

ISSUE 40
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MESSAGE FROM EDITOR



Welcome to the Members of the 15th Council headed by its President Prof. Liu Liping and thanks to the outgoing 14th Council members who have done an excellent job.

Asian region has been a major contributor to global fisheries and aquaculture production and in this context, the 14th Asian Fisheries and Aquaculture Forum organised by the Society in collaboration with a number of Indian institutions in New Delhi, India, has identified a number of issues that need to be addressed for the sustainable development of fisheries and aquaculture sectors that are relevant not only to the Asian region, but globally.

All the branches and sections of the Society have been active during the period of report and undertaken a number of programs, details of which are presented in this newsletter. Readers of the newsletter please mark your calendars for the upcoming major events – the 12th Symposium on Diseases in Asian Aquaculture scheduled for 23-27 September 2025 in Chennai, India and the Global Conference on Gender in Aquaculture and Fisheries (GAF9) scheduled for 1-3 October 2025 in Bangkok, Thailand.

Readers are encouraged to share their research findings, outcomes of conferences, training programs, etc., in the newsletter for the benefit of a larger audience.

M. V. Gupta
Editor

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Message From the President



Since the highly successful 14th Asian Fisheries and Aquaculture Forum (14AFAF) in New Delhi, India (February 10–14, 2025) and the inauguration of our 15th Council, the AFS Council, Branches, Sections, and Networks have maintained remarkable momentum. For detailed updates on these activities, I invite you to explore the comprehensive reports in this E-newsletter.

On March 21, 2025, the AFS Executive Committee convened virtually to advance strategic priorities. Shortly thereafter, the 9th China International Aquatic Science and Technology Conference (March 25–26, Chengdu) showcased cutting-edge innovations, including the co-located China Aquatic Industry New Technologies and Achievements Promotion Conference. I was honoured to participate in a dynamic round-table dialogue on “Innovative Pathways for Smart Fisheries,” chaired by AFS Councillor Prof. Xuxiong Huang.

Collaboration remained central to our efforts. AFS co-organized the Global Meet on Giant Prawn 2025 (June 9–11, Huzhou), where Immediate Past President Prof. Neil Loneragan and I joined global experts in guiding discussions. Prof. Huang further demonstrated AFS leadership as Co-Chair, presiding over the opening, keynotes, and closing summary.

On June 13, AFS strengthened regional ties at the China & Southeast Asian Fisheries Cooperation Conference (Fuzhou). Alongside Prof. Loneragan and Councillor/Secretary Prof. Dr. Murni Karim, I moderated the “Aquaculture Technology” session, highlighting sustainable practices. Prof. Neil Loneragan, Prof. Dr. Murni Karim, and I delivered keynote presentations, showcasing our latest research advances in sustainable fisheries management.

We also nurtured future leaders through the 2025 Shanghai Summer School “Marine Cultivation and Fisheries” (June 23–July 9). Co-organized by AFS and Shanghai Ocean University, the program hosted 28 students from 14 countries, with AFS actively supporting recruitment and training. Complementing these events, I recently chaired two well-attended AFS-SHOU webinars, Dr. Wenbo Zhang’s presentation on Aquaculture transformation in Asia and the Pacific region and Prof. Xugan Wu’s talk on “Technology Optimization of Rice-Giant Freshwater Prawn Co-Culture: Stocking Density and Feeding Frequency for All-Male Juveniles.” Both sessions drew nearly 200 registered participants, fostering vibrant knowledge exchange.

Looking Ahead

The second half of 2025 promises equal vigor:

- ◆ The AFS Fish Health Branch hosts DAA8 in Chennai, India (September 23–27).
 - ◆ The Gender in Fisheries and Aquaculture Section presents GAF9 in Bangkok, Thailand (October 1st-3rd).
- I extend my deepest gratitude to our Councillors, officer, members, partners, and volunteers for driving AFS’s mission forward. Your dedication ensures our Society remains at the forefront of shaping sustainable aquatic futures across Asia and beyond.

Warm regards,
Prof. Liu Liping, President, Asian Fisheries Society

NEWS FROM THE GENDER IN AQUACULTURE AND FISHERIES SECTION



GAF Section Business

The GAFS ExeComm held online meeting on 24th April 2025 to discuss the business of the GAFS for the coming months.

5th Edition of GAFS Newsletter

This Edition includes an exciting collection of new stories and updates on various GAFS undertakings from around the globe. We've included several stories on GAFS contributions to global consultations and recent major events, highlighting how we continue to advocate for gender equality and create spaces to hear from fisherwomen first-hand about what they want.

Check out all our e-Newsletters here: <https://genderaquafish.org/newsletters.htm>

GAF8 Publications and Products

ICSF Yemaya Newsletter: GAF8 was supported by ICSF through its publication 'Yemaya'. The Yemaya Newsletter #70 presented the report of the panel discussion from GAF8 titled 'GAF8: Gender & Fisheries', a report on the training workshop on the use of gender analysis in aquaculture and fisheries research organised by the Asian Fisheries Social Science Research Network.

Yemaya # 70 (ICSF): "GAF8: Gender & Fisheries" Special Session report from GAF8: <https://icsf.net/yemaya/gaf8-gender-fisheries/>

Special Issue of the journal Fishery Technology: The Fishery technology is a respected peer reviewed journal that provides essential information regarding fishing technology, fish processing, aquaculture and fishery resource management. The Special Issue of Fishery Technology on Gender in Aquaculture & Fisheries focuses on learned experiences and empirical evidence from studies in gender in fisheries and aquaculture around the world with special reference to the presentations made at GAF8. Look at the four papers published in the last issue.

- "Scientometric Analysis on Gender in Fisheries and Aquaculture: Global and Indian Trends" by Atufa Regu, Dr. Ananthan P.S, Nikita Gopal, Suvetha Venkat, Shivaji Dadabhau Argade
<https://epubs.icar.org.in/index.php/FT/article/view/154368>
- "Gendered Perspectives on Fish Consumption: A Comparative Analysis of Women and Men in Kerala, India" by Sajeev M. V., Joshy C. G., Nikita Gopal
<https://epubs.icar.org.in/index.php/FT/article/view/147886>
- "Gender Profiling of Workers in Shrimp Processing Factories in Andhra Pradesh, India" by Madhusudana B. Rao, Viji, P., Ahamed Basha K., Jesmi Debbarma
<https://epubs.icar.org.in/index.php/FT/article/view/141174>

Projects

GAFS-TNC Project: The GAFS-TNC project on “Gender Equity in Freshwater Fisheries Conservation” supported by The Nature Conservancy (TNC) was completed in May 2025, resulting in three significant deliverables. This project unequivocally demonstrated the urgent need to place the contributions of women in freshwater fisheries at the forefront of policy agendas. It is imperative that their roles are recognized and prioritized in future discussions and decision-making processes.

GAFS-IDRC Project: The project “Making nature-based climate solutions (NbCS) in aquaculture in Southeast Asia monitoring more gender-responsive: What gets measured gets done” supported by IDRC Canada’s AQUADAPT-SEAPAC grant is in progress. Pilot initiatives have been launched in the Philippines, Cambodia, and Thailand, and is in the process of conducting gender analysis. After the gender analysis, each project team is to operationalize the monitoring schema developed by the project team to suit the local context. Thailand has already developed its locally adapted monitoring scheme and started the monitoring of rice- fish production. The monitoring will continue for over a year.

The paper on the monitoring schema has been published in the journal *Aquaculture*.

Kusakabe, Kyoko, Victoria Syddall, N. Veena, Nikita Gopal, Chollada Wongpanich, Kafayat Fakoya, Alice Joan Ferrer, Arlene Nietes Satapornvanit, Malasri Khumsri, Sereyvath Prak, Meryl J. Williams (2025) Gender monitoring schema for aquaculture projects: Capturing the process of change, *Aquaculture*, 609, 742776, <https://doi.org/10.1016/j.aquaculture.2025.742776>

The project is also planning to present a panel at GAF9.

Election Announcement and Call for Nomination to the GAFS 3rd Executive Committee

Nomination for GAFS members to serve in the 3rd Executive Committee (2025-2028) has been announced.

