MSFD: Common Understanding of Determination of GES and Establishment of Environmental Targets

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Steps for National Marine Strategies development

Initial assessment: analysis of essential features/**characteristics**, (*Annex III, tab.I*) **pressures** and **impacts**, (*Annex III, tab.II)*, on marine waters **economic** and **social** analysis of their use and cost of degradation	**2012**
Determine **Good Environmental Status** (indicative list of elements: Annex I, and Annex III)	
Establishment of **Environmental Targets** and **indicators**	
Monitoring programmes: compatible with existing provisions, methods consistent across the Marine Region (comparability)	**2014**
Programmes of Measures to be taken	**2015**
Entry into operation of programmes	**2016**

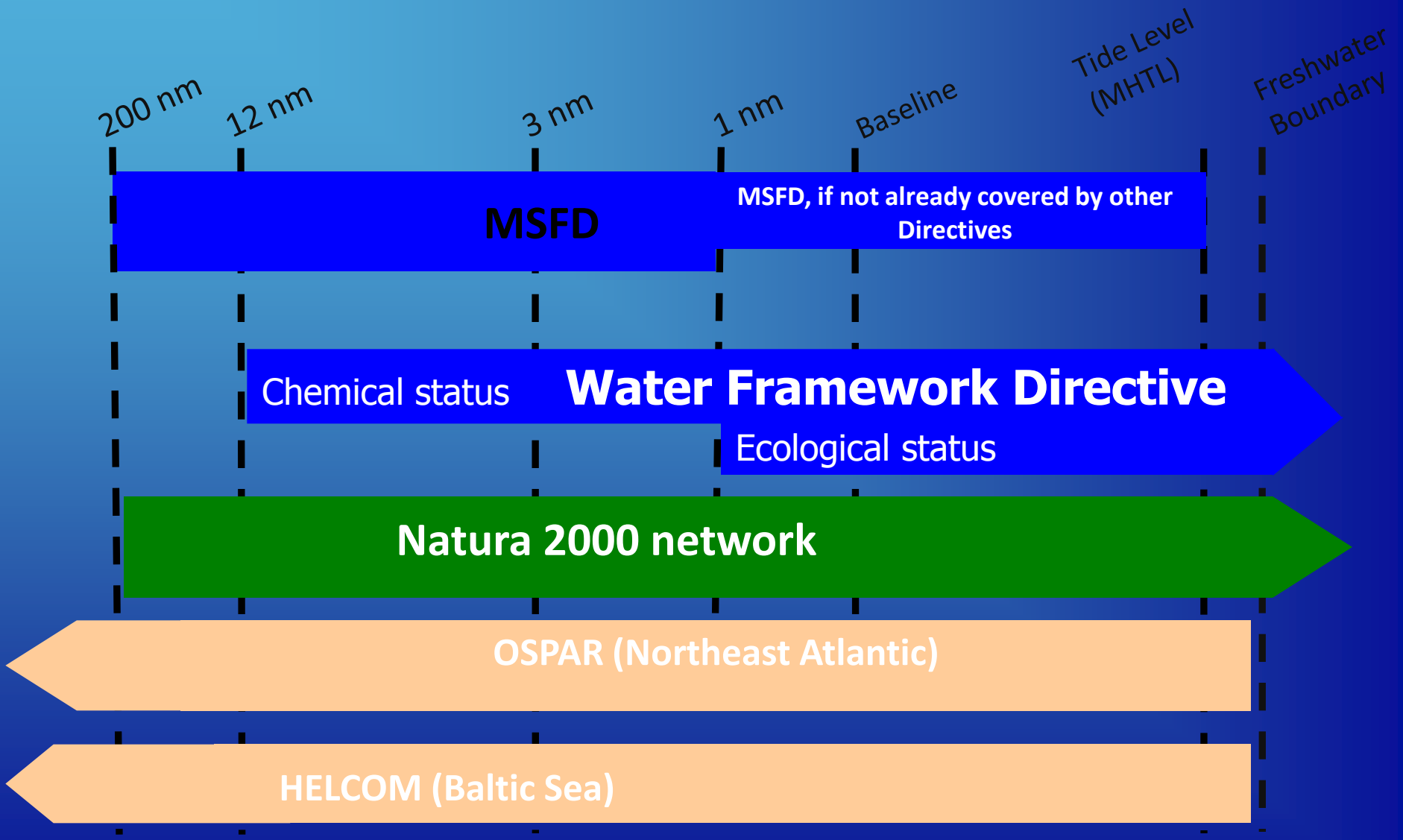
Building upon existing activities developed within EU Directives and Regional Sea Conventions

