



“Fisheries Improvement Programme and More”

Venue: KUFOS Campus, Panangad, Cochin

Date and Time: 2024 April 20 at 10.00 am

One Day All Stakeholders’ Meet in Fisheries

organized by

Kerala University of Fisheries and Ocean Studies (KUFOS)

&

Indian Marine Ingredients Association (IMIA)

supported by

SOLconnectnconsult

Message from the Vice Chancellor
Prof. (Dr.) T. Pradeepkumar



As the global fisheries industry experiences a phase of downturn due to various factors like overfishing, habitat destruction and climate change, it is imperative for us being the first State University dedicated entirely to fisheries and ocean studies, to take a lead role in guiding the entire stakeholder communities across the nation. This program represents one such initiative, born out of our commitment to this responsibility.

This one day event is a continuation of the Fishery Improvement Programme (FIP) that was initiated during the International Fisheries Congress and Expo-24 held during January 12-14 at KUFOS. The fisheries sector encompasses a multitude of segments, ranging from fisherfolk and farmers to aqua feed manufacturers and fish meal producers. Recently, our products, including frozen seafood, faced bans and anti dumping duty from global importers citing concerns over hygiene standards and sustainability.

In response to these challenges, it becomes our moral obligation to restore the reputation and acceptance of our products at the global level. By undertaking this effort, we not only benefit our university and the broader fisheries industry but also directly impact the livelihoods of those at the grassroots level who depend on this sector for their sustenance and well-being.



Message from the Principal Secretary,
Department of Fisheries, Government of Kerala
Mr. K.S. Srinivas, IAS



The importance of Kerala in the fisheries map of the country need not be emphasized. The State endowed with vast extent of water bodies including 44 rivers, 27 back waters, 63 reservoirs, 4 lakes, 590 km of coast line and 2.02 lakh sq. km of EEZ contributes significantly to the total fish production. Millions of people in the State are thriving exclusively depending on these water bodies for their income, employment and nutrition. The aquatic biodiversity of the State is enviable with the presence of hundreds of beautiful freshwater food and ornamental fishes and large number of brackish and marine food fishes of high consumer preference. Being the nodal department of the first State Fisheries University (KUFOS) in the country, the Kerala Department of Fisheries gives utmost importance to the human resource development in the sector.

Our primary objective is to cater the stakeholder communities to improve the quality of their life through enhancing the respectability of the products and ensuring proper price. I appreciate the Indian Marine Ingredients Association (IMIA) for supporting KUFOS for organizing the programme. I hereby welcome all the delegates to this meeting and wish all success to this all stakeholders' meet at KUFOS.



Message from the Registrar and Dean Fisheries Science
Dr. Dinesh Kaippilly



Indian Marine Ingredients Association, a bonafide organization dedicated to addressing sustainability issues within the fisheries sector, approached KUFOS to spearhead the Fishery Improvement Project (FIP) with the support of our students, alumni and teachers. This collaboration underscores our University's pivotal role in driving positive change within the industry.

As an institution deeply rooted in the welfare of coastal and inland communities, KUFOS stands committed to uplifting the lives of those reliant on fisheries for their livelihoods. With a dedicated initiative that provides 20 percent reservation to children of fishermen for all courses, we prioritize the empowerment and advancement of this marginalized community.

By engaging students, scholars, teachers and other stakeholders in the FIP, we not only aim to enhance the sustainability and competitiveness of our fisheries products but also to create meaningful opportunities for the next generation of fisherfolk. Together with IMIA and our diverse network of partners including Department of Fisheries officials (Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra, Pondicherry), Karnataka Veterinary, Animal and Fishery Sciences University, Tamil Nadu Dr. Jayalalithaa Fisheries University, Central Marine Fisheries Research Institute, Central Institute of Fishery Technology, Marine Products Export Development Authority, Matsyafed, Compound Livestock Feed Manufacturers' Association and others, we embark on this journey with a shared vision of a more equitable, prosperous, and sustainable fisheries sector.



Message from President, IMIA
Mr. Mohammed Dawood Sait



IMIA serves as a unifying force within the industry, bringing together leading fishmeal and fish oil producers to drive meaningful change to ensure sustainability. Through collaborative efforts with FIP, particularly focusing on Indian Oil Sardine, we are dedicated to meeting the rigorous standards set forth by Marin Trust certification.

By harnessing our combined expertise and resources, we are committed to implementing sustainable practices that not only meet market demand but also safeguard the long-term health of our marine ecosystems. This partnership exemplifies our unwavering dedication to environmental stewardship and the sustainable future of our fisheries industry.

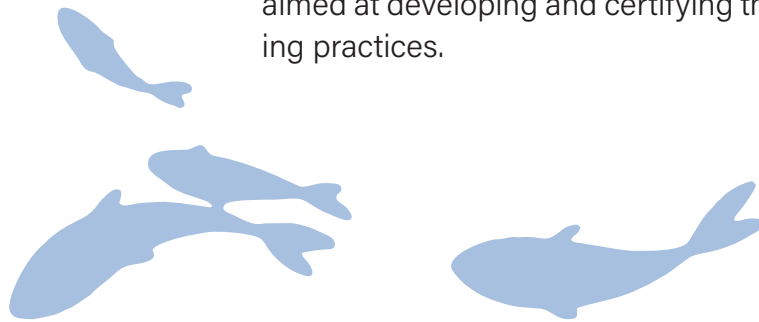
We are thankful to KUFOS for taking a lead role with us for achieving our objectives.



Message from Fisheries Expert
Mr. Duncan Leadbitter



Marin Trust represents a commitment to excellence in marine ingredient production facilities. Their program acknowledges and rewards factories for their dedication to responsibly sourcing and producing marine ingredients. It ensures that sourcing and production adhere to rigorous standards of safety and quality, while prioritizing environmental sustainability, workforce well-being, and community welfare. Through their improvement program, they actively drive fisheries enhancement efforts, guiding factories through a structured and time-sensitive process aimed at developing and certifying their marine ingredient sourcing practices.



About The Code of Conduct for Responsible Fisheries

The Code of Conduct for Responsible Fisheries, adopted by the Food and Agricultural organization (FAO) of the United Nations in 1995, serves as a comprehensive framework to promote sustainable and responsible fishing practices worldwide. It outlines principles and standards to guide governments, fisheries management organizations, and stakeholders in ensuring the long-term health and productivity of aquatic ecosystems while supporting the livelihoods of fishing communities.