9th Global Conference on Gender in Aquaculture and Fisheries (GAF9)

The 9th Global Conference on Gender in Aquaculture and Fisheries (GAF9) on the theme “Transforming Aquaculture & Fisheries for gender justice” will be held from 1-3 October 2025 at the Asian Institute of Technology, Bangkok, Thailand.

GAF9 Pre-Conference Workshops:

We are pleased to announce two pre-conference workshops to be held in conjunction with the GAF9

GAF 101: Introduction to Gender Analysis in Aquaculture and Fisheries Research

GAF 201: Advanced Workshop on Gender Analysis in Aquaculture and Fisheries Research

Both workshops will be held at the GAF9 venue (AIT Conference Center) on September 30, 2025.

Registration is limited to 40 participants each, on a first-come first-served basis.

GAF9 Participant Grants:

IDRC AQUADAPT Grant for South East Asia & Pacific Countries: GAFS is pleased to announce that the IDRC's AQUADAPT initiative is providing support to GAF9 for the sponsorship of women participants from Southeast Asian and Pacific countries. Preference will be given to those who: are intending to make an oral or poster presentation, are early career professionals/students and can support GAF9 conference as rapporteurs or as social media posters. The sponsorship will be partial and can be used to cover return economy airfares, ground transport, conference registration and/or accommodation.

Grant for Countries Other Than South East Asia & Pacific: Limited Travel Grants for participants to attend GAF9 from countries, other than South-East Asia and Pacific are also announced. The partial sponsorship can be used to cover return economy airfares, ground transport, conference registration and/or accommodation.

GAF9 Photo Contest:

GAFS also announces GAF9 Photo contest for the Dr M C Nandeeshha Prize. The theme for the contest is "Transforming aquaculture and fisheries for gender justice". The photo entry submission window will be open till 30 August 2025. Entries selected by the GAF9 Conference Committee will be posted on the website and can be viewed till the end of GAF9 conference.

GAF9 encourages the submission of abstracts for oral and poster presentations under the following sub themes:

- Women/gender in the blue economy
- Gender and climate change: Navigating the impacts on fisheries and aquaculture
- Nature-based solutions in aquaculture and fisheries
- Innovative frameworks/methodology for gender research in fisheries and aquaculture
- Counting and discounting: men's and women's work in fisheries and aquaculture

Details of the GAF9 Conference are available at <https://gafconference.org/index.htm>.

GAFS Communications

GAFS continues to be very active in its outreach, through its website, its GAFS members e-mail group, Genderaquafish e-mail group and social media outlets (Twitter and Facebook). GAFS members are receiving a monthly premium news service on GAF news items.

Here are the latest stories from our website <https://genderaquafish.org/stories.htm>

- “Championing Gender in Fisheries” by Nikita Gopal, posted on January 13, 2025 Link
- “Advocating for Women-Led Sustainable Shellfisheries to Enhance Environmental Stewardship and Climate Action” by Kafayat Fakoya, posted on January 13, 2025 Link
- “Are Plastics Reinforcing Gender Barriers in Fisheries? Exploring a Research Agenda” by Ahana Lakshmi, K Nirmala & Rajdeep Mukherjee, posted on March 05, 2025 Link
- “Understanding Gender Roles, Constraints And Social Context In Fish Value Chain In Edo State, Nigeria” by Sherifat Ibidunni Adegbesan and Taofeek Akinyemi Shittu, posted on April 09, 2025 Link
- “Welcome to the 5th Edition of GAFS Newsletter!” by Madu Galappaththi, GAFS Newsletter Editor, posted on April 23, 2025 Link

Keep in touch with GAF Website: <https://www.genderaquafish.org/>; <https://www.genderequality.genderaquafish.org/>

Facebook Page: <https://www.facebook.com/AFS-Gender-in-Aquaculture-and-Fisheries181176555231544/>

Twitter: @Genderaquafish <https://twitter.com/Genderaquafish>

Contributed by: Dr Nikita Gopal, Dr Kyoko Kusakab and Dr Kafayat Fakoya

AFS SECTIONS

Fish Health Section (FHS)

Newsletter

FHS eNewsletter No.22 is available for online access on the FHS website.

(chrome-extension://efaidnbnmnibpcajpcglclefindmkaj/https://www.fhs-afs.net/pdf/FHS_eNewsletter_Number_22.pdf).

Special Edition for DAA11 publication

The third issue is currently being prepared and will be ready online before September 2025.

Upcoming Events:

The 12th Symposium on Diseases in Asian Aquaculture (DAA12)



Countdown to DAA12 begins! Just 6 weeks to go until DAA12!, Set to take place during September 23-27, 2025 in Chennai, India, DAA12 will bring together top scientists, practitioners, and industry leaders from across the globe to explore cutting-edge advances in aquatic animal health. Mark your calendar now and this is an event you won't want to miss! Stay tuned for more updates by visiting our website: <https://daa12.in>

The 5th Conference of the International Society of Fish & Shellfish Immunology (5th ISFSI)
The International Society of Fish & Shellfish Immunology (ISFSI) will be the upcoming 5th Conference of ISFSI, a premier international event held every three years. This gathering brings together leading scientists, researchers, and professionals from academia, government, and industry to explore the latest developments in fish and shellfish immunology.

The 5th ISFSI serves as a dynamic platform for sharing cutting-edge research and fostering collaboration in aquatic animal health. This year's conference promises an exceptional line-up of speakers from universities, research institutes, and industry, offering diverse perspectives on fish and shellfish immunity, disease management, and innovations in aquaculture.

Conference dates: Nov, 4-8, 2025

Location: National Cheng Kung University, Tainan, Taiwan (R.O.C.)

The 5th ISFSI will provide a platform to:

- Discover the latest breakthroughs in fish and shellfish immunology
- Engage in thought-provoking discussions on disease prevention and management
- Collaborate across disciplines and borders to drive innovation
- Contribute to the sustainable future of global aquaculture

Awards & Recognition:

Participants will have the opportunity to compete for the Best Oral Presentation and Best Poster Presentation awards.

ISFSI warmly invites you to join in beautiful Tainan, Taiwan, and be a part of this global initiative to advance aquatic animal health through science, innovation, and collaboration.

Learn more and register at: <https://5isfsi.tw/index.php>

ISFSI is looking forward to welcoming you to Tainan!



Recognition and Achievements

We take great pride in recognizing our members who have shared their insights and expertise, greatly enriched our collective understanding and fostered meaningful discussions.

* P.K. Pradhan

Designated expert: The Aquatic Animal Health Laboratory, Exotics and Aquatic Animal Health Division, ICAR–National Bureau of Fish Genetic Resources (NBFGR), Lucknow, India. India has been designated as a World Organisation for Animal Health (WOAH) Reference Laboratory for *Aphanomyces invadans* (Epizootic Ulcerative Syndrome).

* Eduardo Leão

Invited Guest and Resource Person: International Workshop on Aquaculture Medicine and Aquatic Animal Health Management in Asia-Pacific (AQUAMAP 25), 16-18 January 2025, Cochin, India

Invited Keynote Speaker: Symposium on Aquatic Animal Diseases – Emerging Challenges and Preparedness; 14th Asian Fisheries and Aquaculture Forum, 12-15 February 2025, Delhi, India.

Invited Panelist: Leveraging the Global Sustainable Aquaculture Advancement Partnership (GSAAP) for implementing the Guidelines for Sustainable Aquaculture (GSA); and, Strengthening legal and regulatory frameworks for sustainable aquaculture. FAO 13th COFI-Sub-Committee on Aquaculture, 20-23 May 2025, Rome, Italy

Invited participant: WOAHA Aquatic Animal Health Standards Commission; WOAHA Observatory side event (Monitoring the implementation of WOAHA standards: A preview of the Second Observatory Report); Meeting of the WOAHA Observatory Consultation Group; and, Side meeting with WOAHA-RRAP. 92nd WOAHA General Session, 25-29 May, Paris, France.

Invited panelist: Innovation pathways for development and localization of biotechnologies. FAO Global Agrifood Biotechnologies Conference, 16-18 June 2025, Rome, Italy.

* **Agus Sunarto and Eduardo Leño**

Invited panelists: Fish breeding, diagnostic tools and vaccines for aquatic animals. FAO Global Agrifood Biotechnologies Conference, 16-18 June 2025, Rome, Italy.

