BOBP BREEZE

A Quadrimester Newsletter

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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.

In this issue...

Viewpoint

Dr. P. Krishnan
Director, BOBP-IGO

Active Engagement of Fisheries: Key for Global Biodiversity Plan

Globally, when the nations are working towards aligning their National Biodiversity Plans with the newest global framework, this editorial calls for learning from our past omissions. It is a rallying cry for all stakeholders involved in fisheries management to take ownership of this critical moment and work collectively towards achieving our shared goals for global biodiversity.

The Living Planet Index (LPI), a measure adopted by the Convention of Biological Diversity (CBD) as an indicator of progress towards the Aichi targets, tracks the state of the world's biological diversity based on population trends of vertebrate species from terrestrial, freshwater and marine habitats. With every passing year, the index is becoming gloomier, with the recent estimate published in 2022 showing a whopping 69% loss in biodiversity. While the Asia-Pacific region fares marginally better compared to Latin America and Africa, with 55% biodiversity loss, it has put at risk 60% of global population, a vast majority of whom are poor.

As we stand at this pivotal moment, the *Kunming-Montreal Global Biodiversity Framework (KM GBF) adopted by the 15th Conference of Parties (COP15) to the CBD on 19 December 2022* emerges as a beacon of hope and a call to action. With its 23 ambitious targets aimed at halting biodiversity loss by 2030, it is imperative that we recognize the critical role of fisheries in this global endeavour. The health of our marine ecosystems and the sustainability of our fisheries are not merely environmental concerns; they are intertwined with the livelihoods of millions and the overall health of our planet.

Local Solution for Global Challenge

The concept of National Biodiversity Strategies and Action Plans (NBSAPs) was developed alongside the negotiation of the CBD to address the challenge of implementation. Since the Convention's adoption in 1992, Article 6 has mandated countries to create an NBSAP or an equivalent instrument. The NBSAP, seen as a "living document," evolves continuously through updates based on new scientific information, monitoring, and evaluation. It integrates biodiversity conservation into sectoral activities, involving multi-stakeholder collaboration, and remains central to implementing not just the CBD but also other biodiversity-related conventions such as CITES and RAMSAR. The KMGBF and NBSAPs are closely linked as they both aim to address global biodiversity loss and promote sustainable management of natural resources.

The KMGBF provides a global framework that guides countries in developing their NBSAPs, ensuring that local actions contribute effectively to global biodiversity goals. Parties to CBD are required to align their NBSAPs with the KMGBF, ensuring that national actions contribute to achieving the global biodiversity targets set forth in the framework.

NBSAPs serve as the primary implementation mechanism for the CBD at the national level. They outline how countries will contribute to the goals of the KMGBF, including setting national targets that reflect the 23 global targets of the framework. The alignment of these two instruments is crucial for fostering cooperation among nations and enhancing efforts to halt biodiversity loss worldwide.

NBSAPs must include mechanisms for monitoring progress toward the KMGBF targets, using indicators established in the KMGBF framework. This ensures accountability and allows countries to assess their progress in real-time, making necessary adjustments to their strategies as needed.

A Timely Opportunity for Advocacy

As part of their commitment to the KMGBF, countries are to submit their updated NBSAPs encompassing national targets to COP16, scheduled in October 2024. This submission process involves consultations across various government sectors, promoting a "whole-of-government approach" that is essential for effective biodiversity management. The development of NBSAPs involves cross-sectoral analysis and integration with other national strategies, such as sustainable development plans. This holistic approach helps identify opportunities for synergies and enhances political will for biodiversity conservation at all levels of government.

Currently, countries are updating their NBSAPs, thus presenting a timely opportunity for fisheries ministries and departments to advocate for the integration of relevant targets concerning fisheries and marine sectors into these plans.

The Urgency for Collaborative Action

Achieving KM GBF targets requires active engagement from all sectors, particularly in fisheries and marine science. The urgency for collaborative action cannot be overstated, especially given the lessons learned from the *Aichi Biodiversity Targets*, where fragmented approaches and acting in silos limited the success.

A total environment-centric approach during the Aichi phase often overlooked the specific needs and contributions of fisheries, resulting in missed opportunities for meaningful progress.

As we face a rapidly changing environment, it is crucial that we think differently this time; the magnitude of biodiversity loss is immense, and the time left to act is dwindling.

One exemplary case is **Norway**, where effective cooperation between fisheries and environment departments led to significant improvements during the Aichi phase. By integrating fisheries management with environmental conservation efforts, Norway achieved better outcomes in both fish stock recovery and marine ecosystem health. This collaborative model serves as a valuable lesson for countries in the Bay of Bengal (BOB) region, highlighting the need for similar synergies to ensure sustainable management of marine resources.

Regional Fisheries Bodies (RFBs) have significant roles to play in this context. They are well-positioned to facilitate cooperation among nations, ensuring that fisheries management is integrated into broader biodiversity strategies. The effective implementation of *National Biodiversity Strategies and Action Plans (NBSAPs)* will be essential in mainstreaming fisheries actions within national and regional biodiversity plans.

Building on Recent Initiatives

The *Regional Capacity Building Workshop for East, South, and South-East Asia* organised by the CBD Secretariat under the aegis of Sustainable Ocean Initiative (SOI) during 05-08, September 2023, in Seoul, Republic of Korea, was a pioneering step for bringing together the regional organizations and the country representatives from fisheries and environment ministries.

BOBP-IGO made a clarion call for formation of BOB Global Biodiversity Framework Working Group (BOB-GBF WG), which would serve as a platform for experience and knowledge sharing in mainstreaming fisheries in the NBSAPs of respective countries.

The *Regional Dialogue on Promoting regional cooperation through NBSAP* organised by the WWF and BOBP-IGO on 29 Aug 2024 marks a significant step in the region.

Participating in the Dialogue, the officials representing fisheries and environment ministries from the region resolved to expand the Working Group with expert members and develop this as a vibrant platform for sustained interaction among the members.

These workshops highlighted the importance of collective ownership and cooperative action among member states. It is crucial that we build upon this momentum, fostering an environment where collaboration becomes the norm rather than the exception.

A Call for Collective Action

As we move forward, let us embrace a spirit of collaboration. The health of our oceans and the sustainability of our fisheries depend on our ability to work together across borders and sectors. We must recognize that active engagement in fisheries is not just about preserving fish stocks; it is about safeguarding the livelihoods of communities, protecting marine ecosystems, and ensuring a sustainable future for generations to come.

In conclusion, as we prepare for the next steps in implementing the KM GBF, let us commit ourselves to fostering collaboration within nations and across regions. By integrating fisheries into our biodiversity strategies, we can pave the way for a more sustainable future—one where both people and nature thrive together. In parallel lines, it is also important that biodiversity strategies are integrated into fisheries governance. Together, we can make a difference!

Salient Programmes/Events

Experts Meet at BOBP-IGO to Review India's Readiness to Implement Ecosystem Approach

The BOBP-IGO carried out a review of India's readiness to implement the Ecosystem Approach to Fisheries from policy and legal perspectives under the BOBLME-II Project based on the FAO methodology developed under the NANSEN Programme.

To review the preliminary findings from the study, an Expert Meet was organized at the BOBP-IGO HQ on 30-31 May 2024. Eminent experts from India, namely, Dr. P. Paul Pandian, former Fishery Development Commissioner of India, Dr. Sunil Mohammed, Chair, Sustainable Seafood Network of India and Prof. S. Amirthalingam from Tamil Nadu National Law University (TNNLU) attended along with Dr. P. Krishnan, Director, BOBP-IGO, Dr. E. Vivekanandan, Dr. R. Soundararajan, and Mr. R. Mukherjee, International consultants of the BOBP-IGO and Ms. Sakshi Venkateswaran, the researcher.

Dr. Krishnan briefly explained the background and scope of the study. He said that the BOBP-IGO was complementing the effort of FAO, which had published reports on EAF preparedness of Bangladesh, Maldives and Sri Lanka which were part of the NANSEN programme, by carrying out the study in India under the BOBLME-II project. The study would help not only in achieving the objectives of the BOBLME-II project but also in contributing to completing the regional picture with respect to EAF readiness. This approach was crucial for implementing effective ecosystem-based management strategies in fisheries, aiming to integrate the ecological and the human dimensions of resource management.

The expert group reviewed over 30 policy and legal documents against a set of filtering questions following the FAO methodology. The preliminary results indicated that India has a sound basis for moving towards EAF. However, streamlining was required in some aspects such as development of fisheries management plan and targeted research. The expert group also observed the complexity in India due to its federal structure and highlighted the need for alignment of inter-state policies and Union-state policies for better implementation of EAFM. They further noted that there is a strong need for a fisheries law for managing waters beyond territorial limits which can address various emerging challenges in fisheries management in India.

BOBLME National Consultation held in Maldives

A two-day national consultation on executing the BOBLME Phase II project in Maldives was held at the Naifaru Island from 12-13 August 2024. The meeting was jointly organised by the IUCN and BOBP-IGO with support from the Government of Maldives. BOBLME II is funded by GEF and NORAD and is being implemented by FAO.

Inaugurating the meeting, Mr. Ahmed Shiyam, Minister of Fisheries & Ocean Resources, Government of Maldives said that Maldives fisheries has always been renowned for its sustainability. Maldives had been blessed with abundant resources in their waters and their forefathers had respected its power and understood its fragility. The baton of this legacy that had been passed from them to the current generation had, in turn, to be passed on to the next generation. Empowering fishers in the management of fisheries, he said, was an important policy of the government. In the past, fishers were involved in the formulation of the Fisheries Act. It was important to also involve them fully in the implementation of these regulations and management regimes, which he hoped would be enabled by the BOBLME project and appreciated BOBP-IGO and IUCN for facilitating this.

On behalf of BOBP-IGO and IUCN, Dr. P. Krishnan and Ms. Maeve Nightingale welcomed the participants and explained the project objectives and work plan.

The National Consultation was held in Naifaru, the capital of Lhaviyani Atoll, and one of prospective sites for EAFM and MMA.

