



CCB review of Baltic Sea Region EU Member States' Implementation of the MSFD

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Terminology

ASCOBANS: Agreement on the Conservation of Small Cetaceans of the Baltic, North East Atlantic, Irish and North Seas

B: Biomass is the body weight of all the fish of one specific stock in the water. B does not differentiate age, gender etc. It is measured in tonnes.

BSAP: HELCOM Baltic Sea Action Plan

BMSY: Biomass (total weight of fish) that can support harvest of the MSY

BPA: Precautionary reference point for spawning stock biomass (SSB)

CCB: Coalition Clean Baltic

CFP: Common Fisheries Policy

DDT: Dichlorodiphenyltrichloroethane, pesticide dangerous for biodiversity

DE: Germany

Descriptor: Describes the problem and target in the Baltic Sea.

DK: Denmark

DN: Danish Society for Nature Conservation

EC: European Commission

EE: Estonia

ESEC: European Seas Environmental Cooperation. Cooperation among regional NGO networks: Seas At Risk, CCB, Mediterranean Information Office MIO, Black Sea NGO network

FANC: The Finnish Association for Nature Conservation (in Finnish: Suomen luonnonsuojeluliitto)

FCS: favourable conservation status (of the Habitats Directive habitats and species)

FI: Finland

FMSY: Fishing mortality consistent with achieving Maximum Sustainable Yield (MSY)

GES: Good Environmental Status is a target which the EU marine environments should reach by the end of 2020

HELCOM: known as the Helsinki Commission. The Name HELCOM is used as a reference to the Regional Convention on the Protection of the Marine Environment of the Baltic Sea Area (Helsinki Convention)

IA: Initial Assessment completed by Member States

ICES: International Council for the Exploration of the Seas

Indicator: To monitor if target of descriptor is reached or not.

IUCN: International Union for the Conservation of Nature

JRC: Joint Research Centre – fisheries data collection

LV: Latvia

LT: Lithuania

MSY: Maximum Sustainable Yield

MSFD: Marine Strategy Framework Directive

MS: Member State of the European Union

NGO: non-governmental organisation

PCB: Polychlorinated biphenyl

PL: Poland

PSPC: Potential Smolt Production Capacity

RBM: River Basin Management Plans. In the Water Framework Directive is required that each member state must produce a plan for each of the river basin districts within its territory.

SAMBAH: Static Acoustic Monitoring of the Baltic Sea Harbour Porpoise

SE: Sweden

SSB: Spawning Stock Biomass

SSBpa: Spawning Stock Biomass- Precautionary Approach

SSBmsy: Spawning Stock Biomass – Maximum Sustainable Yield

SSNC: Swedish Society for Nature Conservation

STEFC: Scientific, Technical and Economic Committee for Fisheries

TAC: The total allowable catch (TAC) is a catch limit set for a particular fishery, generally for a year or a fishing season.

WFD: Water Framework Directive

WWF: World Wildlife Fund

WWTP: Wastewater treatment plant

Abstract

Marine Strategy Framework Directive (MSFD) was adopted in 2008 to protect, maintain and restore EU's marine environment by improved management. The directive is aiming at Good Environmental Status (GES) of EU marine areas by 2020.

The first part of the implementation of the MSFD was to assess the current status of marine areas, define GES and environmental objectives as well as set indicators and targets. This CCBs report was made to evaluate Member States (MS) work with implementing MSFD and to review potential gaps between Baltic Sea Region Member States in the implementation process of MSFD. The Member States in question include Estonia, Latvia, Lithuania, Poland, Germany, Denmark, Sweden and Finland.

CCB NGOs, from all MS except Denmark, has taken part in this work. For the review a number of Descriptors were chosen from the MSFD for a deeper assessment; Biodiversity, Commercial fish species, Eutrophication and Marine litter. MS have been evaluated based on the GES definition, indicators and targets set for the each descriptor. Comparison of MS was done on basis of how well they meet the Commission decision on criteria and methodological standards on good environmental status of marine waters (2010/477/EU).

The ambition level of indicators were evaluated based on the targets, and if target has any legal force. Legal force can mean that targets values are set in other directives, national law or in HELCOM. This was used as criteria for targets also because when MS are implementing their own strategy, according to MSFD they must take into consideration values set in Water Framework Directive (WFD) for coastal areas and other important legislation. The MS indicators were ranked with the numbers between -2 to +2, on basis of criteria described in Methodology.

The assessment shows that the ambition level between MS is varying, and the reports sent to the Commission show huge variation in MS focus and interpretation of the Directive itself. There are for example some MS that have not developed enough indicators or do not have ambitious targets. Many Baltic MS have not reported indicators or targets for many of the descriptors at all and therefore made the evaluation process particularly difficult, however we still tried to assess their ambition level for drafted or preliminary developed indicators. The review also clearly shows that regional coherence is poor, a surprising fact considering the long tradition of environmental cooperation within HELCOM in our region.

In conclusion, some MS managed to get a better overall ranking than others, and the best examples were Sweden and Denmark. Germany is still in the process of developing functional indicators and targets and if their full work based on available drafts is finalised, Germany would receive a much higher score. However, none of the Baltic region MS including the above mentioned MS reaches an acceptable level of fulfilling the requirements of this important Directive.

1. Introduction

Marine Strategy Framework Directive (MSFD) (2008/56/EY), the environmental pillar of the wider Integrated Marine Policy, was adopted in June 2008. The MSFD was established because of the evident pressure on our oceans and the increasing demand of natural resources from our marine environments. The marine ecosystem is pushing the limit in which it can sustain and as a consequence the EU community must reduce the negative effects of human activities.

The marine environment is an invaluable asset which must be protected and restored when possible, with the goal to maintain biological biodiversity and secure dynamic and diverse ecosystems in our seas. The aim of the MSFD is to more effectively protect the marine environment across Europe. The objective is to reach Good Environmental Status of the EU marine waters by the end of year 2020 and to protect resources which are related to economic and social activities.

The European Marine Regions are divided on the basis of geographical and environmental criteria. MSFD requires all Member States (MS) to work together with other EU Member States and non-EU countries when developing strategies for their marine waters.¹

HELCOM has for many years had a key role as a coordinator between the Baltic EU and non-EU countries cooperation. In the Ministerial meetings declarations and the Baltic Sea Action Plan (BSAP) of 2007, several years before the MSFD, established objectives and targets to reach a healthy Baltic Sea by the year 2021. The BSAP shares most of its focus and goals with the MSFD and the HELCOM cooperation has consequently and correctly been given a special task to coordinate the implementation of the MSFD.

The implementation process of the MSFD is divided into three phases; first is the Initial Assessment (IA) of the current state of the environment, definition of "*Good Environmental Status*"-(GES), setting of indicators and the establishment of environmental objectives (IA), the second phase is the implementation of monitoring program and third phase is implementation of the Program of Measures. Also a detailed cost-benefit analysis of the proposed program of measures is required. Member States are given a clear implementation schedule in the MSFD in order to achieve GES by 2020.

1.1 Objective of the report

The main objective is to evaluate Member States performance according to the MSFD requirements and ambitions and also link it to existing work, such as within HELCOM, from a NGO perspective.

CCB has chosen to review Member States performance of this Directive for two main reasons:

1. MSFD is the only coherent EU legislation aiming to push EU members to better manage our common seas, which is also CCBs ultimate goal
2. It is of utmost importance that NGOs learn more about this Directive and take part of Member States plans and consultations. Work with this review has increased awareness and capacity of several Baltic NGOs regarding MSFD

CCB has assessed the ambition level of Member States in first stages of MSFD implementation process. To stay focused on CCB prioritized areas and to limit the project, four different descriptors of MSFD were chosen; Biodiversity, Commercial fish species, Human induced eutrophication and Marine litter. For biodiversity only the species harbour porpoise, seals, salmonids and other fish

¹ http://ec.europa.eu/environment/water/marine/directive_en.htm

species were chosen. This limitation is very important to note and underline, as the report does claim to give a full picture of MS performance in all aspects. However the chosen areas do represent the key parts of this Directive in relation to the main threats and pressures on the Baltic Sea environment. The descriptors were chosen in cooperation with members from Baltic NGOs during a meeting held in Riga, 2013. The actual assessment of the each Member State has been done with the help of national NGO representatives. Member States that are included in this report are Estonia, Latvia, Lithuania, Poland, Germany, Denmark, Sweden and Finland.

The following is assessed for each chosen descriptor:

- proportion of EU criteria covered by Member States
- indicators and evaluation of target values of these indicators
- on what level is Good Environmental Status set and also
- Member State alignment with HELCOM, ICES and other directly related directives.

1.2 Material used for the evaluation

The report is completely based on the official Initial Assessments reported to EU and additional reports from responsible institutes used as resource material, however some MS NGOs had difficulties accessing official material. For example, Poland has not yet reported IA to the Commission, and the reason for this is that transposition into Polish law took place only recently. Therefore the process started later, and the material used for this report is based on a draft version and additional data available.

