



BOBP

BREEZE

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Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) is a Regional Fisheries Advisory Body (RFAB) for promoting sustainable fisheries in the Bay of Bengal and associated regions. Its current members are Bangladesh, India, the Maldives, and Sri Lanka. It serves as the think tank on transboundary and contemporary national issues of the member countries concerning fisheries management.

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Reimagining the Role of Regional Fisheries Bodies in the Emerging Global Scenario – Perspectives of BOBP-IGO

The time is right to consider the transformation of RFBs to effectively address the emerging global challenges facing our member-countries and the rest of the world at large.

At the core of their hearts, Regional Fishery Bodies (RFBs) are an instrument for the conservation of the shared (transboundary, straddling and highly migratory) fish stocks. The RFBs balance their roles – within the organization they strive to prevent a race to fish among their members, while on the other hand, ensure that the regional effort matches the rest of the world's expectations on the conservation of shared stocks. This external environment usually shapes up public and scholastic opinion about the performance of an RFB. However, in managing the internal environment, the slow process of changing the zero-sum games to positive-sum games is usually much less talked about.

There are two main types of RFBs: Regional Fisheries Advisory Bodies (RFABs) and Regional Fisheries Management Organizations (RFMOs). As the name suggests, RFMOs can make binding decisions for their member-countries, while RFABs usually engage in diverse, non-binding advisory activities to prepare their member-countries' conservation activities, as depicted in the following word cloud of keywords from their mandates.



These differences in role and relationships (a country may be more comfortable discussing its issues in an RFAB setting, than in an RFMO setting; on the other hand, a country may see more benefits from RFMO which drive close-ended decisions rather than open-ended advisories as in the cases of the RFABs) can serve as a natural lab for discerning the best course of action for propagating regional cooperation in the future.

As we are rapidly getting close to the planetary boundaries while global inequality has remained threateningly sticky, human society

will face a tough choice between competition and cooperation in the coming years. Differently stated, the option will be between aiming for short-term and long-term gain. However, more often than not, making such a choice is difficult, if not impossible. To start with, we have to decide how many years would qualify as long term and how many years as short term, though the choice will differ depending upon the situation and options. Can national aspirations be withheld for greater good? Many such difficult questions have to be answered as we weigh our options.

It is high time that we explore the implications of the relationship between RFBs and their members and whether RFBs should continue to remain a measure only for conservation. It is quite evident that relying solely on their traditional roles is insufficient in the face of the rapidly evolving and multifaceted challenges confronting global fisheries. The escalating impacts of overfishing, climate change, pollution, and habitat destruction demand a more proactive and dynamic approach to fisheries management.

‘Pivoting’, a term popular in the corporate world, refers to the fundamental change in an organization’s strategy, business model, or operations to adapt to new conditions, technologies, or challenges. For RFBs, pivoting implies rethinking and restructuring their roles, methods, and operations to address contemporary challenges in fisheries management more effectively.

At BOBP-IGO, we are constantly asking the question as to how we can generate more value for our member-countries. For example, over the years, BOBP-IGO has played an important role in capacity building, focussing on bridging the current gaps in performance. While that is necessary, we are increasingly working with the countries to achieve the future we want.

We visualize transformation of our capacity-building activities gradually to ‘capability nurturing’ and ‘incubation activities’, where countries frame the bigger picture and strive towards it. A baby step towards this direction was to create thematic knowledge networks and nurture them to develop focussed knowledge products. Establishment of BOBSAN, the regional network for stock assessment practitioners, provided an opportunity to appreciate the variations in practices and opportunities for cross-learning. The network has

identified for itself a set of focussed tasks through virtual interaction and collaboration with the support of BOBP-IGO. In addition, BOBP-IGO has created a funding platform to operationalize the research network among the marine science researchers in the region through its BIMReN initiative – BIMSTEC-India Marine Research Network. The IGO is actively engaging at different levels of the fisheries production system with the full agreement of the national member governments to locate potential areas and nurture them. BOBP-IGO is leveraging these platforms and the regional projects to keep the conversation going in track 1.5 and track 2 avenues of dialogue.

Sculpting a regional goal while being fully considerate of national goals will be increasingly important in the days to come. The BOBP-IGO is already working towards it, but there is no roadmap or example to follow. It’s a journey of trials and errors; and of small and big triumphs.

To sum up, the future of RFBs depends on how well they become integrated into national strategies. This will, of course, depend on how successful we are in communicating the need for cooperation and the shared nature of our systems.

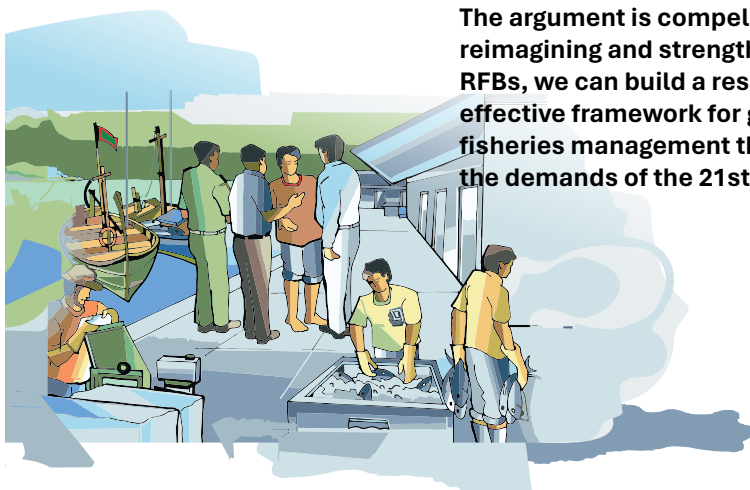
The RFBs of the future need not be platforms only for negotiation and haggling but also for knitting a common future and talking freely about national needs and asking support without the sense of being judged, lacking, or lagging.

The time is right to consider the transformation of RFBs to effectively address the emerging global challenges facing our member-countries and the rest of the world at large. The evidence underscores the fact that the traditional roles of RFBs—centred around data collection, limit setting, and enforcement—are no longer sufficient in the face of complex and interconnected global challenges.

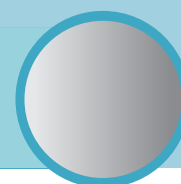
RFBs possess a wealth of historical experience, established relationships, and operational frameworks that can be optimized to meet contemporary demands. Integrating advanced technologies, developing adaptive management plans, and including a broader range of stakeholders are necessary for RFBs in this changing scenario. Addressing the socio-economic dimensions of fisheries management and the need for equitable participation of developing countries should be prioritized. Providing technical assistance, capacity building, and financial mechanisms ensures all member countries benefit from sustainable practices.

The transformation of RFBs into agile, adaptive, and inclusive organizations is not just an option but a necessity. This evolution is essential for maintaining the sustainability of marine resources, protecting biodiversity, and ensuring the livelihoods of millions who rely on healthy ocean ecosystems.

The argument is compelling: by reimagining and strengthening RFBs, we can build a resilient and effective framework for global fisheries management that meets the demands of the 21st century.



Salient Programmes/Events



The year 2023 concluded with the formal launch of Phase II of the Bay of Bengal Large Marine Ecosystem (BOBLME) project, funded by GEF and NORAD. Accelerating the project execution, the year 2024 started with key regional and national workshops in Sri Lanka, Bangladesh, and India. The Governing Council of BOBP-IGO during its meeting in Negombo reviewed BOBP-IGO's progress and endorsed the work-plan. Other key events included the India National Consultation on NPOA-Sharks in Kochi, the launch of BIMSTEC-India Marine Research Network (BIMReN) in Kolkata, and the FAO Regional Workshop in Kochi that aimed to develop a transparent stock assessment framework. These efforts underscore BOBP-IGO's commitment to sustainable fisheries management and regional cooperation in the Bay of Bengal.

BOBLME Sri Lanka National Consultative Workshop

BOBP-IGO and the National Aquatic Resources Research and Development Agency (NARA), Sri Lanka organised a National Workshop on Ecosystem Approach to Fisheries Management (EAFM) under the Bay of Bengal Large Marine Ecosystem (BOBLME) Project in Sri Lanka during January 16-17, 2024. The Phase II of BOBLME project is funded by the Global

Environment Facility (GEF) and the Norwegian Agency for Development Cooperation (NORAD).

The Workshop focused on implementing the EAFM in Sri Lanka under the Sustainable Fisheries Management Component of the BOBLME- Phase II Project. Key outcomes of the meetings include reviewing past and ongoing fisheries management activities in Sri Lanka

and drawing lessons from them, and identification of candidate fisheries management units (FMUs) for implementing EAFM.

