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This document has been revised to include the input from the Meeting.

Background

Following the HELCOM Ministerial Declaration 2018, the Terms of Reference for the EN-Noise (2018-2021) include the support of HELCOM work on development of an action plan on underwater noise (decided to be developed preferably by 2021) and of regionally coordinated actions.

The EN-Noise discussed how to initiate this task and agreed to prepare a document evaluating the implementation of the Roadmap on Underwater Noise 2015-2017 to serve as basis for elaboration of the Regional Action Plan on Underwater Noise ([Memo of the online meeting 16 January 2019](#)) ([document 4-1 to PRESSURE 10-2019](#)). Based on such a document, a draft document containing initial ideas on the scope, structure and contents of the regional action plan was elaborated by Denmark and the Chair of the network in consultation with the Secretariat and further commented by Germany and Lithuania and submitted to PRESSURE 10-2019 for consideration ([document 4-3](#)). PRESSURE 10-2019 agreed on the proposed structure of the Action Plan with the understanding of the preliminary character of proposed actions and the need for further development. The meeting also agreed that the EN-Noise will further elaborate the preliminary actions of the RAP and invited countries to provide written proposals on the matter ([Outcome of PRESSURE 10-2019](#), para. 4.4-4.5). Feedback was provided by Estonia, Germany and Russia.

PRESSURE 10-2019 was of the opinion that the draft action plan should be considered also by HELCOM working groups for their contribution on actions linked to their mandate, and agreed that a further elaborated version of the draft RAP on Underwater Noise will be submitted to MARITIME 19-2019 for consideration ([Outcome of PRESSURE 10-2019](#), para. 4.6-4.7).

This document contains a draft HELCOM Regional Action Plan (RAP) on Underwater Noise together with the feedback provided by Estonia, Germany and Russia included as footnotes for further consideration of the network.

Action requested

The Meeting is invited to discuss and further elaborate the draft HELCOM Regional Action Plan (RAP) on Underwater Noise and agree on a procedure so that an improved document is sent to the upcoming MARITIME meeting for consideration.

Draft HELCOM Regional Action Plan (RAP) on Underwater Noise

Preamble

In 2013 it was agreed in the HELCOM Copenhagen Ministerial Declaration that

- the level of ambient noise and distribution of impulsive sounds in the Baltic Sea should not have ¹negative impact on marine life, and that
- human activities that are assessed to result in ²negative impacts on marine life should be carried out only if relevant mitigation measures are in place.

By this is meant that HELCOM should commit to monitor and manage man-made (anthropogenic) underwater noise in the Baltic and actively assure that levels do not exceed targets established to secure that man-made noise does not prevent recovery of the Baltic Sea ecosystems.

This commitment resulted in the development and implementation of the Regional Baltic Underwater Noise Roadmap 2015-2017, which includes the establishment of a joint HELCOM/OSPAR registry of licenced impulsive sound events and development of a regional monitoring programme for continuous noise.

Furthermore, in the HELCOM Brussels Ministerial Declaration in 2018 it was agreed to

- develop an action plan, preferably by 2021, and regionally coordinated actions on underwater noise, aiming, in the long-term, at addressing adverse effects of underwater noise on marine species identified as sensitive to noise, whilst safeguarding the potential of the Baltic Sea for sustainable human activities
- continuing fruitful cooperation between European Regional Seas Conventions, and in particular OSPAR, in order to exchange good practices and to fill knowledge gaps, and to continuing regional work in developing scientifically sound threshold values for underwater noise that are consistent with GES for species identified as sensitive to noise in the Baltic Sea, in close coordination with work undertaken by Contracting Parties in other relevant fora including UNEP Regional Seas Programme.

The present document lists current activities and proposed new ones directed at achieving these goals.

Types of actions

HELCOM Contracting Parties agreed to start implementation of actions to reduce the negative impacts of underwater noise to be further developed jointly, assisted by the relevant HELCOM subsidiary bodies including lead countries. The actions on reduction of pressures of underwater noise are an inherent part of the RAP on Underwater Noise, having the scope to define and achieve good environmental status³ by member states towards 20XX.

The actions are divided into regional actions and national actions.

The regional actions are to be jointly implemented on a regional scale by the Contracting Parties to the Helsinki Convention. The national actions are actions to be implemented nationally on a voluntary basis.

Both type of actions (regional and national) are focused on reduction of pressures from underwater noise sources having different nature of sound energy input. Actions are thus further subdivided into four subcategories, three addressing different sources and a fourth one on measures involving third parties.