In our evaluation, we have as a base reference used the EU Commission document: “On criteria and methodological standards on good environmental status of marine waters” (2010/477/EU). The purpose of this criteria document is that should be used by the Member States to assess the extent to which good environmental status is being achieved, and it is accompanied with references to applicable methodological standards as an annex. References to this EU document in this report are with names as EU criteria or EU indicator and made by numbering the indicators, e.g. EU indicator 5.1.2.

1.3 Methodology

In general, regardless of what method used, evaluating MS performance is more than difficult because of the huge differences in MS interpretation of the MSFD requirements and EU criteria and indicators. To some extent it is almost impossible and this in itself must be considered as a big problem for implementing this directive and making the regional coherence poor indeed.

Nevertheless we have tried and have used the following methodology. We need to remind the reader again that this report is only based on evaluating performance on four Descriptors (1,3,5,10) and only a selected part of Descriptor 1.

We compared the ambition level to implement the MSFD among Baltic MS in two parts. First, we evaluated their respective efforts reported at present on a descriptor level; that is, for descriptors 1 (only partly evaluated in this report), 3, 5 & 10. This part of the evaluation is based on the following *quantitative* components:

1. Quantitative evaluations of indicators and targets set. We used a blunt grade system, with grades from -2 to +2 to do this and motivations for different grades can be seen in Fig. 2. The grades are also illustrated in the Tables 1-3 and 5-7 by different colours, in accordance with a modified “traffic light system”. An overall grade on a descriptor level for each MS was derived by taking the means of developed (and non-developed, graded -2) indicators and associated targets.

2. Comparisons of the number of indicators developed or drafted for each descriptor (also indicated in the quantitative evaluations, mentioned above).

The second part of the comparison is judging the overall ambition of MS. This part of the evaluation is based on the following *qualitative* components where we on a more general level discuss:

1. Comparisons of specific definitions of Good Environmental Status (GES) on a descriptor level. Primarily, we discuss how the definitions vary from the general definitions given on descriptor levels in the official text of the directive. We judge the definitions after how precise they are and if they are adjusted to regional environmental and social conditions and also if they are in accordance with best available scientific knowledge/advice.
2. Comparisons on how targets are set, that is at Interim or GES. Several MS have defined if the targets set are demonstrating GES or only interim values of GES, or both. In many cases such information is not given.
3. We also received and utilized comments from national NGOs from each country on the whether MS definitions of GES and the current state indicated in the Initial Assessment actually differ as a qualitative mark (this part proved to be very difficult as such this information is mostly lacking but in some cases we have received comments from national experts).

Finally, with the calculated means of the quantitative grades on the descriptors levels, we summed each score from the descriptors in the conclusion (see section 6.). Here we also highlight key points of what we believe are good examples and what should be included in descriptor 1, 3, 5 and 10. We also compare how the selection of developed indicators of different MS actually illustrates their respective definitions of GES. For each descriptor we try to highlight most ambitious initiatives (if such exist), by highlighting the MS that have the most developed or ambitious indicators and targets. At the same time we have to note the worst examples. We also suggest areas and indicators that we believe should be further considered in the work within the field of each descriptor to illustrate and finally achieve GES.

In the summary of each descriptor in section 2-5 we review each country and descriptor and pinpoint the most ambitious initiatives (if such exist), by highlighting the best examples. At the same time we have to note the worst examples and propose improvements of the MS work. We also propose areas and indicators that we believe what should be further considered in the work within the field of each descriptor to actually illustrate and finally achieve GES.

In all evaluation work, we have deemed an indicators and associated target(s) as ambitious if it has legal force, it is set according to already existing legislation (WFD, HD or Common Fishery Policy, CFP) and are in line with the instructions/guidance from the Commission (i.e. EU criteria), and from the Baltic regional body HELCOM (for some descriptors HELCOM has developed guidance on indicator and target level, so called core indicators, that are also related to ecological favourable status of the WFD) and for Descriptor 3 we have also considered guidance from ICES, i.e. member states have to follow that, but also targets set according to HELCOM.

We also include comments from national NGOs, and in some cases national experts. The names of the national environmental-NGO personal that have provided the information on national levels are:

Elke Körner (Bund für Umwelt und Naturschutz), Germany

Janis Ulme (Friends of the Earth Latvia - Zemes Draugi), Latvia
 Kristina Veidemane (Baltic Environmental Forum), Latvia
 Edmundas Greimas (Lithuanian Fund for Nature), Lithuania
 Toomas Liidja (Estonian Green Movement), Estonia
 Maret Merisaar (Estonian Green Movement), Estonia
 Mikołaj Koss (Hel Marine Station), Poland
 Maria Staniszevska (Polish Ecological Club), Poland (Eutrophication Descriptor)
 Emma Gabrielsson (The Fisheries Secretariat – FISH), Sweden & Denmark
 Emma Sipilä (Finnish Association for Nature Conservation, Uusimaa region office), Finland

Figure 1. Grading System of the qualitative evaluation of Indicators and associated targets. This grading system is used for all descriptors. Mean values of MS indicated where the average qualitative level for indicators to illustrate Good Environmental Status (GES) in the range of -2 to +2.

We have graded the MS on a scale between -2 and +2, accordingly:	
-2: RED	No indicator is developed for the criterion
-1: ORANGE	Indicator(s) developed for the criterion but is deemed irrelevant/partly relevant (e.g. important species are missing) but too narrow to actually illustrate GES for this descriptor, alternatively; Indicator(s) developed and found to be relevant to illustrate GES for this descriptor; however, target(s) is (are) too modest (e.g. trends [^] is not considered as ambitious enough).
0: GREY	Indicator(s) developed and found to be relevant to illustrate GES for this descriptor; however, target (s) is (are) not set although basic information for setting target(s) is available, alternatively; basic information for setting target(s) is lacking but there is no or modest indications that MS is striving to overcome this.
1: YELLOW	Indicator(s) developed and found to be relevant to illustrate GES for this descriptor.; however, basic information for setting target(s) is lacking but there are indications that the MS is striving to overcome this and it is deemed that targets finally is going to be set on an ambitious level; alternatively, targets are on an acceptable level but is recommended to be more ambitious.
2: GREEN	2: Indicator(s) developed and found to be relevant to illustrate GES for this descriptor and target(s) is (are) ambitious.
WHITE	Indicators that could not be evaluate at all since they were deemed to be irrelevant for the specific descriptor but more relevant to some other descriptor.

[^]**Note:** Descriptor 10 according to EU Criteria indicator(s) should involve trends when assessing state of GES for Marine Litter.

Qualitative and quantitative targets and difficulties when comparing GES

According to the MSFD, Member States have to set qualitative or quantitative targets for indicators. When comparing ambition of indicator targets it would be crucial to have quantitative targets. Quantitative targets are easier to handle instead of qualitative targets as all the limit values set in WFD, River Basin Management Plans and HELCOM are numerical values. The lack of quantitative targets can be interpreted as unwillingness from the MS to commit itself to reaching a certain level of an indicator. The lack of a quantitative target may also indicate a lack of knowledge

about the environmental context and actual effects in nature.

One part of the IA was to define Good Environmental Status. Member States have set either GES on the descriptor, indicator and/or target level, which make comparison of GES levels difficult. As above mentioned for the Initial Assessment, Member States have to define Good Environmental Status.

The good status boundary of marine environment should be consistent with other directives in order to achieve good results. Figure 2 below shows an example from the Finnish IA outlining how good status could be set equally with other directives, in principle, the same approach should be used in all Member states.

Figure 2:

Directive	Environmental status				
MSFD	Good		Good status not achieved		
WFD (ecological status)	High	Good	Moderate	Poor	Bad
WFD (chemical status)	Good		Good status not achieved		
Habitats Directive	Favorable		Unfavorable	Bad	

Note: a translation, taken from Finnish IA

2. Descriptor 1: Biodiversity

The Commission decision of criteria and methodological standards on good environmental status of marine waters (2010/477/EU) gives some freedom for member states to prioritize aspects of biodiversity. This is because of the very broad scope of biodiversity. For our report we have chosen only a few species to evaluate MS performance. They are CCB priority species (harbour porpoise, seals, salmonids and other fish) and these were not prioritized by all countries. There is also wide diversity in GES descriptions, targets and indicators. The differences can be partly understood in eastern Baltic Sea countries with not so many recent records of harbour porpoise and seals. On the other hand, all member states should have done better work with fish biodiversity, because there are fish all over the Baltic Sea. In addition, our priority species are relatively well known and studied. Member states should work with them in any case because of the Habitats Directive, HELCOM and Common Fisheries Policy of the EU. That is why countries should have done better work than now, when they got only negative points for biodiversity (-1.1 – -2).

In general, the most ambitious countries according to our selection of key biodiversity criteria and indicators are Denmark and Sweden, despite the fact that they got a negative sum of points in our assessment. Trailing them are Finland and Poland. It must be noted that Germany, if finalising fully the ambitions noted on indicators and targets under development regarding biodiversity, will be the most ambitious Member State.

