

Framework for marine environment protection in Croatia

Ministry of Environment and Energy
Department for Sea and Coastal Protection
Sandra Trošelj Stanišić

- Legal and institutional framework
- Ministry of Environment and Energy
- EIA
- Marine and Coastal Management Strategy
- HarmoNIA project specific objectives and expected results

Legal and institutional framework – marine environment protection and management

Ministry of Environment and Energy

(environment and nature protection, offshore exploration and exploitation, waste management, water management, EIA procedures)

- Environment Protection Act (OG 80/13, 153/13, 78/15, 12/18, 118/18)
 - Regulation on development and implementation of the documents of the Marine and Coastal Management Strategy (OG 112/14, 39/17: transposition of MSFD)
 - Regulation on EIA (OG 61/14, 3/17)
- Nature Protection Act (OG 80/13, 15/18)
- Water Act (OG 153/09, 130/11, 53/13, 14/14)
- Waste Management Act (OG, 94/13, 73/17)
- Act on safety of Offshore Exploration and Production of Hydrocarbons/Offshore Safety Act (OG 78/15 (transposition of Directive 2013/30/EU)
- Act on the Exploration and Exploitation of Hydrocarbons

Ministry of Sea, Transport and Infrastructure

(preventing and dealing with marine pollution from maritime facilities, protection and management of maritime domain)

- Maritime Code (OG 181/04, 76/07, 146/08, 61/18, 56/13, 26/15; legal framework for registration and putting into service of of offshore installations, prescribing statutory requirements with regard to new and existing offshore installations)
- Law on maritime domain and sea ports (OG 158/03, NN 38/09, NN 141/06, NN 56/16
- Contingency Plan for Accidental Marine Pollution (OG 92/07)
- Regulation on the protection of the marine environment in the protected ecological and fishing zone of the Republic of Croatia (OG 47/08)

Ministry of Agriculture (management of fishery resources)

Fisheries Act (NN 56/10, 127/10, 55/11)

Ministry of Construction and Spatial Planning (spatial planning as system that provides conditions for use, protection and space management)

Spatial Planning Act (OG153/13, 65/17)

....other ministries:

Ministry of Science and Education

Ministry of Tourism

Ministry of Health

Ministry of Economy

Ministry of Regional Development and EU Funds

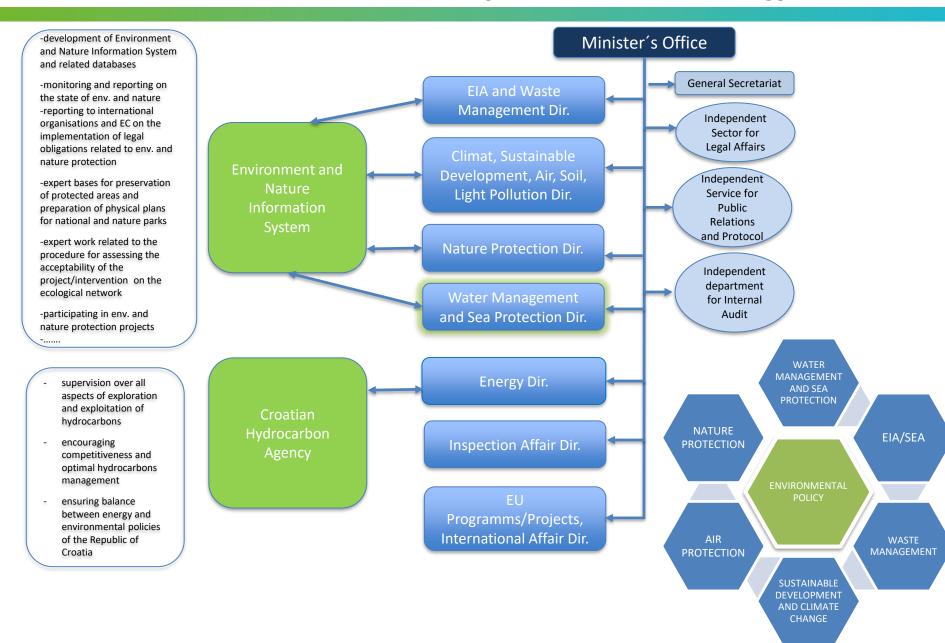
Ministry of Defence

Ministry of Foreign and European Affairs

(integrating environmental concerns in their policies and implementation of activities in the scope of their responsibilities)

