SYKE

VIVI FLEMING-LEHTINEN

BIODIVERSITY-RELATED REQUIREMENTS OF THE MARINE STRATEGY FRAMEWORK DIRECTIVE

IN SYNERGY WITH THE HABITATS DIRECTIVE, THE WATER FRAMEWORK DIRECTIVE, THE BIRDS DIRECTIVE, THE UN CONVENTION OF BIODIVERSITY AND THE HELCOM BSAP

VIVI FLEMING-LEHTINEN (SYKE), with contribution by EDGARS BOJĀRS (BEF-LV), KRISTĪNA VEIDEMANE (BEF-LV), ANDRÉ FETZER (BEF-LV), MERLE KURIS (BEF-EE), LAURI KLEIN (BEF-EE), LAURA REMMELGAS (BEF-EE), JOHAN NÄSLUND (AquaBiota), SANNA KUJANSUU (SYKE)

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in synergy with the Habitats Directive, the Water Framework Directive, the Birds Directive, the UN Convention of Biodiversity and the HELCOM BSAP

Disclaimer

The analysis is produced in the frame of the LIFE+ Nature & Biodiversity project "Innovative approaches for marine biodiversity monitoring and assessment of conservation status of nature values in the Baltic Sea" (Project acronym -MARMONI). The content of this publication is the sole responsibility of the Baltic Environmental Forum and can in no way be taken to reflect the views of the European Union.

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Summary

The Member States of the EU are expected to assess the biodiversity status of the marine environment of their sea-areas under the Marine Strategy Framework Directive (MSFD). This is expected to be done, at least to some extent, also by several other Community directives and policies, as well as by international marine conventions. The EU directives in synergy with the MSFD – the Habitats Directive, the Birds Directive and the Water Framework Directive – differ from the international agreements in that they are legally binding. In addition, the EU Common Fisheries Policy and the Integrated Maritime Policy set expectations on assessing the biodiversity status in the marine areas. The important international agreements related to MSFD are the UN Convention of Biodiversity and the HELCOM Baltic Sea Action Plan, of which especially the latter joins the only non-member state Russia into tight collaboration. The MSFD is overarching in the sense that it is expected to link the requirements of these laws, policies and agreements together, and support coordination of the implementation through regional sea conventions. While some of the directives are already operational within the Member States, the MSFD is only taking its first steps. This report compares the requirements of the EU and international laws and agreements and searches for synergy within. It also summarizes some of the opinions of national experts working with the implementation of these commitments in Estonia, Finland, Latvia and Sweden. The work is done under the LIFE+ project MARMONI (LIFE09 NAT/LV/000238).

Contents

1 Introduction

There is a lack of knowledge and understanding on how the integration of different EU and marine policy documents affecting the Baltic Sea will be carried out. The assessment of the good environmental status of the marine environment under the Marine Strategy Framework Directive (MSFD, Directive 2008/56/EC) is interlinked to obligations under the other directives as well as to the HELCOM monitoring and assessment strategies and practices.

This report focuses on analysing requirements in the Habitats Directive (HD), the Water Framework Directive (WFD), the Marine Strategy Framework Directive, the Birds Directive (BD), the UN Convention on Biological Diversity (CBD) and HELCOM Baltic Sea Action Plan (HELCOM BSAP) and in particular on analysing the obligations deriving from these directives and agreements concerning the assessment of the conservation status and change of the marine biodiversity in one of the EU's regional seas, the Baltic Sea. It includes comparison of the requirements, defining interlinks and possible synergies in the process of data acquisition, assessment and reporting on the conservation status. The main focus of the analysis is on the requirements of the new MSFD, which sets the overall framework for achieving the good environmental status in the marine environment, as well as implementation of the HELCOM BSAP, which may be considered as the expected approach to provide the regional implementation of the MSFD in the Baltic Sea (HELCOM 2010A).

The report has been produced within the MARMONI project Action A1.1: Analysis of the EU legal frame for reporting on marine biodiversity. The aim of the action was to compile background information on the legal framework of the EU and international legislation and policies. The work is based mainly on the legal analysis performed by the partners and expert interviews in the partner states. The action was implemented from 1st October 2010 till 30th June 2011.

The results of Action A1.1 serve other project actions (A2: Development of new set of indicators and monitoring concept for assessment of the status of marine biodiversity, A4.1: Demonstration of biodiversity assessment, A5: Assessment of monitoring results and applied methods and A6: Elaboration of policy-related outcomes) by providing background information.

2 The international laws and agreements determining reporting requirements on marine biodiversity

The directives setting requirements upon the EU member states in regards to marine biodiversity are the MSFD, the WFD, the Habitats Directive and the Birds Directive. These directives are legally binding, and thus involve legal sanctions in case of failure to meet the requirements. The member states are also targeted by EU policies: the Common Fisheries Policy and the Integrated Maritime Policy. In addition, the countries surrounding the Baltic Sea, as well as EU itself, have committed to international agreements: the UN Convention of Biodiversity and the HELCOM BSAP.

2.1 The MSFD and its relation to Community legislation and international agreements

The MSFD was enforced in July 2008. The aim of the Directive is to ensure management of the human activities affecting the environment of the European seas, with protection and use of the seas in balance. The MSFD is the first Community framework instrument aimed expressly at protecting and preserving the marine environment as a whole. Furthermore, it is the first attempt of the EU on implementing the ecosystem-based management of human activities on the marine environment. It can also be seen as evidence of effort of the Union to fulfil its commitments to international agreements regarding marine systems (Long 2011).

The MSFD requires the Member States by 2012 to develop marine strategies for their sea-areas, containing an initial assessment of the state of the environment, a definition of good environmental status (GES) and establishment of environmental indicators, targets and monitoring programmes. GES is to be achieved in 2020 (Directive 2008/56/EC).

The MSFD is set as the environmental pillar of the European Integrated Maritime Policy, which is aiming to develop the sustainable use of the seas. The directive links to a number of EU legislation and regional agreements concerning the marine environment. Of these the most firm link is to the Habitats Directive (HD, Directive 92/43/EEC) and Birds Directive (BD, Directive 2009/147/EC), through obligations concerning monitoring and marine protected areas, for example. The MSFD has also a close connection to the Water Framework Directive (WFD, Directive 2000/60/EC), having inherited for example some of its methodology and criteria for good environmental status. The European Common Fisheries Policy (CFP) on the other hand has been thought to have the potential for controversy with the MSFD through its regulatory measures on fish stocks, and is expected to become a target of additional harmonization. Aside the community legislation, the MSFD is aiming to assist the Union and the Member States in fulfilling the obligations of the UN and regional sea conventions (Long 2011).

The Directive introduces for the first time the concept of 'marine regions' and 'marine subregions', and explicitly requires the Member States to cooperate and coordinate the implementation of the Directive within marine regions, the Baltic Sea region, among others. While doing this, the regional sea conventions, such as HELCOM, should be used fully.

While the MSFD has been praised for its sophisticated and overarching nature, for bringing important concepts into the protection of the marine environment and for promoting public access to information, it has also been seen to contain weaknesses. Implementation of the MSFD is totally relied upon the Member States and the resources they make available for achieving the objectives (Long 2011). This, together with the tight schedule, and on the other hand, some normative weaknesses, flexible disclaimers and lack of distinct sanctions in the event of breach, give the Directive a notable risk of failure to be implemented according to the planned time schedule.

2.2 The Habitats Directive

The Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive) was enforced in May 1992. This is the means by which the Community meets its obligations as a signatory of the

Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The main aim of the EC Habitats Directive is to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance. In applying these measures Member States are required to take into account of economic, social and cultural requirements and regional and local characteristics.

The provisions of the Directive require Member States to introduce a range of measures including the protection of species listed in the Annexes; to undertake surveillance of habitats and species (Article 11) and produce a report every six years on the implementation of the Directive (Article 17). The first report (2001) focused on progress in legal transposition and implementation of the Directive as well as on progress in establishing the Natura 2000 network and administrative aspects. The second report (2007) included the first assessment of conservation status of species and habitats of Community interest based on best available data. The next report (due 21/06/2013) should already include the renewed assessment of conservation status, based on established monitoring system as well as the assessment of effectiveness of measures taken under the Directive.