Estonia has received a low ranking with a score of -1.6. It had 6 indicators for our priority species and 9 other elements of biodiversity. No GES targets or indicators have been developed for porpoises and fish species but three for seals. Three interim indicators were developed for fish species, which is a positive sign. Estonia has done rather good work in seals, but more is needed for example with salmonids.

Latvia reported nothing for our priority species resulting in a score of -2. Latvia should put effort especially to salmonids, since Latvia has many important rivers for wild salmon. Recent findings regarding distribution of porpoise also indicate that this species must be taken into account also by Latvia.

Lithuania had only 2 priority species indicators (and 3 more for birds), so the points are low, -1.7. Lithuania do show some ambitious numeric targets for marine trophic and fish community indexes. It has not yet started work with marine mammals, because they don't have many of them in their short coast. However, as mentioned for Latvia, it seems likely according to new data that harbour porpoises also visit Lithuanian waters.

Poland has had problems in reporting the initial assessment to the Commission. However, if the Polish draft plans will be implemented, it will be better compared to the three smaller Baltic States: 14 indicators for priority species and 5 other for biodiversity resulting in the score -1.4. Poland must pay more attention to harbour porpoise and sea trout.

Germany has the national plan still under consultation. There were only 6 reported indicators for our priority species at this phase and thus a low score, -1.8. In addition, Germany also has a different way to express GES targets, so it is not easy to compare the German result to other countries. However, according to the national consultation draft, Germany is making lots of very detailed work: a total of 18 indicators for priority species and 64 for other biodiversity, far more than any other MS. If Germany can develop more indicators to GES target level, it will most likely become the best example MS regarding the biodiversity descriptor. Germany is planning for

numeric target values for marine mammals, but has today nearly nothing with fish biodiversity, which must be considered questionable for a country with fishery interests.

Denmark was the best country, alongside Sweden and scored -1.1. Denmark has performed better than other MS in relation to harbour porpoise and seals. Denmark had 13 indicators for marine mammals. However, strangely Denmark has reported nothing for fish biodiversity. Denmark has not done very well with the commercial fish descriptor 3 either. This is a severe gap for a country with big fishing fleet.

Sweden received score of -1.1 and has reported a total of 21 indicators for priority species. Sweden was especially strong in fish biodiversity. In fact Sweden was more active for fish species in biodiversity descriptor than commercial fish descriptor. Harbour porpoise is the biggest future challenge for Sweden in the Baltic Sea. Sweden has taken harbour porpoise better into account in the west coast than in the Baltic Sea.

Finland was the third MS with -1.3 points and 9 priority species indicators. Finland is still developing more indicators in 2014 and 2018. It should put more effort to ringed seal, salmon and in the future also harbour porpoise.

Proposals

Concerning to CCB key species, **harbour porpoise** needs more attention in all aspects in all countries (only 13 indicators from 3 countries). In the future there can be at least summer areas also in eastern parts of the Baltic Sea. Underwater voice studies should be continued, because the SAMBAH project gave important new information about the distribution of harbour porpoise. Countries should study also death causes and genetics of marine mammals. Member states should develop conservation measures (e.g. protected areas and minimized by-catch) to help the only Baltic Sea cetacean to come back.

Also seals are coming back to areas, where they have not been breeding for decades. There were 27 indicators from all countries, except Latvia and Lithuania. All the Baltic Sea countries should put more attention to especially current and future breeding and resting areas of seals. Health situation of seals is important to monitor because of new pollutants.

Key fish species should be taken into account in biodiversity, because all fish are not commercial fish (Descriptor 3). There were a total of 31 indicators, which is bigger amount than for harbour porpoise and seals. However, there is nothing reported from Latvia, Germany and Denmark on fish. It is remarkable that fish species had habitat and ecosystem indicators, more so than for marine mammals, so fish species give added value to the indicator set of descriptor 1. Regarding CCB priority species, there were big gaps with salmonids: not one MS has taken salmon into biodiversity indicators, but Sweden and Finland both use sea trout. This is a disappointment, because both of these salmonids are HELCOM core indicator species. Salmon is also a Habitats Directive species, and the EU Common Fisheries Policy is related to both of them. Salmonids are not taken into account properly in every country even in Descriptor 3 (commercial fish).

- Especially salmonids should be taken more seriously by all the countries in MSFD work. They need also conservation measures to achieve e.g. HELCOM targets (80 % of PSpC for wild salmon rivers).

In general, marine mammal indicators were used to usually cover population related indicators, whereas fish indicators are used to best cover habitats and ecosystem related indicators.

In **population targets and indicators** (criteria numbers 1.1 - 1.3) the usual minimum level is

favourable conservation status by the Habitats Directive.

- More numeric target values and timetables for population targets and milestones are needed, because favourable conservation status of the Habitats Directive is mainly a trend.

Habitat and ecosystem indicators (criteria numbers 1.4 - 1.7) were used much more with fish than marine mammals.

- Habitat and ecosystem indicators should be developed for marine mammals.

Compared to other EU Directives, MSFD has better elements for marine species than WFD biological quality elements. On the other hand, WFD has more detailed descriptions for fish high, good and moderate status targets than MSFD. Member states have usually used the **Habitats Directive** favourable conservation status as target in population and range, but habitat aspect was usually forgotten. However, there are no species without habitats.

- Member states should remember the third aspect of it the favourable conservation status of the Habitats Directive: that there should be enough habitats to sustain the populations..

It is astonishing to find that Member States are not using **HELCOM core indicators** more systematically in their MSFD work. Regarding marine mammals the situation is better than with fish, and the worst situation is with salmon and sea trout HELCOM indicators.

- Member states should make more use of HELCOM core indicators. They can give more coherence for the whole Baltic Sea and support implementation of BSAP.

To summarise, all member states should make GES and environmental targets more clear. In most cases countries have been very *qualitative*. We think that the most important need now is to develop also *quantitative* numeric targets.

Table 4. Sum table of the averages of assessed biodiversity indicators (harbour porpoise, seals and fish)

	EE	LV	LT	PL	DE	DK	SE	FI
Porpoise	-2	-2	-2	-1.6	-1.8	-1	-2	-2
Seals	-1.25	-2	-2	-1.6	-1.8	-0.4	-1	-1
Fish	-1.75	-2	-1.3	-1.25	-2	-2	-0.5	-1.1
Sum of averages	-1.6	-2	-1.7	-1.4	-1.8	-1.1	-1.1	-1.3

Note: all details and explanations on each MS and each species can be found in Annex 1 tables 1-3

3. Descriptor 3: Commercially exploited fish and shellfish

Commercially exploited fishes species is an area where data and scientific research is relatively abundant compared to many other MSFD descriptors, and especially so in the Baltic Sea. And yet, when reviewing the MS work it we find a very wide range of approaches, and available ICES data is not always used. In some cases targets set are potentially in conflict with the CFP. Comparison between MS is difficult because of this range, but when adding things together three MS, Germany, Finland and Sweden, seem to have understood the rationale behind this MSFD descriptor better. The links to other important Directives such as WFD, and Habitat Directive is clearer. But all MS must improve on this descriptor, also the mentioned three MS. Even though HELCOM does not directly engage in fishery issues, there are targets and indicators set in the BSAP. Two important goals are the significance of healthy fish stocks showing a size, age and geographical distribution, and the salmon reproduction goal to reach 80% of the Potential Smolt Production Capacity. Both of these have been treated surprisingly poorly and not utilized as common ground for MS.

Estonia

Estonia has not proven to be very ambitious in relation to this descriptor, although according to national NGOs the knowledge is there. Estonia's is given the overall score of -0.75. Reasons for the low score are that Estonia has not developed enough indicators for EU criteria on reproductive capacity of the stocks, such as SSB. Only salmon smolt production as a secondary indicator is chosen. Regarding population age and size distribution Estonia has only chosen to refer to perch to monitor the development, but they have at least tried.

It is recommended to, beside salmon and perch, also include sea trout in the national monitoring programme. We also recommend that counting ascending salmons in salmon rivers should be complemented with targets of Potential Smolt Production Capacity (PSPC) for the Estonian salmon rivers (80% of PSPC is recommended by HELCOM). Furthermore we believe that more functional groups, also monitoring of pike and pikeperch should be included in the size and age criteria. Since Estonian waters are important areas for water fowl we also suggests that the HELCOM core indicator "Number of drowned mammals and water birds in fishing gear" should be included as an environmental D3 indicator.

