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Agenda Item 4: Comparative Analysis IMAP and the European Commission New GES Decision 2017/848/EU for Marine Litter

Comparative Analysis Undertaken with regards to IMAP and the European Commission New GES Decision 2017/848/EU for Marine Litter

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Note by the Secretariat

At their 19th Ordinary Meeting (COP 19, Athens, Greece, 9-12 February 2016), the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) adopted the Integrated Monitoring and Assessment Programme and related Assessment Criteria (IMAP).

The adoption of the New GES Decision 2017/848/EU in 2017, in the framework of EU MSFD, consisting of criteria and methodological standards on good environmental status of marine waters and specifications and standardized methods for monitoring and assessment creates a new momentum to further the synergies between the two processes.

In this context, the Secretariat undertook a comparative analysis and identify as appropriate actions for a more coordinated implementation, of IMAP and MSFD. A preliminary discussion on the findings of this analysis was initiated during the Regional Meeting on Pilot Projects and Assessment Tools for Marine Litter (Athens, Greece, 19-20 November 2019 - UNEP/MED WG.476/5).

This analysis also aims at supporting further elaboration of the Methodological Approach for Mapping the Interrelations between Sectors, Activities, Pressures, Impacts and State of Marine Environment. Along those lines, a tailored analysis for marine litter is provided under UNEP/MED WG.490/03 presented to the present meeting.

The present document is presented for review by the Meeting of the Ecosystem Approach Correspondence Group on Marine Litter Monitoring (CORMON Marine Litter)

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List of Abbreviations / Acronyms

CI	Common Indicator
CIS	Common Implementation Strategy
EC	European Commission's
EcAp	Ecosystem Approach
EO	Ecological Objectives
EU	European Union's
GES	Good Environmental Status
IMAP	Integrated Monitoring and Assessment Program of the Mediterranean Sea and Coast and Related Assessment Criteria
MAP	Mediterranean Action Plan
MED POL	Mediterranean Pollution Assessment and Control Programme
MSFD	Marine Strategy Framework Directive
NGD	New GES Decision
UNEP	United Nations Environment Programme

1. Introduction

1. The 18th Meeting of the Contracting Parties to the Barcelona Convention adopted Decision IG.22/7 on the “*Integrated Monitoring and Assessment Program of the Mediterranean Sea and Coast and Related Assessment Criteria*” (IMAP) for the monitoring and assessment of the Mediterranean Sea and Coast. The IMAP Common Indicators are defined to collect monitoring data in a standardized way and to give an indication of the degree of threat or change in the marine ecosystem based on reliable information to decision makers in order to assess GES.

2. Among the 11 Ecological Objectives (EO) of IMAP, the 10th (EO10) is dedicated on marine litter including two common and one candidate indicators:

- Common Indicator 22: Trends in the amount of litter washed ashore and/or deposited on coastlines (including analysis of its composition, spatial distribution and, where possible, source) (EO10);
- Common Indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor (EO10); and
- Candidate Indicator 24: Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds and marine turtles (EO10)

3. In the framework of EU MSFD (2008/56/EC), specific criteria and methodological standards on Good Environmental Status of marine waters were set by EU Commission Decision of 1st September 2010 (2010/477/EU). The EU MSFD implementation process is based on a 6-year cycle started in 2012, with environmental status assessment (Art. 8), definition of GES (Art. 9), environmental target determination (Art. 10), followed by monitoring programs (Art. 11), and programs of measures (Art. 13).

4. Annex III of the EU MSFD was updated “as regards the indicative lists of elements to be taken into account for the preparation of marine strategies.” The New GES Decision was used to the extent possible by the EU Member States during the Second (II) Cycle of the EU MSFD reporting in 2018 for the update of environmental status assessment (Art. 8); definition of GES (Art. 9); and environmental target determination (Art. 10).

5. The New GES Decision (2017/848¹) provides the following new elements:

- Use of criteria and methodological standards, for good environmental status of marine waters, relevant to qualitative descriptors;
- Use of criteria, methodological standards, specifications and standardized methods for the monitoring and assessment of predominant pressures (focusing on the inputs of litter) and impacts, including elements for integrated assessment/s (i.e. scale of assessment, use of primary and secondary criteria, units of measurements for the criteria); and
- Moving from trends to threshold and setting of threshold values through Union, regional or sub-regional levels.