Thirty-six participants across different stakeholder groups in the fisheries and environment domains from government agencies, researchers, academics, NGOs and fisherfolk participated in the meeting. Speaking on the occasion,



Glimpses from BOBLME National Workshop for Sri Lanka and Group picture with participants



Dr. P. Krishnan emphasized the need for collaboration and delineated the work plan BOBP-IGO is pursuing to achieve the objectives of the BOBP-IGO. This event marked a significant step in advancing sustainable fisheries management in the region, bolstering Sri Lanka's marine conservation efforts.



Sub-Regional Planning Meeting on Implementation of BOBLME Project

The event was organized on 18 January 2024 in Negombo, Sri Lanka to present an overview of the Bay of Bengal Large Marine Ecosystem Phase II (BOBLME II) project to the member countries of BOBP-IGO and to discuss the arrangements for the execution of the project. Representatives from Bangladesh, India, Maldives, and Sri Lanka participated in the meeting along with representatives from inter-governmental and non-governmental organizations. Ms. K.N. Kumari Somaratne, Secretary, Ministry of Fisheries & Aquatic Resources, Government of Sri Lanka inaugurated the meeting and highlighted the importance of the BOBLME project and the need for collaborative work. Ms. Angela Lentisco, Fishery and Aquaculture Officer, FAO Regional Office for Asia and the Pacific elaborated on the development of the project, past works and expectations from the current project.

Dr. P. Krishnan, Director, BOBP-IGO presented the workplan of BOBP-IGO with respect to the project components on sustainable fisheries management, pollution control and regional collaboration. He highlighted that the active involvement of the



Government and other stakeholders in the project is necessary for its timely implementation. Ms. Maeve Nightingale, IUCN, presented IUCN's work-plan on the project components on marine managed areas, livelihoods and regional coordination.

Dr. E. Vivekanandan, International Consultant, BOBLME highlighted the alignment of the project with SDGs. "BOBLME region is likely to face a cumulative loss of USD 240 billion in the next 25 years without proper

management of the fishery resources and the BOBLME project can help arrest that", he said. Representatives from Bangladesh, India, Maldives and Sri Lanka presented the priorities of their respective countries and alignment of ongoing national programs and initiatives with the project.

The BOBLME II Project is funded by GEF under the International Waters Portfolio and NORAD. FAO is the implementing agency for the project.



Participants of the Sub-Regional Planning Meeting of the BOBLME Project

BOBLME Bangladesh National Consultative Workshop

The National Consultative Workshop for the Bay of Bengal Large Marine Ecosystem Phase II (BOBLME II) Project for Bangladesh was jointly organised by the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) and the International Union for Conservation of Nature (IUCN) in cooperation with the Ministry of Fisheries and Livestock, Government of the People's Republic of Bangladesh during 27 – 29 February 2024 in Dhaka.

About 60 participants representing Senior Government Officials across Ministries/Departments and various stakeholders including representatives from fisherfolk organizations, academia, NGOs, regional and international organizations participated in the Workshop. Mr. Md Selim Uddin, Secretary, Ministry of Fisheries and Livestock; Dr. Farhina Ahmed, Secretary, Ministry of Environment, Forest and Climate Change; Mr. A.T.M. Mostafa Kamal, Additional

Secretary, Ministry of Fisheries and Livestock & current Chair, Governing Council of BOBP-IGO were among the distinguished guests during the inauguration.

The participants spoke on the synergy between the BOBLME project and national sustainable development objectives. The Secretary of Fisheries and Secretary, Environment, Forest and Climate Change emphasised the strong commitment of the Government towards achieving the sustainable development goals and assured all support to the project towards its successful implementation in Bangladesh.

On behalf of the project team, Dr. P. Krishnan, Director, BOBP-IGO, and Ms. Maeve Nightingale, Senior Programme Officer, IUCN Asia Regional Office, explained the work plan of the project and larger





Glimpses from the BOBLME National Workshop for Bangladesh

objectives. The key outputs from the project include the identification of candidate units for implementing EAFM and marine managed areas (MMAs), issues regarding IUU fishing, marine pollution, and scope for regional cooperation.

Speaking at the concluding session, Mr. Syed Md. Alamgir, Director General of the Department of Fisheries, recounted the journey and said that it was an enriching process with active participation from all the stakeholders. He expressed hope that the Project had a good start and was now set to contribute to the sustainable development of the Bay of Bengal region.

BOBLME India National Consultative Workshop

A 3-day National Consultative Workshop on implementation of the Bay of Bengal Large Marine Ecosystem Project Phase II (BOBLME II) in India was held from 21 – 23 March 2024 in Chennai. Jointly organised by the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) and the International Union for Conservation of Nature (IUCN), the broad objectives of the Workshop were to (i) share information on the BOBLME II Project; (ii) identify two Ecosystem Approach to Fisheries Management (EAFM) and Marine Managed Area (MMA) sites and scoping the sites to develop plans for implementation, while considering national integrated coastal management / Marine Spatial Planning interests/policies; (iii) initiate planning for reducing IUU fishing and management of coastal & marine pollution; (iv) initiate planning for enhanced livelihoods and resilience of the BOBLME region; and (v) establish partnerships with and amongst stakeholders for future collaboration.

There were 85 participants representing government agencies, academia, NGOs, community organizations and regional and international organizations. Inaugurating the workshop, Ms. Neetu Kumari Prasad, IAS, Joint Secretary, Department of Fisheries complimented the organizers for the initiative towards bringing together all stakeholders and emphasised the necessity for a bottom-up approach that empowers local governance structures, women and youth for effective implementation. She reaffirmed the support of the Ministry of Fisheries to the BOBLME Project.





Participants of the BOBLME National Workshop for India

The scoping exercise for the EAFM plan development and implementation identified issues common to all the selected Fishery Management Units (FMUs) – overfishing, pollution, habitat and biodiversity loss, climate change impact, ineffective resource and habitat management, reduced incomes and weak infrastructure. A similar exercise by participants selecting sites for MMA suggested interventions under four categories – capacity development, evidence-based interventions, sustainable livelihoods and intersectoral cooperation.

Discussions on the management of coastal and marine pollution in fishing harbours identified commonalities between the BOBLME Project in this regard with the National Action Plan on Marine Pollution from Sea-based sources of the Department of Fisheries, Government of India. The key recommendations included recycling discarded fishing gear and plastics as construction materials, incentivizing plastic collection, conducting gear loss assessments and promoting gear marking through cable tags.

On the issue of reducing catch from IUU fishing, after presentations on India's national policies to combat IUU fishing, participants from various coastal states and Union

Territories shared their experiences on dealing with the problem, suggesting measures for strengthening India's draft National Plan of Action for IUU fishing from a participatory perspective, integrating research into IUU policy and practice and the roles the central and state governments can play in capacity building.

The workshop identified synergy between the project activities and ongoing governmental initiatives such as the National Coastal Mission, Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI), National Action Plan on Control of Sea-based Marine Plastic Litter, Swachh Bharat and India's vision for the development of its Blue Economy, underscoring the importance of bringing coastal communities and relevant stakeholders together to implement policies and programmes.

Delivering the concluding remarks, Dr. P. Krishnan, Director, BOBP-IGO thanked the Government of India and the participants for their cooperation in identifying various critical issues on fisheries and environment that will guide the project activities.

Charting a Sustainable Future: The XII Governing Council of BOBP-IGO Convened in Negombo, Sri Lanka

The XII Governing Council Meeting (GCM-XII) of the BOBP-IGO was held in the scenic coastal city of Negombo, Sri Lanka during 19 - 20 January 2024. The country representatives from Bangladesh, India, Maldives and Sri Lanka participated in the meeting along with observers from FAO, IUCN and SEAFDEC. The Governing Council is the highest decision-making body of the BOBP-IGO responsible for reviewing BOBP-IGO's past performance and administrative affairs and approving the work plan.

Bangladesh, the Vice Chair of GCM-XI, was elected unanimously as the Chair for GCM-XII, taking



the baton from the Maldives. India was elected as the Vice Chair for GCM XII. Dr. P. Krishnan, Director BOBP-IGO thanked the Chairs of GCM-XI Mr. Adam Ziyad & Mr. Ahmed Shifaz for successfully



charting the Organisation's course and welcomed the new Chair, Mr A.T.M Mostafa Kamal, Additional Secretary, Ministry of Fisheries and Livestock, Bangladesh and Vice Chair, Dr Sanjay Pandey, Assistant

Commissioner, Department of Fisheries, India.

The GCM-XII appreciated the progress made by the Organisation in the reporting period (April 2022 to Dec 2023), especially the success of the Organisation in raising funds to carry out various regional activities on important issues such as stock assessment, safety at sea, climate change and advancing regional cooperation in R&D. The Council especially appreciated new initiatives of BOBP-IGO viz., BOBSAFE- the FAO/BOBP Regional Plan of action to improve safety at sea; BIMReN - the BIMSTEC India Marine Research Network to promote collaborative research on marine fisheries amongst BIMSTEC countries and Maldives; and the BOBSAN - a professional network



Participants of the XII Governing Council Meeting of BOBP-IGO

of stock assessment experts in the region.