Latvia

Latvia has received a combined score of -1.25 because of s series if gaps and missing indicators. Only 3 indicators are listed for the entire descriptor. When defining GES on criteria level some positive signs are shown since threshold F values for some commercial stocks in relation to 3.1.1, it is actually below current ICES recommendations on Fmsy. However, besides this criterion the ambition level is deemed to be poor. There are species missing and major challenges are lack of data and monitoring. However as mentioned, for this descriptor much data is provided by ICES and therefore there should be enough information to describe GES, develop indicators and targets, even in Latvia. Latvia hosts a large number of wild salmon rivers of all Baltic MS, and with salmon stocks in bad shape, the ambition level for this species should be much higher to be acceptable and

Lithuania

Lithuanian ambition is deemed to be poor, with many gaps in their reports and it is clear that implementing this directive is a big challenge for them; no indicators at all developed on SSB and recruitment and therefore they are graded low on these aspects. A total of only 3 indicators have been reported. Total score is -1.375 and that is the lowest of all MS. For example, Lithuania is missing salmon and this species is not included at all in Lithuanian indicators. As for Latvia, ICES data and proposals could be more utilized by the administration, and much work is needed to meet

the standards of the MSFD.

Poland

Poland has been very late in the reporting and has still not officially reported to the Commission, which might serve as a proxy for the willingness to participate in the implementation of this directive. It is very difficult to evaluate the ambition level of the Polish work, since most targets are set as trends and are only vaguely described. No proper primary indicators for criteria 3.2 or 3.3 are presented. Poland is given the score of -1,22. Poland also show a problematic view of basic scientific data e.g. it is clear that F of western Baltic cod has to be decreased (suggested level 0,25), however this is not supported by the Polish authorities according to targets set. Also, due to the documented high degree of misreporting salmon as sea trout (ICES WGBAST, 2012), which Poland has contested but been proven wrong, it is important to greatly improve fishing restrictions on sea trout in the Polish management.

Germany

If any country should be set as a role model for this descriptor, Germany is the only candidate with a score of 0.786. One problem is that they have chosen a parallel procedure when developing indicators, which is commendable for being more environmentally inclusive but also makes it difficult to compare with other MS. However, it is clear that in many aspects Germany is the most ambitious country of all, with many well thought out indicators. Importantly, Germany has also included indicators that reveal direct ecosystem effects (on non-target species and benthic communities), that are also relevant for D3. Two of them relate to marine spatial planning and effects by fishing activities on sea floor and benthic habitat. These are:

- Area in which benthic communities are not affected by fishing gear (bottom trawling); and,
- Spatial distribution of fishing activities.

Two other indicators are developed which are related to Biodiversity, EU legislation on discard ban and loosely to the EU criteria 3.3 (population age and size distribution). These are:

Discard rate of target and non-target species (Potentially problematic since discards should be eliminated for non-target species, thus label bycatch is appropriate); and,

- Diversity of survey-relevant species.

However, targets are not set for these indicators yet, which is also the case for several indicators under criteria 3.3 resulting in a lower score than possible if such targets are presented.

Denmark

Considering the size and annual catches of Danish fishing fleet, the work on this descriptor is a disappointment with an overall score of -1.11. Danish work on descriptor 3 seems to have been too hasty, only presenting 3 indicators. It is very difficult to assess the actual ambition level, since targets and indicators not always clearly connected. The indicators are also phrased in a very general way. To add to this, the selection of fish species in the IA represents an unclear picture of the situation.

Denmark has developed an indicator to secure that “the commercialization of all fish and seafood species are sustainable”. Even if such an ambition is commendable it is very difficult to evaluate how this actually is going to contribute to the marine environment, since it is very widely phrased and no specific targets are set.

The reasons for the low score for Denmark, besides the unclarities mentioned above, is that no indicators at all under criterion 3.3 is reported (Population age and size distribution). As mentioned before, it can't be used as an excuse that information is not available, especially if no ambitions to remedy this is reported. Furthermore, Denmark has chosen to use of Bpa instead of Bmsy in relation to the reproductive capacity of the commercial stocks. This is highly questionable since the CFP states the SSBmsy target and Denmark will need to change this.

Denmark needs to improve by presenting indicators to estimate the overall impact of fishing - both the targeted and non-targeted - on stocks and the ecosystem as a whole to fulfil the intention of the MSFD. Also, the choice of indicators for environmental goals, which is calculated spawning stock biomasses for cod, herring, sandeel (*Ammodytes tobiatus*/*Hyperoplus lanceolatus*) and plaice, are too limited and can be misleading especially for short-lived species.

Sweden

The Swedish work on this descriptor shows uncharacteristically low ambitions compared to other areas we have reviewed. The total score is -0.3 and Sweden has in total only developed six indicators. It is very difficult to evaluate the ambition of Sweden since so few actual targets have been reported. There are also a number of indicators that are defined as “to be potentially developed” and not all of them are reported to the Commission. These are “Index of ratio of harbour porpoise caught as bycatch in relation to fishing effort” that relate to 3.1 (Fishing mortality); and three indicators related to 3.3.1, 3.3.2 and 3.3.4, respectively (see Table 5 for definitions of these sub-criteria).

It is highly regrettable that Sweden has shown to be more committed to meet EU criteria 3.3, other than discuss these “to be potentially developed” criteria. Even if prerequisites in forms of scientific knowledge are not completely available, the inclusion of such indicators would prove the willingness to close such information gaps and indicators for population age and size distribution should be Sweden’s priority to improve on.

Finland

Finland scores 0.09 overall for this descriptor. Finland has chosen a rather coastal oriented path judging from their selection of species. Ambition is often quite high although some more challenging indicators might have been developed. In some cases the indicator is set on a very ambitious level, and this requires knowledge on population status that today is missing. Finland is one of few MS setting indicators and pushing for monitoring of population age and size distribution and this is positive.

Criticism can be raised on how Finland interpret the PSPC for salmon as they still want to have different categorizations of salmon river based on the old Salmon Action Plan, basically giving different targets for different rivers depending on characteristics even though although such considerations are already included in the PSPC concept. Finland also receives a lower score on the fishing mortality indicator as Finland has chosen as $F=0,46$ as a target level, a contested number and not in line with current management plan.

On a criteria level Finland has also included MSY concerns and furthermore added some concerns of the need for migratory fish to have habitat to reproduce, the need for stocks to be sustainable without need of stocking activities and the fishing mortality of juvenile fish is as low as possible plus need for a selective fishing, accordingly.

Table 5. Indicators for Descriptor 3 Commercially exploited fish and shellfish. Only national indicators that match EU criteria are listed. The colouration of the cells illustrate qualitative grading of indicators and targets, accordingly (categorization for different grades, see below):



Indicators with no coloured cells are deemed to better fit under other descriptors and not included in the qualitative evaluation.

EU criteria	EE	LV	LT	PL x	DE x	DK	SE	FI
3.1. Level of pressure of the fishing activity								
Primary indicator - Fish mortality (F) (3.1.1).	Sprat ,herring (species missing) X	Herring (C & GoR) salmon, cod (flounder is missing) GES	Herring, sprat, cod (salmon missing) X	All commercial species Interim	All commercial species Interim	All commercial species GES	All commercial species GES	All commercial species cod (E, F=0.46) GES
	CPUE alien species X			Trends in F for all commercial species (salmon missing)				% of fish managed according to MSY GES
Secondary indicator - Catch/biomass ratio (3.1.2).		Smelt (missing species) GES			Both landing data (Interim) & surveys		Data poor commercial species GES	Zander, whitefish & perch GES
3.2. Reproductive capacity of the stock								
Primary indicator - Spawning stock biomass (SSB) (3.2.1)		Herring (C & GoR), sprat, cod (E), flounder, salmon, GES		Herring (C & W), sprat cod (E & W) (salmon & plaice missing) (trends)	All commercial species (species specific & for the whole commercial fish assembly)	All commercial species GES	All commercial species GES	Herring (BB) sprat GES
Secondary indicator - Biomass indices (3.2.2)	Natural smolt production in salmon rivers				All commercial species (species specific & for the commercial fish assembly)		GES	Salmon PSPC in other rivers
3.3. Population age and size distribution								
Primary indicators - Proportion of fish larger than the mean size of first maturation (3.3.1)	Perch (missing species) X		All commercial stocks X		see below Interim		Offshore species UD	Zander, whitefish and perch. X
- Mean maximum length across all species found in research vessel surveys (3.3.2)					see below Interim		Coastal species UD	Zander, whitefish and perch. (related to 3.3.1-3) X
- 95 % percentile of the fish length distribution observed in research vessel surveys (3.3.3)	All commercial species & perch (trends) Interim		All commercial species (trends) X	All commercial species (trends) X	All commercial species (related to 3.3.1-3 & 3.3.4) Interim		UD	
Secondary indicator - Size at first sexual maturation... (3.3.4)	Perch (missing species)				see above Interim		UD	
Σ indic.	6	3	3	5 *	8 *†	3 †	6 †	9
N grade Qual	-0.75	-1.25	-1.375	-1.222	0.786 ¹⁾	-1.111 ²⁾	-0.3 ³⁾	0.09

GES: indicator target is final and aiming to Good Environmental Status (GES) of marine areas by 2020; **Interim** target to achieve by 2020 to later on achieve GES; **X** indicator exist, but GES/Interim target not set; **X** not reported to EU; † indicator not matching EU criteria included * Indicators not reported to EU are included. **UD** indicator under development.