Member States shall also report to the Commission on derogations from the provisions of Articles 12, 13, 14 and 15 (that require establishing a strict protection system for the species listed in Annex IV of the Directive) every two years (next report due 30/09/2011).

The habitat types listed in Annex I of the Directive and species listed in Annex II, are to be protected by means of a network of sites. Each Member State is required to prepare and propose a national list of sites for evaluation in order to form a European network of Sites of Community Importance (SCIs). Once adopted, these are designated by Member States as Special Areas of Conservation (SACs), and along with Special Protection Areas (SPAs) classified under the EC Birds Directive, form a network of protected areas known as Natura 2000. The information about Natura 2000 sites is updated according to the need or every six years.

The Habitats Directive introduces for the first time for protected areas, the precautionary principle, which is that projects can only be permitted having ascertained no adverse effect on the integrity of the site (Article 6). Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest. In such cases compensation measures will be necessary to ensure the overall integrity of network of sites. As a consequence of amendments to the Birds Directive these measures are to be applied to SPAs also. Member States shall also endeavour to encourage the management of features of the landscape to support the Natura 2000 network.

2.3 The Birds Directive

The Council Directive 79/409/EEC on the conservation of wild birds (the Birds Directive) was adopted by the European Community in 1979 (in response to the 1979 Bern Convention on the conservation of European habitats and species), and updated in 2009 (Council Directive 2009/147/EC). The Directive provides a framework for the conservation and management of, and human interactions with, wild birds in Europe. It sets broad objectives for a wide range of activities,

although the precise legal mechanisms for their achievement are at the discretion of each Member State.

The main provisions of the Directive include:

- The maintenance of the favourable conservation status of all wild bird species across their distributional range (Article 2) with the encouragement of various activities to that end (Article 3).
- The identification and classification of Special Protection Areas for rare or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance (Article 4). (Together with SACs designated under the Habitats Directive, SPAs form a network of pan-European protected areas known as Natura 2000.)
- The establishment of a general scheme of protection for all wild birds (Article 5).
- Restrictions on the sale and keeping of wild birds (Article 6).
- Specification of the conditions under which hunting and falconry can be undertaken (Article 7) (Huntable species are listed on Annex II.1 and Annex II.2 of the Directive).
- Prohibition of large-scale non-selective means of bird killing (Article 8).
- Procedures under which Member States may derogate from the provisions of Articles 5-8 (Article 9) — that is, the conditions under which permission may be given for otherwise prohibited activities.
- Encouragement of certain forms of relevant research (Article 10).
- Requirements to ensure that introduction of non-native birds does not threaten other biodiversity (Article 11). Member States shall forward to the Commission every three years, starting from 7 April 1981, a report on the implementation of national provisions taken under the Directive (Article 12.1). The next report is due 30/09/2011. Report on derogations under the Birds Directive (Art. 9.3) should be delivered annually (next report due 30/09/2011).

2.4 WFD

The EU Water Framework Directive was adopted and entered into force on December 22, 2000. Thus, December is a point of reference for objectives and obligations set by the Directive.

The WFD sets the broad scope for action and ambitious goals. It covers the protection of inland surface waters, transitional waters, coastal waters and groundwater. Overall, the WFD aims at achieving good water status for all waters by 2015. More specifically, EU water policy aims to:

- Prevent further deterioration of, protect and enhance the status of water resources;
- Promote sustainable water use based on long-term protection of water resources;
- Enhance, protect and improve the aquatic environment through specific measures for the progressive reduction of discharges, emissions and losses

of priority substances and the cessation or phasing-out of discharges, emissions and losses of the priority hazardous substances;

- Ensure the progressive reduction of pollution of groundwater and prevents its further pollution;
- Contribute to mitigating the effects of floods and droughts.

To achieve the set goal, the Member States shall perform a number of actions:

- Identify the individual river basins lying within their national territory and assign them to River Basin Districts (RBDs) and identify competent authorities;
- Characterise river basin districts in terms of pressures, impacts and economics of water uses, including a register of protected areas lying within the river basin district,
- Carry out, jointly and together with the European Commission, the intercalibration of the ecological status classification systems;
- Make operational the monitoring networks;
- Based on sound monitoring and the analysis of the characteristics of the river basin, identify a programme of measures for achieving cost-effectively the environmental objectives of the WFD
- Produce and publish River Basin Management Plans (RBMPs) for each RBD including the designation of heavily modified water bodies;
- Implement water pricing policies that enhance the sustainability of water resources;
- Make the measures of the programme operational;
- Implement the programmes of measures and achieve the environmental objectives.

The WFD sets categories of surface waters and their definitions. With regard to seas, coastal and transitional waters have been defined as:

- Coastal waters means surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters.
- Transitional waters are bodies of surface water in the vicinity of river mouths which are partly saline in character as a result of their proximity to coastal waters but which are substantially influenced by freshwater flows.

For management units surface waters including coastal and transitional water are split in smaller units - water bodies which are essential for management tasks. For identifying coastal and transitional water bodies, a range of factors shall be looked at and described. As the ecological characteristics of surface waters vary according to their different physical regimes, the water bodies are assigned to a physical type. In the case of coastal waters, stretches of open coast are often continuous (unless divided by transitional waters). Subdivisions may follow significant changes in substratum, topographies. When defining transitional waters the setting of boundaries between transitional waters, freshwaters and coastal waters must be ecologically relevant. Transitional waters are usually

characterised by their morphological and chemical features in relation to the size and nature of the inflowing rivers, the salinity is generally lower than in the adjacent coastal water due to substantial influence of freshwater flow. If riverine dynamics occur in a plume outside the coastline because of high and strong freshwater discharge, the transitional water may extend into the sea area. For larger rivers the influence of freshwater is likely to extend into coastal waters.

For each type, reference conditions must also be described based on biological quality elements that exist, or would exist, at high status. That is, with no or very minor disturbance from human activities. Additionally, criteria for the physico-chemical and hydromorphological quality elements at high status must also be established. The objective of setting reference condition standards is to enable the assessment of ecological quality against these standards.

The definition of the quality status for transitional waters covers five biological elements: phytoplankton, macroalgae, benthic invertebrates and fish. For coastal waters the fish is excluded as classification criteria. The quality status is defined in five classes: high, good, moderate, poor or bad. It is determined whether a quality element is affected by very minor, slight or moderate anthropogenic influences. A most critical issue in implementing the WFD will be setting the borders between the high, good and moderate classes, as this determines whether management action is necessary.

The WFD sets the requirements for water monitoring and establishing monitoring network. Depending on the purpose, different monitoring programmes (surveillance, operational or investigative) shall be set up. The Member States shall monitor parameters which are indicative of the status of each relevant quality element. In selecting parameters for biological quality elements Member States shall identify the appropriate taxonomic level required to achieve adequate confidence and precision in the classification of the quality elements. Estimates of the level of confidence and precision of the results provided by the monitoring programmes shall be given in the river basin management plan.

2.5 EU Common Fisheries Policy

In 1970, the first common fishing rules were created and came into action with the main target on free trade of fish products and the agreement that all European fishermen should have access to all waters. Later it became clear that common rules to control the exploitation of the living marine resources should be developed. The Common Fisheries Policy was born and became the law in 1983 (Fisheries ACT 1983).

Among other issues, the agreement included the conservation of fish stocks. Total allowable catch (TAC) and minimum net sizes were introduced to prevent over-fishing. Unfortunately, the implementation of the measures did not stop decline of fish stocks in European seas.

To provide constant data on fish stock and changes of marine environment, the Scientific, Technical and Economic Committee for Fisheries (STECF) was founded in 2002 (EC No.2371/2002). The STECF shall be consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations. On the basis of fish stock data provided by countries, the STECF and ICES (the International Council for the Exploration of the Sea) develop recommendations for the annual TAC. Nevertheless, it is not necessary for the EC

to strictly follow these advices. The TACs passed by the EC were still too high and exceeded the advices by up to a half.

