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

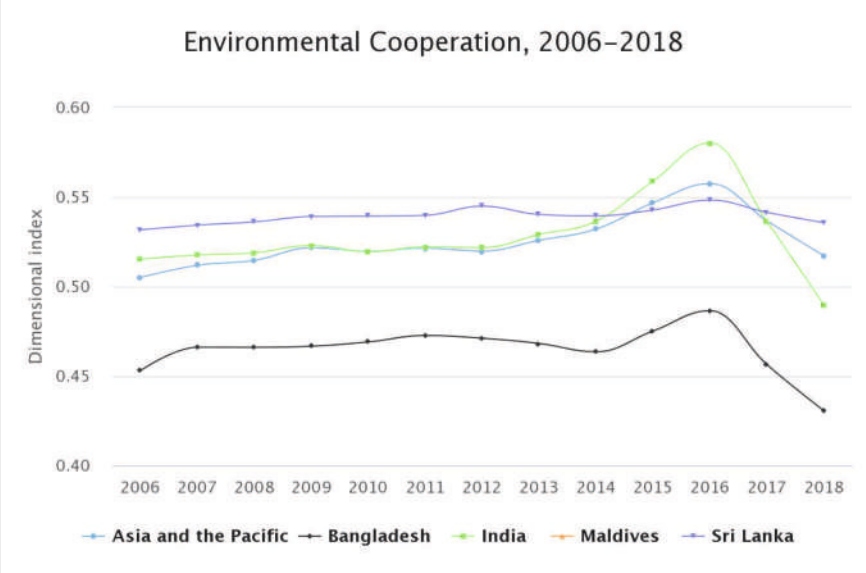
Strengthen Research Networks to Fuel Regional Collaboration

Dr. P. Krishnan
Director, BOBP

Science, policy, and technology form the holy trinity of sustainable fisheries. Research and development, both from public and private sources, have contributed to the global progress. The 1995 FAO Code of Conduct for Responsible Fisheries (CCRF) provides a clear direction that fisheries policies should be based on the best available scientific information.

The intensity of weather events is increasing day by day in Bay of Bengal and adjacent seas and they are moving off the chart – becoming unpredictable. Our commercially most important fish stocks such as hilsa, Indian mackerel and tuna are also highly vulnerable to climate change. In addition, stock assessment studies from the region strongly indicates, over-exploitation, over-capacity, and the presence of rampant IUU fishing that is further worsening the situation.

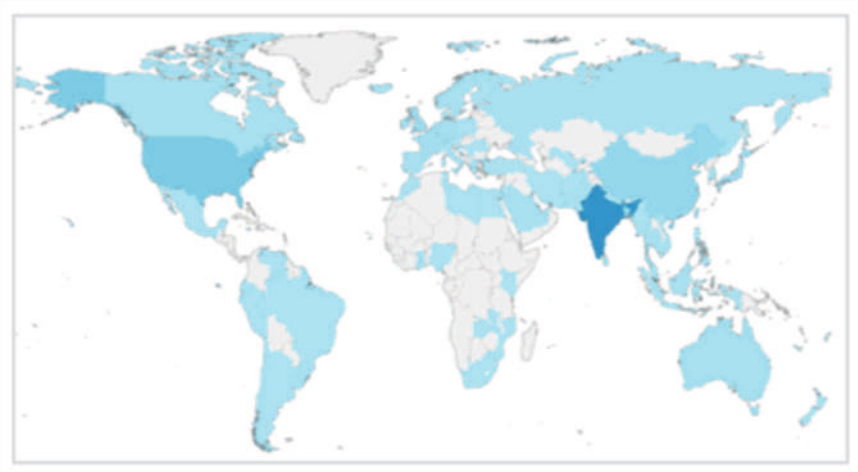
In an interconnected world, all issues are transboundary in nature. This is even truer in the Bay of Bengal region where ecological integrity is very high and risk profiles-environmental, economic or social are similar.



Source: Asian Development Bank. Asia-Pacific Regional Cooperation and Integration Index Database. https://aric.adb.org/database/arcii (Access: May 2021).

Despite the fact that multiple regional and international organization are working in the Bay of Bengal region, the regional cooperation is not improving. The analysis carried out by the Asia-Pacific Regional Cooperation and Integration Index (ARCII), a broad-based, multidimensional measure of regional integration shows that regional cooperation in environment is actually declining.

Research Collaboration in Fisheries



Data Exported on Feb 13, 2022
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Publication Year: 2012-2022 , https://app.dimensions.ai

The Bay of Bengal is an active area of research with 6188 researchers from 82 countries publishing their papers based on their research in the Bay of Bengal region. Analysis of authorship shows that the overwhelmingly dominant trend is north-south collaborative research. There are negligible instances of south-south cooperation. More specifically, cooperation among the BoB rim countries is very weak.

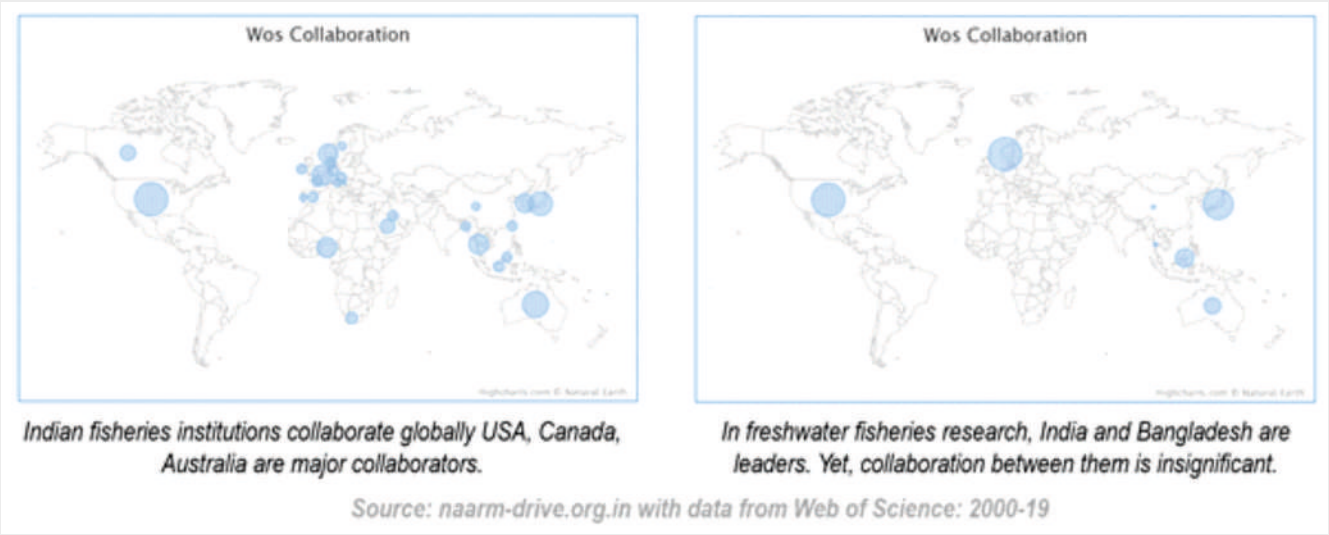
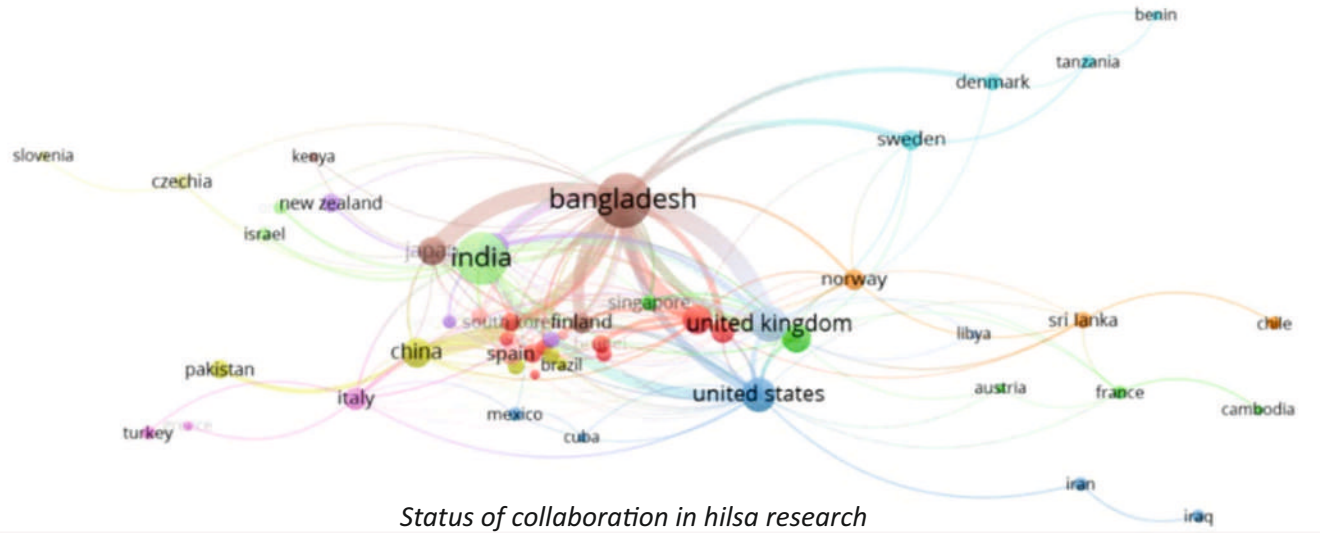


Illustration of regional research collaboration in fisheries: India as a Case

Bangladesh and India together account for over 99% of the global Hilsa fishery. However, research linkages among the researchers from these countries are very weak, as illustrated below (the size of the circle represents the extent of publications and the thickness of the links represents the extent of collaboration between the respective countries.