¹~~Germany: please add "significant".~~

²~~Germany: please add "significant".~~

³~~Germany: Before "achieving GES", GES has to be defined. This step must be included here. How should we achieve something which is not defined?~~

Actions addressing reduction of pressures from impulsive noise sources

These actions relate to pressures from impulsive noise sources, such as those covered by the Joint HELCOM/OSPAR impulsive noise register, hosted by ICES. These sources include pile driving, air gun surveys, underwater explosions, sonars, acoustic deterrence devices and other impulsive sources with significant energy below 10 kHz. These sources are currently addressed by the pre-core indicator “Distribution in time and space of loud low- and mid-frequency impulsive sounds”.

Actions addressing reduction of pressures from continuous noise

These actions relate to pressures from continuous low frequency noise sources, which means sources, whose main impact on the environment relates to the increase of noise levels above natural ambient. The primary sources are ships and boats but may also be noise from offshore installations of various kinds. These sources are currently addressed by the pre-core indicator “Continuous low-frequency anthropogenic sound.

Actions addressing reduction of pressures from other noise sources

These actions relate to pressures from sources not covered under the above categories, but with reason for concern regarding negative impact on the marine ecosystem. This includes sources such as echosounders, sonars and other surveying equipment, acoustic deterrence devices and other continuous or impulsive sources with primary energy above 10 kHz.

Actions with third parties

These actions require involvement of third parties, which include national and international stakeholders (such as IMO, fisheries organisations, NGO’s, OSPAR and the EU Technical Group on Underwater Noise).

Regional actions – HELCOM Collective Actions⁴⁵

The following tables contain preliminary lists of actions for the Contracting Parties to the Helsinki Convention for joint implementation on the regional scale. The lists are to be further elaborated and amended. Actions are grouped, but not prioritized.

2.1 Regional actions addressing impulsive noise sources

CODE	REGIONAL ACTION	FURTHER SPECIFICATION
Monitoring and collection of ecological data		
1	Update and improve common HELCOM guidelines for register of impulsive noise events in the Baltic Sea	Based on the reporting to the register already available
2	Identify important habitats and biologically sensitive areas <u>and periods</u> in the Baltic Sea	Based on HELCOM identified noise sensitive marine animal species ⁶ <u>to be</u>

~~⁴Russia: Russia supports the HELCOM Action Plan for the period until 2021, aimed at eliminating the adverse effects of underwater noise on the Baltic Sea ecosystem, while at the same time protecting the potential of the Baltic Sea for sustainable human activity. Regional actions, including actions involving third parties, listed in the document are appropriate and require persistent implementation.~~

~~⁵Germany: Following actions are missing in the document:~~

- ~~— Definition of GES for continuous noise;~~
- ~~— Characterization of impact;~~
- ~~— Characterization of sensitive periods, not only sensitive areas;~~
- ~~— Assessment of effectivity of potential measures as basis for the guidelines on management.~~

~~It is important to also inform HELCOM Maritime about all issues regarding continuous noise.~~

~~⁶Germany: habitats and areas shall be delineated based on biological data and science-based criteria.~~

	region vulnerable to the introduction of high energy impulsive noise	<u>delineated based on biological data and science-based criteria</u>
Measures to improve assessment of impact from impulsive noise		
3	Establish common methodology for the assessment of <u>negative</u> impact from impulsive noise	Best practice for assessing <u>potential injury</u> ⁷ (<u>PTS, blast trauma</u>), and behavioural disturbance (habitat loss)
4	Further develop the HELCOM impulsive noise pre-core indicator towards an operational core indicator	
5	Develop and implement one or more HELCOM impact indicators for impulsive noise	Based on the current pressure indicator, but with inclusion of information about distribution of sensitive species and habitats
Measures to reduce impact of impulsive noise		
	<u>Assessment of effectivity of potential measures as basis for HELCOM best practice guidelines in methods for mitigation of impact from impulsive noise</u>	
6	Establishment of common HELCOM best practice guidelines in methods for mitigation of impact from impulsive noise	Including air bubble curtains, alternative methods for clearing UXOs, alternative seismic sources, use of sonars and sub-bottom profilers