The GCM-XII welcomed the BOBLME II Project being executed by the BOBP-IGO in its member countries and called for close

cooperation between the project execution partners viz., IUCN and SEAFDEC. The GCM-XII also highlighted the need to address IUU fishing in the region and develop institutional arrangements for better management of the BOBLME.

BOBP Governing Council Members and Observers visit Dikkowita Fishing Harbour and Fisheries VMS Centre in Sri Lanka

On January 20, 2024, the delegates of the Governing Council Meeting of BOBP-IGO visited Dikkowita Fishing Harbour, one of South Asia's largest fishing harbours. They learnt about fishing practices and management measures taken by the Government of Sri Lanka and held discussions with local fishers and officials.

The delegation subsequently visited the Fisheries Vessel Monitoring Centre (VMC) of the Sri Lankan Fisheries Department, where more than 4000 multi-day fishing vessels (MFV) equipped with vessel monitoring system (VMS) transponders are being monitored to ensure that sustainable fishing practices are followed. Members discussed the benefits and constraints faced by the DFAR while implementing the VMS in Sri Lanka. The delegation recognised that the facility was one of its kind in the region and the experience of the Sri Lankan Government in VMS implementation will be of great significance for the BOBP member countries.



National Consultation on NPOA-Sharks for India

The National Stakeholder Consultation for finalising the National Plan of Action for the Conservation and Management of Sharks for India (NPOA-Sharks; India) was held on 19th February 2024 in Kochi, India. The event, organised by the BOBP-IGO, in collaboration with National Fisheries Development Board (NFDB), under the aegis of Department of Fisheries (DoF), Government of India, marked the culmination of an extensive process of plan development initiated in 2008 aimed at conserving and managing shark fisheries in India. The NPOA focused on the legal, administrative, research and cooperation measures to sustain shark populations that are crucial to the livelihoods of over 200,000 people.

The consultation brought together 44 key stakeholders, including government officials from the Department of Fisheries at both national and state levels, representatives from coastal states and Union Territories, scientists from national institutes and experts from non-governmental and regional organizations. The stakeholder consultation for the NPOA-Sharks, India is a reflection of India's commitment to sustaining marine biodiversity and its obligations under several international frameworks.

Dr. Krishnan, Director, BOBP-IGO welcomed the guests and also presented an overview of the various activities and consultations that led to the final draft of the NPOA-Sharks. Ms. Neetu Kumari Prasad, IAS, Joint Secretary, Department of Fisheries, highlighted salient features essential to the success of the NPOA-Sharks: ease of implementation and enforcement; mechanism for data collection and analysis; awareness and capacity building, and institution of progress indicators and monitoring. Dr. A. Gopalakrishnan, Director, ICAR-Central Marine Fisheries Research Institute, Kochi,

highlighted the major contributions of the institute which formed the base for the development of NPOA-Sharks for India.

Presentations from experts highlighted the current status of shark fisheries, both globally and in India, emphasizing the need for investment in policy across all the levels



Glimpses from the NPOA Meeting of BOBP-IGO



of the extensive value chain of shark fisheries, the integration of research with monitoring and enforcement for conservation and management of sharks, and the importance of customizing management plans to the right contexts.

A major outcome of the consultative workshop was the finalization of the NPOA-Sharks India, achieved through discussions held across four thematic areas viz., Research and Development, Socioeconomics and Trade, Monitoring and Reporting, and Capacity Building. The key

recommendations included the improvement of data collection methods through standardised approaches, evaluating the adoption of e-logbooks, increased coordination between state maritime departments, recognition and utilization of traditional ecological knowledge of fishermen, and enhancing capacity building among Forest Department officials for species identification. Co-management was recognised as an essential tool towards sustainable management of shark fisheries.

BIMSTEC-India Marine Research Network (BIMReN) Launched

The Programme Launch Workshop for the BIMSTEC-India Marine Research Network (BIMReN) was held on February 23, 2024, in Kolkata, India on the sidelines of the 13th Indian Fisheries & Aquaculture Forum (13 IFAF). The event marked a significant step towards regional cooperation for achieving Sustainable Development Goals (SDGs).

Dr. C.N Ravishankar, Director, ICAR-CIFE welcomed the gathering and explained the importance of regional cooperation in the field of marine science and also recalled the genesis of BIMReN.

Dr. P. Krishnan, Director, BOBP-IGO, Chennai, provided an overview of the components of BIMReN Split-site PhD fellowship and Twinning Research project.

Amb. C.S.R. Ram, Joint Secretary (BIMSTEC & SAARC), Ministry of External Affairs (MEA), GoI spoke about the various initiatives of MEA in promoting cooperation among the BIMSTEC countries and said that BIMReN would be a major tool in promoting regional cooperation in the field of blue economy and marine sciences. The Memorandum of Understanding (MoU) between the Ministry of External Affairs-India (MEA) and BOBP-IGO was signed during the occasion.

Dr. J.K. Jena, DDG (Fisheries), ICAR highlighted India's prowess in the field and explained how BIMReN offers possibilities for networking and collaborating with researchers within and outside India in the field of Marine Science. He complimented BOBP-IGO for conceiving this initiative and operationalizing the same in a very short time. He also assured all support from ICAR fisheries institutes in this endeavour.

Senior researchers, academicians and heads of institutions participated in the launch workshop. The delegates welcomed and complimented BOBP-IGO and MEA for the initiative.



Decorative Art on Fish - a Women's Day Event

BOBP-IGO celebrated International Women's Day with an art event focused on "Decorative Art on Fish." Women artists and students from different academic institutions participated in the live sketching event and developed creative artworks. The event provided a platform for highlighting the talents and contributions of women in the art community and display their creativity. The participants were treated to a melodious flute recital by Master Suraj Shankar. Fr. Anand Amaladass, who graced the occasion as chief guest distributed the certificates to the participants.



The enthusiasts sketching their art work on the identified theme



FAO Regional Workshop to Review SOFIA Analysis for Area 51

BOBP-IGO organised the FAO Regional Workshop to review the SOFIA analysis for Area 51 at Kochi during 15-19 April 2024. About 50 participants representing 20 Western Indian Ocean Rim countries participated. The Workshop aimed at building a transparent stock assessment framework for estimation of stock status.

Ms. Neetu Kumari Prasad, IAS, Joint Secretary, Department of Fisheries, Government of India delivered the inaugural address. She congratulated FAO and BOBP for this initiative and highlighted the significant strides made by GoI towards informed fisheries resource

management. Dr. Rishi Sharma, Senior Fishery Officer, FAO with his team of experts, coordinated the hands-on and interactive technical sessions.

FAO has been publishing the state of fish stocks since 1971 based on a fixed list of stocks in its flagship publication, "The State of World Fisheries and Aquaculture (SOFIA)" Report. The Workshop deliberated on the transformations in the fisheries assessment techniques as well as the national status and processes and collectively revised the 'reference list' such that it corresponds to actual Management or Operational Units, thus enhancing

the linkages between the FAO Index and the assessment and management initiatives at the national and regional level.

The Workshop also provided an opportunity to discuss and appreciate the opportunities for knowledge sharing among the countries and the regional fishery bodies. The participants appreciated that enhanced engagement with national and regional fisheries institutions will ease the process of assembling the data and information used to derive stock status, improve the database used to derive inference, and reinforce the legitimacy of the



process. The participants developed a standardised approach for the classification of stocks into the alternative categories of State of Exploitation.

The participants received a detailed overview on the FAO statistical areas; overview of the FAO's historical approach to stock status reporting; SDG14.4.1 reporting and its linkages with the FAO's SOFIA framework; SRA+ framework; FAO data storage procedures; power of visual communication and practical application of Github for enhanced collaboration. The Workshop showcased how digital tools can facilitate teamwork and data sharing.

During the Workshop, the FAO Questionnaire on Fisheries Management Effectiveness Index (FMEI) was piloted, and the participants contributed to addressing the gaps and strengthen the framework.



Participants of the FAO Workshop on Review of Area 51 Stocks



Strengthening Cooperation

Workshop to Strengthen Linkage between Science and Policy at University of Washington, Seattle

The School of Aquatic and Fishery Sciences (SAFS), University of Washington, Seattle organised a Workshop to discuss strategies for strengthening evidence-based fisheries management during 01-02 March 2024. Eminent scientists from across the world attended this workshop held on the sidelines of the World Fisheries Congress, held during 03 -07 March 2024.



Dr. P. Krishnan participated as an invited resource person in the topic group on status of fisheries and building capacity to assess fisheries status. He presented the key features of Bay of Bengal Stock Assessment Network (BOBSAN), an initiative of BOBP-IGO to network the practitioners of stock assessment from South Asia, to leverage the collective wisdom and experiences of its members to enhance stock assessment methodologies and contribute to coordinated regional fisheries management.