The code emphasizes key aspects such as the conservation of fish stocks, the reduction of waste and discards, the protection of biodiversity, and the promotion of responsible fishing practices. It encourages the implementation of science-based management measures, the adoption of ecosystem approaches to fisheries management, and the integration of social and economic considerations into decision-making processes.

In essence, the Code of Conduct for Responsible Fisheries serves as a crucial instrument for advancing sustainability in the fisheries sector, fostering environmental stewardship, and safeguarding the well-being of present and future generations dependent on marine resources.



Summary of Indian pelagic fishery (Courtsey: CMFRI)

The marine fish landings along the mainland coast of India in 2022 totaled an estimated 3.49 million tonnes, marking a significant increase of 14.53% compared to 2021 and 28.02% compared to the COVID-19 pandemic year of 2020.

Tamil Nadu reclaimed its position as the leading state in fish landings, reporting 7.22 lakh tonnes, constituting 20.69% of the total national landings. Following closely were Karnataka with 6.95 lakh tonnes and Kerala with 6.87 lakh tonnes.

Gujarat, previously dominating the rankings, fell to the fourth position in 2022 with 5.03 lakh tonnes, experiencing a nearly 13% decline attributed to reduced fishing efforts and trade-related issues.

Indian mackerel emerged as the top marine fish resource in 2022, contributing 3.28 lakh tonnes (9.39% of the national total), followed by Oil sardine with 2.51 lakh tonnes (7.20%), Ribbon fishes with 2.27 lakh tonnes (6.49%), Cephalopods with 2.06 lakh tonnes (5.89%), and Threadfin breams with 1.99 lakh tonnes (5.69%).

Oil sardine witnessed a remarkable comeback in 2022, experiencing a surge of 188.15% compared to 2021 and securing the second position among marine resources in quantity landed. Conversely, Lesser sardines, previously dominant, dropped to sixth position with a 24.89% reduction in landings compared to 2021.

In the southern districts of Maharashtra, significant landings of Oil sardine were attributed to the use of gears capturing shoals en masse.

Despite adverse weather conditions, calm weather prevailed in 2022, facilitating continuous fishing activities. Even during the emergence of a super cyclone in the Bay of Bengal in May, fishing remained unaffected due to the fishing ban period.

A notable increase in the contribution from midlevel landing centers was observed in Odisha and Maharashtra, contrasting with major fishing harbors traditionally dominating the scene.



Illegal, Unreported, and Unregulated (IUU) fishing

IUU poses a significant threat to marine ecosystems, fisheries sustainability, and coastal communities' livelihoods. It involves various illicit activities, including fishing in restricted areas, using banned gear, underreporting catch, and disregarding conservation measures. IUU fishing undermines sustainable fisheries management efforts and jeopardizes marine biodiversity.

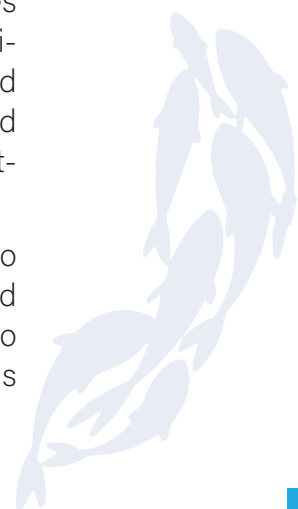
IUU fishing has devastating effects on marine ecosystems, with operators often resorting to destructive practices like bottom trawling and blast fishing, causing irreparable harm to sensitive habitats such as coral reefs and seagrass beds. Furthermore, IUU vessels frequently target endangered species, exacerbating biodiversity loss and disrupting marine food chains.

Beyond environmental concerns, IUU fishing poses economic and social challenges. It undermines law-abiding fishers and legitimate seafood businesses, leading to unfair competition, economic losses, and increased poverty in coastal communities reliant on fishing. Additionally, IUU fishing often involves labor abuses, including forced labor and human trafficking, perpetuating exploitation and endangering vulnerable workers' welfare.

Addressing IUU fishing requires a comprehensive approach involving cooperation between governments, international organizations, NGOs, and the private sector. Key elements include strengthening fisheries management and enforcement, enhancing transparency along the seafood supply chain, promoting international cooperation, and empowering coastal communities through capacity building and alternative livelihoods.

Various international agreements and initiatives aim to combat IUU fishing, such as the FAO's Agreement on Port State Measures and regional fisheries management organizations' efforts. Additionally, technological innovations like satellite monitoring and electronic surveillance systems play a crucial role in detecting and preventing IUU activities, improving transparency and accountability in the seafood industry.

Despite ongoing efforts, IUU fishing remains a persistent threat to global fisheries sustainability and marine conservation. Continued collaboration and concerted action at all levels are necessary to effectively combat IUU fishing and preserve marine ecosystems for future generations.



Importance of Marine Trust Certification



Marine trust certification plays a crucial role in ensuring the sustainability and integrity of seafood products, benefiting both consumers and the marine environment. Here are some key reasons why marine trust certification is important:

1. Sustainable Fisheries Management

Marine trust certification schemes provide a framework for assessing and verifying the sustainability of fisheries and aquaculture operations. By adhering to rigorous standards and criteria, certified fisheries and aquaculture facilities demonstrate their commitment to responsible practices, including minimizing environmental impacts, maintaining healthy fish stocks, and preserving marine habitats.

2. Consumer Confidence

Marine trust certification labels serve as trusted symbols of sustainability and quality for consumers. By choosing certified seafood products, consumers can make informed decisions that support environmentally responsible fishing and aquaculture practices. Certification provides assurance that the seafood they purchase has been sourced responsibly, helping to build trust and confidence in the seafood supply chain.

3. Market Access and Premium Pricing

Marine trust certification can open doors to new markets and opportunities for seafood producers. Many retailers, foodservice providers, and seafood buyers require certification as a prerequisite for sourcing seafood products. Additionally, certified products often command premium prices in the marketplace due to their perceived higher quality and sustainability. Certification can, therefore, provide economic incentives for fisheries and aquaculture operations to adopt sustainable practices.

4. Environmental Conservation

By promoting sustainable fishing and aquaculture practices, marine trust certification contributes to the conservation of marine ecosystems and biodiversity. Certified fisheries and aquaculture operations are required to adhere to strict standards aimed at minimizing their environmental footprint, reducing bycatch, and protecting endangered species. Certification helps mitigate the negative impacts of overfishing, habitat destruction, and pollution, safeguarding the long-term health and resilience of marine ecosystems.

