“Integrated Marine Pollution Monitoring Programme of Turkey”

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Marine Monitoring Activities in Turkey

- Ministry of Environment and Urbanization (MEU) has implemented “Integrated Marine Pollution Monitoring Programme” in order to monitor the quality and pollution of marine environment and coasts of Turkey- Aegean Sea, Black Sea, Mediterranean Sea and Marmara Sea- which provides the basis for national marine and coastal management policy and strategies.

- This programme has been designed as a three-year programme since 2014 in order to obtain regular and continuous data, to monitor seasonally.

- The aim of the national marine monitoring program is to assess chemical and ecological status of marines of Turkey and to prevent marine pollution, to assess the effectiveness of the measures taken by authorities and the compliance with the national legislation and Regional Marine Conventions (Bucharest and Barcelona Conventions).

Integrated Marine Pollution Monitoring Programme

- This comprehensive programme includes a wide range of experts in different expertise areas about marine sciences from universities, institutions and governmental bodies and cooperations with monitoring bodies.

- Data is reported to MEDPOL, Black Sea Commission and European Environment Agency (EEA) and to national authorities (TURKSTAT, Ministry of Agriculture and Forestry).

Commission on the Protection of the Black Sea Against Pollution

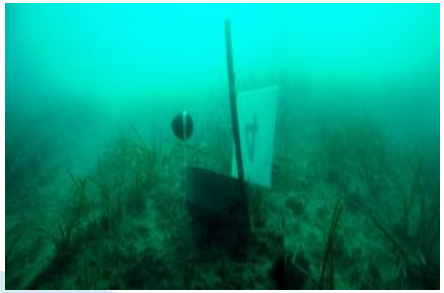
25 1994-2019 European Environment Agency

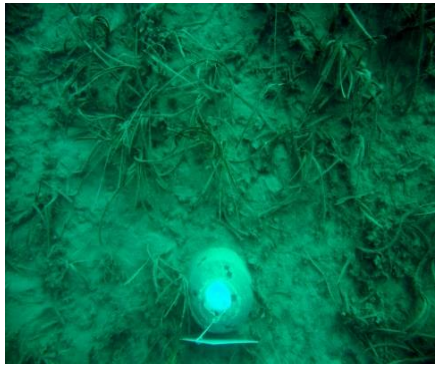
Integrated Marine Pollution Monitoring Programme

- Marine monitoring programme progressed towards an integrated and ecosystem based approach by adopting the EU Water Framework (2000/60/EC) and Marine Strategy Framework Directive (2008/56/EC) strategies. Monitoring activities designed in line with these approaches are carried out in a large-scale monitoring network in designated coastal water bodies and marine assessment units.

- Covers monitoring in marine water, sediment, biota and sea floor of some specific indicators of biodiversity, commercial fisheries, food web, eutrophication, sea floor integrity, hydrographical conditions, contaminants and marine litter descriptors. Monitoring network consists of 350 monitoring stations

- 2017-2019 monitoring programme has new components in line with descriptors and GES approach of MSFD. Zooplankton, seagrass monitoring, beach litter indicator under the marine litter descriptor are among these new components. The other new monitoring element is online marine monitoring which established in heavily polluted İzmit Bay. And also since 2017 pressure-impact has been analyzed.





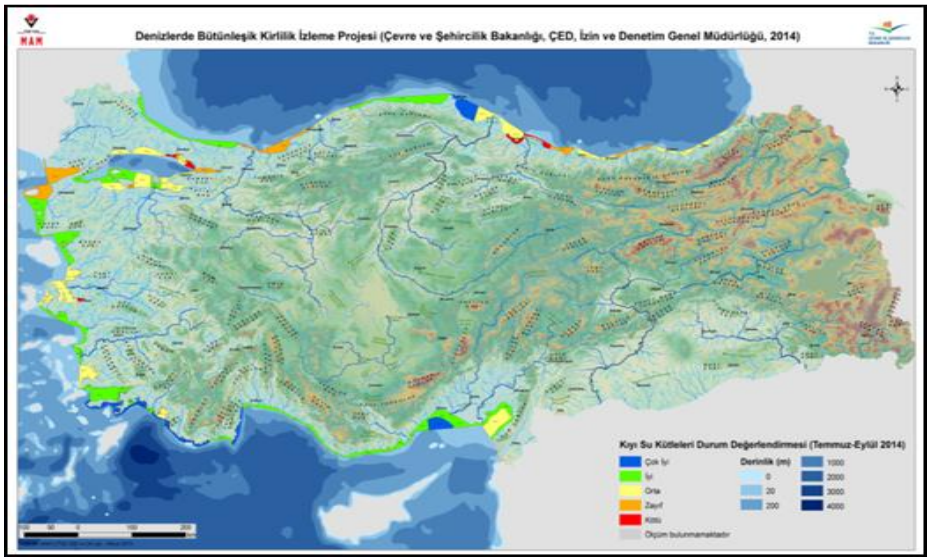
Integrated Marine Pollution Monitoring Programme