Introducing the “Compendium of Fish Stock Assessment Practices in South Asia”, prepared under the aegis of BOBSAN, Dr. Krishnan, outlined BOBSAN’s roadmap for the future. He mooted the idea of creating a Scientific Advisory Committee (SAC) for BOBSAN by bringing together leading researchers and practitioners from across the world, in order to assist the members in keeping abreast about the global development in stock assessment and effective use of scientific information in policy making. The idea was discussed with eminent scientists on the sidelines of the World Fisheries Congress held in Seattle, USA from 03-07 March 2024, following which eminent scientists volunteered to be part of the SAC and guide the activities of BOBSAN.

Participants of the Workshop with Dr. Ray Hilborn at SAFS, University of Washington



Composition of the SAC of BOBSAN

Dr. Ray Hilborn, Professor, SAFS, University of Washington, Seattle

Dr. Rishi Sharma, Senior Fisheries Resources Officer, FAO, Rome

Dr. Chris Anderson, Professor, SAFS, University of Washington, Seattle

Dr. Michael Melnychuk, Professor, SAFS, University of Washington, Seattle

Dr. Michael De Alessi, Research Scientist, SAFS, University of Washington, Seattle

Dr. Olaf Jensen, Associate Professor, University of Wisconsin, Madison

Dr. Keith Sainsbury, Assoc. Professor, Institute of Marine & Antarctic Studies, University of Tasmania, Australia

Dr. Beth Fulton, Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia

Dr. Ricardo Oscar Amoroso, Consultant, University of Washington, Seattle



Second Regional Dialogue of BOBSAN held at Kochi

A Regional Dialogue on “Strengthening the influence of scientific evidence on fisheries management decisions”, was organised by BOBP and CMFRI, during 14-20 April 2024, under the aegis of Bay of Bengal Stock Assessment Network (BOBSAN). The dialogue was organised on the sidelines of FAO Workshop on Review of Stock Status in Area 51, in which about 50 participants from 22 countries participated.

BOBSAN is a virtual network of national stock assessment practitioners from South Asia, with BOBP-IGO as the nodal point. BOBSAN aims to harness its members’ collective wisdom and experiences to improve stock assessment methodologies and contribute to coordinated regional fisheries management. The objective of the BOBSAN Regional Dialogue is to foster collaboration and enhance the effectiveness of the stock assessment and the decision-making process by addressing shortfalls in technical capacity for sustainable fisheries management. Representatives from the Governments, and expert nominees from Bangladesh, India, Maldives and Sri Lanka participated.

Dr. P. Krishnan, Director gave an overview of the BOBSAN Regional Dialogue and introduced the Scientific Advisory Committee (SAC) comprising fishery experts around the world. Dr. Rishi Sharma, Senior Fishery Officer presented the approach for managing fisheries in a data limited conditions in developing countries. Dr. J. Jayasankar from ICAR-CMFRI delivered the inaugural address on behalf of Director, CMFRI and provided the overview of stock assessment work which is being carried out in ICAR-CMFRI, a leading fisheries institute in the region. Subsequently, there were expert talks from the SAC members.

The Regional Dialogue was preceded by expert talks from the members of SAC of BOBSAN. Prof. Ray Hilborn from University of Washington and advisor of BOBSAN, made a presentation on effective uses of fisheries information in policy making. “Effective implementation of output controls (e.g., TAC) requires a reliable stock assessment and rapid and effective in-season measurement of catch. This is almost impossible with large numbers of fishing vessels in many landing locations. Mixed stock fisheries must be managed as complex systems, regulating fishing effort to achieve the optimal species mix, even if this means some species may be overfished while others are underexploited”, he said.

Dr. Chris Anderson, Professor, SAFS, University of Washington, made a presentation on the Fishery Performance Indicators (FPIs), a set of metrics to evaluate the fisheries health stressed on the need for new types of data analysis to guide science-based policy. Dr. Olaf Jensen, Professor, University of Wisconsin presented several methodological approaches for assessing the climate change impact on stocks and emphasised on the need for incorporating the effects of climate change when analysing the status of the stocks. Dr. Michael Melnychuk, Chief Adviser, Marine



Participants in BOBSAN Second Regional Dialogue



Stewardship Council; Dr. Ricardo Oscar Amoroso, Consultant, University of Washington; Dr. Michael De Alessi, SAFS, University of Washington; Dr. Beth Fulton, CSIRO, Australia; and Dr. Keith Sainsbury, Institute of Marine and Antarctic Studies, University of Tasmania, Australia, were the other expert speakers who shared their perspectives on various aspects of fisheries management.

During the Panel Discussion on “Strengthening influence of scientific evidence on fisheries management decisions”, the participants collectively identified the key impediments and the way forward. Advancements in resource management techniques were prioritised for capacity development needs of practitioners. Inadequate funds for surveys and focus on resource management scored high on issues with respect to the generation of scientific evidence / advice and on their use.

The action points collectively prioritised by the BOBSAN Members to pursue in the ensuing period included documentation of regional success stories including fisheries OECSMs, aligning national stock assessment



Release of BOBSAN's Compendium of Stock Assessment Practices in SA

to FAO's global effort, and undertaking collective regional studies like assessing fisheries management effectiveness index for specific fishery, profiling the fisheries performance index, and tracking the impact of climate change on major commercially shared fish stocks.

A publication from the BOBSAN viz., “Compendium of Stock Assessment Practices in South Asia” was released on the sidelines of the Regional Dialogue.

BOBP-IGO and CUSAT to Facilitate Stronger Regional Research

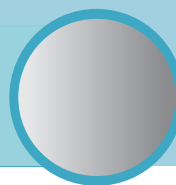
BOBP-IGO and the Cochin University of Science and Technology (CUSAT), Kerala signed an MoU to enhance cooperation in research, policy advocacy, and capacity building by facilitating student/faculty exchange among the academic and research organizations in the BOB region.

The signing ceremony held on 17 April 2024, at Taj Vivanta, Cochin, on the sidelines of the FAO Workshop on Review of Stock Status in Area 51, was witnessed by about 50 participants from 22 Indian Ocean rim countries.

Speaking on the occasion Prof. P.G. Sankaran, Vice Chancellor of CUSAT and Dr. P Krishnan, Director, BOBP-IGO, expressed hope that the partnership will be nurtured in all domains of mutual expertise and interest viz., industrial fisheries, marine sciences, maritime law and policy, social science and humanities.



Meetings/Events Participated



IFISH-6 renews its commitment to promote safety and health safety and working conditions of fish workers



IFISH-6, the Sixth International Fisheries Industry Safety and Health Conference, was organized during 08-12 January 2024, at the FAO Headquarters in Rome, by the Northeast Center for Occupational Health and Safety (NEC) and the National Institute for Occupational Safety and Health (NIOSH). Since its inception in 2000, IFISH has provided a platform for progressing occupational health and safety research and innovations. BOBP-IGO had co-organized IFISH-3 in Mahabalipuram and contributed to bring global attention to the safety issues of small-scale fisheries.

Inaugurating the Conference, Dr. Manuel Barange, ADG, FAO, expressed concern over the number of fatalities in the fisheries sector and called for measures to improve safety at sea. Dr Jennifer Lincoln (NIOSH) recounted the history of IFISH. Dr. Jeremy Turner, formerly with FAO, offered a eulogy in memory of Dr. Y.S. Yadava (1953-2023), former Director of BOBP-IGO (2003-2021) and recalled his passionate advocacy to make safety an integral part of fisheries management.

On the first day of the Conference, Dr. P. Krishnan, Director, BOBP-IGO, delivered a keynote address entitled “Below the Radar: Safety Aspects of Small-Scale Fisheries in South Asia.” The presentation

highlighted the unique challenges faced by small-scale fisheries in Bangladesh, India, Maldives and Sri Lanka. He highlighted that the low capacity of people and institutions, though developing progressively, often led to comprised approaches to safety. He called for wholesome safety measures that address all aspects of the working conditions of fishers including fisheries management, appropriate technology, economic incentives and enabling governance. He envisioned that BOBSAFE, a regional safety plan and the BOBLME II project, a regional fisheries governance project, together would contribute to the improvement of the working conditions of the fishers.



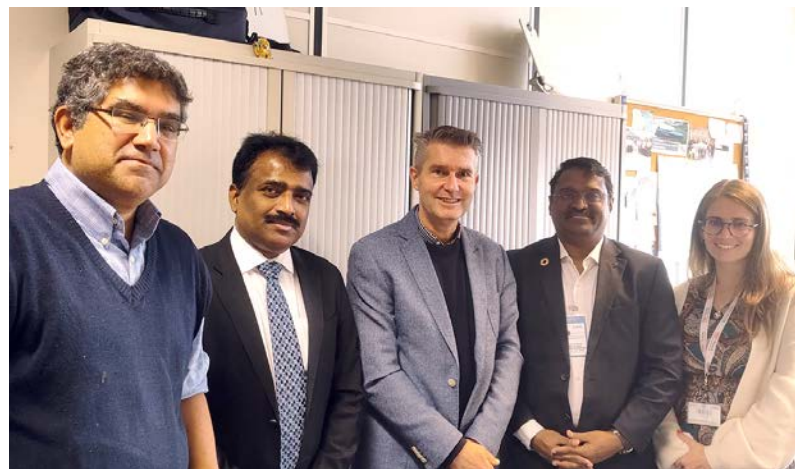


Dr. P. Krishnan was part of the Science Team of IFISH-6 and also co-chaired one of the technical sessions during the Conference.