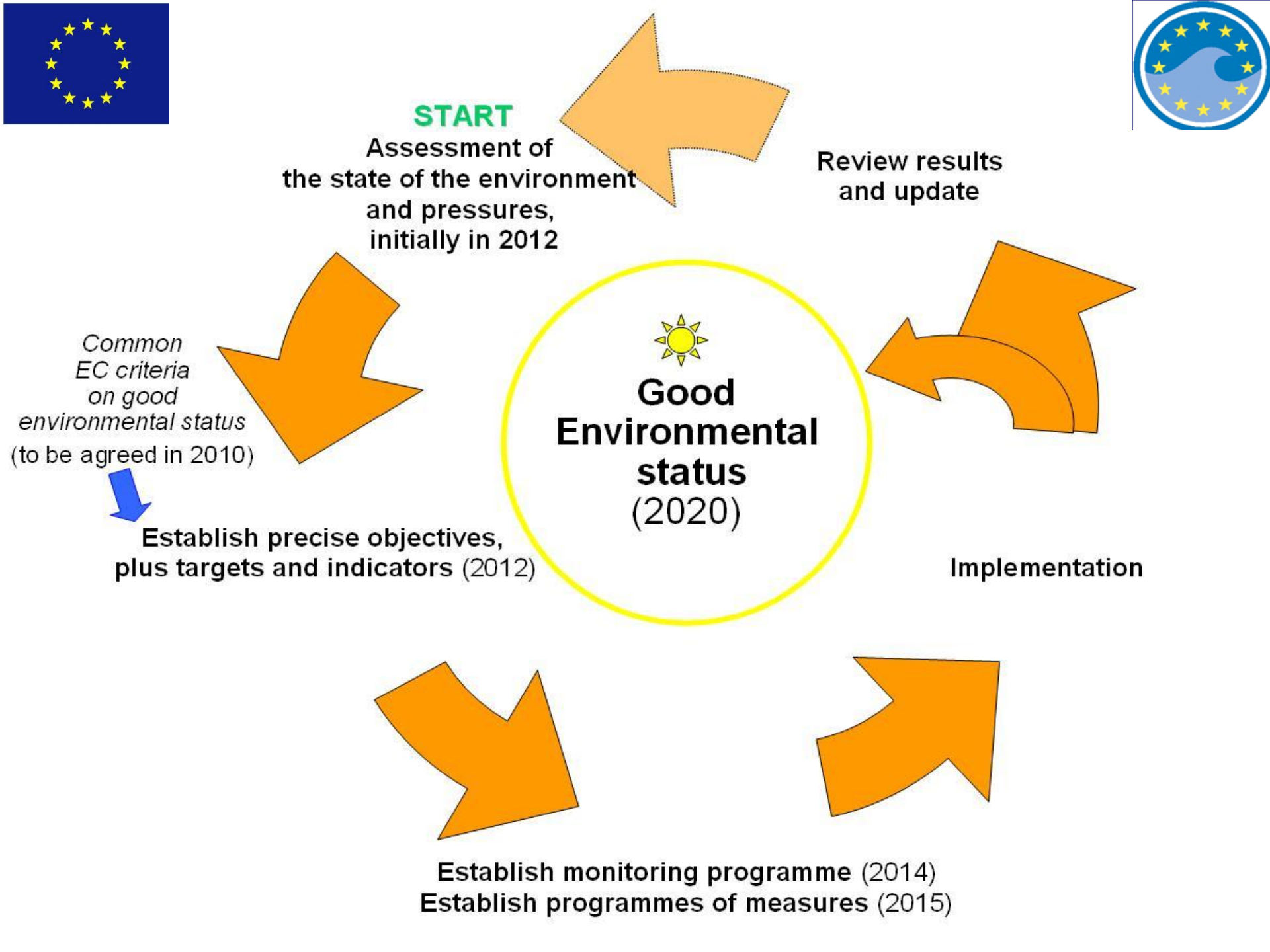
2020

To achieve or maintain Good Environmental Status in the marine environment

Adaptive management , with regular review (every 6 years)

Integrating relevant EU Directives & Conventions




START
Assessment of the state of the environment and pressures, initially in 2012
Review results and update
Common EC criteria on good environmental status (to be agreed in 2010)
Good Environmental status (2020)
Establish precise objectives, plus targets and indicators (2012)
Implementation
Establish monitoring programme (2014)
Establish programmes of measures (2015)

Good Environmental Status (GES)

DEFINITION (Art. 3)

Environmental status of marine waters providing

- ***ecologically diverse*** *and* ***dynamic*** *seas,* ***healthy*** *and* ***productive***
- ***use of marine environment at a sustainable level*** *(safeguarding the potential for use and activities)*

a) ***structure, function and processes of the ecosystems****, with natural physiographic, geographyc, geological and climatic factors allow ecosystems* ***to function fully*** *and maintain their resilience to human-induced changes*

Marine species and habitats are protected*, human-induced decline of biodiversity is prevented, diverse biological components function in balance*

b) ***hydro-morphological, physical, and chemical properties of the ecosystems*** *(including those resulting from human activities)* ***support the ecosystems***

Anthropogenic inputs of substances and energy *(including noise)* ***do not cause pollution effects***

Good Environmental Status (GES)

DETERMINATION of GES (Art.9)

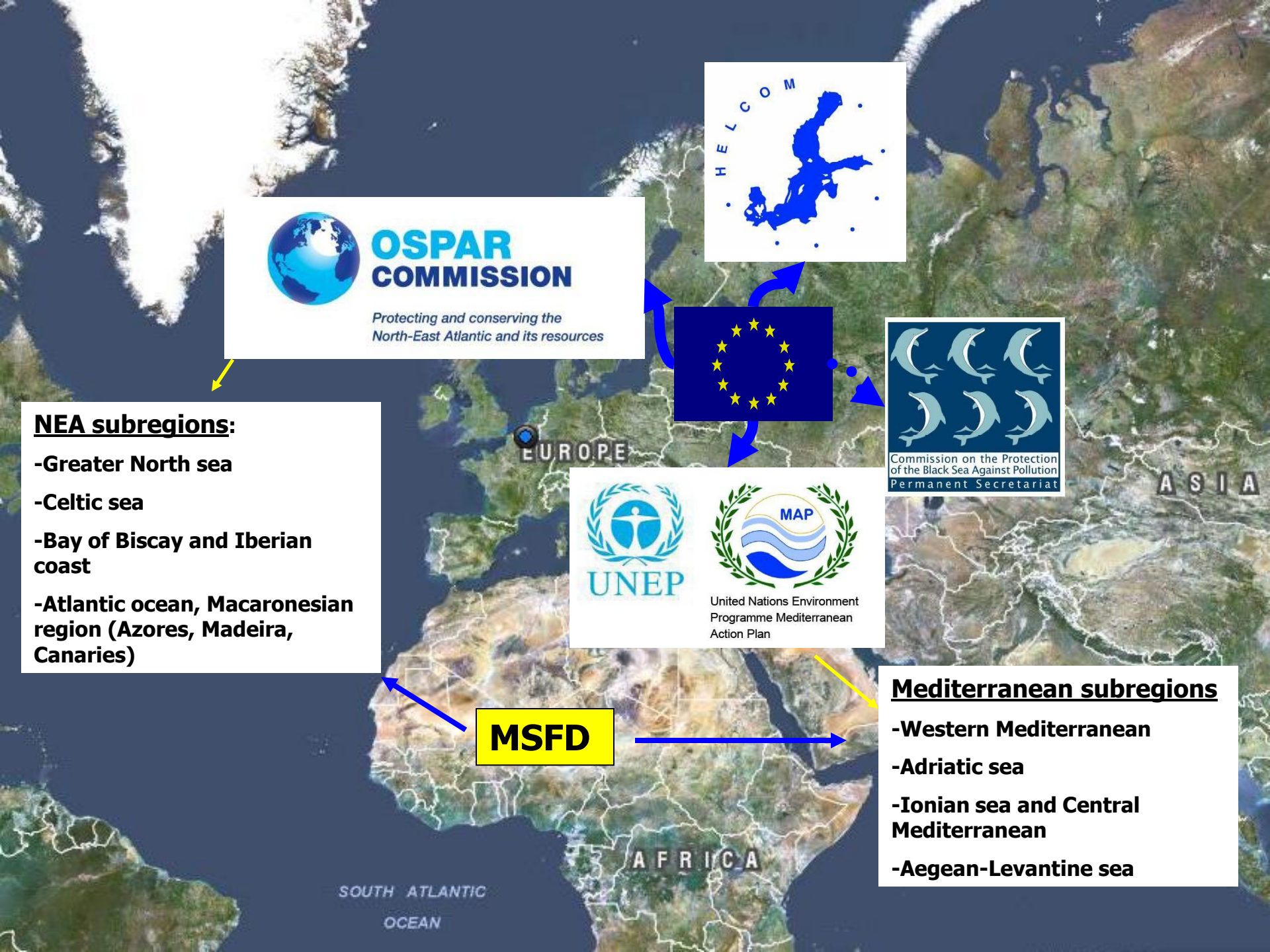
GES shall be determined at the level of **Marine Region** (or subregion),

on the basis of the "**qualitative descriptors**" in **Annex I**

taking into account indicative lists of Elements in **Annex III**:

Tab.1: **characteristics**: physical and chemical features, habitat types, biological features and hydromorphology

Tab. 2: **pressure and impacts** of human activities


HELCOM
OSPAR COMMISSION
Protecting and conserving the North-East Atlantic and its resources
Commission on the Protection of the Black Sea Against Pollution
Permanent Secretariat
UNEP
MAP
United Nations Environment Programme Mediterranean Action Plan
EUROPE
ASIA
AFRICA
SOUTH ATLANTIC OCEAN
MSFD
NEA subregions:
-Greater North sea
-Celtic sea
-Bay of Biscay and Iberian coast
-Atlantic ocean, Macaronesian region (Azores, Madeira, Canaries)
Mediterranean subregions
-Western Mediterranean
-Adriatic sea
-Ionian sea and Central Mediterranean
-Aegean-Levantine sea

ANNEX I

Qualitative descriptors for determining good environmental status

(referred to in Articles 3(5), 9(1), 9(3) and 24)

(1) Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions.