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Ministry of Environment and Energy-structure



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EIA – Oil and gas main impacts

Leaflet- Science for Environment Policy - EC DG Environment News Alert Service Title: Offshore Exploration and Exploitation in the Mediterranean (issue no 3, April 2012)

Possible oil and gas main impacts:

- Death of a wide variety of marine species
- Behavioural disturbances, including changes in feeding, reproduction and migration
- Airborne emissions of chemicals from controlled burns
- Microbial blooms
- Hypoxia lowering of oxygen concentrations in water
- Toxic effects of chemicals used to disperse oil

Other impacts:

- Noise
- Seafloor and geological disturbances caused by explosions and drilling
- Drill cuttings (barium rich drilling by-products deposited on the seabed)
- Produced water (seawater mixed with oil)











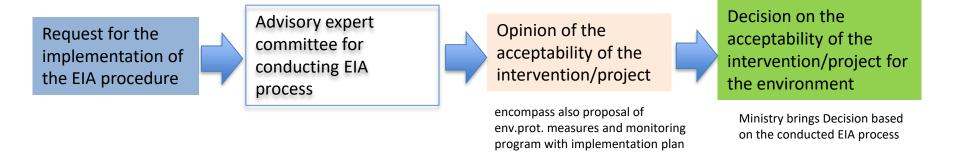




Environmental Impact Assessment

Regulation on EIA (OG 61/14, 3/17)

 Transposing Directive on the assessment of the effects of certain public and private projects on the environment 2011/92/EU and its amendments 2014/52/EU and Directive on industrial emissions (integrated pollution prevention and control) 2010/75/EU



Measures and proposed monitoring activities are obligatory part of the permits for conducting investments/projects.

Environmental Impact Assessment-offshore instalations

- Regulation on EIA (OG 61/14, 3/17)
- Law on ratification of Espoo Convention (OG, IT 6/96)
- Law on ratification on the Offshore Protocol (OG IT, 13/17)
- EIA procedure is obligatory for the exploitation of hydrocarbons (Regulation on EIA, Annex I, intervention no.40)

According to existing practice:

- **Environmental protection measures** in EIA are prescribed in accordance to the relevant national legislation and usually include protection measures:
 - For environmental components (sea, air, flora and fauna), cultural assets, measures related to pressures (noise-impact on humans, waste, wastewaters)
 - To prevent mutual influence with the other existing and planned activities
 - In the case of pollution incidents
 - Measures after the use of installations
- Proposal for monitoring is defined separately for every intervention/project in the framework
 of conducted EIA procedure an usually include monitoring (during construction and production)
 of:
 - Air, sea, flora and fauna
 - Wastewater
 - Subsidence of the seabed
- In case of **trans-boundary cooperation** (Espoo Convention) harmonization of monitoring plans.
- Monitoring data must be submitted to responsible authorities.
- So far there is no national monitoring system of offshore activities in place, according to Art. 19.2. of the Offshore protocol, by which it would be possible to monitor regularly the installations and the impact of the activities on the environment.





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Marine and Coastal Management Strategy

- -Marine Strategy Framework Directive
- -Barcelona convention Protocol on integrated coastal zone management in the Mediterranean (OG, IT, 8/12)
- -Regulation on development and implementation of the documents of the Marine and Coastal Management Strategy (OG 112/14, 39/17, 112/18)

Development of Marine and Coastal Management Strategy

(2012 initiative resulted in cooperation between Ministry and UNEP/MAP PAP/RAC through GEF MedPartnership Project)

- Marine strategy(MSFD) + ICZM Strategy (ICZM Protocol)
- Coordination of existing sectorial policies
- Integrated approach to understanding interlinkage between marine and coastal area
- Rationalization of resources and processes
- Basis for sustainable plan and use of existing recourses (including space)

Regulation (Art 4.) -Scope of application:

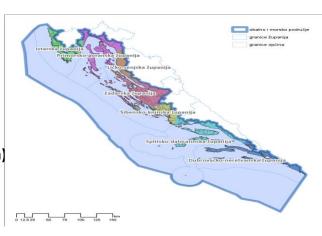
"... areas which are under the sovereignty of the Republic of Croatia and in which the Republic of Croatia exercises sovereign rights and jurisdiction."