On the closing day, Mr. R. Mukherjee, Policy Analyst, BOBO-IGO, made a presentation on “Assessing the Human Life Value and Insurance Disparities in the Bay of Bengal.” He presented the studies undertaken by BOBP and said that the current group insurance scheme for fishers in India covers only 18-55% of their lifetime income. Artisanal fishers are at high risk of destitution while mechanized fishers face relatively lower risk.

Participation by many researchers from Bangladesh, India, and Sri Lanka showed the growing interest in addressing safety and working issues, in the region.



FAO Workshop on Fisheries OECM

The FAO Fisheries and Aquaculture Division (NFI) and Regional Fishery Body Secretariat's Network (RSN) jointly organized a Workshop on Other Effective Area-based Conservation Measures (OECMs) at FAO, Rome on 22 and 23 January 2024.

The Workshop provided an opportunity to review the roles of RFBs in the Kunming-Montreal Global Biodiversity Framework (GBF) with a focus on achieving Target 3, using different case studies. The RFBs were introduced to the Guidance document developed by FAO for the identification, evaluation and reporting of OECMs. The strategies for the RFBs in the demarcation of OECMs in waters under national jurisdiction were discussed.

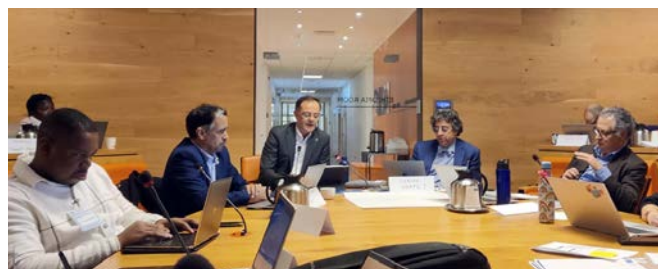
BOBP-IGO highlighted its initiatives towards strengthening capacity in the region and commitment to work with the national governments, leveraging the BOBLME Project being implemented by the IGO in the Bay of Bengal region.



RSN Inter-Sessional Meeting at Rome

The inter-sessional meeting of the Regional Fishery Body Secretariats' Network (RSN) was held at FAO Headquarters, Rome on 24 Jan 2024. Over 30 RFBs including the BOBP-IGO participated in the meeting, in which the activities of the RSN since the last meeting, and the plans of the Secretariat for the 36th Committee of Fisheries (COFI) in July 2024, were presented in brief.

Dr. Manuel Barange, ADG, FAO, in his opening remarks, recognized the collaboration of the BOBP-IGO and



Government of India for the organization of the Workshop on mainstreaming climate change in international fisheries governance for the RFBs in the Indo-Pacific region during 17-19 October 2023.

Indian Ocean Regional Decade Conference 2024

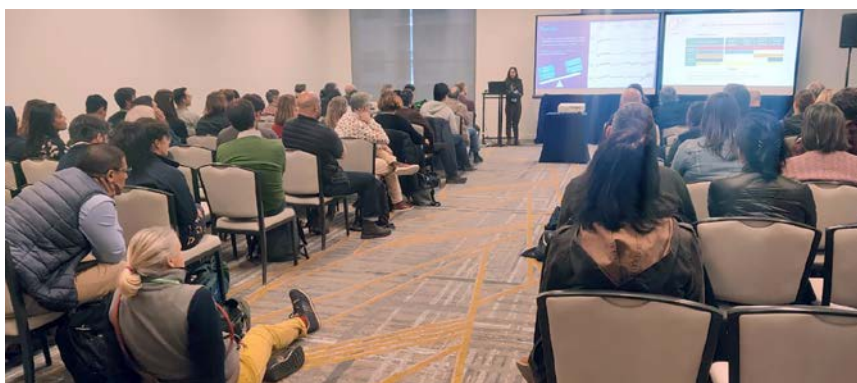


The Indian National Centre for Ocean Information Services (INCOIS), Hyderabad, India hosted and organized the “Indian Ocean Regional Decade Conference 2024: Bridging Billions to Barcelona” during 01-03 February 2024.

Dr. Krishnan delivered a lead talk on, “Leveraging RFBs for Harmonizing National Decadal Committees (NDC) of the IOR & Beyond A Case from Bay of Bengal” in the ‘NDC Special Session: Harmonizing NDCs of the IOR and beyond’ organized under the aegis of Decade Collaborative Centre of the Indian Ocean Region, MoEF-INCOIS, Hyderabad.

9th World Fisheries Congress 2024, Seattle, USA

Dr. P. Krishnan, Director, BOBP-IGO participated in the 9th World Fisheries Congress (WFC) 2024, at Seattle USA during 3-7 Mar 2024. This Congress is organized every four years through the World Council of Fisheries Societies, which provides a unique platform to learn, engage and network with experts. Delegates from around the world exchanged ideas and perspectives about new research, emerging issues, scientific breakthroughs, and governance related to fisheries science, industry, conservation, and management. BOBP-IGO participated in the Conference and shall mainstream the operational elements gleaned from the Congress into its ongoing programmes to enhance efficiency and effectiveness in its activities.



RegLitter Project: Regional Project to Curb Sea-Based Marine Plastic Litter Initiated

The Inception Workshop of the RegLitter Project, a follow-up of the GloLitter project aimed at curbing sea-based marine plastic litter (SBMPL) was held in Ha Noi, Vietnam from 4-7 March 2024. Supported by the Governments of Norway and Republic of Korea, and implemented by IMO and FAO, the initiative aimed at building on the achievements of the GloLitter project to tackle marine plastic litter from sea-based sources, initially focusing on Asia. In the Bay of Bengal, RegLitter will be implemented in India, Indonesia, Sri Lanka and Thailand.

Representing BOBP-IGO in the meeting, Mr. Rajdeep Mukherjee, Policy Analyst, drew parallels between the objectives of RegLitter and the BOBLME project currently being implemented by the BOBP-IGO and its partners. He laid emphasis on addressing the root causes of proliferation of marine pollution and empowering fisher communities to shepherd the sea. Mr. Mukherjee said that both RegLitter and BOBLME projects were institutionally and organically linked and together they could make an impact in dealing with SBMPL.

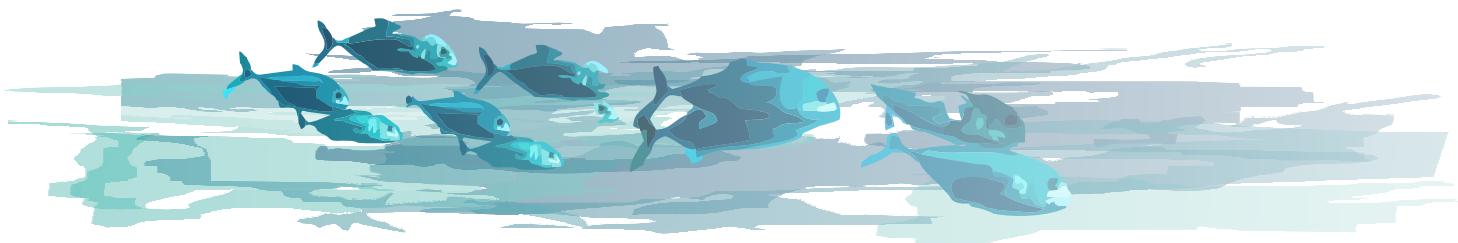


About 30 representatives from India, Indonesia, Philippines, Sri Lanka, Timor Leste, Thailand, Vietnam, Regional and International bodies, academia and NGOs participated in the Inception Workshop.

Workshop on Scaling-Up and Adoption of Nature-Based Solutions in Advancing the Sustainable Blue Economy

Dr. E. Vivekanandan, International Consultant (BOBLME), BOBP-IGO delivered a keynote address at the Workshop on “Scaling-Up and Adoption of Nature-Based Solutions in Advancing the Sustainable Blue Economy” organized by UNEP and M.S. Swaminathan Research Foundation on 15 March 2024.

During the Workshop, Dr. P. Krishnan presented a talk on, “Threats to Blue Economy in the Context of Marine Fisheries - A Case from the Bay of Bengal”. He highlighted overfishing, climate change, habitat degradation, inadequate safety measures, IUU fishing, etc., as the key issues and called for strong collaboration among the countries for effective regional management of fisheries.



