
Document title	Future work on HELCOM indicators - Marine litter
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Background

The following document contains a brief topic summary that addresses the overall aim of indicator work and assessments on the given topic. It outlines the current status and gives an indication of the work needed to adjust/develop the identified indicators. Potential avenues of cooperation are also described. Where possible the information has been compiled based on responses received from the HELCOM indicator questionnaire process and revised based on comments received at the 1st HELCOM Indicator Workshop. This is particularly the case for the section on the aims of the work, which was a focus of attention at that 1st indicator workshop.

Action requested

The Workshop is invited:

- to take note of the information and use it as needed to support the discussion
- provide comments or corrections as needed

Marine litter

Future work on HELCOM indicators – towards the 3rd Holistic Assessment of the Baltic Sea 2023.

Indicators under discussion

1. *Beach Litter.
2. *Microlitter in the watercolumn.
3. Litter on the seafloor.
4. Riverine loads of marine litter.
5. Ingested litter.
6. Floating litter.

*Completed indicator questionnaires received.

Main indicators listed in black text are those discussed below, with other related indicators or proposals listed in grey. These indicators appear in the additional document that considers the HELCOM indicator-policy match and scoring (Document 17 - HELCOM indicator-policy matching and draft scoring, and annex).

Aim

A clear assessment of marine litter of all dominant types, and in all compartments of the marine environment, that can support assessments under the Baltic Sea Action Plan (BSAP), UN Sustainable Development Goals (SDGs) and the EU Marine Strategy Framework Directive (MSFD), for those HELCOM Contracting Parties that are also EU Member States.

Short term aims include that regionally coordinated quantitative threshold values should be developed and applied where ever possible, working closely with other relevant developments in the field such as harmonization with OSPAR, ICES and EU processes (e.g. MSFD CIS and TG Litter). Regional agreement and coordination of methodologies, categorization of items, and harmonization where ever possible needs to be carried out. Source, pathway and trend aspects are also important considerations. An indicator for beach litter should be fully developed and applied in the next assessment.

Direct effects on biota are considered longer-term development aims with existing approaches considered as important for further development. A micro-litter indicator is considered to be an aspect for longer-term development due to further research development requirements.

General introduction and current status

None of the marine litter indicators is considered as operational at this current stage, though these are used descriptively in the 2018 State of the Baltic Sea report. The indicator for beach litter is at the most advanced stage of development and threshold values are currently the next major hurdle since data collection, categorisation and analytical approaches were furthered during the EU co-funded SPICE project and presented in the State of the Baltic Sea report. Microliter and seafloor litter require greater development work, the former particularly related to methodological approaches and sampling matrix.

Relevant species or lists

The [current assessment](#) (though descriptive, i.e. no threshold values applied) utilised in the State of the Baltic Sea report uses 8 material categories (Plastics, Metal, Glass or ceramic, Paper or cardboard, Processed or worked wood, Rubber, Cloth or textile, and Unclassified) and the average number of items per 100 m of beach. A ranking of the top ten most frequently encountered litter items is also applied. A similar categorisation based on numbers of items is applied for on this basis for seafloor litter, where data is available. Microlitter relies heavily on published scientific literature.

Development/adjustment work

This group of indicators is highly relevant for assessments carried out under the BSAP, SDGs and MSFD. The beach litter indicator is well advanced, although a common database solution, threshold values (and approval) remain to be finalised. The seafloor indicator requires a slightly higher level of development. The microlitter indicator requires somewhat greater development, including developments at the methodological level.