(2) Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems.

(3) Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.

(4) All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.

(5) Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

(6) Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

(7) Permanent alteration of hydrographical conditions does not adversely affect marine ecosystems.

(8) Concentrations of contaminants are at levels not giving rise to pollution effects.

(9) Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.

(10) Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

(11) Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment.

To determine the characteristics of good environmental status in a marine region or subregion as provided for in Article 9(1), Member States shall consider each of the qualitative descriptors listed in this Annex in order to identify those descriptors which are to be used to determine good environmental status for that marine region or subregion. When a Member State considers that it is not appropriate to use one or more of those descriptors, it shall provide the Commission with a justification in the framework of the notification made pursuant to Article 9(2).

Annex I
Qualitative descriptors

- D 1 Biodiversity
- D 2 Non-indigenous species
- D 3 Fisheries
- D 4 Food webs
- D 5 Eutrophication
- D 6 Seafloor integrity
- D 7 Hydrographic conditions
- D 8 Contaminants
- D 9 Contaminants in seafood
- D 10 Litter
- D 11 Energy introduction (noise)

Annex III

Characteristics

Physical and chemical
- Topography, bathymetry
- Nutrients, O2

Habitat types
- Predominant seabed and water column habitat types

Biological features
- Phytoplankton, Zooplankton
- benthic flora and fauna
- Fish populations
- Marine mammals
- Birds

Others
- Contaminants in sediment and biota

Pressures / Impacts

- smothering, sealing
- physical damage
- underwater noise
- litter
- nutrients input
- introduction of non-indigenous species
- fishery

Art. 9. 3:

Criteria and methodological standards to be used by MSs, for the determination of GES *shall be laid down, on the basis of Annexes I and III, by EC (**regulatory procedure with scrutiny**) by **15 July 2010**, to ensure consistency and to allow for comparison between marine regions/subregions*

Preparation of the scientific basis for the **development of criteria** and methodological standards for GES:

EC commissioned **JRC** and **ICES** to set up and coordinate **Task Groups** (based on independent experts from the 4 marine regions) that produced **Technical Reports for the Descriptors (Annex 1)** available at **http://publications.jrc.ec.europa.eu/repository and in CIRCA Marine** Internet address: http://circa.europa.eu (Marine Strategy Interest Group: access required)

+ consulting with MSs, stakeholders and Regional Sea Conventions (**Working Group GES**)

Criteria and related indicators referred to the 11 Descriptors for determining **Good Environmental Status**

COMMISSION DECISION

of 1 September 2010

on criteria and methodological standards on good environmental status of marine waters

(notified under document C(2010) 5956)

(Text with EEA relevance)

(2010/477/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to the Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) (1), and in particular, Article 9(3) thereof,

Whereas:

(1) The criteria for the achievement of good environmental status are the starting point for the development of coherent approaches in the preparatory stages of marine strategies, including the determination of characteristics of good environmental status and the establishment of a comprehensive set of environmental targets, to be developed in a coherent and coordinated manner in the framework of the requirement of regional cooperation.

(2) The Commission has consulted all interested parties, including regional sea conventions, in particular on the scientific and technical assessment prepared by the Task Groups set up by the Joint Research Centre and the International Council on the Exploration of the Seas to support the development of criteria and methodological standards.

(3) One major finding of such scientific and technical work is that there is a substantial need to develop additional scientific understanding for assessing good environmental status in a coherent and holistic manner to support the ecosystem-based approach to management. An improved scientific knowledge needs to be developed, in particular through the Communication 'A European Strategy for Marine and Maritime Research. A coherent European Research Area framework in support of a sustainable use of oceans and seas' (2), in the framework of the Communication 'Europe 2020 A strategy for smart, sustainable and inclusive growth' (3) and in coherence with other Union legislation and policies. It is also appropriate to integrate later on in the process the forthcoming experience to be developed at national and regional level in the implementation of the preparatory stages of the marine strategies listed in Article 5(2)(a) of Directive 2008/56/EC.

(4) It is therefore appropriate that the Commission revises this Decision in the framework of Article 25(3) of Directive 2008/56/EC. In addition to revising criteria, the further development of methodological standards is required, in close coordination with the establishment of monitoring programmes. This revision should be carried out as soon as possible after the completion of the assessment required in Article 12 of Directive 2008/56/EC, in time to support a successful update of marine strategies that are due by 2018 pursuant to Article 17 of that Directive, as a further contribution to adaptive management. This is coherent with the fact that the determination of good environmental status may have to be adapted over time, taking into account the dynamic nature of marine ecosystems, their natural variability, and the fact that the pressures and impacts on them may vary with the evolution of different patterns of human activity and the impact of climate change.

(5) The criteria for good environmental status build on existing obligations and developments in the context of applicable Union legislation, including Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (4), which applies to coastal waters, as well as Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (5), Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (6), and a number of instruments developed in the framework of the common fisheries policy, taking also into account, where appropriate, the information and knowledge gathered and approaches developed in the framework of regional conventions. As this Decision contributes to the further development of the concept of good environmental status of marine waters, it supports in relation to marine ecosystems the process to revise the biodiversity strategy of the European Union beyond 2010 and the Biodiversity Action Plan.

(1) OJ L 164, 25.6.2008, p. 19.
(2) COM(2008) 534 final.
(3) COM(2010) 2020 final.
(4) OJ L 327, 22.12.2000, p. 1.
(5) OJ L 206, 22.7.1992, p. 7.
(6) OJ L 20, 26.1.2010, p. 7.

…….there is a **substantial need to develop additional scientific understanding** for assessing good environmental status ……..

ANNEX

CRITERIA AND METHODOLOGICAL STANDARDS FOR GOOD ENVIRONMENTAL STATUS

PART A

General conditions of application of the criteria for good environmental status

1. The criteria (….)specified and numbered in **Part B in relation to each of the eleven descriptors of good environmental status set out in Annex I** (….) **accompanied by a list of related indicators to make such criteria operational** (….)

2. For most criteria, the **assessment and methodologies required** ….where appropriate**,** (….) **be based on those applicable under existing Community legislation**, (….) **taking also into account reports of the Task Groups set up by the JRC and ICES** and, where relevant, (….) the **approaches developed in the framework of Regional Sea Conventions**

4. In a number of cases, (….) **, it can be appropriate to apply as a first step some selected criteria and related indicators for an overall screening**

7. There is a diversity of environmental conditions at sea and of human activities having an impact on it. (….) **diversity exists between regions and even within marine regions, sub-regions and subdivisions.** For this reason, the applicability of specific indicators related to the criteria require **considering whether they are ecologically relevant** to each situation being assessed.

9. (….)..Consideration needs to be given to the fact that **some criteria and related indicators are acknowledged as being still under development during this initial period.**

PART B

Criteria for good environmental status relevant to the descriptors of Annex I to Directive 2008/56/EC

Descriptor 1*: Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climate conditions.*

……

Descriptor 2: ***Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem.***

……

Descriptor 6: *Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.*

The objective is …….

