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Türkiye'de Deniz Stratejisi Çerçeve Direktifi Kapsamında Kapasite Geliştirme Projesi  
Capacity Building Project on Marine Strategy Framework Directive in Turkey

# The MSFD – an INTRODUCTION



*Denizlerimizin geleceđi bizim ellerimizde* *The future of the seas is in our hands*



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## The MSFD - what is it?

- A piece of EU legislation concerned with protection of the marine environment, 22 pp.
- Sibling of the WFD = 72 pp.
- Builds on existing EU legislation
- Incorporates it, e.g. Habitats and Birds Directives, EQS Directive, etc.
- Spatially overlaps with the WFD – ‘coastal’ and ‘littoral’
- In many ways similar to the WFD, in other ways different





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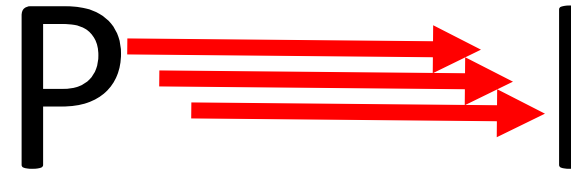
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## Similarities with the WFD



- **Socio-economics – affordability**
- **Heavy penalties for non-compliance**
- **Heavy reliance on monitoring – good management; good information; good data**
- **Assess environmental pressures, impacts & characteristics:**
  - Physical features (including loss & damage)
  - Chemical features (including systematic/intentional release of substances; contamination by hazardous substances; nutrient and organic matter enrichment)
  - Biological features (including disturbance)
  - Habitat types
  - Interference with hydrological processes



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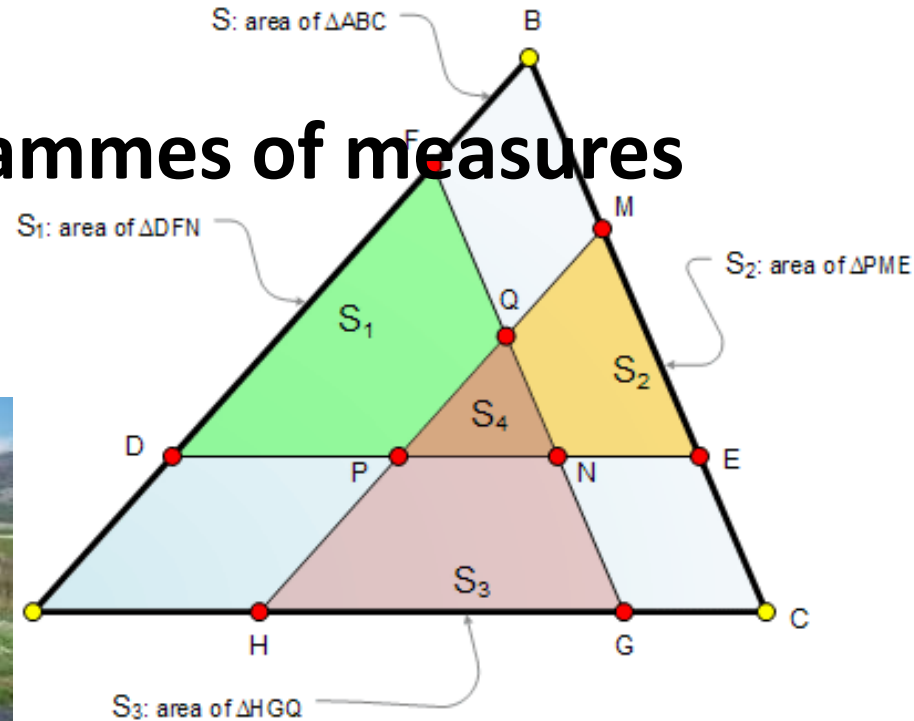


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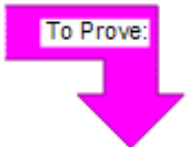


# Similarities

- Environmental assessment – current status vs. threshold status
- Revise monitoring of chemical, physical and biological parameters
- GES achieved through programmes of measures
- 6 year time cycle
- Timetable for achievement



Given:  
 $\Delta ABC$  of area  $S$   
 $DE \parallel AC$ ,  $FG \parallel BC$ ,  $HM \parallel AB$   
 $S_1$ : area of  $\Delta DFN$   
 $S_2$ : area of  $\Delta PME$   
 $S_3$ : area of  $\Delta HGQ$   
 $S_4$ : area of  $\Delta NPQ$



$$\sqrt{S} = \sqrt{S_1} + \sqrt{S_2} + \sqrt{S_3} - 2\sqrt{S_4}$$



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## Differences

- Shorter timescale than WFD - 12 vs. 15 years to achieve GES
- Simple pass/fail scheme (not 5-class)
- Spatial resolution – waterbodies for WFD. MSFD?
- MSFD success (i.e. GES) is judged at Regional/Sub-regional level
- Intercalibration – RSCs influence regional ambition
- MSFD – full-blown **ecosystem-based management**
- Provides a list of characteristics to be taken into account when setting **environmental targets**

