

2015-03-03

## Summary of the Swedish Programme of measures for the marine environment

(established under the Marine Strategy Framework Directive)

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### Summary of the Swedish Programme of measures for the marine environment

The Swedish Agency for Marine and Water Management (SwAM) has developed a proposal for the Programme of measures for the marine environment (PoM) pursuant to the Marine Environmental Ordinance, which is the Swedish implementation of the EU Marine Strategy Framework Directive (MSFD). The program covers the North Sea and Baltic Sea marine areas. The Programme of measures for the marine environment should state which measures are needed in order to comply with the Swedish environmental quality standards (the Swedish implementation of targets pursuant to article 10 of MSFD) for the sea. The aim is to achieve or maintain good environmental status in the marine environment year 2020.

### **The basis of measures - environmental quality standards for the marine environment**

Pursuant to the MSFD, the EU member states should achieve or maintain good environmental status in their marine waters by 2020 at the latest. They should also define a number of environmental targets with indicators so as to guide progress to achieving good environmental status. The environmental targets should be based on, among other things, the definition of good environmental status which is stated in the Directive and should take into account pressures and impacts.

In Sweden the environmental targets were implemented through environmental quality standards pursuant the Marine Environmental Ordinance (SFS 2010:1341). Environmental quality standards are a legally binding policy instrument following Chapter 5 of the Swedish Environmental Code. An environmental quality standard covers a specific geographical area, which may be a municipality, the entire country or as in the case of marine management, an entire marine area.

Notably, both the overall (MSFD Art 9) objective of good environmental status and the environmental targets (MSFD Art 10) were implemented through environmental quality standards. Thus, the Marine Environmental Ordinance states two levels of environmental quality standards. Section 17 of the Ordinance includes an overall standard of what characterises a good environmental status for Sweden's management areas in the North Sea and Baltic Sea. Section 19 of the Ordinance contains more detailed environmental quality standards. Each environmental quality standard has related indicators which aim to verify whether the standard has been complied with. The environmental quality standards and indicators have been determined by SwAM in the HVMFS 2012:18.

The Swedish PoM for the marine environment complies with the provisions in Chapter 5 of the Swedish Environmental Code and primarily addresses authorities and municipalities. For each measure, a competent authority has been identified which will be in charge to implement the measures, in some cases with participation from other authorities. Most measures are of a policy instrument type (for example, guidance, investigations, communication, grants) which will directly or indirectly result in the implementation of physical measures.

SwAM proposes a total of 33 measures within the thematic areas of

- non-indigenous species,
- fish and shellfish which are impacted by fishing,
- eutrophication,
- permanent alteration of hydrographical conditions,
- hazardous substances,
- marine litter,
- biological diversity,
- marine protected areas and marine restoration.

Nutrient loads, biological disturbance through selective extraction of species as well as introduction of hazardous substances are the pressures most impacting the environmental status in Swedish marine areas on an overall level. The potential of reducing the overall pressures with this Programme of measures is the largest for non-indigenous species and biological diversity. There is also a large potential to reduce the pressure on fish and shellfish

within the Swedish trawling limited area. There is a lack of knowledge within a number of areas, which makes it difficult to assess the scope and type of measures which are required to achieve or maintain a good environmental status and also to assess the costs and effects of the measures. Knowledge building is required also as regards marine habitats and species, eg. their status and distribution.

The implementation of the Swedish PoM for the marine environment is not expected to fully achieve good environmental status by 2020. This is partly due to factors such as slow recovery of ecosystems and to impacts from international sources, for example as regards the introduction of hazardous substances by aerial deposit. A strong international collaboration is required to target such pressures. Nevertheless, the Swedish Programme of measures will provide substantial improvements and be an important framework for the work to improve the status of the marine environment.

The benefits which can be attained if the proposed Programme of measures is implemented are assessed to exceed the costs by far. The estimated cost of implementing the Swedish PoM for the marine environment (however, without achieving a good environmental status) is estimated to approximately 0,4 billion EUR during the period 2016-2021<sup>1</sup>. It is clear from the Impact Assessment that implementation of the Swedish PoM for the marine environment will be a very good investment, both for the environment and for the public economy.