Status of collaboration in hilsa research

A direct fallout of the lack of regional cooperation in science is the absence of a regional voice justifying and incentivizing formal cooperation in areas of fisheries management. Over time, a knowledge gap is also accentuating, as scientists are remaining unaware of situation in their neighbourhood leading to poor policy advocacy.

There are, however, structural reasons for lack of cooperation. One possible reason is funding. Research funding from the developed countries over time have cemented strong collaboration with institutions from the donor country, which are nurtured subsequently through funding from international agencies, which tend to bank on these established networks. Thus inadequate funding mechanism is the cause and effect of the weak research network in BoB region.

Most researchers from the region traditionally work on national and local issues and have built their collaborations within national boundaries. The efforts of regional forums and organizations, such as Asian Fisheries Forum have been positive but certainly inadequate to break the silos, which the scientists have been working in.

Scientific inputs drive the national policies and it is pertinent that stronger collaboration among the researchers would aid in developing more harmonious regional policies. To this end, the countries need to establish special funds, institute support schemes and forge bilateral and multilateral arrangements to facilitate more collaborative research among the member countries.

BOBP's Initiatives

The 11th Governing Council Meeting of BOBP-IGO has recognized this as a potential issue to be addressed on priority and committed to institute a regional framework to improve cooperation in scientific research that is expected to trickle down to policy advocacy and collective action in areas of common interest.

The BOBP-IGO has instituted the BOB Policy Research group (BOBPRG), a virtual knowledge network of trans-disciplinary group of experts from the member countries, which will work on mutually agreed regional and international issues. It is hoped that this mechanism will establish new scientist—scientist networks.

Further, to strengthen Institution to Institution (I-O-I) collaborations, the BOBP-IGO has taken steps to formalize its relations with the institutions of higher learning through Memorandums of Understanding (MoUs) facilitating student exchange and inter-institutional cooperation within and across the countries.

BOBP-IGO rededicates itself to strengthen cooperation with international and regional intergovernmental agencies, NGOs, and donor agencies, by leveraging its role as a member of the Regional Secretariat Network (RSN) – a body of RFBs and RFMOs coordinated by FAO. We are also reaching out to ground level organizations to ensure a multi-track dialogue system in the region, which hopefully, will lead to improved understanding and appreciation of trans-boundary issues and sustained cooperation among the member countries.

(P. Krishnan)

Reflections

In this featured section, eminent persons would recall and reflect their association with BOBP, providing insights from their experiences.

My Memories of BOBP

Mr. Lars Engvall
Founder Director
BOBP (1979-1994)

I took charge of the then Bay of Bengal Programme of FAO in 1979 and was responsible for it till my retirement from FAO in 1994. The general purpose of BOBP was to develop and demonstrate improved technologies and methods for the betterment of small-scale fisheries communities. The immediate objective of the first phase (1979-86) was focused on fish production while in the second phase on the betterment of fisherfolk families by means of various extension methodologies. The Programme produced some very positive results during the first two phases and therefore became well-known and much talked about.

A few of our sub-projects, into which the bulk of our work was divided, managed to generate impact in terms of fish production and fisherfolk income. These included the development of beach landing craft on the east coast of India, demonstration of cage culture of seabass along the west coast of Thailand, stimulation of offshore fisheries in Sri Lanka and introduction of motorized outrigger canoes in Nias, Indonesia.

Dozens of sub-projects were implemented in the fields of resource assessment, fishing technology, boatbuilding, post-harvest fisheries and various aspects of extension work. Many of them produced positive results which were used to varying but not spectacular extent by the fisherfolk and authorities concerned. Some of them did not produce intended results but the reasons for that were important learnings for further development efforts. Examples of the latter were (a) a very successful credit scheme in Orissa which was not continued beyond the pilot stage of a couple of years for insufficient management and supervision; (b) income generating activities for women in fishing villages largely failed due to problems in marketing the products; (c) attempts to demonstrate fishing for large demersal species by light attraction in traps in Sri Lanka failed completely, probably due to the non-availability of resources; (d) failure of demonstrating the long-term viability of shrimp culture in ponds at Sathkira, Bangladesh because of underestimated siltation problems and in pens at the backwaters of Killai, Tamil Nadu, India due the limited exchange of water.

Fourth, a substantive amount of capacity building of different kinds was conducted at community level, at district, national and regional levels and in all the topics within the scope of the Programme. During the peak periods of implementation, the total amount of organized training was in the order 30 man-years, i.e., equivalent to one person for 30 years or 360 persons for one month and, this did not include the in-service training.

Most of the above happened some 35 years ago and might be of historic value only. It is quite clear that in most areas of the BOB region, there is no scope for increasing the production in capture fisheries and the overriding need is for fisheries management. It could also be argued that costal fisheries management would be a very suitable topic for cost-effective regional approach since the principles of it are very similar regardless of type of fishery.

If anyone wishes to formulate, plan, and implement regional fisheries management support on regional basis it might be useful to keep in mind the lessons learned in the early stages of the BOBP since they would still be valid to a varying degree.

1. **Duration:** The first two phases lasted for a total of 15 years and were of about equal duration. In most cases, this facilitated a thorough approach to the tasks of developing, testing, and demonstrating new or modified technologies and methods. There was hardly ever any need for panickily accelerating or shortcutting for lack of time. A good example

illustrating this is our efforts in demonstrating cage culture of seabass along the west coast of Thailand. The progress of this sub-project was reviewed after about three years, i.e., at the time it should have been terminated according to the plan. Despite sustainability issues, it was decided to continue the support seeing the potential. By the fourth year, matters didn't just begin to happen but "exploded" and spread along the entire west coast in a couple of years and became one of our most successful activities.

Another significant advantage of the long duration was that counterparts at different levels in the participating countries and Programme staff and consultants got to know and understand each other very well.

2. Funding support: The funding support, particularly from Sweden and Denmark, was very generous. I don't remember any occasion where and when we had to avoid or curtail activities, within the scope and aim of the support projects, for lack of funds. It was a very comfortable situation all through but there is another side to the coin.

We were in fact looking for problems to solve or opportunities to develop and, in retrospect, some of them should perhaps not have been attempted. One was "sails for small fishing boats". It was in small-scale fisheries circles commonly believed that sails would help reducing the fuel spent on propulsion, shorten the time for reaching fishing grounds and the landing sites and improve the safety in case of engine failure. We organized a sail consultation in Madras with participation of national counterparts and international sail specialists. One part of the consultation was a sail competition between alternative sail rigs. The result didn't add much to the then existing knowledge and all our promotional work and demonstrations towards using sail had next to no effect. In retrospect, it is quite possible that this sub-project would not have been implemented if the potential benefits had been better appraised before it was undertaken.

The generous funding also helped us in taking innovative activities. While all of them were not successful, the overall impact was positive.

3. **Staffing:** The international core staff at the BOBP headquarters in Madras was multidisciplinary and covered all major topics of small-scale fisheries development and was supplemented with specialist consultants as required. All core staff had prior experience of working in Asia and some of them were national of participating countries. In addition, many young professionals from mainly European countries were assigned to BOBP by FAO for short periods, mostly 2 years. They were funded by their own national governments without any cost to FAO and BOBP.

4. **Mode of implementation:** The Programme documents gave the scope of problems, issues, and possibilities to be addressed but did not list specific anticipated outputs. They would be determined in consultation with the participating countries through the mechanism of the Advisory Committee (AC) in yearly meetings in which the participating countries, actual and potential donors and BOBP staff participated. After agreement on a particular output a so-called subproject was prepared by the responsible staff member. The national counterpart institution was in most cases responsible for the implementation and BOBP specialists visited the site(s) as required. In Bangladesh, Sri Lanka and Thailand, BOBP national offices were set up to facilitate the implementation of the subprojects. The progress of all work was monitored quarterly at the site of implementation and in the yearly AC meetings. The responsibility of implementation assigned to the national counterpart institutions was felt to be essential for effecting ownership of the work and subsequent follow-up and sustainability.

5. **Newsletter:** The Bay of Bengal News was issued quarterly from 1981 and kept governments and counterparts and others involved and/or interested, in the region and elsewhere, informed about the progress of our work with details of progress of work, positive results, problems and sometimes frustrations. The responses from readers indicated clearly that we succeeded quite well.

Finally, I would like to thank BOBP-IGO and particularly its current Director, Dr. P. Krishnan for inviting me to contribute to the first revival issue of the BOBP newsletter and convey my best wishes for its longevity.

BOBP Team joined Dr. Engvall to celebrate his 87th Birthday on 07 July 2022

PS: The above rambling account of events and views expressed have been made from memory and are hopefully close to correct. Most of it, as mentioned above, is of historic interest only, but I hope that the reader will find some ideas for regional support to the management of coastal fisheries.

Salient Programs/Events

Meeting of the 11th Governing Council of BOBP-IGO

Meeting of the 11th Governing Council of BOBP-IGO organized in Chennai, India. The country representatives from Bangladesh, India, Maldives, and Sri Lanka participated in the meeting along with an observer from SEAFDEC. The 11th Governing Council congratulated the new Director for assuming charge and also for initiating steps for reviving the activities post-Covid. The GC reviewed the proposed work programme of the Organisation for 2022-23, presented by the Director, BOBP-IGO and approved the same.

