

# **Report of the 18th Annual Meeting of Indian Ocean Global Ocean Observing System (IOGOOS-18)**

February 09, 2023



## **1. Opening Remarks**

Dr. T. Srinivasa Kumar, Chair, IOGOOS welcomed all the members and participants to the annual meeting and requested Secretary, IOGOOS to run through the agenda (Annexure 1) and seek comments if any point to be discussed as part of the agenda. Other IOGOOS Officers Dr. Brett Molony, Dr. Jenny Huggett and Dr. Juliet Hermes provided their respective opening remarks.

## **2. Organization of the Meeting (including confirmation of agenda and additional agenda items) by Dr. T. Srinivasa Kumar, Interim Chair, IOGOOS**

The chair thanked IOGOOS Officers for the support of Indian Ocean trainings and discussed the presentations and agenda items. As there are no comments and additional items to include, the agenda is adopted and requested the Panels to provide the reports to the members.

## **3. Reports from Panels [IOGOOS, IRF, SIBER, IORP, IIOE-2]**

### **3.1. Report from the Indian Ocean Region Panel by Dr. Juliet Hermes**

Dr. Juliet Hermes provided reporting on the progress of IORP activities. Dr. Juliet briefly summarised the Terms of Reference of IORP, the present status of membership, new members, and the diversity of the members. She briefly explained about IORP Annual report. She mentioned that no in-person meetings were held during last one year but quarterly virtual meetings of IORP and also of Co-chairs (Juliet & Roxy) with logistical support from Jing Li were held. She explained task teams were organized and actively worked addressing themes of common interest to IORP members, organized workshops, participated and presented at international meetings, and contributed articles to scientific and public media outlets. She explained the Regional Training Workshop on Observing the Coastal and Marginal Seas in the Western Indian Ocean that was co-funded through CLIVAR, POGO, NMU, SAEON, and Mozambique. The workshop was conducted to encourage the WIO countries to engage in ocean observing and marine research. She explained about the CoLaB – Coastal Lab in Box. She explained the objectives of coastal observations in under-resourced countries: identify methods or practices that can be broadly used for observations of physical and chemical parameters of the coastal ocean, develop a handbook for countries to set up and maintain key coastal observations and conduct diverse hydrographic, biological, and biogeochemical studies and applications. She summarized about development of the Indian Ocean ECS Network, development of SDA framework to be trailed at MHW summer school that was shared with other CLIVR panels and 2<sup>nd</sup> meeting of early career scientist ambassadors focused on SDA framework and encouraging ECR participation. She explained the marine heat wave summer school: Global Phenomena with Regional Impacts. She mentioned some of the key priorities for IORP future plans is to some of the major resource required to continue RAMA and other observing networks, provide more support for long time succession planning, assist with finding funding from additional countries and highlighting the importance of IndoOOS, assist with an understanding of policymaker's priorities, etc. In addition, she urged the members to submit information on national progress for IndoOOS.

### **3.2. Report from Sustained Indian Ocean Biogeochemistry and Ecosystem Research by Dr. Raleigh Hood**

Dr. Raleigh Hood thanked Dr. Sidney Thurston for his immense support in his service. He mentioned that SIBER is sponsored by IMBER and IOGOOS(IOC). SIBER is a regional programme of IMBER, and the aim is to leverage IndoOOS to make biogeochemical and ecological observations in the Indian Ocean. He gave an update on SIBER SSC Members and leadership. He mentioned the impacts of covid -19 pandemic that SIBER Executive director Dr. Satya Prakash passed away, Dr. Aneesh Lotliker as the new executive director. He showed his gratitude towards INCOIS for their support in the handling of the SIBER website, He briefly summarized about the project MOSIAC: Marine observation System Along Indian Coast, that aims to establish the sustained time series observation using automated moored buoys at six different locations along the Indian coast to monitor and now-cast water quality of the Indian coastal waters and it is funded by India's Ministry of Earth Sciences (MoES). He explained the biogeochemical Argo floats deployed and near future planed. He mentioned that BGC Argo project is funded by India and the data are available to anyone who wants to use them. He gave an update on SIBER/IIOE – 2 Cruises. He mentioned the special issues of EGU on IIOE – 2, and Deep-Sea Research on IIOE – 2. He briefed about the deteriorated funding opportunities that threatens the existence of SIBER and raised a concern. He mentioned that IMBER is also sunsetting in 2025 which implies that SIBER will sunset too, and hence there is an urgent need to figure out how to maintain funding for SIBER beyond 2025. He enquired about the funding opportunities from SCOR to SIBER that can help in taking forward the SIBER activities either through IMBER or IIOE-2.