2. IMAP and EU MSFD Framework towards GES Assessment for Marine Litter

6. IMAP foresees the following activities during its initial phase (2016-2019) of implementation:

- Existing national monitoring and assessment programmes of Contracting Parties to be updated and integrated, in line with the IMAP structure, principles and common indicators;

¹ Commission Decision (EU) 2017/848: laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardized methods for monitoring and assessment, and repealing Decision 2010/477/EU

- Good environmental status (GES) definitions to be updated and the assessment criteria to be further refined;
- Scale of reporting units to be defined, taking into account both ecological considerations and management purposes, following a nested approach;
- An updated and integrated data and information system for UN Environment/Mediterranean Action Plan (MAP)-Barcelona Convention with clearly set rules for data handling and assessment for the various components, and with a user-friendly reporting platform for Contracting Parties to be developed.

7. At the 20th Ordinary Meeting (COP20, Tirana, Albania, 17-20 December 2017), the Contracting Parties to the Barcelona Convention endorsed the key findings of the 2017 MED QSR² (Decision IG.23/6) which underlined relevant gaps and requested the Secretariat to make all possible efforts to address them. The Contracting Parties recommended the following directions towards the successful delivery of the 2023 MED QSR:

- i. Harmonization and standardization of monitoring and assessment methods;
- ii. Improvement and ensuring availability of long time series of quality assured data to monitor the trends in the status of the marine environment;
- iii. Improvement of availability of synchronized datasets for marine environment state assessment, including use of data stored in other databases where some of the Mediterranean countries regularly contribute; and
- iv. Improvement of data accessibility with the view to improving knowledge on the Mediterranean marine environment, ensuring that Info-MAP System is operational and continuously upgraded to accommodate data submissions for all the IMAP Common Indicators.

8. The spatial and temporal scales of assessment addressed by the New GES Decision constitute important link with the activities of UNEP/MAP aimed at defining the geographical and temporal scales for monitoring and assessment for the Ecological Objectives and Common Indicators of IMAP (Decision IG.23/6 – COP20), which are also addressed by the 2023 MED QSR Roadmap.

9. According to Decision IG.23/06 (COP20, Tirana, Albania, 17-20 December 2017) on the 2017 Mediterranean Quality Status Report (MED QSR), the following issues should be considered as a priority to improve GES assessment:

- Assessment of pressures/impacts/state interactions identifying, where possible, cause-effect relationships;
- Definition of clear and common aggregation (geographical) and integration rules, including in time and space;
- Definition of adequate assessment scales using a nested approach;
- Application of both trends and new/updated IMAP thresholds as appropriate tools for GES assessment.

10. Within the framework of EU MSFD, the new GES Decision establishes a set of common criteria for each descriptor to ensure that coherent and comparable assessment of marine ecosystem between EU Member States (MS) is ensured. Consistency and flexibility are assured with the distinction of primary and secondary criteria, the main difference of which is that no justification has to be provided from MS in case of secondary criteria is applied.

11. Until threshold values are established at EU level for all marine litter EU MSFD D10 Criteria, regional or sub-regional cooperation should be in place to enable EU Member States to use national threshold values, directional trends or pressure-based threshold values as proxies, provided that regional cooperation is pursued as laid down by EU MSFD.

² 2017 Mediterranean Quality Status Report: www.medqsr.org

12. Definition and use of threshold values implies the definition of specific indicators that are not any more explicitly mentioned in the New GES Decision but are actually included in the more general concept of “*Methodological Standards*.”³ The risk for indicators and associated thresholds values to represent a framework with no flexibility for EU Member States is mitigated by the identification of appropriate geographical scale of assessment for each criteria. In this regard, EU Member States should express the extent to which GES is being achieved as the proportion of their marine waters over which the threshold values have been achieved. For UNEP/MAP IMAP specific common indicators are in place for marine litter (i.e. Common Indicators 22 and 23) and regional threshold values are planned to be established for each common indicator and sub-indicator.

13. A comparative analysis dedicated on marine litter IMAP indicators and EU MSFD criteria, is provided in the following Chapter 3 and its Table 3.

