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Name of Delegation : **INDIA**

Agenda Item : **3.2**

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Title Agenda Item : **REPORT OF THE EXECUTIVE SECRETARY ON THE WORK ACCOMPLISHED SINCE THE THIRTIETH SESSION OF THE ASSEMBLY AND ON BUDGET IMPLEMENTATION**

National Report

Members of the Indian Delegation:

- Dr. Srinivasa Kumar Tummala, Director, INCOIS, Ministry of Earth Sciences.
- Ms. Mallika Sudhir, Second Secretary, Permanent Delegation of India to UNESCO
- Dr. Ramadass, Director, NIOT, Ministry of Earth Sciences
- Cdr. Prashant Srivastava, Programme Director, Ministry of Earth Sciences
- Mr. Anoop Dhingra, Director, UNES, Ministry of External Affairs
- Dr. Satheesh Chandra Sheno, Vice Chair, IOC

Introduction:

On behalf of the Indian Delegation, we would like to compliment the Chair, Officers, Executive Secretary and Secretariat for the excellent preparatory work in organising the thirty-first session of the Assembly. We congratulate the Executive Secretary for a detailed report on the substantive progress made in the inter-sessional period across all functions of the IOC in spite of the COVID -19 Pandemic including the launch of UN Ocean Decade.

The importance of Indian Ocean in modulating the regional and global weather and climate systems, and its direct impact on the lives and livelihoods of the huge population living in the countries bordering the Indian Ocean is well known. India has been playing an important role in enhancing the understanding of the Indian Ocean. The Ministry of Earth Sciences, through its Institutes, Indian National Centre for Ocean Information Services (INCOIS), National Institute of Ocean Technology (NIOT), National Centre for Coastal Research (NCCR), Centre for Marine Living Resources and Ecology (CMLRE) and National Centre for Polar Ocean Research (NCPOR) together with National Institute of Oceanography (NIO) and Centre for Marine Fisheries Research Institute (CMFRI) are involved in the full spectrum of activities spanning Ocean Observations; Ocean Modelling & Forecasting; Ocean Data & Information Services; Ocean & Coastal Hazards; Coastal pollution, Ocean Energy & Desalination; Deep Sea Exploration & Mining; Coastal Zone Mapping & Management; Ocean Biodiversity; Polar Science; Fisheries; Capacity Building and many more.

India has also been a key regional partner to the Intergovernmental Oceanographic Commission (IOC-UNESCO) together with other Member States working in the Indian Ocean right from the days of the First International Indian Ocean Expedition (IIOE) in 1962 – 65. Over the years, this engagement has only strengthened, with India currently hosting the Secretariat for IOGOOS; Joint Project Office of IIOE-2 along with Australia providing key support to IndoOOS, IORP, SIBER, IRF; Tsunami Service Provider for the IOTWMS along with Australia & Indonesia; a UNESCO Category 2 Centre; Regional Oceanographic Data Centre, Regional Training Centre & OBIS node of the IODE; Regional Argo Data Centre, etc., all of which are directly contributing to the key functions of the Commission in the Indian Ocean. In addition, India is also a key contributor to other regional and global frameworks related to BBNJ, ISBA, CAMLR, SCAR, IORA, etc. Ministry of Earth Sciences (MoES) is the nodal agency in India for activities of the IOC through its Indian National Centre for Ocean Information Services (INCOIS). Secretary, MoES is the primary focal point of India to the IOC-UNESCO with Director, INCOIS being the secondary focal point. Indian experts also contribute as Vice Chair of IOC, Interim Chair of IOGOOS, Vice Chair of ICG/IOTWMS, and as Members of GOOS Steering Committee, Interim Decade Advisory Board, GEBCO Guiding committee and other important Working Groups and Task Teams established by IOC and its subsidiary bodies. An Indian expert also served as the chair of IOCINDIO.

List of Activities during 2019 - 2021

During the period under report, India continued its efforts to sustain all ocean related activities, despite of Covid-19 impacting several new deployments and maintenance cruises. Important activities relevant to IOC functions are as follows:

OCEAN RESEARCH

- Sustained Research & Development activities.
- Developed an “Algal Bloom Information Services (ABIS)” based on remotely sensed ocean colour data and bio-optical algorithms.

OBSERVING SYSTEMS & DATA MANAGEMENT

- Deployed and Maintained ocean observing networks that contribute to the IOC-IOGOOS-CLIVAR Indian Ocean Observing System (IndOOS) including Argo floats, Drifting buoys, Moored Buoys, XBTs, Current Meter Mooring, Automatic Weather Stations, High Frequency Radars, Tsunami Buoys, Wave Rider Buoys, Tide Gauges, Flux mooring, etc. New deployments and maintenance activities were impacted during the pandemic.
- Launched an interactive web-based portal entitled “Digital Ocean”, that serves as one-stop-solution for all ocean data related needs of a wide range of users, and act as a platform for regional capacity building on ocean data management

EARLY WARNING AND SERVICES

- India continued to provide Tsunami Service Provider support for the IOTWMS.
- Participated in the IOTWMS IOWave20 exercise in October 2020 and COMMS tests with all National Tsunami Warning Centres and Tsunami Service Providers in June 2019, December 2019 and June 2020.