In 2009, the EC started to implement changes on the CFP (EC No.1224/2009). Numerous new acts have been passed. The main efforts have been paid to development of a new common control system and employing inspectors. The CFP reform is planned to be passed in 2013.

Although the countries provide data on commercial fish stocks that serves development of fishing recommendations, there are no specific reporting requirements in the CFP in relation to fish biodiversity.

2.6 EU Integrated Maritime Policy

In 2006, the European Commission adopted the discussion document "Towards a future Maritime Policy for the Union: A European vision for the oceans and seas" (the so-called "Green Paper") that aimed to launch a debate about a future Maritime Policy for the EU that would treat the oceans and seas in a holistic way and secure the valuable marine resources for sustainable use. As result of this debate, "An Integrated Maritime Policy for the European Union" (the "Blue Paper") was launched in 2007.

With these acts the EU tries to counteract threats like climate change, polluting and destruction of marine ecosystems. Furthermore, it also deals with the interactions and conflicts of interest between different sectors such as maritime transport, trade, coastal established industries, off-shore installations, conventional and alternative energy production, fisheries, aquaculture, marine research, tourism, etc. and takes into account the three priorities of the Lisbon-agreements: economic growth, social welfare and environmental protection.

The main aim is to create a "dynamic and sustainable maritime economy for the 21st century and later years". However in both background papers a serious proposal towards a sustainable use of marine resource and the protection of biodiversity has not been made.

Also, the EU Integrated Maritime Policy does not pose any specific reporting requirements in relation to biodiversity.

2.7 The UN Convention on Biological Diversity

The Convention on Biological Diversity (CBD) entered into force on 29 December 1993. It has 3 main objectives:

1. The conservation of biological diversity;
2. The sustainable use of the components of biological diversity;
3. The fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

The Conference of the Parties (COP) has established seven thematic programmes of work which correspond to some of the major biomes on the planet. Each programme establishes a vision for, and basic principles to guide future work. The programmes also set out the key issues for consideration, identify potential outputs, and suggest a timetable and means for achieving these. Implementation of the work programmes depends on contributions from the Parties, the Secretariat, relevant intergovernmental and other organizations. Periodically, the COP and the Subsidiary Body on Scientific, Technical and Technological Ad-

vice (SBSTTA) review the state of implementation of the work programmes. Two of the programmes are relevant in relation to the MSFD: 'Island Biodiversity' and 'Marine and Coastal Biodiversity'.

The work programme on island biodiversity was adopted in 2006. Its aim is to reduce significantly the rate of island biodiversity loss by 2010 and beyond as a contribution to poverty alleviation and the sustainable development of islands, particularly small island developing States. The programme of work sets out almost 50 island-specific priority actions arranged under 11 goals, which are in turn organized under seven focal areas: (1) protect the components of biodiversity; (2) promote sustainable use; (3) address threats to biodiversity; (4) maintain goods and services from biodiversity to support human well-being; (5) protect traditional knowledge and practices; (6) ensure the fair and equitable sharing of benefits arising out of the use of genetic resources; (7) ensure provision of adequate resources.

Adopted in 1998, and reviewed and updated in 2004, the programme of the work on marine and coastal biodiversity focuses on integrated marine and coastal area management, marine and coastal living resources, marine and coastal protected areas, mariculture, and invasive alien species.

The road ahead for coastal areas lies in better and more effective implementation of integrated marine and coastal area management in the context of the Convention's ecosystem approach. This includes putting in place marine and coastal protected areas to promote the recovery of biodiversity and fisheries resources and controlling land-based sources of pollution. For open ocean and deep sea areas, sustainability can only be achieved through increased international cooperation to protect vulnerable habitats and species.

The Conference of the Parties to the CBD has a key role in supporting the work of the United Nations General Assembly, in regards to marine protected areas beyond national jurisdiction, by focusing on the provision of scientific and, as appropriate, technical information and advice relating to marine biological diversity, the application of the ecosystem approach and the precautionary approach, and in delivering the biodiversity targets.

National Biodiversity Strategies and Action Plans are the principal instruments for implementing the Convention at the national level (Article 6). The Convention requires countries to prepare a national biodiversity strategy (or equivalent instrument) and to ensure that this strategy is mainstreamed into the planning and activities of all those sectors whose activities can have an impact (positive and negative) on biodiversity. According to the Article 26 of the CBD, the Contracting Parties shall, at intervals determined by the Conference of the Parties, report on measures taken for the implementation of the Convention and the effectiveness of these measures.

In 2010 the Conference of the Parties adopted a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the period of 2011-2020. This new plan will be the overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system.

The Conference of the Parties also agreed to translate this overarching international framework into national biodiversity strategies and action plans within two years. Additionally, it decided that the fifth national reports, due by 31 March 2014, should focus on the implementation of the 2011-2020 Strategic

Plan and progress achieved towards the Aichi Biodiversity Targets (http://www.cbd.int/sp/targets/). Amongst others, the targets include establishing a conservation target of 10% of marine and coastal areas.

2.8 HELCOM BSAP

The HELCOM Baltic Sea Action Plan (HELCOM BSAP, HELCOM 2007) is a programme developed by the contracting parties of HELCOM to restore the good ecological /environmental status of the Baltic marine environment by 2021. As such it is an agreement between all the coastal states of the Baltic Sea and EU, though not legally binding. As such, it involves also the only non-EU member state with Baltic shore line into the work. It implements the ecosystem approach to the management of human activities. The HELCOM BSAP aims to address all the major environmental problems of the Baltic Sea through the four segments, expressed as goals: a sea unaffected by eutrophication, unaffected by hazardous substances, favourable conservation status of biodiversity and with environmentally friendly maritime activities.

The biodiversity goal means, that biodiversity is restored and maintained and all elements of the marine food-webs occur at normal abundance and biodiversity. These goals are divided into three levels: landscape (ecosystem), community and species level, reflecting the Convention of Biological Diversity. These levels reflect the ecological objectives of 'natural marine and coastal landscapes', 'thriving and balanced communities of plants and animals' and 'viable populations of species'.

The BSAP is based on a set of 'ecological objectives', reflecting an agreed vision of a healthy marine environment, with 'diverse biological components functioning in balance, resulting in a good ecological status and supporting a wide range of sustainable human activities'. In order to make the ecological objectives operational, concrete targets are to be set jointly, as well as indicators developed in order to follow the progress toward these targets.

In the biodiversity segment of the action plan, the contracting parties have committed to several tasks, such as developing marine spatial planning principles, assessing the ecological coherence and implementing management plans for the Baltic Sea Protected Areas (including Natura 2000 and Emerald sites), developing a classification system for marine habitats and updating the Red List of Species and Habitats/Biotopes. The tasks shall be done jointly between the Baltic countries.

HELCOM has taken the decision to revise its existing monitoring programmes, aiming at joint monitoring fully supporting the indicator-based assessment approach and monitoring of the implementation of the Baltic Sea Action Plan. The revised programme is to be cost-effective, and in line with other international monitoring and reporting requirements. The revision is to take place by 2013.

The progress toward the BSAP commitment is followed through the 'Holistic Assessment of the Ecosystem Health of the Baltic Sea', which is updated periodically. The Holistic Assessment builds on four thematic assessments representing each of the segments, based on information provided by the ecological indicators. The Initial Holistic Assessment was published in 2010 (HELCOM 2010).

In 2010 HELCOM decided to "establish, for those HELCOM Contracting States being also EU-Member States, the role of HELCOM as the coordinating platform for the regional implementation of the EU Marine Strategy Framework Directive

(EU MSFD) in the Baltic Sea including striving for harmonised national marine strategies for achieving good environmental status according to the HELCOM Baltic Sea Action Plan and the EU MSFD; and (HELCOM 2010b).