2.2 Regional actions addressing continuous low frequency sound

CODE	REGIONAL ACTION	FURTHER SPECIFICATION
Monitoring and collection of ecological data		
7	Operationalisation of the common database for monitoring data on continuous underwater noise	As decided by HOD 55-2019
8	Development of common guidelines for reporting of continuous noise levels in the Baltic Sea	Linked to establishment of common database
9	Establish a common framework for modelling past, present and future noise levels in the Baltic	Based on AIS and other relevant information about sources, <u>e.g., frequencies, amplitudes</u> ⁸
10	Identification of important habitats and biologically sensitive areas <u>and periods</u> in the Baltic Sea region, vulnerable to elevated levels of continuous noise introduction	⁹ <u>-Based on biological data and science-based criteria</u>
Measures to improve assessment of impact from continuous noise		
11	Establishment of a common methodology for assessment of impact of activities generating continuous noise	Applies to shipping, offshore installations, construction works, etc.
12	Further develop the HELCOM continuous low-frequency sound pre-core indicator towards an operational core indicator	Includes developing methods to <u>monitor and assess include information about noise from small leisure boats</u> ¹⁰ without AIS transmitters <u>as well as natural ambient noise.</u>

⁷Germany: Injury includes TTS.

⁸Germany: e.g., frequencies, amplitudes.

⁹Germany: habitats and areas shall be delineated based on biological data and science-based criteria.

¹⁰Germany: requirement to collect appropriate data for this noise source.

	<u>Support research on effects of n-continuous noise on marine biota</u>	
13	Develop and implement one or more HELCOM impact indicators for continuous low-frequency sound	Based on the current pressure indicator, but with inclusion of information about distribution of sensitive species and habitats
	<u>Assessment of effectivity of potential measures as basis for the guidelines on management (linked to action 14)</u>	<u>Based on proven effective measures.</u>

Measures to reduce impact from continuous noise ^{11, 12}		
14	Preparation of guidelines on management of introduction of elevated continuous noise levels in noise sensitive and biologically important areas in the Baltic Sea based on the HELCOM input to the establishment of environmental targets for underwater noise	Guidelines may encompass rerouting and speed limiting of heavy shipping traffic passing biologically important areas in the Baltic Sea. Guidelines should be harmonized with the IMO EEDI principles describing optimal management of vessels speeds
	<u>Improve awareness of the ship companies and ship owners about the actual noise level radiated by their ships with the focus on the noisiest ships operating in the region.</u>	<u>For example, real time in-situ measurements in ports.</u>

2.3 Regional actions addressing other noise sources¹³

CODE	REGIONAL ACTION	FURTHER SPECIFICATION
Monitoring and collection of ecological data		
15	Identification of other noise sources with likely ¹⁴ significant impact on the marine ecosystems but not covered by the measures targeting impulsive and continuous noise	This includes, but is not limited to: echosounders, non-military sonars and sub-bottom profilers, net pingers, scientific-hydroacoustic instruments, with <u>main energy above 10kHz.</u>
16	Identification of important habitats and biologically sensitive areas and periods in the Baltic Sea region, vulnerable to elevated levels of noise from other sources than those covered by existing pressure indicators.	<u>Based on biological data and science-based criteria</u> Same sources as above ¹⁵
Measures to improve assessment of impact from other noise sources		
17	Compile and assess available information about potential impact caused by noise from small leisure boats	
18	Development of HELCOM indicators suitable for monitoring noise sources identified under measure 15 <u>not covered by existing indicators.</u>	Existing indicators cover impulsive noise under 10 kHz and continuous low-frequency noise, but not echosounders, non-military sonars, sub-bottom profilers, net pingers, etc. ¹⁶
19	Development of common guidelines for assessing impact from echosounders, sonars and other sources not covered by 2.1 and 2.2	

¹¹ Estonia: Another measure that could be added: ~~Improve awareness of the ship companies and ship owners about the actual noise level radiated by their ships with the focus on the noisiest ships operating in the region.~~

¹² Germany: First of all, the impact has to be demonstrated. It makes no sense to propose management where the impact is not characterized. This also applies for the management tools. It must be scientifically proved that measures are effective. Speed limits e.g. means that vessels stay longer in sensitive areas and emit less noise but for a longer period.

¹³ Germany: Discuss if and how (where appropriate) source components above 10kHz are to be included e.g. accounting for hearing capabilities/relevance in assessment.

¹⁴ Germany: propose to delete "likely".

¹⁵ Germany: propose to delete. Habitats and areas shall be delineated based on biological data and science-based criteria.

¹⁶ Germany: first, identification if their impact is significant; second, development of appropriate indicator(s) if needed.

