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Agenda Item 5: Elements for IMAP Revision related to Biodiversity and Non-Indigenous Species (NIS)

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Note by the Secretariat

In 2008, the Contracting Parties reached an important milestone by committing to apply the Ecosystem Approach principle. Through Decision IG.17/6, they adopted the Ecosystem Approach Roadmap to achieving the Good Environmental Status (GES) of the Mediterranean Sea and Coast. Two out of the seven steps indicated in the roadmap are related to monitoring and assessment of marine and coastal environment.

A major component of the ecosystem approach implementation is related to the monitoring and assessment of the status of the marine and coastal environment. In view of establishing a coherent region-wide framework, the Contracting Parties adopted in 2016 the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) (COP 19 Decision IG.22/7).

IMAP sets out all the required elements to cover in an integrated manner monitoring and assessment of biodiversity and fisheries, pollution and marine litter, and coast and hydrography. The core of IMAP is the 23 regionally agreed common indicators and 4 candidate indicators, for which scientific knowledge and information is not yet fully developed to allow for regional monitoring and assessment, covering for the moment 9 out of 11 Ecological Objectives, namely the biodiversity (EO 1), non-indigenous species (EO 2), harvest of commercially exploited fish and shellfish (EO 3), Eutrophication (EO 5), Hydrography (EO 7), Coastal ecosystems and landscapes (EO 8), Pollution (EO 9), Marine litter (EO 10), Energy including underwater noise (EO 11).

At the 23rd ordinary meeting (COP 23 Portorož, Slovenia, 5-8 December 2023), the contracting parties took note of the findings of the independent evaluation of the Ecosystem Approach Roadmap and requested the Secretariat to prepare during the biennium 2024-2025, under the leadership of the Ecosystem Approach Coordination Group, a revised Ecosystem Approach Roadmap Policy, including IMAP revision, taking into account, but not limited to, the outcomes of the 2023 Mediterranean QSR; the findings of the independent evaluation of the implementation of the Ecosystem Approach Roadmap, and other related work of the Secretariat as per the CORMONs and Ecosystem Approach Coordination Group meeting conclusions, and giving due consideration to the most recent relevant developments at global and regional level, including the expected MFSD evaluation and revision, for consideration at COP 24 in Egypt;

The present document aims to serve as a source of information for discussions on elements and recommendations to be considered for the revision of the IMAP concerning the biodiversity and fisheries cluster and also the under development Ecological Objective 4 (Marine food webs) and EO 6 (Seafloor integrity). It builds on the knowledge and experience acquired during the implementation of the current IMAP and incorporates recommendations from various sources including the MedQSR2023 and CORMON Biodiversity and Fisheries meetings.

1. The Independent evaluation of the implementation of the EcAp Roadmap was conducted with regard to the objectives of each of the seven roadmap's steps, at regional level and, when appropriate, at sub-regional and national levels. The evaluation shows that at regional level, the EcAp Roadmap has been implemented overall successfully.
2. Definition of an ecological vision for the Mediterranean with strategic goals allowed the development of 11 corresponding Ecological Objectives. Associated Operational Objectives, Common Indicators (CIs) and target levels were developed for 9 and are effective for 8 of the 11 Ecological Objectives (EOs). The CIs of EO 11 are currently being tested, those of EO 4 are in the process of being defined and those of EO 6 are currently going through approval process.
3. The Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP), being major component of the ecosystem approach implementation, is considered not sufficiently implemented at national level to allow an adequate corresponding reporting from the CPs. Progress is underway, but such an ambitious monitoring programme requires more efforts to bring national regulations, policies and monitoring programmes into compliance with IMAP.
4. Based on the independent evaluation of the implementation of the EcAp Roadmap, the findings and recommendations of the MedQSR2023, the outcomes of the CORMON Biodiversity and Fisheries meetings, the study on the state of the art regarding the available information on GES and the effects of climate change and other cumulative pressures in its determination in the Mediterranean (UNEP/MED WG. 592/Inf.4), and the experience acquired during the implementation of the current IMAP, the following elements could be considered for the review of the IMAP:

Ecological Objective 1: Biodiversity

5. The EcAp roadmap objectives could be updated taking into consideration mitigation of climate change impacts on Mediterranean ecosystems. Further, developing a specific ecological objective related to climate change impacts on ecosystems, that could be based by associating different existing or upcoming CIs and therefor creating a transversal EO.
6. There is a need to expand the scope of species and habitats assessed to better reflect the Mediterranean marine biodiversity (e.g. Vulnerable Marine Ecosystems, pelagic habitats, deep-sea ecosystems, as well as other species groups such as plankton, fish, and cephalopods).
7. Further clarification of GES definitions and indicators as well as methodologies for establishing baseline values and threshold values and to consider the effects of climate change.

Common Indicators

CI1: Habitat distributional range | CI 2: Condition of the habitat's typical species and communities

8. At the level of common indicators, the following considerations could be suggested for incorporation into the revision:
 - Development of EO1 CI1 and CI2 focusing on pelagic habitats.
 - Development of assessment methodologies, assessment criteria, and thresholds for biodiversity common indicators CI1 and CI2 based on MedQSR2023 recommendations.
 - Clear definition of baseline and threshold values for benthic habitat assessment at the sub-regional level.
 - Consideration of integrating assessments from the Water Framework Directive (WFD) for benthic habitats.

- Streamline and simplify factsheets and protocols for EO1-CI1 and CI2 on marine habitats.
- For benthic habitats, it is suggested to consider assessing the impact of Invasive Alien Species within EO1-CI2 on the condition of the habitat's typical species and communities. Additionally, the ongoing development of EO6 on seafloor integrity calls for an assessment of the impacts of Non-Indigenous Species (NIS) on seabed habitats, which is not currently included in IMAP.
- However, benthic habitats are assessed under EO1 biodiversity in IMAP and D6 seafloor integrity in MSFD. This results in EU CPs not reporting on EO1 because analogies between criteria and indicators as well as attributes are not evident. Clarifying the equivalence between the elements of D6 and EO1 on habitats should contribute to increased reporting of EU CPs under IMAP and therefore increase data availability to assess GES.
- Specific pelagic habitats (e.g., upwelling areas, fronts, and gyres) and pelagic ecosystems (e.g., phytoplankton and zooplankton) could be integrated into EO1 indicators. Work is ongoing to define parameters allowing the use of phyto and zooplankton for relevant IMAP biodiversity indicators and to define pelagic habitats. Developing indicators for pelagic habitats is challenging and appears to be a difficult task for the MSFD as well.
- Within IMAP, for EO1 CI1 and CI2, *Posidonia oceanica* meadows are monitored following specific parameters. Considering the importance and vulnerability of this ecosystem in the context of climate change, the parameters followed could be reviewed to ensure better protection of this essential habitat, which plays a functional role for many species, limits coastal erosion, and contributes to climate change mitigation. Parameters that could inform on their resilience capacity to climate change impacts could also be studied.

CI3: Species distributional range / CI4: Population abundance of selected species / CI5: Population demographic characteristics

9. One main common measure to be taken for species, is to further correlate and integrate work on bycatch indicators included in EO3 on fisheries with the CI5 (EO1) on population demographics.

Cetaceans

10. In close collaboration with ACCOBAMS secretariat and with technical support from scientific committee, the following considerations could be suggested for incorporation into the revision:

- Reformulate GES definitions and linked GES assessment elements under CI5, as proposed in the Monitoring and Assessment Scales, Assessment Criteria, Thresholds and Baseline Values for the IMAP Common Indicators 3, 4 and 5 related to marine mammals., notably to shift human induced mortality assessment to CI12 and focus on actual population demographic characteristics (sex ration, calf productivity etc).
- Re-Define GES assessment criteria, particularly baseline/reference and threshold values, for CI5, based on a sufficient collected data if available.
- Further focus on the quantification of thresholds for CI3.

