Main messages, targets and indicators for the Good Environmental Status from initial assessments

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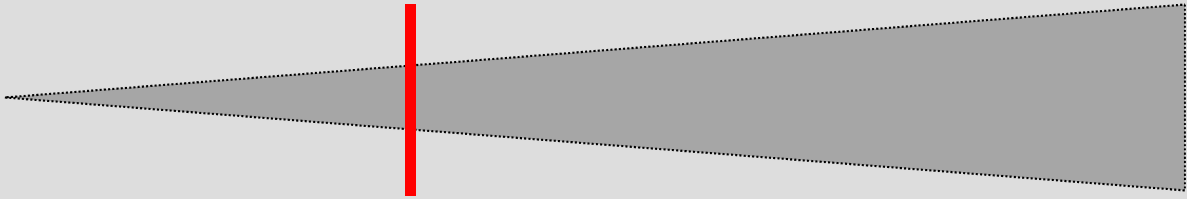
Combining existing assessments

Boundaries of good status

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					

Initial Assessment

Overview of existing assessments of biological characteristics (Annex III, Table 1)

Characteristics	**WFD (2009)** Water bodies (number) in 5 assessment classes	**Habitat Directive** 2007) Hhabitats and species (number) in 3 assessment classes	**HELCOM** Various assessments	**Riecken et al** (2006)	**Red List Spe-cies**	**ICES** (number)	**Wetlands International** Population trends in % (of 257 European species)
Biotope types		1 6 2 2	14				
Phytoplankton	0 4 16 19 5 0						
Zooplankton							
Macrophytes	0 3 16 16 2 7						
Makrozoobenthos	0 8 20 9 4 3						
Fish		0 2 5 1	10		17	3 1 2 2	
Marine Mammals		0 0 3 0					
Seabirds							25 33 41 1
Non-indigenous species							

Initial Assessment

Pressures and impacts		Overview of possible basis for assessments					
		WFD	HELCOM	Bathing Water Directive	EU food limits	ICES	ASCOBANS
Physical loss	Smothering						
	Sealing						
Physical damage	Change in siltation						
	Abrasion						
	Selective extraction (non-living resources)						
Other physical disturbance	Underwater noise						
	Marine litter						
Interference with hydrological processes	Changes thermal regime						
	Changes salinity regime						
Contamination by hazardous substances	(Non) synthetic compounds						
	Radionuclides						
	Contaminants in seafood						
Systematic and/or intentional release	Substances: solid, liquid or gas						
Nutrient and organic matter enrichment	Inputs of fertilisers and other N or P rich substances						
	Input of organic matter						
Biological disturbance	Introduction of microbial pathogens						
	Introduction of non-indigenous species						
	Selective extraction of species						
	Bycatch						

GES and targets

- GES (Art. 9 MSFD):

  Both a qualitative description of the 11 Descriptors and the use of environmental thresholds/limits which quantitatively describe the desired state of the environment in relation to each Descriptor – based on Annexes I and III (in particular Table 1) MSFD and COM Decision 2010/477/EU.

- Environmental targets (Art. 10 MSFD):

  They bridge the gap between state and GES. They are primarily pressure and impact based since the reduction in pressures and impacts is the most effective way to achieve or move towards GES. 7 high level qualitative targets, supported by a set of operational targets (still to be quantified)

GES and targets

Targets to be read in light of Art. 1(3) MSFD: collective pressures are kept within levels compatible with achieving GES; capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine

- Seas non-impacted by human-induced eutrophication
- Seas without contaminant pollution
- Seas with marine species and habitats non-impacted by human activities
- Seas with sustainably and ecologically responsibly used resources
- Seas non-impacted by litter
- Seas non-impacted by anthropogenic energy inputs
- Seas with natural hydro-morphological characteristics

D1 Biodiversity

GES

GES for D1 is defined among others through

- good ecological and chemical status under the WDF
- favourable status of habitats and species under the Habitats Directive
- the objectives of (groups of) species-specific Conventions (e.g. ASCOBANS)
- good status of biodiversity under HELCOM

Targets

Seas with marine species and habitats non-impacted by human activities

- adequate retreat and resting areas
- structure and function of food webs and marine habitats are not altered as a result of by-catch, discards and bottom fishing gear
- Endeavour re-establishment of threatened species and stabilisation of their populations
- Human-made structures and activities do not endanger the natural distribution of species
- Total number of introduced new species approaches zero.