### **3.3. Report from IndoOOS Resource Forum (IRF Chair) by Dr. Sidney Thurston**

The progress of the IRF was presented in the previous session on IRF and hence it is proposed to take up the same as report to IOGOOS. The summary of proceedings of IRF meeting is detailed below.

Dr. Sidney Thurston welcomed the IndoOOS forum (IRF 15), and he mentioned that he retired from NOAA and joined another company. He thanked everyone for their support and showed his pleasure and gratitude to everyone for their support and cooperation in building up IndoOOS, specially he thanked Dr. Nick and Dr. T. Srinivas Kumar for their support. He introduced Mr. David from NOAA to the committee and run through the agenda he requested all to go through and provide comments if any as there are no comments he invited Dr. Nick to give a brief convenor report

Dr. Nick thanked Dr. Sid for the opportunity and showed his gratitude to work with him, he recalled the minutes, and membership from the last meetings, and briefly summarised the convenor report.

Dr. Sid invited Dr. Mike Mcphaden to give an update on the status of RAMA in Covid -19 pandemic. Dr. Mike mentioned that RAMA is in a very bad situation due to the pandemic situation. He discussed about the activities, and infrastructure required to build the RAMA as a strong foundation. He explained about the four cruises that have been scheduled this year. He mentioned that the US Congress has provided an economic stimulus package of 2.5 million dollars to develop the infrastructure, recapitalize and build up RAMA system after a loss during the pandemic, etc. Most of the fund is being invested in the Indian Ocean to launch seven cruises. An MoU was signed with MoES in August 2021 and renewal of the agreement with PMKG in July 2021 after seventeen years of cooperation. He ended his presentation with a note saying that the position of RAMA is not good, but its trajectory and foundation is solid and 70% of operation will be ended by this year.

Dr. Sid invited Mr. E. Pattabhi Rama Rao to give report on Indian ocean Observation network, Mr. E. Pattabhi Rama Rao briefly explained regarding the Ocean Observation Network, as part of IOGOOS from India. Dr. Rao presented the status and future glance of Ocean Observing Network implemented by India. INCOIS introduced a wide variety of observing systems like Argo Floats, Drifting buoys, Automatic weather stations, wave rider buoys, wave drifters, tide gauges, tsunami buoys, XBT/XCTD surveys, coastal water quality moorings, Ocean gliders, Coastal ADCP, equatorial current meter mooring, flux moorings. In addition to this, NIOT has OMNI buoy network, Tsunami buoys, HF radars. He also explained about the Joint data portal of MoES – NOAA OMNI RAMA and he proudly announced that they have several thousands of feeds. Dr. Sid appreciated the work of Mr. E. Pattabhi Rama Rao and Mr. E. Pattabhi Rama Rao thanked Dr. Sid for his service and cooperation.

The Chair requested Dr. Srinivasa Kumar to run through the election of the new chair of IRF. Dr. T. Srinivasa Kumar thanked Dr. Sidney Thurston for his excellent service and support as Chair, IRF and runs through the process of electing new chair for IOGOOS. Dr. Sidney and Dr. Nick provided details on IRF chair Roles and responsibilities, etc. Dr. Srinivasa Kumar mentioned that the full process of the selection will be run through IOGOOS however we need to have an interim chair, wherein everyone anonymously agreed for Dr. Nick D’Adamo to chair for the next two months/until the next chair is elected.

#### **3.4. Report on the status and progress of IIOE-2 (JPO office/s) by Dr. Aneesh Lotliker**

Dr. Aneesh Lotliker briefly explained the progress of IIOE-2 projects, and he recalls about the Scientific committee meetings held on Feb 6<sup>th</sup>. He discussed the IIOE2 progress and status of national committee reports, upwelling research initiatives and other major national activities, IIOE2 working group reports, Science theme reports, early-career scientists’ network, and IIOE2 implementation strategies. He provided details of the activities being taken by the IIOE2 project office in India and its progress. He discussed the recommendations and actions. He mentioned few options for the IIOE2 International Steering Committee No.7 host location.

