

# Draft Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP)

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The first meeting of the Regional Seas Indicators Working Group.

Istanbul, 23 October 2015



United Nations Environment Programme  
Mediterranean Action Plan (UNEP/MAP)  
Barcelona Convention



# IMAP: as a key step of EcAp Roadmap

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Draft IMAP builds on:

- Barcelona Convention and its Protocols Monitoring obligations
- EcAp-based Ecological Objectives of UNEP/MAP (COP17)
- Decision IG. 21/3 (COP 18 EcAp Decision);
- Ongoing monitoring and assessment practice of CPs;
- Delivered in full consultation with CPs (CORMON groups, Component FPs, EcAp CG and online expert groups),
- Best practices of other RSCs; regional and international bodies, including MSFD CIS

Draft IMAP aims to:

- Guide and support the CPs in establishing and implementing an integrated monitoring and assessment programme to assess GES;
- Lead to integrated assessment of GES and trends

Draft IMAP's Cycle: 2016-2021;

- National integrated monitoring 2016-2019 to feed Quality Status Report 2017 and in particular SoEr 2019.



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# **Integrated Good Environmental Status and Targets indicators are organized according to EcAp EO – Ecological Objective**

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## **EO 1 – Biodiversity**

**Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic and climatic conditions.**

## **EO 2 – Non-indigenous species**

**Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem**

## **EO 3 - Harvest of commercially exploited fish and shellfish**

**Populations of selected commercially exploited fish and shellfish are within biologically safe limits, exhibiting a population age and size distribution that is indicative of a healthy stock**



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# **Integrated Good Environmental Status and Targets indicators are organized according to EcAp EO – Ecological Objective**

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## **EO 4 – Marine Food Webs**

Alterations to components of marine food webs caused by resource extraction or human-induced environmental changes do not have long-term adverse effects on food web dynamics and related viability

## **EO 5 – Eutrophication**

Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.

## **EO 6 – Sea-floor integrity**

Sea-floor integrity is maintained, especially in priority benthic habitats

## **EO 7 Hydrography**

Alteration of hydrographic conditions does not adversely affect coastal and marine ecosystems.



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# **Integrated Good Environmental Status and Targets indicators are organized according to EcAp EO – Ecological Objective**

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## **EO 8 – Coastal ecosystems and landscapes**

The natural dynamics of coastal areas are maintained and coastal ecosystems and landscapes are preserved

## **EO 9 – Pollution**

Contaminants cause no significant impact on coastal and marine ecosystems and human health

