

Summary

This Strategic Environmental Assessment Report (SEA Report) describes the environmental impacts that the implementation of the updated Programme of Measures for the Marine Environment is expected to entail. The assessment provides a basis for the decision by the Swedish Agency for Marine and Water Management on the Programme of Measures for the Marine Environment. The decision will be made at the latest on the 31 December 2021.

The Programme of Measures for the Marine Environment is based on the Marine Strategy Framework Directive (2008/56/EG) and its overall goal is to attain good environmental status in the Baltic Sea and North Sea marine areas in Sweden. The Programme plan aims at achieving the following goals:

- to comply with the environmental quality standards and the indicators in Appendix 3 in the Swedish Agency for Marine and Water Management regulations (HVMFS 2012:18) of what characterises good environmental status and environmental quality standards with indicators of the North Sea and Baltic Sea,
- to maintain or reach a good environmental status,
- to decrease the environmental pressures that currently are restricting the achievement of a good environmental status in the Swedish marine areas (North Sea and Baltic Sea),
- to facilitate or maintain a good environmental status also in the marine environments of the EU,
- to continually protect and preserve the marine environment and to prevent further deterioration, and
- to decrease the environmental pressures on marine resources and marine ecosystem services from human actions.

The programme period of the updated Programme of Measures for the Marine Environment has been set to 2022 – 2027.

This SEA Report describes the result of the Strategic Environmental Assessment (SEA) of the proposal of the updated Programme of Measures for the Marine Environment by the Swedish Agency for Marine and Water Management. The SEA Report describes the current environmental status of the Baltic Sea and Northern Sea and the expected environmental impacts of the implementation of the updated programme.

Screening

The first step in the SEA process is to assess if the Programme of Measures for the Marine Environment can lead to significant environmental impacts according to the 4

§ of the Swedish Ordinance of Impact Assessment (SFS 2017:966). The result of the screening process showed that the majority of the environmental impacts of the updated Programme will be positive. However, the updated Programme could result in negative impacts for the cultural environment and energy consumption.

The Swedish Agency for Marine and Water Management have, based on the results of the screening process, concluded that an SEA process should be carried out for the Programme of Measures for the Marine Environment in accordance with chapter 6, paragraphs 6 to 19 of the Environmental Code (SFS 1998:808). The three main arguments of this conclusion are:

1. The Marine Strategy Framework Directive requires that a programme is developed and implemented.
2. The Swedish Agency for Marine and Water Management will decide on the programme.
3. The programme sets a framework for projects and other measures that can impact the environment, and the aim of the programme is to generate a large positive impact on the environment.

Scoping

The scope of the SEA is focusing on; geographical scope, significant environmental impacts, temporal scope, alternatives, and level of detail.

The geographical scope that the updated Programme includes the Swedish sections of the North Sea and the Baltic Sea. Maritime areas outside of these sections could also be impacted by the Programme and have in these cases been included in the specific assessments.

The main environmental aspects that the updated Programme could influence (direct or indirect, temporary or permanent, or through cumulation) are:

- Water
- Biodiversity
- Soil
- Cultural heritage
- Landscape
- Population and human health
- Air
- Climate
- Natural resource management and material assets (including waste)

The updated Programme is not expected to have significant environmental impacts to the aspects land and buildings.

The short-term perspective of the impact appraisal has been based on the year 2027 which is the target year of the Marine Strategy Framework Directive. The long-term perspective of the impact appraisal has been based on the target year of the Swedish Generation Goal which is the year 2050.

The level of detail of the assessments in the SEA have been aligned with the level of detail of the updated Programme. The main parts of the updated Programme have been formulated on an overarching level. This means that the focus of the appraisal of impacts in the SEA has been the national and strategic level.

Public Consultation

Consultation about the results of the screening process and the scope of the SEA of the updated Programme of Measures for the Marine Environment was carried out during June 2020. The consultation was made by the Swedish Agency for Marine and Water Management with the Swedish Environmental Protection Agency and 11 other central authorities and all Swedish County Administrative Boards. The selection of relevant authorities was based on an estimation of to which degree they could be affected by activities by the Swedish Agency for Marine and Water Management. The consultation was carried out as a digital consultation in which written comments on the materials of the consultation could be put forward. The materials of the consultation contained a description of the SEA and an outline of the content and the level of detail of the SEA, and an overview of the expected significant environmental impacts of the updated Programme.

Comments of the scoping report was put forward by 20 consultation parties and have been summarised in a memo called 'Synpunkter på avgränsningssamrådet' (Comments on the scoping consultation) available at the website of the Swedish Agency for Marine and Water Management: www.havochvatten.se/remiss-aph2020, along with the scoping report. The comments on the scoping report has been, as far as possible, been taken into consideration in the SEA.