* **Kua Beng Chu**

Invited speaker: Update on the Diseases and Management in Giant Prawns, 9-10 June 2025, Giant Prawn Conference 2025, China

Contributed by: Dr. Kua Beng Chu

Asian Fisheries Social Scientists Network (AFSSRN)



Members of Incoming Executive Committee (2024-2027)

On 11 December 2024, the newly elected AFSSRN Executive Committee (Execom) formally took their oath of office during the online AFSSRN General Assembly. In her inaugural address, the incoming Chair, Dr. Nikita Gopal, expressed her vision of AFSSRN as a robust platform for meaningful discourse amid the evolving challenges in the fisheries and aquaculture sector. She extended her gratitude to the outgoing Execom (2021–2024), led by Dr. Marieta Bañez Sumagaysay, and affirmed her commitment to building on the milestones they achieved.

Prof. Neil Loneragan, President of the Asian Fisheries Society, emphasized the critical role of social sciences in advancing fisheries. He thanked AFSSRN for its continued support of the Society's mission and conveyed his encouragement and support for the network's future endeavours.

The 1st meeting of the newly elected AFSSRN Executive Committee 2024-2027 was held on April 23, 2025 via Google Meet to chalk out the future plans and activities to be planned for the tenure.

Vision and Future Plans of AFSSRN (2024–2027)

The AFSSRN Executive Committee envisions a dynamic and inclusive platform that strengthens fisheries social science research across Asia through collaboration, capacity building, and knowledge exchange. Over the 2024–2027 term, AFSSRN will focus on (i) key priorities that reflect both emerging challenges and member needs; (ii) to enhance engagement and visibility, continue the quarterly Newsletter featuring member contributions, recent research, and upcoming activities and (iii) capacity development through an online training program in research methods, tailored for scholars and students, in addition to the series of thematic webinars to stimulate dialogue on pressing issues in fisheries social science.

Through these initiatives, AFSSRN envisages a stronger, more connected community of social science researchers dedicated to addressing the complexities of the fisheries and aquaculture sector.

Contributed by: Dr Neha Qureshi and Dr Nikita Gopal

AFS BRANCHES

Asian Fisheries Society Indian Branch (AFSIB)

14th Asian Fisheries and Aquaculture Forum (14AFAF) and other Parallel Events at New Delhi, India.

The 14th Asian Fisheries and Aquaculture Forum (14AFAF), the triennial event of the Asian Fisheries Society (AFS), was organised by AFS in collaboration with the Indian Council of Agricultural Research, New Delhi, India; Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India and the Asian Fisheries Society Indian Branch (AFSIB), during 12-15 February, 2025 at the ICAR Convention Centre, New Delhi, India. The main objective of this Forum was to provide an international platform for eminent scientists, young researchers, and other stakeholders across the globe to share their research experiences and innovative ideas. By facilitating the exchange of a diverse range of knowledge and expertise, the Forum with the theme 'Greening the Blue Growth in Asia-Pacific' aimed to address key issues towards developing sustainable fisheries and aquaculture.

The 14AFAF was inaugurated by Shri Rajiv Ranjan Singh, Union Minister of Fisheries, Animal Husbandry & Dairying, Government of India, in the presence of several other dignitaries including Dr. Himanshu Pathak, Secretary, Department of Agricultural Research and Education (DARE), and Director General, Indian Council of Agricultural Research; Dr. Abhilaksh Likhi, Secretary, Department of Fisheries, Government of India; Dr. S. Ayyappan, Former Secretary, DARE, and DG, ICAR; Dr. Essam Yassin Mohammed, Director General, WorldFish, Malaysia; Prof. Neil Loneragan, President, AFS; Dr. J.K. Jena, Deputy Director General (Fisheries Science), ICAR and Chairman, AFSIB, and Convener of 14AFAF; Dr. C.N. Ravishankar, Vice-Chairman, AFSIB and Councillor, AFS; and Dr. K.K. Lal, Councillor, AFS & Co-Convener, 14AFAF. During the Inaugural Session, different publications & technologies were released by the dignitaries.



Inauguration - 14FAF-Lighting the Lamps



Deligates- 14FAF



Opening Ceremony-14FAF

Over 1000 delegates from India and overseas participated. The Technical Programme included a Keynote presentation by Dr. S. Ayyappan, Former Secretary, DARE, and DG, ICAR; and five Plenary presentations by Dr. Essam Yassin Mohammed, Director General, WorldFish, Malaysia; Prof. Neil Loneragan, President, AFS, Australia; Dr. Shakuntala Haraksingh Thilsted, Director for Nutrition, Health and Food Security Impact Area Platform, CGIAR; Prof. Jun Zou, Professor, College of Fisheries and Life Science, Shanghai Ocean University, China; and Dr. Matthew Camilleri, Leader, Global and Regional Processes (Fisheries), FAO, Rome. Further, there were 12 Lead speaker presentations by globally-acclaimed experts in different subject areas of fisheries and aquaculture, which included presentations by Dr. Rishi Sharma, FAO, Rome; Dr. Krishna R. Salin, AIT, Bangkok, Thailand; Dr. N.A. Robinson, NOFIMA, Norway; Dr. Vikas Kumar, University of Idaho, USA; Dr. Arun K. Dhar, University of Arizona, Arizona, USA; Dr. Lasse H. Pettersson, Bergen, Norway; Dr. Angela Lentisco, FAO Regional Office, Bangkok, Thailand; Dr. Soottawat Benjakul, Prince of Songkla University, Thailand; Dr. Alice Joan G. Ferrer, University of the Philippines, Philippines; Dr. Nikita Gopal, Chair, Gender in Aquaculture & Fisheries Section of AFS; Dr. Marcio Castro De Souza, FAO, Rome; and Dr. Maarten Bavinck, University of Amsterdam, Netherlands.

The 16 Technical Sessions covered all relevant aspects of fisheries and aquaculture, which included oral and poster presentations. There was an overwhelming response to this international event, and a record number of 805 abstracts were accepted for oral and poster presentations. The oral presentations under different Technical Sessions were undertaken through ten parallel sessions. The Forum discussed all issues fisheries and aquaculture sector is currently encountering and came out with important recommendations for achieving the United Nations' Sustainable Development Goals and Blue Transformation objectives.

It is known that research on aquatic animal health management in recent years has led to the generation of a lot of information on disease diagnosis and reporting, effective vaccines and vaccination strategies, disease and AMR surveillance, quarantine, biosecurity, and alternate therapeutics besides the application of newer technologies to develop resistant varieties of fish using genome editing. Looking at the latest developments in the above areas, the Symposium on 'Aquatic Animal Diseases: Emerging Challenges and Preparedness' was organized as a parallel event during the 14AFAF.

It was co-organised by ICAR, DoF, National Fisheries Development Board (NFDB), and Network Centres for Aquaculture in Asia Pacific (NACA), Thailand. The event was inaugurated by Shri George Kurian, Minister of State, Ministry of Fisheries and Animal Husbandry and Dairying, Government of India, as the Chief Guest in the presence of several other dignitaries. The inaugural session was followed by a special technical session. The technical session included a Keynote presentation by Dr Edwardo Leano, Director General, NACA; and several lead presentations by identified experts, followed by discussions. Over 200 delegates from India and overseas participated.



Hon'ble Chief Guest, Minister of Fisheries & AHD, Govt of India



Opening Ceremony-Address by Dr S. Ayyappan



Opening Ceremony-14AFAF-Address by Convener-Dr. J.K. Jena



Opening Ceremony-14AFAF-AFS President Prof. Neil Loneragan

During the last three decades, coastal shrimp farming has grown significantly due to its high economic impact. Despite being recognized as a money-spinning farming activity, farming today is subject to several issues and concerns, importantly disease threats and price volatility. A stakeholder interaction, i.e., Academia-Industry-Government Meet, was organized as a Satellite event on the Theme 'De-risking Shrimp Aquaculture Value-Chain for Improved Global Competitiveness' on 14th February 2025, which discussed emerging Challenges and measures for sustainable farming practices.

A grand exhibition (14AFAF Expo) was organized during the event involving over 40 scientific and academic organizations, and industries & business houses associated with the fisheries and aquaculture sectors, showcasing their achievements and products.

