



Ministry of Infrastructure and the
Environment

The (future) of regulation of underwater noise

The European Marine Strategy
and developments in
assessment and management

René Dekeling

EU TG Noise



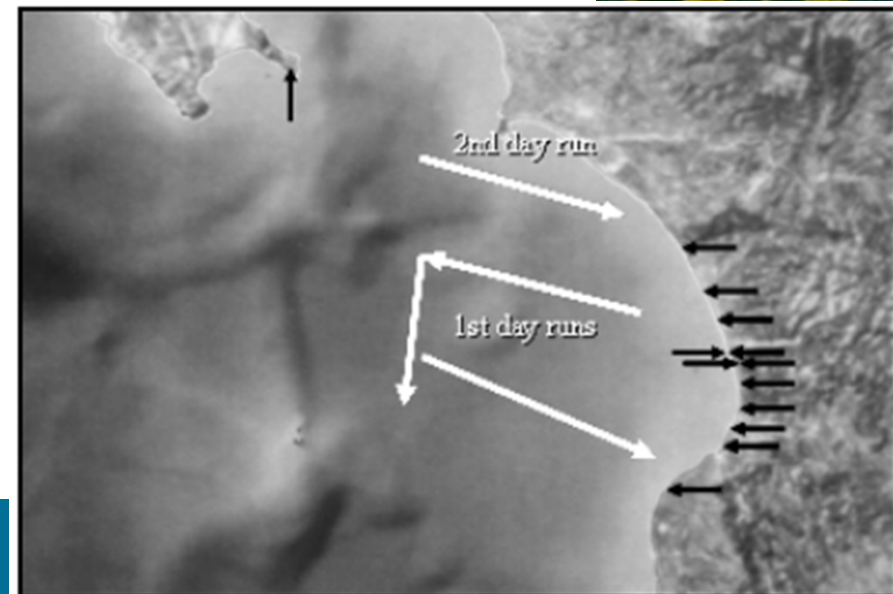
Regulation/Marine Strategy Framework Directive

- How underwater noise became topic of interest in EU
- Overview of EU directives that are relevant
- What is the MSFD, how does it work
- Main directions/noise monitoring and assessment
 - Impulsive noise
- Developments towards larger scale
- Implications for management of sonar



Underwater noise as issue in EU

- Many anthropogenic sounds of concern:
 - Piling, seismic, sonar, explosions
 - Shipping noise
- Stranding events: 1996 Greece, 2000 Madeira, 2002 Canary Island strandings
- 28 October 2004 European Parliament resolution
 - Moratorium suggested
 - ICES report (2005)
- 2008 European Marine Strategy
 - Energy (including underwater Noise) added as descriptor 11





Other legislation

- Habitats directive
 - protection and conservation of particular species
- Environmental Impact Assessment Directive
 - focussed on ensuring specified list of activities do not do undue harm
- Strategic Environmental Assessment Directive
 - focussed on particular industry sectors

All implicitly require assessment of effects of UW noise

- Marine Strategy Framework Directive
 - Explicit requirement to ensure that underwater noise does not adversely affect the marine environment

EU Marine Strategy

to protect Europe's oceans and seas

'pollution':...the introduction of substances or energy, including human-induced **underwater noise**, which results or is likely to result in deleterious effects ...





Definition of pollution in MSFD art. 3

‘pollution’ means the direct or indirect introduction into the marine environment, as a result of human activity, of substances or energy, **including human-induced marine underwater noise**, which results or is likely to result in deleterious effects...

.... such as harm to living resources and marine ecosystems, including loss of biodiversity, hazards to human health, the hindering of marine activities, including fishing, tourism and recreation and other legitimate uses of the sea, impairment of the quality for use of sea water and reduction of amenities or, in general, impairment of the sustainable use of marine goods and services;

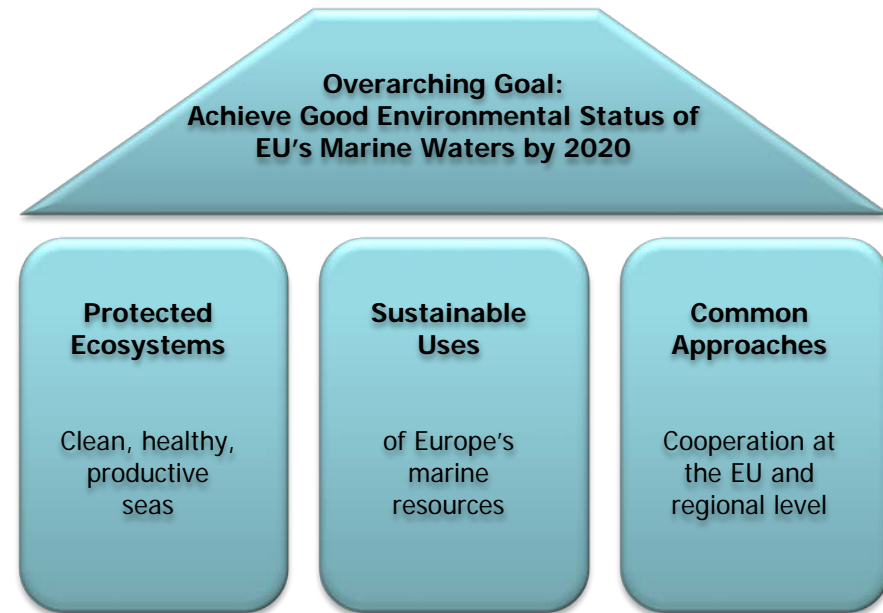


Marine Strategy Framework Directive (2008)

Overall objective: to achieve or maintain Good Environmental Status (GES) of the EU's marine waters by 2020.