1) for Germany, indicators not matching the EU criteria are also included, namely: “Area in which benthic communities are not affected by fishing gear”; “Spatial distribution of fishing activities”; “Discard rate of target and non -target species”; and, “Diversity of survey-relevant species”. Neither of them are included in the grading since they are not reported to EC.

2) Denmark also includes one indicator not matching the EU criteria, namely: “The commercialization of all fish and seafood species are sustainable” (grade: 0).

3) Sweden also include two indicators under criterion 3.1, also listed as indicators under criterion 1.6.1 (Condition of the typical species and communities), namely: “Size Structure of fish community in Coastal Waters” and “Proportion of large individuals in the fishing community in offshore waters” (both graded as +1).

4. Descriptor 5: Eutrophication in the Baltic Sea

Eutrophication from land-based activities is a serious and major environmental problem in the Baltic Sea. Increased amount of nutrients lead to phytoplankton algae blooming and as a consequence reduce dissolved oxygen in the water body. The two nutrients mostly affecting Baltic Sea are phosphorus and nitrogen.

The Baltic Sea eutrophication is mainly caused by agricultural nutrient run-off from usage of fertilizers in the surrounding countries during the last 50 years. Annual total nutrient load to Baltic Sea is 600 000 tons of nitrogen and 30 000 tons of phosphorus. The biggest loader is Poland with 30% share of the total nutrient load. Approximately a quarter of the total nitrogen load comes as atmospheric deposition, from shipping and road traffic, agriculture and energy production.

Estonia

Estonia received medium ranking with **+0.375**, and is thereby ranked in third place. The score shows that indicators and GES targets needs to be further developed to reach MSFD ambitions. Estonia has overall 11 indicators and they fulfil 5 out of 8 EU criteria associated indicators. GES and Interim targets were set for five indicators, within two EU associated indicator; *Nutrient- and Chlorophyll concentration*. Estonia has developed appropriate targets, but they still need to develop more indicators related to EU criteria.

Latvia

Latvia fulfils half of the EU criteria associated indicators and their score is **-0.375**, which is among low grades. They have overall 7 indicators and all of them are corresponding to four indicators within EU criteria, GES targets are set for 5 indicators and few of them have already been achieved. However they have not developed comparable indicators for rest of the EU indicators, particularly they need to develop indicators for criteria (5.2.) *Direct effects of nutrient enrichment*.

Lithuania

Lithuania has developed overall 10 indicators which all are within EU criteria and even 6 correspond to first EU indicator; Nutrient concentration. Lithuania has not defined any GES targets, but still the target level is set on appropriate level for most of the indicators. The score for Lithuania is low **-0.375**, because they have not developed corresponding indicators, especially related to flora species, for half of the EU indicators.

Poland

It is especially important for Poland to work hard on eutrophication due to large total nutrient load. The fact that Poland has not yet reported to EC should perhaps have disqualified them from this report as this must be judged as low interest in MSFD implementation. However when evaluating them based on the draft version of the initial evaluation, they are doing pretty good. They cover EU criteria very well and receive score of **+0.75**, which is enough for the second place, but again nothing of what Poland has done is official yet. They have altogether 11 indicators and all of them are within EU criteria and two of those have even GES target.

Germany

Germany has developed 5 indicators for eutrophication and they have the lowest score, just **-1.5**. The reason for low score is that they do not have enough indicators and they have only set Interim targets for the indicators, and ambitious targets for only two indicators. The German indicators only cover EU criteria (5.1.) *Nutrient levels*. After setting appropriate target values and more indicators their grade will improve a lot.

Denmark

Denmark is according to scoring **+1.12** the most ambitious MS. Denmark has in total 9 indicators and cover almost all EU criteria associated indicators, only one indicator (5.1.2) *Nutrient ratios* is not covered. They have also set ambitious GES targets for most of the indicators. They have done exemplary work effectively following the EU criteria. The main weakness is that Tot-P is not included.

Sweden

Sweden has a quite low grade, only **+0.125**. Sweden has developed 8 indicators of which all within EU criteria, and they have set ambitious GES targets to every indicator.

In order to have comprehensive marine strategy they must develop more indicators for the criteria (5.2.) *Direct effects of nutrient enrichment*, an area much better covered by other MS in the Baltic region.

Finland

Finland is on the positive side of ranking, with a score **+0.375**. They share the third place with Estonia. Finland has overall as many as 17 indicators and cover same amount of EU indicators as Denmark (7/8). They have set ambitious targets according to WFD and HELCOM thresholds for half of the indicators, however numerical target values are missing, which makes the score low. It is exceptional that Finland has not set any GES targets, while many other MS have.

Table 6. Indicators for Descriptor 5 Human induced eutrophication. Only national indicators that match EU criteria are listed. The coloration of the cells illustrate qualitative grading of indicators and targets, accordingly (categorization for different grades, see below):



EU criteria and associated indicators	EE	LV	LT	PL	DE	DK	SE	FI
5.1. Nutrients levels								
— Nutrients concentration in the water column (5.1.1)	GES/Interim	GES	x	x	Interim	GES	GES	x
— Nutrient ratios (silica, nitrogen and phosphorus), where appropriate (5.1.2)								x
5.2. Direct effects of nutrient enrichment								
— Chlorophyll concentration in the water column (5.2.1)	GES	GES	x	x		GES	GES	x
— Water transparency related to increase in suspended algae, where relevant (5.2.2)	x	GES	x	x		GES	GES	x
— Abundance of opportunistic macro-algae (5.2.3)				x		GES		
— Species shift in floristic composition such as diatom to flagellate ratio, benthic to pelagic shifts, as well as bloom events of nuisance/toxic algal blooms (e.g. cyanobacteria) caused by human activities	x			x/GES		GES		x

(5.2.4)								
5.3. Indirect effects of nutrient enrichment								
— Abundance of perennial seaweeds and seagrasses (e.g. fucoids, eelgrass and Neptune grass) adversely impacted by decrease in water transparency (5.3.1)	x	x	x	x		GES	GES	x
— Dissolved oxygen, i.e. changes due to increased organic matter decomposition and size of the area concerned (5.3.2).				x		GES	GES	x
Σ indic.*	11	7	10	11	5	9	8	17
N grade Qual	0.375	-0.375	-0.375	0.75	-1.5	1.12	0.125	0.375

GES: indicator target is final and aiming to Good Environmental Status (GES) of marine areas by 2020; **Interim** target to achieve by 2020 to later on achieve GES; **X** indicator exist, but GES/Interim target not set; *also indicators outside EU criteria included

5. Descriptor 10: Marine Litter

The Commission decision of criteria and methodological standards on good environmental status of marine waters (2010/477/EU) for Descriptor 10: Marine litter is quite broad. Stating that GES is reached when “Properties and quantities of marine litter do not cause harm to the coastal and marine environment”. Furthermore, the Commission notes that variability in the distribution of litter, and the difficulty in tracking litter from its place of origin but emphasizes the importance of developing indicators with reference to micro-particles and where there is notable impact on marine life.

The Commission also states that it understands that there is a need for indicators to be further developed and that the MS should use experience from other areas that have more data i.e. the North Sea. However, with this in mind the ambition level of the MS in the Baltic Region varies quite a lot. Although all of the MS in the Baltic Region mention the lack of data and information about marine litter- some countries were much more ambitious when drafting indicators and targets that can be developed into functional indicators and targets in the near future. Also, in accordance with HELCOM core indicators- Marine Litter is still not a core indicator but a candidate indicator which is being developed in the next project of CORESET II, so unfortunately the Baltic MS do not have a regional framework to use a guideline when developing their indicators for the MSFD.

Germany

Overall- the most ambitious MS according to our grading system for Marine Litter is Germany. Germany has 4 indicators and has many other drafted indicators that are being developed. They received a total score of **-0.5**. They need to be more specific as to where they will monitor macro-plastics, as well as the selecting an indicator species for ingested litter/ entanglement in litter. They are also lacking an indicator to understand the trends, amount, and distribution of micro-particles, which is a challenge for all MS. German target to reduce the amount of litter by 10% is very ambitious. Furthermore their definition of GES is based on the descriptor level and should be developed further. Finally, a definite link between their definition of GES and the indicators and targets reported should be made more evident. The indicators developed are listed as interim.

Sweden

Following Germany with a minimal gap in development is Sweden with a score of **-0.75**. Sweden has only developed 1 indicator that is functional and applicable in the Baltic Sea, this is part of the reason for a lower grade than Germany. However, Sweden has developed indicators and targets that cover EU criteria and is developing indicators and targets for micro-particles, water-column and impacts of marine litter on marine life. These drafted targets were mentioned in the Swedish reporting. Their definition of GES at the descriptor level is a copy of the EU MSFD definition, but their definitions on the criteria and indicator level are not. Swedish NGOs stress the need for long-term funded projects and a more ambitious goal for the reduction of litter by 2020. The indicators developed are listed as GES.