3 Determining good environmental status

3.1 MSFD and Good Environmental Status of Biodiversity

Article 9 in the MSFD states: "Member States shall, in respect of each marine region or subregion concerned, determine, for the marine waters, a set of characteristics for good environmental status." When doing this, the pressures or impacts of human activities must also be taken into account. Achieving good environmental status (GES) for marine waters by 2020 is the fundamental objective for the Directive (Fig. 1, Long 2011).

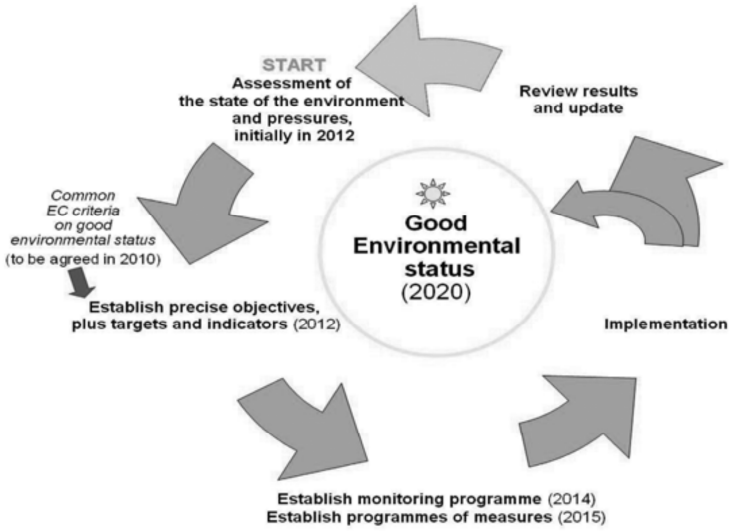

Fig. 1 Process of attaining GES under the MSFD. Source: European Commission. Available at: https://webgate.ec.europa.eu/fpfis/iwt/sites/default/files/Birgit_Snoeren%20%20EU%20policy%20framewor%20adaptation%20coasts%20and%20seas.pdf

Good Environmental Status is measured using eleven high-level criteria, environmental descriptors listed in the Annex I of the Directive. The use of these environmental descriptors is obligatory, unless the Member State can justify doing the opposite.

Descriptor 1 (D1) in Annex I of the Directive defines GES as follows: "*Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.*" Biological diversity, in this context may be taken from the Convention on Biological Diversity, where it describes the variability of living organisms and the complexes of which they are a part; within species, between species and of ecosystems. The term 'maintain' refers to no further loss, as well as restoring to a desired level where conditions are acceptable. The second sentence, of being in line with prevailing physiographic, geographic and climatic conditions, means that GES should be determined taking into account the general abiotic factors, and that for example effects of climate change should not be included in determining whether GES has been met (JRC 2010).

The Descriptor 1 is a very broad descriptor, interacting strongly with all of the other ten descriptors of Annex I (JRC 2010). It has especially strong overlap with descriptors 3 (commercial fish and shellfish), 4 (food webs) and 6 (sea-floor integrity), sharing some of the same habitats, populations or species. Some of the other descriptors, namely 5 (eutrophication), 7 (hydrographical conditions), 8 (contaminants), 9 (contaminants in seafood), 10 (litter) and 11 (energy) may be seen as causing pressure or having an impact on Descriptor 1 elements.

The Commission revised the criteria on determining good environmental status in 2010 (Commission Decision 477/2010/EU). It is emphasized, that the criteria of the descriptors build upon existing obligations in the EU context, such as the Water Framework Directive, the Habitats Directive and the Birds Directive, as well as the Common Fisheries Policy and the agreements in the regional sea conventions.

The GES descriptor 1 is expected to assess biodiversity at three ecological levels: ecosystems, habitats and species. At the species level, it is necessary to determine a set of relevant species and functional groups, with three criteria: species distribution, population size and population condition. The habitat level, including both abiotic and biotic characteristics treated together, includes three criteria to be assessed: distribution, extent and condition of the habitats. The third, ecosystem level should include assessment of composition and relative proportions of ecosystem components; also taking into account functional aspects of other GES descriptors, as well as connectivity and resilience consideration.

The biological characteristics covered by the MSFD are listed in Annex III, Table 1 of the Directive. The scale is very broad, covering zooplankton, phytoplankton, birds, mammals, reptiles, fish, zoobenthos, macroalgae, angiosperms and alien species. The directive also lists a comprehensive list of pressures and impacts (Table 2), including physical loss, damage and other disturbance, interference with hydrological processes, contamination, release of substances, nutrient and organic enrichment and biological disturbance.

It was found appropriate to take steps toward developing methodological standards for describing GES. These standards would be an attempt to ensure consistency as well as allow comparison between marine regions and subregions. These standards are not described in the MSFD or in the COM Dec 477/2010/EU. They should be correlated to the requirements of the Water Framework Directive, the Habitats Directive, the Birds Directive as well as the Common Fisheries Policy and the regional sea conventions.

3.2 GES in relation to the other obligations

The overarching goal of "good environmental status" in the MSFD is a direct successor of "good ecological" and "good chemical status" demanded first in the WFD. Yet while the WFD concentrates on water quality, the MSFD has gone further, demanding good environmental status to be reached by a far larger variety of environmental parameters. "Good environmental status" is also closely related to the "good ecological/environmental status" requirement of the HELCOM BSAP.

The Descriptor of good environmental status focused on in this report – maintaining biological diversity – is a requirement of the Habitats Directive, the Birds Directive, the Common Fisheries Policy, the HELCOM BSAP, yet not of the WFD. The WFD is mainly targeted on protecting waters from chemical pollution, using

assessments of biological features in order to make ecological status assessments (to estimate the degree of chemical pollution impact on aquatic systems). WFD does not either directly address non-indigenous species or marine food webs. Of the ten quality elements covered in the MSFD, only four are listed in the WFD, namely phytoplankton, zoobenthos, macroalgae and angiosperms.

The Member States are required by the Habitats Directive as well as by the HELCOM BSAP to take measures to maintain or restore favourable conservation status of natural habitats and species of wild fauna and flora of Community interest. The components of 'good environmental status' build partly on these components, and are thus in synergy. The Programme of Measures required by the Member States in Article 13 of the MSFD to present by 2015 to achieve or maintain good environmental status have elements from the Habitats Directive when it comes to Special Areas of Conservation and the Birds Directive when it comes to Special Protection Areas.

A three-levelled approach resembling the one used in the MSFD for determining the status of biodiversity is presented in the HELCOM BSAP (Fig 2). An attempt to collide these approaches reveals original differences to be solved: although both include a species level similar to the other, the proceeding two levels may be interpreted differently. The 'habitats' –level in the MSFD includes both the biotic and abiotic environment, whereas the second level in the HELCOM BSAP focuses on communities of plants and animals. On the other hand, the third 'landscape / seascape' –level of the HELCOM BSAP includes elements habitat elements and also cultural values, whereas the 'ecosystem' –level in the MSFD focuses on interactions between structural components of the ecosystem, and issues such as resilience and connectivity of the system (Commission Decision 2010/477/EU, HELCOM 2006).

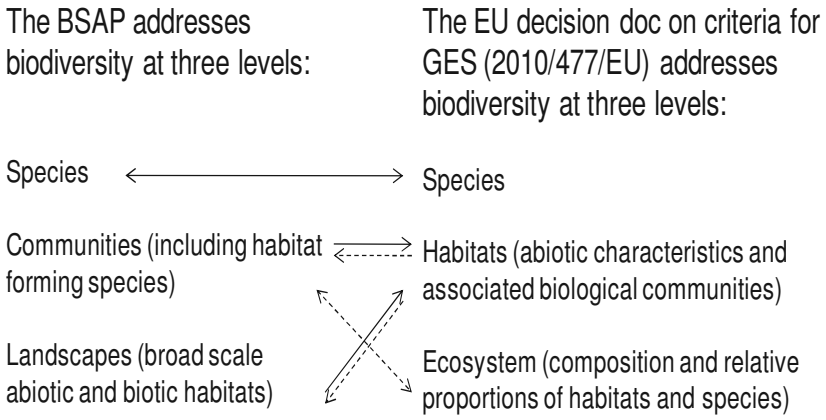

Fig. 2. Assessment of biodiversity according to the BSAP and MSFD. Ulla-Li Zweifel, HELCOM CORESET.