The valedictory session and closing ceremony was held on 14th February, 2025, which was led by Dr J.K. Jena, Convener of 14AFAF. The session featured insightful addresses from AFS delegates Prof. Neil Loneragan, Outgoing President of AFS; Prof Liping Liu, Newly elected President of AFS, and Dr Alice Joan Ferrer, Former President of AFS, emphasizing the crucial role of international collaboration in advancing fisheries and aquaculture research and development. The Asian Fisheries Society (AFS) Awards were presented to recognize outstanding contributions in fisheries and aquaculture research. Awards were also given for best oral and poster presentations, encouraging young researchers and promoting innovation in the sector. Dr J.K. Jena, Convener 14AFAF expressed sincere gratitude to all organizers and sponsors, including DoF and NFDB, for their invaluable support; the participation of ICAR institutes and their significant contributions; the overwhelming response of over 1000 delegates including those of overseas delegates; all participating organizations and industrial houses for their active participation in the 14AFAF Expo; and Members of Different Committees for the huge success of the event.

Key Recommendations from the Conference:

1. Development of aquaculture technologies, and sustainable alternate farming systems, including IMTA, Aquaponics, natural farming, etc., aimed at climate resilience, energy efficiency and low carbon footprints.
2. Development and large-scale adoption of intensive seed production and grow-out culture systems of important fish/shellfish species with application of digital platforms like IoT, generative AI, and machine/deep learning for improving efficiency in fish farming.
3. Enhance thrust on selective breeding programmes with new prioritized fish/shellfish/seaweed species of aquaculture importance for the improvement of economic traits.
4. Focus on use of CRISPR-Cas gene editing tool for development of strains of important fish/shellfish species with improved efficiency in terms of growth, disease resistance, reproductive performance, flesh quality, etc.
5. Technology development of cultured-meat production with standardization of methods for creating immortalized or long-term cell lines of specific lineages of selected fish species.

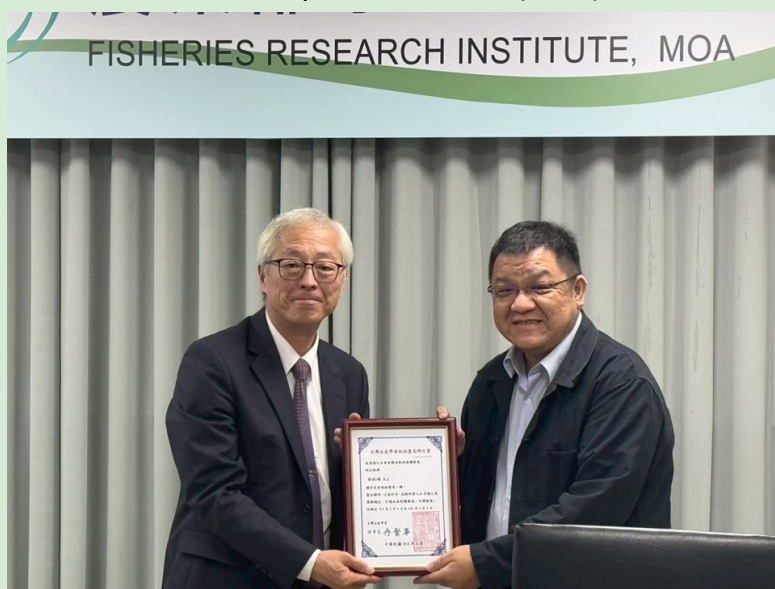
6. Development of species and system-specific climate resilient aquafeeds, with a focus on larval and broodstock nutrition and feeds.
7. Search for novel feed ingredients, functional feed additives, and nutraceuticals for improved feed efficiency and cost reduction.
8. Focus on nutrigenomics approaches for better growth, nutrient utilization, and immune response.
9. Adopting a holistic approach for the investigation and control of both emerging and existing aquatic animal diseases, with special emphasis on the targeted development of vaccines and point-of-care diagnostics within a defined timeframe.
10. Developing and implementing the National Aquatic Animal Health Plans within definite time frames with defined roles and responsibilities.
11. Strengthening surveillance of antimicrobial resistance (AMR) in aquatic animal and zoonotic pathogens by integrating genomics and epidemiological approaches, and developing strategies to prevent and control the risk of AMR in aquaculture.
12. Institutionalization of the National Surveillance Programme for Aquatic Animal Diseases, and developing effective synergy between aquatic animal disease and AMR surveillance programmes.
13. Development and use of innovative technologies like artificial Intelligence, drones, and underwater ROV (Remotely Operated Vehicles) for monitoring aquatic environments and biodiversity assessment for ensuring sustainability.
14. Understanding the disproportionate impacts of climate change in fisheries and aquaculture across regions and countries for developing adaptive systems and solutions.
15. Development and implementation of strategies for the use of eco-friendly, energy-efficient, and modified gears suiting local requirements, and ensuring sustainable fish harvest from open-waters.
16. Ensuring sustainability in fisheries by aligning management and governance framework with global instruments and beacons of sustainability such as maximum sustainable yield (MSY), maximum economic yield (MEY), and maximum sustainable employment (MSE).
17. Developing greenhouse gas inventory and generating carbon sequestration data as an input for voluntary carbon markets.
18. Developing technologies/protocols for zero-waste processing and innovative functional byproducts from finfish and shellfish wastes.
19. Developing machineries and gadgets for farm automation, efficient fish harvest and processing of fish/shellfish for production of hygienic and safe products.
20. Strengthening fish value chains through greater emphasis on efficient marketing operations, cold chain infrastructure, and integrating domestic and international markets for sustainability with minimum carbon footprints.

21. Integration of socio-economic dimensions to technology development, assessment, refinement, dissemination, and utilisation.
22. Developing a global framework for gender research and devising initiatives to mainstream and empower all genders.
23. Empowering capacity-building centres as a tool for technology transfer to reduce the skill gap in the fisheries and aquaculture sectors.
24. Optimizing benefits for fisheries through greater focus on developing efficient institutions, participatory regulatory frameworks, and management policies with special focus on spatial planning, ecosystem approach to fisheries management, occupational safety, and blue justice.
25. Enhancing community-led fisheries management by facilitating participatory governance structures that engage fishers in decision-making processes.
26. Implementing social protection mechanisms by establishing safety-net programmes, encompassing insurance and welfare schemes for fishers.
27. Strengthening global cooperation for sharing research experiences and advancements in the domain of aquaculture, nutrition, genetics and breeding, and fish health management.
28. Organizing focus deliberations and developing pragmatic strategies for R&D through expert consultations at the National Level on important areas, viz., Aquaculture medicines, Genomics, Genome Editing, Traceability, Trout farming, Sustainable Wetland Management, Seaweed Value-chains, Seed Certification, Aquaculture Biosecurity, Prospecting Bioactive Compounds, Mainstreaming Students' Research, etc.
29. Increasing investment in research in fisheries and aquaculture, and focused outreach programmes, including those in new areas of S&T viz., Artificial Intelligence, machine learning, block chain technology, and computational fluid dynamics.
30. Special emphasis on governance, policies, international collaborations, and climate finance projects.

Contributed by Dr J.K. Jena

Asian Fisheries Society Taiwan Branch (AFSTB)

Following the election held during the General Assembly of the Fisheries Society of Taiwan, Dr. Fan-Hua Nan, Vice President of National Taiwan Ocean University, was appointed as the new President of the Society. On April 16, 2025, the Society convened its second joint board meeting of Directors and Supervisors, during which Dr. Yu-Hung Lin, Council Member of the Asian Fisheries Society (AFS) and the Secretary of AFS Taiwan Branch, was invited to serve as Deputy Secretary-General of the Fisheries Society of Taiwan. Dr. Lin will assist in strengthening collaboration between the Asian Fisheries Society and the Fisheries Society of Taiwan. During the meeting, President Nan also expressed the intention to seek the opportunity to host the Asian Fisheries and Aquaculture Forum (AFAF) in Taiwan in the near future.



President Fan-Hua Nan presented the Certificate of Appointment as Deputy Secretary to Dr. Yu-Hung Lin.



The 2nd joint Board Meeting of the Fisheries Society of Taiwan.