6.1. Physical damage, having regard to substrate characteristics

The main concern for management purposes is the magnitude of impacts of human activities on seafloor substrates structuring the benthic habitats. Among the substrate types, biogenic substrates, which are the most sensitive to physical disturbance, provide a range of functions that support benthic habitats and communities.

— Type, abundance, biomass and areal extent of relevant biogenic substrate (6.1.1)
— Extent of the seabed significantly affected by human activities for the different substrate types (6.1.2)

6.2. Condition of benthic community

The characteristics of the benthic community such as species composition, size composition and functional traits provide an important indication of the potential of the ecosystem to function well. Information on the structure and dynamics of communities is obtained, as appropriate, by measuring species diversity, productivity (abundance or biomass), tolerant or sensitive taxa and taxocene dominance and size composition of a community, reflected by the proportion of small and large individuals

— Presence of particularly sensitive and/or tolerant species (6.2.1)
— Multi-metric indexes assessing benthic community condition and functionality, such as species diversity and richness, proportion of opportunistic to sensitive species (6.2.2)
— Proportion of biomass or number of individuals in the macrobenthos above some specified length/size (6.2.3)
— Parameters describing the characteristics (shape, slope and intercept) of the size spectrum of the benthic community (6.2.4)

COM Decision on GES

Criteria for biodiversity descriptors

BIODIVERSITY

Species distribution
- Population size
- Population condition

- **Habitat** distribution
- Habitat extent
- Habitat condition

- **Ecosystem** structure

NON-INDIGENOUS SPECIES

- Abundance of non-indigenous species
- Impact of invasive species

FISH POPULATIONS

- Level of pressure of fishing
- Reproductive capacity of the stock
- Population age and size distribution

FOOD WEBS

- Productivity of key species / groups
- Proportion of selected species at the top of food webs
- Abundance/distribution of key groups/species

SEAFLOOR INTEGRITY

- Physical damage and substrate characteristics
- Condition of benthic community

COM Decision on GES

Criteria for descriptors more related to water quality

EUTROPHICATION

- Nutrients levels
- Direct and indirect effects of nutrients enrichment

HYDROGRAPHICAL CONDITIONS

- Spatial characterization of alterations
- Impacts of hydrographical changes

CONTAMINANTS

- Concentrations
- Effects

CONTAMINANTS in seafood

(human consumption)

- Level, number and frequency of contaminants

COM Decision on GES

Criteria for descriptors requiring further development

LITTER

- Characteristics: amounts trends (ashore, water column, seafloor) and composition of microparticles
- Impacts on marine life

ENERGY INTRODUCTION (noise)

- Distribution (temporal/spatial) of loud, low and mid frequency impulsive sound
- Continuous low frequency sound

Themes requiring further development in relation to GES

Beyond the development of specific criteria, common issues across all descriptors have been identified and require a common understanding, developed at EU level

- How to **integrate the different criteria** within each descriptors

- How to **aggregate** the findings on **all descriptors** to get an **overall assessment of the status**

- **Development of methodological standards** where not yet available

- **Regional cooperation** for MSs obligations

- **Research needs** for specific descriptors

Common Understanding of (Initial) Assessment, Determination of Good Environmental Status (GES) & Establishment of Environmental Targets (Articles 8, 9 & 10 MSFD)

Status: 22.11.2011

This is a living document which should be revisited and revised due to increased knowledge and/or experiences with the MSFD implementation

Status box

Title:

Common Understanding of (Initial) Assessment, Determination of Good Environmental Status (GES) and Establishment of Environmental Targets (Art. 8, 9 & 10 MSFD)

Status: Version 6 – 22 November 2011

Background:

Under the MSFD Common Implementation Strategy, a Working Group (WG) on Good Environmental Status (GES) has been initiated in 2009 to assist the development of criteria and methodological standards for good environmental status and address issues of their application by EU Member States. WG GES agreed as a priority for 2010-2011 to develop a common understanding of the main normative concepts of the MSFD (Art. 8, 9 and 10) as basis to assist the application of MSFD in Member States in a comparable and consistent way. WG GES co-lead Germany and a drafting group involving the European Commission and the EU Member States Finland, France, Greece, Romania, Sweden and the UK initiated the development of a common understanding. An early draft has been shared with members of WG GES for commenting. A revised draft was presented to WG GES on 27/28 September with an invitation to EU Member States to comment by 12 October. WG GES agreed that the document should be finalised based on comments received and submitted to MSCG for endorsement, noting that this is a living document and that certain comments require further discussion by Member States and should be addressed in a future update. Subject to minor amendments, MSCG recommended the finalised document to Marine Directors for endorsement.

Marine Directors at their meeting on 8./9.12.2011 endorsed the Common Understanding document as a living document and the work package for further work in 2012/2013.

Contact details of WG GES co-lead and members of the drafting group:

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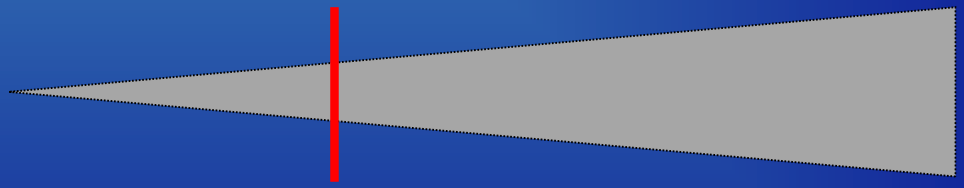
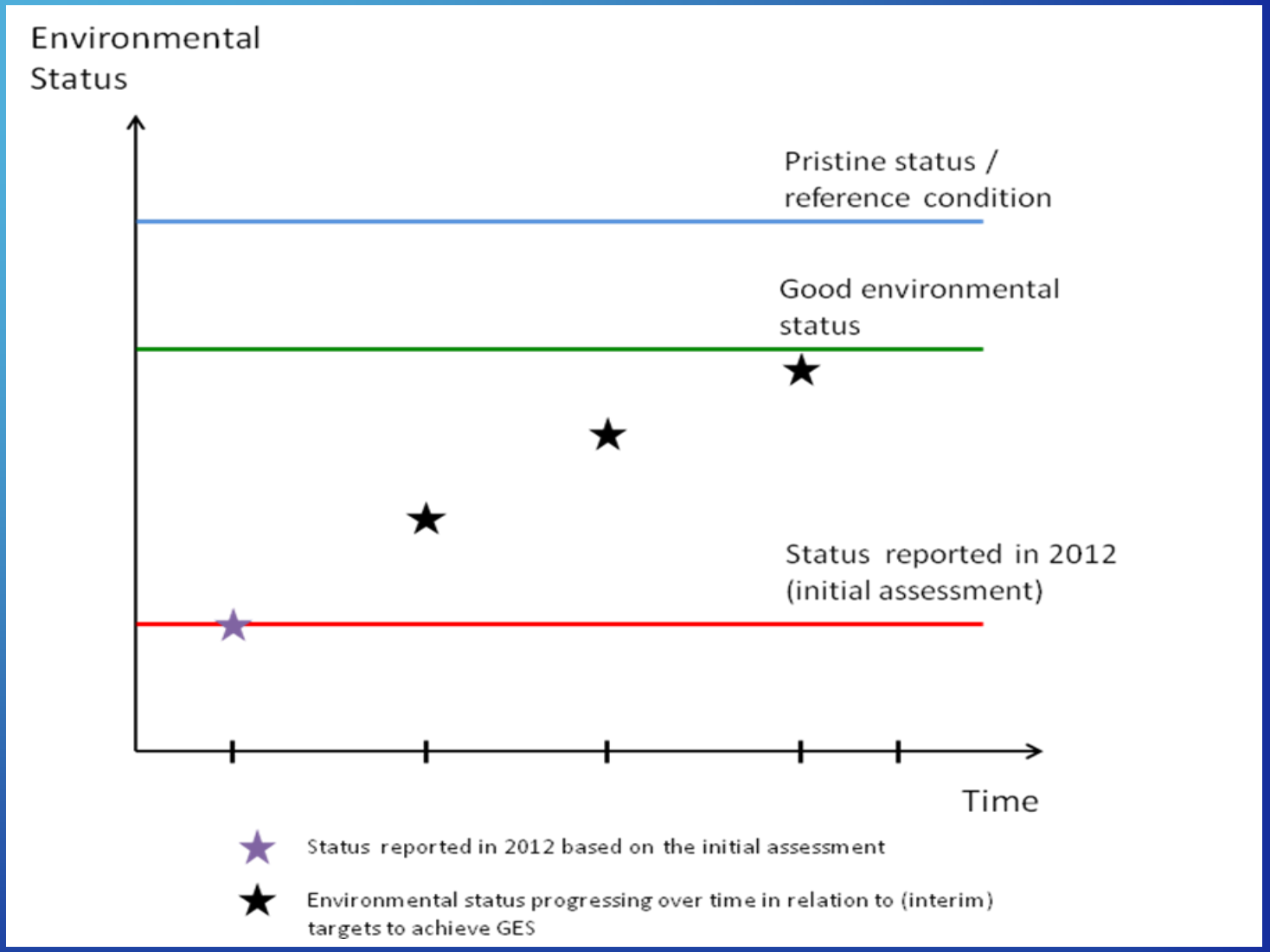
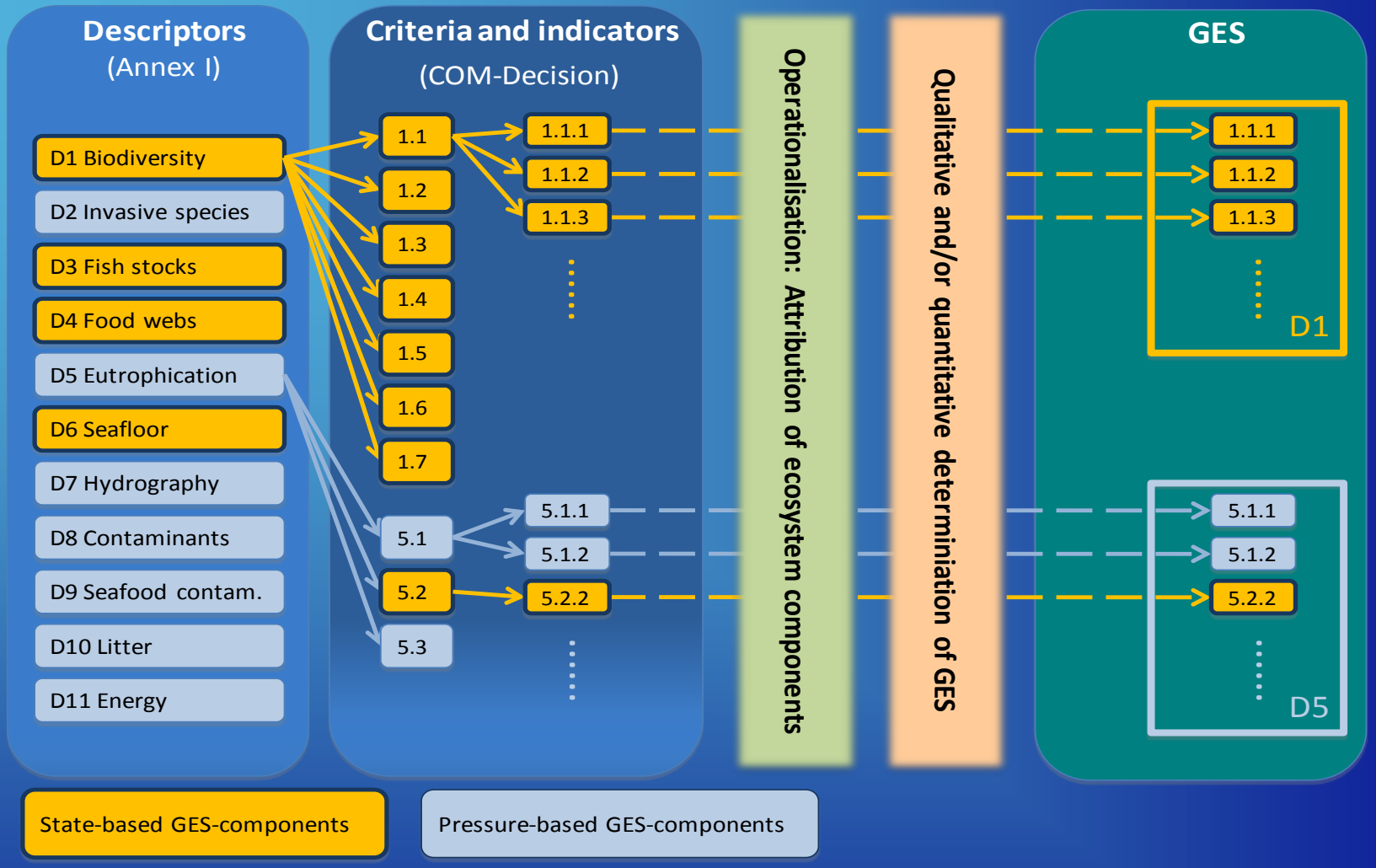
Classifications under EU Directives

EU Directives	Assessment of environmental status				
MSFD	Good Environmental Status		GES not achieved		
Habitat Directive	Conservation status favourable		Inadequate	Bad	
WFD (ecological status)	High	Good	Moderate	Poor	Bad
WFD (chemical status)	Good chemical status		Good chemical status not achieved		
Pressures and impacts					



Pristine status/reference condition *is considered highest quality, followed by the* ***desired future environmental status (GES)****.*