As mentioned in chapter 3.1, the criteria for methodological standards on good environmental status have not been revised for the MSFD, yet it is emphasized

that they need to take into account and, where appropriate, be based on those applicable under existing community legislation. Methodological standards for assessing GES for biodiversity exist in the WFD, the Habitats Directive and in HELCOM. Standards for assessing status on species- and habitat-levels are addressed in the Habitats Directive, and for the ecosystem level both in the Habitats Directive and the WFD (Piha & Zampoukas 2010). Methodological standards have also been developed within HELCOM (HELCOM 2010b).

4 Environmental targets and indicators

4.1 Indicators to be produced according to MSFD

Article 10 of the MSFD states: "*Member States shall, in respect of each marine region or subregion, establish a comprehensive set of environmental targets and associated indicators for their marine waters so as to guide progress towards achieving good environmental status in the marine environment*". In doing so, they shall take into account the pressures and impacts, of which an indicative list is set out in Annex III of the Directive. When devising the targets and indicators, it shall be ensured that they are compatible with the relevant existing targets laid down by other existing Community, national or international legislation.

Development of indicators describing GES of the Baltic Sea is to be done jointly between the Baltic Sea countries –- in practice the collaboration is done through the work within HELCOM.

Indicators for biodiversity related to the GES criteria have been determined in the Commission Decision 477/2010/EU:

Descriptor 1	Indicator
Species level	
Species distribution	**Distributional range**
	Distributional pattern within the distributional range (where appropriate)
	Area covered by the species (for sessile/ benthic species)
Population size	**Population abundance and/ or biomass (as appropriate)**
Population condition	**Population demographic characteristics (e.g. body size, or age class structure, sex, ratio, fecundity rates, survival/mortality rates)**
	Population genetic structure (where appropriate)
Habitat level	
Habitat distribution	**Habitat distributional range**
	Habitat distributional pattern
Habitat extent	**Habitat area**
	Habitat volume (where relevant)
Habitat condition	**Condition of the typical species and communities**
	Relative abundance and/or biomass, as appropriate
	Physical, hydrological and chemical conditions
Ecosystem level	
Ecosystem structure	**Composition and relative proportions of ecosystem components (habitats species)**
	Connectivity consideration
	Resilience consideration

In some cases, a fine line drawn between descriptors of good environmental status described in the previous chapter makes developing a non-overlapping yet holistic set of indicators challenging.

4.2 Synergy with other obligations

The Marine Strategy Framework Directive is broad and covers a several indicators. However, it is stated that there is a need to prioritize and select among those listed. Very little overlap can be found between MSFD and CBD. HD has the most overlap with MSFD, especially on habitat level.

In general there is mainly wider overlap for species distributions, population sizes, habitat distribution and condition, with the exception that WFD does not cover habitats at all.

BSAP does not use species distributions, but to some extent looks at population sizes (certain species).

MSFD is the only that fully includes population genetic structure, although it could be included for HD in population condition assessments.

MSFD is the only that fully includes ecosystem level descriptors, although partly this is also included in HD.

MSFD includes much more than the other legal documents on non-indigenous species, both concerning abundances and impacts. BSAP, HD and WFD have no NIS descriptors at all.

BD, CBD and WFD have no descriptors related to fishing pressure or fish stocks.

BSAP, MSFD and WFD are quite overlapping regarding descriptors describing direct effects of nutrient enrichment as well as effects of contaminants. These are to a minor extent also covered by HD but not at all part of CBD and BD.

Table 1. Biodiversity indicators in the MSFD covered by the other directives and policies, according to the legal analysis. The HELCOM BSAP includes determining status through indicators, but is not included in the table due to its flexibility toward the MSFD indicator development.

Level	Biodiversity indicators	HD	WFD	BD	CBD	BSAP
Species	Species distribution	X	X	X	X	
	Distributional range	X	X			
	Distributional pattern within the distributional range (where appropriate)	X				
	Area covered by the species (for sessile/ benthic species)	X				
	Population size	X	X	X		(x)
	Population abundance and/or biomass (as appropriate)	X	X			(x)
	Population condition	X				
	Population demographic characteristics	(x)				
	Population genetic structure (where appropriate)	(x)				
Habitat	Habitat level					
	Habitat distribution	X		(x)	X	(x)

Level	Biodiversity indicators	HD	WFD	BD	CBD	BSAP
	Habitat distributional range	X				(x)
	Habitat distributional pattern	X				
	Habitat extent	X				
	Habitat area	X				
	Habitat volume (where relevant)					
	Habitat condition	X		(x)	(x)	(x)
	Condition of the typical species and communities	X			(x)	(x)
	Relative abundance and/ or biomass, as appropriate	X				
	Physical, hydrological and chemical conditions					
Ecosystem	Ecosystem level					
	Ecosystem structure	(x)				
	Composition and relative proportions of ecosystem components	(x)				
	Connectivity consideration	(x)		(x)		
	Resilience consideration					

Note: the HELCOM BSAP includes determining status through indicators, but is not included in the table due to its flexibility toward the MSFD indicator development.

5 The assessment

5.1 Assessment obligations in the MSFD

According to Article 8 in the MSFD: *In respect of each marine region or subregion, Member States shall make an initial assessment of their marine waters.* The initial assessment shall comprise of a) an analysis of the essential features and characteristics, and current environmental status, b) an analysis on the predominant pressures and impacts and c) an economic and social analysis of the use of those waters and the cost of degradation. While preparing the assessments, the Baltic Member States shall do their best to ensure that the assessment methodologies are consistent across the sub-region, and that transboundary features are taken into account.

Traditional assessments have typically assessed biodiversity elements, species and habitats individually – basing on a number of criteria that leads to a judgement of the overall condition. In these cases the individual species and habitats are most often considered to be under threat, needing conservation action. The holistic approach adopted in the concept of GES in the MSFD focuses also on the dynamic interactions of the species and habitats concerned (JRC 2010).

The geographical scale of the assessment has an effect on its outcomes. For an ecologically relevant assessment, the scale should reflect the range of the species/habitat in question. In practice this might lead to several geographical units. Geographical units should reflect the levels at which the policies are applied, and also relate to the more strict geographical descriptions of the other legal requirements.

5.2 Synergy with other obligatory assessments

Similarly to the MSFD, also the Habitats Directive, the WFD and the HELCOM BSAP include requirements of regular assessments of the environmental state (Table 2). The status assessment includes biological features in all of the above, but physical and chemical features only in the HELCOM PSAP and the WFD, in addition to the MSFD. On the other hand, the habitat types are naturally a strong part of the Habitat Directive assessment, but missing completely in the requirements of the WFD. The MSFD, Habitats Directive, WFD, Birds Directive, UN Convention of Biodiversity and the BSAP all include a component on determining the predominant pressures and impacts in the assessment. The economic and social analysis of the cost of degradation of the environment included in the MSFD is also partly covered in WFD as well as BSAP.

The holistic assessment of HELCOM BSAP resembles the assessment required in the MSFD in the sense that they both include both the marine and coastal areas and require assessing status, pressures and impacts and their cumulative effects, as well as economic and social aspects. Taking also into account article 6 in the MSFD requiring regional cooperation, these assessments can be tightly linked. The HELCOM biodiversity assessment is based on the BEAT assessment tool, which was used in the Initial Holistic Assessment, and is under further development.

Table 2. Assessment obligations in the MSFD covered by the other directives and policies, according to the legal analysis.