Area

- 4 Sea
- 15 Marine Assesment Units
- 85 Water Bodys
- 350 Stations Totally

Frequency

- 3 years Programme
- Black Sea and Mediteranean 2 times per year Marmara sea 3 times in a year

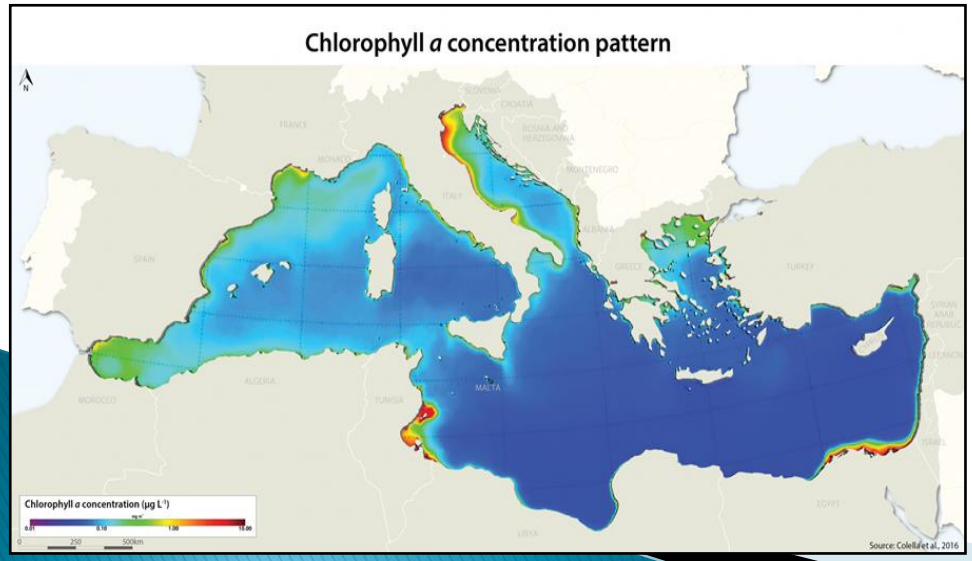


MED QSR 2017

- «2017 Mediterranean Quality Status Report –MED QSR 2017" as the first integrated report on the assessment of the Mediterranean marine and coastal environment situation with using IMAP joint indicators.

- Turkey's "Integrated Marine Pollution Monitoring Programme"s data from took 2014-2016 period was being a part in the MED QSR 2017 report.

- Turkey's contrubition to this report about eutrophication and chemical monitoring, microplastics and marine litter monitoring data by a case study article in the Mediterranean side and Mersin Bay



Mediterranean 2017 Quality Status Report

Annex IV

Guidance for QSR2017 Case Studies

The Quality Status Report for 2017 (QSR2017) will be an online report on the current assessment of each of the 27 indicators adopted as part of the Decision IG.22/7 (COP 19) on the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) adopted in February 2016.

The following structure (italic is annotation for the chapter to guide the preparation of the case studies) is proposed:

Common Indicator:

Common indicator 13 Concentration of key nutrients in water column (EO5 eutrophication);

Common indicator 14 Chlorophyll-a concentration in water column (EO5 eutrophication);

Case Study title: Turkish Mediterranean Sea Coasts Eutrophication Status and Mersin Bay Trend Analysis

Monitoring of the eutrophication status of Mediterranean Sea in 2016 within the scope of Integrated Marine Pollution Monitoring Programme of Turkey (2014-2016) evaluated by TRIX, HEAT and for 3 years trend according to physicochemical parameters and TRIX. Also Mersin Bay is evaluated with a historical data.