Key Takeaways from the Workshop

- EAFM Implementation in Lhaviyani and Huvadhoo Atolls: The workshop identified the need to apply existing national fisheries management plans to the livebait and reef fisheries in Lhaviyani Atoll, focusing on

protecting livebait resources, reducing post-harvest losses, exploring farming potential, and improving data collection and marketing for reef fisheries. Stakeholder involvement, capacity building, and gender equality will be central to the Ecosystem Approach to Fisheries Management (EAFM) plan development.

- Marine Protected Area (MPA) Management: Discussions emphasized the importance of improving management effectiveness in the seven MPAs in Lhaviyani Atoll. Participants stressed the need for better public awareness, stronger NGO support, and collaboration among stakeholders to enhance data sharing and build capacity.

Establishing baseline ecological assessments and addressing threats such as fishing activities and anchoring were key priorities.

- Combatting IUU Fishing: The workshop underscored the importance of strengthening both national and regional action plans to reduce Illegal, Unreported, and Unregulated (IUU) fishing. This includes enhancing vessel monitoring systems and conducting capacity-building programs on monitoring, control, and surveillance (MCS) and port inspections.

- Gender Mainstreaming and Livelihood Enhancement: A gender-sensitive approach was highlighted as essential across all project components. Additionally, linking conservation efforts to local livelihood enhancement, such as eco-tourism and aquaculture diversification, was emphasized as crucial for fostering resilience and community-led resource management.

These key takeaways provide a roadmap for advancing sustainable fisheries management and conservation efforts in the Maldives under the BOBLME Phase II project.

Regional Capacity Building Workshop on BBNJ held at Chennai

The Regional Capacity Building Workshop on 'Biodiversity Beyond National Jurisdiction (BBNJ) Agreement: From Participation to Implementation' was held in Chennai on 27-28 August, 2024. Traversing the Oceans, about 60 participants from Australia, Bangladesh, Bhutan, Cambodia, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, and Timor-Leste, national and international organizations including FAO, WWF and IUCN and media participated.

The Regional Workshop, organized by BOBP-IGO, High Seas Alliance (HAS) and Rise UP and supported by the Government of Netherlands, explored challenges and opportunities for conserving and managing the high seas in South and Southeast Asia.

Welcoming the participants, Dr. P. Krishnan, Director, BOBP-IGO underscored the importance of the high seas governance in achieving human sustainability and reiterated BOBP-IGO's commitment to strengthening regional coordination to ensure ocean and fisheries governance. Ms. Rizza Ssacra-Dejucos, Asia Regional Coordinator, of High Seas Alliance (HSA) set the context of the workshop and provided a brief background of the agreement.

Mr. Ewout de Wit, Consul General, Kingdom of Netherlands said that as a marine economy, the Netherlands is highly committed to ocean sustainability, being enshrined in the national constitution. He expressed his hope that

the BBNJ Treaty would provide necessary institutional support to bridge the current gaps in ocean governance as well as in addressing future needs.

Cdr. P.K. Srivastava, Advisor, Ministry of Earth Sciences, Government of India emphasised the multi-faceted role played by Ocean as a provider of water, food, health, resources and communication. He said that the Cabinet had the BBNJ agreement for signing and that India would sign the Agreement during the next UNGA session. He also presented a roadmap for ratification of the BBNJ Agreement. Giving the example of India, he said that India has several laws which can be strengthened to address the conservation, evaluation and other aspects of the BBNJ Agreement.

Dr. David Eggleston, Deputy Consul General, Australian Consulate General in Chennai, Dr. Grinson George, Director, CMFRI and Mission Officials from Bangladesh, Myanmar, Sri Lanka and Thailand also spoke during the inaugural session.

The event featured six technical sessions, focusing on various aspects of the BBNJ Agreement, such as marine genetic resources, environmental impact assessments (EIA), and marine protected areas. Discussions also covered the importance of capacity building and technology transfer to enable developing countries to effectively implement the treaty. The participants acknowledged the gaps in national policies and legal frameworks and committed to enhancing regional cooperation, conducting national workshops, and aligning national laws with the BBNJ Agreement.

The Regional Workshop significantly raised awareness among government officials and policymakers from South and Southeast Asia regarding the importance of conserving marine biodiversity beyond national jurisdiction. Countries like India, Bangladesh, Sri Lanka, and Myanmar recognized the urgency of signing and ratifying the treaty to protect the high seas, while Indonesia and Nepal committed to fast-tracking their ratification process. The Maldives announced parliamentary approval for ratification, and India confirmed its intent to sign the agreement during the next UN General Assembly. The workshop highlighted the need for further consultations and capacity-building workshops to support the ratification and implementation of the treaty[1] .

In addition, the workshop emphasized the importance of capacity building and marine technology transfer, especially for developing countries, and recommended establishing regional hubs for monitoring and sharing marine technologies. Several nations, including India and Sri Lanka, committed to aligning their national EIA policies with the BBNJ framework. Stakeholder collaboration was also emphasized, with participants agreeing to strengthen data-sharing mechanisms and engage in joint research efforts. The workshop concluded with commitments to hold national consultations, review legal frameworks, and establish a regional working group to coordinate BBNJ-related activities, supported by international organizations like the High Seas Alliance and BOBP-IGO.

[1] *At the time of publication of this newsletter, Maldives, India and Bangladesh had signed the treaty.*

Regional Dialogue on Conservation of Marine Mammals & Turtles

A Regional Dialogue on Regional Dialogue on "Conservation of Marine Mammals and turtles-Experience Sharing on Meeting Trade Obligations by the Bay of Bengal Rim Countries" was convened in Chennai on 28 August 2024, bringing together experts, policymakers, and stakeholders from 11 countries and international organizations such as the World Bank, FAO and IUCN. The event, organized by BOBP-IGO, ICAR-CMFRI, and MPEDA, focused on addressing the challenges of meeting U.S. trade obligations under the Marine Mammal Protection Act (MMPA) and similar regulations for sea turtles.

USA enacted the Marine Mammal Protection Act (MMPA), stipulating that fish exported to the US should be captured in a manner that does not result in greater incidental mortality or serious injury to marine mammals. Submission of 'Comparability Finding Application" is a mandatory requirement to continue exporting fish and fish products to the U.S. Similarly, U.S. law provides that wild-caught shrimp or products from wild-caught shrimp, harvested by commercial fisheries in a manner that adversely affects the sea turtles, may not be imported into the United States.

While countries, especially the USA's trading partners, are taking steps to meet these standards, they are facing challenges as they need to take significant additional steps to ensure compliance with the rule, bridge the gaps in regulation, enforcement, engagement, and knowledge, and explore practical solutions that can effectively reduce bycatch while supporting sustainable livelihoods.

The Regional Dialogue was moderated by Dr. K. Arulananthan, Director General, National Aquatic Resources Research and Development Agency (NARA), Sri Lanka; Dr. Grinson George, Director, ICAR-CMFRI; and Dr. Karthikeyan, Director, MPEDA. Dr. P. Krishnan, Director, BOBP-IGO spoke about the purpose and context of the Regional Dialogue.

India and Bangladesh shared their experience in the preparation and submission of the 'Comparability Finding Application' to the standards prescribed by the USA. Maldives and Sri Lanka informed that they do not trawl, yet, there are measures in place to save the megafauna. Countries also shared difficulties in stock assessment of megafauna and appreciated India's initiative in this regard.

The dialogue concluded with a consensus on the need for regional collaboration, potentially led by India, to enhance research and conservation efforts. A proposal to establish a network of research organizations and management institutions across the region was also discussed, aiming to strengthen the conservation of marine mammals and turtles while supporting sustainable fisheries.

Leveraging National Biodiversity Plans for Regional Collaboration

BOBP-IGO and WWF organized a Regional Dialogue on, "Promoting cooperation through the National Biodiversity Strategy and Action Plan (NBSAP)" on August 29, 2024, in Chennai. Participants from Bangladesh, India, Maldives, Sri Lanka, and the World Bank took part in the dialogue along with the organizers to facilitate cooperation among South Asian countries, address shared biodiversity challenges, ensure alignment with the Kunming-Montreal Global Biodiversity Framework (KM-GBF), and promote the exchange of technical knowledge, best practices, and scientific research.

During the Regional Dialogue, several national delegations reflected on their progress and plans towards achieving the KM-GBF targets, with a particular focus on marine biodiversity conservation. Bangladesh is currently summarizing stakeholder inputs for their NBSAP, with the Fisheries Ministry playing a key role. Sri Lanka is focusing on Target 3 of the GBF, aiming to conserve 30% of its marine areas by expanding efforts into the EEZ if needed. Meanwhile, the Maldives is initiating its NBSAP development and exploring Other Effective Area-Based Conservation Measures (OECM) as a means to achieve Target 3.

The Bay of Bengal Programme (BOBP) announced the establishment of the Bay of Bengal Global Biodiversity Framework (BOB-GBF) Group, a virtual network aimed at fostering regional collaboration for biodiversity conservation, which was committed during the Regional Capacity

Building Workshop for East, South, and South-East Asia organised by the Secretariat of the Convention on Biological Diversity (CBD under the aegis of Sustainable Ocean Initiative (SOI) during 05-08, September 2023, in Seoul, Republic of Korea. Participants, during the Workshop, resolved to expand the Working Group with expert members and develop this as a vibrant platform for sustained interaction among the members.

X Technical Advisory Committee meeting with strategic proposals for 2025 held

The Tenth Technical Advisory Committee (TAC-X) meeting of the BOBP-IGO was convened on August 30, 2024 in Chennai. Delegates from Bangladesh, Maldives, Sri Lanka, and India gathered to review intersessional progress and develop the 2025 work plan. Emphasizing shared priorities like combating IUU fishing, climate change adaptation, and marine pollution control, the meeting highlighted the region's commitment to sustainable fisheries governance.

During the session, BOBP-IGO Director Dr. P. Krishnan presented achievements from 2022-2024, including the advocacy for parametric insurance for small-scale fisheries, and innovative regional capacity-building initiatives such as the Bay of Bengal Stock Assessment Network (BOBSAN). Delegates endorsed key proposals, including the development of Potential Fishing Zone (PFZ) advisories, enhanced collaboration under the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, and capacity-building programs targeting fisheries law and policy.

