The Governing Body of the Council of Scientific & Industrial Research in March 1964 under the Chairmanship of the then Prime Minister Jawaharlal Nehru took the important decision to establish this National Laboratory as the focal point for ocean research in India. The draft plan of the Institute drawn up by the Indian National Committee on Oceanic Research with the late Dr. D. N. Wadia as Chairman and Dr. N. K. Panikkar as Secretary was accepted by the Governing Body in May 1965. A high power committee was entrusted with the task of selecting a site which recommended that the headquarters be established in Panaji with regional centres at Cochin, Visakhapatnam and Calcutta. Subsequently a centre began functioning at Bombay for the specific purpose of undertaking problems on pollution and related fields.

Organisation

The Institute is organised with the following divisions:

1. Indian Ocean Biological Centre
2. Physical Oceanography Division
3. Chemical Oceanography Division
4. Biological Oceanography Division
5. Geological Oceanography Division
6. Planning & Data Division
7. Instrumentation Division

All these divisions with the exception of Indian Ocean Biological Centre are functioning at the Headquarters. The Indian Ocean Biological Centre with Units for specific research work in biological oceanography and coastal oceanography constitute the regional centre at Cochin and similar centres will be established at Waltair and Calcutta. When fully established the Institute will have over 200 scientists on the staff in addition to auxiliary, technical and other staff. Extensive laboratory accommodation is being planned for work on the various aspects of oceanography. The Indian National Oceanographic Data Centre (the Data Division) will be an important national facility for all ocean-
graphic data. The Indian Ocean Biological Centre at Cochin houses a unique collection of Indian Ocean Plankton from the far-flung regions of the Indian Ocean collected by several ships belonging to many nations that took part in the International Indian Ocean Expedition. The Centre was developed as a joint venture of the CSIR and UNESCO. The Oceanographic Instrumentation Division which is in the process of organisation at the headquarters will concentrate on the important aspects of instrumentation technology with special application to ocean research. The Instrumentation Division will also have a section for maintenance, servicing and calibration of instruments needed for day-to-day oceanographic investigations.

Research

Three vessels, R. V. Nauplius, R. V. Needakara, and R. V. Tarini are at present available for nearshore work. A full-fledged oceanographic ship is proposed to be acquired. The Library has 110 periodicals and about 6000 books. The MAHASAGAR, consisting of notes, news and comments on oceanography, aimed at encouraging and fostering the growth of oceanographic in the country, is published every quarter.

Established as part of the IIOE and located at Cochin, the Indian Ocean Biological Centre undertakes both taxonomical and zoogeographical studies on zooplankton collected from the Indian Ocean. Special investigations include detailed studies of eggs and larvae of fishes
and decapod crustacea. The Centre began with the handling and sorting of the plankton collections taken during the IIOE but is being further developed as an advanced centre for tropical zooplankton research. Indian Ocean Plankton atlases are being issued by the IOBC.

The Physical Division performs oceanographic studies related to the understanding of various physical characteristics in the seas adjacent to India, such as seasonal and time-series data, characterisation of water masses, and mixing phenomena. Coastal and nearshore oceanographic studies are undertaken to develop an understanding of beach and nearshore processes having application on erosion and sedimentation.

The Biological Division investigates the productivity and ecology of the nearshore, inshore and estuarine areas as well as the effects of the changes in the environment on the ecological characteristics and productivity cycles.

The Chemical Division tackles problems related to the distribution of nutrients in the offshore water with particular reference to the process of upwelling and in turn its effect on productivity. The distribution of nutrients is also being studied in the estuarine environment.

The Geological Division is principally concerned with the continental shelf where extensive bottom sampling and echo sounding have been undertaken. These investigations have been taken up with a view to establishing the environmental framework of the continental shelf which is expected to have application in the exploitation of economically useful mineral deposits of phosphorites, heavy minerals and petroleum.

The Indian National Oceanographic Data Centre, which is a Division of the NIO receives and stores data in the standard proforma devised by the World Data Centres. These data are checked for quality, processed and exchanged with the World Data Centres and other National Oceanographic Data Centres. It also functions as the national facility for the exchange and dissemination of oceanographic data, with particular reference to the Indian Ocean and the seas around India.

In addition to the specialised work of each Division, interdisciplinary research projects, such as those connected with pollution, waste disposal, harbour locations and the like are also taken up. The Institute cooperates with the various other Institutions in the respective fields.

Coordination

The Indian National Committee on Oceanic Research was constituted in 1961 to coordinate the participation of the various departments in the country in the International Indian Ocean Expedition Programmes. On the completion of the IIOE Programme, the Committee functioned as the National Advisory Committee for Oceanographic Research in India, with representatives from Universities, the Ministries of Defence and Agriculture. This Committee now functions under the aegis of the Indian National Science Academy, which is the affiliating Body in India for the International Council of Scientific Unions, the parent body for the Scientific Committee on Oceanic Research (SCOR).
Basic needs

With one of the highest population densities in the world and with a coastline of about 5000 km it is of the highest importance to India to acquire as much information of the surrounding seas as possible in order to exploit their living and non-living resources to the fullest extent. The average Indian diet is very low in calories while the animal protein component is alarmingly deficient. Over 5 million tons of fish is required annually even at the present time to meet the needs of the country on a very modest scale. This would require a four-fold increase over the present catch, necessitating full use of oceanographic information for the exploration and exploitation of ocean resources.

The demand exceeds supply for such commodities like petroleum, phosphates and many other minerals. Alternate sources of supply for some, if not all the minerals, have to be sought and the Continental Shelf and Slope offer potentially rich areas. A full programme of survey of the Shelf and Slope is expected to be drawn up and implemented in the near future in continuation of the work now in progress.

Prospects

India has a growing programme in the field of marine sciences. The new developments are likely towards increased efforts for exploiting offshore fisheries, petroleum and minerals. Trained scientific personnel for this purpose is available, but imported technology will be required for ocean mining and oil drilling; equipment required for conventional oceanography and ocean engineering connected with petroleum and minerals are all imported at present but capability to manufacture less-sophisticated equipment is being developed within the country. United Nations agencies and friendly countries have assisted in the development of ocean sciences and technology in India.

As regards the impact on economy, benefits have already accrued through the phenomenal growth of exports in marine products during the last decade which in turn has stimulated trawler building industry within the country. Oil production from offshore sources would similarly reduce dependence on imported crude by the Indian Oil refineries. All round marine resources development is expected to play an important part during the coming decade.