D2 Non-indigenous species

GES	Targets
GES for D2 is achieved when introduction of new species approaches zero and when non-indigenous species have no negative impact on populations of indigenous species and on natural habitats. Like under the WFD, non-indigenous species should not be a criterion for excluding achieving GES as a whole.	Part of the targets for D1: Total number of introduced new species approaches zero.

D3 Commercial fish / shellfish

GES

GES for D3 is achieved when for all commercially used fish and shellfish populations of the Baltic Sea

- fishing mortality does not exceed the F_{MSY}
- spawning biomass is above $B_{MSY\text{-}trigger}$ and
- stocks of commercially exploited species have an age and size structure in which all age and size classes are represented close to natural conditions

Targets

Seas with sustainably and ecologically responsibly used resources

- all stocks are managed based on the MSY approach
- stocks of commercially used species have an age and size structure in which all age and size classes are represented close to natural conditions
- Fisheries do not impact other ecosystem components (non-target species, benthic communities) to an extent that achieving or maintaining GES is jeopardised.

D4 Food webs

GES

GES for D4 is only measurable with indicators which are specifically tailored to the D4 and which still need to be developed. As a minimum, the description of GES for D1 can be used

Targets

Environmental targets for biodiversity, use of living and non-living resources, eutrophication, hazardous substances, hydrographic change, litter and noise will all contribute to achieving GES for D4.

D5 Eutrophication

GES

GES for D5 is achieved when

- good ecological status is achieved under the WFD
- eutrophication status is al least “good” according to the integrated HELCOM HEAT eutrophication assessment

For the purposes of the MSFD, further alignment of assessment methods and results is still required

Targets

Seas non-impacted by anthropogenic eutrophication

Further reduction of

- riverine inputs of nutrients
- inputs of nutrients via transboundary transport
- nutrient inputs via atmospheric deposition

D8 Contaminants

GES

- GES for D8 is achieved when concentrations of contaminants in biota, sediments and water meet the requirements of the EU EQS-Directive and the EQS of the national Ordinance on Surface Waters as well as the goals and objectives of the “Hazardous substances segment” of the HELCOM BSAP.
- Substantial uncertainties and gaps in knowledge relating to EQS and EACs remain: precautionary principle applies
- Additional MSFD requirements: EQS/EACs still need to be developed for biota and sediments; consideration of biological effects

Targets

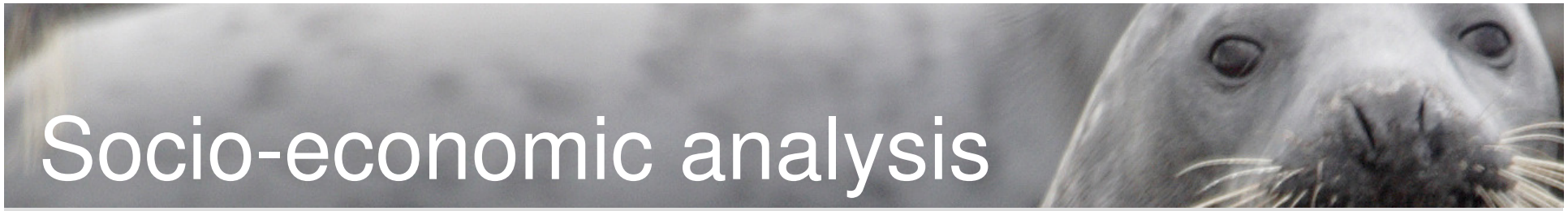
Seas without contaminant pollution

Further reduction of

- riverine inputs of contaminants
- inputs via atmospheric deposition
- inputs from sea-based sources such as shipping
- legal, illegal and unintended inputs of oil, oil mixtures and products
- concentrations of contaminants in the marine environment and resulting pollution effects

Next steps up to 2018

- Conclude on indicators to be used
- Develop the indicators to be used for GES and quantify them (i.e. their thresholds/ limits) in order to determine, in quantitative terms, the gap between current state and GES
- Quantify operational environmental targets to inform measures and develop / consolidate associated indicators



Socio-economic analysis

- Follows guidance of WG ESA
- Overall, the marine uses have a high macro-economic value for the German coast as well as for Baltic Sea. Shipping and the development of the offshore windfarm industry are important economic sectors
- Societal aspects include
  - costs of effects on the ecosystems (e.g. costs to collect and dispose of marine litter, to renew infrastructure destroyed by invasive species, to redistribute sediments or costs due to shipping accidents)
  - Impacts on other uses (in particular tourism and fisheries) as a result of impacts on the ecosystems and competition for space
- Costs of degradation is the difference between GES and current state. As the reference state is not yet defined, estimation of costs was not possible.

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