³ Cardoso et al., 2010. Scientific Support to the European Commission on the Marine Strategy Framework Directive. Management Group Report, JRC Scientific and Technical Reports. JRC 58097; EUR 24336 EN; ISBN 978-92-79-15649-6: <https://mcc.jrc.ec.europa.eu/documents/201409161354.pdf>

3. Comparative Analysis between IMAP and New GES Decision for Marine Litter

Table 1: Comparative analysis, similarities and differences between IMAP Ecological Objective (EO) 10 and EU MSFD Descriptor (D) 10

NGD ⁴	NGD Objective	IMAP	IMAP Objective	Differences in Description IMAP vs NGD	Differences in Objectives IMAP vs NGD
Descriptor10 D10C1 ⁵ : The composition, amount and spatial distribution of litter on the coastline, in the surface layer of the water column, and on the seabed, are at levels that do not cause harm to the coastal and marine environment.	Reach levels that do not cause damage to the marine and coastal environment.	<u>Common Indicator (CI) 22⁶</u> : GES Definition: Number/amount of marine litter items on the coastline do not have negative impact on human health, marine life and ecosystem services.	The impacts related to properties and quantities of marine litter in the marine environment and coastal environment are minimized	NGD establishes the difference between descriptors D10C1 and D10C2 based on the type of marine litter (macro and micro litter). IMAP establishes the difference between the common indicators CI22 and CI23 based on the scenario (coasts, water column and sea bottom), not taking into account micro-litter on coast. NGD does not establish a size to distinguish between macro and micro-litter. IMAP establishes a minimum size for beach macro-litter (CI22) of 0.5 cm, while EU MSFD considers items no smaller than 2.5 cm. IMAP establishes the maximum size for micro-litter at 5 mm which is common with EU MSFD.	NGD establishes the target levels based on threshold values in the total amount of marine litter. IMAP refers to threshold value and trend in the total amount of marine litter.
		<u>Common Indicator (CI) 23⁷</u> : GES Definition: Number/amount of marine litter items in the water surface and the seafloor do not have negative impacts on human health, marine life, ecosystem services and do not create risk to navigation	The impacts related to properties and quantities of marine litter in the marine and coastal environment are minimized		
Descriptor 10 D10C2 ⁴ : The composition, amount and spatial distribution of micro-litter on the coastline, in the surface layer of the water column, and in seabed sediment, are at levels that do not cause harm to the coastal and marine environment.	Reach levels that do not cause damage to the marine and coastal environment.	<u>Common Indicator (CI) 23⁶</u> : GES Definition: Number/amount of marine litter items in the water surface and the seafloor do not have negative impacts on human health, marine life, ecosystem services and do not create risk to navigation	The impacts related to properties and quantities of marine litter in the marine and coastal environment are minimized		
Descriptor 10 D10C3 ⁸ : The amount of litter and micro-litter ingested by marine animals is at a level that does not adversely affect the health of the species concerned.	Reach a level that does not adversely affect the health of the species in question.	Candidate Indicator (CI) 24 ⁹ :	Impacts of litter on marine life are controlled to the maximum extent practicable	NGD considers both the ingested macro and micro-litter. IMAP refers only to the ingested macro-litter (gr), but also takes into account entanglement.	NGD requires threshold values in quantity ingested. IMAP refers to threshold value and trends of the amount ingested.

⁴ NGD: New GES Decision

⁵ Primary Criteria: Member States shall establish threshold values for these levels through cooperation at Union level, taking into account regional or sub-regional specificities.

⁶ “Trends in the amount of litter washed ashore and/or deposited on coastlines (including analysis of its composition, spatial distribution and, where possible, source)”

⁷ “Trends in the amount of litter in the water column including microplastics and on the seafloor”

⁸ Secondary Criteria

⁹ “Trends in the amount of litter ingested by or entangling marine organisms, especially mammals, marine birds and turtles”

14. Based on the above presented comparative analysis, the common issues under both IMAP and EU MSFD/ New GES Decision 2017/848/EU include:

- Definition of appropriate spatial and temporal scales of assessment;
- Identification of common parameters/features to be monitored and assessed at the level of Common Indicator;
- Setting of thresholds values for parameters/Common Indicators; and
- Integration rule between parameters belonging to the same Ecological Objective/Descriptor.

3.1 Spatial and temporal scale of assessment

15. The harmonization of temporal and spatial scales applied in the framework of IMAP and EU MSFD needs to identify proper and agreed subdivisions of the Mediterranean Sea and its sub-regions. This will enable the harmonization of the national monitoring programs for the collection of consistent and coherent data to be used for assessment purposes. Having in mind the final aim, a nested approach is the most appropriate and in fact has been decided in the framework of IMAP.

16. Each Contracting Party should provide a first list of subdivisions of its own territorial waters for the Common Indicators CI22, CI23 and CI24 (Table 4). This list must be accompanied by the Mediterranean sub-region corresponding to each national region defined in line with the requirements of the Technical Group on Marine Litter (TGML).