Regional approach(MSFD Art. 4. i 6.)

Coordinated and harmonized development and implementation of national marine strategies on the regional/sub-regional level (Mediterranean region/Adriatic sub-region)

- consistency in development of assessments and implementation of monitoring and measures
- facilitate comparison of the GES achievement

Implementation: EU CIS MSFD activities, UNEP/MAP, EU projects



Marine and Coastal Management Strategy

Strategy- "tool" for achieving goals of ICZM

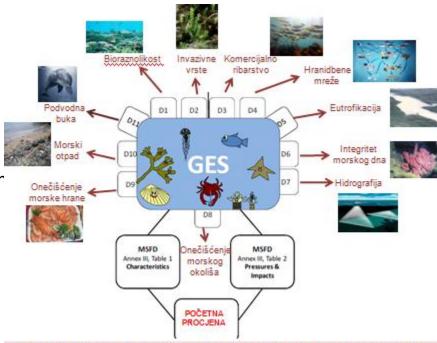
(sustainable management/use of coastal area) and MSFD (achieving and/or sustaining of GES till 2020.)

Goals related to marine environment (MSFD)

- Protection, preservation, rehabilitation and restoration of marine and coastal ecosystems
- Preservation of protected areas
- Pollution reduction
- Establishing and/or maintaining a balance betweer human activities and natural resources in the sea and the coastal area

Goals related to ICZM

- Preservation of coastal area
- Sustainable use of natural resources
- Coastal ecosystem and landscape preservation
- Prevention and/or mitigation of natural risks
- Consistency among public and private initiatives and government decisions regarding use of coastal area



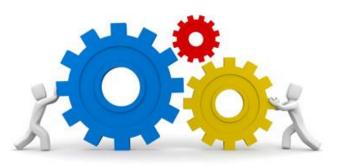
DESKRIPTORI ZA PROCJENU DOBROG STANJA MORSKOGOKOLIŠA



Marine and Coastal Management Strategy

Cooperation

• Implementation of MSFD is collective process that requires participation and an active role of all stakeholders; relevant ministries, scientific institutions, county and local institutions, civil society



Science

 Decision-making at the national or regional level must be based on strong scientific knowledge and cooperation with the academic and scientific community.

Marine and Coastal Management Strategy - institutional framework

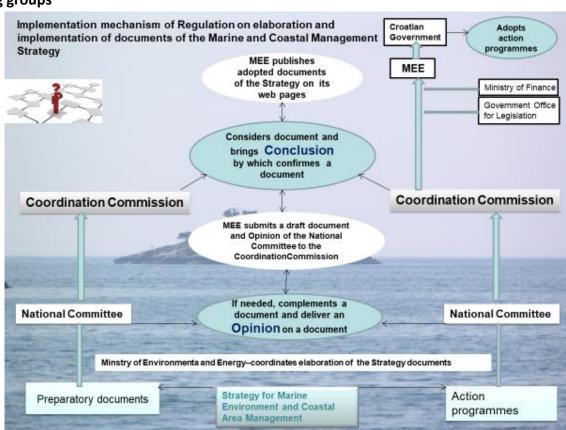
National institutional framework (MSFD and ICZM)

Aim - coordination and coherence of actions for sustainable marine and coastal protection and management

- Ministry (coordination)
- Other responsible institutions
 - Ministries (12), state institutions (5), legal persons with public authority (5), scientific institutions (4), physical planning institutes (7), public health institutes (7)
- Bodies/platforms for development and implementation of the Strategy
 - Coordination Commission (ministers and their deputies)
 - National Committee (expert/coordination platform)
 - Possibility for establishing "working groups"

Responsibilities:

- -Elaboration and adoption of the Strategy documents
- -Coordination EU CIS MSFD activities on the national level
- -Platform for implementing regional (Mediterranean Sea) and sub-regional (Adriatic Sea) cooperation

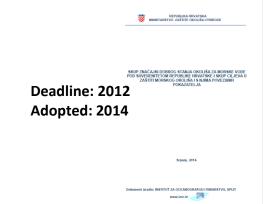


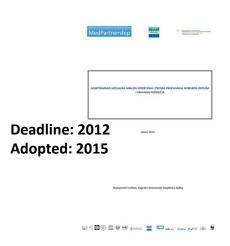
Marine and Coastal Management Strategy - documents

Preparatory documents:

Deadline: 2012 Adopted: 2012







Action programes:

Deadline: 2014 Adopted: 2014



Deadline: 2015 Adopted: 2017





Plana provedbe Sustava praćenja i promatranja za stalnu procjenu stanja Jadranskog mora za razdoblje 2014. – 2020. g.