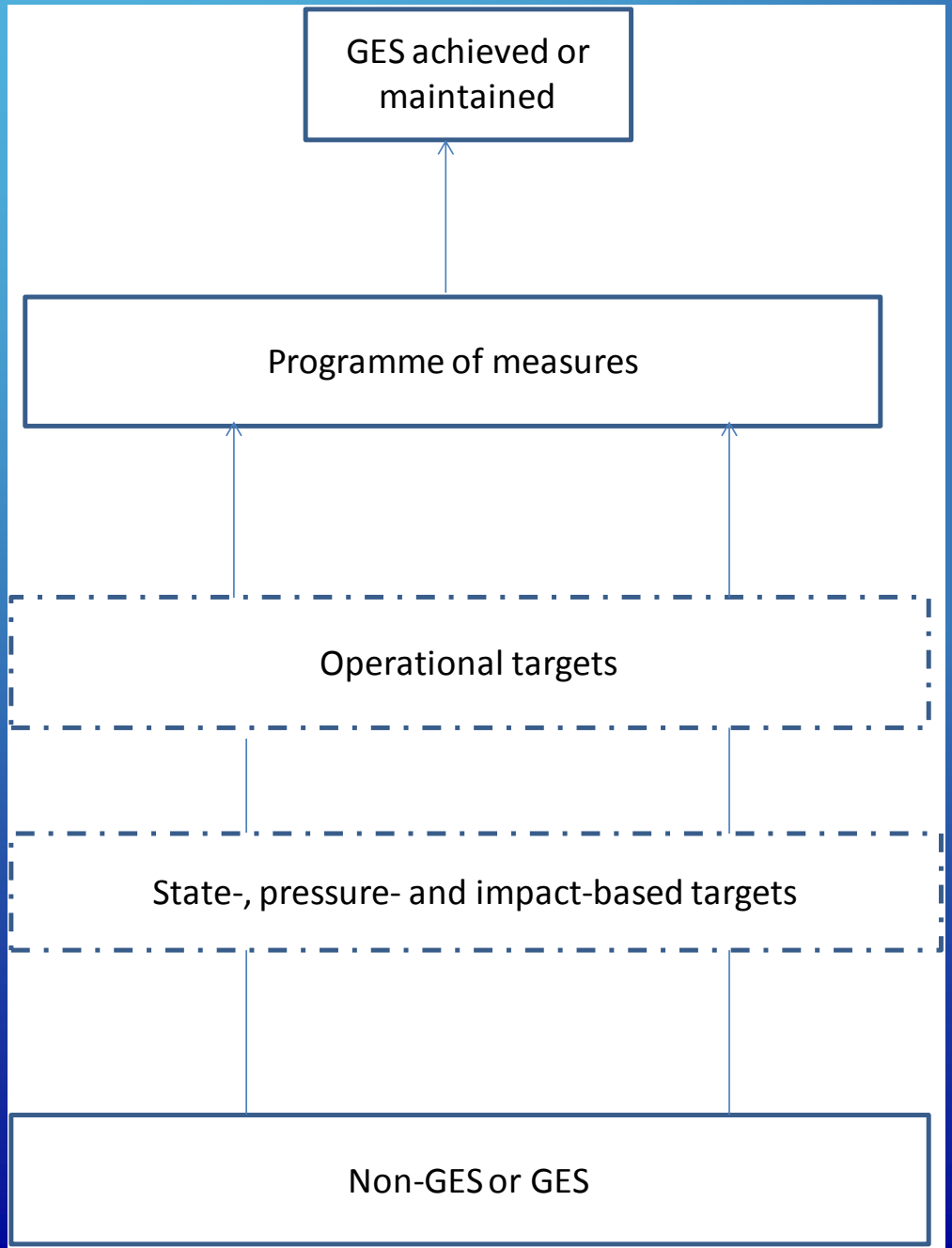
GES *can be* ***set in relation to*** *the pristine status and/or by reference to* ***the status in 2012 (based on the initial assessment)*** *which, in this example, is shown to be* ***below GES and requiring restoration***



Components for the determination of Good Environmental Status (GES) *as defined in Art. 3(5)*
-11 Descriptors *(Annex I), as well as 29 criteria and 56 indicators (COM Decision 2010/477/EU).*
- *state-based GES components: Descriptors D1, D3, D4 and D6*
- *pressure-based GES components*

Overall GES is determined through qualitative and/or quantitative expression of a set of criteria and indicators.

TARGETS



Different types of environmental targets needs to be established *(state-, pressure-, impact-, and operational targets) (Art.10 & Annex IV)*

to guide the setting of management measures *(Art. 13) directly, or indirectly via the establishment of operational targets.*

Operational targets *may also be set where management action is desirable, but it is not possible to establish associated state-, pressure-, or impact-targets e.g. due to a lack of understanding.*

On occasion it may be appropriate to establish **interim targets** *to help guide progress towards achieving or maintaining GES by 2020*

What are Environmental Targets?

Environmental targets can be set directly in relation to the eleven Descriptors (**Annex I**) and their related criteria and indicators and/or with respect to the characteristics and pressures laid down in **Annex III**

State-based targets

These provide an indication as to the physical, chemical or biological condition of the environment that would be observed when GES is achieved.

-particularly relevant for Descriptors D1, D3, D4, D6 which predominantly cover state.

- however, there are state-based elements within other Descriptors e.g. D5 and D7 for which such targets would also be appropriate.

Ex: size **composition of fish communities**: *'At least 30% of fish (by weight) should be greater than 40 cm in length'. (from OSPAR EcoQO)*

Pressure-based targets

These targets can be used to articulate the desired or acceptable level of a particular pressure which would not prevent the achievement or maintenance of GES.

-they can be more easily related to management measures and often easier and more cost effective to monitor than state-based targets.

- they should be used where a clear understanding of the relationship between pressure, state and impact exists

- or may be set on the basis of the precautionary principle.

-on instances, where a quantitative approach is not feasible trend-based targets may be appropriate.

Ex: ***'fishing mortality** is at levels consistent with MSY'*.

Impact-based targets

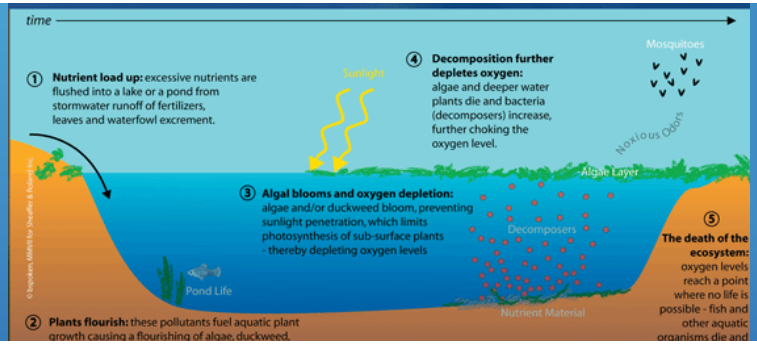
These provide an indication of the acceptable level of impact on the components of the marine environment arising from a particular pressure or range of pressures.

-ecosystem components need to be considered at an ecologically relevant scale in relation to the region or subregion.

Ex (existing impact-based targets) :

-*'**Annual by-catch of harbour porpoises** should be reduced to below 1.7% of the best population estimate',*

-'*the average level of imposex in dog whelks (Nucella lapillus) should be consistent with exposure to TBT concentrations below the environmental assessment criterion for TBT'.*



Operational targets

These targets relate directly to the nature of management action required in order to achieve or maintain GES - can also allow for the assessment of progress towards full implementation of a specific measure.

Ex (*HELCOM Baltic Sea Action Plan)* : **nutrient load reduction** target expressed per country

- *'to reduce by 2021 the input of nitrogen and phosphorus by x tonnes'.*
- *'to reduce total inputs of nitrogen and phosphorus from the different sources (e.g. agriculture, waste water treatment plants, traffic) by %'.*

The use of trends

In absence of robust evidence, trends (both positive and negative) may be used in order to establish interim environmental targets.