NEWS FROM CHINA

On 25th-26th March 2025, The 9th China International Aquatic Science and Technology Conference was successfully organized in Chengdu, China during 25-26 March 2025. At the same time, China Aquatic Industry New Technologies and Achievements Promotion Conference was also held as a side event. The event was Chaired by Prof. Xuxiong Huang, councilor of the Asian Fisheries Society (AFS), and attended by Prof. Liping Liu, President of AFS, along with other distinguished guests and industry representatives.



Prof.Xuxiong Huang, Councilor of AFS, Chairing the conference.

During the round-table dialogue on “Innovative Pathways for Smart Fisheries,” Prof. Liping Liu, President of the Asian Fisheries Society; Prof. Haiping Liu, Deputy Party Secretary and Dean of the College of Fisheries, Southwest University; Mr. Igal Ekdesman, Deputy Consul General of Israel in Chengdu; and corporate delegates engaged in spirited discussion and intellectual exchange, jointly exploring new directions, technologies and trends for the sector while offering participants valuable insights and inspiration.



NEWS FROM CHINA

The Conference provided a premier platform for research institutes and aquaculture enterprises to present and exchange cutting-edge technologies, products and equipment, accelerating the translation and commercialization of scientific achievements and actively advancing high-quality development of the industry.

Global Meet on Giant Prawn 2025 was held in Huzhou, Zhejiang, China

From June 9th to 11th, 2025, the Global Meet on Giant Prawn 2025, of which the Asian Fisheries Society is one of the co-organizers, was held in Huzhou, China. Prof. Liping Liu, President of AFS, and Prof. Neil Loneragan, immediate past President, along with other leading experts, attended and provided guidance to the conference.



Conference Venue

Prof. Xuxiong Huang, Council Member of the Asian Fisheries Society, served as Co-Chair of the conference, presiding over the opening ceremony, several keynote presentations, and delivered the closing summary. More than 300 experts and entrepreneurs from China and 12 other countries, including the United Kingdom, Australia, Israel, Thailand, India, and the Philippines etc, gathered in Huzhou to exchange perspectives on the innovation and sustainable development of *Macrobrachium rosenbergii* farming.

The conference concluded successfully, advancing technological progress in the global giant prawn sector and injecting new momentum into the sustainable development of worldwide aquaculture.

China & Southeast Asian Fishery Cooperation Conference Held in Fuzhou, China

On June 13, 2025, the China & Southeast Asian Fisheries Cooperation Conference was held at the Fuzhou Strait International Conference & Exhibition Center. The Asian Fisheries Society (AFS) was prominently represented by Prof. LIU Liping, President of AFS, Prof. Neil Loneragan, Immediate Past President of AFS, and Prof. Dr. Murni Karim, Councilor and secretary of AFS.



The conference brought together nearly 200 participants from China and Southeast Asian countries, including consulate representatives, research scholars, industry experts, and enterprise leaders to explore sustainable fisheries development and regional cooperation opportunities. Prof. LIU moderated the “Aquaculture Technology” session, which featured comprehensive discussions on quality control, farming innovations, and intelligent technology applications throughout the aquaculture value chain.



The conference demonstrated China and Southeast Asia continued commitment to fostering regional fisheries cooperation and promoting sustainable blue economy development across Asia-Pacific waters.

AFS Co-organized 2025 Shanghai Summer School Program

During June 23th- July 9th, 2025, the 2025 Shanghai Summer School “Marine Cultivation and Fisheries” program was held at Shanghai Ocean University. The program was hosted by Shanghai Municipal Education Commission and undertaken by Shanghai Ocean University, with the Asian Fisheries Society (AFS) serving as co-organizer. A total of 28 international students from 14 countries participated. AFS played an active role in the program by assisting in student recruitment and training.



Fig.1 During a practical training course, participants collected water samples, observed plankton, and analyzed water quality.

Prof. Liu Liping, President of AFS, delivered the opening lecture to kick off the academic activities. Additionally, Prof. Liu's team organized various practical activities including water quality testing, plankton identification, and field site visits for enhanced learning experiences.



Fig.2 Participants group photo after a practical course



Fig.3 Closing ceremony of the Summer School

2025 marks the fifth consecutive year Shanghai Ocean University has hosted this program, establishing it as an important platform for global students to understand modern fisheries and experience Chinese culture. The collaboration also demonstrates AFS's commitment to international education and sustainable aquaculture development.

Contributed By: Prof. Liping Liu

ARTICLES

Fuelling the Future or the Fleet? A Critical Look at Gujarat, India's Marine Fisheries Subsidies

Saba N. Reshi^{1*} and Neha Wajahat Qureshi^{2*}

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Introduction

The fisheries sector is an essential driver of India's socioeconomic development. Over the past six decades, fish production has expanded more than thirteenfold underscoring the sector's dynamism and its increasingly vital role in national development. Supporting over 14.5 million livelihoods and generating approximately US\$5.51 billion, the sector remains integral to food security, employment, and economic resilience.

Marine fisheries, in particular, hold high commercial and ecological value. Yet, the discourse surrounding fisheries management remains deeply contested especially in relation to subsidies, their influence on fishing capacity, income support, and long-term sustainability. While global literature has examined fisheries subsidies extensively, comprehensive quantification within the Indian context is relatively sparse. This study aims to address that lacuna by critically evaluating the subsidy infrastructure in Gujarat.

Rationale for Selecting Gujarat

Gujarat, India was selected for this study due to its strategic, economic, and policy-centric significance in India's marine fisheries sector. With the longest coastline among Indian states, Gujarat plays a critical role in marine fish production, contributing nearly 20% of the country's total marine fish output. The state fisheries sector is a critical center of intensive public investment particularly through subsidies targeting fuel, vessel modernization, gear, and fisher welfare. While these subsidies enhance productivity and support livelihoods, they also prompt critical inquiries into sustainability, equity, and the risk of overcapitalization. These subsidies, while enhancing productivity and livelihoods, raise important questions about sustainability, equity, and overcapitalization. As a leading exporter of marine products, the state's fisheries also have significant implications for national and global trade. Moreover, its policy framework significantly influences the national narrative on fisheries governance, especially in light of India's commitments under the WTO's Fisheries Subsidies Agreement. Given this convergence of ecological significance, economic scale, and policy leadership, Gujarat provides a compelling case for an in-depth examination of marine fisheries subsidies and their broader developmental and environmental ramifications.

Methodology

This study adopted a secondary data-driven approach to evaluate the scale and structure of fisheries subsidies in Gujarat's marine sector. The data sources include Union and Gujarat State Budget documents, supplemented by official reports from the Department of Fisheries, government notifications, and relevant circulars. A significant portion of the data was accessed through the Open Budgets India portal to ensure transparency and consistency.

The analysis covered a period of eight fiscal years (2016–2023), enabling a comprehensive assessment of subsidy trends over time, particularly pre- and post-COVID-19. To understand the differential impact of various subsidies on the fisheries ecosystem and fisher communities, the former was categorized into three broad types:

Capacity-Enhancing Subsidies: Financial support by government in terms of tax exemptions (mainly fuel), boat building which result in reduced costs and increased revenue for fishermen, enabling them to expand their fishing capacity. (e.g., fuel, vessel and gear modernization)

Beneficial Subsidies: Subsidies directed towards improving fisheries management practices, scientific research and the development of technologies to promote responsible fishing

Welfare subsidies: Subsidies directed towards the well-being of fishers (unemployment allowance, ban period compensation and insurance.

This categorization enabled a nuanced understanding of how different subsidy regimes influence marine resource exploitation, fisher welfare, and the sector's alignment with national policy objectives and international sustainability commitments.

Subsidy Allocation Trends and Implications

Over the past eight years, Gujarat has allocated an average annual subsidy of approximately ₹ 2.01 billion for capacity-enhancing measures, ₹1.38 billion for beneficial subsidies, and a modest ₹ 17.5 million for welfare-oriented support in the marine fisheries sector. The dominant share of funding directed towards capacity-enhancing subsidies underscores the state's policy emphasis on mechanization, infrastructure development, and boosting operational efficiency. Beneficial subsidies, which cover aspects of resource management and conservation, also receive notable allocations but remain secondary in priority. In contrast, welfare subsidies, which include critical social support measures and other safety nets such as insurance, housing, and fisher safety, account for a disproportionately lower share of the subsidy structure. This imbalance reflects a developmental orientation that favors economic enhancement over social security.