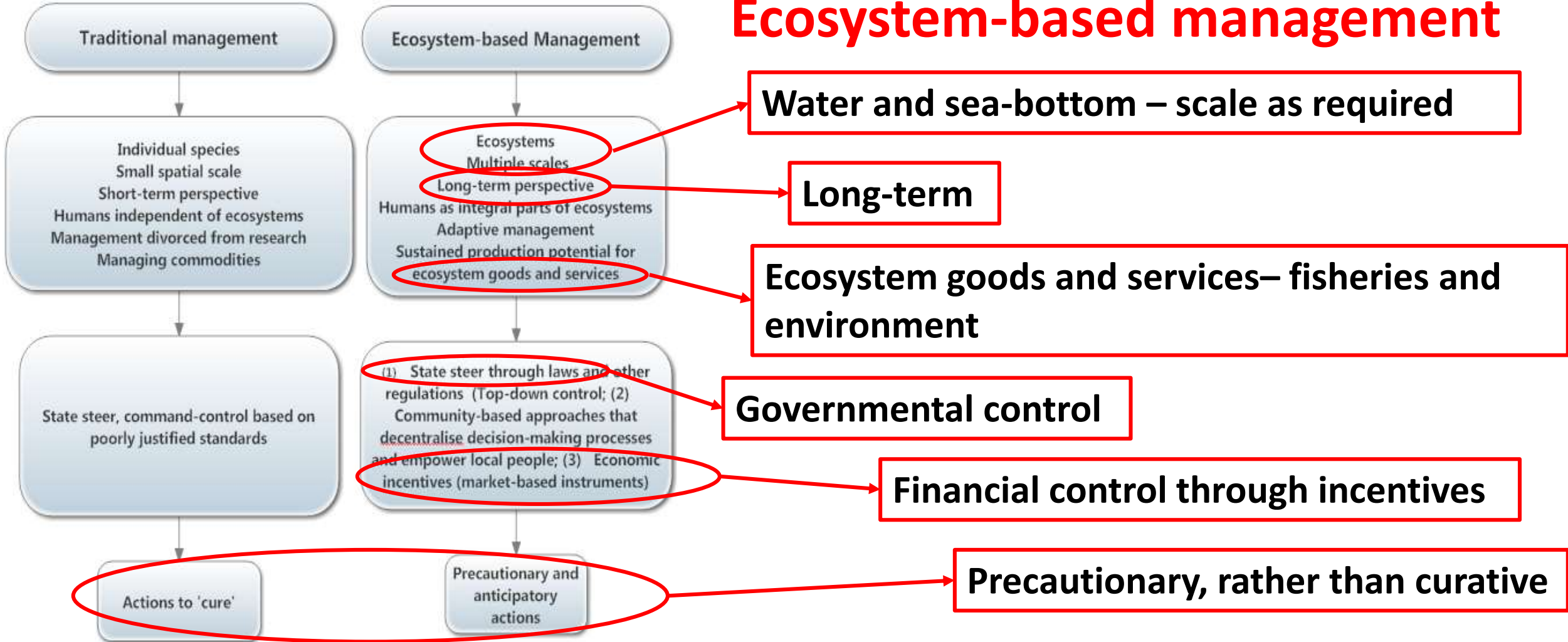




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# Ecosystem-based management



## What is an ENVIRONMENTAL TARGET?

**“A qualitative or quantitative statement on the desired condition of the different components of, and pressures and impacts on, marine waters in respect of each marine region or subregion”**

**“Member States shall... establish a comprehensive set of environmental targets and associated indicators for their marine waters so as to guide progress towards achieving good environmental status”**

## Environmental Targets may be:



- Qualitative (e.g. trends) or quantitative
- Based on commitments under the Habitats Directive (e.g. for marine mammals)
- Biological targets may include species distribution, population size, population condition, productivity and abundance
- Be developed for habitat distribution, habitat extent, habitat condition. Ecosystem structure!
- Collated to define GES for specific descriptors, e.g. combine species / functional group targets to define D1: Biodiversity GES





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## Environmental Targets

- Chemical targets – loads or concentrations; environmental (water column/sediment) or body burdens
- Physical damage targets – measureable
- Hydrographical/hydrological, e.g. related to thermocline, pycnocline, cold intermediate layers



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T.C.  
ÇEVRE VE ŞEHİRCİLİK  
BAKANLIĞI



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## Assessment scheme – 11 Descriptors