Part I – Features of marine environment

- 1. PHYSICAL AND CHEMICAL FEATURES
- Topography and bathymetry of the seabed
- •Geological features of the seabed
- Movement of water masses
- Temperature and salinity
- Basic chemical parameters (pH, oxigen, nutrients)
- 2. HABITAT TYPES
- 3. BIOLOGICAL FEATURES
- One-cell organisms (bacteria, phytoplankton and zooplankton)
- •Benthic communities (macro-algae, angiosperms and invertebrate)
- •Structure of fish populations (bentic, pelagic and coastal communities)
- •Marine mammals and reptiles
- Sea birds
- 4. CONTAMINANTS (heavy metals, antifoulants, persistent organic pollutants)



Part II – Pressures and impacts on marine environment

- 1. PHYSICAL LOSSES AND PHYSICAL DAMAGES (construction works, impacts of fisheries, maricultture, sea traffic, etc.) sl.)
- 2. CONTAMINATION BY HAZARDOUS SUBSTANCES (pesticides, antifoulants, heavy metals, radio-nuclides)
- 3. NUTRIENT AND ORGANIC MATTER ENRICHMENT (inputs of nitrogen and phosphorus-rich substances, pollution by fertilizers from diffuse sources, inputs of nutrients by rivers and sewerage, eutrophycation: TRIX index)
- 4. BIOLOGICAL DISTURBANCE (introduction of microbial pathogens, introduction of non-indigenous species, impact of incidental non-target catches on large marine vertebrates)

Pressures and impacts from the offshore installations weren't included in the 1st IA report – data were not available.

2nd cycle assessment will include activities-extraction of oil and gas including infrastructure.

Strategy documents Determination of GES and Environmental Targets

GES DESCRIPTORS

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 (**D1**).

GES achieved for some of the criteria, while for some of them achievement of GES is not possible to determine.

2. Non-indigenous species (NIS) introduced by human activities are at levels that do not adversely alter the ecosystem (D2).

GES achieved (for abundance and state characterisation of NIS), GES is not achieved for trends in abundance, temporal occurence and spatial distribution of NIS. Due to lack of data on the impact of non-indigenous (invasive) species on the ecosystem, it is not possible to assess the good environmental status.

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 **(D3)**.

On the subregional (GSA 17) GES not achieved, while the status of D3 on the level of Croatian territorial sea is sustainable.

4. All elements of the marine food webs, to the extent that they are known, should 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. (D4).

GES - achieved.

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 **D5**).

GES - achieved

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 (D6)

GES - achieved.

- 7. **Permanent changes of hydrographic conditions** do not alter the ecosystem (changes in circulation, low oxygen in the bottom layer, red tide, habitat degradation, changes in biodiversity) or these changes are minimal (**D7**) GES- achieved
- 8. Concentrations of **contaminants** are at levels not giving rise to pollution effects (**D8**).

 GES- achieved, except for contaminants (Hg, Pb i PCB) in sediment and biota (most of the locations where the samples were taken were exposed to a strong anthropogenic influence, "hot-spot" locations from the MED POL monitoring program)
- 9. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards. (D9).

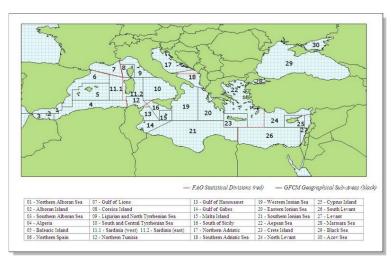
GES- achieved.

- 10. Properties and quantities of marine litter does not harm the coastal and marine environment (D10).
 Due to the lack of systematic studies and monitoring programs of marine this descriptor is not processed.
- 11. Introduction of **energy, including underwater noise**, is at levels that do not adversely affect the marine environment (**D11**).