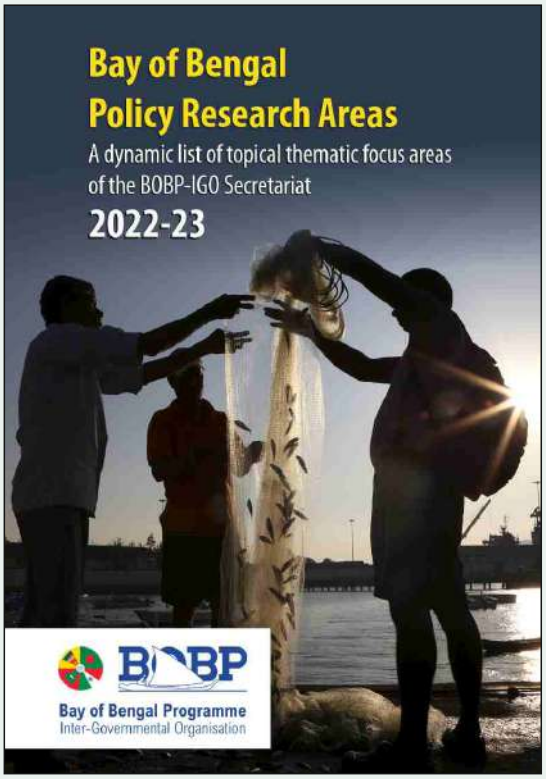
The Governing Council appreciated the initiative of the Organisation to rework its capacity building programmes to match the emerging needs and instituting BOB Fellowship to improve scientific collaboration in the region.

The Governing Council of BOBP-IGO approved the Prioritized Research Areas (PRA) and Capacity Development Programs (CDP) for implementation in the ensuing period.

Policy Research Areas

Enhancing the science-policy interface and pilot evidence-driven policy-making are major hallmarks of BOBP-IGO. With increasing pressure on coastal and marine ecosystems including fish stocks, the sector requires transformation in its approach towards assessment and management.

Corresponding to felt-needs and national priorities, The Governing Council of BOBP-IGO prioritized Policy Research Areas to be initiated during the next two years, and reviewed as per the need, during the subsequent period.



1. Reimagining Regional Fisheries Management: Participatory Approaches for Near Real-time Stock Assessment
2. Capturing the Hidden Harvest: A Framework for Small-Scale Multi-Species Fishery
3. Back to Basics: Revitalising Traditional Knowledge for Sustaining Fisheries Future
4. Shared Prosperity: Governance and Institutional Framework for Assessment and Management of Blue Economy in the Bay of Bengal
5. Insurance for Ameliorating the Climate Risks of Coastal Fishers of the Bay of Bengal Region
6. Aquaculture-Fisheries Co-development for Stock Enhancement and Sea Ranching
7. Bay of Bengal Large Marine Ecosystem Project

Capacity Development Programmes

Capacity development has been the major focus of the Organisation, ever since its inception. BOBP-IGO envisions to leverage the developments in e-applications and digital penetration post-pandemic, to redefine its capacity development programs so as to expand its reach and connect, by partnering with various national and regional agencies, thus enabling the member countries to adopt frontier tools and innovative approaches of fisheries management towards future-proofing the sector.

The Organisation has also prioritized few Capacity Development Programs (CDP) to be implemented jointly with the member countries and sponsors for different levels of the officers and other stakeholders. Executive Development Programs (EDP): EDPs are designed for senior Government Officials, Researchers and Influencers. Management Development Programs (MDP): MDPs are designed for Junior and middle-level Government Officials, Researchers and the community workers.

The themes have been re-designed to deal with the contemporary and emerging management issues and solutions, with an objective of catalyzing transformation in fisheries for sustainability and equity.

They are expected to catalyze implementation of fisheries management systems in the region that deal with issues in real-time and where policies are evidence-driven and ecosystem-based.

EDP

Monitoring and Reporting Progress for Sustainable Development Goal 14: Life Below Water

MDP

Ecosystem Approach to Fisheries Management

MDP

Development of Changing Climate Adaptation Plan

MDP

New Paradigms in Fish Stock Assessment

MDP

Business Case & Design Thinking for Development Projects Planning

Training Course

Greening the Fisheries Value Chain

MDP

Code of Conduct for Responsible Fisheries

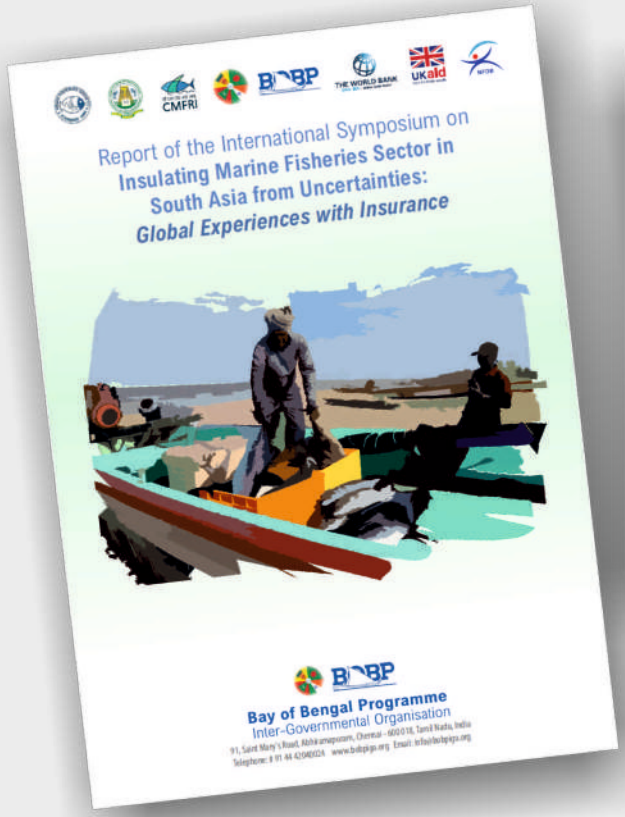
In addition, to the above, BOBP-IGO will undertake need-based programmes for the member-countries and donor-supported programmes. Many capacity building programmes will also be implemented under the BOBLME Project, such as on international framework to curb IUU fishing; flag and port state measures, etc.

International Symposium on Marine Fisheries Insurance

During the event, speakers from the World Bank, FAO, APRACA, Nalanda University and ICICI-Lombard explained the global development in insurance and emerging challenges, need to consider the capability of the poor while designing insurance products and the delivery of benefits. Country representatives from Sri Lanka, Maldives, India, Bangladesh, and Thailand presented their experiences and plans for mitigating the risks of marine fishers.

The objectives of the symposium were to: (1) Understand the status of insurance in the fisheries sector in South Asia and (2) Promote cross learning and collaboration in climate risk insurance research. Dr. C. Suvarna, Chief Executive, National Fisheries Development Board, India inaugurated the Symposium. Dr. K.S. Palanisamy, IAS, Commissioner of Fisheries, Tamil Nadu, and Dr J.K. Jena, DDG (Fisheries), ICAR were the Guests of Honour. The symposium highlighted the special case of the small-scale and artisanal fishers, growing physical and transition risks the sector is subjected to due to climate change and possibility of parametric insurance to adapt and mitigate climate change impact. The country participants highlighted the need of insurance while acknowledging that penetration of insurance remains low in the sector despite various development.

The proceedings of the Symposium is available at https://youtu.be/Rkr6539F94E



The event received wide coverage in the print and digital media.

Quadrimester Dialogue Series on Science for Policy (QDS4P)

BOBP-IGO has initiated a Track 1.5 Quadrimester Dialogue Series jointly with Fisheries Technocrat Forum (FTF) on Science for Policy (QDS4P). This initiative provided a platform for fisheries officials, scientists and concerned citizens to deliberate on topical fisheries issues and supporting evidence-based policy making. The first session of the series was organized on 11th June 2022 at the BOBP-IGO Conference Hall.

During the session, the participants discussed the issue of Responsible Coastal Aquaculture especially in view of the coastal conservation and the case of hilsa fishery from the perspective of migration of fishes along the conscripted rivers.

International Fish Migration Day 2022

BOBP-IGO, the College of Fisheries (CoF), Mangalore and Asian Fisheries Society-Indian Branch (AFSIB) observed the International Biodiversity Day and International Fish Migration Day on 23 May 2022. During the event, Dr. P. Krishnan illustrated the impact of impediments created to the migration routes of mahseer and hilsa fisheries in the Cauvery River system in the southern part of India. He advocated the need for scientific studies to track the migration routes of fishes, evaluate suitable fish passages for various locations and demonstrate success of planned interventions to facilitate regional scale-up. Dr. Shiva Kumar Magada, Dean, CoF, Mangalore presided over the function.

World Ocean Day 2022 Marked

BOBP-IGO collaborated the Center for Ocean Research, Earth Science and Technology Cell, Ministry of Earth Sciences (MoES), Government of India (GoI), Satyabama Institute Science and Technology, MoES- National Centre for Coastal Research (NCCR) and Ocean Society of India In commemorating the World Ocean Day 2022 on 10 June 2022.

Dr. P. Krishnan, Director, BOBP-IGO delivered the special address. Dr. M.V Ramana Murthy, Director, NCCR, Chennai; Prof. Balasubramaniam, Chairman, Ocean Society of India; Dr. Tune Usha and Dr. Sisir Kumar Dash, Scientists of NCCR, attended the meeting.

Plein-Air Sketching Event Organized in a Fishing Village

BOBP-IGO and Arnavaz Vasudev Charities, Cholamandal Artists Village, jointly organized a sketching event on 31 July 2022 at Injambakkam fishing village, near Chennai, Tamilnadu. Eminent artists took part along with art students and art enthusiasts. The theme of the event was Women in Fisheries. The event aimed at raising awareness among the diverse stakeholders on various issues in fisheries using different art media.

FAO's New Stock Assessment Method Validated for Area 57

The Food and Agriculture Organization of the United Nations (FAO) conducted trial of a new methodology to assess the status of fish stock from the regional and global perspective, jointly with the BOBP-IGO and the ICAR- CMFRI.

The Joint Exercise was carried out during 8 -10 August 2022 at the BOBP-IGO Secretariat in Chennai, India. Dr. Rishi Sharma, Senior Fishery Resources Officer, Fisheries & Aquaculture Department, FAO, Rome led the team, wherein serving and retired experts from CMFRI and members of BOB-Policy Research Group took part.