The meeting concluded with a collective call for enhanced regional cooperation, emphasizing data sharing, technology transfer, and fostering partnerships to address transboundary resource management challenges.

Strengthening Cooperation

BOBP-IGO and TNNLU Join Hands to Address Capacity Needs in Fisheries Law and Policy

BOBP-IGO signed an MoU with Tamil Nadu National Law University (TNNLU), Tiruchirappalli to strengthen legal and policy understanding amongst the fisheries professionals in the BOB region.

On this occasion, a brainstorming session was held on 10 May 2024 at the University on the capacity needs in the sector and the academic and training programmes that can be offered jointly by the partnering organizations. Dr. V. Nagaraj, Vice Chancellor, TNNLU along with senior University officials and the Director, BOBP-IGO.

Recognizing the heightened need, it was decided that a PG Diploma programme in Fisheries Law and Policy would be initiated from this year and offered in hybrid mode with required flexibility to enable participation of potential students from BOBP member countries as well. The possibility of designing an Executive Development Program (EDP) targeting the senior officials in the government was also discussed.

Dr. N. Felix, VC, TNJFU also participated in the discussion and highlighted that steps would be taken to integrate a PhD Program in this area under the aegis of TNJFU jointly with BOBP and TNNLU.

BOBP-IGO Signs MoU with Sathyabama Institute of Science and Technology

BOBP-IGO signed an MoU with Sathyabama Institute of Science and Technology (SIST), Chennai on 5 July 2024. On behalf of BOBP-IGO, Dr. E. Vivekanandan, International Consultant, BOBLME and Adviser, BOBP-IGO exchanged the MoU with the Chancellor, SIST. The event was attended by distinguished guests including Dr. M. Ravichandran, Secretary, MOES, Government of India; Dr. Mariazeena Johnson, Chancellor, SIST; Dr. G.A. Ramadass, Former Director, NIOT;

Dr. M.V. Ramana Murthy, Director, MoES-NCCR and Dr. T. Srinivasa Kumar, Director, ESSO-INCOIS.

In his remarks, Dr. Vivekanandan mentioned that the MoU formalises the long-time partnership between BOBP and SIST. He said that the National Facility for Marine Research in the multidisciplinary ecosystem of the University was a unique opportunity that could be availed for national and regional research studies including BOBP's BIMReN programme.

The signing ceremony was held in the sidelines of the inauguration of the National Workshop on "Blue Biotechnology" conducted by the Centre for Ocean Research, SIST. On the occasion, Dr. M. Ravichandran, Secretary, MOES, Government of India dedicated the state-of-the-art National Facility for Coastal and Marine Research established by the SIST to the country.

10th Session of Regional Fisheries Bodies Secretariats' Network (RSN) Convened at FAO, Rome

The Tenth Meeting of the Regional Fishery Body Secretariat Network (RSN) was held at FAO Headquarters in Rome during 5-6 July 2024, before the 36th Meeting of the FAO Committee on Fisheries (COFI) scheduled for 8-12 July 2024.

Dr. Manuel Barange, ADG, FAO, in his opening remarks, called upon the RFBs to rejig their plans to rise up to the dynamic challenges confronting the sector in their respective region.

Representing BOBP-IGO, Dr. P. Krishnan, Director, presented the initiatives of the Organisation

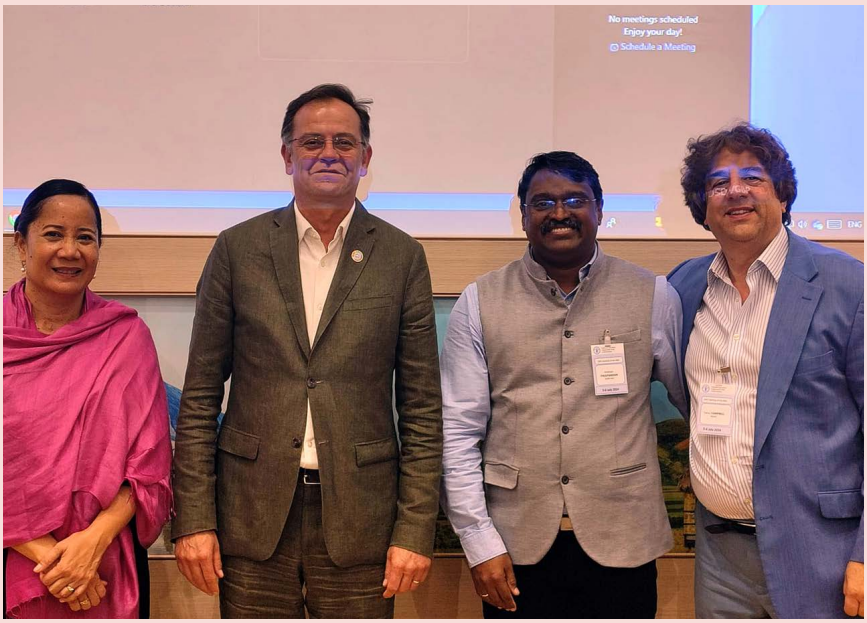
to boost regional cooperation for sustainable fisheries in its area of competence. Dr. Krishnan explained how the Organisation was adopting and sustaining various international activities in the region such as the Bay of Bengal Stock Assessment Network (BOBSAN) for building a better national and regional stock assessment framework and the BIMSTEC-INDIA Marine Research Network (BIMReN) implemented by BOBP-IGO towards promoting south-south collaboration in marine research.

The participants emphasized the importance of addressing regional issues and called for closer interactions among the Regional Fishery Bodies (RFBs) to enhance knowledge and experience sharing.

Earlier, the subject matter experts from FAO provided an overview of the global developments in important areas like stock assessment, BBNJ, fisheries subsidies, measures for spatial conservation and combating IUU. The members shared their perspectives on how these developments could be internalized in the activities of the respective RFBs.

Director, BOBP-IGO Selected as Vice Chair of RSN

Dr. P Krishnan, Director BOBP-IGO was elected as the Vice Chair of Regional Fisheries Bodies Secretariat Network (RSN) during its 10th meeting held in Rome from 5-6 July 2024. The meeting was held at the FAO headquarters prior to the 36th COFI.



Dr. Darius Campbell, NEAFC and Dr. Manumatavai Tupou-Roosen, FFA were selected as Co-Chairs.

The office bearers will work closely with FAO and other RFBs to promote inter-regional cooperation and take global efforts forward in strategic areas, such as conservation, climate change, and livelihoods.

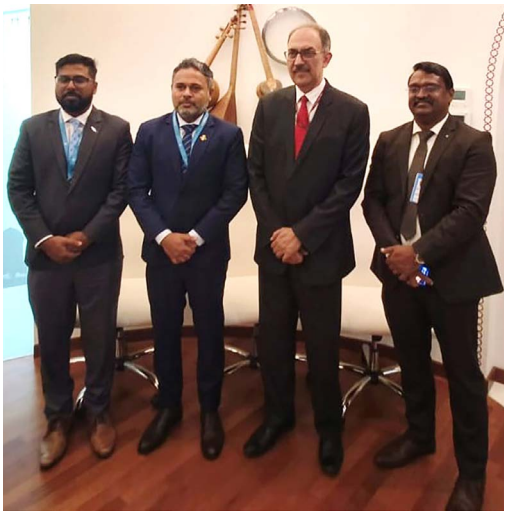
36th Session of Committee on Fisheries (COFI-36) Held at FAO, Rome

COFI-36 was held at FAO HQ, Rome during 8-12 July 2024. COFI is the global intergovernmental forum where FAO Members meet to consider issues related to fisheries and aquaculture. It is a unique body that provides periodic recommendations and policies on global fisheries and aquaculture.

COFI-36 focused on the vital role of fisheries and aquaculture in tackling food insecurity, malnutrition, and poverty, as well as stressing their ability to alleviate hunger, drive sustainable growth, and reverse environmental degradation. Also, the main outcomes reached during the previous session of its subcommittees on Aquaculture, Fisheries Management, and Trade were presented.

Dr P. Krishnan, Director, BOBP-IGO, participated in COFI-36 to represent the interests and perspectives of the Bay of Bengal Region.
He made specific interventions on the agendas concerning the Bay of Bengal region and its members. His participation underscores the commitment of BOBP-IGO to strengthening international collaboration and fostering commitments that will benefit the region.

BOBP-IGO Members Hold Bilateral Meetings on the Sidelines of COFI-36



The Maldives delegation, comprising Mr. Ahmed Shiyam, Minister of Fisheries and Ocean Resources, and Dr. Hussain Sinan, Director General (Fisheries), interacted with the Indian delegation led by Dr. Abhilaksh Likhi, Secretary, Department of Fisheries, Government of India on 8th July 2024. Dr. B.K. Behera, Chief Executive, NFDB, and Ms. Neetu Kumari Prasad, Joint Secretary, DoF, participated in the interaction. The delegation mutually recognized the strong collaboration between the countries and the active engagements under the aegis of the BOBP-IGO arrangement. They discussed possible areas for strengthening cooperation.

Dr. P Krishnan, Director of BOBP-IGO participated in the meeting along with senior officials from the Missions of India and Maldives and contributed during the deliberations.

Delegations from India Meets FAO Team on the Sidelines of COFI-36

A meeting of the Indian delegation with Dr. Manual Barange, ADG (Fisheries) was held on 08 July at FAO headquarters. The Indian delegation consisted of Dr. Abhilaksh Likhi, Secretary, Department of Fisheries, Government of India, Dr. B.K. Behera, Chief Executive, NFDB and Ms. Neetu Kumari Prasad, Joint Secretary, DoF, Government of India.

The potential areas of joint collaborative action between India and FAO were discussed. India appreciated FAO's support, and Dr. Manuel Barange recognized India's key role in realizing the Blue Transformation goals in the region.

The meeting was also attended by Dr. Krishnan, Director of BOBP-IGO, and representatives from the Indian Mission in Rome.