Assessment obligations	HD	WFD	BD	CBD	BSAP
1) the features or characteristics of their marine waters:		(x)			
- physical and chemical features		(x)			x
- habitat types	x			(x)	x
- biological features	x	x	x	(x)	x
- other features or characteristics typical of or specific for the Baltic Sea	x	(x)		(x)	x
2) identification of the predominant pressures and impacts	x	x	x	x	x
3) an economic and social analysis of their use and of the cost of degradation of the marine	x	x	x	x	x
Continuous assessment and regular updating of targets through monitoring programmes	x	(x)	x	x	x

6 Monitoring programmes

6.1 MSFD requirements for monitoring programmes

Article 11 in the MSFD states: *„Member States shall establish and implement coordinated monitoring programmes for the ongoing assessment of the environmental status of their marine waters*". These monitoring programmes are to be compatible within the Baltic subregion, and they shall build upon relevant as-

sessment and monitoring systems laid down by the other Community Directives. Also the methodology is expected to be consistent across the region. It is clear, that these monitoring programmes are to serve the updating of the indicators described in article 10 (see chapter 4).

6.2 Monitoring according to other obligations

Monitoring programmes are to be implemented at least to some extent also in the Habitats Directive, the WFD, the Birds Directive, the Convention of Biodiversity and the HELCOM BSAP. Many of the requirements listed in the MSFD, are also present in some of the other policy documents (Table 3). Even though member states are required to provide the commission the user rights of the monitoring data, the MSFD is the only directive actively making this data accessible to EEA and thus to other Member States.

Table 3. Monitoring obligations in the MSFD covered by the other directives and policies, according to the legal analysis. HELCOM monitoring has been left out of the table, since it will be revised by 2013.

Monitoring programme obligations	HD	WFD	BD	CBD	BSAP
Implementation of coordinated monitoring programmes	(x)	x	(x)	(x)	x
Monitoring programmes shall be compatible within marine regions or subregions and shall be compatible with relevant other Community legislation	x				x
(a) monitoring methods are consistent across the marine region or subregion	(x)	(x)			(x)
(b) relevant transboundary impacts and transboundary features are taken into account	(x)				
Specifications and standardised methods for monitoring and assessment shall be adopted		x	(x)		(x)
Member States shall review the monitoring programmes		x			
Member States shall publish summaries of the monitoring programmes	(x)				
Member States shall provide the Commission access and use rights of data from the monitoring programmes	x		x		
Information to be made available to the European Environment Agency					
Monitoring programmes need to provide information for an assessment of the environmental status and progress towards GES	(x)	(x)		(x)	(x)
Monitoring programmes need to ensure information enabling the identification of suitable indicators for the environmental targets	(x)			(x)	(x)
Monitoring programmes need to ensure information allowing impact assessment	x	x	(x)		
Monitoring programmes need to include activities to identify the cause of the change and hence the possible corrective measures, when deviations from the desired status range have been identified	(x)	x			(x)
Monitoring programmes need to include activities to confirm that the corrective measure delivers the desired changes and not any unwanted side effects.	x				
Monitoring programmes need to aggregate the information on the Baltic Sea	(x)				

Monitoring programme obligations	HD	WFD	BD	CBD	BSAP
Monitoring programmes need to ensure comparability of assessment approaches and methods within and between marine regions	(x)	(x)			
Monitoring programmes need to develop technical specifications and standardised methods for monitoring at Community level, so as to allow comparability of information		(x)	(x)		
Monitoring programmes need to ensure, as far as possible, compatibility with existing programmes					(x)
Monitoring programmes need to include an assessment of major changes in the environmental conditions as well as, where necessary, new and emerging issues	(x)		(x)	(x)	
Monitoring programmes need to address the relevant elements listed in Annex III				(x)	

A crucial issue that remains regarding the MSFD implementation process is to determine the spatial and temporal resolution needed for the monitoring of Baltic Sea biodiversity. The level of resolution that is adequate will likely vary among species and habitats and will be a complex question to solve.

7 Views of national experts

In order to foresee problems in the implementation of MSFD and the other policies in Estonia, Finland, Latvia and Sweden, national experts in these countries were interviewed. A standard form was sent or communicated via expert meetings to altogether 41 experts, and altogether 23 answers were received. The number of experts was divided more or less evenly between the countries (Figure 3), obligation involvement (Figure 5) and policy involvement (Figure 6). Nearly half of them were involved with environmental protection in their work (Figure 4). In Estonia and Latvia, where the total number of governmental and other experts working with the implementation of directives and policies is low, nearly all the experts answered the questionnaire, but in Finland and Sweden, approximately half of the experts interviewed replied. This might have led to a bias in the results, with possibly uncovered areas of expertise.

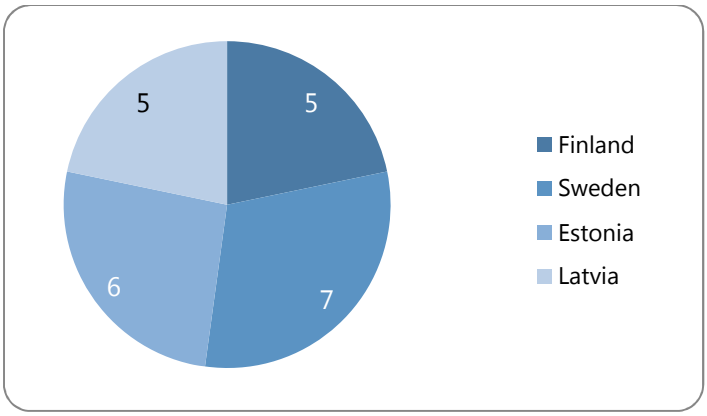

Fig. 3. Distribution of the experts by country.

Note: individual experts may be listed in more than one category.

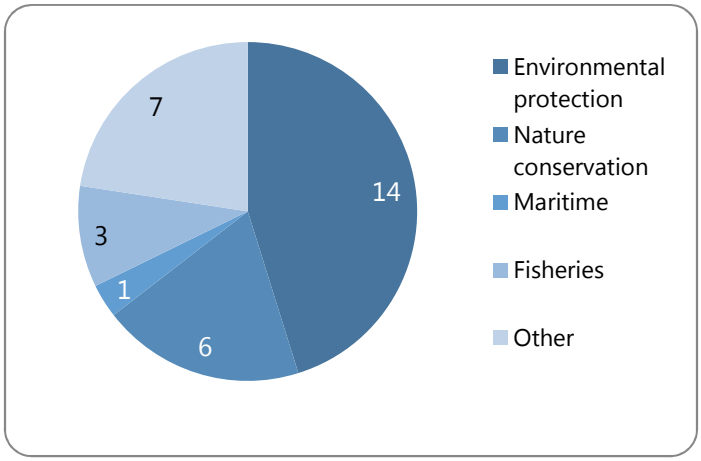

Fig. 4. Distribution of the experts by marine sector.
Note: individual experts may be listed in more than one category.

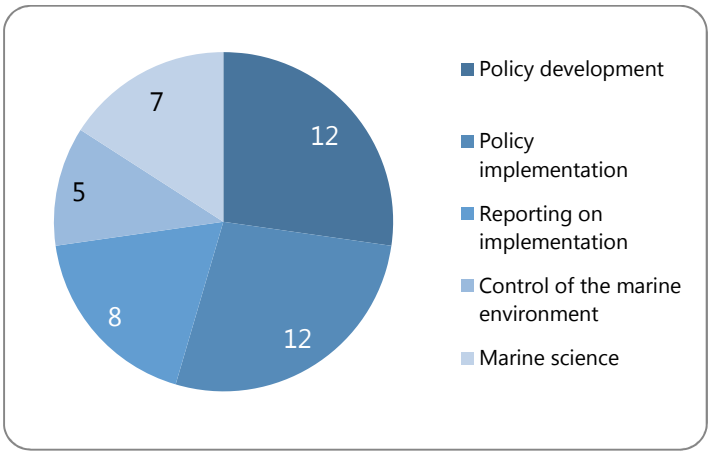

Fig. 5. Distribution of the experts by obligation involvement.
Note: individual experts may be listed in more than one category.