- On the occasion of 4th World Tsunami Awareness Day on 05 November 2019, India through INCOIS Organised an open day for school children and public to bring in more awareness among the stakeholders.
- Recognition of two communities in India as UNESCO-IOC “Tsunami Ready” in line with the IOC indicators, a first in the Indian Ocean. Another 04 villages in Odisha also implemented the Tsunami Ready Programme and are to be evaluated.

ASSESSMENTS & INFORMATION FOR POLICY

- India participated actively in the planning of the UN Decade of Ocean Science for Sustainable Development (UN Ocean Decade) and established a National Decade Coordination Committee to coordinate amongst multiple national institutions and engage them in the Ocean Decade.
- Contributed to the IOC Surveys on impact of pandemic on ocean observing systems and operational functioning of the global tsunami warning and mitigation system.

SUSTAINABLE MANAGEMENT AND GOVERNANCE

- India participated in the 30th session of the IOC Assembly, 53rd Session of the IOC Executive Council, Ninth meeting of the GOOS Steering Committee (GSC), GOOS Regional Alliances (GRA) Council Meeting, IndoOOS Resources Forum (IRF), Indian Ocean Regional Panel (IORP) and organized the 16th meeting IOGOOS.
- India participated in the consultation meeting on the potential transformation of the IOC Regional Committee for the Central Indian Ocean (IOCINDIO) into an IOC Sub-commission, 16 February 2020.
- India, in association with ICG/IOTWMS, organised a meeting of Expert Teams for the development of Probabilistic Tsunami Hazard Assessment (PTHA) for the Makran region during 2-4 December 2019 at INCOIS, Hyderabad.
- India, in collaboration with ICG/IOTWMS and IOTIC, organised the “UNESCO-IOC Tsunami Ready Workshop” for the disaster management officers of the coastal states and union territories during 10-12 December 2019.
- An international symposium on Advances in Coastal Research with special reference to Indo Pacific specifically focusing on role of India in pursuing the SDG 14 goals was hosted by India in December 2019.
- India hosted the 7th (2019) session of the IOCINDIO in addition to workshops on Coastal Vulnerability Assessment in the context of Sea-level rise and Storm Surges (2019) and a Leadership Workshop on Developing a Regional Framework for Coastal Vulnerability.
- India hosted the Regional Planning Workshop for the Northern/Central Indian Ocean countries as well as ROPME Sea Area towards the UN Decade hosted by India (2020).

CAPACITY DEVELOPMENT

- India has been continuing capacity building activities to Member States. The International Training Centre for Operational Oceanography (ITCO-Ocean) which is recognized as a UNESCO Category 2 Centre and Regional Training Centre of the OTGA at INCOIS organised
 - 11 training courses (in-person) of 1 to 2-weeks duration and trained 267 trainees from 23 countries during 2019-20 and

- 07 training programmes in virtual mode, and trained 2421 participants from 85 countries during 2020-21.
- The centre has expanded its facility for providing on-campus accommodation when “in-person” trainings resume in near-future.
- Two meetings of the Governing Board of UNESCO Category 2 Center were held in January 2020 and May 2021

Abbreviations used in the Report:

BBNJ: Marine Biodiversity of Areas Beyond National Jurisdiction
 CAMLR: Convention on the Conservation of Antarctic Marine Living Resources
 CMFRI: Centre for Marine Fisheries Research Institute
 CMLRE: Centre for Marine Living resources and Ecology
 GEBCO: General Bathymetric Chart of the Oceans
 GOOS: Global Ocean Observing System
 GRA: GOOS Regional Alliances
 GSC: GOOS Steering Committee
 IOE: International Indian Ocean Expedition
 INCOIS: Indian National Centre for Ocean Information Services
 IndOOS: Indian Ocean Observing System
 IOC: Intergovernmental Oceanographic Commission
 IOCINDIO: IOC Regional Committee for the Central Indian Ocean
 IODE: International Oceanographic Data Exchange
 IOGOOS: Indian Ocean Global Ocean Observing System
 IORA: Indian Ocean Rim Association
 IORP: Indian Ocean regional Panel
 IOTIC: Indian Ocean Tsunami Information Centre
 ICG/IOTWMS: Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System
 ITCO-Ocean: International Training Centre for Operational Oceanography
 IRF: IndOOS Resources Forum
 ISBA: International Sea Bed Authority
 NCCR: National Centre for Coastal Research
 NCPOR: National Centre for Polar Ocean Research
 NIOT: National Institute of Ocean Technology
 NIO: National Institute of Oceanography
 OBIS: Ocean Biogeographic Information System
 OTGA: Ocean Teacher Global Academy
 PTHA: Probabilistic Tsunami Hazard Assessment
 ROPME: Regional Organization for the Protection of the Marine Environment
 SCAR: Scientific Committee on Antarctic Research
 SIBER: Sustained Indian Ocean Biogeochemistry and Ecosystem Research
 UNESCO: United Nations Educational Scientific and Cultural Organisation
 UN Ocean Decade: UN Decade of Ocean Science for Sustainable Development
 XBT: eXpendable BathyThermograph