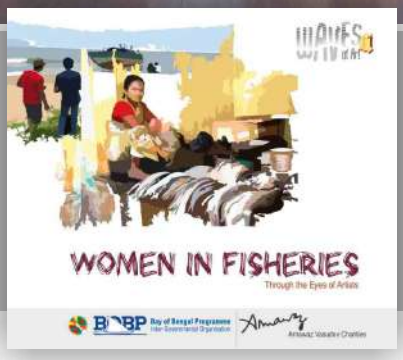
Due to data limitation, FAO usually assesses the status of many fish stocks using catch-only methods. The new method includes information from national stock assessments, scientific publications and reported catches to assess the stock. Dr. Rishi Sharma said the initial results are promising, however, further trials will be conducted before the new method is implemented. He thanked the Organisation and ICAR-CMFRI for their support and the quality of work done.

The trial was carried out for FAO Major Fishing Area 57 (Eastern Indian Ocean). FAO Major Fishing Areas are statistical divisions of the global marine waters for data collation, reporting, and fisheries management. There are 19 such areas.

'Waves of Art' Initiative launched to raise public awareness on fisheries issues

The BOBP-IGO and Arnawaz Vaudev Charities (AVC) launched the "Wave of Art" Initiative today (29 August 2022) in an event organized at the BOBP-IGO conference Hall in a Hybrid Mode. Dr. M. Venkatachalam, IFS, Joint Secretary & Head, MEA Branch Secretariat, Chennai, Ministry of External Affairs chaired the event. Prof. J. Ranganathan, Honorary Consulate General of Myanmar and Padmashri Dr. Thota Tharani, Film Art Director, were the Guest of Honor. Dr. B. Manimaran, Founder Vice Chancellor, TNJFU, Dr. E. Vivekanandan, fisheries expert, artists from the Cholamandal Artist Village Sketching Club, faculties from the Stella Maris College, members of the AVC and scientists from ICAR were other distinguished guests who attended the event.

Dr. M. Venkatachalam released the first sketching work of the series, "Women in Fisheries" on this occasion. Speaking on the occasion, Dr. Venkatachalam said that the activity intrigues him and he will extend full cooperation to take the initiative beyond the frontiers. Prof. J. Ranganathan appreciated the initiative and said that he will help network with other countries. Dr. Thota Tharini congratulated the Organisation and AVC for taking a novel communication approach and called for support from artists and academics to take it forward.



Country-specific Stakeholder Consultations on Marine Fisheries Insurance

The BOBP-IGO organized a series of stakeholder consultation on "Insurance as a Tool for Managing Marine Fisheries & Building Resilience" with representatives of fisher associations, state officials and insurers in India (16th July), Bangladesh (28th July), Maldives (15th August) and Sri Lanka (18th August). This was done as a part of the World Bank supported study being implemented by BOBP-IGO, to understand the current situation and assess stakeholders perspective on parametric or index-based insurance to cover for climate risks.

These consultations were organized in a format of gauging the views of the fishers regarding the future of the fisheries sector; understanding their business needs and views on insurance, the impact of climate change, and the scope of parametric insurance. In these meetings, Dr. P. Krishnan provided an overview of marine fisheries insurance in the region vis-à-vis the world, particularly in the light of changing climate. The country specific issues and needs were discussed in these meetings with specific reference to insurance in the marine fisheries sector.

INDIA

In the meeting held at the BOBP-IGO Secretariat, office bearers from ten different fisher welfare associations based at Chennai participated. Dr. E. Vivekanandan, Fisheries Expert, Dr. T. Ravisankar, Principal Scientist, CIBA, Mr. R. Mukherjee, Policy Analyst, BOBP-IGO, Mr. Ajay Anand, Asst. Director, Dept. of Fisheries, Tamil Nadu, Dr. Angela and Dr. E. Suresh, TNJFU, Dr. D. Kishore, Nalanda University, Dr. Subash Chand, ICAR-NIAP and Dr. M. Sri Hari, Centurion University of Technology & Management were among the expert participants.

India

BANGLADESH

The consultation was organized by BOBP-IGO jointly with the Marine Fisheries Office (MFO), Department of Fisheries, Government of Bangladesh (MFO). Boat owners from Chittagong, officials from MFO, Dr. E. Vivekanandan, Fisheries Expert and Mr. R. Mukherjee, Policy Analyst, BOBP-IGO took part. Dr. Md. Sharif Uddin, Director, MFO conducted the meeting.

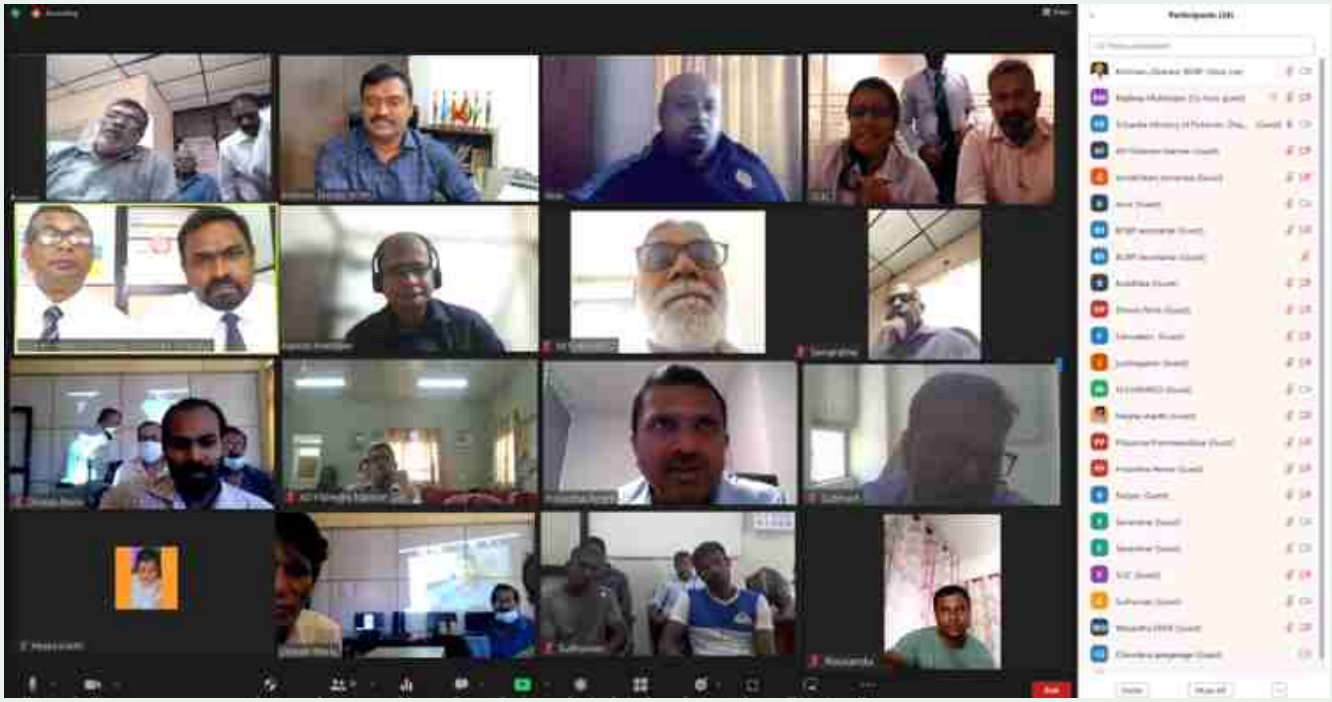
THE MALDIVES

The BOBP-IGO conducted a series of consultations in Maldives to understand the fisheries insurance landscape. On behalf of the BOBP-IGO, Dr. P. Krishnan carried out the consultation with the officials from the Ministry of Fisheries, Agriculture and Marine Resources, the Government of Maldives, the Maldivian Fisher Association, and Maldivian fishermen – an NGO working on the sector.

SRI LANKA

The BOBP-IGO jointly with the Ministry of Fisheries & Aquatic Resources, Government of Sri Lanka (MFAR) organized an online consultation. Boat owners from different parts of Sri Lanka operating multi-day and single-day boats, Sri Lanka Insurance Company, the national insurance provider and fisheries officials from different fishing districts took part. Mr. Dhammika Ranatunga, DG (Technical); MFAR; Mr. S.J. Kahawatte, DG, Department of Fisheries and Aquatic Resources conducted the session.

Bangladesh



Sri Lanka

Study Report

Insurance as a Tool for Managing Marine Fisheries & Building Resilience

Fisheries is a risky occupation' is an oft-repeated phase in the fisheries discourse. Despite the concern, a process of risk transfer and risk mitigation remains a misnomer in the sector. Global and national studies across time and geographies indicate that there are various sticky factors preventing penetration of risk mitigation measures such as insurance in the marine fisheries sector. One of the sticky problem is design issue. Most insurance companies do not have a tailored product for the fishing vessels. The marine hull insurance offered to the fisheries sector was developed with cargo vessels in mind and does not necessarily fit the risk spectrum faced by a fishing vessels owner. Another sticky issue is high risk of fraudulent claims, which disincentivises the insurance companies to get engaged.

The climate change is now accentuating the risk profile of the fisheries sector to a level which is beyond the scope of an individual fisher. There is growing business risk from the impact of climate change on fish stocks and ecosystems and higher exposure to assets due to increasing intensities of natural calamities and sea level rise. The role of insurance in adaptation and mitigation of climate risks was advised in the Paris Agreement and subsequent international conventions.

Therefore, an emerging issue before us is how insurance can be used to build climate resilience when it is not traditionally successful?

BOBP-IGO is implementing a World Bank funded multi-country research study on marine fisheries insurance, to evaluate the existing mechanisms for risk transfer and risk mitigation with reference to climate change in the fisheries sector to develop guideline for improved insurance coverage.

The study is in line with the Blue Growth Initiative (BGI) propagated by the World Bank, the Food and Agriculture Organization (FAO) and other UN agencies and Problue programme of the World Bank. It also addressed SDGs especially goals on no poverty, zero hunger, gender equality and life below water.