5. Transparency and Accountability

Marine trust certification schemes promote transparency and accountability throughout the seafood supply chain. Certified fisheries and aquaculture facilities undergo independent audits and assessments to verify compliance with certification standards. This process ensures that seafood products are traceable from ocean to plate, providing transparency about their origins, production methods, and environmental credentials. Certification also encourages continuous improvement and accountability within the industry, as certified entities are required to address any identified deficiencies and work towards achieving sustainability goals.

In summary, marine trust certification plays a vital role in promoting sustainable fisheries and aquaculture practices, building consumer confidence, facilitating market access, conserving marine resources, and fostering transparency and accountability within the seafood industry. By supporting certified seafood products, stakeholders can contribute to the long-term health and resilience of our oceans while enjoying high-quality, responsibly sourced seafood.



Prof. K. C. Veeranna

Prof. K. C. Veeranna, a distinguished academician with qualifications including B.V.Sc & A.H., M.V.Sc., Ph.D., and PGDEE, assumed the esteemed position of Vice-Chancellor at Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, Karnataka on July 11th, 2022.

Prior to his appointment as Vice-Chancellor, Prof. Veeranna held several key roles within the university, including Acting Vice-Chancellor, Registrar, Dean of Veterinary College in Shivamogga, and Officer on Special Duty at Veterinary College, Gadag. He has played a pivotal role in the planning, designing, and furnishing of laboratory facilities and infrastructure, ensuring compliance with VCI and ICAR regulations. Additionally, he has actively contributed to statutory bodies and committees at university, state, and national levels.

As a researcher, Prof. Veeranna has led three externally funded projects, including those supported by KWDP II - Sujala III Project, ICAR-NAIP, and DBT, New Delhi. He has also managed four university-funded projects and served as Co-PI for several others. Notably, he has been the Nodal Officer for KWDP-II; Sujala-III Project for KVAFSU, Bidar.

In the realm of extension activities, Prof. Veeranna has organized/coordinated two national conferences, conducted 30 training programs for line department officers, delivered 150 training sessions for farmers, organized five livestock shows, and conducted over 100 on-farm demonstrations. He has also served as a resource person in various extension activities organized by other organizations.

Prof. Veeranna's scholarly contributions include over 70 research papers in esteemed national and international journals, approximately 80 papers presented in national/international seminars/conferences, 120 popular articles/leaflets/bulletins, and authorship of five books.

His contributions to the field have been recognized through several awards, including the State NSS Award by the Ministry of Youth and Sports, Govt. of Karnataka in 2000, the Leelavathi Krishna Rao Award by the Indian Veterinary Association in 2000, and Certificates of Merit by KVAFSU, Bidar in 2010, 2011, and 2016. He has also received Best Paper Presentation Awards from various professional societies and organizations, the Best Veterinarian Award by Karnataka Veterinary Association in 2014, and was honored as a National Fellow of Indian Veterinary Extension Forum, Puducherry in November 2022. Furthermore, he has been conferred with the Lifetime Achievement Award by the Society for Scientific Development in Agriculture and Technology in November 2022 and the National Agricultural Development Cooperative Ltd., Baramulla in December 2023.



Dr. Shamila Monteiro

Dr. Shamila Monteiro holds a Bachelor's degree in Fisheries Science (1992) and a Master's degree in Fisheries Science (1994) with a specialization in Fish Production and Management from the College of Fisheries, Mangalore, Karnataka. During her academic tenure, she conducted research on the replacement of defatted Soya flour as an alternative protein source to fish meal in shrimp feeds. She was honored with the Gold Medal of Merit for her Bachelor's degree by the University of Agriculture Science, Bangalore, Karnataka.

In 2006, Dr. Monteiro obtained her PhD from Goa University through the National Institute of Oceanography. Her doctoral research focused extensively on the Fisheries Resources of Goa and their Management.

Furthermore, she underwent international training on Intensive Aquaculture, Food Safety, and Environment from MASHAV, Israel, in 2006. Dr. Monteiro was nominated as a fisheries and ecosystem expert in the Mahadayi Tribunal on behalf of the State of Goa.

Throughout her career, Dr. Monteiro has been actively involved in various governmental bodies and committees. She commenced her professional journey with Nagarjuna Aqua Exports Pvt. Ltd., Nellore, AP, where she oversaw monodon hatchery algae production, disease diagnosis, and water quality management.

Subsequently, in 1998, Dr. Monteiro joined the Government of Goa as Superintendent of Fisheries and progressively ascended to the position of Director of Fisheries, Govt. of Goa, in 2013. In addition to her role in the Fisheries Department, she has been serving as the Member Secretary of the Goa State Pollution Control Board since 2018.



Dr. B. Ahilan

Dr. B. Ahilan, currently serving as the Dean at the Fisheries College and Research Institute, Tamil Nadu Dr. Jayalalitha Fisheries University, Thoothukudi, brings forth an extensive 32-year tenure within the university system, showcasing a profound blend of teaching, research, extension, and administrative expertise. As a distinguished professor of Aquaculture, he previously held the position of Dean at Dr. MGR Fisheries College and Research Institute, Ponneri, from 2017 to 2022. His doctoral research delved into the breeding and culture of goldfish (*Carassius auratus*). Dr. Ahilan has provided guidance to fifty-nine postgraduate students, both M.F.Sc and Ph.D., in capacities ranging from Chairman to Member.

With a prolific research background, Dr. Ahilan has successfully concluded over 30 research projects sponsored by various Central and State government agencies. These projects primarily focused on the culture and breeding of ornamental fishes, fish nutrition, and the training of fish farmers. He spearheaded the establishment of a Nutrition laboratory and Feed mill unit at FC&RI, Thoothukudi, in 2015, under NADP funds. Furthermore, he played a pivotal role in setting up RAS units for Seabass and an Aquaponics unit at ARFF, TNJFU, Madhavaram, Chennai, in 2018. Additionally, he established a Fish farm complex at MGR FCRI, Ponneri, in 2021, utilizing NADP funds.

Dr. Ahilan's scholarly contributions extend to the publication of 16 textbooks, 121 research articles in reputable journals, and the presentation of 92 papers in International/National conferences and seminars. His innovative mindset has led to the development of nine technologies approved by the University in the domains of Aquaculture and Aquariculture. His dedication to the advancement of ornamental fish culture is widely acknowledged and appreciated by the general public and fish farmers of Tamil Nadu. Dr. Ahilan has nurtured numerous entrepreneurs in ornamental fish culture through his intensive training programs. His exceptional contributions to academia have been recognized with the "Best Teacher Award" sponsored by PFGF, Mumbai, in 2003, and TANUVAS, Chennai, in 2011.