#### **3.5. Reports from the Pilot Projects on Modelling for Ocean Forecasting and Process Studies Project by Mr. Nagaraja Kumar**

Mr. Nagaraja Kumar made a detailed report on the status of the projects and the activities being carried out under them. Briefly provided about the activities of the Ocean Forecasting Services being provided by IOGOOS through its Modelling and Ocean Forecasting and Process Studies (MOFPS). He mentioned a training cum brainstorming session on “Modelling for Ocean Forecasting and process studies (MOFPS) was held during December 6-10, 2021 and detailed the MOFPS survey results. He mentioned the recommendations of the brainstorming sessions to the members viz. (i) IOGOOS should design and circulate a detailed survey form to collect the requirements of the member institutes / other countries in the region (ii) The MOFPS project should be continued with the active stakeholders and newly interested stakeholders from the region (iii) should communicate to all IOGOOS members and regional bodies such as IORA, RIMES, etc and seek their interest in the MOFPS project as well as a detailed survey. He also described the technical support of BOM and INCOIS and the user requirements in terms of parameters to model, product/ service requirement, and capacity building, etc. The brainstorming session also suggested to explore the cloud computing and data services to host the forecasting services, and requested to establish an online community forum to put ideas to collaborate. He explained regarding the Ocean forecasting survey and the questionnaire related to the survey.

\*Tamaran Morris of the South African weather service described the Ocean Observing Co-Design project by GOOS. She also explained the GOOS, GOOS Co-Design Examples, Boundary currents, and Core Coordination and function. She describes the Argo training Workshop and she also answered the queries of the members.

### **3.6. Report from Indian Ocean Core Remote Sensing Project by Dr. Aneesh Lotliker**

Dr. Aneesh A Lotliker briefly explained about the Indian Ocean Core Remote Sensing Project and the website through which the products are being disseminated to the IOGOOS Member institutes and mentioned that the member states can request, if they would like to have any specific Ocean RS products.

## **4. IOGOOS Annual Meeting**

### **4.1. Welcome by Chair, IOGOOS**

Dr. T. Srinivasa Kumar, Chair, IOGOOS welcomed all the members and experts to the IOGOOS 18<sup>th</sup> general body meeting and requested to make the secretariat report.

### **4.2. Presentation of Secretariat Report and Accounts and Financial Summary of IOGOOS by Secretariat by Mr. Nagaraja Kumar**

Mr. M. Nagaraja Kumar, Co-Secretary, IOGOOS provided the details of the activities being taken up by the Secretariat since the last annual meeting. The ATR report was circulated to all the members. Mr. M. Nagaraja Kumar briefly summarized the action items on IOGOOS 17 annual meeting and post-annual activities, He mentioned that there is no funding from IOC. He mentioned regarding IOGOOS budget allocation and IOGOOS training programs conducted, followed by other meetings and activities. He explained the Ocean Modelling activities and discussed regarding Ocean prediction DCC kick-off meeting and the discussion on activating regional teams. He discussed regarding IOGOOS trainings like Ocean observation to societal applications, Ocean colour remote sensing-Data processing and analysis, Fundamentals of Remote sensing, and its Oceanographic Applications. Oceans Institute of University of Western Australia showed interest to join IOGOOS in the 17<sup>th</sup> annual meeting and now the formal approval mechanisms were taken and submitted the request to the IOGOOS secretariat, and it has to be endorsed at this meeting.

The Financial statement of the bank accounts being operated is tabled to the annual body, the annual statement for the period April 2021 - January 25, 2023, was circulated to all members for their verification and comments. Hence, the chair requested all to go through and provide comments, if any. It was also mentioned that the audited statements will be submitted after March 31, 2023, by the authorized auditors of the host institute. As there are no comments received from the members, the financial statements were treated as adopted.

### **4.3. Confirmation of new memberships if any and proposal by IOGOOS Chair.**

Oceans Institute of University of Western Australia submitted a formal request and signed copy of MoU to the Secretariat. The forum endorsed the membership of University of Western Australia. The chair welcomed the Oceans Institute of University of Western Australia as a member of IOGOOS. Dr. Nick D'Adamo has been nominated as the focal point of the member institute.

### **4.4. Elections of Chair IOGOOS, Officers if any**

As the present tenure of the Officers are until 2024, there are no elections scheduled.

#### **4.5. Discussions on the IRF Secretariat and IRF Convenor**

Chair has mentioned that IOGOOS will work with the convenor to roll up the process and mentioned that Dr. Nick is acting as a convenor and Interim Chair and Dr. Aneesh A Lotliker is supporting him.