Turkey constitutes monitoring programme for 3 year periods since 2014 under the name of "Integrated Marine Pollution Monitoring Programme". The programme covers all of the marines; Marmara Sea, Black Sea and Mediterranean Sea. 2014-2016 period finished and 2017-2019 has begun on March 2017. The programme is implemented by the Ministry of Environment and Urbanization (MoEU) and is coordinated by MoEU with TUBITAK Marmara Research Center (TUBITAK MRC) with the involvement of a lot of universities and institutes from Turkish marine academical community. The 2014-2016 "Integrated Marine Pollution Monitoring Programme" covered three summer and two winter cruises, 272 stations were monitored and the programme was developed according to Regional Conventions (Barcelona and Bucharest Conventions), WFD, SFD, National Legislation. In the context of MSFD D1 (Biological diversity), D5 (Eutrophication), D6 (Sea floor integrity), D8 (Contaminants), D9 (Contaminants in fish and seafood for human consumption), D 10 (Marine litter) were included.

Mediterranean Sea monitoring programme (table 1) with 68 monitoring stations was completed by Middle Esat Technical University (METU, Institute of Marine Sciences) with the coordination of TUBITAK MRC.

Standardization of Marine Monitoring Project

- Aim; Standardize sampling and analysing methods, monitoring variables, reporting formats and also preperation of a Strategy Document to support the development of National Monitoring Legislation.
- Project was carried out 2015-2017 years
- Monitoring guidelines developed by expert groups according to MSFD, Regional Conventions and IMAP needs and also national legislation
- 12 guidelines prepared both Turkish and English, and these guidelines have an ISBN numbers, and also sharing on our Ministry's web site

Standardization of Marine Monitoring Project

- **These 12 Guidelines;** especially based to IMAP indicators
- will be a standardization of monitoring activities for new components


Sea grass and Macroalgeas Guidline


Inorgonic Pollutants Monitoring Guideline


Euthrophication Monitoring Guideline


Biodiversity, Allien Species and Management a Solid Waste in the sea Throl Method Using Guideline


Orghanic Pollutants Monitoring Guideline


Hydrographic Conditions Monitoring Guideline


Sea Mammals Monitorin Guideline


Microbiologic Pollutants Guidelin


Sea Solid wastes Monitoring Guideline


Benthos Monitoring Guideline


Plancthone Monitoring Guideline


Bottom Sea Noise Monitoring Guideline

Quality Control

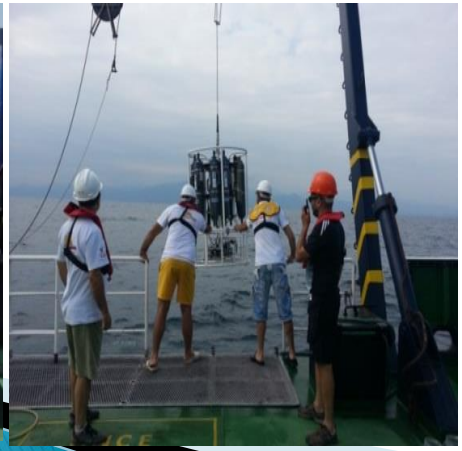
- QA/QC assurance obtained by **certified reference material and intercalibration tests**: MEDPOL Proficiency Test (biota-metals) and Quasimeme intercalibraion (Estuarine water, Low salinity seawater- nutrients and marine water-Chlorophyll-a)

- sampling and measuring equipment and methods selecting specified in the monitoring guidelines,

- **sampling, transportation and storage methods are accordonce to the standards** and equipment is regularly calibrated.

Evaluation

- Turkey's marine monitoring activities provides EU requirements mostly and large-scale marine stations monitoring network ongoing in a dynamic baseline.
- This programme has been designed as a three-year programme and the program is reviewed by considering our country needs and EU requirements and new points and parameters are added.
- Mediterranean Monitoring Results compliance with the UNEP / MAP-MED POL Database and verification is ensured and then have recorded to the reporting format.
- In Black Sea reported to the Black Sea Commission by LBS Reportment

Sharing Marine Data

- all outputs are shared with stakeholders with symposiums, reports, bulletins and summary reports from web site of Ministry

- In 2016, "1. National Marine Monitoring and Evaluation Symposium" was organized the first time with the participation of representatives of institutions, municipalities, and non-governmental organizations in order to include the measures to be taken in the policies take in to consideration with the findings of marine monitoring activities .

- "2. National Marine Monitoring and Evaluation Symposium" will be held in December 2019.