There is currently insufficient data to provide a quantitative assessment of the current status and trends of underwater noise in the Adriatic Sea.



DESKRIPTORI ZA PROCJENU DOBROG STANJA MORSKOGOKOLIŠA



Geographical Sub-Areas (GSAs) map after General Fisheries Commission for the Mediterranean (GFCM)

Strategy documents Monitoring program

- MONITORING AND OBSERVATION SYSTEM FOR FUTURE ENVIRONMENTAL ASSESSMENTS (OG 153/14)
- Croatian Agency for Environment and Nature (CAEN, from 2019-part of the Ministry) was an institution in charge for implementation of Monitoring programme (from 2016)
- Implementation plan for the Monitoring programme 2014-2020 (CAEN) including also monitoring according to:
 - Water Framework Directive
 - Habitat and Bird Directive
 - Common Fisheries Policy
- Implementation:
 - 2016 partial scope (D1, D2, D4, D5 i D7- all partially)
 - Continuation in 2017 (increasing the scope D8, D10 i D11) and in 2018. (still not in full scope).





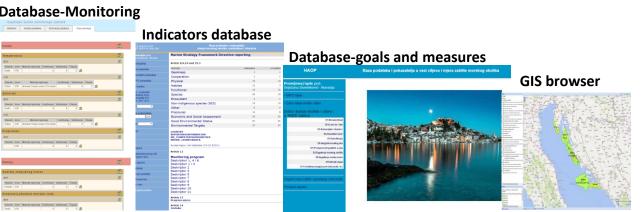


- defined by the Regulation (NN 112/14, 39/17)
- part of the Environment Protection Information System
- responsibility of CAEN (Ministry-from 2019, Reference Centre for the Sea)

Components:

- Database of expert backgrounds and elements for drafting the Strategy, including amendments
- Database of indicators related to objectives and measures for the protection of the marine environment and the coastal area
- Database of the Monitoring programme
- Spatial databases related to the marine environment and the coastal area
- Spatial data base (metadata) according to Directive 2007/2 / EC of the European Parliament and of the Council of 14 March 2007 establishing a European Spatial Information Infrastructure (INSPIRE) and the National Spatial Data Infrastructure
- Numerical analyses and models in digital records and databases
- Database (metadata) according to the standards of the European Union directive
- Data services for exchange with other system stakeholders

There is also, under development, a unique network for access to all data and databases and other information related to the marine environment

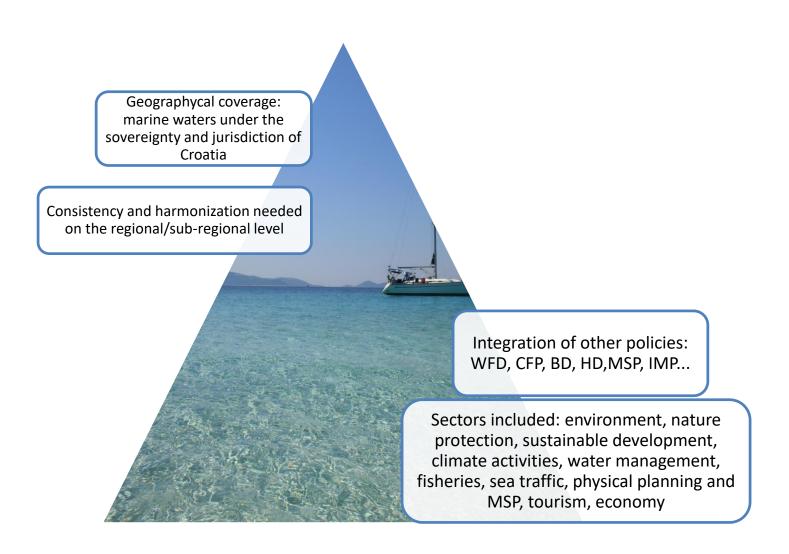




http://baltazar.izor.hr/portal/pocetna

Marine and Coastal Management Strategy Programe of measures

Programme of Measures for the Protection and Management of the Marine Environment and Coastal Zone of the Republic of Croatia (OG 97/2017)



Marine and Coastal Management Strategy Programe of measures

SPECIAL OBJECTIVES

- **1.1.** Establishing the system for coordinated, participative and transparent colnsultation and decision-making on the use of coastal and marine resources
- **1.2.** Improving the regulatory framework and harmonising the terms related to the management and protection of the marine environment and coastal zone