Beach Litter: The indicator is not operational but has preliminary assessment scales and data collection (national) in many areas, but threshold values and regional agreement is currently lacking. While there are significant steps needed and work/resources required, this indicator is considered as approaching operationalisation. Data availability and monitoring needs to be reviewed to ensure comparable data is collected by all countries (e.g. conclusion on assessment scales, number of beaches assessed per assessment unit) and that monitoring is sufficient to give high confidence. Harmonisation is also critical in other areas, such as: criteria for selection of beaches to monitor (including reference beaches) and categorisation of litter items; followed by approval at the appropriate HELCOM level (e.g. via PRESSURE, State and Conservation and at HOD). A common (and 'single') data reporting and databasing solution is needed, potentially informed by earlier projects, as currently data is stored on a national basis, as well as in the OSPAR, EEA MLW and MARLIN databases. MARLIN (though only based on the UNEP categorisation lists) is considered a viable option, though developments that are potentially costly would be required to create a fully suitable platform. In the future, seasonal data and effect-based threshold values could be considered to understand wider trends and environmental impact, though further studies would likely be required.

Seafloor litter: The indicator is not operational but existing methods are available in certain areas.. Compatibility of data from different monitoring methods needs to be assessed to further develop the most appropriate approach. A regionally coordinated monitoring programme needs to be fully implemented/furthered to enable a full regional assessment. Agreement on threshold values and application of the indicator is needed.

Microlitter: The indicator is not operational and developments related to methodology and monitoring applicability remain needed. There are a number of projects, research activities and initiatives underway (HELCOM countries and within the EU) that mainly focus on the development and harmonisation of methods. Harmonised monitoring, including: a HELCOM guideline, methodology, matrix, definition of components, particle size categories, frequency, application of reference sites, sample treatment, and data collection to build a viable temporal and spatial data set will be critical. Such aspects will inform the monitoring strategies applied and highlight trends/fate appropriately. A database solution will be needed. The concept of the indicator needs to be more clearly defined and this will primarily be determined by the choice of the appropriate methodology and monitoring matrix. Discussion is ongoing related to developments made within OSPAR and the use of sediment as the sampling matrix (or in addition to surface water), surface water and biota

sampling (possible sentinel species, though species distribution and feeding mode must be considered). Consideration should be given to whether the indicator is applied as either a pressure or a state indicator, or both. This may have implications for monitoring and assessment design, for example if open sea waters and sediments are most appropriate sampling matrix or if storm water entry points, rivers and WWTPS are most significant. Conclusion on scale of assessment, data reporting needs, and threshold values will subsequently be needed, and approval of these at the appropriate HELCOM level (e.g. via PRESSURE, State and Conservation and at HOD).

Note: many of the above issues or potential obstacles also have resource implications.

Potential obstacles

Beach Litter: The current processes at the EU level (e.g. MEFD CIS threshold value agreement and integration rules) and this HELCOM process for indicator development may not have matching timelines. A number of HELCOM Contracting Parties that are also EU Member States aim to ensure that proposals made via the EU are comparable with those developed/applied within HELCOM.

Similar issues may be relevant for other marine litter indicators, though their development stage is currently not as advanced as beach litter.

Frequency

Overall status assessment on a 4- or 6-year basis deemed appropriate. More regular trend data (e.g. annual) is valuable for assessing measures and estimating changes in trends or items/material categories that dominate the litter pool, if good data reporting and database solutions (including automation) can be established. Annual data reporting and review should happen irrespective of update frequency. The above relates to beach litter only, as other indicators are not at a suitable development stage.

Potential for cooperation

On-going work in the EU Technical Group on Marine Litter (TG Litter) regarding the update of the Master list of litter items, the update of the monitoring guidance, and other MSFD CIS processes are relevant to ensure comparable developments for those HELCOM countries that are also EU Member States. MARLIN/UNEP, OSPAR and national data solutions should be examined to develop suitable solutions at the regional level. For seafloor litter, data hosting via cooperation with ICES is important. Finally, for microlitter the GESAMP report and EMODNET may provide broader understanding at this development stage, if data is suitable. Linkages with the EEA and OSPAR may also be relevant.

Other issues

The workshop is invited to document other aspects they consider to be relevant to the development of this specific indicator category.

A number of issues raised previously (though not an exclusive list) that may be relevant for discussion include: integration rules, linkages between litter and biodiversity (e.g. biological effects or harm), appropriate coordination with MSFD CIS processes, and appropriate coordination with OSPAR.