Skill Development Workshop Organized by Fishery Survey of India

Dr. E. Vivekanandan, International Consultant (BOBLME), BOBP-IGO, inaugurated the in-house skill development programmes of Fishery Survey of India, on “Stock Assessment of Marine Fisheries Resources of Indian Seas – SMAFRIS – 2024”. He also handled a few technical sessions during the training workshop.



Interaction with SIFFS

Dr. P. Krishnan had an interaction with the executive committee members of South Indian Federation of Fishermen Societies (SIFFS) on 06 April 2024 at Vizhinjam, Kerala. He recalled the past collaborations and presented a roadmap for possible areas of working together.

He visited the field facilities of SIFFS viz., OBM workshop, boatyard, society office, etc. He undertook a fishing voyage in a longliner along with the SIFFS team. Mr. Vincent Jain from SIFFS coordinated the entire programme.





Dr. P. Krishnan visited the Jeppiyar Fishing Harbour at Muttom, Kanyakumari District on 08 March 2024. The Harbour Manager arranged a coordinated tour of the harbour which has all modern amenities for fish handling and marketing.



Other Events/Meetings Attended by BOBP-IGO Staff

Dr. P. Krishnan, Director

- Presented a lead talk on “Safety of Fishers at Sea: India’s Share in a Global Tragedy Understanding the Plight of Indian Fishers in the Shadow of 100,000 Annual Sea Fatalities Worldwide”, in the National Workshop on Harnessing Potential of Fisheries in Marine States organized at Kochi by CMFRI, Niti Ayog and Govt. of Kerala on 05 January 2024.
- Participated in the International Fisheries Congress & Expo 2024 organized by Kerala University of Fisheries Ocean Studies (KUFOS) at Kochi during 12-14 January 2024 and delivered a lead talk on “Cooperation for Sustainable Fisheries Governance: A Case of Shared Stocks from Bay of Bengal”,
- Participated in the First Session of the Sub-Committee on Fisheries Management of the Committee on Fisheries (COFI), held virtually during 15-18 January 2024.
- Participated in several Partners’ meetings of the BOBLME Project (Phase II) in connection with review of project activities and preparation of the BOBLME National Workshops.
- Participated in the 13th Indian Fisheries & Aquaculture Forum organized by ICAR-CIFRI, Kolkata and AFSIB during 23 to 25 February 2024 at Biswa Bangla Convention Centre New Town, Kolkata as a delegate. Presented a Lead Talk on, “Harnessing Genomic Tools for Regional Fisheries Management: A Case for Bay of Bengal Region” in the Satellite Symposium on “Fish Genetic Resources and Conservation” organized by ICAR-NBFGR on 24 February 2024.
- Participated virtually in the Satellite event “EAF Nansen Programme - Science serving sustainability” at the International Barcelona Conference Centre held in Spain on 21 April 2024.

Integrating effective co-management system into Ecosystem Approach to Fisheries Management: Challenges and opportunities in putting principles into practice in India

E. Vivekanandan

International Consultant (BOBLME), BOBP-IGO

Practical and effective means to manage fisheries holistically

It is being increasingly realised that complex fisheries management necessitates connecting people, fish and ecosystems, and addressing ecological, economic and social issues. It is becoming clear that we have to look beyond simple fish stock management to the broader ecosystem and human dimensions and many other drivers of fisheries. For accomplishing sustainable fisheries, strong cooperation among stakeholders is necessary by integrating science, traditional knowledge and management skills.

Ecosystem Approach to Fisheries Management (EAFM) offers a practical and effective means to manage fisheries more holistically. EAFM is an extension of the conventional principles for sustainable development in general, and sustainable fisheries development in particular, to cover the ecosystem as a whole. EAFM focuses on decision making processes that balance ecological and human well-being with improved governance frameworks essential for sustainable development.

In the last few years, application of EAFM has assumed greater preference globally. For example, the Global Environment Facility (GEF) supports processes in adopting a science-driven, ecosystem-based approach to the

management of human activities affecting large marine ecosystems (LMEs). GEF International Waters is supporting/has supported 23 LME projects involving 124 countries. Bay of Bengal Large Marine Ecosystem (BOBLME) is one of the LME projects, in which EAFM implementation is promoted by the GEF. The project entails institutionalising EAFM in six countries bordering the Bay of Bengal, and the Maldives.

Integrating co-management into EAFM

For an effective EAFM, co-management should be at the centre. Fisheries co-management is a partnership arrangement between the government, the local community of resource users and other concerned stakeholders to share the responsibility and authority (Pomeroy et al., 2022). Potential stakeholders in co-management include: fishers and fisher associations, governments (district – state-national), fishery-related (e.g. boat owners, traders, money lenders, processors), compliance and enforcement organisations, scientific and academic institutions, NGOs, and other users (e.g. tourism, ports).

There are many advantages of integrating EAFM and co-management such as (i) transparent, accountable and autonomous management; (ii) more democratic and participatory approach;

(iii) improved aquatic and coastal resources management; (iv) localized solutions to local problems and opportunities; (v) higher degree of acceptability, legitimacy and compliance to plans and regulations; and (vi) improved coordination and communication among all partners (Pomeroy et al., 2022). Fisheries co-management takes into account the three foundational pillars of EAFM - human well-being, ecological well-being and good governance (BOBLME, 2014). It can also address the seven principles of EAFM (Fig. 1).

Types of co-management

Co-management is different from community-based management (CBM) (Pomeroy and Berkes, 1997). In CBM, the concerned user community(ies) use informal rules and regulation to manage the resources. However, CBM measures can be formalized in management plans to reform it as co-management.

Management approaches can be “top-down”, i.e. fully planned and implemented by governments; or “bottom-up”, where community-based management entails full devolution of responsibilities to communities/fishers. The role of government decreases when stakeholders start assuming management responsibilities.

Four types of co-management have been recognised, based on the role

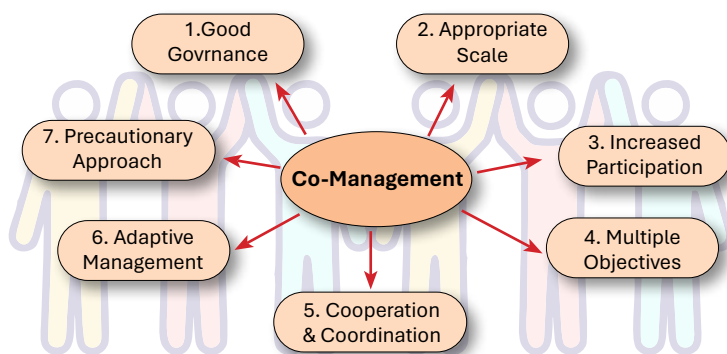


Fig. 1. Co-Management is at the centre of EAFM

and power-sharing between the government and other fisheries user groups (Sen and Raakjær Nielsen, 1996; Pomeroy et al., 2022):

Instructive: Government instructs what should be done.

Consultative: Government consults with users but the decision-making is by the government.

Cooperative: Government and user groups cooperate in decision-making as equal partners.

Delegated: Management authority is delegated to user-groups/fishing communities and the government is informed of decisions taken.

Co-management initiatives in India

EAFM/Co-management has been reflected in India's National Policy on Marine Fisheries 2017 as *"While keeping sustainability of the resources at the core of all actions, the policy framework will meet the national social and economic goals, livelihood sustainability and socio-economic upliftment of the fisher community and is intended to guide the coordination and management of marine fisheries*

in the country during the next ten years" (DAHDF, 2017). While this concept remains to be adopted and integrated into fisheries and develop management plans in a national scale, the maritime states of Kerala and Tamil Nadu and the Union Territory (UT) of Puducherry have formalised co-management arrangements.

Kerala

The Government of Kerala made amendments in the Kerala Marine Fishing Regulation Act (KMFRA) and has established Fishery Management Councils. A three-tier fisheries management system with 222 Village Management Councils (VMC), 9 District Management Councils (DMC) and one State Management Council (SMC) have been constituted 'for effective management and surveillance of marine fisheries' and notified in the Gazette in 2017. In this arrangement, the VMCs will propose regulations, the DMC will process the regulations to the SMC that will give approval in deserving cases. Terms of Reference (ToR) have been developed and jurisdiction identified

for each Council for Conflict management, Policy-making, Implementation, Monitoring, Adapting co-management plan, and Information and data collection & analysis.

In a separate development, a 20-member Co-management Council with the Collector of Kollam District as Chairman is functioning since 2011 to arrest the decline of short-neck clam fisheries in Ashtamudi Lake (Kerala). The activities that have been successfully carried out by the Council are: Creation of Clam Sanctuary (no-clam-fishing zone for protection of spawning biomass), Implementation of a quota management system based on TAC, Ban on mechanical dredging, Prescription of minimum legal size at capture, and Encouragement for depuration of clams for better hygienic quality. These management measures were implemented by mutual consultation and agreement among the members in the Co-management Council. This arrangement helped recovery of the clam stock and the fishery was identified for ecolabelling by the Marine Stewardship Council and it became the first certified fishery in India in 2015 (Mohamed and Malayilethu, 2015).