BOBP-IGO Members Hold Bilateral Meetings with FAO Experts

High level delegations from India and Maldives participated in the COFI-36 held at FAO headquarters, Rome during 08-12 July 2024. Based on the specific interests of the members, BOBP-IGO facilitated bilateral meetings with the fisheries experts from FAO working on fishing techniology, stock assessment, PSMA, resource conservation, etc.

Dr. Krishnan, Director, BOBP-IGO also participated in these meetings and contributed to the deliberations.

INCOIS to Expand Ocean Information Services to the Members of BOBP-IGO

BOBP-IGO and ESSO-Indian National Centre for Ocean Information Services (INCOIS) signed a Framework of Cooperation on 05 August 2024 to improve and extend ocean information services in the Bay of Bengal region.

Speaking on the occasion, Dr. Krishnan, highlighted the scope of this promising partnership and the specific interests of the BOBP- IGO member countries: Bangladesh, India, Maldives, and Sri Lanka. Dr. T. Srinivasa Kumar, Director, INCOIS, outlined potential service areas and assured that the unique needs of each country could be addressed. Invitees from Bangladesh, Maldives, and Sri Lanka also attended the signing ceremony virtually and appreciated the need and potential of the cooperation.

This collaboration aims to boost cooperation in research, policy advocacy, capacity building, and outreach in ocean information services. Key focus areas among BOBP-IGO members include Potential Fishing Zones (PFZ), sea safety, coral bleaching alerts, algal blooms, and oil spill tracking. The objectives of the cooperation framework encompass facilitating institutional visits, exchanging students and researchers, promoting the exchange of scientific materials, organizing joint events, and acting as an outreach interface for INCOIS within BOBP-IGO member countries.

Meetings/Events Participated

Strong Regional Cooperation Pitched in 4th Bay of Bengal Maritime Dialogue

The Fourth Bay of Bengal Maritime Dialogue, co-hosted by the Pathfinder Foundation and the Centre for Humanitarian Dialogue (HD), was held in Colombo, Sri Lanka from 07-08 May 2024. Amb. Indra Mani Pandey, Secretary General, BIMSTEC was the Guest of Honour.

The Dialogue brought together diplomats, experts, and researchers from the Bay of Bengal rim countries and beyond to provide a platform for informal discussions on maritime affairs in the region, identify new avenues for regional collaboration, and address potential challenges to constructive engagement among littoral states. Key topics included maritime governance, crisis management, disaster management, and sustainable fisheries.

Dr. P. Krishnan, Director, BOBP-IGO, delivered the lead talk, titled, "Transboundary Fisheries Management in the Bay of Bengal: From Cooperation to Action," emphasizing the need for collaboration in managing shared fish stocks. Dr. Krishnan highlighted that over 50% of South Asian and more than 60% of Southeast Asian fish stocks are shared, underscoring the necessity for collaborative management. He emphasized the importance of initiatives like the Bay of Bengal Stock Assessment Network (BOB-SAN) and BIMSTEC-India Marine Research Network (BIMReN) in strengthening marine science research and collaborative stock assessment.

The proposal from BOBP-IGO to establish a research vessel network in the region was well received. BOBP-IGO committed to prepare a roadmap for the same, jointly with HD. Amb. Venu Rajamony moderated the technical sessions.

BOBP-IGO Participates in ICSP 17 at UN HQ

The Seventeenth round of the Informal Consultations of States Parties (ICSP 17) to the United Nations Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea (UNCLOS) relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) on the theme of

"Sustainable fisheries management in the face of climate change" was held at the United Nations Headquarters in New York from 15 to 17 May 2024.

Dr. P. Krishnan attended the meeting from the BOB region and contributed to the deliberations. The delegation from India and Maldives, members of BOBP-IGO, participated in the Conference and presented the national scenario of fisheries in the context of changing climate.

Role of RFBs in Integrating Climate Change in Fisheries Management Highlighted in ICSP-17 at UN HQ

A Panel Discussion on, "Mainstreaming climate change into international fisheries governance: the case of regional fisheries bodies" was held at the United Nations headquarters in New York on 16 May 2024. The event, organized by the FAO, aimed to discuss the role of RFBs in addressing the impacts of climate change on transboundary fisheries management, highlighting ongoing efforts, and exploring the potential for regional coordination frameworks.

The Director, BOBP-IGO presented a talk on, "Impacts of climate change on shared fisheries resources and management responses in Indian Ocean". He gave an overview of the activities of the RFBs in the IO region and the key lessons learnt towards integrating climate change in management advice. He highlighted the crucial role of the lower middle-income countries in the region in ocean

management, owing to their significant share in marine fisheries production.

"As the Indian Ocean has experienced a significant basin-wide surface warming since the 20th century, the RFBs have a significant role to build capacity in the countries towards tracking the impact of climate change on the fisheries resources and in integrating climate change in their management advice", Dr. Krishnan said. He highlighted the new collaboration frameworks developed by BOBP-IGO and plans to undertake a regional study on the impact of climate on fisheries.

The FAO Panel Discussion was held on the sidelines of the Seventeenth round of the Informal Consultations of States Parties (ICSP 17) to the United Nations Agreement for the implementation of the provisions of the UNCLOS relating to the UNFSA held at UN Headquarters in New York from 15 to 17 May 2024.

4th Global Dialogue of Sustainable Ocean Initiative (SOI) Held at Seoul

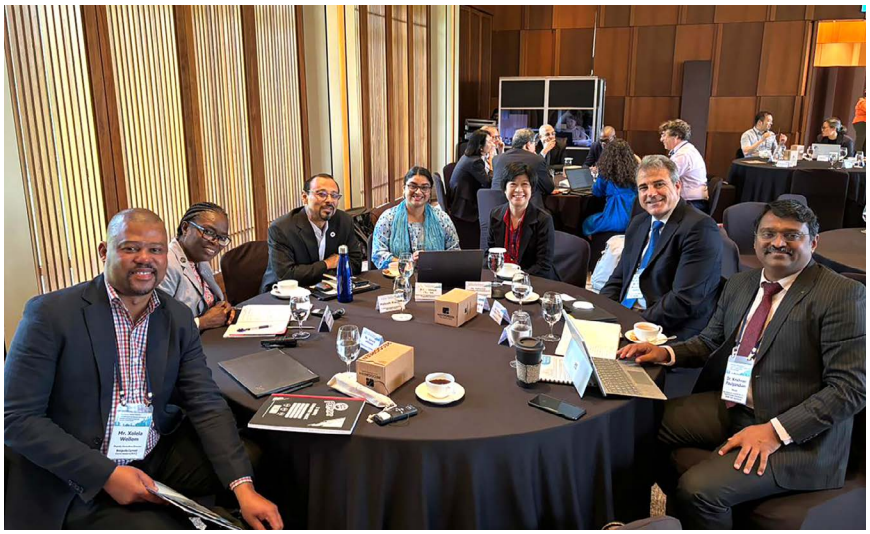
The 4th SOI Global Dialogue with Regional Seas Organizations (RSOs) and Regional Fisheries Bodies (RFBs) was held during 11-14 June 2024 in Seoul, Republic of South Korea.

This meeting was convened by the Secretariat of the Convention on Biological Diversity (CBD), the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Environment Programme (UNEP), in collaboration with the Ministry of Oceans and Fisheries of the Republic of Korea and the National Marine Biodiversity Institute of Korea.

The meeting aimed at advancing the work under the SOI Global Dialogue, a key platform that bridges national, regional, and global ocean priorities.

Through its first three meetings (2016, 2018, 2022) and various workshops, the SOI Global Dialogue facilitated valuable exchanges among regional organizations, identified opportunities for cross-sectoral collaboration on sustainable fisheries and marine biodiversity, and outlined the roles of regional organizations in supporting global commitments for fisheries, environment, biodiversity, and sustainable development.

The participants included heads of the Regional Fishery Bodies (RFBs) and Regional Seas Organizations (RSOs), as well as representatives from the countries of this region.
Dr. P. Krishnan participated in the dialogue and contributed to the meeting outcome.



The Regional Fishery Bodies (RFB) and the Regional Seas Organisations (RSO) resolved to work together towards creating wider understanding on Biodiversity Beyond National Jurisdiction (BBNJ) and Global Biodiversity Framework (GBF).
The SOI Global Dialogue with RFBs and RSOs had resource persons from many global organisations including CBD, FAO and DOALOS-UN.

Experts Discuss Strategies for Leveraging OECMs to Meet India's 30x30 Conservation Targets

A National Workshop on "Advancing India's 30x30 Target through OECMs" was organized by Goa State Biodiversity Board in collaboration with the National Biodiversity Authority, Government of India, and Wildlife Conservation Society (WCS), India, on 26-27 June 2024 in Goa.

The Director, BOBP-IGO, joined as a panellist and contributed to the deliberations on leveraging fisheries OECMs as a promising alternative to meet the national targets on expanding spatial conservation areas.

Mr. Aleixo Sequeira, Minister of Environment and Climate Change, Government of Goa, was the Chief Guest.

Dr. Vidya Athreya, WCS;
Dr. C. Achalender Reddy, NBA;
Dr. Ravindra Kumar, GIZ; Dr. Vishaish Uppal, WWF; Dr. Yash Veer Bhatnagar, IUCN; and Mr. Raghu Kumar Kodali, MoEFCC, along with senior officials from different states, participated in the deliberations.

Dr. M. Devaraj Endowment Lecture at Fisheries College and Research Institute (FCRI), Thoothukkudi

Dr. P. Krishnan delivered the Dr. M. Devaraj Endowment Lecture at the Fisheries College and Research Institute, Thoothukudi on 22 July 2024. Dr. M. Devaraj, a distinguished fisheries scientist and educator, was recognized for initiating significant mariculture projects and contributing to tropical fish stock assessment through his highly regarded "Manual of Fish Population Dynamics." Dr. Devaraj's leadership at CMFRI focused on integrating small-scale mariculture with capture fisheries, enhancing bioeconomic fisheries management, and promoting community involvement in sustaining marine resources. His commitment to advancing fisheries research continued until his passing away in 2013, leaving a legacy of scientific excellence and dedication to sustainable marine practices.