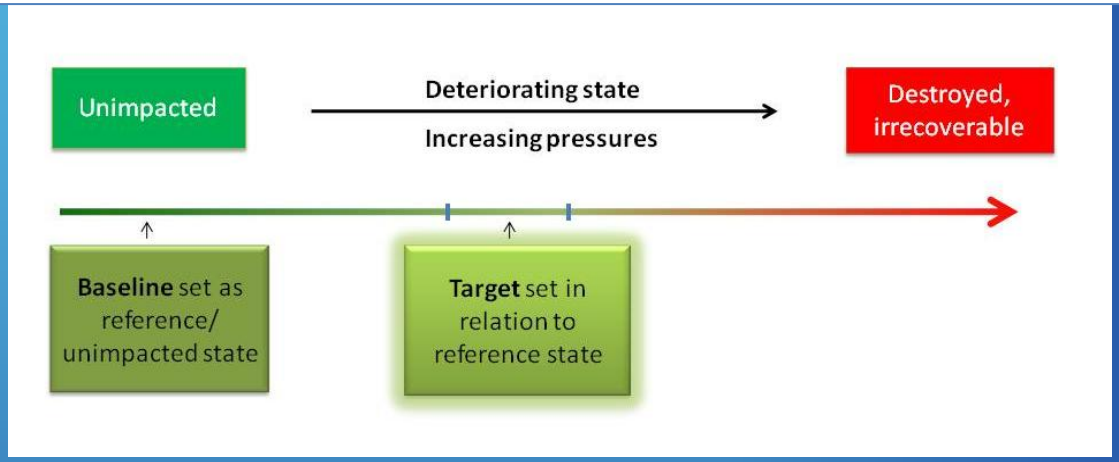
Trends can be used as a means of ascertaining whether progress is being made towards achieving GES.

Should be used as an interim option until the evidence base supports the establishment of more quantitative environmental targets

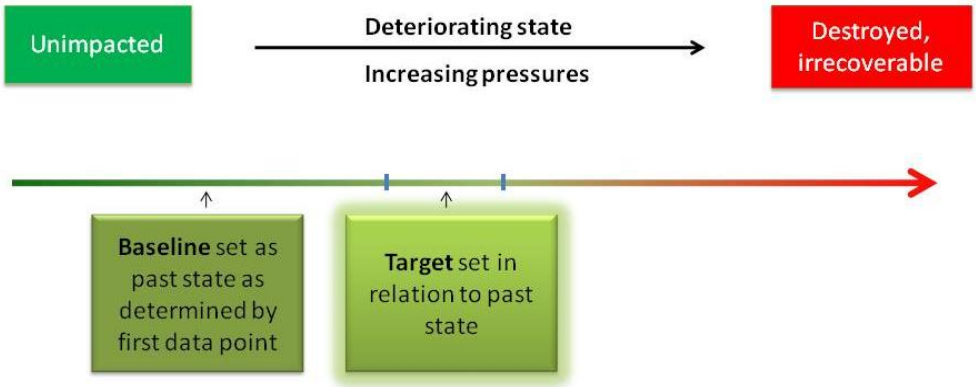
Descriptor examples	State	Pressure	Impact	Operational	Measure
D5 	**Nutrient concentrations** do not lead to an **undesirable disturbance** to the **balance of organisms** present in the water or to the **quality of the water** concerned resulting from accelerated growth of algae	**Anthropogenic inputs of nutrients are reduced**.	**No kills in benthic animal species** as a result of **oxygen deficiency** related to anthropogenic input of nutrients	**Limit** the total contribution of the different sources **to nutrient enrichment by %'** (or as pressures target)	**- Prevent** livestock from fouling rivers **through appropriate fencing and movement controls** - **Reduce inputs of N and P** from diffuse sources. - Reduce inputs of P (e.g. via **urban waste water**) resulting from the **use of detergents**.
D1, D4 Biodiversity Food web 	**Marine mammal populations** will be **maintained** (in the long-term) **at no less than 80%** of carrying capacity (D1, D4)		**Annual by-catch** of harbour porpoises **should be reduced to below 1.7% of the best population estimate** (D1, D4))	Ensure **measures are in place in the fishing industry** to tackle the causes of cetacean by-catch.	**Ban specific types of fishing gear** with high by-catch rates (D1, D4).

Setting baseline

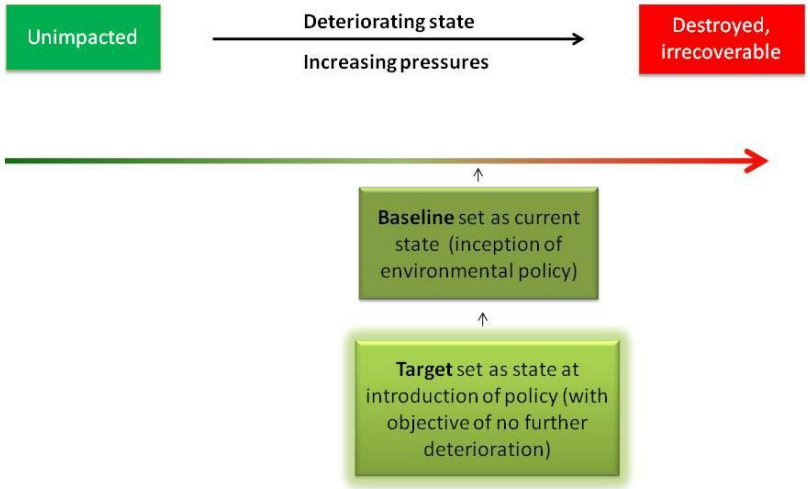
Baseline as a state at which **anthropogenic influences** are considered to be **negligible**



Baseline set in the **past**



Current Baseline



Coordination with Third Countries

Coordination and communication with Third countries is essential:
-to ensure that conflicting activities are not taking place
-allow for meaningful, practical and effective measures to be established.

Without such coordination Member States run the risk that their attempts to achieve or maintain GES will be inadvertently countered by Third Country activities.