Shri. Dinesh Kumar K

Shri. Dinesh Kumar K, currently serving as the Director of Fisheries for the Government of Karnataka, has a distinguished career spanning three decades within the fisheries sector. He embarked on his professional journey through the Karnataka Public Service Commission (KPSC), initially assuming the role of Deputy Director of Fisheries. Over the years, he has ascended through various positions of responsibility, including Deputy Director, Joint Director, Additional Director, Managing Director of the Karnataka Fisheries Development Corporation Ltd, before attaining his current designation.

Throughout his tenure, Sri. Dinesh Kumar K has left an indelible mark on the fisheries landscape of Karnataka. He is credited with significant achievements, including the overhaul of the administrative framework within the Department of Fisheries, the decentralization of scheme implementation processes, and the establishment of a 24/7 helpline catering to the needs of fishers and the public.

Under his leadership, several groundbreaking projects have been initiated on a Public-Private Partnership basis, contributing to the development of aquaria at Cubbon Park and a fish seed farm at Karanja. Sri. Dinesh Kumar K's strategic acumen has been instrumental in formulating action plans for various centrally sponsored schemes, resulting in substantial increases in fund allocation from the central government. Under his stewardship, Karnataka has garnered accolades such as the title of "Best Marine State" during his tenure as Additional Director of Fisheries (Marine). He has been a driving force behind pioneering initiatives, including the deployment of Artificial Reefs for marine ecosystem protection and livelihood enhancement of traditional fishers. Furthermore, Sri. Dinesh Kumar K has championed innovative schemes like "Matshyavahini" under PMMSY to bolster domestic fish consumption and proposed welfare programs for fishermen, including the Deployment of Sea Ambulance and the establishment of Aqua Parks and integrated fish markets across the state



Dr.PSahadevan

P. Sahadevan holds the position of Managing Director at Matsyafed. Previously, he served as the Additional Director of Fisheries in the Kerala Department of Fisheries, a role he held since May 2018. Prior to this appointment, Sahadevan served as the Executive Director from June 2012 to the present day. In 2021, Sahadevan assumed leadership of a seven-member committee entrusted with examining and reporting on several pressing matters, including coastal security, vessel monitoring systems, and the challenge of illegal fishing.



Dr. H.N. Anjaneyappa

With 29 years of experience, Dr. H.N. Anjaneyappa holds the position of Dean at the College of Fisheries, Mangalore. His expertise spans across teaching, research, and extension services, particularly in Fisheries Resources and Management.

He has supervised the academic journeys of 15 Master's students and mentoring 10 doctoral scholars. His scholarly pursuits have resulted in the publication of 85 papers in esteemed national and international journals, complemented by 20 popular articles and 10 leaflets. Additionally, Dr. Anjaneyappa has played a pivotal role in enhancing educational content, having spearheaded e-content development for the B.F.Sc. degree program. His expertise extends to project leadership, particularly in the areas of shellfish and finfish taxonomy. Notably, his exemplary contributions were recognized with the prestigious Dr. APJ Abdul Kalam Lifetime Achievement National Award in 2018. Beyond his academic endeavours, Dr. Anjaneyappa has undertaken various administrative responsibilities, serving as Assistant Registrar, Assistant Coordinator of Examination, Deputy Librarian, Head of Extension Education Center, Head of Estate Branch, and Head of Division (Fisheries Science), exemplifying his multi-faceted commitment to the advancement of fisheries education and research.

The Fishmeal Industry in India: Navigating Present Challenges and Charting Future Courses

Mohamed Dawood Sait

President, INDIAN MARINE INGREDIENTS ASSOCIATION (IMIA)

Who Are We?

The Indian Marine Ingredients Association (IMIA) is a beacon of sustainability and development within India's fishmeal and fish oil industry. As a non-profit entity, IMIA is committed to environmental stewardship, community responsibility, and global competitiveness.

Our Objectives

1. Promoting Sustainable Practices:

We are dedicated to fostering environmentally and socially responsible operations within the industry.

2. Research and Development:

We support innovative efforts to enhance product quality and sustainable practices.

3. Policy Advocacy:

We engage in policy dialogues, ensuring industry representation in legislative circles.

4. Industry Cooperation:

By unifying industry stakeholders, we aspire to collective progress for the common good.

5. Government Collaboration:

Through a Memorandum of Understanding (MoU), we solidify our partnership with the government to achieve shared objectives.

Through transparent collaboration, IMIA protects and champions the interests of the fishers and the fishmeal industry.

One India – One FIP: A Phased Approach



- Phase 1: Karnataka Kerala Coast
- Phase 2: Tamil Nadu Coast
- Phase 3: Maharashtra & Goa Coast
- Phase 4: Gujarat Coast
- Phase 5: Andhra & Orissa Coast

**ONE INDIA
ONE FIP**

One India – One FIP: A Phased Approach

India stands tall as a major player in the global aquaculture and fishmeal market:

- Ranked among the top three in aquaculture exports.
- Positioned in the top five for fishmeal production and exports.
- A significant contributor to the global aquaculture feed market.
- Boasts a long coastline and a robust fishing community.
- Noted for premium-grade fishmeal and fish oil exports.
- Industry hotspots include Gujarat, Maharashtra, Kerala, Tamil Nadu, and Karnataka.

However, sustainable practices are often misunderstood due to lack of awareness and external pressures.

Key Characteristics

Production Capacity

India leverages its by-catch and small pelagic fish for substantial production.

Export

A considerable export quotient caters to aquaculture-centric nations.

Sustainability Concerns

The global spotlight on sustainable fishing highlights the need for balance.

Regulation and Management

Government and industry initiatives aim to fortify sustainable fishing.

Quality and Standards

Emphasis on quality is key to satisfying stringent international standards.

Sustainability and Efficiency

- Fish in Fish out (FIFO) Ratio: Demonstrating high efficiency, the industry boasts a FIFO ratio where every 1 kg of non-human-grade fish is transformed into 5 kg of aquaculture product.
- Shelf-Life Extension: Small pelagic fish, rich in fats, spoil rapidly. Fishmeal processing significantly enhances shelf life from mere hours to 2 years, drastically reducing waste and preserving value.

Support and Conversion

Domestic Aquaculture Growth: The fishmeal industry plays a pivotal role in supporting the growth of India's domestic aquaculture sector by providing high-quality feed.