17. The temporal and spatial scales are directly related. A nested approach allows obtaining sufficient spatial resolution and thus establishes the period required to have robust baselines and a consistent trend analysis. Four annual surveys per each designated station/location, for a round of 4-5 years assessment period seems to be the most appropriate monitoring design (Marcus Schulz et al, 2019).

18. The temporal scale defined for the evaluation of baseline and threshold value of each IMAP Common and Candidate Indicators (i.e. CI22, CI23, Cand.I24) should be looked closely with those agreed in the framework of the EU MSFD TGML and the relevant guidelines. In most cases, after four to five years, a sufficiently stable and precise baseline could be reached. However, a baseline period of three years can be used, which can be necessary for marine regions in which a few marine litter data sets are available (Marcus Schulz et al, 2019). Annual data sets reported by the countries could give a good support to implement a Mediterranean assessment according with IMAP (i.e. Guidance Factsheets for CIs 22 and 23) and with the New GES Decision (Assessment periods to D10C1, D10C2 and D10C3).

19. The above specified differences need to be further addressed within the future revision of EC's GES decision as well as in future update/upgrade of IMAP, especially following the preparation of the 2023 MED QSR.

20. During the upcoming Meeting of the Ecosystem Approach Correspondence Group on Pollution Monitoring (CORMON Pollution) that will be held via videoconference during 26-27 April 2021, the Secretariat and its MED POL Programme considering the findings deriving from the analysis of the current national monitoring and assessment practices of the Contracting Parties to the Barcelona Convention, along with related best available knowledge and practices, will present a working document (UNEP/MED WG.492/13¹⁰) with which concrete rules for integration and aggregation will be presented.

¹⁰ The Proposal of Integration and Aggregation Rules for Monitoring and Assessment of National Data on State of Marine Environment related to IMAP Pollution and Marine Litter Cluster

21. Those rules reflect and elaborate elements regarding the: i) preparation of integrated GES assessment for IMAP Pollution and Marine Litter Cluster as an element of 2023 MED QSR; and ii) optimal integration of national monitoring and assessment efforts related to IMAP Pollution and Marine Litter Cluster, along with synchronization of national practices at sub-regional and regional levels as requested in 2017 MED QSR.

3.2 Identification of common monitoring and reporting parameters

22. Data submission shall follow a homogeneous form and format. The Data Standards and Data Dictionaries (DSs and DDs) developed by UNEP/MAP, as well as built into IMAP Info System, offer enlarged possibilities for the Contracting Parties that are measuring additional parameters to report those to the IMAP Info System.

23. For IMAP Common Indicators 22 and 23, the DDs reflect the elements included in the monitoring templates aiming to facilitate the population of corresponding data in the IMAP Info System.

24. For beach marine litter (i.e. Common Indicator 22), the DDs are structured based on the approved “Beach ID” and “Beach Survey” Forms providing information and metadata on the beach profile, link to the potential sources, recorded marine litter items, effect to biota etc. For seafloor marine litter, the DDs include a number of information related to the vessel/trawling characteristics as well as the list of marine litter items. For floating microplastics, the DDs provide information about the methodological approach for monitoring of floating microplastics (i.e. manta net), and the list and types of microplastics that may be found in the marine environment.

25. Moreover, the current IMAP/MED POL templates which are in use for the collection of data for beach macro-litter, seafloor macro-litter and floating micro-litter/plastics are harmonized with those used under the EU MSFD TGML¹¹ processes, providing for an additional source of information to be used for monitoring and assessment purposes. In fact, both frameworks (i.e. IMAP and TGML) have an active role in its others processes and thus a very good level of coordination can be reported.

26. As a concluding remark the reporting parameters between the two processes are quite harmonized and the next step could be to explore how the relevant databases could be interlinked, when and if such an exercise is necessary.

3.2.1 IMAP Common Indicator 22 (CI22): Beach Marine Litter

27. The confluence points between monitoring forms and relevant reporting templates of IMAP CI22 and EU MSFD D10C1, for beach marine litter, provides a coherent and harmonized approach. The parameter recommended in both IMAP and MSFD is the total amount of recorded marine litter items on a 100 m stretch, expressed on items/100m, including baseline and threshold values for the common indicator assessment.

28. The new GES Decision does not establish a certain size to distinguish between macro- and micro-litter. UNEP/MAP IMAP establishes the maximum size for micro-litter at 5 mm and the minimum size for macro-litter at 0.5 cm, while EU MSFD TGML proposes as a minimum size the 2.5 cm. Currently some countries monitor plastic/polystyrene pieces of 0-2.5 cm (G75). This item code, in several countries is one of the most frequently recorded and abundantly found items in the majority of the surveys. Proposals to remove item G75 from the monitoring protocols may have a direct effect in the approximation of the indicator’s assessment, especially with regards to IMAP CI22 and EU MSFD D10C1.