2.4 Regional actions involving third parties

CODE	REGIONAL ACTION	FURTHER SPECIFICATION
20	Establish a discussion between HELCOM and IMO about binding requirements for use of noise reducing technologies and operating practices for ships in the Baltic	
21 ¹⁷	Establish platforms to share best practices on policy options within member states and between authorities, the private sector and NGO's	^{18F} <u>For example, issuing a bulletin on best practices and policy options in the region and in the world.</u>
22	Strengthen the cooperation with OSPAR on development of common and/or compatible indicators, databases and assessment methodologies	As agreed on an overall level in the 2018 HELCOM Brussels declaration
23	Maintain and strengthen cooperation with the European Union expert group TG-Noise on issues of mutual interest	
	<u>Improve public awareness, so that political decision makers, local administrations and civil society are adequately informed about the underwater noise challenges.</u>	

¹⁹

Voluntary national actions²⁰

The following tables provide preliminary lists of proposed actions for the Contracting Parties to the Helsinki Convention for voluntary implementation. These actions aim at information exchange and coordination but are primarily of national concern and in the responsibility of the Contracting Parties.

3.1 Voluntary national actions addressing impulsive noise sources

CODE	PROPOSED NATIONAL ACTIONS
1	Propose national legislation to reduce impact of impulsive noise from activities such as: <ul style="list-style-type: none"> • Pile driving • Underwater explosions • Sonars and surveying equipment
	<u>Create a national forum for stakeholders on issues related to underwater noise.</u>
2	Share national experiences on the implementation of national legislation to reduce impact of

¹⁷ Estonia: ~~Could be added: Make an effort for harmonization of the mitigation measures and regulatory framework on the regional level.~~

¹⁸ Estonia: ~~Consider issuing of a bulletin writing about best practices and policy options in the region and in the world.~~

¹⁹ Estonia: ~~New action: Improve public awareness, so that political decision makers, local administrations and civil society are adequately informed about the underwater noise challenges.~~

²⁰ Russia: ~~As for voluntary national actions, Russian intends to:~~

- ~~— to promote research on the impact of both impulsive and other types of noise on marine flora and fauna and provide HELCOM with qualitative and quantitative information to help to determine priorities and optimize measures;~~
- ~~— to continue the study of best practices in order to develop proposals for the improvement of national legislation in the field of reducing the impact of underwater noise on the Baltic Sea ecosystem;~~
- ~~— create a national forum for stakeholders on issues related to underwater noise.~~

	impulsive noise
3	Conduct research into new solutions to reduce impulsive noise, including alternatives to pile driving, seismic sources, sonars
4	Conduct research on impact of impulsive noise on marine life and provide qualitative and quantitative information to assist in prioritizing and optimizing measures

3.2²⁴ Voluntary national actions addressing continuous noise sources

CODE	PROPOSED NATIONAL ACTIONS
5	Establishment of national regulation for mandatory use of AIS transmitters on small leisure crafts likely to emit high levels of underwater noise Could be as a requirement based on engine power or similar
6	Propose national legislation regulating the use of leisure boats with the objective of reducing impact from underwater noise on noise sensitive and biologically important areas and species
7	Participation in and active contribution to common platforms for sharing best practices on policy options within HELCOM countries (gaps in national legislation etc.)
	Develop <u>Establish a database of ship underwater noise data including ship type, sound spectra and noise reduction technologies applied on the ship</u>

3.3 Voluntary national actions addressing other noise sources

CODE	PROPOSED NATIONAL ACTIONS
8	Development and implementation of national regulations addressing the use of acoustic deterrent devices (including seal scarers)
9	Development and implementation of national regulations for the use of echosounders and fishfinders on recreational vessels
10	Development and implementation of national regulation for use of sub-bottom profiling and similar instruments
11	Development and implementation of regulation for use of military sonars during training and exercises
12	Development and implementation of national regulation on underwater explosions

3.4 Voluntary national actions involving third parties

CODE	PROPOSED NATIONAL ACTIONS
13	Establish national stakeholder fora for issues involving underwater noise

Reporting on effectiveness of actions by member states & analysis of the feedbacks
[To be further elaborated].

²⁴ ~~Estonia: Voluntary national actions should include commercial ships as a major contributor to the underwater radiated noise. As an example we can include: "Develop database of ship underwater noise data including ship type, sound spectra and noise reduction technologies applied on the ship"~~