The work on developing the Programme of measures for the marine environment has been coordinated with other environmental policy work. The Swedish marine-related Environmental Quality Objectives<sup>2</sup> cover certain requirements in the Marine Environmental Ordinance. In this manner the legally binding environmental quality standards for the marine environment are linked to the politically decided objectives for Swedish seas. The Programme of measures for the marine environment is also closely related to the Programmes of measures required<sup>3</sup> by the Water Framework Directive, WFD (2000/60/EC), since the majority of measures as regards nutrient loads and hazardous substances are land-based and thus included in the PoMs for WFD. The drafting of programmes of measures under the two different Directives has been coordinated in order for the PoM:s to complement each other, and this work will continue during the public consultation period and onwards.

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<sup>1</sup> most measures are included in this cost, with a few exceptions where data was insufficient

<sup>2</sup> Sixteen environmental quality objectives describe the state of the Swedish environment which environmental action is to result in. These objectives are to be met within one generation, i.e. by 2020 (2050 in the case of the climate objective). See [www.miljomal.se/sv/Environmental-Objectives-Portal/](http://www.miljomal.se/sv/Environmental-Objectives-Portal/) (accessed online 2015-03-03)

<sup>3</sup> programmes of measures which are developed using the Swedish Water Quality Management Ordinance (2004:660), which is the Swedish implementation of the Water Framework Directive (2000/60/EC),

The upcoming Swedish marine spatial planning ordinance will provide a process for spatial organisation of activities so that a good environmental status and sustainable use of the seas can be attained. Several of the proposed measures in the PoM have a spatial dimension which needs to be handled in a future process for marine spatial planning. The work also entails collaboration with our neighbouring countries on measures in the shared marine environment, through the regional marine conventions OSPAR and HELCOM and on the EU level as well as through bilateral collaborations.

The Swedish PoM for the marine environment is developed during 2014 and 2015. The draft PoM has been developed in collaboration with the authorities addressed.

A national public consultation on the proposed Programme of measures is ongoing between 1 February and 30 April 2015. The Programme of measures will be decided by 31 December 2015 at the latest and will thereafter be reported to the EU Commission. Starting in 2016, the work on implementing the measures and monitoring their effects will begin.

## Summary of the measures proposed in the draft Swedish Programme of measures for the marine environment

The Programme of measures under the MSFD includes existing and new measures. Existing legislative frameworks (national, regional, international) and the tools they offer, already contribute to protection of the marine environment. A summary of such **existing measures** is contained in an appendix of the Swedish PoM, and in the description of the analysis of the need for new measures in the programme of measures.

**New measures** are those which have been identified in the PoM as being necessary to achieve or maintain Good Environmental Status in marine waters by 2020 when existing measures are not considered sufficient. The new measures contribute directly or indirectly to attaining the improvement needs which comprise the difference between the current environmental status and the Swedish environmental quality standards.

The measures, which address national authorities, county administrative boards and municipalities, are presented in summary below. Further information is given in the PoM in fact sheets for each measure.

### Measures regarding non-indigenous species

- **SwAM 1:** to design a pilot project to develop methods for control and local combating of invasive non-indigenous species.
- **SwAM 2:** to develop technical tools to make information on non-indigenous species more available .
- **SwAM 3:** to develop a national warning and response system for early detection of new invasive non-indigenous species as well as contingency plans for managing these.

- **The Swedish Environmental Protection Agency 1:** to develop guidance for authorities, businesses and the public in general for managing and disposal of biofouling on vessels.