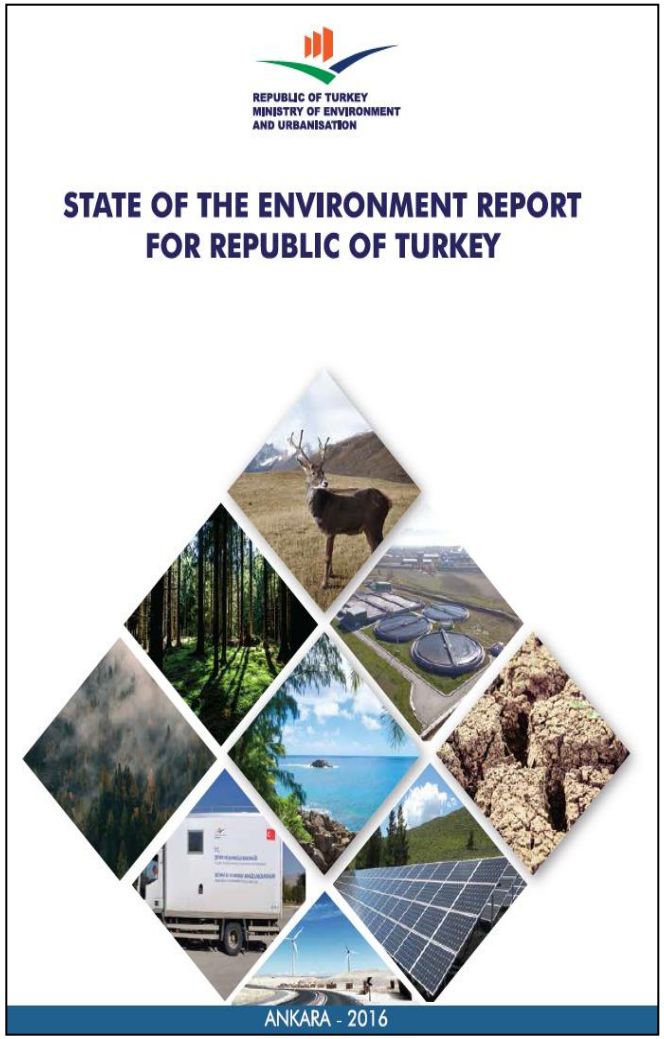
- The book of abstracts of the symposium has been published on the website of the General Directorate of of EIA, Permit and Inspection of our Ministry and is accessible to the public.

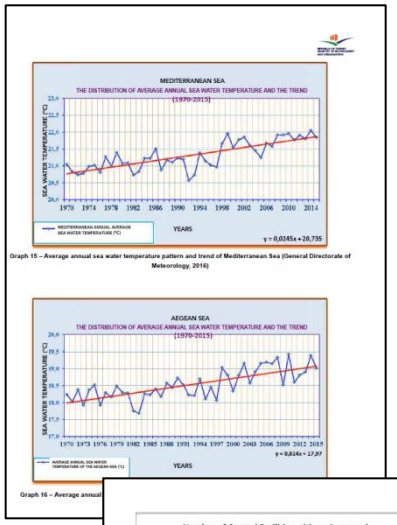
- These symposiums, which are widely attended to provide public awareness for marine litter and other marine pollutants, contribute greatly..

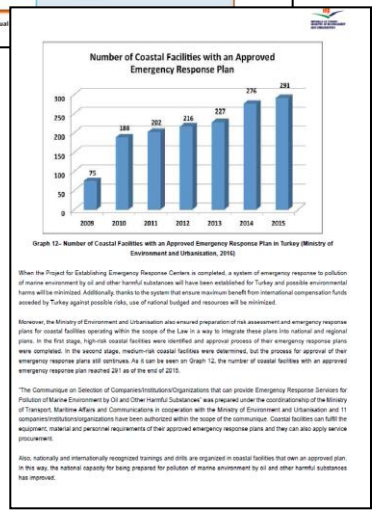
Environmental Data Assessment, Statistics and Exchange Capacities

- «**State of the Environment Report for Republic of Turkey**» is prepared Ministry Of Environment and Urbanisation every four years in coordination of the General Directorate of Environmental Impact Assessment, Permit and Inspection with contributions of related institutions and organizations.