Dr. Krishnan recalled his association with Dr. M. Devaraj as his student and highlighted his remarkable legacy and pioneering work in fisheries science. In his presentation titled "Breaking Myths & Building Perspectives in Fisheries Management", Dr. Krishnan said that fisheries management requires collaboration among neighbouring countries, as most marine species are shared. "While India has made significant advances in marine science research, the government needs to increase research collaboration with neighbouring countries. Fisheries management is an interdisciplinary field that goes beyond just fish biology and stock assessment. Fisheries managers and researchers should work together more closely to ensure effective policies and management. Focusing on value creation and profit maximization, rather than just maximizing catch, can lead to better outcomes", Dr. Krishnan said.

Visit to Labs and Interaction with Faculty of FCRI, Thoothukkudi

Dr. Krishnan visited the Fisheries College and Research Institute (FCRI) under the Tamil Nadu
Dr. J. Jayalalithaa Fisheries University (TNJFU) on 22 July 2024. Dr. Neethiselvan, Dean i/c, coordinated a tour to the new state-of-the-art training facilities established at the Main Campus and Shore Laboratory of the College in the field of fishing technology.

Dr. Krishnan indicated that the new fishing survey vessel, navigation simulator, cut-out models of the marine engines, marine electronics unit, navigation and seamanship section are potential areas which the University and BOBP-IGO shall jointly leverage for exposure visits and regional capacity development programmes. Earlier, he interacted with the students and faculty members of the Fisheries College on potential areas of working together.

Exploratory Reef Fishing and Field Visits by BOBLME Team in Maldives

As a part of the coordinated field visits BOBP-IGO and IUCN team visited the Maldives Industrial Fisheries Company (MIFCO) at the Felivaru Island on 14 August 2024. The team was shown various facilities and sections of the state-of-the-art cannery.

The team visited the Atoll Marine Conservation Centre, established by an NGO 'Naifaru Juvenile', at Naifaru Island on 15 August 2024. The NGO is undertaking a sea turtle recovery programme. At the time of the visit of the BOBLME project team, 6 turtles (5 olive ridleys and one hawksbill) with amputated flippers were being treated in the facility.

The team visited Madhrasathul Ifthithaah, the second oldest academic institution in the country at Naifaru Island and interacted with the principal, staff and higher secondary students of environmental/fisheries science who showed great interest to get associated with the awareness programmes on environment and fisheries sustainability under the BOBLME project.

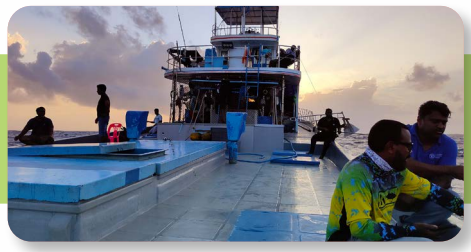
The BOBLME Project team also visited a smoked tuna (valhomas) unit and interacted with the woman-entrepreneur. Valhomas is now made in large-scale fish factories for export. However, there are still a few

in the islands, who have been keeping this traditional technique alive.

The BOBLME project team met the President, Lhaviyani Atoll Council (also called Faadhippolhu Atoll Council) along with the Secretary and staff of the Council in the Secretariat of the Council in Naifaru Island on 16 August 2024. In the meeting, the project team shared an overview of the project and solicited support and engagement of the Council. The Council assured full support and cooperation to execute the project in the Atoll.

Felivaru Tuna Processing Plant

Fishing Trip in Pole and Line Fishing Boat



Atoll Marine Conservation Centre

With Teachers at Madhrasathul Ifthithaah

Smoked Fish Yard

Lhaviyani Atoll Council

Other Events/Meetings Attended by BOBP-IGO Staff

Dr. P. Krishnan, Director

- Meeting on Port State Measures Agreement (PSMA) to combat Illegal, Unreported, and Unregulated (IUU) fishing on 17th May 2024 with BOBLME II and FAO experts.
- External examiner at the Ph.D. viva voce of Ms. Kanchi Bhargavi which was held on 22 May 2024 by ICAR-Central Institute of Fisheries Education (CIFE), Mumbai.
- Meeting for cross-sectoral regional cooperation convened by CBD Secretariat, in connection with the 4th meeting of the SOI Global Dialogue with RSOs and RFBs in Seoul, 11-14 June 2024.
- First Meeting of the Expert Committee for Revalidation of Potential Fishery Resources in Indian EEZ, convened by the Department of Fisheries, Government of India, on June 20, 2024.
- EAF-NANSEN Core Group meeting convened by FAO for the Expert Members on 10th July 2024.
- Delivered a lecture on 'Breaking Myths in Project Preparation' as part of the DWRP Lecture series organized by ICAR-National Academy of Agricultural Research Management (NAARM), Hyderabad on 19th July 2024, under the aegis of the National Agricultural Higher Education Project (NAHEP)
- Experts Meeting convened by the Department of Fisheries, Government of India, on 18 and 24 July 2024 under the chairmanship of Joint Secretary (Marine), Department of Fisheries, Government of India, to discuss the Draft Guidelines for Indian fishing vessels fishing in the High Seas
- 5th Maldives Marine Science Symposium convened by the Maldives Marine Research Institute (MMRI) on 24th July 2024.
- Scoping meeting with Cooper Van Vranken on the Fishers' Voice Online Network (FVON) pilot project in Bangladesh on 29th July 2024 to discuss the potential areas of collaboration.
- Board of Studies meeting convened by Tamil Nadu National Law University (TNNLU), Tiruchirappalli on 22 August 2024 to discuss the course curriculum and syllabus for the PG Diploma in Fisheries Law and Policy being offered jointly by TNNLU and BOBP-IGO.
- BIMREN Task Force meeting convened by BOBP-IGO on 24 August 2024 for Evaluation and finalization of the BIMReN project proposals.
- Meeting with Chief Executive, National Fisheries Development Board (NFDB), on Hyderabad to discuss the status of the collaborative projects.

Mr. Rajdeep and Dr. T. Velumani

- Comprehensive Performance Review meeting convened by the MoES-National Centre for Coastal Research (NCCR) on 11 July 2024 for evaluating the scientific, technical, financial, and accounting aspects of the project with external experts.

Dr. Ahana Lakshmi and Dr. K. Nirmala

- Scoping meeting convened by the ICAR-National Academy of Agricultural Research Management (NAARM), Hyderabad on 22 July 2024 under the project titled, "Development of a Framework for Gender Mainstreaming in the Development Schemes of the Agriculture Sector in India".

Study Report

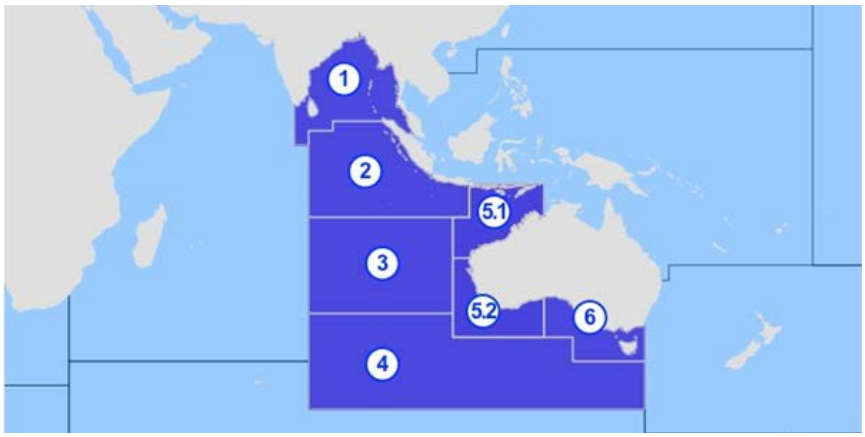
Status of Fish Stocks in the Eastern Indian Ocean: Need for a Transboundary Initiative

The management of transboundary fish stocks in the EIO is a complex and pressing issue that necessitates binding international agreements, improved data collection and sharing practices, and the promotion of long-term sustainable fishing practices. By aligning individual actions with collective interests, the countries in the region can work towards the sustainable use of their shared marine resources, ensuring the long-term health and productivity of the EIO's fisheries.

We present our preliminary results based on analyses of the status of transboundary fish stocks in the Eastern Indian Ocean (EIO) using the FAO data on marine fisheries production.

1. Introduction

The Eastern Indian Ocean (EIO: FAO Area 57) plays a critical role in global marine biodiversity and serves as a key fisheries hub for countries bordering this expansive region. Spanning from the Bay of Bengal to the Timor Sea, it covers tropical and subtropical waters along coastlines of nations including India, Indonesia, Thailand, Malaysia, Myanmar, and western and southern Australia. This region's marine geography comprises coastal and offshore ecosystems, such as coral reefs, mangroves, and seagrass beds, particularly around the Andaman Sea, Strait of Malacca, and the Arafura Sea. With its nutrient-rich waters, fuelled by monsoon-driven upwelling, Area 57 supports robust fisheries and houses species ranging from Indian mackerel and tunas to prawns and anchovies. The biodiversity and productivity of this area make it essential for regional food security, with millions relying on its resources for subsistence and economic stability. However, EIO is facing intensifying pressures from climate change, overfishing, pollution and habitat degradation. Rising sea temperatures and ocean acidification are shifting species distributions, affecting



Map 1. Eastern Indian Ocean region (Source: FAO)

fish reproductive cycles, and diminishing stock abundance, with severe implications for food security in the region (Das et al., 2020). Additionally, increased coastal development and pollution are degrading essential habitats like coral reefs and mangroves, which act as nurseries for fish populations (Vivekanandan et al., 2016). Overfishing compounds these impacts, with many fish stocks nearing or exceeding sustainable levels of exploitation, threatening the long-term productivity of these fisheries (Dutta et al., 2021).