Public consultation on the updated Programme of Measures for the Marine Environment will be carried out during November 2020 – April 2021 through a submission of digital information to relevant consultation parties. Consultation about the SEA Report will also be included in this consultation. During February 2021, national consultation meetings will be held with authorities, industry and other stakeholder groups. Representatives from the Swedish Agency for Marine and Water Management will present their consultation material in these consultation meetings. During the autumn of 2021, the Swedish Agency for Marine and Water Management will publish a compilation of all received comments on their website. The Swedish government will be given the opportunity to review the suggestion for the updated Programme after the consultation process.

The received comments on the SEA Report will be considered in the decision on the updated Programme of Measures for the Marine Environment taken by the Swedish Agency for Marine and Water Management at the latest 31 December 2021. Furthermore, the comments on the SEA Report will either be presented in the decision or in an individual document together with the decision.

Alternatives

The measures that have been included in the updated Programme and that fulfil the goals of the Programme have been combined into an alternative called the *Programme alternative*. Also, the SEA Report includes a description of the environmental conditions and the probable development of the environment if the Programme in question will not be implemented. This description has been called the *zero alternative*. Since the updated Programme can be considered to be an extension of the current Programme, the zero alternative is constituted by the *Plan alternative* in the SEA of the former Programme.

Comprehensive Assessment of the Updated Programme

The overall aim of the updated Programme of Measures for the Marine Environment itself is to contribute to an improved environment. The Programme is concurrently focusing on one specific environmental aspect (water quality). This means that there might be other aspects that the updated Programme could entail negative or positive impacts. The assessments in the SEA has mainly been based on the Swedish Environmental Quality Objectives. This means that the assessment has the character of a goal conflict analysis where different goals are evaluated against each other. I.e. a measure that contributes to positive impacts for water quality or biodiversity could potentially have to negative impacts on an aspect such as natural resource management. Accordingly, the analysis will provide guidance on if there is a need to adjust a specific measure in order to reduce negative impacts on another aspect. When possible, suggestions on adjustments to the measures have been presented in the SEA Report.

A comprehensive assessment of the updated Programme indicates that it contributes to the achievement of the underlying Environmental Quality Objectives for the majority of the individual aspects (Table S2). Only two measures are considered to counteract the fulfilment of the underlying goals with regards to the aspect of natural resource management and material assets. Below follow summarised assessments of the measures of the updated Programme for each individual aspect.

Table S2. Overall assessment of the Programme alternative effects on the different aspects.

Aspect	Measure														Overall assessment of all measures	
	46	47	48	49	50	51	52	53	54	55	56	57	58	60		59
Water																
Biodiversity																
Land																
Cultural Heritage																
Landscape																
Population & Health																
Air																
Climate																
Natural resource management & Material assets																

Clarification:



Measures:

- 46 Guidance to include measures against invasive species in decisions/maintenance plans/preservation plans for marine protected areas.
- 47 Improved labelling, reporting of fishing gear and strengthening the supervision of recreational fishing.
- 48 Promote a size distribution in the coastal fish community that enables important functions in the food web to be maintained.
- 49 Reduce the negative impact of bottom trawling on both bottoms and fish stocks within the trawl limit.
- 50 Prohibition of bottom trawling in sea areas with dumped ammunition and chemical weapons.
- 51 Minimize the environmental impacts to the marine environment from shipping.
- 52 Expert support for coordinated oil damage protection.
- 53 Increased crime prevention work to combat illegal discharges of mineral oil and other hazardous substances.
- 54 Reducing the use of biocide-containing boat bottom paints on recreational boats.
- 55 Active phasing out of two-stroke engines with carburettors on leisure boats.
- 56 Product and material development of fishing gear.
- 57 Providing guidance to operators to prevent seismic surveys from causing harmful impulsive noise in marine mammalian distribution areas during periods when the animals are susceptible to disturbance.
- 58 Application of marine ecosystem-based marine management.
- 59 Establishment of a management council for protected areas in Swedish sea areas.
- 60 Area-specific limitation of predators; seal and cormorant.

Water

The measures mainly affect three environmental quality standards (MKN); A.1 (nutrients), B.1 (hazardous substances) and E.1 (marine debris). The overall assessment of all measures is that they together, to some extent contribute to the

fulfilment of the goals of the relevant environmental quality standards. Eight out of 15 measures are assessed to contribute to some extent to the fulfilment of the long-term goals, whilst the rest of the measures are assessed not to be relevant to this aspect.

The measures have according to this assessment the weakest connection to nutrients (MKN A.1) with few measures that are connected to this environmental quality standard, whilst the connection to hazardous substances (MKN B.1) has the strongest connection, with several measures relating to this environmental quality standard.

Environmental quality standard D.3 (hydrographic conditions) is in this SEA assessed to be relevant to the aspect water, but none of the measures can be considered to contribute to the fulfilment of the goal aiming at this specific environmental quality standard.

