



# Overview of the actual NIMRD National Monitoring Program

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## NECESSITY OF THE ROMANIAN INTEGRATED MARINE MONITORING SYSTEM

as Contracting Party of the **Convention for the Protection of the Black Sea Against Pollution** (Bucharest Convention), Romania has established and carries on a program of water pollution monitoring and assessment of the transitional national coastal and marine areas (Article XV 4);

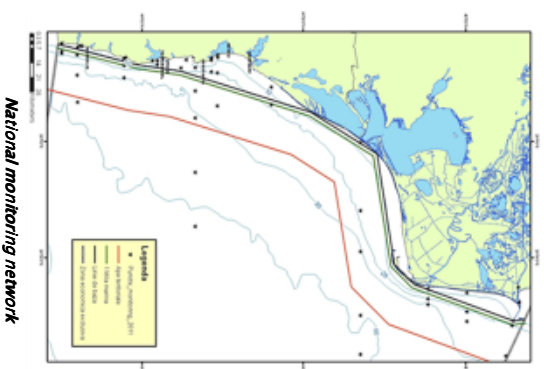
as member of European Union, Romania has the obligation to harmonize and implement **European legislation**: Water Framework Directive, Directive of Bathing waters, Shellfish Waters Directive, Birds and Habitats Directives and NATURA 2000 Network, Integrated Maritime Strategy, Marine Strategy Framework Directive (2008/56/CE);

as Contracting Party to other **European and international conventions**: INSPIRE Directive containing the water component of WISE, Initiative Global Monitoring for Environment and Security (GMES), Common policies on fisheries, European maritime policies, including maritime spatial planning, ACCOBAMS Convention;



## PARAMETERS AND STATIONS FOR MARINE MONITORING

- ▶ NIMRD monitoring programme of the transitional, coastal and marine waters from the Romanian Black Sea area is based on the analysis of water, sediment and biota samples, collected from a network of 44 stations located between Sulina and Vama Veche (research vessel "Steaua de Mare 1", 2-4 times/year).
- ▶ The stations network includes the survey of all water typologies included in Water Framework Directive and Marine Strategy Directive, as follows:
  - MARINE TRANSITIONAL WATERS – 12 stations (Sulina, Miliag, Sf.Gheorghe, Portita, Cura Buhaz – up to 20 m depth),
  - COASTAL WATERS – 21 stations (East Constanta, Cazino Mamaia, Constanta North, Constanta South, Eforie, Costinesti, Mangalia, Vama Veche, up to 20 m depth) and
  - MARINE WATERS – 11 stations (30 – 50 m depths);



National monitoring network



## DESCRIPTION OF NIMRD RESEARCH AREAS INCLUDED IN THE INTEGRATED MARINE MONITORING SYSTEM

- ▶ 1. Marine pollution monitoring and assessment;
- 2.Shellfish water monitoring;
- 3. Monitoring and control of dangerous substances in dredged sediments from ports and maritime shipping channels;
- 4. Monitoring of ballast waters;
- 5. Monitoring of coastal erosion;
- 6. Monitoring of the biological diversity, including marine mammals populations and marine habitats in the protected areas;
- 7. Monitoring of dolphins' accidental catches and stranding;
- 8.Monitoring of the bathing waters and beaches quality (collaboration with Public Health Directorate and Romanian Waters Administration);
- 9. Monitoring of extreme marine phenomena (extreme surges, tsunamis);
- 10. Monitoring of accidental oil pollution (when needed);
- ▶ 11. Monitoring of the marine litter;



## PARAMETERS AND STATIONS FOR MARINE MONITORING

- According to provisions of the Ordinance no 71 /2010 regarding Strategy for the marine environment, NIMRD is one of the competent authority for MSFD implementation, carrying out research activities regarding ecological state of the marine ecosystems;
- The National Institute "Grigore Antipa" is the technical operator of the national network for physical, chemical and biological monitoring of the marine waters and coastal erosion surveillance and it is empowered to suggest regulations in the domain concerned to Ministry of Environment and Climatic Changes.