#### **4.6. Next meeting date, venue, and hosting - to be considered with joint input from IOGOOS, IORP, SIBER, IRF and IIOE-2 Co-Chairs**

The next annual meeting venue and dates will be decided in conjunction with all leads of IORP, SIBER, IRF, IIOE-2. Mr. Nagaraja mentioned that the University of Western Australia has offered to host these integrated meetings and IOGOOS would like to place on record its acknowledgement for the support extended by Ocean Institutes for hosting these meetings. It was also mentioned that there was an invitation by Dr. Ocky Karna Rajdasa from BRIN to host the next meetings in Lombok, Indonesia. The IOGOOS Secretariat was suggested to finalize the venue in coordination with the leads.

#### **4.7. Any other final items (Discussions on taking up of new project of interest to the region etc.)**

As there are no specific requests for taking up of the new projects, the agenda point is treated as completed.

### **5. Concluding session- Ocean Decade Activities of relevance to IOGOOS Stakeholders**

#### **5.1. Status of Ocean Decade Implementation & Perspective for 2023/2024 – Dr. Alison Clausen**

Dr. Alison Clausen Provided the details about the Decade actions Framework and she briefly summarized the Ocean Decade Challenges, Decade objectives, Decade Actions, Endorsed Ocean Decade Actions, Regional And National Coordination and engagement, and Outreach. she also discussed the Programmes and Projects, Decentralised Coordination Structures and Decade coordination offices, Decade Collaboratives Centres, Decade Implementing Partners, National decade Committees, Discussions advancing on Arctic, Southern Ocean, African, Caribbean, and South Pacific DCCs, DCOs. She also described upcoming major events of Semester 1, 2023 such as Our Ocean Conference, UN Water Conference, foundations Dialogue, and IOC Assembly. She gave an update on the 2<sup>nd</sup> International Ocean decade Conference, which is going to be held on April 8-12, 2024 in Barcelona, Spain. She summarizes the Decade Actions Categories & Endorsement Process and types of Decade Actions such as Decade programme, Decade project, and Decade contribution. She discussed regarding Decision Making Processes for the Endorsement of Decade Actions i) Programmes – IOC executive secretary makes decisions based on advice from Decade Advisory Board ii) Projects – IOC Executive Secretary makes a decision based on advice from programmes and technical advice from DCU iii) Contributions – IOC Executive Secretary makes decision based on technical advice from DCU. She clarified all the questions from the members.

#### **5.2. Decade Collaborative Centre for Indian Ocean region by Dr. Nimit Kumar**

Dr. Nimit Kumar gave a brief introduction to Indian Ocean Region, expanding the Decentralised Coordination Structures and DCOs, DCCs, International & Regional Organisations, and Networks and he explains how it runs. He explained regarding DCC-IOR structure and ocean Decade Aspiration, Decade Objectives i) Identify required knowledge for sustainable development ii) Generate Comprehensive Knowledge and understanding of the ocean iii) Increase the use of Ocean Knowledge. He explained Decade Actions on programmes, projects, activities, and contributions.



he briefly explains Decade challenges i) understand and beat marine pollution ii) protect and restore ecosystems and biodiversity iii) Sustainably feed the global population iv) develop a sustainable and equitable ocean economy v) Unlock ocean based solutions to climate change vi) Increase community resilience to ocean hazards vii) Expand the global Ocean Observing system viii) Create a digital representation of the Ocean ix) Skills, Knowledge, and, technology for all x) Change humanity's relationship with the Ocean and expand the Decade outcomes – 'The Ocean we want'. He mentioned knowledge and solutions challenges, Essential infrastructure challenges, and Foundation challenges and he briefly explained regarding Challenged distribution for Indian Ocean Projects and programmes, Orphan projects, and contributions. He mentioned DCC Ocean Decade Clockwork. He explained the DCC – IOR status and the way ahead. The members discussed the topics mentioned by Dr. Nimit Kumar, he gave clarifications on that.

### **5.3. Discussion on IOGOOS contributions to UN Ocean decade**

Chair gave a brief summary on IOGOOS contribution to the UN Ocean decade and its future plans to continue engagement in Ocean Decade activities.

The meeting ended with chair thanking all the participants/members for their active participation.