Given the ecological and socioeconomic importance of the EIO, there is an urgent need for enhanced fisheries management. This includes adopting ecosystem-based management approaches, enforcing sustainable catch limits, and implementing adaptive policies that can withstand climate variability (Heenan et al., 2015). Collaborative, science-informed management across national borders is essential to maintaining the resilience of EIO's fisheries, ensuring that they continue to support regional food security, biodiversity, and economic stability for future generations.

2. Trends in Production and Stock Status

Marine fisheries in the EIO have developed rapidly since 1950s. The region comprises many developing coastal states and small island

developing states (SIDS), majority of whom got their independence during 1950s. After independence, the countries focused on development including their fisheries sector. With support from various international and bilateral projects such as the Bay of Bengal Programme of FAO, the countries started seeing noticeable development in the fisheries sector since 1970s. The overall production trend in the EIO from 1950s show that the marine fisheries production remained within two million tonnes till 1970s. However, during the next twenty years, production doubled to about five million tonnes. During the next period from 1990s to 2022, the period for which data is available, the production continued to increase and reached 7.07 million tonnes in 2017. During the next five year, (2018-22), however, the catch has declined to about 6.31 million tonnes. Overall, during 2000-2022, the average production remained at about 5.95 million tonnes. The cumulative annual average growth rate of fisheries production was four percent during 1950-2022. However, the year-on-year (YoY) growth has consistently decreased from 8.2% in 1982 to -0.1% in 2022. (Fig. 1).

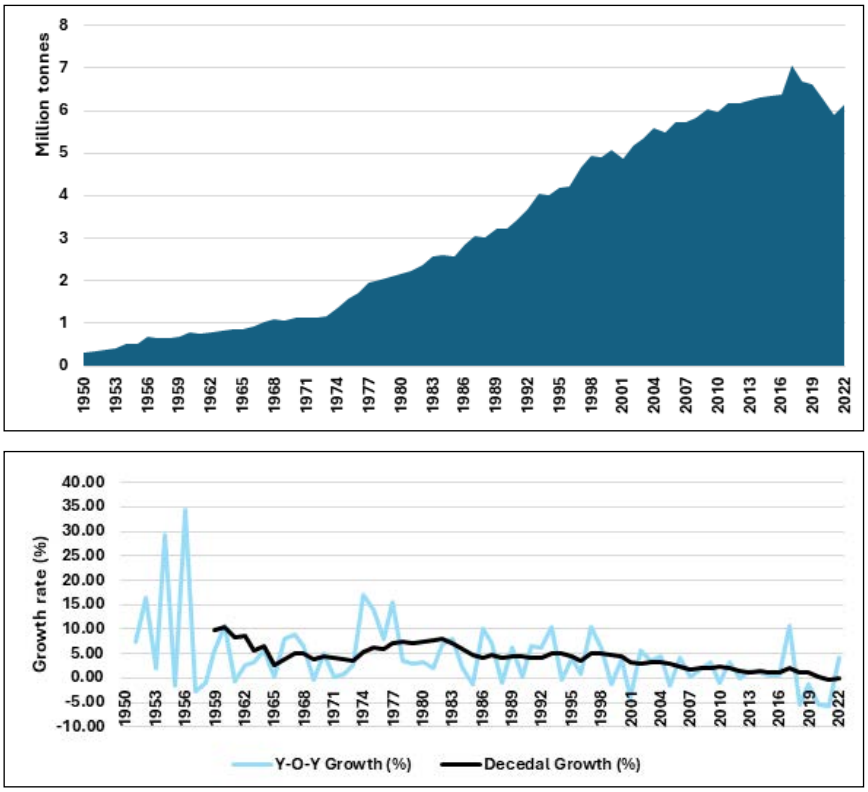


Fig. 1. Growth in production in EIO (Computed from FAO)

Analysis of the catch composition and growth rates of various marine species groups in the EIO (Table 1, Fig. 2) during the period of analysis (1950-2022) shows that the broad composition of catch has remained largely stable with pelagic and demersal fisheries contributing about 44-50% catch throughout the period. However, growth experience of various groups shows some variation. For example, Cephalopods, Freshwater and Diadromous fishes which were relatively slower in the earlier period, experienced rapid growth in the latter half of the period of analysis resulting in their increased share in the catch. Overall, most species exhibited their highest growth rates in the 1970s and 1980s, with a general moderation of growth rates in recent decades, indicating a trend of declining growth rates over time. These patterns suggest changes in fishing practices, species availability, and environmental conditions, emphasizing the need for adaptive management strategies to ensure the sustainability of fisheries and the conservation of marine biodiversity in the EIO.

Table 1. Decadal catch composition in the EIO region- major groups excluding unidentified species

Period	Aquatic Animals NEI	Cephalopods	Crustaceans	Demersal Marine Fish	Freshwater and Diadromous Fish	Molluscs excl. Cephalopods	Pelagic Marine Fish
1950-59	-	0.20	7.43	20.21	0.41	0.41	30.03
1960-69	0.12	0.21	6.95	14.45	0.62	1.24	31.03
1970-79	1.36	0.87	8.04	16.57	0.81	1.61	27.53
1980-89	11.78	1.54	7.50	13.99	3.05	2.49	30.29
1990-99	3.79	2.12	7.12	15.92	4.59	1.60	30.68
2000-09	12.28	2.04	6.91	15.23	4.29	0.94	28.81
2010-19	15.97	2.34	8.30	17.22	4.90	1.57	35.00
2020-22	1.97	2.08	7.00	17.60	5.83	2.03	38.36
Overall	6.75	1.60	7.40	15.85	3.44	1.64	31.67

However, the FAO's annual State of World Fisheries and Aquaculture reports (2018, 2020, 2022, and 2024 editions) (Fig. 3) shows that the share of unsustainable stocks has increased from 26.5% in 2015 to 36.5% in 2021 due to persistent fishing pressures (FAO, 2024). Rising ocean temperatures, acidification, and other climate change impacts are also increasingly influencing stock health and distribution patterns. The reports emphasize that fishery resources are also under strain from socioeconomic factors, such as increased coastal population growth, tourism, and shipping activities, which often disrupt habitats and reduce stock resilience. The 2022 and 2024 editions highlight that climate variability, combined with weak enforcement of sustainable fishing practices, exacerbates stock depletion and habitat loss.

Comparative analysis of unsustainable fish stocks across FAO fishing areas reveals significant disparities, influenced by varying levels of fisheries management and enforcement effectiveness. The Northeast and Southwest Pacific (Areas 67 and 81) report some of the lowest unsustainable stock percentages at 15% and 23%, respectively, likely reflecting robust management frameworks, particularly in countries like the United States and Australia, where advanced stock assessment and ecosystem-based approaches are widely implemented. In comparison, the Eastern and Western Indian Ocean areas (Areas 57 and 51) display higher proportion of unsustainable stocks of 36.5% and 37.5%. These areas face high fishing pressures, often from small-scale, artisanal fisheries, coupled with environmental stressors like climate change and pollution. Limited resources for effective enforcement further compound stock vulnerability.

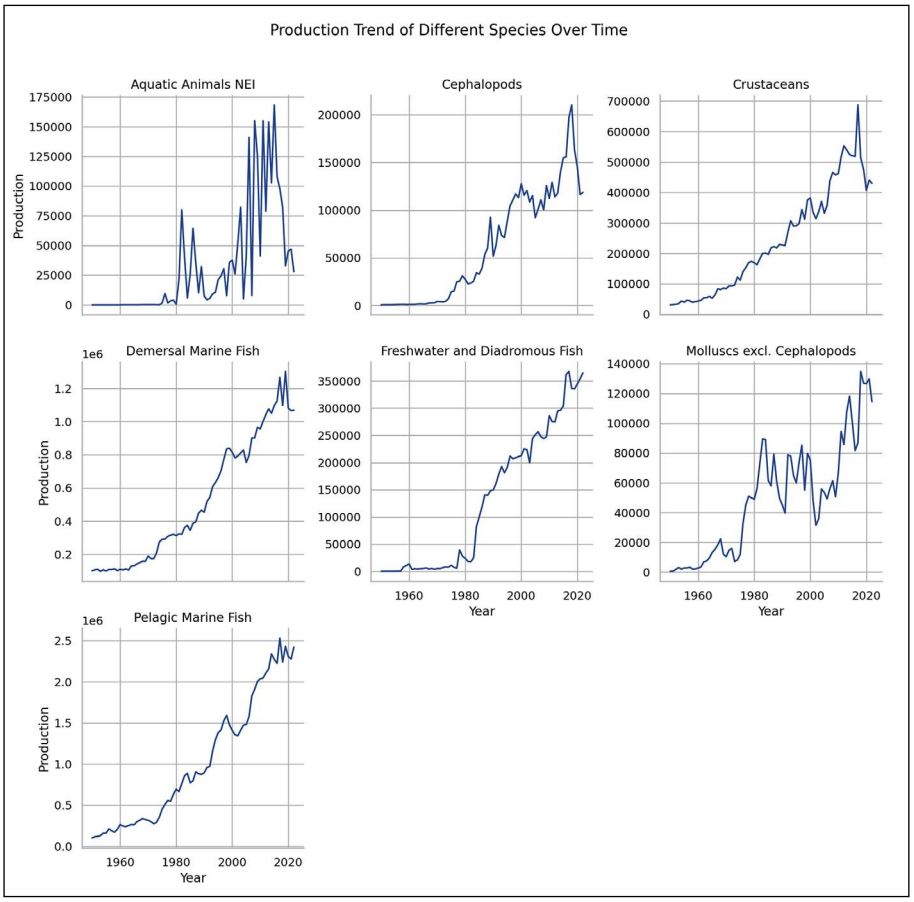


Fig. 2. Production trend of different groups over time (Estimated from FAO)