#### **Measures for fish and shellfish which are impacted by fishing**

- **SwAM 4:** to introduce new fishing regulations in order to protect particularly endangered stocks spawning coastal waters within the national trawling limited area in Skagerrak and Kattegatt.
- **SwAM 5:** to introduce new fishing regulations with the purpose of establishing more selective fisheries within the coastal trawling prohibited areas in Skagerrak and Kattegatt.
- **SwAM 6:** to introduce new fishing regulations with the purpose of reducing pressure from fishery on those coastal stocks within the coastal trawling prohibited areas in Skagerrak, Kattegatt and the Baltic Sea in need of improved protection but which can be fished to a certain extent.
- **SwAM 7:** to investigate where further areas protected from fishery are needed in coastal waters, and establish such areas.
- **SwAM 8:** to investigate the need to introduce further temporal closures for fishery, to decide for which fish species and which time periods of the year this would be relevant, and to establish such temporal closures.
- **SwAM 9:** to adjust the fishing fleet capacity to fishing opportunities for certain fleet segments.
- **County administrative boards 1:** to assist the Swedish Agency for Marine and water management in their investigation of where further areas protected from fishery in the coastal waters need to be established. *Applies to coastal county administrative boards.*

#### **Measures regarding eutrophication**

Measures are to a large extent included in the PoMs under the WFD, to be decided in 2015. Reductions in nitrogen and phosphorus loads due to the Water Framework Directive Programme of Measures are expected to be sufficient to meet Sweden's obligations under the HELCOM Baltic Sea Action Plan.

New measures proposed to complement the WFD PoMs to reach national targets for eutrophication include:

- **SwAM 10:** to investigate the possibilities to affect the internal nutrient load, locally in eutrophicated bays and inlets and in the Baltic Proper.
- **The Swedish Board of Agriculture 1:** to investigate the possibility to financially support net uptake of nitrogen and phosphorus from the marine environment through cultivation and harvest of "blue catch crops" (e.g. sea-weed or mussels) where possible in marine areas which

do not reach good environmental status, and to stimulate technologies for cultivation and refining of such blue catch crops.

- **The Swedish Board of Agriculture 2:** to stimulate aquaculture technology which provides no net load to the surrounding waters, in marine areas which do not reach good environmental status.

#### **Measures regarding permanent alteration of hydrographical conditions:**

- **SwAM 11:** supported by the Swedish Environmental Protection Agency, to prepare guidance on marine-related environmental impact assessments<sup>4</sup>.
- **The Swedish National Board of Housing, Building and Planning 1:** to, in collaboration with the Agency for Marine and Water Management, prepare guidance for municipal maritime and coastal planning.

#### **Measures regarding hazardous substances:**

Important measures are also included in the PoMs under the WFD, to be decided in 2015.

- **The Swedish Environmental Protection Agency 2:** to develop guidance for the supervisory authorities regarding contaminated sediments on methodology for inventory, liability investigation and risk assessment. The need for general target values needs to be investigated and regionally adapted biological sediment tests need to be developed, particularly for the Baltic Sea.
- **The Swedish Environmental Protection Agency 3:** to investigate how accessibility and searchability of existing data on hazardous substances in sediment can be increased and coordinated.
- **The Swedish Environmental Protection Agency 4:** The Swedish Environmental Protection Agency and the Swedish Transport Agency together need to investigate the presence of tributyltin (TBT) and its degradation products in ports and in the marine environment in general, and ensure that underlying causes for its occurrence are investigated. Furthermore, based on reviews of existing policy instruments opportunities for further regulation need to be investigated with the aim of preventing the spread of TBT from vessels and ports to the marine environment. Based on the afore-mentioned, the need for national guidance needs to be identified in order to enhance the improvement work.

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<sup>4</sup> Environmental impact assessments here refer to Swedish implementation of EU Directives on SEA (2001/42/EC) and EIA (85/337/EEC)

- **The Swedish Environmental Protection Agency 5:** to identify the substances which may occur in discharge water from sewage treatment plants in such concentrations that they risk negatively influencing the marine environment and based on the results investigate the need for further emission restrictions. Furthermore, the Swedish Environmental Protection Agency needs to develop guidance for on licensing and supervisory authorities for risk assessment for impact and effects and the need for measures aimed at reducing emissions of hazardous substances from sewage treatment plants.
- **The Swedish Transport Agency 1:** The Swedish Environmental Protection Agency 4: The Swedish Environmental Protection Agency and the Swedish Transport Agency together need to investigate the presence of tributyltin (TBT) and its degradation products in ports and in the marine environment in general, and ensure that underlying causes for its occurrence are investigated. Furthermore, based on reviews of existing policy instruments opportunities for further regulation need to be investigated with the aim of preventing the spread of TBT from vessels and ports to the marine environment. Based on the afore-mentioned, the need for national guidance needs to be identified in order to enhance the improvement work.

