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# IODE NATIONAL REPORT FOR I.R. IRAN

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Version: 28 February 2003

1. **Name of Data Centre:**
   Iranian Oceanographic Data Centre (IRODC)

2. **National IODE Coordinator:**
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3. **Data Centre Address:**
   As above

4. **Data Centre URL:**
   http://www.incoir.org

5. **IODE Data Centre Designation Date:**
   1995

6. **Brief History:**

   Due to the need for general data collection and information system in I.R.Iran, through a resolution of the 27th session of UNESCO general conference, the establishment of a NODC in Iran was facilitated.

   In 1993 the draft resolution 153 was adopted. Finally in 1995 the Iranian Oceanographic Data Centre (IRODC) was established in the Iranian National Centre for Oceanography (INCO) and introduced as the node of the International Oceanographic Data and Information Exchange (IODE) in Iran.

   Today, IRODC is equipped with the latest computer technology and Internet facilities. Its staff include experts in physical oceanography, computer engineering, geology, and photogrammetry.

7. **Roles and Responsibilities of the Data Centre:**

   Designing a data management system for easy and fast access to marine data

   1. Applying quality control procedures as recommended by IODE
   2. Updating and monitoring the data bank system
   3. Data storage in standard formats as recommended by IODE
   4. Extracting data sets and required informations for users
   5. Publishing manuals and guides for IRODC's software products

   Organizing workshops and training courses in marine data management.

8. **Data Centre Projects and Activities during the Intersessional Period:**

   National Projects:

   **The First Phase of the Establishment of an Oceanographic Database Management System.**

   The management of an oceanographic data system calls for the utilization of various methods. According to international standards, an oceanographic database management system must meet the following requirements:

   1. Metadata generation
   2. Data formatting

3. Relational database management
4. Data archiving
5. Data cataloging

The system is designed on a GIS basis and is able to receive data in manual or file forms. It can also act as a module system and can fulfil the above requirements. The main objectives of the project are as follows:

The project will include modules for: (1) Data formatting into Med Atlas; (2) Generation of Metadata based on ANZELIC Standard; (3) GIS-based data cataloging

**Establishment of the Caspian Sea and Coastal Zone Data Base of Mazandaran Province for using in ICAM**

Owing to the underdevelopment of marine data banks for the country's coastal areas and considering the key importance of GIS-based data banks in coastal management scheme, it is necessary to establish such data banks for the coastal zone of the Mazandaran Province.

The project aims to:

1. Create a data bank for the coastal areas of Mazandaran, with information on geology, topography, geology, hydrology, demography and other relevant factors that are key to an integral coastal management system.
2. Integrate data for analysis in ICAM.
3. Draw up map, charts and other analytical tools for integrated coastal zone management of Mazandaran Province.

**Geochemical and Sedimentological Characteristics of the Lake Urumia and Their Significance**

The Urumia Salt Lake is located in northeastern Iran. The chemistry of the lake and its sedimentological and mineralogical composition directly depend on the chemical composition of the inflows, climatic conditions, biological processes, and level of salinitization mechanism. The study of the these factors will shed light on the evolution of the lake. On the other hand, the geochemical studies of the lake's sediments will indicate the rate of pollution in the environment. In addition, the study of the lake's sediments will contribute to a better understanding of the paleoclimate of the region and the water level fluctuations of the lake. Geological and sedimentological investigations of the lake basin may show the probable sources of the minerals and saline water. The main objectives of the project are as follows:

1. The study of the water chemistry
   - Chemical fluctuations in water composition
   - Sources of salinity
2. The study of the lake's mud flats
   - Neogene-Quaternary stratigraphy of the sediments
   - Water level fluctuations
3. A general study of the lake's sediments
   - Identification of the sediment types
   - Detection of heavy metal concentration in the sediments

**A Study of the Distribution, Species Biodiversity and Biochemical Analysis of Marine Sponges in the Iranian Waters of the Persian Gulf (Nayband Bay, and Kish, Larak, and Khark islands)**

The marine sponge is the oldest and simplest multicultural animal on earth, having originated over a billion years ago. Owing to its simplicity, it has become a useful tool for medical researchers trying to unravel the complex workings of the human immune system. This study focuses on the identification and preliminary assessment of different species of sponges and their diversity, distribution, and abundance at the Iranian islands of the Persian Gulf and Oman Sea. It also includes the measurement and analysis of the chemical component of some species. The survey will be the first of its kind in Iran.

**The Annual Monitoring of Coral Reefs in the Iranian Waters of the Persian Gulf**

The coral reef ecosystem, similar to mangroves, with ample zoo- and phyto-plankton food resources, makes it an essential natural habitat for the breeding and growth of a wide variety of species of commercial significance. Firsthand data on the corals in the Iranian territorial waters is quite limited. Owing to the key importance of these organisms to any marine ecosystem, the INCO, in the framework of the Reef Check Programme, will undertake to study vast stocks of coral reefs in the Iranian Water of Persian Gulf, on an annual basis. In the earlier surveys of the corals around Kish Island, ***Favidea*** were found to be the largest family in terms of biodiversity, while ***Acroporidea*** and ***Poridea*** occurred most frequently.

**Holocene Sedimentology of Southern Caspian Sea (Phase1: Neka –Babolsar)**

Holocene sediments from the beach to the upper shelf (-100m) will be sampled by Grab and Corer. The project will attempt to use and integrate a comprehensive sedimentological approach to lacustrine deposits in a semi-tropical zone.

Special attention will be given to the problems concerning Paleo-environment and Paleo-climate using carbon and oxygen isotopes. The project will attempt to determine:

- The sediment characterization, such as the distribution of various types of sediments.
- The rate of sedimentation in the Holocene period
- The Paleo-climatic conditions of the region

The Physical Oceanography of the Southern Coastal Waters of the Caspian Sea (Phase1: Eastern Area)

The project will undertake to the study the hydrodynamic effects (wave, currents, tide), the sea-atmosphere interaction, wind, and physical properties (Salinity, Temperature, Turbidity and other) in Southern parts of Caspian Sea this project defined. This project has 2 separate sections, field observation (about 3 month) and Data Analysis (about 12 month).

Regional and International Projects:

Cooperation with:

- the Intergovernmental Oceanographic Commission (IOC) of UNESCO.
- the IOC Regional Committee for the Central Indian Ocean (IOCINDIO).
- the Inter-Islamic Science and Technology Network on Oceanography.
- the International Oceanographic Data and Information Exchange (IODE).
- the Department of the Ocean Development (DOD, India) and National Institute of Oceanography (NIO, India).
- Caspian Sea littoral states and International Atomic Energy Agency (IAEA) in 2 marine cruises in Caspian Sea.

The initiative to establish the Oceanographic Data and Information Network for Central Indian Ocean (ODINCINDIO).

Workshops and Training Courses:

1. Workshop on National Oceanographic Data Centre (February 2002)
2. Regional Training Course on Ocean Data and Information Management (October 2002)

**9. Data Centre Products and Services Developed and/or Made Available during the Intersessional Period:**

- Establishment of INCO website (http://www.incoir.org).
- Establishment of IOCINDIO website (http://ioc.unesco.org/iocindio/default.htm).
- Cooperation with various national marine organizations, whose metadata, produced by MEDI software, will soon be accessible through the INCO web site.

- Formatting of Mount Mitchell & IAEA cruises' data in MEDATLAS format
- Procurement of the latest operational oceanography instruments.

**10. Future plans**

- Expansion of NODC activities on the national level
- Expansion of efforts toward the collection of marine data