

## 7.19 Tunisia



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Capital city	Tunis
Population (2005 est.)	10,100,000 (1.0% growth)
GDP per capita (USD 2005 est.)	\$8 371
Life expectancy at birth (2005 est.)	73.5 years (male - 71.5, female - 75.6)
Land and water area	163,610 km <sup>2</sup> (land - 155 360, water - 8 250)
Length of coastline	1 148 km
Highest point of elevation	Mt. Chambi 1 544 m
Mangrove area (2005 est.)	None recorded in study
Marine protected areas (2007 est.)	55.80 km <sup>2</sup> (0.15% of total territorial waters)
Capture fisheries prod. (2006 est.)	111,288 metric tones
Aquaculture fisheries prod. (2006 est.)	2 775 metric tones

**Coastal Climate:** Tunisia's climate is temperate in north with mild, rainy winters and hot, dry summers; desert in the south.

**Mineral Resources:** Phosphate and iron ore.

**Agricultural Products:** Olives, olive oil, grain, tomatoes, citrus fruit, sugar beets, dates, almonds; beef and dairy products.

### ADDRESSING KEY COASTAL ISSUES AND HOT SPOTS:

Tunisia faces major challenges in connection with the management of its natural resources. Its main problems are water quality, waste management, marine and coastal pollution and nature conservation. The development of industry and tourism and the growth in road traffic, which are concentrated along the coast, coupled with a rapid increase in the urban population, have put water resources under considerable pressure and are increasing pollution in coastal areas and waste generation. Notwithstanding the significant work carried out by Tunisia on environmental protection, the negative ecological effects caused by the intensified use of coastal natural resources associated with economic development remain the country's most serious environmental problem.

## DEVELOPMENT AND ACHIEVEMENTS OF THE NODC

The Oceanographic Data and Information Centre is hosted by Institut National des Sciences et Technologies de la Mer (INSTM). The data centre is a research structure in charge of identifying, collecting and disseminating data on the marine environment. The data are fundamental to understanding the process control of our natural environment. They can provide answers to local questions, for example the risk of coastal pollution, or the global issues, such as predicting the impact of global warming. The better we can understand these events, the better we can protect ourselves in the future.

The Data centre deals with physical, chemical and biological data. The data are originating mainly from national research and monitoring programs. Many of the data centre staff have direct experience of marine data collection and analysis. Through collaborations with specialists in information technology data are well documented and stored for current and future uses. Users of the data centre include: scientists, students, government (administration), and the private sector. The main objectives of the Data Centre are:

- Store, quality control, and archive data, ensuring they are not affected by changes in technology and will be available in the future
- Maintain and develop national oceanographic databases
- Work with scientists during marine research projects and provide data management services during the life of the project
- Distribute data for scientific, educational and development purposes. An effort is made to improve access online data through the web site
- Develop marine data products and digital atlas

### Products and services available are as follows.

Further information can be found on the website (<http://www.instm.rnrt.tn/fr/observatoire/observatoire.html>):

- Catalogue Of Library Holdings contains over 7, 600 records. This catalogue will be a part of a national libraries catalogue.
- Cruise Summary Report Database: the cruise inventory is a catalogue of Tunisian research vessel activities dating from 1995 to the present day. It is a valuable resource for scientists, programme managers and data managers providing information on who has collected what, where and when, in addition to details of measurements taken and samples collected.
- Hydrobase: is a user oriented discovery tool for viewing and downloading services of physical and bio-chemical data. It includes conductive Temperature Depth (CTD) and water bottles data collected in the framework of national research cruises in Tunisia. Currently, HydroBase contains over 1,000 CTD profiles, CTD time series over 5 years measurements and 7,000 measurements concerning 11 bio-chemical parameters. The data cover the geographical area between 6°E and 13°E longitude and between 30°N and 39°N latitude.
- Phytoplankton Database: this database contains data collected in the framework of the national phytoplankton monitoring program established since 1995 in more than 15 sampling sites along the Tunisian coast. Among the main activities of this network is the detection of toxic phytoplankton species that may affect the Tunisian coast. This program operates with a weekly sampling and the database contains nearly 6,000 observations.
- National Oceanographic Atlas is a collection of oceanographic data published in specialized databases throughout the word. The Atlas provides substantial maps, images, data and information to marine resource managers, planners and decision-makers from various administrative institutions and specialized agencies in Tunisia.

## MARINE RELATED PROGRAMMES AND ORGANIZATIONS

The data centre cooperates with several partners nationally:

- Official Authorities of the Ministry for the execution of the research projects and the studies which are entrusted to it by the Government.
- The institutions and public companies which have a close links with the sea as well as with the field of protecting the environment (the Ministry of Agriculture, Environment and Hydraulic Resources represented by the Directorate-General of Fisheries and Aquaculture, the Inter-professional Grouping of Fisheries Products, the National Agency for the Protection of the Environment, the Agency for the Protection and development of the Littoral and the National Company for the Diffusion and Exploitation of Water), with whom it cooperates to conduct specific studies.
- Professionals (in fisheries, aquaculture and valorisation of sea products).
- Higher Education and scientific research Institutions to carry out

*Figure 1. Participants at a data management training course hosted by INSTM in 2002.*



research programs.

- Conscious of the importance and the need to work in a regional framework, the data centre is involved in several regional data management projects:
- MAMA Project -Mediterranean network to Access and upgrade the monitoring and forecasting Activity in the area.
- SeaDataNet Pan European Project- aims to develop an efficient data management system for the present and future ocean observing and forecasting programmes, able to handle the diversity and large volume of data collected
- via the Pan-European oceanographic fleet and the new observation systems
- CIRCE project: aims at developing for the first time an assessment of the climate change impacts in the Mediterranean area. It attempts to predict and to quantify physical impacts of climate change in the Mediterranean area, to evaluate the consequences of climate change for the society and the economy of the populations located in the Mediterranean area and to develop an integrated approach to understand combined effects of climate change.
- SEASAME project: aims to assess and predict changes in the Southern European Seas (Mediterranean and Black Sea) ecosystems and in their ability to provide key goods and services with high societal importance, such as tourism, fisheries, ecosystem biodiversity and mitigation of climate change through carbon sequestration in water and sediments.

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*Figure 2. Participants at the ODINAFRICA meeting, Mombasa, Kenya in July, 2008.*