Tamil Nadu

During 2010-2011, the Food and Agriculture Organization of the United Nations (FAO) implemented the World Bank Trust Fund Project "Fisheries Management for Sustainable Livelihoods (FIMSUL I)", with the State of Tamil Nadu and Union Territory of Puducherry. The Project identified inadequate fisheries governance as a major problem, and recommended moving towards 'an effective co-management process' to address the concerns. The Government of Tamil Nadu recognised the importance of co-management of fisheries resources in which the fishers take responsible decisions in consultation with the government and support the



government in framing legislations and implementing marine fisheries regulations. In phase two of FIMSUL (FIMSUL II), the Government of Tamil Nadu passed an Order constituting the following four-tier co-management system in 2019: Village Level Co-management Committee, District level Co-management Council, Zonal Level Co-management Forum and State Level Co-management Forum. The chairpersons and members of each committee as well as their functional powers, duties and responsibilities were notified in the Order.

Puducherry

In FIMSUL II, the Government of Puducherry also issued a notification on setting up of a three-tier co-management framework in 2017. The lowest tier in the framework is a village-level committee comprising all relevant stakeholders and organisations. In the next tier, there are two district-level councils, one each for Puducherry and Karaikal districts, comprising relevant village-level committees and other concerned stakeholders. The top tier is a UT-level forum comprising representatives from district councils and other UT-level stakeholders. BOBP-IGO assisted the Department of Fisheries and Fishermen Welfare (DFFW), UT of Puducherry in this endeavour under its Ocean Partnership Project (TF 018233). In this context, the BOBP-IGO and the DFFW jointly organized a series of Workshops for the fishing community titled “Stakeholder Orientation Workshop on Implementation of Fisheries Co-management in Puducherry (SOW-CoM)”. The SOW-CoM brought to light the following important considerations for implementing co-management (BOBP-IGO, 2017):

“It is discernible from the group discussions that the stakeholders have not assimilated the essence of the co-management process. The stakeholders are probably under the impression that they

will be bestowed with power and finance as welfare. It was not a surprise because the stakeholders were never tuned to take up the responsibility of managing the fish resources on their own. The co-management process is totally new to the fisheries sector, and it would take considerable time and effort to tune them to cope up with shift in approach. For putting co-management into practice and in right perspective, lot of effort has to be made to change the understanding and attitude of the stakeholders”.

Challenges in implementing co-management

There are many challenges in implementing co-management.

- The fishing communities are interested in short-term benefits, mainly monetary and material benefits, a trade-off with long-term sustainability. As the fishers and their families are dependent on the fishery for their livelihood, the resource is perceived principally as an income generator. Hence, the emphasis is to increase production and incomes. Consequently, the communities may not perceive large benefits from co-management.
- Although resource users may be aware of the appropriate management strategies, they may be unable or unwilling to take on the responsibility.
- The inexperience of fishing communities in management tasks such as designing fisheries regulations and conducting monitoring activities hinders co-management success.
- In countries where the conventional fisheries management system is weak, it is a challenge to implement co-management. A long history of dependency on the government may take years to reverse.
- It is often difficult to convince the resource users on the benefits of co-management in measurable units.

- High initial investment in time, financial resources and human resources are required to establish co-management.
- Often resource users, scientists and government agencies have different perspectives on the resource system and knowledge. This can create barriers to identifying and achieving management objectives.

Opportunities to put co-management principle into practice

The co-management approach can be applied at any scale, from that of a single fishery (fleet sector, gear type, geographical area), through to multi-stakeholder, multi-resource, multi-use situations, but the principles of co-management are essentially the same. Co-management has to be customised to specific settings and implementation modalities may differ depending on the perceptions of the local resource users. In countries where conventional fisheries management is not well-grounded, co-management interventions should be tried on a pilot scale before implementing in large scale.

Based on the available information on the involvement of stakeholders in setting the operational rules; and considering the typology presented by Sen and Raakjær Nielsen (1996), it is possible to conclude that Instructive, Consultative and Cooperative types of co-management are prevailing in India (Table 1). Consultative type of co-management is in practice with a majority of the fishery-dependent stakeholders, i.e., the government consults the resource users, but the decision-making is by the government. For example, the user groups are consulted on the operational measures such as closed seasons and gear type restrictions (minimum mesh size), but the control and law enforcement is left to the government departments. This is the obvious choice of the government as there

Table 1. Involvement of government and resource users in the role* of setting operational rules in India

Stakeholder categories	Departments			
	Fisheries	Environment	Commerce	Tourism
Fisheries Dependents				
Fish workers	1, 2			
Boat owners	2			
Fisher associations	2			
Processors			2	
Traders	2			
Other users				
Tourism operators		2, 3		2, 3
Coastal developers		2, 3		2, 3
Other coastal communities		1, 2		

* 1 = Instructive; 2 = Consultative; 3 = Cooperative

are multiple resource user groups with varied interests and objectives. In this type of management, meeting the expectations of all user groups is not possible.

For moving ahead, the country has to shift towards Cooperative co-management with the fishery-dependent stakeholders, wherein the government and user groups cooperate in decision-making as equal partners. This could be implemented in different stages. For example, while rule creation could be Consultative, the planning and implementation could be done in Cooperative mode. The objective is to achieve “bottom-up” management, where more responsibilities are entrusted to the communities/fisher organisations.

Delegated co-management is possible in advanced type of management regimes where the user groups take greater responsibilities. The government cannot fully entrust the resource users with management responsibilities without developing their capacity. It would be the responsibility of governments and researchers to provide the scientific advice needed and train the local partners prior to delegating the power to manage the resources.

For successful co-management, the promoting factors need to be identified. Enabling policy and legislation, effective community organisations, local leadership, external agents of change like the NGOs, incentives to participate in the process, clear and attainable objectives, appropriate scale in geographical and management boundaries, effective enforcement mechanism, and availability of financial resources are some important conditions for promoting co-management (Pomeroy et al., 2001). It is important to assess the presence of these factors in the EAFM Unit where co-management is proposed to be promoted.

The co-management process should adopt a gender-balanced perspective and must acknowledge the position of women. Women should be given the opportunity to actively participate in co-management. Participation of women in co-management committees should be supported in terms of scale, i.e. number of women and extent of participation, and in terms of position in committees, their involvement and influence on decisions and outcomes.

Capacity building is critically important for greater social

awareness, decision-making and self-reliance. The range of actions for capacity building includes enhancing community access to information and services, ensuring community participation and management skills. Promoting co-management without capacity building is likely to end in failure.

Conclusion

Harmonising EAFM and co-management will require a deeper engagement and understanding with the stakeholders. Promoting fisheries co-management is currently a challenge in the region due to a few critical constraints. However, there is potential for achieving success.

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BOBP's work in taking SSF into an "Ice Age"

Venkatesh Salagrama

Expert Consultant, Small-scale Fisheries

The use of ice and iceboxes in small-scale fisheries (SSF) on the east coast of India is so ubiquitous that it is difficult to envisage the fishing economies surviving without ice. Ice entered the SSF sector only in the 1990s and yet, like that other omniscient marker of the Modern Civilization, i.e., the cell phone, it took over the sector so comprehensively that, as someone suggested, the present era of SSF can be defined as the "Ice Age" in fishing. Ice had of course been in use in the mechanised and export processing sectors on the east coast of India since the 1960s, but its widespread uptake in SSF was of a more recent vintage. Coinciding, rather presciently, with the liberalisation of the Indian economy in the early 1990s, the proliferation of ice (along with ready transport systems) led to the growth of an inter-state, urban middleclass-oriented, fish value chain which remains the mainstay of many SSF today.

With the benefit of hindsight, one might conclude that the phenomenon of ice in SSF was as certain to happen as the sun rising in the east. That the very nature of the target commodity, i.e., fish which had this unfortunate tendency to spoil rather quickly, demanded that 'something be done about it'. Ice being the most efficient means to preserve fish from spoilage, its adoption by the fishers would be an inevitable eventuality once ice became widely accessible. But back in the late 1980s, when BOBP had got interested in post-harvest fisheries in general and in promoting

the use of ice in SSF in particular, matters weren't so clearcut – nor the fishers' acceptance of the idea so easy, as I can say from personal experience.

BOBP's pioneering efforts certainly played an instrumental role in the promotion of ice and iceboxes in several east coast fisheries through the 1990s. The fishers may have known the benefits of ice, but the mechanisms by which it could be carried onboard and preserved at multiple points along the value chain remained an untried proposition in SSF until the BOBP's initiatives under the British ODA (later renamed DFID) funded Post-Harvest Fisheries Project (PHFP) came along.