- Environmental inventory, data and also some statistics about state of the **air, climate change, water** and **wastewater management, waste, management of chemicals, nature conservation** and **biological diversity.**





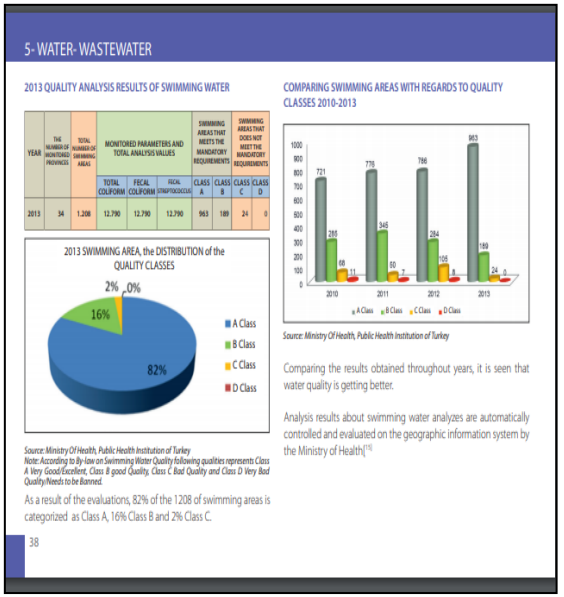


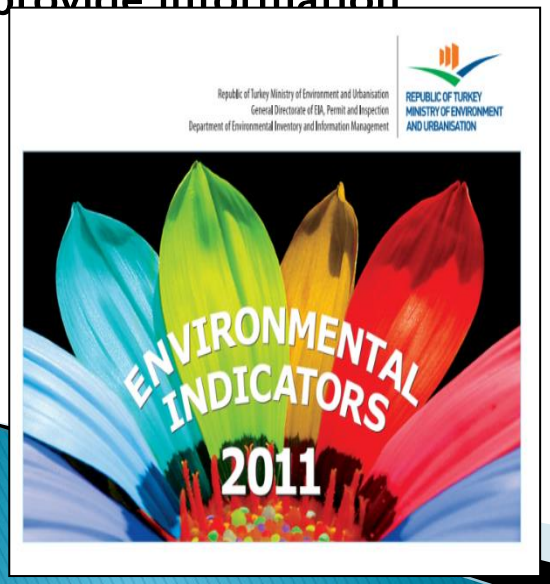
Environmental Data Assessment, Statistics and Exchange Capacities

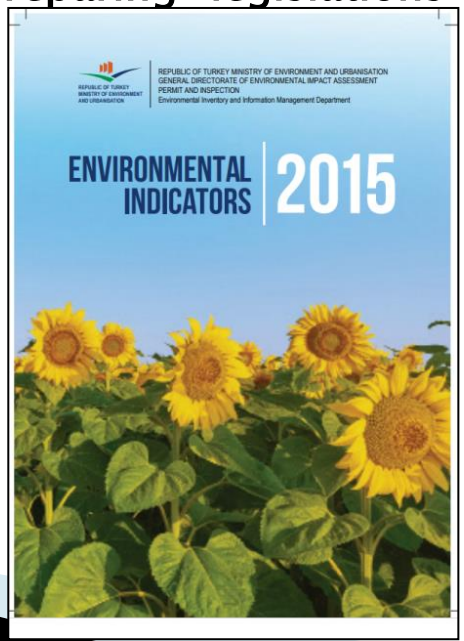
- Ministry of Environment and Urbanization, has been prepared of the «**Environmental Indicators**» booklet every year since 2006 ;

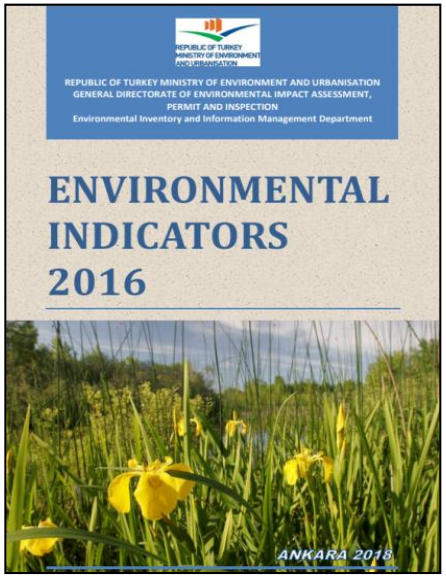
- **aims to represent the relationship between the environment and the sectors and to monitor the activities that have environmental impacts in a sequence and to monitor the results** of the applied environmental policies.

- aims to provide assist in **determining plans, programmes and policies, preparing legislations and provide information**









Environmental Data Assessment, Statistics and Exchange Capacities

- **Turkish Statistical Institute (TURKSTAT-TUİK):** to compile, evaluate, analyse and publish statistics in the fields of different areas also environmental data.
- As an example; drinking water networks and water treatment plants, municipal wastewater statistics, municipal waste statistics published every year from 1995.
- Variable selection statistical data in the web site of institute and, data can export TUİK's web site as html, cvs, excel, xml and pdf formats.

Thank You for your Attention

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