## **EO 10 – Marine Litter**

Marine and coastal litter do not adversely affect coastal and marine environment

## **EO 11 – Underwater Noise**

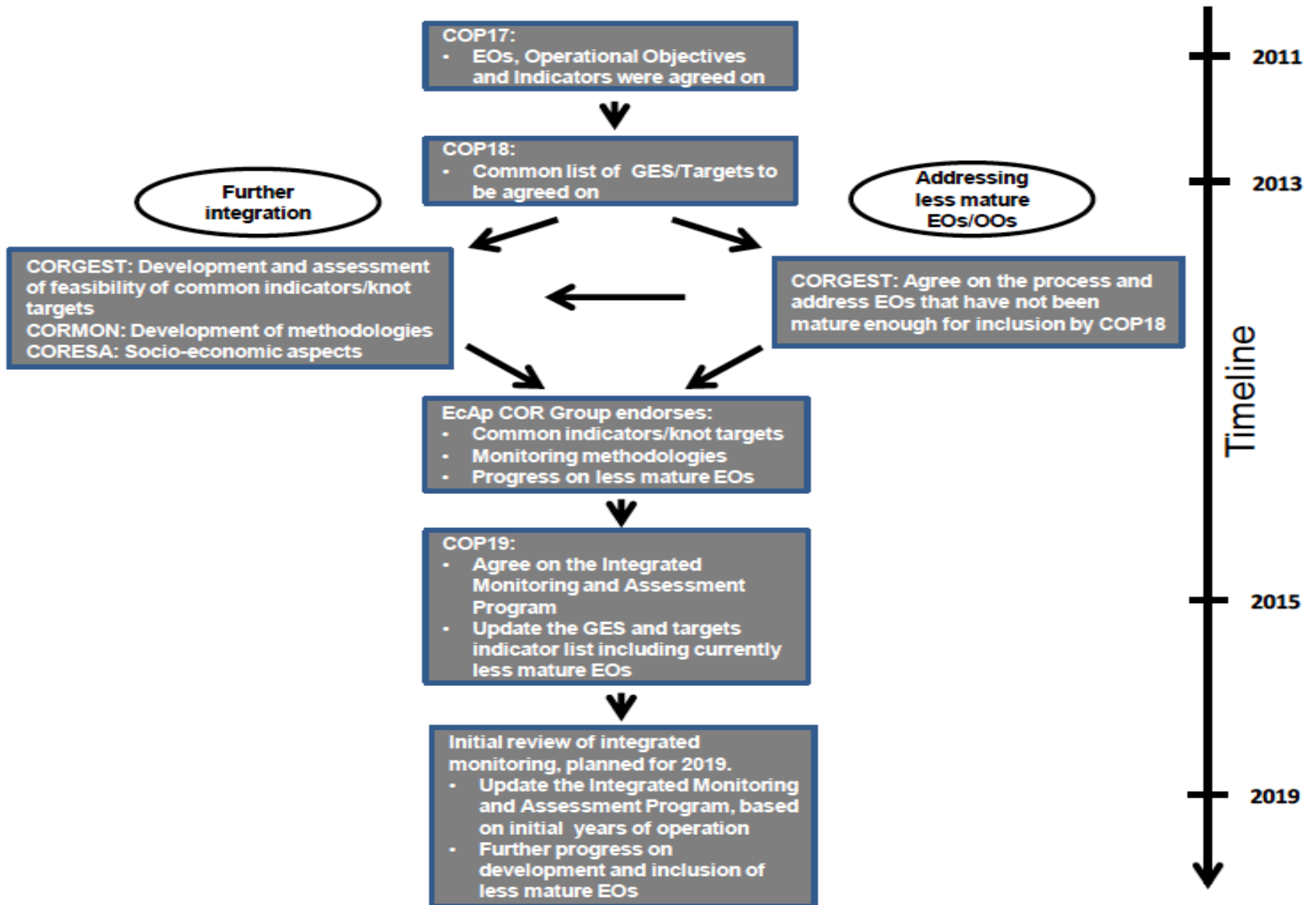
Energy including underwater noise



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# Process of EcAp



# EO 1 - Biodiversity

| COP 17 Ecological Objective   | COP 17 Indicators   | IMAP Indicators  |
|---|---|--|
| <p><b>Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic and climatic conditions.</b></p> | 1.1.1 Distributional range  | Common Indicator 1: Habitat distributional range (EO1);  |
|   | 1.1.2 Area covered by the species (for sessile/benthic species)   |  |
|   | 1.2.1 Population abundance  | Common Indicator 4: Population abundance of selected species (EO1, related to marine mammals, seabirds, marine reptiles);  |
|   | 1.2.2 Population density  |  |
|   | 1.3.1 Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/ mortality rates) | Common indicator 5: Population demographic characteristics (EO1, e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles) |
|   | 1.4.1 Potential / observed distributional range of certain coastal and marine habitats listed under SPA protocol                            | Common Indicator 3: Species distributional range (EO1 related to marine mammals, seabirds, marine reptiles);   |
|   | 1.4.2 Distributional pattern of certain coastal and marine habitats listed under SPA protocol   |  |
|   | 1.4.3 Condition of the habitat-defining species and communities   | Common Indicator 2: Condition of the habitat's typical species and communities (EO1);  |

# EO 2 – Non-indigenous species

| COP 17 Ecological Objective   | COP 17 Indicators  | IMAP Indicators   |
|---|--|---|
| <p><b>Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem</b></p> | <p>2.1.1. Spatial distribution, origin and population status (established vs. vagrant) of non-indigenous species</p> |   |
|   | <p>2.1.2 Trends in the abundance of introduced species, notably in risk areas</p>                                    | <p>Common Indicator 6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (EO2, in relation to the main vectors and pathways of spreading of such species);</p> |
|   | <p>2.2.1 Ecosystem impacts of particularly invasive species</p>  |   |
|   | <p>2.2.2 Ratio between non-indigenous invasive species and native species in some well studied taxonomic groups</p>  |   |