### Measures for marine litter

Notably, existing measures include working for a Helcom Action Plan on Marine Litter (joint within BSR), and implementing agreements from OSPAR RAP nationally.

New measures proposed include:

- **SwAM 12:** to promote the development of a strategic and technical platform to collect lost fishing equipment and prevent new losses of such equipment into the marine environment.
- **SwAM 13:** in collaboration with the Swedish Environmental Protection Agency to develop a targeted national information campaign for the public and consumers regarding items of waste commonly occurring in the marine environment, their negative impact on the environment and the link to consumer behaviour.
- **SwAM 14:** to support initiatives which promote, organise and perform beach cleaning .
- **The Swedish Environmental Protection Agency 6:** to conduct strategic work by including marine litter in relevant waste management plans and programs including the municipal waste plans, where the significance of waste management for preventing marine litter is highlighted. Material flows of plastic need to be prioritised and policy instruments should be investigated with the aim of reducing the prevalence of plastic items in the marine environment.

- **Municipalities 1:** during revision of municipal waste plans, to identify and highlight how waste management can contribute to reducing the emergence of marine litter and establish objectives for such work.

#### **Measures for biological diversity:**

- **SwAM 15:** to develop an overall framework for species and habitat specific national programmes of measures for threatened species and habitats in the marine environment and to coordinate the work nationally. (*Note: The measure includes a first set of national programs proposed based on a comprehensive analysis of species/habitats listed in the EU Directives, Regional Sea Conventions and national red lists*) .
- **SwAM 16:** to develop knowledge building programmes for threatened species and habitats in the marine environment and to coordinate this work nationally.

#### **Measures for marine protected areas:**

Sweden has adopted a target of 10 percent (of the total marine area) marine protected areas to 2020, representative and ensuring connectivity. Notably, existing measures include a National plan for developing marine spatial protection in Sweden to be developed in 2015.

New measures proposed include:

- **SwAM 17:** to develop guidance for the content of management documents for protected marine areas.
- **County administrative boards 2:** based on guidelines and criteria developed in SwAM's national plan for developing marine spatial protection in Sweden, to establish new marine protected areas with an adequate geographical scope, and including appropriate management measures in order for the new areas to help reaching good environmental status in accordance with the Marine Environmental Ordinance.
- **County administrative boards 3:** to introduce management measures in marine protected areas (existing/new, where such measures do not currently exist).

#### **Measures for marine restoration:**

- **SwAM 18:** with assistance of county administrative boards, the Swedish Environmental Protection Agency as well as the Swedish National Heritage Board, to develop a coordinated strategy for reducing physical impact and for working with biological restoration in coastal waters.
- **SwAM 19:** with assistance of county administrative boards, to develop methods for ecological compensation and restoration of marine environments.



- **County administrative boards 4:** in collaboration with SwAM and relevant municipalities, to implement restoration measures for *Zostera marina* in the Swedish North Sea coastal waters.

#### Measures for follow-up:

- **Authorities and municipalities 1:** Authorities and municipalities undertaking measures in the marine environment need to report which measures have been implemented and how these affect the environmental quality standards for the marine environment.

#### Additional notes for information

- **Regarding introduction of energy (including underwater noise):** No new measure proposed in the MSFD PoM. This because status, targets, indicators have not yet been determined as regards noise. However, next steps planned are described. Actions to be undertaken deal mainly with research and development of tools for management (for example within the BIAS project).
- **Regarding the topic of sea floor integrity:** It has been concluded that there is a need for measures, such as fishing regulations, for certain marine habitats (reefs). But the habitat type is not well documented, which complicates specification of relevant and efficient measures. No specific measures have therefore been proposed. Steps forward are described, including systematic mapping of these areas as a basis for planning of future measures.