- D1: Biological diversity
- D2: Non-indigenous species (including microbial pathogens)
- D3: Commercially exploited fish and shellfish
- D4: Marine food webs
- D5: Eutrophication
- D6: Sea floor integrity
- D7: Hydrographical conditions
- D8: Environmental contaminants
- D9: Contaminants in seafood
- D10: Marine litter
- D11: Energy/noise



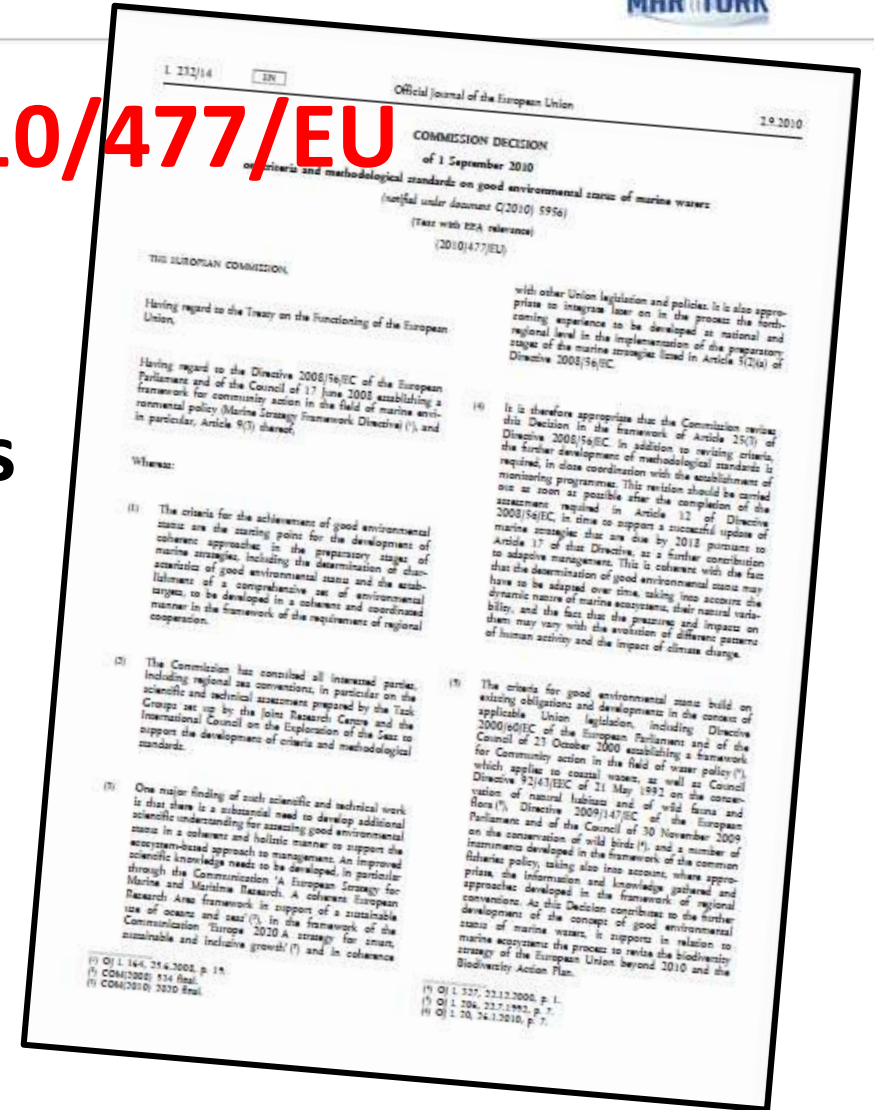
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# Commission Decision 2010/477/EU

- 11 pages
- Re-introduces the 11 qualitative descriptors of good environmental status
- Provides more insight than the Directive itself what has to be assessed and monitored:

- Criteria
- Indicators





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## Assessment scheme – 29 Criteria; 63 Indicators

### D1: Biological diversity

- Species distribution
- Population size
- Population condition
- Habitat distribution
- Habitat extent
- Habitat condition
- Ecosystem structure

### D5: Eutrophication

- Nutrient levels
  - Nutrient concentrations
  - Nutrient ratios
- Direct effects
  - Chlorophyll-a concentrations
  - Water transparency
  - Abundance of opportunistic seaweeds
  - Changes in floristic composition
- Indirect effects
  - Abundance of perennial seaweeds and seagrasses
  - Dissolved oxygen



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## What has gone before - Reporting

### ● Article 8 – Initial Assessment

**Preamble, para. 24: “Member States should undertake an analysis of the features or characteristics of, and pressures and impacts on, their marine waters, and an economic and social analysis of their use and of the cost of degradation of the marine environment”**

### ● Article 9 – Determination of GES

### ● Article 10 – Establish Environmental Targets

### ● Article 11 – Monitoring Programmes

### ● Article 12 – Commission’s Assessment

### ● Article 13 – Programme of Measures – now being reported



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## Proposals – Initial Assessment