The major focus of this report is four South Asian Maritime Countries (SAMCs): Bangladesh, India, Maldives and Sri Lanka. These countries shared similar socio-cultural scenarios and are members of the BOBP-IGO. Parallels were also drawn from four Southeast Asian Countries: Indonesia, Malaysia, Myanmar, and Thailand where ever possible, given the co-evolution of the fisheries sector in the Bay of Bengal region, shared history, and management traits.

Marine capture fisheries is inherently a risky activity as the output is of stochastic nature. Fishers traditionally use a *priori* knowledge to improve their chances of good catch. Apart from the production risks, fisheries (fisheries implies marine capture fisheries, unless otherwise mentioned) is also subjected to high degree of natural oscillations, occupational risks, supply chain disruptions and policy risks.

Climate change is altering the conventional risk profile of the fisheries sector. There is growing evidence that climate change due to global warming will lead to changes in biological (such as primary production, biodiversity, species distribution, and habitat), physical (such as wind speed, ocean current, and temperature), and chemical (such as salinity, oxygen saturation, and ocean acidity) and will affect marine fisheries. In addition, there are several long-term implications of global warming such as sea level rise, ocean warming, and changes in precipitation, as well as the immediate effects on the extreme weather events (e.g., cyclones, extreme rainfall, and saltwater intrusion) which would further affect the space for fisheries and the fishers.

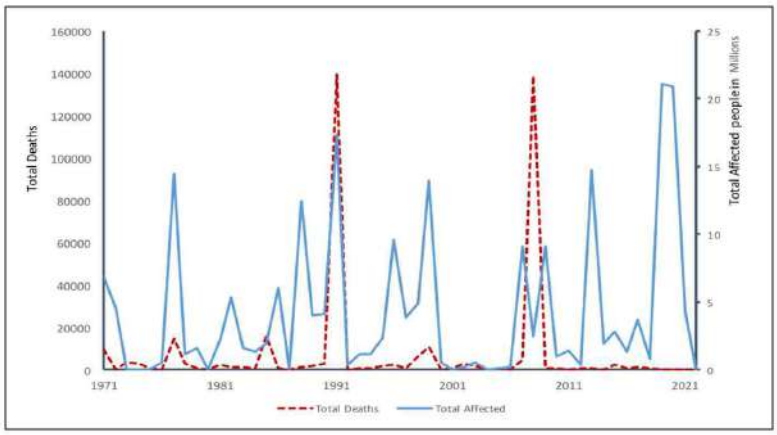
Climate risk profile of the Bay of Bengal rim countries

Risk factor/ Country	Bangladesh	India	Indonesia	Malaysia	Maldives	Myanmar	Thailand	Sri Lanka
Coastal flood	High	High	High	High	Very low	High	High	Medium
Cyclone	High	High	High	High	No data	High	High	High
Extreme heat	High	High	Medium	Medium	No data	High	High	Medium
Tsunami	Medium	Medium	High	High	Medium	Medium	Medium	Medium

Compiled from thinkhazard. https://thinkhazard.org/

Insurance is available in the region in various forms. Apart from profit insurance, non-profit Takaful insurance (mutual guarantee) is also prevalent in the region, especially in Malaysia, Indonesia and Bangladesh. Pursuant to the Paris Agreement, insurance emerged as preferred tool for adaptation for climate change. While risk mitigation measures of insurance are traditional, the major highlight of climate insurance is incentivizing sustainable behavioural changes to mitigate climate change. It suggests a policy on insurance both by the Government and the Private Sector defining the role of insurance to deal with climate change.

Mixed evidence was found in terms of penetration of insurance in the marine fisheries sector in the South Asian region. While participation in the Government Schemes is good (e.g. Group Insurance Scheme in India, Income Guarantee scheme in Maldives), subscription to the insurance products remain low. Lack of insurance may have been contributing to concentration of fishing assets. In absence of an insurance, fishers build multiple fishing vessels to sustain fishing activity even if a fishing vessel got damaged. Fishers from India and Bangladesh reported that minimum two vessels are required to mitigate the various risks associated with fishing. Single boat owners are often pushed out



Deaths and number of affected people due to cyclones in Bay of Bengal during 1971-2021

of the sector due to business loss or damage to fishing vessels.

There is lack of awareness and clarity amongst the fishers on insurance schemes. Non-availability of information about the insurance products in vernacular languages contributes to the poor penetration of the insurance schemes among the fishers, who are largely non-conversant in English.

In addition to the country-specific issues expressed by the fisher associations the common issues that emerged during the discussion were

- non-availability of insurance products for partial damage of boats, damage or loss of fishing equipment/gear and disabilities caused during fishing.
- need for simplification of claim processes in case of life and asset insurance.
- specialized health insurance for fisheries and state-support for meeting the premium, considering the risks involved in the vocation.

The fishers across the countries welcomed the idea of parametric insurance / livelihood insurance which they believe will help to compensate for the days of fishing lost due to inclement weather conditions.

Key Recommendations

1. There is a need for a clear policy statement and demonstration of political will on adapting and mitigating risk in fisheries sector and use of insurance.

2. Given the similarity in risk profile of the Bay of Bengal rim countries, a bay-wide insurance programme may be considered in line of the Caribbean countries.

3. The fishers in this region expect the respective governments to play a more pro-active role to ensure coverage of both life and non-life insurance

4. The insurance companies need to develop tailor-made products for the fisheries sector in the lines of those available for in the agricultural sector. Market is consolidated in agriculture sector, largely due to Government's interventions and a similar strategy is needed for the fisheries sector.

5. Parametric or Index-based insurance can meet the business loss due to climate change. One simple example of parametric insurance could be Cyclone Insurance, where the fishers would be compensated at a fixed rate, once the event (e.g. Cyclone) is triggered.

6. Insurance would incentivize good behavior and can be used to improve safety at sea fishers. For example, sturdy fishing vessels will have less damage than poorly maintained fishing vessels. However, in case of a cyclone both will be compensated. It will incentivize the sturdy boat owner as his loss will be less.

7. Insurance can also incentivize better data reporting, maintenance of crew list, etc. which are a major issue in the region.

8. The Government may consider to provide incentives to fishers to purchase insurance. This can be through making premium and insurance claim tax-free and linking insurance with vessel registration and licensing.

Strengthening Cooperation

MOU with Fisheries Universities in India

The BOBP-IGO signed Memorandums of Understanding (MoUs) with the Kerala University of Fisheries and Ocean Studies (KUFOS) and the Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) on 07 May 2022 in an event held at the BOBP-IGO Secretariat. These MOUs will facilitate technical collaboration, joint programme implementation and exchange of students and faculty members from the BOBP-IGO member-countries in these universities.

Dr. Dilip Kumar, Fisheries Expert & Ex-VC, ICAR-CIFE, Dr. Riji John, Vice Chancellor, KUFOS and Dr. Shiva Kumar Magada, Dean, College of Fisheries, KVAFSU attended the event with the Governing Council Members of BOBP-IGO.

BOBP-IGO & CIFNET Plan Joint Programs

The Director, BOBP-IGO attended the special meeting convened by Dr. A. K. Choudhury, Director, Central Institute of Fisheries Nautical Engineering and Technology (CIFNET), Kochi on 11 May 2022 at its Chennai Regional Office to explore possible areas of working together with BOBP-IGO. Senior Officers from CIFNET Headquarters and Vizag Centre of CIFNET also participated.

Possibilities of cooperation between Myanmar and the BOBP-IGO explored

Prof. J. Ranganathan, Honorary Consul of Myanmar, Chennai visited BOBP-IGO Secretariat on 24 May 2022, to explore the possibilities of cooperation between Myanmar and the BOBP-IGO.

Dr. P. Krishnan, Director BOBP-IGO, presented an overview of IGO's activities and the involvement of Myanmar in earlier programmes. He highlighted the policy research areas and capacity development programmes initiated by the IGO and the plans of the Organisation towards expanding its membership.

Prof. Ranganathan complimented the initiatives and assured to take necessary steps for bringing Myanmar into the folds of the BOBP-IGO. He invited inputs from the IGO for strengthening fisheries research and development in Myanmar.

Collaboration with the Centre on Integrated Rural Development for Asia and the Pacific (CIRDAP)

BOBP-IGO held a virtual meeting with CIRDAP on 07 July 2022 to explore areas of cooperation and collaboration. CIRDAP is an intergovernmental organization having its headquarters in Dhaka, Bangladesh. It is involved in rural development and poverty alleviation.

Opening the meeting, Dr. P. Krishnan presented an overview of the activities and current plans of the Organisation for strengthening networking. Dr. Cherdsak Virapat, Director General, CIRDAP indicated the areas of interest of CIRDAP viz., blue economy, empowerment of rural women and e-commerce for rural entrepreneurs, etc. Highlighting the presence of multiple regional bodies in the Bay of Bengal region with overlapping mandate, he stressed the need for complementary action to avoid duplication of work and efficient resource utilization. BOBP-IGO and CIRDAP agreed to work on select programs together leveraging their mutual strengths.

BOBP-IGO and Sathyabama Institute of Science and Technology (SIST) to Implement Joint Research Programmes

A team of senior officials of SIST, a multi-disciplinary Deemed University, visited the BOBP Secretariat on 23 July 2022. SIST is ranked among the top 100 universities globally for its work on SDG 14 and the university was first in the country to launch a satellite for pollution monitoring.

Dr. P. Krishnan illustrated how the synergy between both the organizations could be leveraged to address issues of topical importance in marine fisheries sector like fisheries resource management, ecosystem management, use of IoT and AI in fisheries and capacity building.

Dr. B. Sheela Rani, Director of Research and Former Vice Chancellor, SIST provided an overview of the educational programmes and research activities of the institution. It was agreed that the SIST would partner with the Organisation to promote fisheries research and also enable students from the neighboring countries to enroll in their programs.