The ecological status of the Romanian Black Sea transitional, coastal and marine waters is assessed on the basis of the physical, chemical, biological and hydromorphological indicators recommended by the Water Framework Directive and Marine Strategy Framework Directive:

### ▶ **PHYSICAL AND CHEMICAL PARAMETERS:**

- annual and seasonal temperature regime, sea currents velocity, wave exposure, turbidity ;
- spatial and temporal distribution of salinity ;
- spatial and temporal distribution of nutrients (P-PO<sub>4</sub>, N-NO<sub>2</sub>, N-NO<sub>3</sub>, N-NH<sub>4</sub>, N total, T total, Si-SiO<sub>4</sub>), dissolved oxygen and saturability, BOD<sub>5</sub>, total organic carbon (TOC), chlorophyll a, total suspended matter, pH;



## PARAMETERS AND STATIONS FOR MARINE MONITORING

### ▶ **CONTAMINATION PARAMETERS (in water, sediments, biota):**

- total petroleum hydrocarbons (TPH), heavy metals, organo-chlorinated pesticides, polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs);

### ▶ **BIOLOGICAL PARAMETERS:**

- phytoplankton (species, seasonal and geographical variability);
- macrozoobentos (species composition, biomass and annual/seasonal variability);
- zooplankton (species, seasonal and geographical variability);
- macro-algae (species composition, biomass and annual/seasonal variability);

### ▶ **MICROBIOLOGICAL PARAMETERS:**

- ▶ - microbial pathogens;



## CORRELATION OF REPORTED MARINE ENVIRONMENTAL INDICATORS WITH THE DOMAINS OF THE MSFD

MSFD Annex III Characteristics	National monitoring parameters
Physico-Chemical	<ul style="list-style-type: none"> <li>- temperature, salinity;</li> <li>- nutrients (P-PO<sub>4</sub>, N-NO<sub>2</sub>, N-NO<sub>3</sub>, N-NH<sub>4</sub>, N total, T total, Si-SiO<sub>4</sub>), dissolved oxygen and saturation, BOD<sub>5</sub>, total organic carbon (TOC), chlorophyll a, total suspended matter, pH;</li> </ul>
Biological features	<ul style="list-style-type: none"> <li>- phytoplankton;</li> <li>- macrozoobentos;</li> <li>- zooplankton;</li> <li>- macroalgae;</li> </ul>
Other features	<p><b>CONTAMINATION PARAMETERS:</b></p> <ul style="list-style-type: none"> <li>- total petroleum hydrocarbons (TPH), heavy metals, organo-chlorinated pesticides, polycyclic aromatic hydrocarbons (PAHs);</li> </ul> <p><b>MICROBIOLOGICAL PARAMETERS:</b></p> <ul style="list-style-type: none"> <li>- microbial pathogens;</li> </ul>
<p>Not yet included in monitoring program, but data generated in other projects were used in IA for habitats, fish, NIS.</p>	

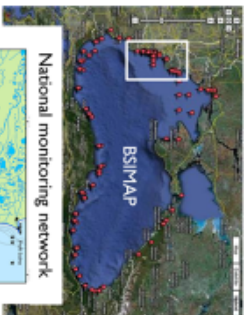


- ▶ The integrated marine monitoring system in Romania was designed in agreement with the Water Framework Directive, Shellfish Waters Directive, Birds and Habitats Directives and NATURA 2000 Network, Integrated Maritime Strategy, Marine Strategy Framework Directive and regional and national requirements;
- ▶ Actual integrated marine monitoring system responds to the majority of characteristics described in Annex 3 and descriptors from Annex 1 of MSFD;
- ▶ In order to ensure all the requirements of the Marine Strategy, the monitoring system needs to be completed with some specific parameters;
- Following IA, a detailed data gap analysis for each descriptor will emphasize the necessity of including more parameters in the revised monitoring program, in correlation with relevant definitions of GES and related environmental targets;
- For instance, minor or major gaps in required monitoring were identified for D10, I1 (Litter, Noise), D4 (Food webs), D2 (Non-Indigenous species), or D9 (Contaminants in fish and other seafood)



## REGIONAL COORDINATION

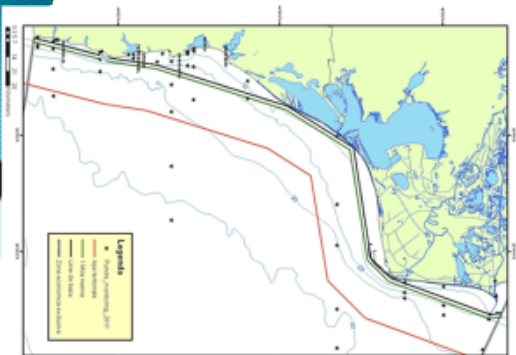
- There is the need to "ensure comparability of assessment approaches and methods within and between marine regions " and to "ensure compatibility with existing programmes developed at regional and international level".
- **Regional Sea Conventions (RSC)** should play a crucial role in this process, coordination at regional level being therefore a key for a successful implementation of a monitoring programme.