Waste to Resource: The industry is adept at converting fish waste into valuable resources, epitomizing the principle of waste minimization and resource maximization.

Future of the Indian Fishmeal Industry

The Indian Fishmeal Industry's horizon is shaped by innovation, policy, and sustainability:

IMIA's Role: Bridging gaps between stakeholders and policymakers.

National Fisheries Policy: A catalyst for elevating the industry.

Infrastructure and Research: Government-led enhancements are underway.

Trends

Sustainable Practices: Eco-labeling and certification will likely become standard.

Aquaculture Growth: The rising demand for aquaculture presents opportunities.

Diversification: Expansion into high-value products like refined fish oil is anticipated.

Technological Advancements: Efficiency and reduced environmental impact through technology.

Challenges

Resource Management: Sustainable fish stock management is critical.

Regulatory Framework: A stronger framework is essential for enforcing sustainability.

Competition: Alternative protein sources are emerging as competitors.

Climate Change: Fluctuating marine ecosystems due to climate change could impact resources.

Conclusion

The Indian fishmeal industry is at a crossroads of opportunity and responsibility. The potential for growth is vast, but it must be harnessed alongside a commitment to sustainability. The FIFO ratio and shelf-life extension are testaments to the industry's efficiencies and innovations.

Growth Initiatives by Hon'ble Prime Minister, Government of India

Vision of our Hon'ble Prime Minister PMMSY

Sustainable Sector Growth: Sustainable and inclusive exploitation of fisheries potential.

Boost Production and Incomes: Aiming to double incomes, intensify production, and generate employment.

Value Chain Modernization: Enhancing the entire value chain from harvest to quality improvement.

Contribution to Agriculture: Augmenting the fisheries sector's share in Agricultural GVA and exports.

Security for Fishers: Ensuring comprehensive security for fishers and fish farmers.

Robust Regulatory Framework: Establishing a strong management and regulatory environment.

Great Initiative by Hon'ble Union Fisheries Minister

SAGAR PARIKRAMA

- A campaign to connect with fishermen and coastal communities, promoting government fisheries schemes.
- Embodying the spirit of Aatmanirbhar Bharat (self-sufficient India) and demonstrating support for all stakeholders.
- Encouraging responsible fisheries focused on the sustainable utilization of resources for national food security and the livelihoods of coastal communities.
- Commitment to the protection of marine ecosystems

This updated outline reflects a more comprehensive view of the Indian fishmeal industry, including its efforts to improve sustainability, efficiency, and support for the domestic aquaculture industry. The additional points emphasize the industry's role in converting waste into valuable resources and increasing the shelf life of fish products, which are key to its future growth and sustainability.

The Overlooked Pillar of Aquaculture: India's Fishmeal Industry

Despite being the linchpin in the aquaculture supply chain and a source of significant export earnings, the Indian fishmeal industry often goes unnoticed by the country's planners and policy-makers. The industry's vital contributions to the economy and the aquaculture sector cannot be overstated:

Aquaculture Support: It provides essential nutrients for the cultivation of marine and freshwater species, crucial for the booming aquaculture industry.

Exports: The industry adds considerable value to the economy through its export earnings.

The Critical Need for Certification

For Indian fishmeal products to gain widespread acceptance and reputation in the competitive international market, immediate actions are essential:

Certification of Pelagic Fishery: Certifying the pelagic resources is an urgent priority to align with international sustainability standards.

Preventing Unsustainable Practices: Fishermen need to be fully informed and educated about the consequences of illegal fishing practices, including the capture of juvenile fish, to protect future fish stocks.

IMIA's Commitment to Sustainable Practices

The Indian Marine Ingredients Association (IMIA) is deeply committed to enhancing the Indian fishmeal industry's standing in the global market:

Striving for Global Certifications: IMIA is diligently working to acquire certifications for Indian fisheries from respected agencies worldwide.

Fisheries Improvement Programs (FIPs): IMIA is actively participating in FIPs across India's west and east coasts, in partnership with research organizations, universities, and both central and state governments.

Visibility of Sustainable Practices: These efforts aim to highlight the sustainability of India's pelagic resources to the global community.

Value Enhancement: By showcasing sustainable practices, IMIA seeks to augment the global value of Indian seafood and fishmeal.

Economic Benefits and Support to Fishermen Communities

Enhanced Price Levels: By improving the perception and certification of Indian fishmeal, IMIA's initiatives are designed to support fishermen communities through better pricing.

Economic Stability: Sustainable practices and global certifications can lead to more stable and higher income for fishermen, securing their livelihoods and contributing to the economic health of coastal regions.

Conclusion: A Collective Push for Recognition & Sustainability

As the Indian fishmeal industry navigates the complex waters of international trade and sustainability, the need for recognition from local policy-makers and global certification bodies has never been greater. The concerted efforts of IMIA and its partners aim to secure a brighter future for the industry — one where the sustainability of pelagic resources is not only visible but also valued and rewarded on the global stage. This, in turn, will ensure the prosperity of the Indian fishermen communities who are the backbone of this sector. It is a call to action for all stakeholders to recognize and invest in the sustainable practices that will drive the industry forward.

The Importance of a Sustainable Fisheries Sector for Our Country?

The fisheries sector in India is a crucial pillar of our economy, making up about 1.4% of the GDP and 4.6% of agricultural output. This sector provides employment to nearly 6 million people, including 2.4 million full-time fishermen, and supports the livelihoods of 18–20 million individuals across the country. Beyond the numbers, the Indian fishery sector has profound socio-economic implications, impacting various facets of our society and economy. Fishing and related activities serve as a vital source of income diversification for coastal communities, offering an alternative to traditional agriculture and supporting families with additional earnings. It's important to note that fishing activities often involve marginalized communities such as coastal tribes, Scheduled Castes (SCs), and Scheduled Tribes (STs), providing them with socio-economic opportunities and empowerment through their participation in this sector. Fish is a critical source of protein for a large segment of the Indian population, particularly those residing in coastal regions. The availability of fish significantly contributes to improved nutrition and enhances food security across communities. Moreover, the fishery sector plays a pivotal role in the development of rural and coastal areas by generating income, boosting local economies, and catalysing infrastructure development such as harbours and cold storage facilities, which benefit entire communities. In India women especially from economically and socially vulnerable groups are integral to various aspects of the fishery sector, including fish processing, marketing, and retailing. Their active participation not only contributes to household income but also empowers them economically and socially within their communities.