Sustainable: Ecosystem scale and integrated approach to the management of all human activities which have an impact on the marine environment

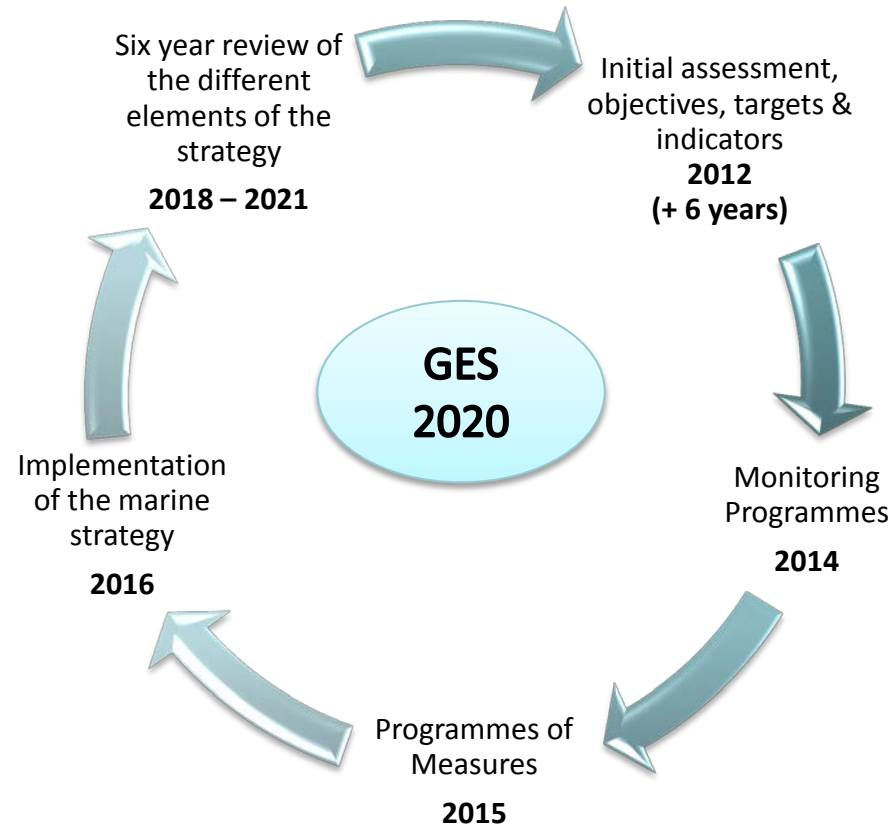
Common: Regional approach to implementation





Implementation Steps

- *Initial assessment* of environmental status of MS waters (2012)
- *Determination* of GES (2012)
- Establishment of environmental *targets* and *indicators* (2012)
- *Monitoring programme* for ongoing assessment and regular updating of targets (2014)
- *Programme of measures* designed to achieve or maintain GES (design 2015, operational 2016)





Priority action on descriptor 11

- 2010 EC Decision- measurement of noise should have priority
- Two indicators defined, addressing main concerns
 - Short duration: low and mid-frequency impulsive noise
 - Seismic surveys, piling, sonars, explosions
 - New activity- offshore renewable energy
 - Long lasting: low frequency continuous noise
 - Commercial shipping
- Main effects currently addressed
 - (Temporary) habitat loss caused by behavioural alterations after “loud” impulsive sounds
 - Interference with communication (masking) and other forms of stress caused by low frequency noise



Specific action on descriptor 11

- Monitoring of the pressure being set up (both impulsive as ambient noise)
- Register at ICES containing data on all relevant activities (e.g., seismic, piling, explosions) based on advice of EU expert group TG Noise
- Some European MoD's have confirmed that they will provide data
 - Exact content still to be determined- some information on source strength needed
 - Not compromising system capabilities
- Register first step to enable assessment of 'instantaneous' (e.g. days) percentage loss of habitat
- Cooperation in regional sea conventions (OSPAR, HELCOM, Barcelona convention, Bucharest convention)
- Assessments at larger scale: across boundaries, longer periods, across activities, e.g. OSPAR Intermediate Assessment 2017



Future of regulation of underwater noise (?)

- Regional level assessments can be used for revision of marine strategies by EU member states 2018
- International regulation frameworks to be developed
 - International noise register now implemented
 - Use of data (methodology) evaluated
 - International agreement on thresholds for concern
 - Agreement on methodology to determine whether thresholds are exceeded
 - If further action required, development of mechanism to share 'noise allowance' internationally (noise budget?)
 - National responsibility to restrict amount of noise emitted
- OSPAR will evaluate added value of Regional Action Plan on noise, similar as RAP Marine Litter



Implications for sonar

- Management of underwater noise likely to further develop
 - Larger scale assessment, management across activities
 - Sonar probably not main issue for many member states
 - Sonar use will not be directly regulated by European directives
 - But consider to harmonize with regulation of other activities
 - Not necessarily larger burden or stricter regulation, but at other level (what is preferred by operational units?)
- Science needs/priorities:
 - Information on behavioural effects- avoidance of habitat (scale of habitat loss)
 - Distances
 - Duration ('severity'?)
 - Information on implication of habitat avoidance for populations