¹¹ Monitoring Guidance for Marine Litter in European Seas (Galgani et al., 2013)

29. Although, UNEP/MAP IMAP does not yet consider micro-litter under IMAP CI22, it is therefore foreseen to be included in the second phase of IMAP implementation. The development of data collection heavily involves a wide range of partners being actively involved on marine litter monitoring, including research institutes and universities.

30. For the trends establishment, as indicated by the IMAP, it is necessary to have a database including at least four years of data collection (Baggelaar, PK and Van der Meulen, 2014). The reporting of data into the IMAP Info System which is underway will significantly contribute towards this direction.

31. Further clarification on the sizing of the relevant beach marine litter items would be useful to further clarify the relevant monitoring practices and the data obtained. The IMAP framework should also further progress the work for beach micro-litter/plastics. Moreover, the population of relevant datasets in IMAP Info System will further support the establishment of a good basis for regional/sub-regional/national assessments which could be extremely useful for the needs of targeted reduction and prevention measures especially focusing on priority single-use plastic items.

3.2.2 IMAP Common Indicator 23 (CI23): Seafloor and Floating Marine Litter

32. The confluence points between monitoring forms and relevant reporting templates of IMAP CI23 (sea floor litter) and D10C1, for seafloor marine litter provides for a common approach. The parameter recommended in both IMAP and EU MSFD is the total density of recorded marine litter items found on the seafloor, expressed in item/km², including baseline and threshold values for the assessment of the common indicator.

33. IMAP Common Indicator 23 coincides with the EU MSFD criteria D10C1 and D10C2, for which the data collection methodology must be harmonized aiming to achieve a direct correlation between these indicators. There are two ways of taking seabed marine litter data according to the depth:

- i. Monitoring shallow seafloor (<20 m): Recreational and professional scuba divers can provide valuable information on shallow seabed litter. They can access, have the skills and the equipment needed to collect, record, and share information about litter they found underwater. Many dive clubs organize underwater clean-ups, often in partnerships with NGOs or local governments. Many of these events, when managed, can be a valuable source of information and possibly be a part of a regular survey using volunteers. However, not all countries regularly apply this methodology. To achieve quality results, it is possible to extend some experiences in this regard where national diving clubs organize themselves scheduled cleanup and marine litter monitoring activities through a common platform that centralizes the data obtained and facilitates them to the focal point in each country (e.g. Red de Vigilantes Marinos, Spain).
- ii. Monitoring the Sea-floor (20-800 m): The methodology for obtaining this data is included in IMAP Guidance Document, as well as in the UNEP/MAP “Fishing-for-litter” Guidelines as provided for in Decision IG.22/10¹², which are in accordance with the methodology proposed by EU MSFD TGML. For the establishment of trends, as indicated by the IMAP process, it is necessary to obtain data for at least four years (Baggelaar, PK and Van der Meulen, 2014). Currently there is not enough macro-litter data available in Mediterranean countries, but as the national implementation of IMAP is progressing and the reporting of data into IMAP Info System has just been launched; the situation is expected to get improved.

¹² Decision IG.22/10: Fishing for Litter Guidelines, Assessment Report, Baselines Values, and Reduction Targets.

34. Seafloor macro-litter in the continental shelf of the Mediterranean is fully aligned between the two processes (IMAP and MSFD/TGML). Additional clarity on the applied methodology and monitoring protocols is required for shallow water. Same as with IMAP EO10 CI22, the population of relevant datasets in the IMAP Info System will further support the establishment of a good basis for regional/sub-regional/national assessments which could be extremely useful for the needs of targeted reduction and prevention measures especially focusing on priority single-use plastic items.

3.2.3 IMAP Candidate Indicator 24 (CI24): Effect of marine litter on biota

35. IMAP Candidate Indicator 24¹³ coincides with the descriptors D10C3 and D10C4 of the EU MSFD, all aiming to assess and evaluate the effect of marine litter on biota. IMAP CI24 refers to the trends for the evaluation of the total amount of marine litter ingested by or entangling marine organisms, while the new GES Decision refers to the threshold values for ingested macro- and micro-litter (D10C3), as well as on the number of individuals of each species affected by marine litter (D10C4).