Denmark

Denmark follows Sweden with a score of **- 1.0** and has developed 3 indicators that we have graded. However, the indicators that are established are very vague and do not go into very specific details. Because of this Denmark has received a lower score although it has developed more indicators than Sweden. Many of the indicators and targets are non-functional and need to be developed from research/data collection targets to targets used to reduce litter. Denmark has mentioned the need to develop targets for micro-particles. Denmark’s GES definition is on the descriptor level but does include aspects of maritime activities and invasive species which, is good. The indicators developed are listed as interim.

All these MS (Germany, Denmark, and Sweden) have drafted or preliminarily developed indicators

for 10.1 “*Characteristics of litter in the marine and coastal environment*”. However, these MS (Germany, Denmark and Sweden) have not been very ambitious in developing an indicator/target for 10.2 “*Impacts on litter of marine life*”, they have all preliminarily stated that they would like to use data or research on the Fulmar to do stomach analysis but it is known that this bird species is not as common in the Baltic Sea as in the North Sea- therefore we would like to see other indicator species used in understanding the impact of marine litter on marine life. Germany has for this indicator preliminarily drafted two indicators that involve entanglement of birds found dead or alive- which could be an indicator that can be applied to all areas of the Baltic Region.

Finland

Finland is next in line with a score of **-1.50**. Finland has preliminarily drafted indicators and targets for 10.1 but has no drafted indicator for 10.2 for these reason they received a lower score. Furthermore, Finland’s indicators and targets are quite vague and hard to quantify. Their definition of GES is at the descriptor and criteria level but also includes impacts on maritime activities but however needs to be further developed. The indicators that are reported are listed as interim. Indicators must be developed for impacts on marine life and micro-particles.

Estonia

Estonia received a score of **-1.75** as many of indicators and targets are not developed or functional or they are direct copies of the EU Commission Decision. Estonia has not defined GES for descriptor 10. Estonia has not reported the indicators or targets as GES or interim. Estonian NGOs mention the need for more monitoring and understanding of marine litter.

Poland

Poland has also received a score of **-1.75** although they have not officially reported anything to the EU. They have preliminarily drafted 1 indicator but as mentioned have not reported anything to the EU. They have not defined GES for descriptor 10. Poland has not reported the indicators or targets as GES or interim. Polish NGOs stress the need to develop more than 1 indicator for marine litter.

Latvia and Lithuania both received a score of **-2.00**. Neither Latvia nor Lithuania have reported any drafted targets or indicators for descriptor 10. They have not defined GES. Although it is a known fact that data is scarce in the field of Marine Litter- this does not excuse the very low ambitions of these countries. In order to achieve GES by 2020 for Marine litter – all MS in the Baltic Region must coordinate and communicate when developing indicators that can be used between countries and in the entire Baltic Region.

General coherence between Baltic Region MS is not very good. There are big differences in ambition and development of indicators/targets for Descriptor 10. Those countries with the lowest ambition/worst examples must develop indicators/targets together with the MS that have already begun to draft indicators/targets that can be functional as soon as possible in order to reach GES by 2020. All MS in the Baltic Region should be able to develop and analyze the same indicators for the region by using similar targets- if this is done there will be larger degree of coherence within the region.

- **Overall** the grade span for Descriptor 10: Marine litter- ranges from -2.0 to -0.5.

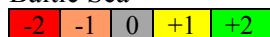
This means that there is a very large gap between MS in the Baltic Region. Furthermore, this means that there are overall no MS that are on track to reach GES by 2020 for Marine Litter (as all the scores are negative and all countries are the process of developing functional indicators and targets). This is a bad sign, as the MS have known about this goal and the MSFD timeline since 2008.

Overall **best example** for Descriptor 10 is Germany.

However, although Germany has received the highest score for this descriptor it does not mean it is on track to reach GES for Marine litter by 2020. Germany as well as all the other MS in the Baltic Region must increase their level of ambition tremendously if they are to have functional indicators for marine litter in the near future that can help the MS reach GES by 2020 and hopefully both EU level work within HELCOM related to litter this will be greatly improved and added directly into all MS programme of measures. Overall least ambitious countries for Descriptor 10 are Latvia and Lithuania.

All MS in the Baltic Region seem to agree that data and information to establish valuable targets and indicators is missing. It is important to try to develop targets and indicators that need minimal data in order to be applicable to reach GES for Marine litter. All Baltic MS agree that they must decrease the amount of litter in the Baltic Sea, but there is no overall agreement as to how much or what % of litter should decrease per year. HELCOM is working on establishing core indicators for Marine Litter, hopefully these indicators will help those Baltic MS that have not developed any indicators or targets in the correct direction. In conclusion, coordination and communication between MS is a necessity, as is coordinating and streamlining their work with HELCOM.

Table 7: Comparison of EU criteria and indicators covered by MS for Descriptor 10: Marine Litter in the Baltic Sea



EU criteria and associated indicators	EE	LV	LT	PL	DE*	DK	SE*	FI
10.1. Characteristics of litter in the marine and coastal environment								
— Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source (10.1.1)	X number & quality (needs to be more ambitious)	(no indicator developed)	(no indicator developed)	X number & quality (needs to be more ambitious)	Interim volume & category (needs to be more ambitious)	Interim Data /Reference levels (needs to be more ambitious)	Needs developed for Baltic SEA (needs to be more ambitious)	Interim number & quality (needs to be more ambitious)
— Trends in the amount of litter in the water column (including floating at the surface) and deposited on the sea-floor, including analysis of its composition, spatial distribution and, where possible, source (10.1.2)	X number & quality water column (needs to be more ambitious)	(no indicator developed)	(no indicator developed)	(no indicator developed)	Water column/surface (needs to be more ambitious)	Interim number & quality water column (needs to be more ambitious)	GES number & quality (needs to be more ambitious)	Interim number & quality (needs to be more ambitious)
— Trends in the amount, distribution and, where possible, composition of micro-particles (in particular micro-plastics) (10.1.3)	(no indicator developed)	(no indicator developed)	(no indicator developed)	(no indicator developed)	(ind. being developed)	(ind. being developed)	(ind. being developed)	(ind. being developed)
10.2. Impacts of litter on marine life								
— Trends in the amount and composition of litter ingested by marine animals (e.g. stomach analysis) (10.2.1).	X Sea fauna (more specific/better ind. species needed)	(no indicator developed)	(no indicator developed)	(no indicator developed)	Interim number & quality (better ind. species needed)	X Fulmar/bird species (better ind. species needed)	X No species decided (better ind. species needed)	(no indicator developed)
∑ indic.	1	0	0	0	4†	3	2	3†
N grade Qual	-1.75	-2	-2	-1.75	-0.5¹⁾	-1.0	-0.75	-1.5²⁾

GES: indicator target is final and aiming to Good Environmental Status (GES) of marine areas by 2020; **Interim** target to achieve by 2020 to later on achieve GES; **X** indicator exist, but GES/Interim target not set; **X** not reported to EU; † indicator not matching EU criteria included * Indicators not reported to EU are included.

¹⁾ Germany also included indicators not matching the EU criteria specifically: “Number of entangled birds in breeding colonies” (grade:1); “Dead found entangled birds and other indicator species” (grade:1);

²⁾ Finland also included one indicator not matching the EU criteria, specifically: “Amount of collected litter” (grade: -1).

6. Conclusions

6.1 Main findings

Summarised scores for all Member States on all evaluated descriptors

	EE	LV	LT	PL	DE	DK	SE	FI
D1	-1.6	-2.00	-1.7	-1.4	-1.8	-1.1	-1.1	-1.3
D3	-0.75	-1.25	-1.375	-1.222	0.786	-1.111	-0.3	0.09
D5	0.375	-0.375	-0.375	0.75	-1.5	1.12	0.125	0.375
D10	-1.75	-2.0	-2.0	-1.75	-0.5	-1.0	-0.75	-1.5
Average	-0.93	-1.40	-1.36	-0.90	-0.75	-0.52	-0.50	-0.58

1. Baltic EU Member States show low ambitions and poor quality of work in almost all cases and have definitely not fulfilled the expectations with a comprehensive and sustainable management of the marine environment. CCB has ranked MS work with grades: -2, -1, 0, +1, +2. The level and the span is evaluated and the results are:

D 1 - Biodiversity: Porpoise -2 to -1, Seals -2 to -0,4, Fish -2 to -0,5 (Overall -2 to -1,1).
 D 3 – Commercial fish species -1,38 to +0,78
 D 5 – Eutrophication -1,5 to +1,12
 D 10 Marine litter -1,75 to -0,5

Ranking is mainly negative or zero which means: "Indicators developed is irrelevant/partly relevant but too narrow" or "Indicator developed and relevant but targets too modest" or if evaluations is "zero" the "Indicator developed and relevant, but targets not set although basic info for setting targets are available"

The level +1, which means "Indicator developed and found relevant for GES, but basic info to set targets is lacking, but there is indications that the MS try to overcome this" has only been reached by a few MS

2. Surprisingly the HELCOM targets and goals are often simply not included as a base level, and decided key species etc not mentioned in some cases. The already established targets and indicators within HELCOM should of course be minimum standard for all Baltic EU Member States

3. Lack of a coherent view of Baltic MS for most of the descriptor indicators. The scoring span between Baltic EU MS is too big. Such big differences in ambition levels cannot be accepted if an ambitious GES, or already decided ambitions within HELCOM, shall be reached.