Monk Seal

11. The definition of GES has to be reconsidered to be more achievable according to reparation areas. GES definition could be reassessed to prioritize population development to enhance resilience against climate change impacts and include the conservation of Monk Seal habitats.

Marine Turtles

12. Nothing proposed.

Marine Birds

13. The following considerations could be suggested for incorporation into the revision:
- Expand the list of species bird under IMAP for other species of SPA/DB protocol annex II to better represent Mediterranean marine biodiversity.
 - Implement coordinated monitoring efforts within subdivisions or subregions to improve the representativeness of monitoring samples.
 - Ensure comparability of monitoring data between assessment cycles by monitoring consistent populations over prolonged time series.
 - Facilitate regular knowledge transfer and calibration of monitoring methods at the local level.
 - Enhance harmonization between different assessment programs for more efficient GES assessments.
 - Conduct further assessments to address the lack of data, particularly concerning seabird assessment and EO1-CI5, to support effective GES assessment conditions in the Mediterranean.

Ecological Objective 2: Non-indigenous Species

CI6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas

14. The following considerations could be suggested for incorporation into the revision:
- Set threshold values for trends in temporal occurrence through regional cooperation.
 - Methodologies need to be adapted for national-level GES assessments.
 - Develop methodologies for quantifying pathway pressure to assist in specifying quantitative targets for NIS management.
 - Adopt a commonly agreed methodology to address reporting gaps in NIS data analysis.
 - Further develop assessment criteria and quantitative targets for assessing the impacts of NIS, particularly focusing on the most vulnerable or important species and habitats at risk.

Ecological Objective 3: Harvest of commercially exploited fish and shellfish

CI 7: Spawning stock Biomass | CI 8: Total landings | CI 9: Fishing Mortality | CI 10: Fishing effort | CI 11: Catch per unit of effort (CPUE) or landing per unit of effort (LPUE) as a proxy | CI 12: Bycatch of vulnerable and non-target species.

15. Collaborate with the General Fisheries Commission for the Mediterranean (G to:
- Further develop CI on EO3 and their related assessment elements
 - Integrate nature-based solutions and sustainable fishing practices into IMAP indicators and targets for EO3, ensuring long-term viability of fisheries resources and considering a specific indicator related to discarded marine resources. This collaboration can also identify key fish and cephalopods species for inclusion in EO3 assessments and support future indicators for EO4, potentially addressing climate change impacts on fisheries.

Ecological Objective 4: Marine food webs

16. Further development of EO4 within the IMAP is underway. EO4 focuses on marine food webs, which is a complex subject requiring careful consideration. Therefore, it is advisable to further work on the development of operational objectives, indicators, and targets for EO4.

Ecological Objective 6: seafloor integrity

17. Considering the current development of EO6 on seafloor integrity, along with the need to address the impacts of Invasive Alien Species and the expanding Blue Economy, it is imperative to integrate these aspects into the IMAP. Additionally, alignment between EO1 and EO6 implementation should be considered to ensure effective management of marine habitats and ecosystems.
18. Explore ways to align the implementation of EO1 and EO6 to streamline monitoring efforts and ensure comprehensive assessment of seabed habitats. This could involve:
 - i. Merging EO1 and EO6 for seabed habitats, using a common set of habitat types.
 - ii. Aligning assessment scales and areas between EO1 and EO6 to facilitate data comparison.
 - iii. Reusing indicators or underlying data from EO1 for EO6 purposes, where applicable.
19. Develop indicators within EO6 to identify abrasion pressure on deep-sea habitats, particularly soft bottom habitats. This information is essential for sustainable management of deep-sea ecosystems and fisheries, in collaboration with GFCM.
20. Develop indicators and threshold values within EO6 to assess seafloor integrity in relation to the development of the Blue Economy, including offshore renewable energy project.