36. For EU MSFD D10C3, the EU-funded INDICIT project proposes a threshold value for the Mediterranean only for total macro-litter ingestion values in turtles (Matiddi, M. et al, 2019), discarding the entanglement from being a parameter for which the quantitative evaluation is difficult. Under IMAP, sea turtles are considered as the most appropriate indicator species for the assessment of the indicator.

37. Regarding EU MSFD D10C4, sufficient information is not available as it is not a criterion explicitly addressed by IMAP. It is noteworthy to mention that, for the first two criteria (D10C1 and D10C2), the threshold values must be agreed at European Union level. To this end, a technical working group, the EU MSFD TGML, has been created within the framework of the Common Implementation Strategy (CIS), which is working to address these aspects. At the moment no threshold values have been agreed, except for a first approximation to the threshold value for marine litter on beaches (JRC; 2019)

38. Aiming to harmonize methods and data collection, IMAP has developed a specific protocol on monitoring the amount of marine litter ingested by or entangling selected species. Cooperation and synergies have been established between MED POL and several EU-funded projects (e.g. INDICIT, MEDSEALITTER, Life Euro Turtles projects) with the scope to ensure coherence between the different protocols that are under development from the respective projects. The said cooperation has resulted in the development of a single unified consistent protocol for the Mediterranean¹⁴. The specific Protocol describes the most suitable methods for monitoring the ingestion of marine litter by marine turtles (dead or alive) in the Mediterranean. It also describes the methodology intended to assess in a harmonized way rates of entanglement of marine turtles in marine litter, as back-up to the pilot monitoring approach.

¹³ “Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds and marine turtles (EO10)”.

¹⁴ Monitoring Protocols for IMAP Common Indicators related to Biodiversity and Non-Indigenous species (UNEP/MED WG.467/16). 7th Meeting of the Ecosystem Approach Coordination Group, Athens, Greece, 9 September 2019.

39. In the framework of IMAP Candidate Indicator 24, a preliminary assessment¹⁵ of available data to propose GES targets has been conducted by UNEP/MAP. An agreement was achieved in 2019 with specific marine turtle rescue centres in the Mediterranean to test and use the specific protocols¹⁶. Meanwhile, the regional operational strategy for monitoring IMAP Candidate Indicator 24 has been prepared and is presented under working document UNEP/MED WG.490/05 to the present meeting.

40. The monitoring protocols for monitoring the amount of marine litter ingested by or entangling by marine turtles are fully aligned, and in fact jointly prepared between the frameworks (i.e. IMAP and MSFD/TGML). The next step for IMAP is to convert this indicator from a candidate to common. This certainly entails additional support as well as enhances national capacities. The UNEP/MAP report on the most representative species already sets the scene for the species which should be look at priority. The next step could be to progressively involve additional species in the work pertinent to documenting harm from marine litter. However, this could be only done if and when the relevant monitoring techniques and protocols are mature enough to enable a regional consensus.

3.3 Setting of baseline and thresholds values for common indicators/parameters

41. For IMAP EO10 (marine litter), UNEP/MAP has established baseline values since 2016 for the IMAP marine litter indicators. MED POL has worked to propose an updated Baseline Value (BV) and a proposal for the establishment of Threshold Value (TV) for IMAP CI22 (beach marine litter) at regional and sub-regional levels which are elaborated under document UNEP/MED WG.482.23/Rev.1; pending a no-objection process from the Contracting Parties (Table 2).

42. For the proposal of updated IMAP baseline value for IMAP EO10 Common Indicator 22 the 100% of the information (i.e. datasets) were used to calculate the median value (items/100m) per each sub-region (WM¹⁷: 399 items/100m; CM¹⁶: 536 items/100m; AD: 686 items/100m; EM: 205 items/100m) and subsequently calculating the average value. To calculate the threshold value, it was proceeded with the estimation of the 15th percentile of the baseline value results. In order to give equal contribution to each sub-region, an equal weight was given while calculating the corresponding threshold value in accordance with the 15th. This method will prevent data of one or more countries with many surveys or with extremely high or low total abundance values from dominating the threshold value. The proposed Threshold Value for IMAP EO CI22 is 177 items/100m.