In essence, the fisheries sector in India is a dynamic and evolving industry that plays a vital role in ensuring food security, driving economic development, and creating essential employment opportunities—especially in coastal and rural areas where communities rely heavily on this sector for their sustenance and livelihoods.

Why sustainable fishery management matters?

The significance of sustainable fisheries lies in its capacity to harmonize ecological, economic, and social considerations, thereby promoting the well-being of ecosystems, communities, and future generations. Sustainable fisheries management is focused on ensuring the long-term health and productivity of marine ecosystems, which in turn supports stable and resilient fisheries-dependent economies. By maintaining fish stocks, preserving market access, and promoting sustainable business practices, sustainable fisheries management safeguards the livelihoods of many coastal communities and small-scale fishers, preventing the depletion of fish stocks and ensuring equitable access to fishing opportunities. Moreover, sustainable fisheries management recognizes the deep-rooted cultural heritage and identity associated with fishing traditions and practices, particularly among indigenous and coastal communities. By fostering stewardship of marine resources, sustainable management supports the preservation of these cultural traditions. Healthy fisheries also provide a range of ecosystem services, including nutrient cycling, coastal protection, and biodiversity support. Sustainable management practices help maintain these ecosystem services, benefiting both human well-being and the broader environment. Furthermore, the increasing consumer demand for sustainably sourced seafood has created market opportunities for certified sustainable fisheries products. Sustainable fisheries management enhances consumer confidence by ensuring traceability, transparency, and responsible fishing practices throughout the supply chain. This not only supports sustainable fisheries but also fosters a greater appreciation for responsible resource management and conservation efforts within the fishing industry.

Methods for Assessing Fishery Sustainability?

Methods for Assessing Fishery Sustainability?

Assessing the sustainability of fisheries encompasses multiple factors, addressing the health of fish populations, the impact of fishing practices on ecosystems, and the socio-economic well-being of fishing communities. Sustainable fisheries management strives to maintain fish stocks at levels that allow for their replenishment and long-term health. This involves setting catch limits, implementing fishing quotas, and conducting scientific assessments to monitor fish populations.

Additionally, sustainable fisheries management aims to minimize bycatch, which refers to the unintended capture of non-target species, and to protect essential habitats like coral reefs and mangroves. Destructive fishing methods such as bottom trawling are avoided to preserve marine ecosystems.

Effective fisheries management relies on robust regulations and enforcement mechanisms to prevent overfishing and combat illegal, unreported, and unregulated (IUU) fishing activities. Monitoring fishing activities and enforcing fishing quotas are crucial components of this effort.

Engaging with fishing communities, indigenous groups, and stakeholders is essential to ensure that management decisions are inclusive and consider local knowledge and practices. This fosters community support for conservation efforts and promotes socio-economic sustainability within fishing-dependent regions.

Consumer demand for sustainably sourced seafood can drive improvements in fisheries management practices. Certification programs like the Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC) provide consumers with information about sustainably harvested seafood, promoting transparency and responsible sourcing.

Advancements in technology, such as improved fishing gear, satellite monitoring, and data analytics, play a key role in enhancing fisheries management and sustainability. These technologies enable precise monitoring of fish stocks and fishing activities, supporting informed decision-making.

Achieving sustainable fisheries requires a comprehensive approach that integrates ecological, economic, and social considerations. By addressing these factors holistically, sustainable fisheries management can contribute to the preservation of marine resources and the well-being of both ecosystems and fishing communities.

The Role of Fishery Improvement Programs (FIPs) in Promoting Fishery Improvement Programs (FIPs) play a critical role in advancing sustainable fisheries by fostering collaboration, promoting best practices, improving governance, and enhancing market opportunities. By addressing environmental, social, and economic aspects of fisheries management, FIPs contribute to the long-term health and resilience of marine ecosystems and fishing communities. FIPs focus on engaging fishery stakeholders, including fishers, governments, NGOs, and businesses, to collectively improve fisheries management practices. By identifying areas for improvement and setting specific goals, FIPs drive positive changes in fishery governance and regulatory frameworks. Lessons learned from FIPs can inform broader policy reforms and initiatives aimed at achieving sustainable fisheries management on a larger scale.

Implementing Fishery Improvement Programs (FIPs): Key Steps and Strategies?

Conducting a Fishery Improvement Program (FIP) involves a structured approach to assess, prioritize, and implement improvements in fisheries management practices. The success of FIPs relies heavily on engaging major stakeholders in the fisheries sector, including fishers, government agencies, processing and fish meal entrepreneurs, local communities, and consumers.

The first step is to conduct a comprehensive baseline assessment of the target fishery, evaluating fish stock status, ecosystem health, fishing practices, and socio-economic aspects. This involves gathering data through scientific surveys, interviews, and consultations with stakeholders to understand the current state of the fishery.

Based on the baseline assessment, prioritize areas for improvement that will contribute to the sustainability of the fishery. Define clear and achievable goals for the FIP, addressing key challenges such as overfishing, bycatch, habitat degradation, or governance issues.

Next, develop a detailed Fishery Action Plan (FAP) outlining specific steps, timelines, responsibilities, and required resources to achieve the FIP goals. Identify interventions and best practices that can be implemented to address priority issues identified during the assessment phase.

Implementation involves executing the action plan in collaboration with stakeholders, ensuring tasks are carried out effectively and progress is monitored. Implement improvements in fishing practices, gear technology, data collection, management strategies, and compliance measures.

Establish monitoring systems to track progress towards FIP goals and assess the effectiveness of implemented actions. Regularly evaluate the impact of interventions on fish stocks, ecosystem health, socio-economic conditions, and compliance with sustainability standards.

Continuously review and adapt the FIP based on monitoring results, stakeholder feedback, and changing circumstances. Once FIP objectives are met and improvements are verified, seek third-party certification or recognition from credible sustainability programs (e.g., MSC, ASC).

Communicate achievements to seafood buyers, consumers, and other stakeholders to promote market access for sustainably sourced seafood. Provide training and capacity-building support to fishers, communities, and relevant institutions to strengthen sustainable fishing practices and governance. Raise awareness among consumers, retailers, and policymakers about the importance of sustainable fisheries and the benefits of FIPs. Foster collaboration with other FIPs, conservation organizations, research institutions, and government agencies to leverage resources, share knowledge, and scale up impact.