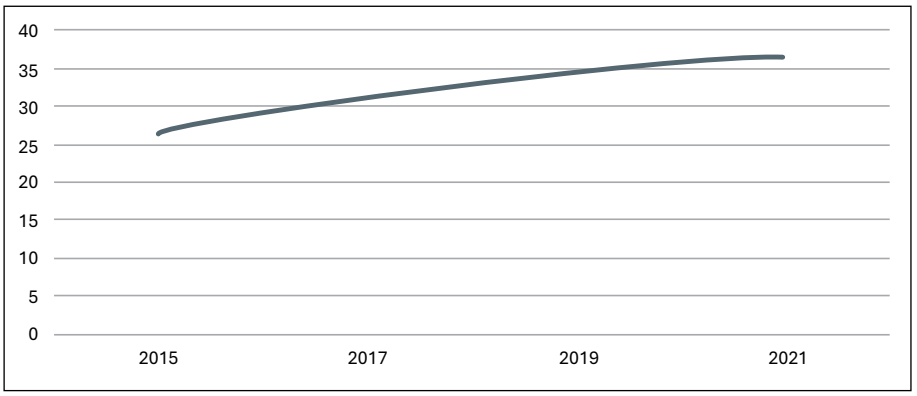


Fig. 3. Share of unsustainable stocks in EIO (Compiled from SOFIA 2018-24)

3. Economic Implications

The analysis of marine fisheries production in the EIO, categorized by World Bank's economic classifications of countries, reveals significant economic implications and risks, particularly for lower-middle income countries. Lower-middle income nations contribute substantially to the region's total marine production (Fig. 4), underscoring their economic and food security reliance on fisheries. In these countries, fisheries are not only vital for employment and GDP but also play a critical role in sustaining livelihoods in coastal communities where alternative economic opportunities may be limited. However, this reliance on marine resources exposes lower-middle income countries to considerable economic risks, especially given the increasing prevalence of over-exploited and collapsed stocks documented in the stock status data.

The correlation between stock decline and production trends suggests that as over-exploitation intensifies, lower-middle income countries face heightened vulnerability to economic instability. This risk is compounded by limited financial and regulatory resources, which can hinder effective stock management and adaptive measures, thereby exacerbating over-exploitation and unsustainable fishing practices. Furthermore, environmental factors, including climate change, add another layer of complexity; lower-middle income countries are often unable to deal with climate impacts, such as changing sea temperatures and ecosystem shifts, which can disrupt fish availability and further strain economic resilience. Unlike high-income nations, which generally have resources to adapt, lower-middle income countries may experience direct economic losses and increased volatility in production if these trends persist unaddressed.

Analyzing production trends, catch composition, and stock status

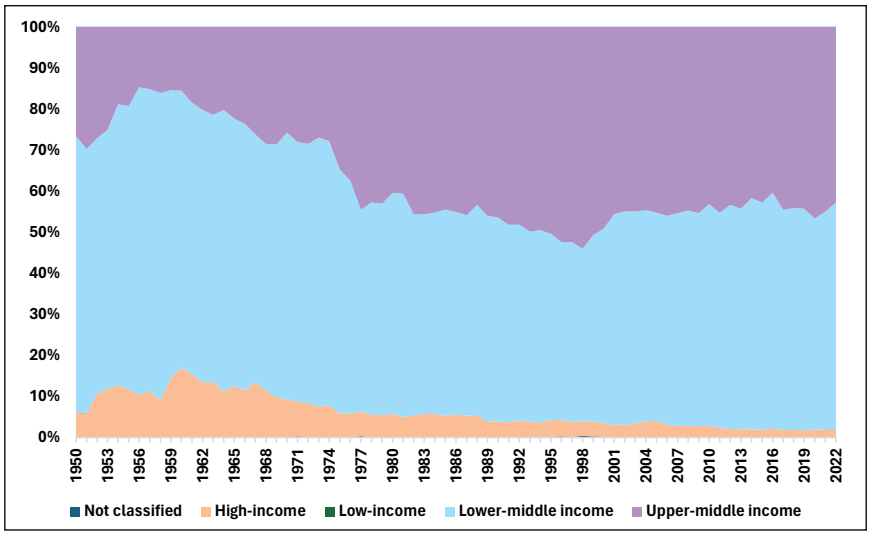


Fig. 4. Marine fisheries production in EIO by different economic groups (Estimated from FAO)

highlights additional challenges for lower-middle income nations. The catch composition shows a growing emphasis on high-value species, such as pelagic fish and cephalopods, likely in response to declining demersal stocks. While targeting these species may temporarily offset production declines, it increases the risk of over-exploitation and depletes the most economically valuable species, which are crucial for export revenue. The dependency on a narrow range of high-value species could have far-reaching economic repercussions if stocks continue to degrade, reducing export income and destabilizing local economies. Furthermore, the potential for economic loss is heightened by the limited capacity of lower-middle income countries to diversify into alternative sectors or invest in sustainable practices, making them particularly susceptible to economic shocks.

To mitigate these risks, it is essential to focus on strengthening stock management in lower-middle income nations. International support for implementing sustainable fishing practices, enhanced monitoring, and adaptation funding for climate resilience could help stabilize production levels and protect economic interests. Additionally, fostering diversification in fisheries, such as developing aquaculture or processing value-added fishery products, would reduce dependency on vulnerable marine resources, enhancing economic stability. Without these interventions, lower-middle income countries in the Eastern Indian Ocean are likely to experience long-term economic losses, as the current trajectory of over-exploitation and environmental pressures threatens to erode the foundations of their fisheries-dependent economies.

Group	Number of Families	Approximate share in catch (%)
Fish families harvested by one country	68	0.77
Fish families harvested by multiple countries	67	30.47
Highly migratory and straddling species (IOTC listed species)	8	20.91
Others		47.85
All families	143	100.00

Estimated from FAO FishStatJ

Despite a strong and growing fishery, fisheries management in the EIO remains weak. This is especially concerning the transboundary species. Given the diverse catch basket, regional management mechanism cover is available only for tunas and sharks which are about 13 percent of the total production.

4. Focussing on Transboundary stocks in Eastern Indian Ocean

The marine fish stocks occurring in the EIO can be classified as follows: stocks occurring within national boundaries; (2) Highly migratory and straddling fish stocks such as tuna; and (3) transboundary stocks occurring in the Exclusive Economic Zone of more than one country . An analysis of FAO catch data for EIO shows that catch is reported for 143 families. In addition, about 40% of catch is in the "Others" category, for which family cannot be identified. Out of these 143 families, there are about 67 families which are harvested by more than one country. This group contributed about 30% to the catch during 1950-2022 while about 21% of catch came from highly migratory and straddling stocks (Table 2). The table is indicative only as data reporting is inconsistent. However, it shows that more than half of the catch is coming from families that are targeted by multiple countries.

Estimated from FAO FishStatJ.

As mentioned above and considering that the EIO envelopes many transboundary ecosystems and also noting that it includes a large marine ecosystem like the Bay of Bengal, it can be reasonably argued that a large portion of the families targeted by multiple countries are transboundary species.

However, the management of transboundary fish stocks in this region faces several challenges. First, a list of transboundary stocks is not available and there is lack of reliable data on their distribution and abundance. The complex political and institutional arrangements for fisheries governance, and the impacts of overfishing and habitat degradation are the other challenges. Climate change further complicates transboundary fishery management by altering the distribution and abundance of fish stocks. These environmental changes require adaptive management strategies to address shifting stock distributions, which can lead to disputes over resource allocation and increased fishing pressure (Palacios-Abrantes et al., 2020).

As mentioned earlier, a major challenge is the complex political and institutional arrangements for governing transboundary fish stocks in the region. The countries in the EIO share maritime borders and have established exclusive economic zones, but they have yet to develop comprehensive and coordinated mechanisms for joint management of their transboundary fishery resources.

Unlike straddling and highly migratory fish stocks, for which the United Nations Convention on Law of the Sea and the UN Fish Stocks Agreement provide a framework, there is no global legal instrument specifically addressing the management of transboundary fish stocks. Identification of transboundary stocks is also challenging, as the migration patterns and distributional ranges are usually not well studied, especially in developing countries.

5. Conclusions

- EIO is a critical region for global marine biodiversity, supporting millions in coastal communities, but faces growing threats from overfishing, climate change, and habitat degradation.
- Current management efforts are inadequate, particularly for transboundary fish stocks, which are exploited by multiple countries without sufficient coordination, leading to high rates of unsustainable fishing practices as evident from stock status.
- A significant portion of the catch in the EIO is composed of pelagic, demersal, and crustacean species that are under increasing pressure, highlighting the urgent need for structured, multi-country management approaches.
- The high economic dependency on fisheries among lower-middle income countries in the region makes them particularly vulnerable to stock declines, risking food security and economic stability.
- To ensure the long-term health of EIO fisheries, a transboundary initiative is essential, focused on binding agreements, data-sharing mechanisms, and adaptive management strategies to respond to changing environmental conditions.
- Strengthening data collection, establishing collaborative governance frameworks, and aligning national policies with regional conservation goals are critical to sustainable fisheries management in the EIO.

These actions are necessary to mitigate the risks associated with overexploitation and ensure the resilience of shared fish stocks in the EIO, benefiting the economies and communities dependent on these resources.

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Research Team

Rajdeep Mukherjee, M. Sri Hari and V. Anisha

List of New Projects

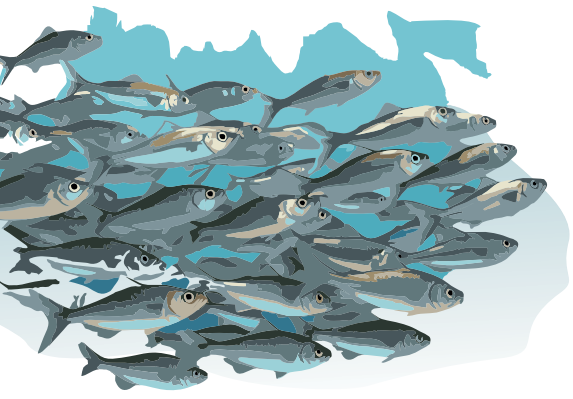
1. FAO project for provision of service for "Information collection for Fishery Management Inventory (FMInv) for 20 fisheries in Bangladesh, India, Maldives and Sri Lanka" from October 2024 – January 2025
2. FAO project for provision of service for "Technical and organizational support to facilitate policy dialogue and capacity development in India on the 2009 FAO Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA)." from 15 November 2024 – 28 February 2025.