BOBP's ice story began in 1987, and the trials with the new insulated iceboxes had been in full steam in Andhra Pradesh by late 1988 when I became involved with the project as an unpaid – and self-designated – apprentice. I was still

at university but had long cherished the hope of someday becoming part of the BOBP; thanks to my father's involvement with BOBP since 1980 as a liaison officer seconded by the Department of Fisheries (DOF) Andhra Pradesh, I had grown up listening to the heroic exploits of the BOBP experts in comparison to whom my boyish imagination found the likes of Batman, Superman and Spiderman pale into insignificance. Inserting myself into the icebox trials was my way of finding a back entrance into the holiest of the holies. Since then, the progression of ice and iceboxes along the east coast of India has also been the story of my career in SSF.

The UK-based post-harvest fisheries expert, Ivor Clucas, designed insulated iceboxes with different materials, including wood and galvanised iron, though it was a foregone conclusion that fibreglass (fibre-reinforced plastic, FRP) would be the material of choice for the fishers. The trials involved





testing the technical and economic performance of the insulated boxes in control-and-target experiments involving the larger version of the plank-built navas of Andhra Pradesh.

The trials proved successful in establishing the technical feasibility of the iceboxes under the prevailing conditions of fishing. In economic terms, the data indicated a significant increase in income for the target navas using iceboxes, though I must admit I am not so convinced that it was based on a fair comparison: while the quality of fish is certainly an important consideration in defining the value of a fish, it is not the only factor, there are other considerations as well. This means that any difference in the incomes between the target and control crafts would have been mediated by multiple factors.

While that may be hindsight talking, more undeniable evidence in favour of the boxes was that all four boat owners who used the trial boxes wanted to buy them out of their own pockets. From this early experience, I drew a lesson that I have held on to until now: no matter how much robust statistical data you may have collected in support of your intervention, its true effectiveness is established only when the target users are willing to invest in it.

The success of the trials led to what we were soon referring to as

the 'roadshow' or the 'carnival': it involved a team comprising Ivor Clucas, my father and one of his DOF colleagues, and two Tamil ladies from BOBP, with me of course tagging along. This team was tasked with traversing the southern two-thirds of the Andhra Pradesh coast (during possibly one of the hottest summers on record) and proselytising the fishers on the merits of the insulated iceboxes.

The road show included the usual lectures, followed by a practical demonstration of the insulated box and a video showing why and how to use an insulated icebox on the navas. The box would be carried from one village to the next atop one of the cars (with a real 8-kg king fish nestling in ice inside the box). Whatever the merits of the icebox, the roadshow was a grand success and drew large crowds owing, I think, to two factors: one, no self-respecting South Indian could pass up the opportunity to see a video film, even if the film was very scratchy and only showed fish drying for two long hours; and two, the novel sight of a Westerner – Ivor Clucas – trying to eat with his bare fingers the murderously hot fish dishes that the villagers often served us. All in all, great time had often been had by all – except perhaps the hapless Ivor, but he was too much of a gentleman to complain.

[One couldn't also ignore the unintentional entertainment that BOBP's gleaming Volvo station wagon often provided, its irresistible attraction for people arising from its fierce-looking driver who frowned furiously and cursed in chaste Tamil if anybody came within fifty feet of it. The car's propensity to burst a tyre at least once every fifty kilometres and the driver's propensity to drive it into some of the most intricate ditches by the roadside would also be fondly remembered for years to come.]

The trials and the tribulations of promotion thus completed, my backdoor entry into the BOBP was legitimised when I began to receive short contracts with the designation of 'ice box promoter', a title that (as I used to boast) I bore with more pride than Don King, the reigning 'boxing promoter' of the 1990s, did his. Aside from the tiny salary from BOBP, my memories are of numerous sleepless nights in derelict bus stands, bed-bug ridden beds in tiny hotels, faceless villages where the drivers had to be reminded to halt and the perennial water shortage in fishing households where even a glass of drinking water was hard to come by.

Basically, my work involved visiting fish landing centres in Andhra Pradesh and trying to convince the fishermen of the utility of having an icebox on their navas. The BOBP – and later the Andhra Pradesh DOF

– got a couple of hundred insulated iceboxes made for distribution on 50% subsidy and my job involved trying to sell these boxes to the interested fishers after ‘raising their awareness’. Selling the boxes (or, put euphemistically, ‘promoting the iceboxes’) was easier said than done because the fishers were not ready for this new investment, their logic being that if they invested the same money in a new net, they’d catch more fish which would fetch more than what they could expect from the icebox. Obviously, the time had not come for the fishers to realise there was only so much fish they could catch, and no more. To that extent, the BOBP’s work on iceboxes was a little bit (but only a tiny bit) ahead of its time.

By the time I ended my first stint with the BOBP about a year later, I had managed to sell all 60 iceboxes that BOBP had got built. I had little reason to celebrate though because it soon became apparent that most of those boxes had ended up on mechanised trawlers which were not the target users of the BOBP boxes, not with that hefty discount tag attached to them anyway. The trawl operators well knew the benefits of ice and were crafty enough to buy the boxes using the nava owners as a front. It was a bitter lesson for a novice to realise how easily he could be duped – a lesson that I would have opportunities to learn again – and again.

Early 1990s saw the BOBP PHFP continue its efforts to ‘raise awareness’ of the fishers and to develop a wider range of iceboxes for a diverse range of fishing boats along the east coast of India – with indifferent results. The substantial subsidy component helped to push a few boxes here and there but overall, the fishers were not really keen on the new intervention. It was a period of transition in the sector and, equally, a period of confusion, as the fishers were waking up to the finiteness of fish resources, to the finicky nature of the state support that they had come so much to take for granted, to the enticement of



new markets... Iceboxes were as yet a minor player in the larger narratives unfolding in the sector.

By mid-1990s, the PHFP was despairing of the icebox programme and was almost ready to shelve it for good. But then, as always happens in an inspirational Hollywood film, suddenly the winds changed. An inkling of this change came when a group of fishermen visited BOBP’s office in Kakinada in early 1995 seeking the project’s help in negotiating with a private insulated icebox dealer to provide 100 boxes to them on credit. The government’s subsidy programme had ended by then and in any case the fishers were not asking for subsidy, they just wanted the boxes to be supplied on credit. The dealer was justifiably reluctant to take such a risk, and agreed to do so on condition that the project would stand guarantee for the repayment. Obviously, the project couldn’t do that but did it anyway – call it just a gut response – and fortunately (even miraculously) the fishers repaid the entire loan in four instalments instead of the pre-arranged six, and came back asking for more boxes. And this time the dealer did not seek any project guarantee; he had good confidence in the fishers to go ahead and give them the boxes on his own account.

From that moment on, there has been no looking back and the Ice Age descended upon the SSF and everybody lived happily ever after. At least that’s where I’d stop my story.

Looking back from a distance of three-and-a half decades, I believe that it was not so much the technical knowhow of developing an insulated icebox per se that was BOBP’s chief contribution to the post-harvest fisheries in SSF, though it ticked all the right boxes in that department, i.e., designing and building an icebox that was simple, low-cost, user-friendly, efficient, and customisable to the user requirements. Rather, the real long-term contribution of BOBP’s work unfolded in two important directions: one, it allowed the SSF actors to relate to ice and iceboxes in a familiar way, i.e., not as some kind of exotic or alien impositions, as being too strange to fit into their way of life, but as something that they could intuitively relate to and use in ways that aligned with their existing systems of production and trade. Secondly, more importantly, by mainstreaming the use of ice at a time when the SSF sector was just becoming exposed to threats (such as declining catches of commercial species) as well as opportunities (such as the opening of new, distant, markets), BOBP’s work enabled the fishing economies to be prepared to cope with them by reducing losses and wastage in production, by enabling the utilisation of a broader diversity of fish species, by reaching out to new markets, and overall, by sustaining the stability of fishers’ incomes.

India | World | **NEWS EXPE**

India Gears up to Adopt National Plan of Action for Conservation

February 19, 2024 in Agriculture

India gears up to adopt National Plan for Conservation of Sharks

February 19, 2024 - by Mohd Mustaqim - Leave a Comment



The plan is expected to improve India's understanding of shark populations in Indian waters. Discussions at the meeting centered on these critical areas, ensuring a comprehensive and actionable plan. These areas include legal framework, capacity building, data collection, scientific research, regulation of fishing, biodiversity and ecological considerations, and regional cooperation.



National Plan of Action for Conservation of Sharks to be adopted soon

Kochi, Feb 19 India is poised to adopt the National Plan of Action for Conservation and Management of Sharks (NPOA).

On Monday, a meeting was jointly organised by the Department of Fisheries, the Central government and the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) in which feedback from all stakeholder was taken paving the way for NPOA implementation.

The draft of the NPOA outlines key priorities for effectively managing and conserving shark populations in Indian waters.

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