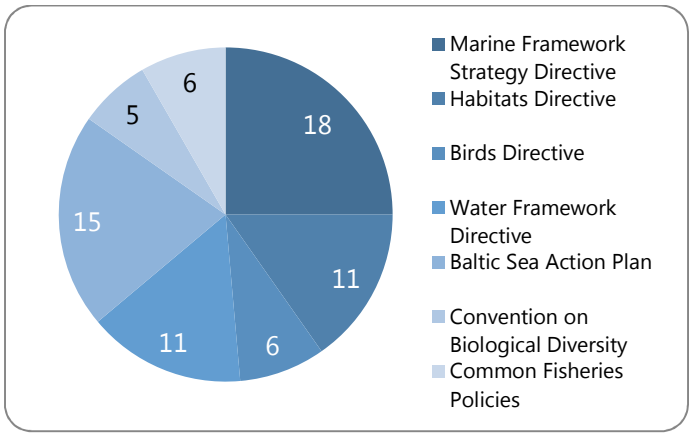

Fig. 6. Distribution of the experts by policy involvement.
Note: individual experts may be listed in more than one category.

Of the experts involved with the implementation of laws and agreements, 48% were of the opinion that the obligations have not been fulfilled in their country (Figure 7). The implementation was least satisfactory in Sweden, which may also be an artefact of different interviewing strategy – the Swedish experts were the only ones giving anonymous interviews. This result did not differ significantly from the opinions of the experts involved with the Habitats Directive, the Birds Directive, the Water Framework Directive, the HELCOM Baltic Sea Action Plan and the UN Convention of Biological Diversity. The experts involved with the Common Fisheries Policy seemed in average more satisfied with the state of the implementation. Some pointed out, regarding all of the named policies, that the overall implementation is still at such an early stage, that it is difficult to estimate whether the obligations are fulfilled.

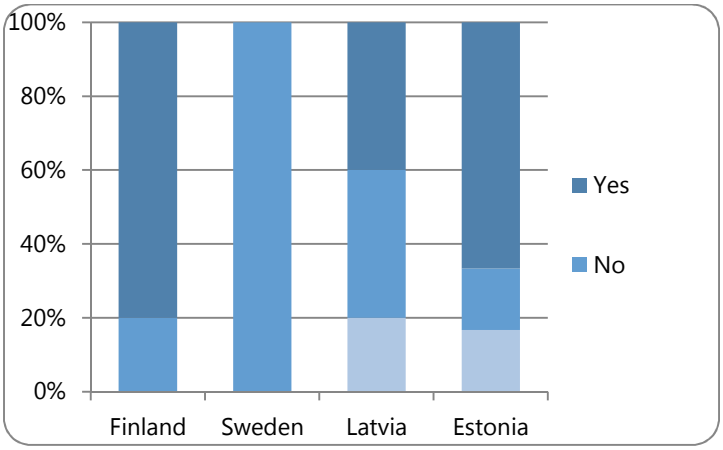

Fig. 7. Opinions of the experts on how well the policies have been implemented in their country. Total number of answers to the question was 23, divided evenly between countries. More information found in Annex 1.

Lack of national resources directed to the sector was seen by 45% of the experts as the obstacle in fulfilling the obligations of the policies named above (Figure 8). This was interpreted as the most important problem in most of the countries, excluding Sweden, where methodological unclarities, including division of tasks at a national level, were mentioned by many of the experts. In some countries, it was felt that the political support at the national level was not as strong as it should be, in order to follow and implement the directives – which naturally reflects also to the funding mentioned above. The obligations of the directives were estimated to be unrealistic especially in Finland and in Estonia, due to the tight schedules, lack of harmonization between the countries or the general complexity of the marine system and the problems encountered within.

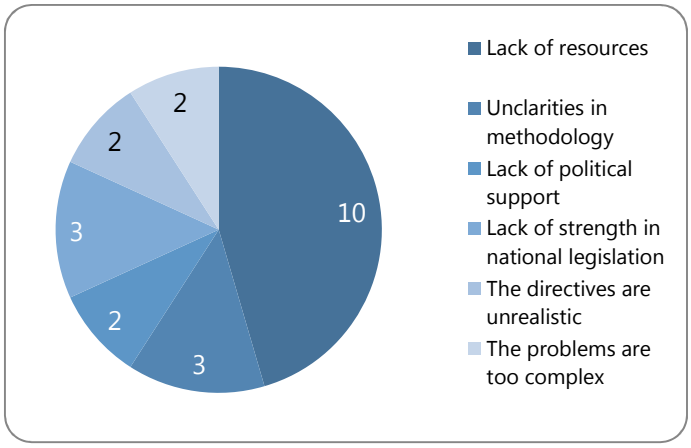

Fig. 8. Opinions of the experts on major problem/drawbacks in relation to the implementation of the directives/policy documents.

Lack of monitoring data, usually related to the lack of national resources, was seen as the single most important gap in the implementation of the directives and policies (Figure 9). Also methodological problems were felt to slow the process.

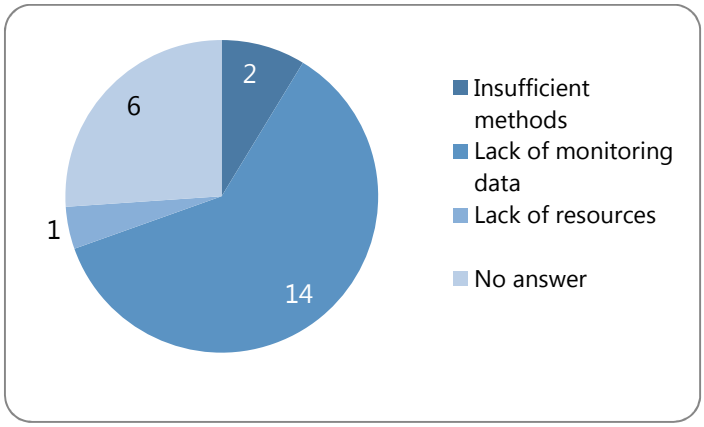

Fig. 9. Opinions of the experts on major data/information gaps related to biodiversity for the directives/policy documents.

Integrating the implementation of the policies, when planning for example the monitoring and the development of indicators, was seen to be crucial, as was the role of HELCOM in this process. The importance, and on the other hand the difficulty of harmonizing between the countries was emphasized. The availability of the reported data to all countries involved was seen to be important. The need for adaptive management, a system undergoing continuous self-evaluation and improvement was emphasized.

Overall, 43% of the national experts answering the questionnaire felt, that there was a significant risk of failure in meeting the obligations of the directives and policies (Figure 10).

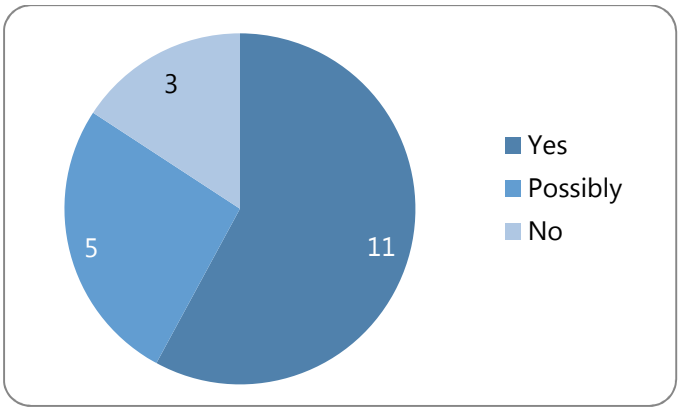

Fig. 10. Opinions of the experts on risk of failure of meeting the objectives of the MSFD and other marine legislations.

8 Acknowledgements

We would like to thank the national experts in Estonia, Finland, Latvia and Sweden for their kind participation in the expert interviews.

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10 ANNEX 1. Summary of policy expert interviews

In order to assess the problems in the implementation of Marine Strategy Framework of Directive and the other policies, a questionnaire was designed and 23 national experts interviewed in all four project countries. In total 41 experts were requested to answer the questionnaire and response percentage was 56 %. The experts responded to 11 questions. The reflection of the interviews shows 10 questions. Question 11 on expectations from the MARMONI project was weakly addressed.