Given the total 10,677 active mechanized fishers and an annual fuel subsidy allocation of ₹ 4.43 billion (\$54.1 million USD) in 2023, the calculations suggest that the subsidy per fisher amounts to ₹41,543 (\$5,068) annually, ₹3,462 (\$422) monthly, and ₹114 (\$13.9) daily.

The per-fisher allocation remains considerably lower than international benchmarks, indicating a potential mismatch between policy ambition and on-ground economic empowerment. While concerns about overcapitalization in the sector persist due to the scale of mechanization-driven subsidies, the limited financial support per fisher constrains inclusive growth. It hinders the sector's ability to modernize in a globally competitive manner. This trend calls for a recalibration of subsidy strategies to balance economic advancement with equitable welfare and sustainability goals.

Challenges and Policy Recommendations

Balancing Capacity-Enhancing Subsidies with Sustainability: Gujarat's heavy investment in capacity-enhancing subsidies poses a challenge. While it reflects a commitment to improving productivity through mechanization and infrastructure, unchecked support risks overcapitalization, potentially accelerating marine resource depletion. Notably, the subsidy per fisher in Gujarat stands significantly below international standards.

Recommendations:

1. Implement conditional subsidies linked to sustainability measures, such as responsible fishing gear adoption and stock assessment programs.
2. Introduce subsidy ceilings per vessel to prevent excessive capacity buildup.
3. Promote eco-certifications and incentivize sustainable fishing practices through targeted financial support.
4. Strengthen monitoring and enforcement to prevent overfishing due to subsidy-driven expansion.

Inadequate Welfare-Oriented Subsidies: The relatively sparse allocation to welfare subsidies reflects a neglect of social protection within Gujarat's subsidy structure. This gap undermines the resilience of fishing communities, especially during climate shocks, fishing bans, or off-seasons.

Recommendations:

1. Introduce direct income support schemes for vulnerable fishers, particularly during fishing bans or off-seasons.
2. Introduce affordable housing schemes with improved access to healthcare, sanitation, and education in fishing communities.
3. Strengthen sea safety programs with better access to navigational aids, distress signal systems, and vessel tracking.

Lack of Comprehensive and Transparent Data: The absence of a centralized and transparent fisheries subsidy database impedes evidence-based policymaking. Disaggregated and outdated data on subsidy disbursements and their outcomes limits efforts to assess effectiveness and adjust policy design accordingly.

Recommendations:

1. Establish a centralized fisheries subsidy database with real-time tracking of fund disbursement, utilization, and outcomes.
2. Enhance the use of GIS to map marine resources, infrastructure gaps, and subsidy coverage across districts.
3. Institutionalize regular impact assessments of subsidy schemes to evaluate their influence on sustainability, livelihood security, and sectoral growth, ensuring that public spending remains targeted and adaptive.

Conclusion

Gujarat's subsidy infrastructure in marine fisheries reflects a clear thrust toward mechanization and capacity expansion. While this has spurred infrastructure and output, it also risks ecological strain and inequitable benefit distribution. The per-fisher subsidy remains disproportionately low, revealing a disconnect between investment and inclusive impact. Welfare and sustainability-linked support, though critical, remain marginal in the broader allocation structure.

As a leading marine producer, Gujarat's policy direction carries national and global significance. The path forward lies in rebalancing: aligning subsidies with sustainability, strengthening fisher welfare, and building a transparent, data-driven governance architecture. Such a recalibration is vital not only to preserve marine ecosystems, but also to ensure the long-term economic resilience and social inclusivity of India's fisheries sector.

This work is a part of the ongoing PhD work of the first author and the fellowship and support received from the Indian Council of Agriculture (ICAR) is acknowledged.

Ultrasound Imaging Techniques for Pangasius and Hemibagrus seed production

To reduce fishing pressure and help conserve economically valuable fish species at risk of extinction and meet the increasing demand for seed from aquaculture industry, artificial reproduction for seed production is becoming increasingly important. In this context, selecting male and female broodstock and determining ovarian maturity are critical factors. Currently, methods used to determine sex and maturity are still invasive and do not meet some of the animal welfare standards. Meanwhile, the European Union has established minimum animal welfare and humane treatment standards for imported aquatic products.

In view of this, Dr. Nguyen Phu Hoa and her colleagues at Nong Lam University - Ho Chi Minh City, Viet Nam undertook ministerial-level scientific and technological project titled "Research on ultrasound imaging diagnostic techniques of gonads in the process of rearing and artificially breeding striped catfish (*Pangasianodon hypophthalmus*) and catfish (*Hemibagrus wyckoides*) and their application in production". The goal of the project was to develop ultrasound imaging techniques for seed production of these two species.

The research team achieved several important results of practical significance in application of ultrasound imaging to monitor the gonads of *Pangasius* and *Hemibagrus* throughout the broodstock rearing and artificial reproduction stages.

Ultrasound imaging cross-referenced with anatomical/gonadal specimens showed clear correlations in image and organ positioning. Based on these findings, the research team developed a standardized technique for gonadal ultrasound in *Pangasius* and *Hemibagrus*. Also measured and provided guidelines for assessing ovary size across fish of different sizes. One of the project's key achievements was transferring this ultrasound technique to fish hatcheries, allowing proactive monitoring and reproductive stimulation of broodstock. Results showed ultrasound achieved over 90% accuracy in sex identification and gonadal maturity - much higher than the traditional "belly squeezing" method (about 65–75%) and approaching the accuracy of surgical dissection without harming the fish. Additionally, ultrasound allows repeated monitoring during rearing, enabling farmers to track gonadal development progress and adjust nutrition or environmental conditions accordingly, thus improving maturation efficiency and artificial reproduction success rates.

The project organized three ultrasound training sessions to over 60 technical staff at fish hatcheries. After training, participants were able to independently conduct gonadal ultrasound on *Pangasius* and *Hemibagrus*, interpreting images, and accurately determining reproductive stages.

Further, the research team compiled a technical guide and created a demonstration video of the ultrasound process to promote widespread adoption of this technique in the aquaculture sector. This is a significant step toward standardizing non-invasive diagnostic techniques in freshwater fish seed production in Vietnam.

It can be affirmed that the application of gonadal ultrasound techniques not only enhances reproductive efficiency but also reduces costs by minimizing the selection of immature or poor-quality broodstock. The initial investment in ultrasound equipment is considered reasonable and offers long-term economic benefits by reducing parent fish losses, increasing reproductive success, and improving seed quality. This technique can also be expanded to other economically valuable freshwater fish species, contributing to the improvement of seed production, meet animal welfare standards and stricter quality requirements.

Contributed by: Dr. Nguyen Phu Hoa, Nong Lam University - Ho Chi Minh City, Viet Nam.

Transforming Fish Scales into Sustainable Treasures

In the vibrant chaos of our inland fish markets, amidst the lively exchanges of vendors and the earthy aroma of freshwater, countless fish scales—each a tiny, glistening fragment of nature—are carelessly discarded. Once dismissed as mere waste, these scales are swiftly swept aside, condemned to overflowing landfills or a silent disappearance. Yet, if we pause and look closer, we begin to uncover that these silvery remnants hold a hidden reservoir of potential.

Imagine if these neglected scraps could transcend their status as refuse—if they could mend wounds, energize small devices, add allure to cosmetics, or even supplant conventional plastics. Across the globe, innovative scientists, ingenious entrepreneurs, and resourceful farmers are discovering and harnessing the true value of fish scales, redefining waste as a conduit of sustainable innovation.

So, let us embark on this journey together—a journey that invites us to reimagine what is possible when nature's discarded treasures are given a second life. Dive deep into this narrative and explore how the humble fish scale is being reborn as a powerful symbol of hope, ingenuity, and ecological balance.

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The Environmental Cost of Ignoring Fish Scales

Every year, over 20 million tons of fish processing waste, including fish scales, are dumped into landfills or directly into our water systems. This unchecked disposal releases hazardous methane and harms delicate marine ecosystems. In India, for instance, inland fisheries churn out thousands of tons of scales annually. With such staggering figures, the question naturally arises: Why squander a resource that nature generously provides? Repurposing these scales not only addresses waste management issues but also paves the way for economically and environmentally sustainable practices.

