load and marine litter in the Baltic Sea. I believe that even greater priority should be given to national and international work in the river basin areas. Successful cooperation between different countries sharing a river basin district is of particular importance, regardless whether or not the states in question are EU members.

The nitrate vulnerable zones of the river catchment areas must be more carefully identified. More attention should also be paid to gathering accurate data on the quantities of nutrients flowing into the Baltic Sea via rivers. Facts and accurate data will lie at the very heart of success in achieving the targets set in the plans for improving the status of the Baltic Sea.

There is a mutual understanding between the HELCOM states that new data and research are required on marine litter, in particular. This view was presented in numerous statements given during the Helsinki meeting of HELCOM in February 2017.

5.3. Agri-environmental schemes and funding

Agriculture is the main source of nutrient inputs to the Baltic Sea, which remain considerable despite all the plans made to decrease them.

The European Court of Auditors (ECA) report reveals that we are failing to achieve the related goals because the related measures are not targeted at the most problematic areas with respect to nutrient flows. Furthermore, the most polluting farms do not apply for agri-environmental schemes and funding, due to the limited compensation payments available. Furthermore, Member States do not penalise offenders because the 'polluter pays' principle is difficult to apply to agriculture.

On the other hand, it is critical that we view agriculture as the solution rather than the problem. Both farmers and the environment will benefit from the circular economy and nutrient recycling. Mutual and enlightened self-interest forms the best way of engaging all parties in working towards a healthier Baltic Sea.

For example, mutually beneficial actions would involve developing instruments within the agricultural support system that motivate farmers to engage in more environmental friendly production, especially in the key areas with the greatest impact on the Baltic Sea. Under this scheme, the same amount of aid would be divided in different ways to now, and be subject to authorisation. This measure would therefore affect the allocation criteria of environmental compensation, not the amount of compensation itself.

In their report, Oinonen et al. state that efforts to develop EU environmental compensation systems could have a major impact on the amount of emissions into waters. Such measures are viewed as important and cost-effective approaches to marine protection.

Information and education on the opportunities represented by regenerative agriculture modes of production would help in achieving these aims. In general, more research and innovations focusing on sustainable agriculture are needed in this regard.

5.4. More ambition is needed

HELCOM Member States have referred to the need to update the Baltic Sea Action Plan. The updating and modification of the plan would be a good idea and it would be important that HELCOM countries are ready for this.

However, there is a risk that, once the process is open, pressure will mount to modify the targets as well. In my opinion, the BSPC should take a strong stand on the current, ambitious targets – meaning that we want to ensure that the HELCOM targets will remain ambitious and sufficiently concrete when the action plan is updated and modified and that we do not settle for targets less ambitious than the current ones.

More work must be done to improve the condition of the Baltic Sea to 'good'. The objectives of the current plans and agreements must be pursued more vigorously. Implementation is the key.

The quantity of litter, waste water and nutrients coming from the land must be decreased. In this regard, cooperation in the river catchment areas is important and commonly agreed standards and strategies must be adhered to.

Education and research are making innovations and new solutions possible. Science and knowledge must lead the way in fulfilling local, national and international strategies while policy making, laws and subsidies must firmly direct us towards a more sustainable economy.

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