# EO 5 – Eutrophication

| COP 17 Ecological Objective  | COP 17 Indicators   | IMAP Indicators  |
|--|---|--|
| <p><b>Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.</b></p> | 5.1.1 Concentration of key nutrients in the water column  | Common Indicator 13: Concentration of key nutrients in water column (EO5); |
|  | 5.1.2 Nutrient ratios (silica, nitrogen and phosphorus), where appropriate  |  |
|  | 5.2.1 Chlorophyll-a concentration in the water column   | Common Indicator 14: Chlorophyll-a concentration in water column (EO5)     |
|  | 5.2.2 Water transparency where relevant   |  |
|  | 5.2.3 Number and location of major events of nuisance/toxic algal blooms caused by human activities                                 |  |
|  | 5.3.1 Dissolved oxygen near the bottom, i.e. changes due to increased organic matter decomposition, and size of the area concerned* |  |

# EO 9 – Pollution

| COP 17 Ecological Objective  | COP 17 Indicators   | IMAP Indicators  |
|--|---|--|
| <p><b>Contaminants cause no significant impact on coastal and marine ecosystems and human health</b></p> | <p>9.1.1 Concentration of key harmful contaminants in biota, sediment or water</p>  | <p>Common Indicator 17: Concentration of key harmful contaminants measured in the relevant matrix (EO9, related to biota, sediment, seawater);</p>   |
|  | <p>9.2.1 Level of pollution effects of key contaminants where a cause and effect relationship has been established</p>  | <p>Common Indicator 18: Level of pollution effects of key contaminants where a cause and effect relationship has been established (EO9);</p>   |
|  | <p>9.3.1 Occurrence, origin (where possible), extent of significant acute pollution events (e.g. slicks from oil, oil products and hazardous substances) and their impact on biota affected by this pollution</p> | <p>Common Indicator 19: Occurrence, origin (where possible), extent of acute pollution events (e.g. slicks from oil, oil products and hazardous substances), and their impact on biota affected by this pollution (EO9);</p> |
|  | <p>9.4.1 Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood</p>  | <p>Common Indicator 20: Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood (EO9);</p>                               |
|  | <p>9.4.2 Frequency that regulatory levels of contaminants are exceeded</p>  |  |
|  | <p>9.5.1 Percentage of intestinal enterococci concentration measurements within established standards</p>   | <p>Common Indicator 21: Percentage of intestinal enterococci concentration measurements within established standards (EO9)</p>   |
|  | <p>9.5.2 Occurrence of Harmful Algal Blooms within bathing and recreational areas</p>   |  |

# EO 11 – Marine Litter

| COP 17 Ecological Objective  | COP 17 Indicators  | IMAP Indicators  |
|--|--|--|
| <p><b>Marine and coastal litter do not adversely affect coastal and marine environment</b></p> | <p>10.1.1 Trends in the amount of litter washed ashore and/or deposited on coastlines, including analysis of its composition, spatial distribution and, where possible, source</p> | <p>Common Indicator 22: Trends in the amount of litter washed ashore and/or deposited on coastlines (EO10);</p>  |
|  | <p>10.1.2 Trends in amounts of litter in the water column, including microplastics, and on the seafloor</p>  | <p>Common Indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor (EO10);</p>   |
|  | <p>10.2.1 Trends in the amount of litter ingested by or entangling marine organisms, especially mammals, marine birds and turtles</p>  | <p>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)</p> |

# IMAP: Collaboration with key partners

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- EO1, both with the GFCM for commercial species of fish and shellfish and the Secretariat of the ACCOBAMS,
- EO3, with the GFCM,
- EO11, with ACCOBAMS,
- Cooperation with other regional and international bodies, to avoid duplication for those Contracting Parties, which are Parties to various Regional Seas Convention and maximize synergies with MSFD and relevant work of UNEP.
- Exchange of best practices and information is encouraged during the IMAP implementation, both in between Contracting Parties participating in various monitoring programmes and in between UNEP/MAP and other relevant regional, international bodies.
- Collaboration with citizens, communities (NGOs, civil society initiatives), and environmental protection associations and institutes



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**Contact** Virginie Hart ([virginie.hart@unepmap.gr](mailto:virginie.hart@unepmap.gr)), Tatjana Hema ([t.hema@unepmap.gr](mailto:t.hema@unepmap.gr))  
and Gyorgyi Gurban ([gyorgyi.gurban@unepmap.gr](mailto:gyorgyi.gurban@unepmap.gr))

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United Nations Environment Programme  
Coordinating Unit for the Mediterranean Action Plan  
Vassileos Konstantinou 48  
Athens 11635  
Greece

[www.unepmap.org](http://www.unepmap.org)



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