We see great need for improved coordination and cooperation among Baltic MS, perhaps by simply giving one country a lead/coordinating role in developing targets and useful indicators for a certain area/descriptor.

4. We want the Commission to take a greater responsibility for next steps to ensure better coherence etc. but we must also acknowledge the fact that many supporting documents and guidelines provided by the Commission or for example from ICES have come too late to help and improve MS work.

5. The overall appropriate comment and finding on implementation of this important directive so far is that Baltic MS seem unwilling to take full responsibility for proper management of the environment and natural resources of the Sea. At the same time the activities to utilize and harvest marine resources are expanding. However we hope, and believe, that MSFD implementation can be improved by 2015 and especially cooperation and development of joint indicators and common goals and targets.

6.2 Coherence within the Baltic Sea Region and connections to HELCOM agreements

Baltic MS have defined GES for descriptors in very diversified ways. GES have sometimes been set on Indicator-level, but different countries using various indicators, which make comparability low. Target levels for GES have been set in some cases, but many times also as interim values, or no level has been set.

This makes it extremely difficult to compare Baltic MS ambition level, when it comes to GES, and especially evaluate the real impact of GES-standards set on the marine environment.

As clearly stated by the Commission, the MSFD should be in line with other directives and legislation and furthermore have added effects in our mutual efforts to improve the marine environment.

Descriptor 1 - Biodiversity

We have assessed CCB priority marine species (Harbour porpoises, seals, salmonids and other fish species) as test species for the descriptor 1.

HELCOM Core indicators and agreements

HELCOM has developed 13 Core indicators related to marine biodiversity. But Baltic EU Member states, and in parallel HELCOM contracting parties, have to a low degree applied HELCOM agreed core indicators for biodiversity descriptor in MSFD. This implies low coherence and coordination between Baltic countries. Highest coherence you find population abundance/distribution of marine mammals, where 5 Baltic Sea countries use this indicator, while other indicators have only been used by 1-3 countries.

HELCOM platform has not been used very much to develop GES for biodiversity, which indicate that implementation of HELCOM agreements will not get very much support from GES activities in the Baltic region. It also reflects poor quality for many Baltic countries to develop high quality GES on biodiversity.

HELCOM target values for viable populations of species - not applied in GES

HELCOM BSAP has for wild salmon populations set as the target attainment of at least 80% of the PSPC (Potential Smolt Production Capacity) and for some very weak salmon populations of at least 50% of the PSPC, by 2015.

Salmon is a commercial fish species in the Baltic Sea, but also an EU Habitat species that shall reach favourable conservation status. HELCOM targets for wild salmon have a direct link to the implementation of the Habitat & MSFD directives in Baltic Sea.

No Baltic EU country has applied the HELCOM targets for wild salmon under the biodiversity descriptor. But under descriptor 3, Commercial fish species, six Baltic countries has "Fish mortality" for all commercial fish species (including salmon), 3 countries have SSB as indicator for

salmon. But only two countries (FI,EE) has followed the HELCOM approach for salmon and developed indicators for smolt production in rivers (Finland applied this in spite of having a constant derogation of all fish species from the Habitat Directive). Fish mortality and SSB are indicators for salmon in commercial fisheries, but such indicators are far from enough to safeguard the Habitat Directive goals for all wild Baltic salmon populations. This clearly shows that many Baltic EU countries don't follow the HELCOM agreements on targets already set up, which should have been used as minimum standard for GES.

Viable populations of Habitat Directive species (Harbour porpoises, seals) – not getting attention enough

Some Baltic countries have not developed any descriptors indicators for important marine species (harbour porpoises, seal species), that also have the status as Habitat Directive species. These countries believe they don't have these species in their marine waters, which is an underestimation of the real situation. Management plans for marine Habitat Directive species is necessary, to safeguard Favourable conservation status, and it is highly relevant to develop such concepts to fulfil ambitions of the MSFD.

It is surprising that Baltic countries have not used the baseline data and monitoring systems for marine Habitat Directive species, which was reported for the last six-year period according to Habitats Directive in June 2013, also for the MSFD work on marine biodiversity.

Some examples:

Four countries (EE,LV,LT,FI) have paid no attention to porpoises. New data from the SAMBAH project suggests that porpoises also inhabit Gulf of Finland and coastal areas of Eastern Baltic, which show that these countries need to develop population indicators.

Other observations

Fish biodiversity within GES holds very poor quality for Baltic region countries. All Baltic countries have received low ranking.

This section must be developed by most countries and receive clear GES-targets, because fish species, represent crucial components in the marine ecosystem, and also represent important society values for commercial and recreational fisheries. Especially surprising was that Germany and Denmark, important fishing nations, and countries making good work with marine mammals diversity, performed poorly on fish biodiversity.

Descriptor 3 – Commercial fish

First of all, it must be stated that the fact that information is missing so that indicators cannot be developed is a poor excuse, especially for Descriptor 3 for which ICES has so good possibilities to provide material and function as a discussion partner.

HELCOM agreements related to descriptor 3

HELCOM has had a main responsibility to coordinate the development and implementation of the MSFD among the Baltic States. Therefore it is alarming that targets set in the HELCOM Baltic Sea Action Plan (2007) are not covered in the EU criteria. Most importantly an EU criterion for spatial distribution of fish within the sea, and age/size distribution for fish stocks that should be included; it should include references to the HELCOM target that especially cod should be found within its natural geographical distribution area in Baltic proper and on HELCOM decision that all commercial fish stocks will exhibit a population age and size distribution for a healthy stock, by 2020.

Also, the socio-economic importance of coastal fish species is highlighted in the HELCOM BSAP agreements and as suggested by ICES (2014), there would also be important to include indicators for species that are managed on a national/regional level. International cooperation for monitoring of coastal fishes is already practised to meet the challenges of BSAP and the MSFD, e.g. the HELCOM Fish-Pro II project (<http://helcom.fi/helcom-at-work/projects/fish-pro>) and this effort is not only relevant for the descriptors D1 and D4, but also for D3 since these species also often are of at least local commercial importance. Especially when they are clearly linked to the human behaviour in commercial fishery; e.g. spatial estimates of impact on habitat due to fishing activities; indirect impact on non-targets species due to their ecological association with target species; and/or, direct impact on target species being caught as bycatch. HELCOM has developed a core indicator on “Number of drowned mammals and water birds in fishing gear” which should be used by all MS, especially in the southern Baltic where the degree of wintering waterfowl caught in gillnets is significant.

Baltic countries ambition level

Judging the different GES ambitions of MS only as indicated by the choice of indicators and targets, Germany and to some extent also Finland differ from the other MS in that they have higher ambitions of fulfilling the criteria listed by the Commission. These countries have developed the largest spread of indicators (although Finland lacks indicators for several criteria) and even though the targets are not always developed, the selection of indicators reveals that they have the ambition to fulfil the objectives indicated by the EU criteria.

To conclude, the ambition level in achieving GES is deemed as highest for Germany. Finland has partly showed being ambitious although there are still species to be included and targets to be developed. Sweden has partly showed ambition (3.1 and 3.2) but performed poorly in relation to EU criteria 3.3. Denmark reveals a large inconsistency between ambition level on a descriptor level and what is indicated by their selection of indicators and targets. Latvia, Estonia and Poland show some ambitions, although too many targets are set as trends and in the Estonian case the species selection is far too narrow and GES definitions on criteria levels are clearly substandard. Lithuania needs extra considerations as their ambition levels, both in view of GES definitions and set targets of indicators which are deemed to be unacceptable.

There are examples that stick out that may be in conflict with other regulations such as Denmark’s decision, regarding reproductive capacity of all the commercial stocks, not to set biomass targets according to SSB_{msy} but to SSB_{bpa} across the board (or actually to B_{pca}, precautionary approach). Setting target as B_{pca} is not in accordance with already agreed legislation of achieving SSB_{msy} for European stocks by 2020 (i.e. CFP). This must simply be changed and aligned with CFP. Some other MS has done this as well but only in special cases (e.g. when F_{msy} trigger is missing etc).

Descriptor 5 – Eutrophication

HELCOM agreements related to descriptor 5

HELCOM has developed 7 core indicators related to marine eutrophication. Many core indicators have in this case been applied by MS. Examples of gaps in applying HELCOM indicators are e.g. only half of HELCOM countries have incl. oxygen concentration/oxygen-free areas as indicators and a few the aspect of Lower depth distribution of macrophytes. Such indicators should be applied by all Baltic MS.

Baltic EU MS, also HELCOM contracting parties, have a moderate to relative high degree applied HELCOM core indicators for eutrophication. As eutrophication is the major environmental problem

for the Baltic Sea, high requirements for application of HELCOM and EU indicators is important, which mean that many Baltic countries must strengthen their work to develop indicators better.

