

ECOLOGICAL OBJECTIVES IN EU MSFD AND HELCOM

Overview & practical aspects

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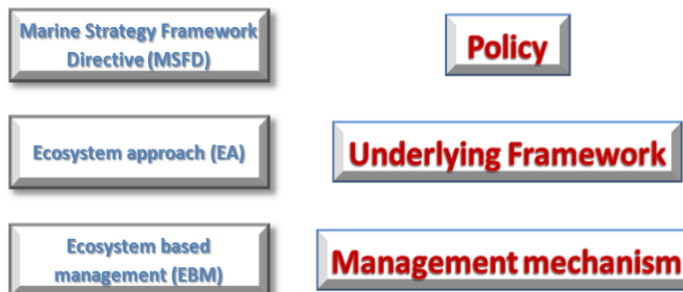
EU Marine Strategy Framework Directive

- MSFD (2008) is a key EU legislative instrument for implementation of Ecosystem Approach through EBM into management of human actions in the European seas.
- The Directive is binding the EU member states and has an ambitious goal of establishing Good Environmental Status (GES) by the year 2020.
- The Directive is implemented by EU member states through marine strategies and in close co-operation in European regional seas (Baltic, NE Atlantic, Mediterranean, Black Sea)
- Six-year management cycle for reporting and update (2012-2018, 2018-2024)

EU Marine Strategy Framework Directive

EA is defined as *“An integrated resource planning and management approach that recognizes the connections between land, air and water and all living things, including people, their activities and institutions.”*

EBM is defined as *'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way – the ecosystem approach.'*



EBM seeks to realise the following features of the EA:

- Management objectives as societal choice;
- Management decentralised and multi-sectoral;
- Appropriate temporal and spatial scale;
- Conservation of ecosystem function and resilience;
- Appropriate balance between conservation and use.
- Management within system limits;
- The outward vision (respect interconnectedness) and long-term vision (change is inevitable);
- Broad use of knowledge, scientific and traditional; and
- Incorporation of economic considerations (costs and benefits, removal of externalities).

EU Marine Strategy Framework Directive

- Initial assessment (current status)
- Description of GES including indicators (objectives)
- Programmes of measures (actions)
- Monitoring programs (follow-up of measures, GES reached?)
- Hierarchical structure: GES-Descriptors (Goals) – Criteria (Objectives)-Indicators-assessment

Good Environmental Status- a MSFD "vision"

5. 'good environmental status' means the environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive within their intrinsic conditions, and the use of the marine environment is at a level that is sustainable, thus safeguarding the potential for uses and activities by current and future generations, i.e.:
 - (a) the structure, functions and processes of the constituent marine ecosystems, together with the associated physiographic, geographic, geological and climatic factors, allow those ecosystems to function fully and to maintain their resilience to human-induced environmental change. Marine species and habitats are protected, human-induced decline of biodiversity is prevented and diverse biological components function in balance;



Good Environmental Status- a MSFD "vision"

- (b) hydro-morphological, physical and chemical properties of the ecosystems, including those properties which result from human activities in the area concerned, support the ecosystems as described above. Anthropogenic inputs of substances and energy, including noise, into the marine environment do not cause pollution effects;

Good environmental status shall be determined at the level of the marine region or subregion as referred to in Article 4, on the basis of the qualitative descriptors in Annex I. Adaptive management on the basis of the ecosystem approach shall be applied with the aim of attaining good environmental status;

11 generic qualitative GES descriptors

1. **Biodiversity** is maintained
2. **Non-indigenous species** do not adversely alter the ecosystem
3. The population of **commercial fish** species is healthy
4. Elements of **food webs** ensure long-term abundance and reproduction
5. **Eutrophication** is minimised
6. The **sea floor integrity** ensures functioning of the ecosystem
7. Permanent **alteration of hydrographical** conditions does not adversely affect the ecosystem
8. Concentrations of **contaminants** give no effects
9. **Contaminants in seafood** are below safe levels
10. **Marine litter** does not cause harm
11. **Introduction of energy** (including underwater noise) does not adversely affect the ecosystem

Criteria and indicators

- GES descriptors are diverse by nature
 - Scope (e.g. Food webs vs. Marine litter)
 - Type (Status vs. Pressure descriptors)
- MSFD Criteria and indicators are distinctive technical features, which help make the descriptors more concrete and quantifiable.
- Commission Decision on criteria and methodological standards (2010) -under revision.