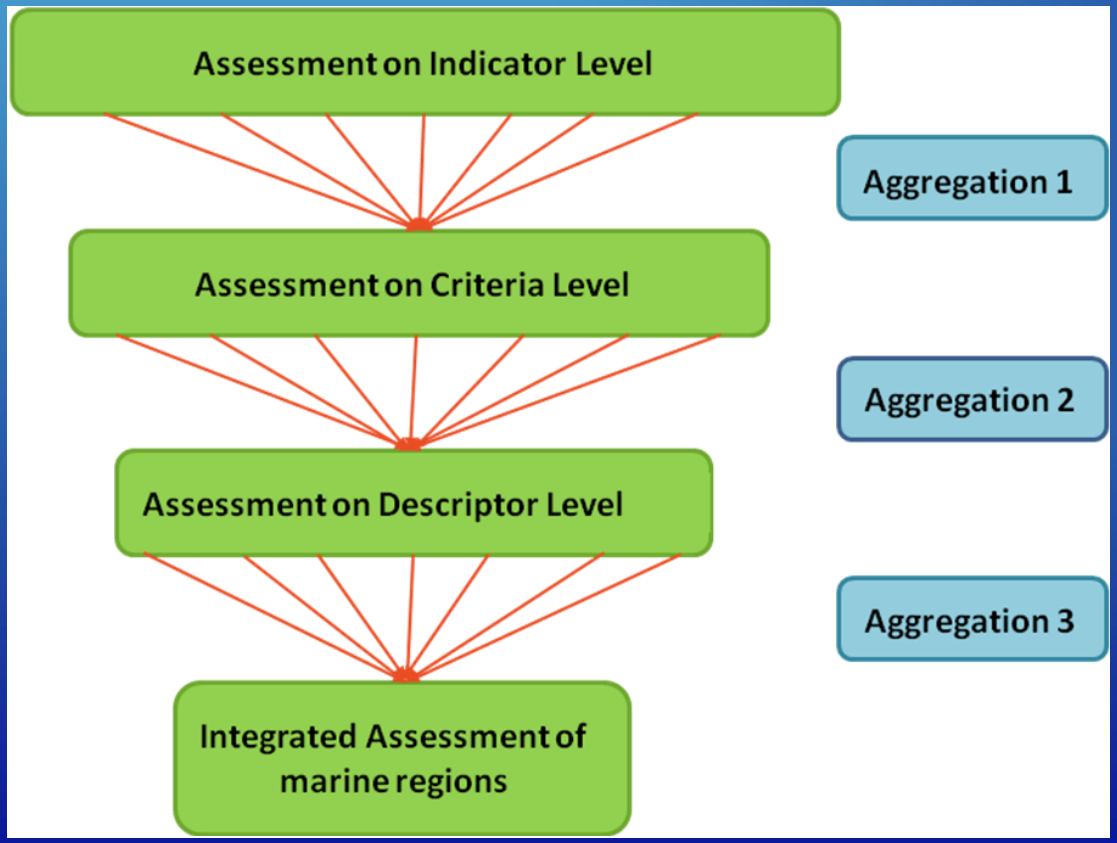
Already existing international structures, such as the Regional Sea Conventions, should be preferably used to coordinate the regional implementation of the Directive and be used as forums for communication between EU Member States and Third Countries.

Key steps to facilitate this process:
-Establish appropriate channels of communication with key experts and policy makers
-appropriate forums for exchange of information and discussion on scientific and policy aspects of achieving GES
-pilot projects involving Member Stats and Third Countries which aim to address specific environmental issues potentially preventing the achievement of GES
- use the framework of bi- and multilateral agreements.

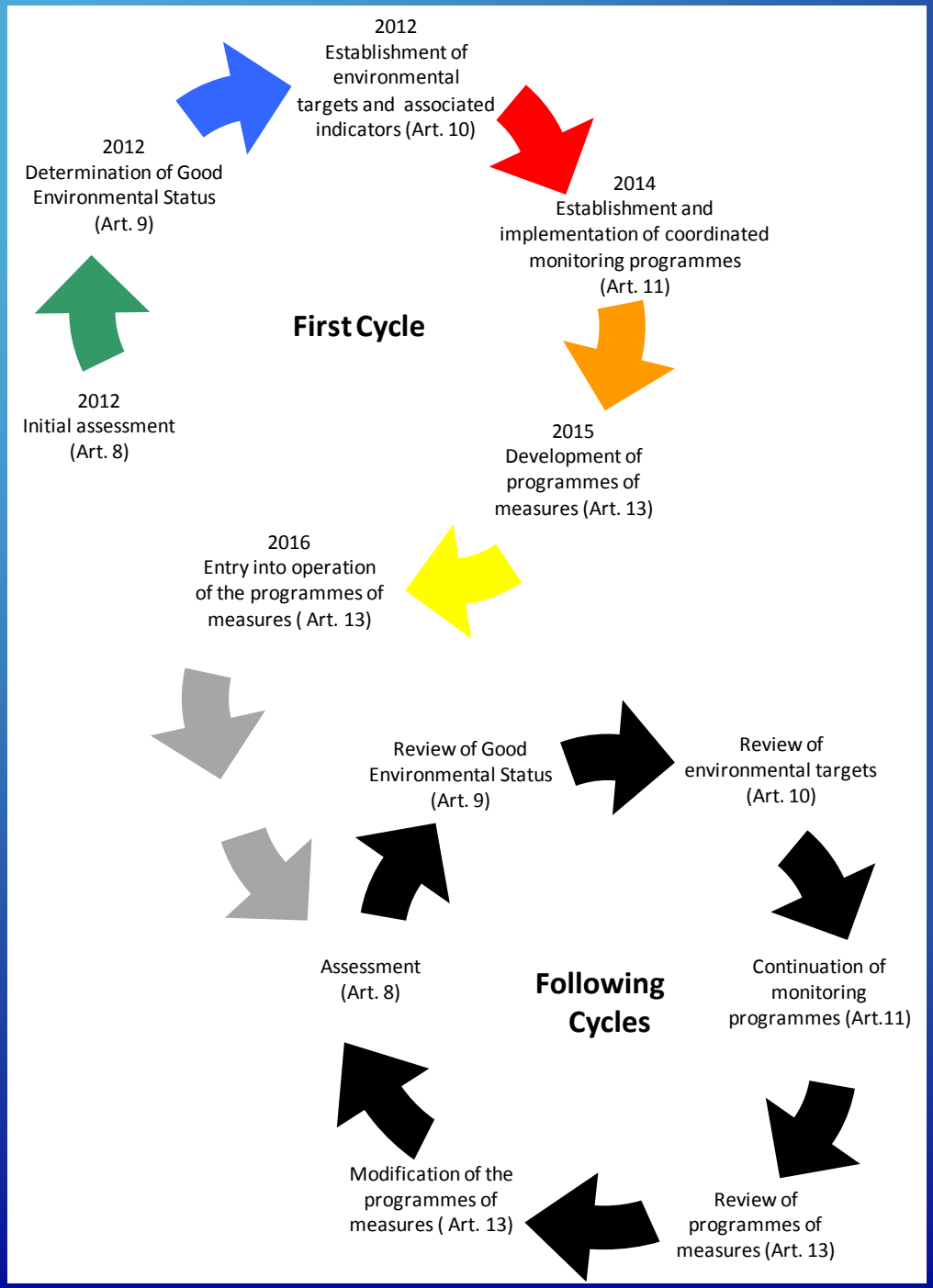
Future work: Towards a common assessment philosophy

Need to develop an ecosystem-based assessment framework

- Approaches to assessing whether or not GES has been reached
- Options for aggregation between Descriptors to assess an overall status, with the possibility of grouping rather than aggregating Descriptors.
- Options for aggregation within Descriptors at the level of criteria and indicators.
- Need for more categories for reporting on GES, i.e. currently only two categories (GES/non-GES), including the possibility of incorporating trends.



Possible aggregation levels for the integrated assessment of marine regions


2012
Establishment of environmental targets and associated indicators (Art. 10)
2014
Establishment and implementation of coordinated monitoring programmes (Art. 11)
2015
Development of programmes of measures (Art. 13)
2016
Entry into operation of the programmes of measures (Art. 13)
2012
Initial assessment (Art. 8)
2012
Determination of Good Environmental Status (Art. 9)
First Cycle
Review of Good Environmental Status (Art. 9)
Review of environmental targets (Art. 10)
Continuation of monitoring programmes (Art.11)
Review of programmes of measures (Art. 13)
Modification of the programmes of measures (Art. 13)
Assessment (Art. 8)
Following Cycles

The word **ECOLOGY** is the union of two greek words:

Oikos + logos
House + study

The study of the house
(home, niche, territory)

The word ecology is very close and complementary to another word
ECONOMY

The Household management

Key message: “no clean sea” means “no maritime economy”

EUROPEAN COMMISSION

Thank you for your attention !