### Summary of national strategic environmental assessment for the draft Swedish Programme of measures for the marine environment

The Programme of measures is subject to a national strategic environment assessment (SEA). The SEA describes the significant environmental impact which an implementation of the Programme of measures for the marine environment is expected to entail. The information in the SEA, and the comments made in the public consultation on the material, will be considered as a basis for SwAM's decision on the Programme of measures for the marine environment which should be made by 31 December 2015 at the latest.

The Programme of measures for the marine environment is of an overarching nature, therefore the environmental impacts are described on a general level. Environmental assessments at a more detailed level are often required before undertaking specific measures as a result of the programme of measures, for example pursuant to the Swedish Environmental Code.

In summary, the measures proposed in order to improve the status of the marine environment are not expected to have more than minor negative environmental impacts. In contrary, the measures intended to improve water

quality generally have a positive impact on several environmental aspects as well

- A significant positive environmental impact is expected to arise nationally as regards biodiversity, flora and fauna, as well as water quality and population.
- A certain level of negative socio-economic effect is expected, primarily as a result of proposed measures which are expected to include regulations of activities (such as fishing, boat life, etc.) but the impact is not assessed as being significant. In order to prevent and avoid negative effects, consultations and collaboration with the actors who may be affected is important before implementation.

In the strategic environmental assessment expected positive consequences of the Programme of measures for the marine environment is evaluated compared to a “Business as usual” (BAU) alternative which describes the expected development of the environmental status without the Programme of measures. The two alternatives have been compared to the current situation of 2014, in an analysis of their potential to contribute towards reaching the objective of good environmental status. The comparison shows that:

- Both the BAU alternative and the Programme of measures for the marine environment is expected to have the potential to provide substantial improvements to the Swedish marine environment compared to the current situation. The magnitude of the final improvements in the two alternatives depends on how well the proposed measures are implemented.
- The BAU alternative is expected to have the potential to provide substantial improvements for the marine environment, primarily as regards reduced loads of nitrogen and phosphorous to the marine environment, but also as regards reduced impacts from of hazardous substances. This conclusion is based on that the BAU alternative also comprises implementation of the Swedish WFD programmes of<sup>5</sup>.
- The Programme of measures for the marine environment is expected to have a greater positive effect than the BAU alternative for the thematic areas of fish and shellfish which are affected by fishing (coastal fishing stock), biological diversity and work against non-indigenous and invasive species in the marine environment. Significant improvements are expected also from the work on marine litter, even if the difference compared to the BAU alternative is slightly smaller. The Programme of measures also comprises a necessary step towards structuring the work

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<sup>5</sup> programmes of measures which are developed using the Swedish Water Quality Management Ordinance (2004:660), which is the Swedish implementation of the Water Framework Directive (2000/60/EC),

for an improved marine environment in a longer perspective than the target year 2020.

## Transboundary environmental impact

The measures which are proposed in the Swedish PoM for the marine environment are generally of a trans boundary nature since the Swedish marine waters have borders on marine waters of other states. The countries which are expected to be influenced by the Swedish PoM will be formally notified and given the opportunity to participate in public consultation regarding the impacts of the draft document. Pursuant to Chapter 6, Section 15 of the Swedish Environmental Code, this procedure is a part of the environmental assessment. A number of other neighbouring countries will also be informed about the draft programme of measures.

The trans boundary environmental impact from the Swedish PoM for the marine environment is primarily positive and summarised below for each thematic area. Generally no significant positive or negative effects of the Swedish PoM on another state are expected. The reason for not considering the expected positive impact to be *significant* for this programme of measures (2016 to 2021) is both the long recovery time before positive effects can be measured in the marine environment, and the fact that the majority of the measures included in the programme require a first step of investigation and organisation, and only as a second step will have an actual effect in the environment. However, with the programme of measures, necessary and important steps forward will be taken in structuring the work for an improved marine environment.

This structure will also help facilitating trans boundary collaboration. It is essential that the work on measures is conducted on a similar level within the countries surrounding a shared marine area in order for the work to result in significant positive effects for the marine environment. The cumulative positive effect could be significant if all countries sharing a marine area take the necessary measures.