Criteria and indicators – Marine Litter

GES Descriptors
high level, generic across Europe

Descriptor 10 – Marine litter does not cause harm to the coastal and marine environment

GES Criteria
will be based on characteristics which define what GES means in each Member State

1. Characteristics of litter in the marine and coastal environment
2. Impacts of litter on marine life

GES: Indicators & Targets
provide the final level of details.
If the targets are met, GES should be achieved

Indicators:

- Trends in the amount of litter washed ashore and/or deposited on coastlines
- Trends in the amount of litter in the water column (including floating at the surface) and deposited on the sea-floor
- Trends in the amount, distribution and where possible, composition of micro-particles (in particular micro-plastics)
- Trends in the amount and composition of litter ingested by marine animals

Targets (examples):

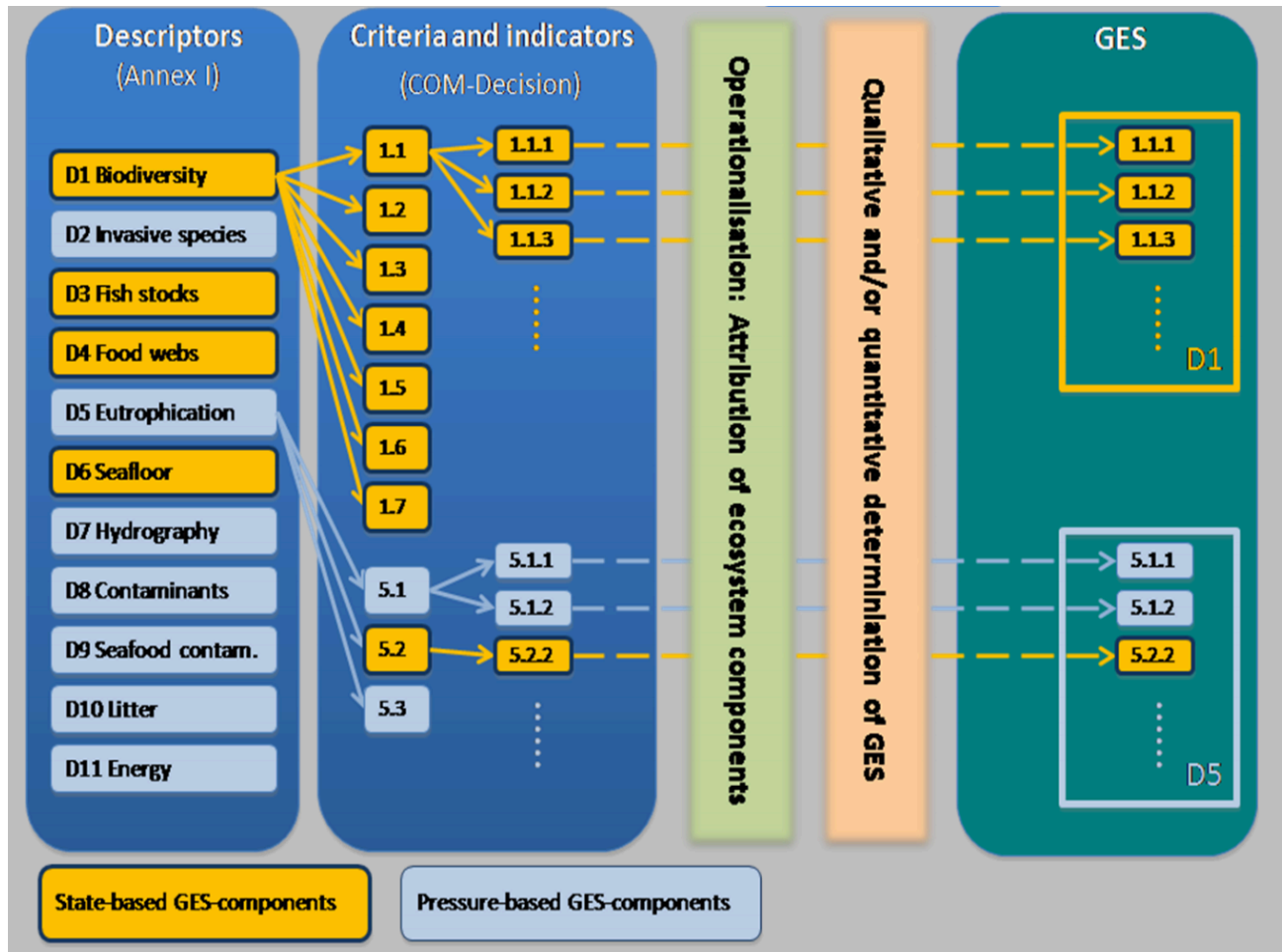
- X% of overall reduction in the volume of litter on coastlines from 2010 levels by 2020.