1. STRATEGIC PRIORITY:

IMPROVING THE OPERATIONAL
FRAMEWORK FOR
COORDINATED MARINE
ENVIRONMENT AND COASTAL
ZONE MANAGEMENT

3. STRATEGIC PRIORITY:

IMPROVING THE
IMPLEMENTATION OF
INSTRUMENTS FOR
ACHIEVING GOOD
ENVIRONMENTAL STATUS OF
THE MARINE ENVIRONMENT
AND COASTAL ZONE

2. STRATEGIC PRIORITY:

STRENGTHENING THE
CAPACITY FOR
MANAGEMENT AND
PROTECTION OF THE MARINE
ENVIRONMENT AND COASTAL
ZONE

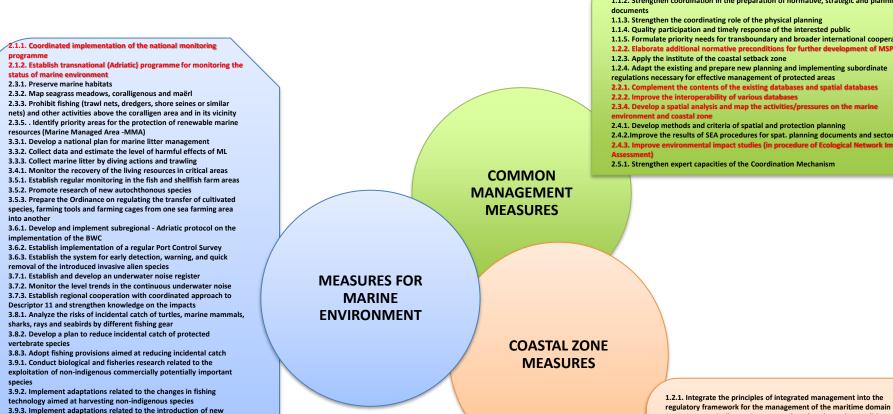
SPECIAL OBJECTIVES

- **3.1.** Improve the existing and introduce new instruments for the implementation of spatial planning documents in the coastal zone
- **3.2.** Improve the management of the maritime domain
- 3.3. Improve the marine litter management system
- 3.4. Reduce the impact of fisheries on the marine environment
- 3.5. Mitigate the impact of mariculture on the marine environment
- **3.6.** Reduce the risk of entry of alien invasive species through maritime traffic (ballast waters and ship biofouling)
- **3.7.** Reduce energy input into the marine environment (underwater noise)
- **3.8.** Protection and preservation of biodiversity
- **3.9.** Devise and implement methods and technologies for adapting to changes in the marine and coastal ecosystem coaused by climate change

SPECIAL OBJECTIVES

- **2.1.** Establishing a coordinated system for monitoring the status of coastal and marine ecosystems and processes
- **2.2.** Efficient information management in the function of integrated marine environment and coastal zone management
- **2.3.** Identify and valorize the priority areas for the preservation of biodiversity in the marine environment and coastal zone
- **2.4.** Improve the quality of spatial and development planning and assessment of the impact on the environment and nature in the function of the integrated management of the mareine environment and coastal zone
- **2.5.** Increase he efficiency of the capacities for protection and management of the marine environment and coastal zone

Marine and Coastal Management Strategy **Programe of measures**



autochthonous warmwater fish and shellfish species in maricult.

3.9.4. Implement adaptations related to the changes in farming

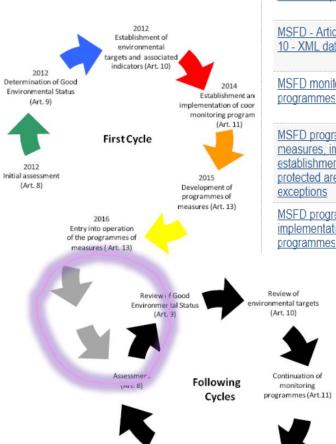
technology

- 1.1.1.Establish permanent coordination mechanism
- 1.1.2. Strengthen coordination in the preparation of normative, strategic and planning
- 1.1.4. Quality participation and timely response of the interested public
- 1.1.5. Formulate priority needs for transboundary and broader international cooperation
- 1.2.2. Elaborate additional normative preconditions for further development of MSP
- 1.2.4. Adapt the existing and prepare new planning and implementing subordinate
- 2.2.1. Complement the contents of the existing databases and spatial databases
- 2.3.4. Develop a spatial analysis and map the activities/pressures on the marine
- 2.4.1. Develop methods and criteria of spatial and protection planning
- 2.4.2.Improve the results of SEA procedures for spat. planning documents and sectoral doc.
- 2.4.3. Improve environmental impact studies (in procedure of Ecological Network Impact