Table 2: Proposed baselines and threshold values for IMAP EO10 Common Indicator 22:

IMAP Indicators	EU MSFD Indicators	Categories of Marine Litter	IMAP Baseline Values (2016)	Proposed IMAP Baseline Values (2020)	Proposed IMAP Threshold Values (2020)
CI22		Beach Marine Litter	450-1400 items/100m	457 items/100m	177 items/100m
CI23	D10C1	Floating Litter	3-5 items/km ²	N/A	N/A
		Seafloor Litter	130-230 items/km ²	N/A	N/A
	D10C2	Floating micro-litter	200,000 – 500,000 items/km ²	N/A	N/A

¹⁵ Assessment of the available data to propose GES targets for IMAP Candidate Indicator 24 (UNEP/MED WG.464/Inf.3). Joint Meeting of the Ecosystem Approach Correspondence Group on Marine Litter Monitoring and ENI SEIS II Assessment of Horizon 2020/National Action Plans of Waste Indicators, Podgorica, Montenegro, 4-5 April 2019.

¹⁶ The monitoring protocols that were developed in the framework of the EU-funded Marine Litter MED project, coordinated and managed by UNEP/MAP, were tested in 2019 by 3 scientific teams in Algeria (ABYSS Environmental Services), Lebanon (Tyre Rescue Center) and Tunisia (INSTM Rescue Center) and individual reports are available including finding, lessons learnt and recommendations.

¹⁷ Western Mediterranean (WM); Central Mediterranean (CM); Adriatic Sea (AD); Eastern Mediterranean

IMAP Indicators	EU MSFD Indicators	Categories of Marine Litter	IMAP Baseline Values (2016)	Proposed IMAP Baseline Values (2020)	Proposed IMAP Threshold Values (2020)
		Seafloor micro-litter	-	N/A	N/A
CI24	D10C3	Macro and micro-litter ingested by marine animals	40-60% 1-3 gr	N/A	N/A
	D10C4	Species negatively affected	-	N/A	N/A

43. In the framework of EU MSFD, TGML a proposal for establishment of baseline and threshold values for the different marine litter indicators was published in 2020¹⁸. Priority has been given to the baseline values for beach macro-litter (Criterion 1) with datasets from 2015-2016. According to the report, it was concluded by TG ML that a TV cannot be based on quantitative ecological and socio-economic harm due to a lack of scientific data on harm caused by marine litter on beaches. Of the remaining options, the use of the 15th percentile value of the total litter abundance dataset from all European beaches in the baseline period 2015-2016 was selected and applied, as it was considered to be sufficiently precautionary while being based on already available beach litter abundances in the EU. The 15th percentile leads to a final TV of 20 items/100 m beach length. The TG ML methodology acknowledges uncertainties in the underlying data which is considered in the proposal. The median assessment value is compared with this TV for compliance checking. It is acknowledged that achieving this TV will require substantial and sustained measures over a longer period. Intermediate targets over time towards the proposed TV are proposed to support the achievement of the TV.

44. At the same time, threshold values are also under examination for the different marine litter indicators based on the scenarios of the different percentiles (e.g. Q1, Q5, Q10 and Q15) and of the occurrence of marine litter in pristine environments. Under the UNEP/MAP IMAP framework the work for IMAP EO10 CI23 will be initiated and hopefully concluded within 2021 for seafloor macro-litter and floating micro-plastics.

3.4 Integration rule between parameters belonging to IMAP EO10 and Descriptor 10 (Marine Litter)

45. Rules or guidelines for integration of monitoring activities can be applied for each EO separately for each IMAP cluster or across clusters, and even across framework (e.g. UNEP/MAP IMAP vs EU MSFD). In all cases the rules for establishing an integrated monitoring scheme aim to provide integrated assessments in a cost effective way and are built on the interrelations between EOs/Descriptors and CIs/Criteria. Rules for an integrated monitoring are closely linked to those for integrated assessments.

46. The interrelation and links between Pressure – Impact - State tailored to IMAP EO10 Marine Litter Common Indicators have been outlined UNEP/MED WG.490/3.

47. An analysis is providing hereunder on the integration rule between parameters belonging to UNEP/MAP IMAP EO10 and EU MSFD D10 (Marine Litter):

48. IMAP CI22 and EU MSFD D10C1: Integration is direct by applying a common reduction percentage. TGML proposes a baseline 90% reduction percentage to reach the threshold value (Van Loon et al., 2019). The threshold value proposed by IMAP (Table 2) have associated 86-99% reduction percentage, very close with 90%.

¹⁸ JRC Technical Reports. [A European Threshold Value and Assessment Method for Macro Litter on Coastlines](#) (JRC121707 – DOI: 10.2760/54369)

49. IMAP CI23 and EU MSFD D10C1-D10C2: Integration could be direct by applying a common reduction percentage. TGML has not yet published the threshold values for these descriptors (floating and seafloor litter and micro-litter), while IMAP is in the process of providing proposals.