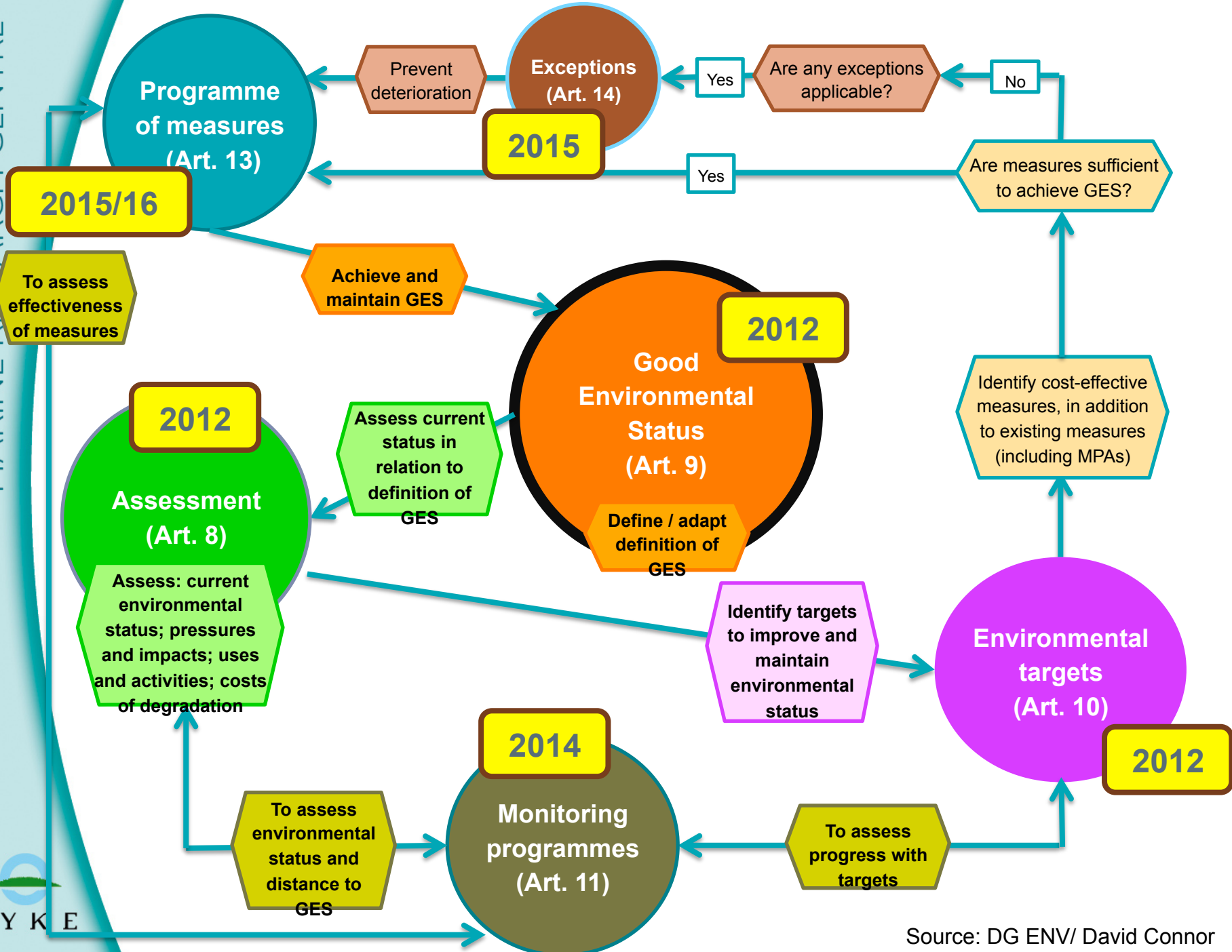


Criteria and indicators- biological components

	Component	Criteria	Indicators
At level of individual species	<ul style="list-style-type: none"> - Fish - Mammals - Reptiles - Seabirds - Other species of EU legislation and international agreements - Genetically distinct forms of native species 	1.1 Species distribution	1.1.1 species distribution range 1.1.2 species distributional pattern 1.1.3 area covered by species
		1.2 Population size	1.2.1 population abundance
		1.3 Population condition	1.3.1 population demographics 1.3.2 population genetic structure
	<ul style="list-style-type: none"> - Commercially exploited fish and shellfish – additional criteria/indicators 	3.2 Reproductive capacity of the stock	3.2.1 spawning stock biomass 3.2.2 biomass indices
		3.3 Population age and size distribution	3.3.1 proportion of large fish
			3.3.2 mean max. length 3.3.3 fish length distribution 3.3.4 size at first sexual maturation
- Non-indigenous species	Refer to section 4.2		
At level of functional groups	<ul style="list-style-type: none"> - Fish - Mammals - Reptiles - Seabirds - Cephalopods 	1.6 Habitat condition	1.6.1 condition typical species 1.6.2 relative abundance 1.6.3 habitat condition

Criteria and indicators- biological components





Dynamic nature of marine environment & "shifting baselines"

- (34) In view of the dynamic nature of marine ecosystems and their natural variability, and given that the pressures and impacts on them may vary with the evolvement of different patterns of human activity and the impact of climate change, it is essential to recognise that the determination of good environmental status may have to be adapted over time. Accordingly, it is appropriate that programmes of measures for the protection and management of the marine environment be flexible and adaptive and take account of scientific and technological developments. Provision should therefore be made for the updating of marine strategies on a regular basis.

HELCOM

- HELCOM is an international "soft law" convention for the protection of the Baltic Sea Marine Environment that entered into force in 1974.
- Implemented by Helsinki Commission, secretariat in Helsinki.
- One of the four regional seas conventions in Europe (along with OSPAR, MEDPOL, Black Sea convention).

HELCOM Baltic Sea Action Plan 2007

VISION

”A healthy Baltic Sea environment, with diverse biological components functioning in balance, resulting in a good environmental/ecological status and supporting a wide range of sustainable human economic and social activities”