### Purposes:

- Identify what information is available
- Identify what information isn't available – gap analysis
- Provides an early warning of what needs addressing
- Provide insight to Programme of Measures
- Feeds directly into revision of monitoring programme and sub-programmes
- Ensures indicators (for GES) and associated indicators (for environmental targets) are included in monitoring programme





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- **Be realistic!**
- **Be flexible – all sides**
- **Article 8 – Initial Assessment drives all future MSFD work**
- **At present, identification of baselines is more important than GES thresholds**

- **Link standards with those developed for other Directives and agreements**



- **Learn from neighbours and other projects**



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## GES

- Decide how many different baselines are needed: different regions (seas)/sub-regions/areas (e.g. coastal and offshore)
- $MSFD_{baseline} \sim WFD_{high\ status}$ 
  - ★ Historical data
  - ★ Expert opinion
  - ★ Spatial data
  - ★ Modelling
  - ★ Statistical, e.g. upper/lower 25%ile
- What deviation from baselines is considered acceptable, i.e. GES thresholds
- Neighbours' thresholds?
- Natural environmental variability vs. impacts
- $GES_{MSFD} = GES_{WFD}$  for coastal/transitional waters







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# Monitoring - how the WFD and MSFD dovetail for coastal waters

WFD	MSFD
Macrophytes (not phytobenthos) Phytoplankton Dissolved O <sub>2</sub> status Organic enrichment	D5: Eutrophication D1: Biodiversity
Macroinvertebrates	D6: Seafloor integrity
Fish (only transitional waters)	D3: Commercially exploited fish and shellfish D1: Biodiversity
Hydromorphology	D7: Hydrographical conditions
Phys-chem. parameters supporting aquatic life Other specific substances/pollutants EQS Directive (2013/39/EU)	D7: Hydrographical conditions D8: Environmental contaminants in water and sediment EQS Directive (2013/39/EU)

Pressures monitoring for both

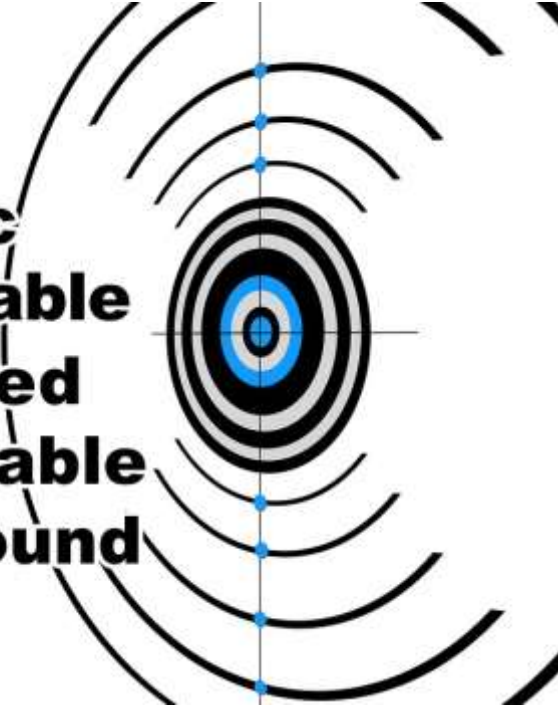




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## Targets should be:

**S** Specific  
**M** Measurable  
**A** Accepted  
**R** Reasonable  
**T** Time-bound



- Targets are not a re-statement of GES
- At least one Target per Descriptor; preferably one per Criterion
- Each target must have at least one Associated Indicator
- More AIs increases monitoring expense – need sustainability



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## Croatia

- For D1: Biodiversity – 76 targets
- Each target must have at least one associated indicator
- Mainland coast = 1,777 km, islands add a further 4,058 km of coastline

The number of adult specimens of *Corallium rubrum* is increasing.

There is no statistically significant reduction in the distribution range of monitored cetaceans.

The upper and lower limits of *Posidonia* meadows in the Croatian part of the Adriatic Sea are stable or expanding.

## Turkey

- Pragmatism with a bottom line...

The geographic and depth distribution of selected fish meet individual indicator targets

The abundance of breeding seabirds (selected species) is stable or increasing.



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## Expectation Management

- **Extremely complex piece of legislation**
- **Subject to revision – Annex 3 likely to be replaced by a new Directive; Commission Decision 2010/477/EU being amended**
- **Insufficient data on which to base a complete assessment; we are addressing only 2 of Turkey's 3 seas; large information gaps**
- **Time – MSFD published in 2008, GES to be achieved by 2020**
- **Costs of compliance – social, economic: developmental, operational and capital; costs of non-compliance**
- **Funding of RSCs and monitoring programmes**



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Sunumumuz sona ermiştir, ilginiz için teşekkür ederiz.  
Our presentation is finished, thank you for listening.



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