50. IMAP Cand.I24 and EU MSFD D10C3-D10C4: Integration could be direct by applying a common reduction percentage. TGML has not yet published the threshold values for these descriptors (D10C3, D10C4). IMAP can also propose this integration rule.

4. Way Forward

51. The coordinated implementation between IMAP and EU MSFD, as amended by the New GES Decision 2017/848/EU, may include the following elements:

- Further to UNEP/MAP IMAP Guidance Factsheets for marine litter the definition of appropriate spatial and temporal scale of assessment should be further refined;
- Further elaborate and specify the agreed parameters/features to be monitored and assessed at the level of Common Indicator;
- Further work in setting thresholds values for those Common Indicator/ Criteria which are not yet in place (e.g. seafloor marine litter, floating microplastics, etc.); and
- Definition of integration and aggregation rules between Indicators/ Criteria belonging to the same Ecological Objective (EO10)/ Descriptor (D10).

52. Further steps are required for establishing synergies between IMAP and EU MSFD data collection and processing for the Contracting Parties to the Barcelona Convention which are also EU Member States. It should be noted that data flows related to marine litter in the framework of IMAP includes, for the moment, the following data sets for: beach macro-litter, seafloor macro-litter and floating microplastics. These are mainstreamed through the elaborated, by MED POL, Data Standards (DS) and Data Dictionaries (DD), for the different IMAP marine litter indicators. Both elements are expected to significantly facilitate the process of submission of marine litter-related data and those to further support the alignment between the IMAP and EU MSFD processes.

53. As far as the establishment of trends, and as also indicated by the IMAP process, it is necessary to have data sets available including at least four years of data collection.

References:

- Baggelaar, Paul K. and Van der Meulen Eit C.J. “Evaluation and fine-tuning of a procedure for statistical analysis of beach litter data” (2014).
- Galgani, F., Hanke, G., Werner, S., Oosterbaan, L., Nilsson, P., Fleet, D., Kinsey, S., Thompson, R.C., VanFraneker, J., Vlachogianni, T., Scoulios, M., Mira Veiga, J., Palatinus, A., Matiddi, M., Maes, T., Korpinen, S., Budziak, A., Leslie, H., Gago, J., Liebezeit, G., 2013. MSFD GES technical subgroup on marine litter. “Monitoring Guidance for Marine Litter in European Seas”. In: JRC Scientific and Policy Reports, pp. 120 Report EUR 26113 EN.
- JRC within the MSFD Technical Group on Marine Litter in close collaboration with EU Member States. “Marine Beach Litter Baselines. Scenario analysis of a pan-European 2012-2016 beach litter dataset” (Draf). Luxembourg: Publications Office of the European Union, 2019.
- Marcus Schulz a, Dennis J.J. Walvoort b, Jon Barry c, David M. Fleet d, Willem M.G.M. Van Loon. “Baseline and power analyses for the assessment of beach litter reductions in the European OSPAR region”. *Environmental Pollution* 248. Pp 555-564. (2019)
- Matiddi, M., deLucia, G.A., Silvestri, C., Darmon, G., Tomás, J., Pham, C.K., Camedda, A., Vandeperre, F., Claro, F., Kaska, Y., Kaberi, H., Revuelta, O., Piermarini, R., Daffina, R., Pisapia, M., Genta, D., Sözbilen, D., Bradai, M.N., Rodríguez, Y., Gambaiani, D., Tsangaris, C., Chaieb, O., Moussier, J., Loza, A.L., Miaud, C., , I.c. “Data Collection on Marine Litter Ingestion in Sea Turtles and Thresholds for Good Environmental Status”. *J. Vis. Exp.* (147), e59466, doi:10.3791/59466 (2019).
- UNEP. “Integrated Monitoring and Assessment Guidance”. 19th Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols. Athens, Greece, 9-12 February 2016.
- UNEP. “Meeting of the Ecosystem Approach Correspondence Group on Pollution Monitoring”. Podgorica, Montenegro, 2-3 April 2019.
- United Nations Environment Program Mediterranean Action Plan, 2017.
- Van Loon, W., Fleet, D., Hanke, G., Werner, S., Barry, J., Eriksson J., Gräwe, D., Kinsey, S., Schulz, M., Vlachogianni, Th., Press, M. and Blidberg, E. “Proposal towards a SMART Threshold Value for Beach Litter”. MLWG UE 2019 (Draft).