What Makes Fish Scales Special?

At first glance, fish scales might appear to be an insignificant byproduct, yet a closer look reveals a treasure trove of valuable compounds. For instance, collagen, a remarkable structural protein, is celebrated for its healing and regenerative properties. Equally intriguing is hydroxyapatite—a mineral that closely mirrors the composition of human bone and finds extensive use in medical applications. Then there's guanine, a naturally shimmering compound that contributes a luminous quality to a variety of products.

Collectively, these elements make fish scales not only biodegradable and non-toxic but also incredibly abundant, positioning them as an ideal candidate for a wide array of innovative applications.

Healing Burns and Building Bones

Imagine sterilized tilapia fish scales being transformed into advanced collagen dressings. In locales stretching from Brazil to rural Telangana, these membranes have already been used to treat burns—reducing pain and accelerating healing by as much as 30%, all while costing a fraction (up to 90% less) of commercial alternatives. Meanwhile, the hydroxyapatite extracted from scales is making waves in the world of medical implants, effectively mimicking human bone structure. Such bone grafts have found their place in dental implants and orthopaedic surgeries, marking a revolutionary convergence of nature and medicine.

Beauty Secrets from the Sea

The beauty industry is no stranger to innovation. The refined guanine in fish scales is processed into “pearl essence,” lending an ethereal glow to cosmetics such as lipsticks, nail polishes, and eyeshadows—a secret ingredient behind some of the most glamorous products from giants like L'Oréal and Estée Lauder. Moreover, marine collagen is fast becoming a coveted component in anti-aging skincare, celebrated for its capacity to repair and rejuvenate skin, ensuring that beauty, like nature, is ever-renewing.

Plastic-Free Packaging

With the global urgency to cut down on plastic waste, a UK startup has tapped into the potential of fish scales, creating a bioplastic known as Marina Tex—a material that is reportedly stronger than conventional LDPE yet capable of decomposing in merely six weeks. In tandem, researchers in China have pushed the boundaries further by developing transparent “bio glass” sheets from scales, paving the way for eco-friendly packaging solutions that do not sacrifice aesthetic appeal or functionality.

Energy Harvesting

In an era where sustainable energy is the watchword, even fish scales have found their place. At Guru Nanak Dev University, India, scientists have ingeniously employed rohu fish scales to construct a triboelectric nanogenerator (TENG). This innovative device is capable of converting everyday motion into electrical energy, powering small devices like LEDs and calculators—a leap forward in the realm of self-powered batteries.

Boosting Agriculture

The humble fish scale is also proving its mettle in the agricultural sector. When crushed into a mineral-rich powder, scales slowly release essential nutrients like phosphorus and calcium into the soil, acting as a natural organic fertilizer. Farmers in Kerala, India report yield improvements of as much as 20% when using compost enriched with scale-derived minerals, marking a promising stride toward sustainable farming practices.

Fashion Forward

The world of fashion is embracing the unconventional. Designers such as Diana Scherer are experimenting with fish-scale collagen threads to craft biodegradable textiles, while enterprising startups are turning discarded scales into innovative accessories—think “scale leather” handbags and other chic, sustainable fashion pieces. This marriage of eco-conscious design and unconventional material innovation is redefining fashion on a global stage.

The Ripple Effect: Economic and Environmental Wins

The benefits of transforming fish scales extend well beyond individual applications. By repurposing what was once waste, we dramatically reduce landfill burdens and the harmful methane emissions associated with them. Pilot projects in regions like Telangana are already creating new job opportunities, employing fishers and local technicians in the collection and processing of scales. Meanwhile, cost savings are tangible; hospitals have reported savings between ₹500–1,000 per patient when using scale-based dressings instead of costly imported alternatives. Such ripple effects demonstrate that turning ‘waste into wonder’ is not only environmentally sound, but also economically astute.

Challenges and the Road Ahead

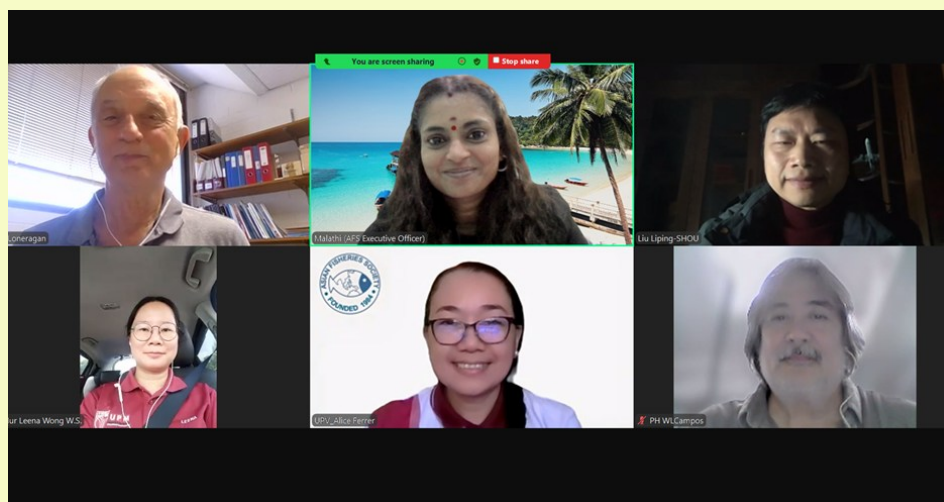
The potential of fish scales is truly undeniable, yet several challenges must be addressed before these innovations can be widely adopted. Achieving scalability for these technologies requires robust government support, as demonstrated by initiatives like India’s PMMSY scheme, which has the potential to be pivotal in promoting fishery waste projects. In parallel, a growing consumer appetite for eco-conscious products is essential to drive further industry innovation. Additionally, local investments—especially in establishing processing units near fish markets—are crucial for minimizing logistical hurdles and maximizing operational efficiency. Ultimately, overcoming these challenges calls for a coordinated effort among policymakers, industry leaders, and communities.

Contributed by Pittala Ravinder, India.

AFS SECRETARIAT NEWS

1.0 AFS Executive Committee Meeting – (14.5)

The Asian Fisheries Society Secretariat meeting was held on Tuesday, January 7, 2025, using an online platform. There were 6 attendees, Prof. Neil Loneragan, Dr. Nur Leena Wong Wai Sin, Prof. Liping Liu, Prof. Alice Joan Ferrer, Prof. Wilfredo Campos and Mrs. Malathi Thanamsegaram joined this meeting.



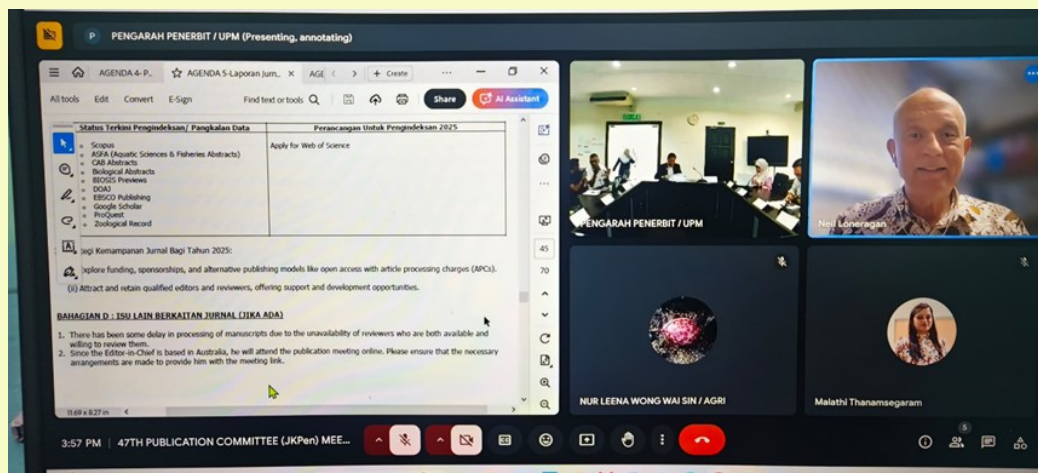
1.2 AFS Execomm Meeting (15.1)

Asian Fisheries Society (AFS) Execomm meeting was held on Friday, 21 March 2025 using an online platform. Prof. Liping Liu, Prof. Buddy Wiryawan, Dr. Nur Leena Wong Wai Sin and Prof. Murni Marlina Abd Karim joined this online meeting.