Concerning the thematic area of Eutrophication the measures for nutrient load reduction are generally included the WFD PoMs<sup>6</sup>, which deal mainly with land-based pressures. Reductions in nitrogen and phosphorus loads due to the Water Framework Directive Programme of Measures are expected to be sufficient to meet Sweden's obligations under the HELCOM Baltic Sea Action Plan. The measures which are proposed in the Swedish PoM for the marine environment are expected mainly to have a positive impact on a local scale, in national waters, but possibly in the long term also on a larger scale, for

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<sup>6</sup> programmes of measures which are developed using the Swedish Water Quality Management Ordinance (2004:660)

example though the work on developing technology for managing internal nutrient loads in the sea.

The expected pressure reduction for *Hazardous substances* primarily relates to land-based pressures and measures are generally proposed within the Swedish WFD programme of measures. However, measures are proposed in the PoM for the marine environment which aims at reducing problems with certain substances which particularly cause problems in the marine environment. As regards hazardous substances, the Swedish PoM for the marine environment is primarily assessed as having positive effects on national waters, but positive effects may also affect migrating species, and thus extend to waters of other countries. In the long run, measures for reducing the problems with hazardous substances in the marine environment are expected to lower the concentration of hazardous substances in seafood, something which would have a positive impact on the health of human beings and also employment opportunities within fishing and seafood industries.

Measures concerning *Fish and shellfish which are impacted by fishing* are expected to have positive effects through reduced disruptions in food webs as the fish stock and fish communities impacted by fishing reach a better status. This can have positive trans boundary effects for fishing also for countries which fish in or next to Swedish waters. The proposals for measures under this thematic area do not imply regulations which are expected to impact another country's fishing (eg. within the CFP competence) (however, please note text on Biological diversity below).

The risk for spreading of marine *Non-indigenous species* to the waters of other countries is expected to be reduced through strengthened preventative work, as proposed in the Swedish PoM for the marine environment. However, in the long run sea regions need to collaborate further on this topic, for example as regards reporting, in order to increase the effect of national measures and to further reduce the risks associated with certain alien species. Such measures are discussed within the framework of the marine environment conventions.

It has been suggested that a significant part of *Marine litter* along Swedish coasts comes from other countries. This particularly applies to the Bohuslän coast. Sweden similarly contributes to marine litter ending up in waters or coasts of other countries. By proposing strengthened preventative work and information, the Swedish PoM for the marine environment is expected to reduce the risk of spreading marine litter to other countries. This has an indirect positive impact on animal populations and beach environments, something which in turn has a positive effect on biological diversity, population and industries of other countries.

No trans boundary effect is expected from the knowledge development which is proposed concerning *Seafloor integrity*.

Regarding *Permanent alteration of hydrographical conditions*, guidance on marine-related environmental impact assessments is expected to result in better access to relevant data as a basis for decisions about large-scale

structures in the marine environment (for example, large wind farms) . This would improve the possibilities to prevent negative hydrographic impact also concerning projects bordering to another state, and could therefore have positive trans boundary impacts. This could possibly indirectly result in limitations in exploitation opportunities for other states. In such cases coordination needs to take place with the affected countries, in order to prevent a negative effect as far as possible.

The measures for *Biological diversity* (national programmes of measures for threatened species/habitats, knowledge building programmes), marine protected areas and marine restoration are expected to have a positive effect for other countries in terms of improved status for migrating species. The effect can be strengthened through collaboration between states, for example, through collaboration in order to help improving coherence and representativeness of the network of marine protected areas in a marine area. In order to obtain greater protection of habitats and species, restrictions for activities such as maritime traffic, tourism, fishing and exploitation of the seafloor are likely, and could in some cases impact another country. However, the measures proposed in the PoM are on a general level. There are specific legal procedures and frameworks (such as the CFP or IMO) which need to be followed prior to the more specific decisions, including those which are expected to have a trans boundary impact. For example, in terms of fishing regulation outside the trawling limited area, there may be a risk of negative socio-economic effects. However, in the long run the purpose of the regulation is to strengthen the animal population as a shared resource in the marine area, which should have a long term positive socio-economic trans boundary effect. In the event that a negative effect is expected, coordination needs to take place with affected countries and if applicable within appropriate frameworks.