**18<sup>th</sup> Annual Meeting of  
Indian Ocean Global Ocean Observing System  
(IOGOOS) Provisional Agenda**

**February 09, 2023 in between 1100- 1700 Hrs (Perth Time – GMT+8)**

**Virtual Meeting Link: <https://msteams.link/PC6M>**

Time	Agenda Item
11:00 - 11:30 Hrs	<ol style="list-style-type: none"> <li>1. Opening Session (5 mins each) <ul style="list-style-type: none"> <li>➤ Welcome Address by Dr T. Srinivasa Kumar, Chair IOGOOS</li> <li>➤ Opening Remarks by Dr. Brett Molony, IOGOOS Officer</li> <li>➤ Opening Remarks by Dr. Faiza Yamani, IOGOOS Officer</li> <li>➤ Opening Remarks by Dr. Jenny Huggett, IOGOOS Officer</li> <li>➤ Opening Remarks by Dr. Juliet Hermes, IOGOOS Officer</li> </ul> </li> <li>2. Organization of the Meeting (including confirmation of agenda and additional agenda items) by Dr T. Srinivasa Kumar, Chair IOGOOS</li> </ol>
11:30 – 12:30 Hrs	<ol style="list-style-type: none"> <li>3. Reports from Panels [IOGOOS, IRF, SIBER, IORP, IIOE-2] – (15 mins each + 5min discussions / Q &amp;A) – <b>Chair: Dr. Brett Molony, IOGOOS officer</b> <ol style="list-style-type: none"> <li>3.1. Report from the Indian Ocean Region Panel – Dr. Juliet Hermes</li> <li>3.2. Report from Sustained Indian Ocean Biogeochemistry and Ecosystem Research – Dr. Greg Cowie / Dr. Raleigh Hood</li> <li>3.3. Report from IndOOS Resource Forum (IRF Chair) – Dr. Sidney Thurston</li> </ol> </li> </ol>
12:30 – 13:30 Hrs	Lunch Break
13:30 – 14:10 Hrs	<p>Reports from Panels [IOGOOS, IRF, SIBER, IORP, IIOE-2] – (15 mins each + 5min discussions / Q &amp;A) – <b>Chair: Dr. T. Srinivasa Kumar, Chair, IOGOOS</b></p> <ol style="list-style-type: none"> <li>3.4. Report on the status and progress of IIOE-2 (JPO office/s) – Dr. Aneesh Lotliker / Mr. Kiran Kumar</li> <li>3.5. Reports from the Pilot Projects – M. Nagaraja Kumar <ul style="list-style-type: none"> <li>• Modelling for Ocean Forecasting and Process Studies Project (Project Leader) – Discussions on the full Survey of regional needs</li> <li>• IOGOOS Pilot Project: Indian Ocean Core Remote Sensing Project IOGOOS</li> </ul> </li> </ol>
14:10 – 15:00 Hrs	<ol style="list-style-type: none"> <li>4. IOGOOS Annual Meeting. (Chair, Dr T. Srinivasa Kumar, Chair IOGOOS) <ol style="list-style-type: none"> <li>4.1. Welcome by Chair, IOGOOS</li> <li>4.2. Presentation of Secretariat Report and Accounts and Financial Summary of IOGOOS by Secretariat– Mr. Nagaraja Kumar</li> <li>4.3. Confirmation of new memberships, if any</li> <li>4.4. Elections of Chair IOGOOS, Officers if any</li> <li>4.5. Discussions on IRF Secretariat and IRF Convenor</li> <li>4.6. Next meeting date, venue, and hosting - to be considered with joint input from IOGOOS, IORP, SIBER, IRF and IIOE-2 Co-Chairs</li> <li>4.7. Any other final items (Discussions on taking up of new projects of Interest to the region, etc.)</li> </ol> </li> </ol>
15:00 – 15:45 Hrs	Comfort Break
15:45 – 17:00 Hrs	<ol style="list-style-type: none"> <li>5. Concluding Session – Ocean Decade Activities of relevance to IOGOOS Stakeholders <ol style="list-style-type: none"> <li>5.1. Status of Ocean Decade Implementation &amp; Perspectives for 2023 / 2024 – Dr. Alison Clausen</li> <li>5.2. Decade Collaborative Centre for Indian Ocean Region by Dr. Nimit Kumar</li> <li>5.3. Discussions on IOGOOS contributions to UN Ocean decade</li> </ol> </li> </ol>