Question 1: Which marine sector do you represent?

The respondents were given the following alternatives:

- ☐ 1.1. Environmental protection
- ☐ 1.2. Nature conservation
- ☐ 1.3. Maritime
- ☐ 1.4. Fisheries
- ☐ 1.5. Any other (please insert).....

Nearly half of the respondents stated, that they represent the sector of environmental protection. Mostly, the experts were dealing with only one sector.

Table 1. Answers to Question 1 (Which marine sector do you represent?) by country.

	Total	Finland	Sweden	Latvia	Estonia
Environmental protection	14	2	6	2	4
Nature conservation	6	1	2	2	1
Maritime	1	0	1	0	0
Fisheries	3	0	1	1	1
Research	5	2	3	0	0
Status assessments, including development and research	1	0	1	0	0
Environmental law	1	0	1	0	0

Note: some experts in Sweden have more than one answer.

Question 2: What are current obligations you are involved in regarding marine policies?

The respondents were given the following alternatives:

- ☐ 1.1. Policy development
- ☐ 1.2. Policy implementation
- ☐ 1.3. Control of the marine environment
- ☐ 1.4. Marine science

Most of the respondents were involved in policy development and policy implementation. Other alternatives were also well represented, mostly the experts were dealing with more than one obligation.

Table 2. Answers to Question 2 (What are current obligations you are involved in regarding marine policies?) by country

	Total	Finland	Sweden	Latvia	Estonia
Policy development	12	2	3	3	4
Policy implementation	12	3	4	3	2
Reporting on implementation	8	0	3	1	4
Control of the marine environment	5	0	4	1	0
Marine science	7	2	4	0	1

Note: one expert may have one or more answers.

Question 3: What is relation of your activities to marine biodiversity?

The interviewees were asked to answer freely.

Most of them were working with biodiversity- or habitat –related research, assessment or monitoring. More than one were either in addition to that, or separately, involved in eutrophication or fisheries related issues. A few were involved in policy development and one was involved in developing cost-efficient approaches.

Question 4: Which type of directives/policy documents is your work related to?

The respondents were given the following alternatives:

- ☐ 1.1. Marine Framework Strategy Directive
- ☐ 1.2. Habitats Directive
- ☐ 1.3. Birds Directive
- ☐ 1.4. Water Framework Directive
- ☐ 1.5. Baltic Sea Action Plan
- ☐ 1.6. Convention on Biological Diversity
- ☐ 1.4. Common Fisheries Policies

Most of the respondents worked with Marine Framework Strategy Directive and Baltic Sea Action Plan. In all countries exept Latvia experts were involved with the Water Framework Directive and Convention on Biological Diversity. Many of the experts were involved with more than one policy.

Table 3. Answers to Question 4 (Which type of directives/policy documents is your work related to?) by country. Please note that one expert may have one or more answers.

	Total	Finland	Sweden	Latvia	Estonia
Marine Strategy Framework Directive	18	5	6	3	4
Habitats Directive	11	2	4	2	3
Birds Directive	6	1	2	2	1
Water Framework Directive	11	3	4	0	4
Baltic Sea Action Plan	15	5	4	3	3
Convention on Biological Diversity	5	2	2	0	1
Common Fisheries Policy	6	2	1	2	1

Note: one expert may have one or more answers.

Question 5: Are the obligations of the directives/policy documents you work with currently fulfilled in your country?

The respondents were given the options yes / no, and in addition a possibility to explain their answer freely.

Most of the Finnish and Estonian respondents answered that obligations of the directives and policy documents were fulfilled in their countries. In Sweden, all respondents felt that obligations are not fulfilled.

Table 4. Answers to Question 5 (Are the obligations of the directives/policy documents you work with currently fulfilled in your country?) by country.

	Total	Finland	Sweden	Latvia	Estonia
Yes	10	4	0	2	4
Possibly	11	1	7	2	1
Too early to say	2	0	0	1	1

Question 6: What are major problems/drawbacks you see in relation to the implementation of the directives/policy documents your work with?

The respondents were asked to answer freely.

The lack of resources was found to be the most significant problem, especially in Finland and Latvia. Estonian respondents also thought that the equal problem is that the directives are unrealistic. Instead of resources, the major problem in Sweden was found to be the unclarities in methodology and lack of strength in national legislation.

Table 5. Answers to Question 6 (What are major problems/drawbacks you see in relation to the implementation of the directives/policy documents your work with?) by country.

	Total	Finland	Sweden	Latvia	Estonia
Lack of resources	10	3	1	4	2
Unclarities in methodology	3	0	3	0	0
Lack of political support	2	2	0	0	1
Lack of strength in national legislation	3	0	2	4	0
The directives are unrealistic	2	0	0	0	2
The problems are too complex	2	1	0	0	1

Question 7: What are major data/information gaps related to biodiversity for the directives/policy documents you work with?

The respondents were asked to answer freely.

Nearly all the experts agreed that the lack of monitoring data was the most important gap of information. In Estonia, especially the monitoring outside the territorial waters was reported to have gaps, whereas Swedish respondents felt that coastal areas should be better represented, especially regarding benthic organisms and genetic information. The Finnish respondents named a need for additional under water biodiversity monitoring in general, and the Latvian experts also expressed a worry for lack of biodiversity and habitat monitoring.

Table 6. Answers to Question 7 (What are major data/information gaps related to biodiversity for the directives/policy documents you work with?) by country.

	Total	Finland	Sweden	Latvia	Estonia
Insufficient methods	2	1	0	0	1
Lack of monitoring data	14	3	5	2	4
Lack of resources	1	0	0	1	0
No answer	6	1	2	2	1

Question 8: What would you recommend to be changed/improved for the biodiversity related reporting system for policy/legal documents in regard to contents, timing and format?

The respondents were asked to specify recommendations for contents, timing and formats separately in their own words.

A low number of answers was received for this question. Only four respondents gave recommends to the content of the reporting system, two to timing and three to format. The remaining respondents either provided no answer or informed that they are not working with reporting system.

Among the answers received, following proposals were presented to the content: "Content should be more or less same in all reporting related to biodiversity", to the timing "The directives reporting should be coordinated." and to the

format "Easy to fill up and should be harmonised between directives, so you don't have to report same issues many times.".

Question 9: What are your visions regarding integration of monitoring and reporting for the different directives?

There respondents were asked to answer freely.

Most of the respondents provided an opinion. Harmonization of the reporting for the different obligations was hoped, in order to avoid double work. On the other hand, some suspicion existed on the possibilities of harmonization, and it was reminded that it is not to be done on expense of the purpose behind the reporting. The importance of international cooperation and harmonization as well as the aim of continuous improvement and 'adjustive management' was emphasized.

Question 10: Do you see any risk of failure of meeting the objectives of the Marine Strategy Framework Directive and other marine legislations?

The respondents were asked to answer freely.

Most of the respondents (11 from 23) thought that the risk of failure is obvious. Only in Sweden, two respondents felt that no risk of failure exists, yet one of them believed that delays might occur. The short timing of the obligations was seen as one of the most significant reasons behind failure. Also the unclarity of the expected measures and legal uncertainties were named. The question of the relation of meeting these objectives to the actual state of the Baltic Sea was also brought up.

Table 7. Answers to Question 10 (Do you see any risk of failure of meeting the objectives of the Marine Strategy Framework Directive and other marine legislations?) by country.

	Total	Finland	Sweden	Latvia	Estonia
Yes	11	3	3	2	3
Possibly	5	2	2	0	1
No	2	0	2	0	1

Note: A risk of delay was also included as a form of failure to meet the objectives.

LIFE+ Nature & Biodiversity project **"Innovative approaches for marine biodiversity monitoring and assessment of conservation status of nature values in the Baltic Sea"** (Project acronym -MARMONI).

Please visit the project website: http://marmoni.balticseaportal.net/

Project coordinating beneficiary: Baltic Environmental Forum – Latvia
Antonijas street 3-8, Rīga, LV -1010, Latvia
www.bef.lv