Baltic countries ambition level

Out of the descriptors we have assessed, Descriptor D 5 is definitely the descriptor with highest coherence and ambition level from MS, but there is still a need to strengthen MS work on some aspects.

Nutrient and chlorophyll concentrations and water transparency indicators have been addressed by almost all countries. This reflects also that these parameters have the base for the calculation of country nutrient reduction target agreed upon within HELCOM.

Six countries have Tot-N and Tot-P as indicators, and these are the parameters for the nutrient reduction goals within HELCOM. But it is remarkable that target values for nutrient concentrations have not been set by all HELCOM countries, as HELCOM has already agreed on such values. The same concern is valid for water transparency and chlorophyll, where HELCOM has set standards.

Applications of other EU indicators are more disparate, even though most countries have included some indicators on direct effect/indirect effects of nutrient. The coherence with EU criteria is relatively high.

Descriptor 10 – Marine litter

The coordination of the descriptor for Marine litter for Baltic Sea Region EU MS has so far been minor or non-existing. All MS in the Baltic Region seem to agree that data and information to establish valuable targets and indicators is missing. In this particular case it would have most appropriate to coordinate and work towards joint indicators.

HELCOM has an intention of developing an action plan and developing Marine Litter into a core indicator by latest 2015 as well as developing an overall goal to reduce marine litter over time. This is in line with the EU MSFD as well as what each MS should strive towards. These ambitions, if fully implemented, can provide coherent views from the Baltic region to reduce marine litter, but the ambition level is today unclear.

6.3 Summary of ambition level for Baltic EU MS

Estonia

Estonia received an overall score of -0.93 and has not been very ambitious in relation to Descriptor 1: Biodiversity, Descriptor 3: Commercial Fish and Descriptor 10: Marine Litter. Estonia has not defined GES for Marine Litter, and has no GES targets or indicators for Biodiversity for Harbour porpoise. They have not developed enough indicators for Descriptor 3 for the EU criteria on reproductive capacity of stocks, such as SSB.

However, Estonia has been more ambitious when developing indicators and targets for Descriptor 5: Eutrophication, where they have developed appropriate and functional targets, but some indicators need complementary work. Overall, Estonia needs to develop more appropriate targets and indicators that fulfill GES. Communication and coordination between MS in the Baltic Region is key.

Latvia

Latvia has received an overall score of - 1.4, it is clear that implementation of the MSFD and the development of targets and indicators has been a challenge. Latvia has not been very ambitious at all when developing indicators and targets for Descriptor 1: Biodiversity and Descriptor 10: Marine Litter. Latvia has reported minimal or no indicators or targets for these descriptors. They have not defined GES for either of these descriptors.

Latvia has also had very low ambition for Descriptor 3: Commercial Fish and Descriptor 5: Eutrophication. Latvia has set some GES targets for Eutrophication and Commercial fisheries but major species are missing and comparable indicators need to be developed.

In conclusion, Latvia needs to develop many more indicators and targets that are applicable to achieve GES and must communicate and coordinate with other Baltic MS to reach regional goals. Special focus must be given to salmonids in Latvia considering as many as 10 wild salmon stocks that spawn in Latvian rivers.

Lithuania

Lithuania has received an overall score of -1.36, and implementation of the MSFD so far and the development of targets and indicators is not acceptable. Lithuania has been the least ambitious when developing indicators and targets for Descriptor 1: Biodiversity and Descriptor 10: Marine Litter. Lithuania received very low scores for both of these Descriptors.

Lithuania has also done less than satisfactory work for descriptor 3: Commercial fish and Descriptor 5: Eutrophication. Not many indicators or targets have been developed that are efficient, and Lithuania has a great many details to improve before reaching an acceptable level of implementation of the MSFD. Overall, as for most Baltic MS, Lithuania must coordinate and communicate with other MS in the Baltic region to develop indicators and targets that are applicable to achieve GES.

Poland

Poland received an overall score of **-0.90**, based on still not reported drafts. Poland has shown the least effort when developing indicators and targets for Descriptor 10: Marine Litter, where more indicators and targets need to be developed and Poland needs to more clearly define GES on descriptor and indicator levels.

Poland has developed more indicators and targets for Descriptor 1: Biodiversity, Descriptor 3: Commercial Fish and Descriptor 5: Eutrophication. Although they have not reported on MSFD to the Commission, but their drafted targets for these three descriptors are functional and developed and some are quite ambitious, especially in relation to Eutrophication.

Poland must report to the EC as soon as possible in order to participate officially in the implementation of the MSFD. Poland should also communicate and coordinate with neighboring MS in the Baltic Region to develop indicators and targets in areas where they need the most assistance.

Germany

Germany has received an overall score of **-0.75**. Germany has not done well in developing and also reporting targets and indicators for Descriptor 5: Eutrophication as well as for Descriptor 1: Biodiversity. The reason for the low scores is simply that they have not developed enough indicators or targets that were reported, but when considering available drafts circulated for consultations it seems that Germany can and will do a lot better if drafted work is implemented.

Germany has been somewhat more ambitious when they developed indicators and targets for Descriptor 10: Marine Litter. Germany must further link GES for Marine litter from the descriptor to indicator and target levels, as well as develop indicators for micro-particles. Germany has been quite ambitious when developing Descriptor 3: Commercial Fish as it has developed targets and indicators that are related to ecosystem effects, and they receive the highest score of any MS in the Baltic Region for this Descriptor.

Overall it has been difficult to compare Germany to other MS as they have chosen a parallel procedure when developing indicators, which has been more environmentally inclusive but difficult to compare to other MS. Therefore, Germany must communicate and coordinate its goals and aims so that other MS can cooperate together to reach GES.

Denmark

Denmark has received an overall score of **-0.52**. Denmark has been the least ambitious when developing indicators and targets Descriptor 3: Commercial Fish. Denmark has to be more ambitious when developing indicators for fish species for both of the Descriptor 3 and descriptor 1: Biodiversity. Further, their definition of GES for Descriptor 3 and relation to indicators and targets is very vague and hard to quantify.

Denmark has been more ambitious when developing indicators and targets for Descriptor 10: Marine Litter. However, many of the indicators mentioned are vague and data collection targets. Denmark needs to develop targets and indicators that actually aim to decrease marine litter. Denmark has been the most ambitious in developing indicators and targets for Descriptor 5:

Eutrophication, where it received the highest score and it has covered most of the EU Criteria. They have set ambitious targets and defined GES.

Overall, Denmark needs to be more specific in certain areas of its reporting and needs to develop indicators and targets that are applicable, as they have in Descriptor 5.

Sweden

Sweden received an overall score of **-0.50** which is the highest combined score of all the MS in the Baltic Sea Region. When compared to other Baltic MS, Sweden has been very ambitious when developing indicators and targets for Descriptor 1: Biodiversity. In relation to Biodiversity they have done good work with fish species but need to also focus more on harbour porpoise as recent information indicate relative high density of porpoises in Swedish waters in Baltic proper (if they are to reach GES for all species listed.)

Sweden has been less ambitious when developing indicators and targets for Descriptor 10: Marine litter, where only 1 indicator is applicable to the Baltic Sea. Although Sweden does define GES on the descriptor and criteria level, it must develop more functional indicators in the Baltic Sea. Sweden has been least ambitious when developing indicators and targets for Descriptor 3: Commercial Fisheries and Descriptor 5: Eutrophication. For both descriptors they must develop more indicators and report more targets. Although Sweden has reported many drafted or “to be potentially developed” targets and indicators these must be further developed in order to reach GES.

Overall, Sweden has received the highest score as they are reported the most consistently for the Descriptors that we reviewed, and they have also defined GES in a way that is consistent with descriptor, criteria and in some cases indicators. Sweden has also mentioned many drafted indicators that are being developed and we urge Sweden to continue to develop these into functional indicators that will help Sweden reach GES for 2020. Sweden should also communicate and coordinate with MS in the Baltic Region.

Finland

Finland received an overall score of **-0.58** and has been least ambitious when developing targets and indicators for Descriptor 1: Biodiversity and Descriptor 10: Marine Litter, where they mention the need for more indicators to be developed. Finland lacks ambition when developing indicators for Biodiversity in relation to harbour porpoise, ringed seal and salmon (Descriptor 1). Finland has however, included fish biodiversity indicators in both Descriptor 1 and Descriptor 3 – Commercial Fisheries, which is important, and show relative high ambitions. Marine litter has not been a prioritized descriptor.

Finland has been more ambitious when developing indicators and targets for Descriptor 3: Commercial Fish and Descriptor 5: Eutrophication. In relation to commercial fish Finland is pushing for monitoring of population age and size distribution, which supports HELCOM goals. However, in relation to eutrophication, Finland must set some clear GES targets, which are now missing.

Overall, Finland should communicate and coordinate with other MS in order to prioritize areas that need to be developed further.