Up Coming Event

Regional Training Course on CCRF and EAFM

15 – 30 November 2024 | Chennai & Kochi

This Training Course is strategically placed as a refresher and skill building course to elevate officials who have basic familiarity with the governance issues to engage in effective consultation with experts and other stakeholders and system as a whole with scientific insights and novel thinking. In addition, the Course will provide an international exposure to fisheries practitioners and hands-on experience in analyzing complex fisheries problems. The Training Course will be instrumental in building rapport among the fisheries practitioners of the member-countries and encouraging them to exchange ideas and experiences regarding fisheries management.



BOBP-IGO in the Media

THE NEW INDIAN EXPRESS

India to sign High Seas Treaty in General Assembly next month

Govt of India to establish an appropriate institutional mechanism t Treaty.

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Companies / Markets / Portfolio / Opinion

India to sign High Seas Treat joining global effort to protec

Updated - August 27, 2024 at 05:25 PM.

India's participation will enable it to contribute to global ocean a role in establishing marine protected areas and sharing

The Cabinet of Minister
actual signing will take p
agreement will begin, Sri
agreement here today.

Today, there is no internat
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High Seas," negotiated for t
Convention on the Law of th
March 4, 2023.

The full name of the agreem
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Diversity of Areas Beyond N
sign at the UN headquarter
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"It is ambitious," Rebecca
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Environmental Impact A
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equitably with other countries.

The treaty is also seen as an instrument of action against climate change. "If effectively protected and well-managed, the Marine Protected Areas will help realize the target to protect at least 30% of our ocean by 2030, as agreed by countries in December 2022 under the Kunming-Montreal Global Biodiversity Framework," says a background no provided at the workshop.

Srivastava observed that signing the treaty would benefit India. It would make India part of the decision-making body for biodiversity on the high seas. Being inside rather than outside would also help India access funds for biodiversity programmes.

THE HINDU businessline

Companies / Markets / Portfolio / Opinion / Economy / bl PREMIUM

India to join High Seas Alliance next month

M Ramesh
Chennai

India will sign the Biodiversity Beyond National Jurisdiction Agreement, shortly known as High Seas Alliance, next month, Cdr PK Srivastava, Scientist, Ministry of Earth Sciences, said.

The Cabinet of Ministers approved India's signing of the agreement last month, and the actual signing scheduled for September. Then the process of ratification of the agreement will begin, Srivastava told *businessline* on the sidelines of a workshop on the agreement here.

Rebecca Hubbard, Director, High Seas Alliance

on the High Seas," negotiated for two decades under the aegis of the United Nations Convention on the Law of the Sea (UNCLOS).

was opened for countries to sign at the UN headquarters in New York on September 20, 2023. So far, 91 countries have signed the treaty, which will come into force on the 120th day from the day the 60th country ratifies it. Till now only 8 countries have ratified it. "It is ambitious," Rebecca Hubbard, Director, High Seas Alliance, told *businessline*, when asked about achieving the target of getting 60 countries to ratify it by June 2025, "but we are confident."

LEGAL FRAMEWORK

Once it enters into force, the treaty will set out a legal framework and process for any things, such as establishing 'marine protected

the genetic material from the high seas to develop pharmaceuticals and nutraceuticals.

Once the treaty comes into force, the benefits must be shared fairly and equitably with other countries.

The treaty is also seen as an instrument of action against climate change. "If effectively protected and well-managed, the Marine Protected Areas will help realise the target to protect at least 30 per cent of our ocean by 2030, as agreed by countries in December 2022 under the Kunming-Montreal Global Biodiversity Framework," says a background note provided at the workshop. Srivastava observed that signing the treaty would benefit India. It would

India to sign High Seas Treaty at U.N. General Assembly session

Geetha Srimathi
CHENNAI

India is set to sign the Biodiversity Beyond National Jurisdiction (BBNJ) agreement, also known as the High Seas Treaty, at the upcoming United Nations General Assembly next month. The announcement was made by P.K. Srivastava, Advisor to the Ministry of Earth Sciences said that India is all set to sign the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, also called High Seas Treaty, in the next General Assembly of the United Nations to be held next month.

authority to monitor developments related to the BBNJ agreement. "This authority will manage the necessary regulations, studies, and other activities concerning the treaty," he added. Diplomats, policymakers and experts from a dozen South and Southeast Asian countries, including India, Malaysia, Nepal, Thailand, Indonesia, Myanmar, attended the workshop organised by the Bay of Bengal Programme Inter-Governmental Organisation (BOBP-IGO) in collaboration with the High Seas Alliance (HSA) and RISE UP, will senior government officials and policymakers from countries including Bangladesh, Maldives, Sri Lanka, Nepal, Cambodia, Thailand, Indonesia, Bhutan, Myanmar

igh Seas Treaty: India set to sign agreement next month's UNGA

SS NEWS SERVICE @ Chennai

rivastava, advisor to the Ministry of Earth Sciences said that India is all set to the Biodiversity Beyond nal Jurisdiction (BBNJ) ment, also called High reaty, in the next General bly of the United Nations eld next month. He was ng at a high-level two-day hop in Chennai on Tuesday focusing on the implementation of the agreement.

lso said that the ministry tablish a dedicated instil mechanism to oversee velopments regarding eement. "This authority al with the necessary ions, studies, and other the treaty."

Recommendations

A set of recommendations will be developed during the two-day workshop for the effective implementation of the Biodiversity Beyond National Jurisdiction Agreement, also called the High Seas, contributing to the global effort to safeguard marine biodiversity and address the challenges posed by climate change.

search and development, and capacity building are some immediate tasks that must be carried out with regional cooperation. "There is a strong need to leverage regional partnership between the South and South-East Asian countries for capacity building in this direction," he added.

The workshop was at- delegates,

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SUSTAINABILITY

India set to sign High Seas Treaty

27/08/2024

Government to establish an appropriate institutional mechanism to oversee the treaty

PK Srivastava, Advisor to the Union Ministry of Earth Sciences said that India is all set to sign the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, also called High Seas Treaty, in the next General Assembly of the United Nations to be held next month.

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maritime gateway

Chennai To Host The High Seas Treaty

The focus will be on managing and conserving the biodiversity in the high seas in southern view of the climate change challenges.

Maritime scientists and southeast Asian leaders will assemble in Chennai on august 27, 2024, f two day event that will focus on the implementation of the United Nations' Biodiversity Beyon National Jurisdiction (BBNJ) Agreement, also called High Seas Treaty. The focus will be on managing and conserving the biodiversity in the high seas in southeast asia, in view of the c change challenges.

The BBNJ Agreement, adopted in March 2023 under the United Nations Convention on t the Sea (UNCLOS), marks a crucial milestone in preserving marine biodiversity and cor climate change. The decision of signing the treaty by India was approved by the Union July 2.

The workshop, organised by the Bay of Bengal Programme Inter-Governmental Org (BOBP-IGO) in collaboration with the High Seas Alliance (HSA) and RISE UP, will senior government officials and policymakers from countries including Banglad Maldives, Sri Lanka, Nepal, Cambodia, Thailand, Indonesia, Bhutan, Myanmar

KJ KRISHI JAGRAN

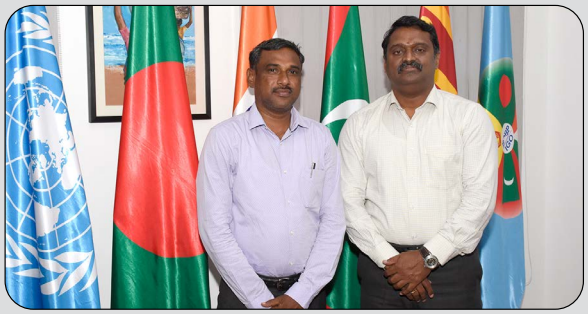
South and Southeast Asian Leaders to Convene in Chennai on Implementation of High Seas Treaty

High Seas Alliance, together with its 62 members and the International Union for Conservation of Nature (IUCN), has been working towards protecting the 50% of the planet that is the High Seas; the global ocean beyond national jurisdiction.

South and Southeast Asian leaders and marine scientists will gather at Trident Hotel, Chennai from Tuesday (August 27) for a two-day landmark event focused on the implementation of the United Nations' Biodiversity Beyond National Jurisdiction (BBNJ) Agreement, also called High Seas Treaty. Often referred to as the 'High Seas', areas beyond national jurisdiction are the global common oceans open to all for internationally lawful purposes such as navigation, overflight, laying submarine cables and pipelines, etc. This two-day workshop aims to develop strategies for conserving and managing the high seas in South and Southeast Asia amid challenges posed by climate change.

The BBNJ Agreement, adopted in March 2023 under the United Nations Convention on the Law of the Sea (UNCLOS), marks a crucial milestone in preserving marine biodiversity and combating climate change. The decision of signing the treaty by India was approved by the Union Cabinet on July 2.

Visitors



Prof. S. Amirthalingam, *Tamil Nadu National Law University*

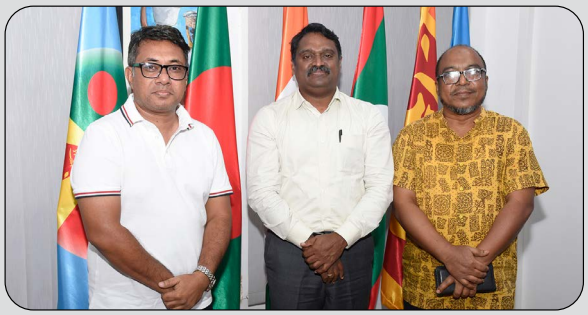
Students from Kumaraguru College of Technology

Dr. N. Felix *and* **Dr. S. A. Shanmugam**, *TNJFU*

Sathyabama University Faculty

Dr. R. S. Mahendra, *Scientist, INCOIS*

Dr. A.G. Ponniah, *Former Director, CIBA*



TAC Members, *Bangladesh*

TAC Members, *Sri Lanka*

Bay of Bengal Programme
Inter-Governmental Organisation

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