BOBP-IGO discusses Country-Specific Programmes with member-countries

Following the meeting of the Governing Council, a decision was taken to chalk out a list of curated programmes as per the priorities of each member-country. Accordingly, the Director, BOBP-IGO conducted meeting with India, Sri Lanka and Maldives till date. A common framework was developed to conduct the meetings.

INDIA

Dr. Krishnan interacted with Dr. J. Balaji, Joint Secretary, Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Governemnt of India and Dr. C. Suvarna, Chief Executive National Fisheries Development Board on separate occasions. During the meetings, training of fisheries officials on emerging international processes, development of national plan on hilsa, and instituting a fisheries development dashborad were identiifed as potential areas of collaoration.

The BOBP-IGO is also working with the Governement of India in developoing the Vision 2047 marking, 100 years of India's freedomby analysing international agreements and instruments for their integration in national framework.

SRI LANKA

Dr. P. Krishnan, Director, BOBP-IGO visited Sri Lanka from 12 – 13 August 2022 to attend a high-level meeting organised by the Ministry of Fisheries & Aquatic Resources, Government of Sri Lanka (MFAR) to discuss country-specific programmes. During the meeting, Dr. Krishnan interacted with Mr. D. Devanand, Hon'ble Minister of Fisheries & Aquatic Resources; Mrs. R.M.I. Rathnayake, Secretary, MFAR; Mr. Dhammika Ranatunga, Director General (Technical), MFAR; Mr. S.J. Kahawatte, DG, Department of Fisheries and Aquatic Resources; Prof. M.J.S. Wijeyaratne, Chair person, National Aquatic Resources Research and Development Agency (NARA); Dr. H.P.M. Kithsiri, DG, NARA; Dr. (Mrs.) J. M. Asoka, DG, National Aquaculture Development Authority of Sri Lanka (NAQDA) and other senior Government functionaries and officials.

During the meeting, various issues including secondment from member-countries, areas and mechanisms of research collaboration, insurance study report and strengthening regional mechanisms for curbing IUU fishing were discussed.

THE MALDIVES

The Director, BOBP-IGO travelled to the Maldives from 13-16 August 2022 and held meetings with the Hon'ble Minister of Fisheries, Marine Resources, and Agriculture (MFMRA), senior fisheries officials, representatives of fisher associations, and industries on country-specific programs to be implemented by the Organisation. Hon'ble Minister Dr. Hussain Rasheed Hassan appreciated the initiative of the Organisation on regional science networking, Dr. Rasheed advised the BOBP-IGO to facilitate the higher education of Maldivian students in agriculture and fisheries science in India. State Minister Mr. Hasan Rasheed, Permanent Secretary, Dr. Aminath Shafia, and other senior officials also attended the meeting.

In the subsequent meetings with senior officals of MFMRA, Mr. Adam Ziyad, Director General (Fisheries) highlighted the need for bait fishery management in the country. Other priority areas identified were GI tag for masmeen and marine fisheries insurance. Maldives also welcomed the idea of Regional Plan to curb IUU fishing.

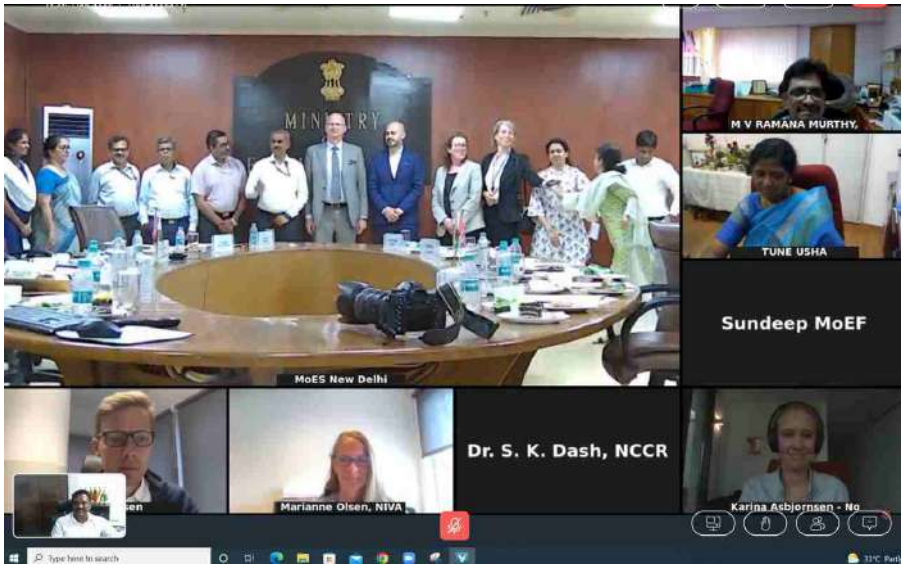
Dr. Krishnan also interacted with the Senior Executives of Maldives Industrial Fisheries Company (MIFCO), Dr. Shiham Adam, Director of Science and Maldives, International Pole and Line Fisheries Foundation (IPNLF); Dr. Najeeb Ali, Chief Operating Officer, Villa College, and other academicians for possible collaboration in joint activities to be undertaken in the Maldives.

Meetings / Events Participated

National Seminar on Sustainable Aquaculture

Dr. P. Krishnan, participated in the National Seminar organized by the Justice Basheer Ahmed Sayeed College for Women, Chennai on 11 May 2022 as the Chief Guest. During interaction, he emphasized the need for eliminating unsustainable practices in aquaculture through research and strong linkage with policy makers.

India-Norway Integrated Ocean Management and Research Initiative



The Director, BOBP-IGO attended the 2nd Meeting of the Project Steering Committee (PSC) of the India-Norway Integrated Ocean Management and Research Initiative held on 18 May 2022. He made a presentation on "Shared Blue Economy (BE) Resources: Governance and Institutional Framework for Access and Management" and highlighted the areas for India-Norway collaboration in developing a framework for robust BE. Dr. M. Ravichandran, Secretary, Ministry of Earth Sciences, GoI chaired the meeting.

Development of Roadmap for Future-Fit Sustainable Brackishwater Aquaculture Emphasized on World Environment Day 2022

The Director, BOBP-IGO attended the World Environment Day organized by ICAR-Central Institute of Brackishwater Aquaculture (CIBA), Chennai on 04 June 2022. Speaking on the occasion, he highlighted the need for preparing a road map for the desired progression in the technology basket, species and energy mix and more importantly the regulatory framework to enable the sector to perform to its potential, without impacting the sensitive coastal ecosystems and livelihoods, as envisioned in the Code of Conduct for Responsible Fisheries and Aquaculture. Dr. K. P. Jithendran, Director, ICAR-CIBA delivered the presidential address on the occasion.

Consultative Workshop on "Strategies to Increase Indian Seafood Exports"

The Marine Product Export Development Authority (MPEDA), India conducted a Consultative Workshop jointly with the Coastal Aquaculture Authority (CAA) and the National Fisheries Development Board (NFDB) on "Way forward for Enhancement of Seafood Exports from India" on 17 June 2022.

Speaking on the occasion, Dr. P. Krishnan, highlighted the need for creating an institutional mechanism to garner trade intelligence, rejigging laws to align with policy aspirations and leveraging technology, to ensure the sectoral growth, matching with the projected economic potential of the country.

Mr. Jatindra Nath Swain, Secretary (Fisheries), Department of Fisheries, Government of India was the Chief Guest. Senior Officials from MPEDA, CAA, NFDB, Indian Council of Agricultural Research (ICAR), Fishery Survey of India (FSI), Central Institute of Fisheries Nautical & Engineering Training (CIFNET), Coastal States and Union Territories participated.

Meeting of Regional Fishery Bodies (RFBs) in the Indian Ocean Region

The Director, BOBP-IGO took part in an Indian Ocean Regional Fisheries Bodies (RFBs) meeting held from 22-24 June 2022 in Maputo, Mozambique. The meeting was organized by FAO to develop "a Regional Coordination Framework between Regional Fishery Bodies in the Indian Ocean". Representatives from different regional bodies (AU-IBAR, BOBP-IGO, CCSBT, IOTC, IWC, RECOFI, SADC, SIOFA and SWIOFC) participated in the meeting, in addition to the senior officials from FAO, Rome and independent experts.

The meeting identified areas and formulated strategies for effective coordination, cooperation and collaboration among the RFBs to address the regional issues, with particular reference to IUU fishing.

National Seminar on Indian Shrimp Farming

Dr. Krishnan presented a talk on "Preparing HRD for the Future Aquaculture in the context of Blue Transformation", during the National Seminar on "Indian Shrimp Farming- Diversification, Traceability and Supply Chain Standards", organized by TNJFU on 03 June 2022 at Nagapattinam.

FAO Regional Meeting on PSMA

Dr. P. Krishnan, Director, BOBP took part in the regional coordination meeting for Asia on implementing the Port State Measures Agreement (PSMA) to prevent, deter and eliminate Illegal, Unreported, and Unregulated (IUU) fishing convened by FAO in Seoul from 11 to 15 July 2022, jointly with the Government of the Republic of Korea with the financial support of the Government of Norway.

Australia, Bangladesh, China, Cambodia, India, Indonesia, Japan, Korea, Malaysia, Maldives, Singapore, Sri Lanka, Thailand, and Vietnam were in attendance. BOBP shared the regional perspectives and the initiatives of the IGO towards curbing IUU fishing.