- National monitoring network is included in the Regional Black Sea Integrated Monitoring and Assessment Programme (BSIMAP), monitoring data being annually reported to the **Black Sea Commission Permanent Secretariate/ Advisory Groups** by NIMRD National focal points.

*EC recommendation: MSFD Monitoring should be build upon and integrate as much as possible, existing well-established monitoring programmes and relevant guidance under Habitats and Birds Directives, the Water Framework Directive and other relevant EU legislation as well as under Regional Sea Conventions and other International agreements.*

- for many of the MSFD indicators data should already be collected under other pieces of legislation: **Water Framework Directive, Environment Quality Standards Directive, Habitat Directive, Shellfish Waters Directive, Common Fishery Policy, Regional Seas Convention;**
- **differences in spatial requirements:**
  - WFD:** coastal waters (up to 1nm);
  - EQS:** territorial waters (up to 12 nm);
  - HD:** where listed species and habitats occur;
  - CFP:** where fish stocks and fishing activity take place;
  - MSFD:** all territorial waters and Exclusive Economic Zone;
- **National monitoring network includes 44 stations divided as follows:**
  - MARINE TRANSITIONAL WATERS – 12 stations,
  - COASTAL WATERS – 21 stations, and
  - MARINE WATERS – 11 stations.





## OUTCOMES OF THE MONITORING PROGRAMME

- ▶ Elaboration of the Annual Report on the Integrated Monitoring on the Black Sea Marine Ecosystem, through the evolution of physico-chemical and biological indicators in transitional, coastal and marine waters. Beneficiary: Ministry of Environment and Climatic Changes;
- ▶ Contribution to the annual State of Environment in Romania Report (Chapter marine and coastal environment);
- ▶ An important contribution of the monitoring program is to ensure the completion of the series of historical data needed to assess the long-term development trends of the marine ecosystem components.



## OUTCOMES OF THE MONITORING PROGRAMME

- ▶ Fulfilling international obligations under the Convention for the Protection of the Black Sea against Pollution, by:
  - providing data for annual reports of NIMRD national focal points to the Black Sea Commission (Istanbul / Turkey), the national network being included in the regional program of monitoring of the Black Sea (BSIMAP);
  - elaboration and sending to the Black Sea Commission of the annual reports on the quality of Romanian marine environment and every 5 years national contribution to the regional reports on the State of the Environment in the Black Sea;





## OUTCOMES OF THE MONITORING PROGRAMME

- ▶ Providing marine monitoring data for mandatory annual reporting to the European Environment Agency (EEA) (Copenhagen / Denmark)
  - EIONET / WISE (Water Information System for Europe);
- EIONET Network (European Environment Information and Observation **Network**) coordinates the collection and organization of environmental data submitted by member countries and is composed of national focal points (NFP) and National Reference Centre (NRC), INCDM functioning as National Reference Center (NRC) for marine and coastal environment;
- ▶ Exchange/provide monitoring data to other competent authorities involved in directives implementation – eg. Romanian Waters National Administration, based on the Bilateral Cooperation Agreement within institutions.



## CONCLUSIONS

- Even MSFD introduces new challenges for designing and implementation of monitoring programmes, the existing monitoring programmes under EU legislation (e.g. Water Framework Directive or Habitats Directive) and the Regional Sea Conventions as well as other existing monitoring can and should be used.
- Thus, the development of integrated multi-disciplinary monitoring programmes should aim to maximise the use of existing resources, by improving the efficiency of existing programmes.
- Moreover, joint monitoring programmes in (sub) regions may help forge synergies between Member States on the ways in which they are monitoring and assessing the marine environment, and which can potentially reduce overall costs.
- It should be clear how the governance of monitoring programmes is organised (e.g. clear attribution of responsibilities, allocation of resources etc...). There should be also clear coordination arrangements in case of various administrations playing a role in the implementation of the monitoring programmes.

THANK YOU FOR YOUR ATTENTION!