GOALS

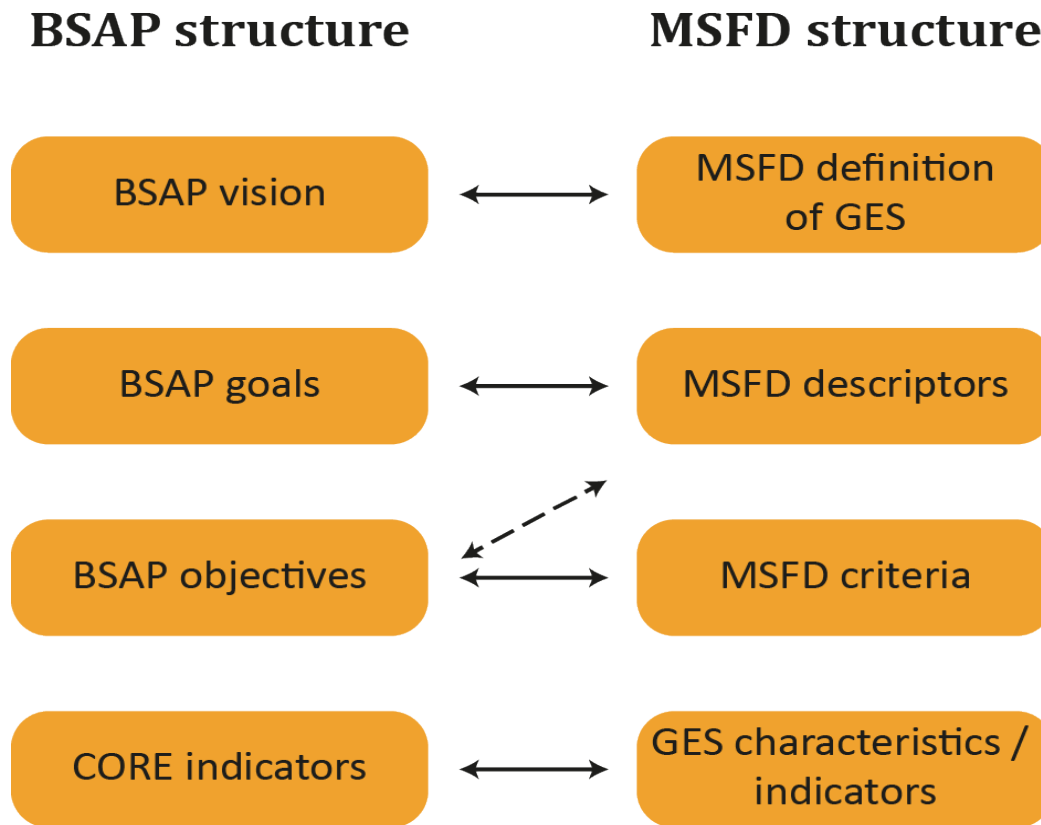
- Baltic Sea unaffected by **eutrophication**
- Baltic Sea life undisturbed by **hazardous substances**
- Favourable status of Baltic Sea **biodiversity**
- **Maritime activities** in the Baltic Sea carried out in an environmentally friendly way

BSAP objectives (each supported by commonly agreed core indicators)

OBJECTIVES

<p>EUTROPHICATION</p> <ul style="list-style-type: none"> • Concentrations of nutrients close to natural levels • Clear water • Natural level of algal blooms • Natural distribution and occurrence of plants and animals • Natural oxygen levels 	<p>BIODIVERSITY</p> <ul style="list-style-type: none"> • Natural marine and coastal landscapes • Thriving and balanced communities of plants and animals • Viable populations of species
<p>HAZARDOUS SUBSTANCES</p> <ul style="list-style-type: none"> • Concentrations of hazardous substances close to natural levels • All fish are safe to eat • Healthy wildlife • Radioactivity at the pre-Chernobyl level 	<p>MARITIME ACTIVITIES</p> <ul style="list-style-type: none"> • Enforcement of international regulations – no illegal discharges • Safe maritime traffic without accidental pollution • Efficient emergency and response capabilities • Minimum sewage pollution from ships • No introductions of alien species from ships • Minimum air pollution from ships • Zero discharges from offshore platforms • Minimum threats from offshore installations

BSAP structure corresponds to MSFD structure



Remarks

- Both MSFD and BSAP contain a hierarchical structure Vision-Goals-Objectives-Indicators
- Assessment and monitoring programs are structured by objectives and implemented through indicators.
- HELCOM is a regional "coordination forum" for MSFD implementation -> contracting parties that are also EU member states (7/8) can gain synergy in implementation of BSAP and MSFD

Practical views on MSFD implementation

- First monitoring programme currently in public hearing
 - Not all descriptors had previous monitoring
 - Some indicators not ready until 2018
 - Development in HELCOM co-operation among Baltic Sea EU MS
- Commission decision on criteria and indicators under revision.
 - Further guidance, clarification and development of indicators still required to ensure functional assessment of GES
- Required data and information arrangements are complex and under development.

Reflections on AC EA work

- How objectives will be structured to meet e.g. AMSP vision/ Kiruna general objectives?
 - Pressure vs. Status objectives/criteria
 - Need to accommodate "shifting baselines"?
 - Need for a multi-level structure analogous to other existing systems?
 - Practical aspects important (if not decisive) in the delineation of system of objectives. Not feasible to set up structures that cannot be monitored or assessed.
 - Maximal use of existing AC work – restructuring/redirecting may be required (cf. HELCOM)

Reflections on AC EA work

- Further information:
 - http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/index_en.htm
 - <http://www.helcom.fi/>
 - <http://www.msfd.eu/>