Other Events / Meetings Attended

- Dr. Krishnan participated in the periodic meetings of the EAF-NANSEN Core Group as its Expert Member.
- The Director and Mr. Rajdeep Mukherjee, Policy Analyst, BOBP-IGO participated in the partners meeting of BOBLME Project.
- Dr. P. Krishnan served as resource person in different Training Programmes conducted by ICAR-National Academy of Agricultural Research Management (NAARM) for the researchers and faculty members of the agricultural universities. He conducted interactive sessions on Design Thinking on Project Development; Building Right Perspectives in Science Communication; Effective Collaboration & Networking using Online Tools; Breaking Myths in Project Preparation.
- Dr. P. Krishnan, participated online in the Twenty Ninth General Body Meeting and the Foundation Day of National Academy of Agricultural Sciences (NAAS) (5th June 2022).
- The Director, BOBP-IGO served as the nominee of the Hon'ble Chancellor and as a subject expert during the recruitment of teaching staff in the Kerala University of Fisheries & Ocean Studies (KUFOS), Kerala (13 June 2022).
- Dr. P. Krishnan Fifth Meeting of the Project Monitoring Committee was held on 6th July 2022, to review the projects under the DBT-Department of Space joint initiative, it also viewed the progress review of the projects supported.
- Dr. P. Krishnan participated in the Brainstorming workshop on 'Regulating the use of chemicals and Veterinary medicines products (CMPs) in Indian aquaculture' on 25-26 August 2022, at National Agricultural Science Complex (NASC), New Delhi (25 August 2022).
- The Director, BOBP interacted with the Organizing Committee of the "Fishing for Life Conference 2022- South and South-East Conference on Small Scale Fisheries and Aquaculture", to be held at Ocean University of Sri Lanka during 19-20 Sep 2022. Prof. Oscar Amarasinghe, Chancellor at the Ocean University of Sri Lanka (OUSL) and President of Sri Lanka Forum for Small Scale Fisheries (SLFSSF); Mr. Dhammika Ranatunga, Director General (Technical) from the Ministry of Fisheries and Aquatic Resources Development, Sri Lanka and other members of the organizing committee participated. It was agreed that the BOBP-IGO will partner with SLFSSF and OUSL in organizing the Conference.

Perspective

Hilsa Fisheries in the Bay of Bengal

- Rajdeep Mukherjee & P. Krishnan

Hilsa (Tenualosa ilisha), locally known as Ilish is arguably the most valuable fishery in the Bay of Bengal with an estimated first-sale value of USD 3 billion in 2020. It is moderately resistant to fishing pressure (K=0.3-1.2; tmax=5; Fec=220,000, FishBase) but highly vulnerable to climate change and other anthropogenic impacts, such as barrages (FishBase). It is the national fish of Bangladesh and the state fish of the Indian state of West Bengal and an indispensable part of Bengali culture and tradition.

Apart from BoB, hilsa fisheries also exist in Pakistan and the gulf countries. Globally, Bangladesh is the largest producer of hilsa accounting for about 89 percent of the landings, followed by India (Table 1) . The species is anadromous and migrates through riverine system for a large part of its life cycle. Therefore, large inland capture fisheries also exists for hilsa contributing about 39 percent of the catch (Table 1).

Table 1: Global hilsa fisheries: Major players and production, 2016-2020

Country	Average capture production during 2016-20 (in tonnes)			Average Percentage for 2016-20		Year-to-Year Fluctuation
	Inland	Marine	Total	Share	Growth	
Bangladesh	215,852	282,505	498,357	88.51	7.87	+ + + +
India	5,536	54,809	60,345	10.72	-2.15	- - - +
Iran		1,480	1,480	0.26	-5.30	- - - +
Iraq		1,366	1,366	0.24	-4.42	+ + - -
Kuwait		104	104	0.02	-4.50	- - + +
Pakistan		1,374	1,374	0.24	4.63	+ - + +
Average	221,389	341,637	563,026	100.00	5.81	+ - + +

Source: FAO. 2022. Fishery and Aquaculture Statistics. Global capture production 1950-2020 (FishStatJ). In: FAO Fisheries and Aquaculture Division [online]. Rome. Updated 2022. www.fao.org/fishery/statistics/software/fishstatj/en

Apart from its fame as the tastiest fish in the region, in Bangladesh, hilsa fishery provides employment for over 500,000 fishers directly and over two million people indirectly and contributes about US Dollar (USD) two billion to the GDP (BOBLME, 2012).

Long-term trend in production

Despite its economic and cultural significance, the hilsa fishery remains unmanaged for most part of its journey. With growing fishing pressure, worsening condition of its natural habitats due to pollution and blockages in its life cycle journey, the fish population, possibly got depleted resulting in lower production during later 1990s to early 2000s (Figure 1). As there was no stock estimate available, inference on population health was drawn from length-weight relationship, increasing share of juvenile hilsa in the catch, declining catch per unit of effort, etc.

Hilsa is a major fishery in Myanmar also, however, owing to the paucity of data, role, and contribution of hilsa fishery in Myanmar is outside our purview.

http://www.boblme.org/documentRepository/BOBLME-2012-Brochure-02.pdf

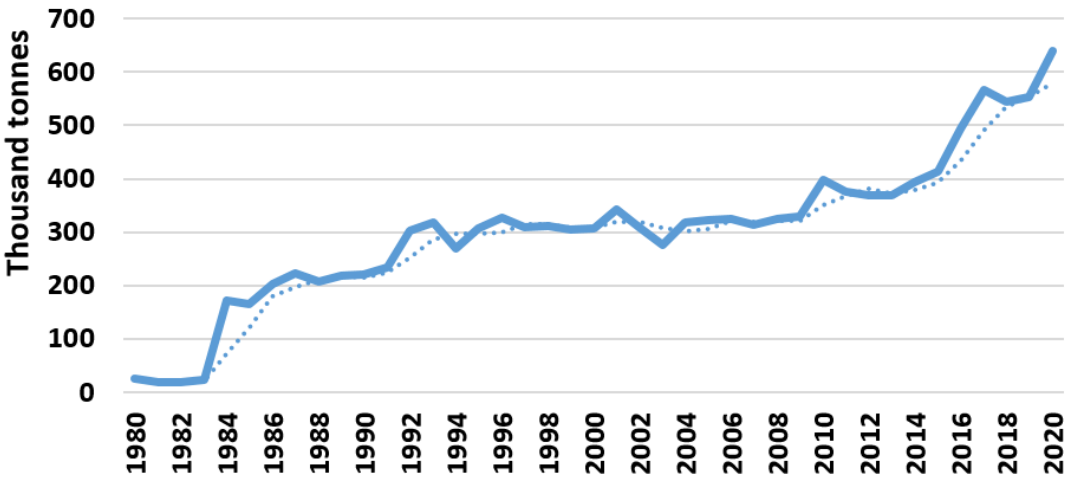


Figure 1: Trend of hilsa production from the Bay of Bengal region (Bangladesh & India)

At the national level, Bangladesh and India's experience in hilsa production is quite contrasting. Time series analysis shows production in India remains quite static, hovering around 60 000 tonnes during 1984-2020. In case of Bangladesh, production has increased steadily and increased by 400 percent since 1984. The year-to-year fluctuation in production in case of India is also high and seems to be increasing, unlike in Bangladesh (Figures 2 & 3). In case of India, although hilsa fishery was prominent across the entire east coast, it is now mostly limited to West Bengal.

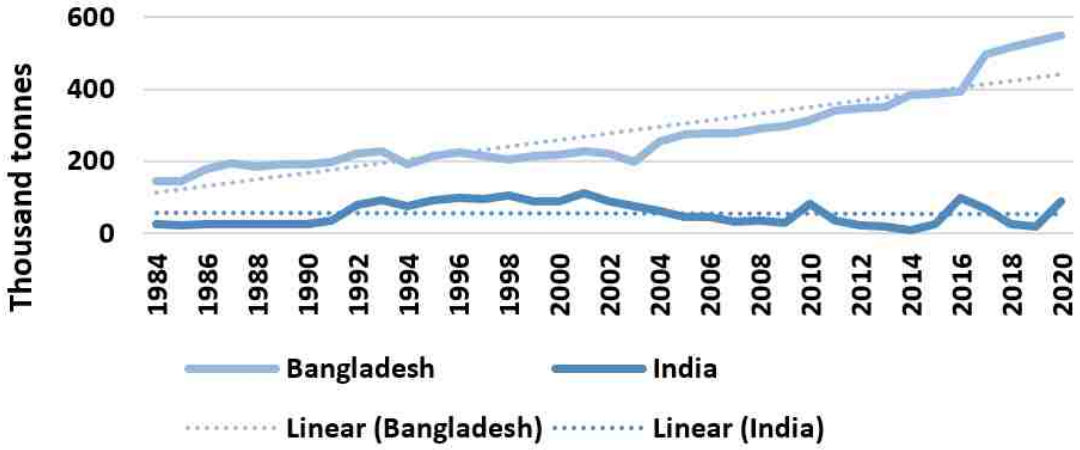


Figure 2: Growth of hilsa production in Bangladesh and India during 1984-2020

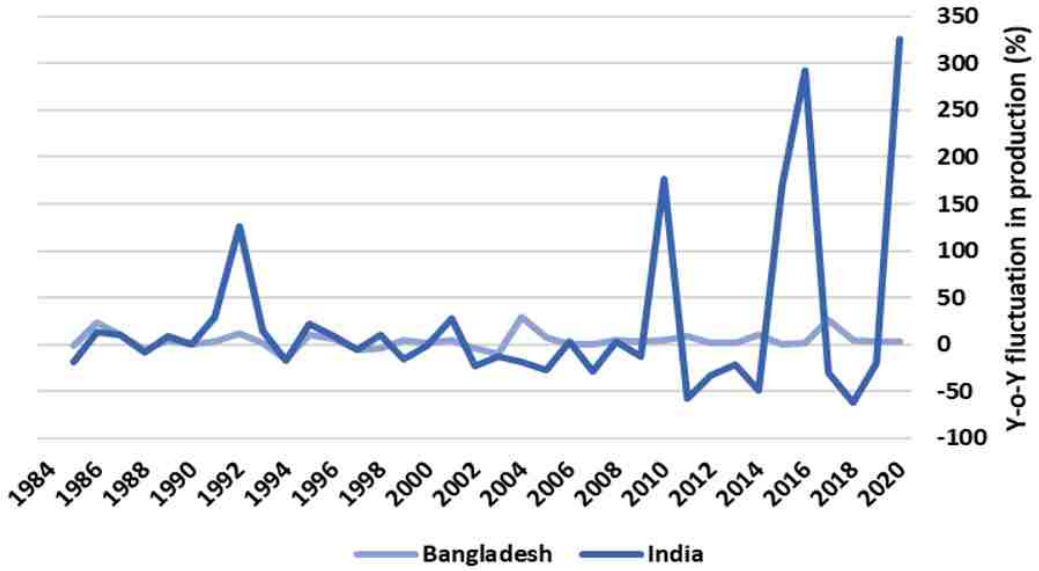


Figure 3: Contrasting national experience in production trend in India and Bangladesh

Observing the development pattern, the BOBP-IGO raised concern about the depleting hilsa resource and voiced the need for a regional management in 2007. It has led to the beginning of a regional initiative to manage hilsa fishery involving Bangladesh, India and Myanmar. The 1st Regional Consultation was held in CIFRI, Barrackpore in March 2008. The 2nd Regional Consultation was held in Chittagong in February 2010. The BOBLME Project also joined the initiative during the 2nd consultation and carried out an assessment study on hilsa fisheries. Subsequently, Bangladesh developed and implemented its Hilsa Management Plan. Discussions have since been underway with the Government of India to review and develop NPOA on Hilsa for India.