Biodiversity

The overall assessment is that all measures, to some extent, contributes to the fulfilment of the goals relevant to the relevant environmental quality standards. The environmental quality standards of which the updated measures are expected to impact the with regards to goal fulfilment are mainly, wellbeing in fish and shellfish communities (D.4, C.3), seabed structure/function (D.1, D.2), and effects from hazardous substances (B.2). All measures are assessed to contribute to some extent to the fulfilment of the long-term goals. Measure No. 60 either contributes or counteracts the long-term goal for the environmental quality standards long-term. However, this measure is assessed to be able to contribute to some extent to the short-term goal fulfilment. Measure No. 51 is considered to have the largest potential to contribute to the fulfilment of the goals regarding biodiversity since this is the only measure clearly target the environmental quality standard (B.2).

Environmental quality standard D.3 (hydrographic conditions) is considered to be relevant to this aspect. However, none of the measures in the Programme are considered to contribute to the fulfilment of the goals of this particular environmental quality standard.

Soil

The updated measures in relation to the aspect soil mainly affect five environmental quality standards: A.1 (nutrients), B.1 (hazardous substances), D.1 (unimpacted seabed area), D.2 (biogenous substrates) and E.1 (debris). The overall assessment of all measures is that they together contribute, to some extent, to the fulfilment of the goals of the relevant environmental quality standards. Twelve of 15 measures are assessed to contribute, long-term, to some extent to the fulfilment of the underlying goals, whilst the remaining three is assessed not to be relevant to this aspect. The significance of the measures for the aspect soil is in many cases indirect, since hazardous substances and debris in often are congregated or accumulated in the seabed area. Overfertilization have a negative impact on the seabed area through a

decreased water transparency, increased presence of annual filamentous algae and, by extension, lack of oxygen.

The measures in relation to the aspect soil, has according to this assessment the strongest connection to hazardous substances (B.1) and unimpacted seabed area (D.1) with several measures connected to these environmental quality standards. The weakest connection is to the quality standard "nutrients" (A.1).

Cultural heritage

The comprehensive assessment of all measures is that they to some extent contribute to fulfilment of the underlying goals. It is mainly measures focusing on the decrease of the quantity of marine debris that are considered to have a large impact on the cultural heritage. Measures focusing on the decrease of the negative effects from bottom trawling are assessed to contribute to the fulfilment of the goals to some extent. In total, five out of the 15 measures are assessed to contribute to the fulfilment of the long-term goals.

Landscape

The overall assessment of all measures is that they contribute, to some extent, to the fulfilment of the underlying Swedish Environmental Quality Objectives. Measures focusing on the decrease of the quantity of marine debris are assessed to have the largest impact on the aspect landscape. In total, five out of the 15 measures are expected to contribute to the fulfilment of the goals to some extent.

Population and human health

The overall assessment of all measures is that they, to some extent, contribute to the fulfilment of the underlying goals of population and human health. Measures focusing on the decrease of the amount of hazardous substances and marine debris are assessed to have the largest impact on this aspect. In total, eight out of the 15 measures are expected, to some extent, contribute to the fulfilment of the underlying goals.

Air

Only one of the measures is considered to have an impact on air. The overall assessment is that the updated Programme in general either contributes or counteracts an improved air quality.

Climate

The overall assessment of all measures is that they to some extent contribute to the fulfilment of the climate goals. Herein lies a large potential to improve the work with the climate goals by suggesting that the implementation of the measures should promote energy efficient and climate-adapted solutions.

The assessment is that the degree of fulfilment of the underlying goals is reasonable considering the aim and scope of the updated Programme. There are other programmes, cooperation's and policies that are more suitable instruments for approaching the challenges climate issues of the marine environment sector. Therefore, it is important that measures in other programs are harmonised with the Programme for the marine environment in order to, as far as possible, avoid future goal conflicts.

Natural resource management and material assets

The overall assessment of all measures is that they mainly contribute to the fulfilment of the underlying goals. There is a potential goal conflict between the measures in the updated Programme and the possibilities to future extraction of natural resources and energy. However, the overall assessment is that the impacts of the measures for the possibility of extracting marine sand and gravel or to construct water based wind power are very limited.

In view of the aspect waste, the measures contribute to some extent, or in some cases highly, to the target of sustainable waste management. However, in the future, it is important that a clear plan for the handling of the engines that are to be phased out is drawn up in the future.

Transboundary Environmental Impacts

Some transboundary environmental impact is estimated to arise from the updated Programme of Measures for the Marine Environment. The impacts are assessed to be mainly positive and are not assessed to be significant. However, significant positive effects could be accomplished if corresponding measures would be carried out by other states bordering the Swedish marine areas. In that case, coordination with other states are needed to, as far as possible, prevent negative impacts.