"Fishery Improvement Programs (FIPs) Supported by KUFOS: Advancing Sustainable Fisheries Fishery Improvement Project (FIP) & Fishermen-Fish farmers' Conclave (FFC)

Organized by Kerala University of Fisheries and Ocean Studies (KUFOS) as part of the International Fisheries Congress & Expo-2024 and supported by Indian Marine Ingredients Association (IMIA) and Aquaculture without Frontiers (AwF)

Date: January 13, 2024

Patron: Dr. T. Pradeepkumar

Organizer: Dr. Dinesh Kaippilly

The session was chaired by Dr. N.G.K Pillai, former Director of Central Marine Fisheries Research Institute, and Dr. B. Manojkumar, former Registrar of KUFOS. The meeting was inaugurated by Dr. T. Pradeepkumar, Hon'ble Vice Chancellor of KUFOS and the welcome address was given by Dr. Dinesh Kaippilly, Registrar and Dean of KUFOS. The vote of thanks was delivered by Dr. Daisy C Kappen, Director of Extension. The Chief Guest of the program was Mr. V. Dinakaran, former Member of Legislative Assembly. Mr. K.K. Reghuraj, former Farm Superintendent of KUFOS, moderated the session. The rapporteurs were Mr. Naveen Nivas and Miss. Nayanthara Ashok, Ph.D. Scholars of KUFOS. Mr. Antony Sheelan, Governing Council Member of KUFOS, Mr. Ibnu Sahidhir from the National Research and Innovation Agency of the Republic of Indonesia, Dr. Le Viet Dung, Head of the Department, Aquaculture at Vietnam Agricultural University, Vietnam and Mr. Bharthruhari, Fishermen leader were the panel members of the program. In the inaugural session, Dr. N.G.K. Pillai delivered a detailed talk on sustainable fishery practices and strategies to protect fish stocks in our oceans and Dr. B. Manojkumar emphasized the importance of fisheries in the economy of the State. The invited talks began with Dr. Abdusamad E.M., Principal Scientist of CMFRI and a renowned scientist in the field of marine fishery with his major focus areas as fishery, biology and stock assessment of large pelagic fishes and taxonomic studies of pelagic fishes. He has presented the status of marine fisheries with special reference to resource utilization with a clear observation that more than 90% of the Indian pelagic fishery is highly sustainable.

Dr. Shoji Joseph, Principal Scientist of CMFRI who is a live feed expert with major research areas as cage culture, live feed culture and molluscan mariculture. Dr. Shoji presented the mariculture potential of South India from a fishermen's perspective. Dr. Manoj Sharma, Managing Director of Mayank Aquaculture and a well-known shrimp farmer from Gujarat discussed the status of shrimp farming globally with a foresight for Indian farmers to cope up with future global scenarios. Dr. Gopinath Panangad, former Executive Director of the Kerala State Literacy Mission, spoke about the role played by the fisheries sector in the socio-economic development of the State and Mr. Charles George, President of Mathsya Thozhilali Aikyavedi, addressed the various issues pertaining to fisher folk and suggested solutions related to mitigating the same. The Fisheries Inspector from Kanyakumari, Ms. Mary Shilma, delivered a presentation on marine fisheries in Tamil Nadu, specifically focusing on Kanyakumari District and sustainable fishing practices for the well-being of fishermen.

Dr. C. Ramachandran, Principal Scientist of CMFRI and a renowned social scientist working in the fisheries sector portrayed the importance of code of conduct for responsible fisheries in his simple and narrative style of dissemination. He explained the essence of the concept put forward by FAO for the clear understanding of the fisher folk. Mr. Mohamed Dawood Sait, President of the Indian Marine Ingredients Association discussed the importance of sustainable fishing for the development of seafood industry. He emphasized that the fish meal industry in India is not getting proper attention from the planners and policy makers of the country even though the industry plays a key role in supporting the aquaculture industry and bringing export earnings to the country. For getting our products well accepted in the international market there is a need for urgently certifying our fishery of the pelagic resources. At the same time, fishermen should be given absolute awareness on not to indulge in illegal fishing practices or the fishing of juveniles. IMIA is taking all efforts to get our fisheries certified by various agencies across the globe by actively involving in Fisheries Improvement Programmes in the country pertaining to both the west and east coasts collaborating with central and State research organizations/universities/governments. A short play titled "Kadal Karayukayaanu" -meaning, the ocean is crying- was performed by Mr. Meenaraj Palluruthy & Team. A total number of 300 fishermen and fish farmers from Kerala, Tamil Nadu, Pondicherry, Karnataka and Maharashtra attended the programme.

Major objectives of the programme were:

- To facilitate the exchange of knowledge and best practices among fishermen focusing on fisheries improvement and aquafarmers to improve their techniques, enhance productivity and ensure sustainable practices.
- Provide training sessions, workshops and demonstrations to enhance the skills and capabilities of fishermen and aquafarmers in areas such as modern fishing techniques, aquaculture management and post-harvest handling.
- Create opportunities for fishermen and aquafarmers to access markets by connecting them with buyers, processors, exporters and other stakeholders in the seafood industry.
- Discuss and advocate for policies that support the interests of fishermen and aquafarmers, including regulations related to fishing practices, aquaculture management, access to resources and market opportunities.
- Raise awareness about the importance of sustainable fishing and aquaculture practices to conserve marine resources, protect ecosystems and ensure long-term viability of the industry.
- Foster a sense of community among fishermen and aquafarmers, promote cooperation and collaboration and address common challenges faced by the industry through collective action.
- Introduce and promote the adoption of innovative technologies, tools, and equipment that can improve efficiency, reduce costs and enhance sustainability in fishing and aquaculture operations.
- Provide information about available financial resources, grants, subsidies and credit facilities to support the development and expansion of fishing and aquaculture enterprises.
- Facilitate networking opportunities for fishermen and aquafarmers to establish connections, share experiences, and build relationships with industry peers, government officials, researchers, and other stakeholders.