While the progress is slow, a suite of developments took place in both the countries and the recent figure from Bangladesh shows that the fishery is improving. In this backdrop, to accelerate the cooperation, BOBP-IGO is focusing on evidence-based policy advocacy and strengthening the scientific voice in the region by promoting Indo-Bangladesh collaborative work.

Issues in Hilsa Fishery Management and Way Forward

Straddling stock: Hilsa represents various fisheries management issues typical to coastal fisheries. Firstly, it is a straddling stock occurring in Bangladesh-India-Myanmar exclusive economic zone (EEZ). Therefore, a single-country based management measures cannot bring optimum results.

Anthropogenic impacts: Water abstraction, siltation and loss of riverine habitat are few of the leading causes of depletion of hilsa fishery. Studies carried out in Bangladesh show that the fishery has disappeared from 35 rivers in Bangladesh . An analogous situation was also observed in upper Ganges stretches of India.

Diverse institutional structure: Regional cooperation is a challenge as it needs balancing national autonomy, priorities with responsibility. Hilsa fisheries has a unique position in this aspect. While it is the largest fishery in case of Bangladesh (43% of marine fish production and 12% of total fish production), it is a minor fishery in India (0.41% of marine fish production). Further, in India, management of coastal fisheries is in the purview of State Government, while policy making comes under the Union Government. Therefore, decision making for the whole water body is difficult.

Lack of biological targets: How much hilsa can be caught from the BoB, is a question that remains unsettled. The Regional Fisheries Management Advisory Committee of the BOBLME Project came out with an MSY of 1,25,000 tonnes which is far below the current level of production at >5,00,000 tonnes.

Lack of collaborative research: Bangladesh-India joint programmes on hilsa fisheries management remain limited. While the issue is regularly flagged at India-Bangladesh Joint Fisheries Working Group, a process to link R&D institutions from both the countries is yet to be formalized. The BOBP-IGO is currently working towards establishing knowledge networks on thematic areas so as to let this it happen.

BOBP Impact

BOBP-IGO strives to make positive changes in the fisheries sector. In this section, we intend to document the impact of past interventions.

The Making of Aurofish Model

During 2016-18, the BOBP-IGO implemented the Ocean Partnership for Sustainable Fisheries & Biodiversity Conservation: Models for Innovation and Reform.

The main objective of this World Bank funded project was to ensure that transboundary tuna resources are exploited sustainably. Tuna was an emerging fishery at that time and the market was unorganized. The fishers were not aware about the true value of tunas and it was handled like a low value species. The fishers were practically doing biomass fishing of tuna, which was not sustainable.

The Aurofish model was conceptualized to let fishers experience the potential of tuna in their backyard when handled properly. Secondly, the model visualized a harvester-processor-consumer supply chain to ensure that major share of the consumer's money goes to the hands of the fishers. However, numerous attempts to connect with enterprising processor remained futile.

It is at that time, the BOBP-IGO team met Anitha and Muthu from Puducherry, who were a small processor-retailer sourcing fish from 4 fishing vessels.

The intervention

The existing processing facility was demolished and a modern hygienic processing facility was developed. Training was provided to ensure fish is handled hygienically and safety protocols are maintained. On their turn, Muthu trained the fishers on proper post-harvest handling of tuna. Anitha, who looks after management and marketing, demonstrated her product to different eateries and local market in Puducherry. A social media campaign was also initiated. Aurofish assured fishers that they will be paid a premium (1.5 to 2 times more than market price) price and all tuna will be purchased if the quality is maintained.

Success factors

Entrepreneurial ability demonstrated by Anitha and Muthu is the single largest success factor. However, they did not have enough capital to invest and it was met through the project. Ensuring capital availability at a reasonable cost was another significant factor. Anitha and Muthu also drew from their goodwill to convince fishers to take the plunge. The trust factor amongst the partners was noted as a significant determinant of their success.

The Impact

The intake capacity of Aurofish increased from 4 boats per day to 20 boats per day. These boats usually do line fishing and follow proper protocols to keep the fish fresh. Thanks to the quality assurance, Aurofish now has established itself as a premium brand in Puducherry.

Anitha received various recognitions including Best Innovation Award by the Ministry of Fisheries during the National Fish Farmers Day in 2021.

Scalability and Replicability

The success story of the Aurofish is picked up by the National Fisheries Development Board (NFDB), Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India to inspire others.

There are two major lessons from the Aurofish experience: (1) it is possible to successfully run a small-scale processing unit to cater to the local market; and (2) by reducing the length of the supply channel and using market incentives, fishers and processors can engage in sustainable and profitable fisheries business.

Following the publicity of Aurofish, various lessons were picked up by the fishers and the entrepreneurs, including better post-harvest, social media marketing, and marketing from boat to assure freshness. While 2 years of COVID-19 hampered the process, the trend is strengthening again.

Success Story: 53

Azadi Ka Amrit Mahotsav

NFDB

Woman Entrepreneur Reshaping Value Chain in Fisheries

Name	Anitha Muthuvel
District	Puducherry
State	Puducherry
Education	B.A.
Category	OBC
Occupation	Fish processing and marketing of fresh and ready-to-cook fish products
Mobile number	9786147288
Firm's name	Aurofish
Year of establishment	2018
Position	Proprietor
Activity	Seafood processor and supplier
Annual turnover	₹ 10 lakhs
Annual production	8.50 tonnes
Employment generated	5 direct and 50 indirect

Aurofish is a brand of fish and fishery products owned by a woman entrepreneur Mrs Anitha Muthuvel with the support from the Ocean Partnership Project funded by GEF/World Bank and implemented by BOBP. In 2018 a modern fish processing unit was set up by converting her ancestral house and an adjacent piece of land at Vaithikuppam village, Puducherry. AUROFISH was started as an innovative model to encourage the fishers to source the fish responsibly and ensure that the catch reaches the consumer in a hygienic condition. For this, Mrs Muthuvel formed a cooperative network of 20 fishers owning small FRP boats from Vaithikuppam and Nadukuppam villages. After having her team of fishermen trained in the post-harvest handling of tuna, she agreed to pay double the price for the fish responsibly caught and delivered in hygienic conditions; in doing so, she disproved the popular belief that "more fish means more income". She convinced the fishers that "if the potential value of fish is realized, even less fish also can fetch more income"

AUROFISH slowly ventured into supplying sashimi-grade ahi tuna loins (yellowfin tuna), and other products and tapped the Japanese export market. In the meantime, AUROFISH has also ventured into the domestic market supplying the best premium grade fresh seafood at retail and wholesale prices to hotels, restaurants, and to high-end supermarkets.

Anitha's success story was featured on "Super Success Stories from Indian Fisheries" published by the National Fisheries Development Board, Government of India celebrating the 75th anniversary of India's Independence

Economic Assessment of Ecosystem-based Services (EbS) of Critical Coastal Habitats along the West Coast of the Bay of Bengal

BOBP-IGO received a funding from the National Centre for Coastal Research under the Ministry of Earth Sciences, Government of India to conduct this study.

Globally Critical Coastal Ecosystems (CCE) are most heavily exploited and threatened natural systems. As coastal ecosystems provide various goods and services to society, which in turn directly contribute to our well-being and economic wealth, valuing the contribution of ecosystems to human well-being through economic, ecological and social (triple-bottom-line) accounting is crucial.

The study aims at developing a methodological framework and piloting it selected ecosystems viz., Coringa - Mangroves, Pulicat - Lagoon and Gulf of Mannar - Coral Reefs, and capacity building.

New Projects Initiated

Development of Guidelines on Repair of FRP Vessels

FAO and BOBP-IGO are developing a manual: “Guide to Simple Repair of FRP Boats in Tropical Climate”. This manual provides guidance for simple repair of FRP vessels when professional service is not available or accessible. Fishing boat owners and others often carry out many types of repair work without expertise and guidance. Factors such as cost of professional work, non-availability of professional services in the vicinity and difficulties in taking the boat to a workshop led to this situation.

This booklet would provide guidance to the owners and laminators on how to carry out simple FRP repair on the beach, the pitfalls and the do’s and don’ts.

Development of Action Plan to Promote Safety at Sea and Decent

BOBP-IGO and FAO are collaborating on preparing an action plan for increasing the attention of the BOBP-IGO member-countries to safety and decent working conditions in fisheries. The purpose of the Action Plan is to assess and implement concrete actions to ensure safety, social protection and decent working conditions on fishing fleets operating under the authority of BOBP-IGO member-countries.

It is expected that the Plan will assist the fishery sector in promoting international fisheries instruments and improving safety and decent work in the BOBP-IGO region fisheries as well as in supporting members to conduct relevant training and capacity building activities with respect to labour laws and safety of fishers.

Distinguished Visitors













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