- 1.2.1. Integrate the principles of integrated management into the
- 2.1.3. Systematically monitor, research and evaluate the conditions and processes in the coastal zone area
- 2.5.2. Strengthen expert capacities for the management of the maritime
- 2.5.3. Strengthen the capacities for monitoring the maritime domain through strengthening of the competent inspectional services
- 3.1.1. Improve the quality of future construction and the built environment 3.1.2. Develop a methodology for urban rehabilitation and transformation
- 3.2.1. Establish the maritime domain limits in the entire Adriatic and ensure their registration in Land Registry books
- 3.2.2. Improve the system for protection and management of the maritime domain in general use
- 3.9.5. Enhance the resilience of coastal settlements to the occurrence of extreme weather and climate hazards
- 3.9.6. Develop adaptation of the coastal zone to sea level rise.

Marine and Coastal Management Strategy 2nd cycle

Deadlines:



Modification of the programmes of

measures (Art. 13)

Review of

programmes of measures (Art. 13)

MSFD - Article 4 - Spatial data	<u>Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008</u> establishing a framework for community action in the field of marine environmental policy	Commission	2018-10- 15
MSFD - Articles 8, 9 and 10 - Text reports	<u>Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008</u> establishing a framework for community action in the field of marine environmental policy	Commission	2018-07- 15
MSFD - Articles 8, 9 and 10 - XML data	<u>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</u>	Commission	2018-10- 15
MSFD monitoring programmes (Art. 11)	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	Commission	2020-10- 15
MSFD programmes of measures, including establishment of marine protected areas, and exceptions	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	Commission	2022-03-
MSFD progress on implementation of programmes of measures	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	Commission	2018-12- 31

Implementation of the Monitoring programe and Programe of measures

Revision of the Strategy document in the 2nd MSFD cycle

- Legal and institutional framework
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- HarmoNIA project specific objectives and expected results

Ministry of Environment and Energy- Associated partner to the project

Project preparation phase:

- Stated expected benefit: to enhance the implementation of monitoring programs related to contaminants in a harmonized way through the Adriatic-Ionian area thus contribute to the implementation of MSFD
- Stated role: to follow the project activities and to use project results in implementation of MSFD on the national level

Possible use of expected project results according to specific objectives:

Transnational harmonization for MSFD and UNEP/MAP protocol implementation

- Implementation of harmonized strategies for monitoring and assessment of contaminants addressing the requirements of the MSFD and Barcelona Convention protocols
 - revision of the existing national Monitoring program
 - contribute to the implementation of Programme of measures e.g. 2.1.2. Establish transnational (Adriatic) programme for monitoring the status of marine environment etc.
- Improving the practice of EIA procedures for offshore installations
 - use of shared EIA methodologies
 - contribute to the implementation of the Programme of measures e.g. 2.4.3. Improve environmental impact studies

Regional aggregated dataset on marine contaminants and harmonized data visualization

- Improvement of the existing National Environmental Information System in visualization of contaminant level in marine environment
 - contribute to the implementation of the Programme of measure e.g. 2.2.1 Complement the contents of the existing databases and spatial databases in the function of integrated marine environment and coastal zone management

Case study on contaminant dispersion

- Consider the methodology proposal for assessing risk index of contaminant dispersion in preventive activities related to accidental marine pollution
 - implementation of National Contingency Plan-development of the assessment of risk and sensitivity of the area covered by the Contingency Plan
- Take into consideration the project results in mapping the activities and pressures on the marine environment and coastal zone as a basis for Marine Spatial Planning
 - contribute to the implementation of the Programme of measures-e.g. 1.2.2. Elaborate additional normative preconditions for further development of MSP; 2.3.4. Develop a spatial analysis and map the activities/pressures on the marine environment and coastal zone