FISHERIES IMPROVEMENT PROJECT AND MORE

Venue: KUFOS Campus, Panangad, Kochi

Date and Time: 2024 April 20 at 10.00 am

One Day All Stakeholders' Meet in Fisheries

organized by

Kerala University of Fisheries and Ocean Studies (KUFOS)

&

Indian Marine Ingredients Association (IMIA)

supported by

SOL connect n consult

PROGRAMME

Welcome Address: Prof. (Dr.) Dinesh Kaippilly

Registrar and Dean Fisheries Science, KUFOS

Opening Remarks: Prof. (Dr.) T. Pradeepkumar

Vice Chancellor, KUFOS

Special Remarks: Prof. K. C. Veeranna

Vice Chancellor

Karnataka Veterinary, Animal and Fisheries Sciences University

Honouring the Dignitaries: Mr. Mohamed Dawood Sait

President

Indian Marine Ingredients Association

Short address by the Hon'ble Dignitaries

Dr. B. Ahilan, Dean, Fisheries College & Research Institute, Thoothukudi

Dr. H.N. Anjaneyappa, Dean, College of Fisheries Sciences, Mangalore

Dr. Shamila Monteiro, Director of Fisheries, Goa

Dr. Dinesh Kumar Kaller, Director of Fisheries, Karnataka

Dr. P. Sahadevan, Managing Director, Matsyafed

Mr. S. Mahesh, Joint Director of Fisheries, Kerala

Shri. M. Chinnakuppan, Deputy Director of Fisheries and Fisherman Welfare,

Kanniyakumari

Mr. Santhosh K, State Coordinator, NET Fish, MPEDA

STAKE HOLDER DISCUSSION CONCLUSION

Objectives of the programme

- Feasibility of implementing global standards within the Indian context
- Importance of establishing country-specific standards
- Advocating for unified regulations across India
- Emphasizing the necessity for logical and practical regulations
- Significance of conducting awareness programs for stakeholders
- Importance of organizing follow-up meetings
- Need for ongoing monitoring at the grassroots level

Professor (Dr.) Dinesh Kaippilly warmly welcomed all the participants and served as the moderator of the discussion session. Professor (Dr.) T. Pradeepkumar, Vice Chancellor of Kerala University of Fisheries and Ocean Studies, delivered the opening remarks, emphasizing the significance of the fisheries sector in India's economic and social development. He also addressed recent challenges, such as the market ban on Indian shrimp in the US due to labor-related issues, stressing the importance of strong governance and unity among stakeholders in the fishery sector.

Dr. Veerana initiated the discussion by highlighting the multifaceted nature of the fisheries sector, emphasizing its socioeconomic dimensions and pivotal role in job creation and income generation. He underscored the nutritional value of fish, particularly their rich content of essential amino acids like lysine and methionine, and emphasized the urgent need for sustainability in light of challenges such as antibiotic residues and heavy metal contamination.

Dr. Ahilan then discussed the sector's growth trajectory, citing India's impressive export figures of fishery products while identifying potential obstacles such as undervalued freshwater fish and reliance on traditional methods.

Anjaneyappa emphasized the renewable nature of fisheries resources and stressed the critical need for effective stock assessment to manage fishing mortality. Dr. Shamila Monteiro echoed this sentiment, highlighting the sector's evolving dynamics and emphasizing the crucial role of research institutes in exploring deep-sea fisheries.

Dr. Dinesh Kumar Kaller advocated for smarter regulations, such as mesh size control, to ensure sustainability, and urged a reduction in antibiotic use in shrimp farming to enhance export potential. Meanwhile, Duncan provided an international perspective, discussing the significance of trade certifications in meeting global demands for responsibly sourced fish products.

On the other hand, Mr. Chandrabose voiced fishermen's concerns, highlighting the risks they face and questioning the impact of stringent regulations on their livelihoods. Mr. Antony Sheelan supported this discussion, advocating for a balanced approach that addresses disparities within the fishing sector and calling for global solidarity to address detrimental regulations imposed by certain countries.

Mr. Peter raised practical challenges faced by local fishermen, questioning the feasibility of increased restrictions and emphasizing the need for tailored solutions that account for varying conditions.

Overall, the dialogue was enriched by diverse perspectives and lively debate, illustrating the complex yet dynamic nature of the fisheries sector and emphasizing the urgent need for collaborative, innovative solutions to ensure its future sustainability.

Recommendations

- Advocating for uniform regulations nationwide.
- Implementing evidence-based management plans to establish quotas and limits based on fish stock health and abundance. Utilizing tools such as stock assessments, ecosystem modeling, and monitoring programs to inform management decisions.
- Enforcing regulations to prevent overfishing, including size limits, gear restrictions, seasonal closures, and marine protected areas (MPAs) to protect spawning grounds, nursery areas, and critical habitats.
- Implementing strategies to reduce bycatch through the use of selective fishing gear, adjustments in fishing practices, and the adoption of bycatch reduction devices (BRDs).
- Embracing an ecosystem-based approach to fisheries management that considers species interactions and habitat preservation. Protecting and restoring vital habitats like mangroves and coral reefs that sustain fish populations.
- Engaging local communities, fishers, and stakeholders in decision-making processes. Integrating traditional knowledge and practices into management plans and ensuring fishing communities have a voice in shaping policies affecting their livelihoods.
- Establishing traceability systems to track seafood from boat to plate, ensuring transparency and accountability across the supply chain.
- Pursuing certification from reputable programs like the Marine Stewardship Council (MSC) or Aquaculture Stewardship Council (ASC) to verify fisheries' sustainability standards.
- Investing in research and innovation to develop sustainable fishing practices, technologies, and alternative protein sources.
- Enhancing global awareness of the sustainability of pelagic resources to enhance the value of seafood and fish meal products, ultimately benefiting fishing communities through improved pricing.
- Increasing per capita fish consumption in India to promote better nutrition and support the fisheries sector.
- Supporting initiatives that promote sustainable aquaculture, aquaponics, and responsible fish farming practices.
- Raising awareness about the importance of sustainable fisheries among consumers, retailers, and policymakers.
- Providing educational resources and promoting seafood eco-labeling to empower consumers to make informed choices that support sustainable fisheries.



Dr. T. Pradeepkumar officially publishing the souvenir



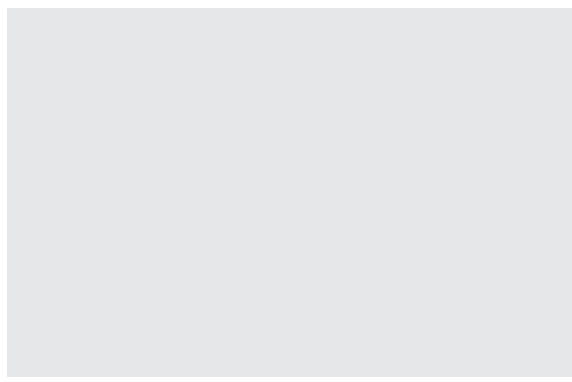
Discussion Session



Stakeholders in the meet









“Fisheries Improvement Programme and More”

Kerala University of Fisheries and Ocean Studies (KUFOS)