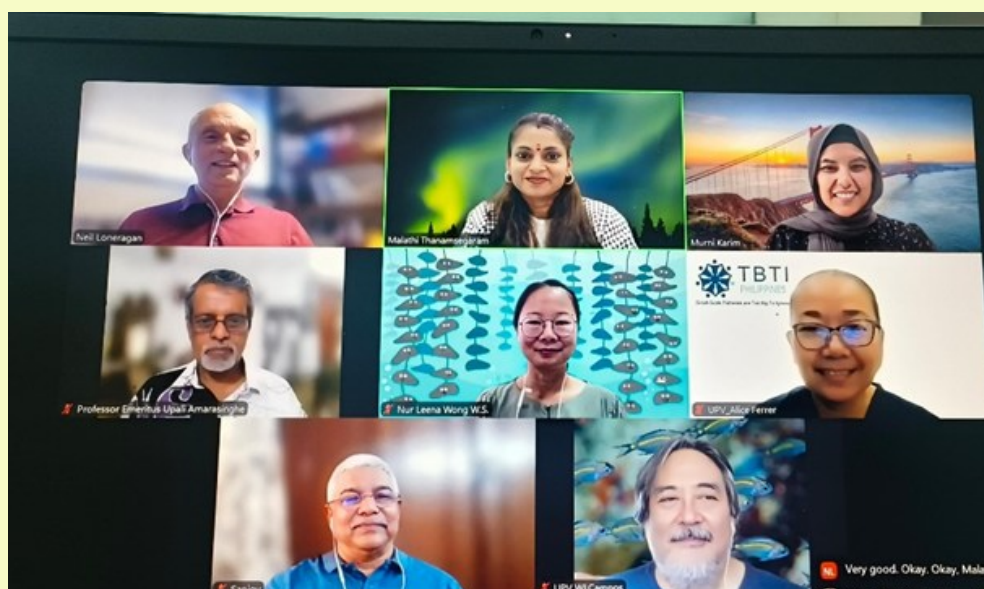
1.3 Journal Meeting (JKPEN)

Asian Fisheries Society and Universiti Putra Malaysia Journal Meeting (JKPEN) was held on Wednesday, 5 March 2025 on an online platform. Prof. Neil Loneragan, Dr. Nur Leena Wong Wai Sin, Mrs. Malathi Thanamsegaram and other Chief in Editors participated in the meeting.



1.4 AFS Associate Editors Meeting

Asian Fisheries Society and Universiti Putra Malaysia Journal Meeting (JKPEN) was held on Wednesday, 17 April 2025 using an online platform. Associate Editors – Prof. Neil Loneragan, Prof. Amarasinghe, Dr. Sanjoy Banerjee, Prof. Wilfredo Campos, Prof. Alice Joan Ferrer, Prof. Murni Marlina, Prof. Liping Liu, Dr. Nur Leena Wong Wai Sin and Prof. Ir. Ts. Dr. Mohamed Thariq Bin Haji Hameed Sultan participated.



2.0 Membership

AFS encourages members to renew and to be Permanent Active Members (PAM). A notice has been sent to the AFS mailing list for renewal.

Membership Account

The username and password remained as below:

Username: ID Number password: afs@123

3.0 AFS new website

The AFS website is currently undergoing technical maintenance due to compatibility issues between some of the most recent plugins and the existing WordPress installation, which is running on PHP version 8.1. These plugin conflicts have affected certain functionalities of the site. They are expected to be completed shortly.

4.0 Webinars

The following webinars were hosted by the Asian Fisheries Society starting in May 2025:

1. AFS 1st Webinar of the year 2025 (Aquaculture transformation in Asia and the Pacific Region)—15 May 2025.
2. AFS 2nd Webinar of the year 2025 (Ecosystem-Based Fisheries Management (EBFM) for Capture Fisheries)—19 June 2025.
3. On July 10, 2025, the AFS 3rd Webinar on 10 July 2025 focussing on the technology optimization of the rice-giant freshwater prawn co-culture model: stocking density and feeding frequency for all-male juveniles.

5.0 Upcoming Events

1. 12th Symposium on Diseases in Asian Aquaculture (DAA12) <https://daa12.in/> will be held on 23 – 27 September 2025 in Chennai, India.
2. 9th Global Conference on Gender in Aquaculture and Fisheries (GAF9) <https://gafconference.org/index.htm> will be held on 1 – 3 October 2025 in Bangkok, Thailand.

AFS MEMBERSHIP RENEWAL NOTICE

Dear AFS Members:

Thank you all AFS Members for your ongoing commitment and support towards the Society!

The Secretariat has started to update the Members details in database.

Therefore, the Secretariat requests all AFS members to update their membership dues and contact information, to the Secretariat via email at **info@asianfisheriessociety.org**.

Kindly renew your membership dues using online payment system at

<http://www.asianfisheriessociety.org/join.php>

or you may also request the membership form from Secretariat via

info@asianfisheriessociety.org.

Membership is open for all!

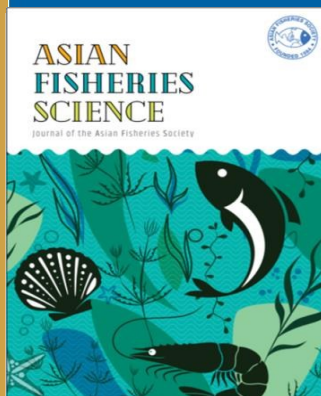
Please apply for membership at
<http://www.asianfisheriessociety.org/join.php>.

If you have any question, kindly email us at
info@asianfisheriessociety.org

SYNOPSIS OF PAPERS VOLUME 38 (ISSUE 1) :

ASIAN FISHERIES SCIENCE JOURNAL

Asian Fisheries Science



Latest Articles

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E-ISSN: 2073-3720

Short Term, Low Temperature Preservation of the Pacific Whiteleg Shrimp *Penaeus vannamei* Spermatophores

YAMILIS CATAÑO, PABLO INTRIAGO, ANDREW P. SHINN, MARTHA PRIETO-GUEVARA, VÍCTOR ATENCIO-GARCÍA

<https://doi.org/10.33997/j.afs.2025.38.1.001>

This study evaluated the short-term preservation of *P. vannamei* spermatophores at 10 °C and 24 °C in mineral oil over 24 days. Sperm viability and fertilisation performance were assessed, with results showing a gradual decline in fertility over time. Preservation was most effective up to 18 days at 10 °C and 8 days at 24 °C. The method has been successfully used for years in controlled breeding programs to reduce pathogen risks.

Estimating Abalone Growth and Shell Morphometrics on a Sea Ranch in South-Western Australia

DAVID MUNDY , NEIL R. LONERAGAN, RYAN ADMIRAAL, ANTHONY HART

<https://doi.org/10.33997/j.afs.2025.38.1.002>

Researchers assessed growth and shell morphometrics of hatchery-reared *Haliotis laevis* (Greenlip abalone) released on artificial habitats (Abitats). Variability in growth rates across different areas was linked to pre-release conditions. A shell mark from hatchery-to-sea transfer served as a reliable indicator of release size and growth, eliminating the need for tagging. Shell proportions of juveniles differed significantly from those of mature southern Australian *H. rubra*.

Dietary Application of Chlorophytum borivilianum and Withania somnifera Root Extracts Stimulates Growth, Immunity and Resistance Against Aeromonas hydrophila Infection in Nile Tilapia, Oreochromis niloticus

MANOJIT DE, SUMAN BHUSAN CHAKRABORTY

<https://doi.org/10.33997/j.afs.2025.38.1.003>

The study investigated the effects of plant root extracts on growth and immunity in Nile tilapia. Fish fed diets fortified with *C. borivilianum* and *W. somnifera* showed improved growth, immune responses, and survival following bacterial challenge. *W. somnifera* extract had a more pronounced effect than *C. borivilianum*. These phytochemicals offer safer alternatives to antibiotics in aquaculture.

Enhancement of Antioxidant Capacities of Salmon Viscera Waste as an Animal Feed Additive: Effects of Continuous Process With Acid/Alkali Swelling, Enzymatic Hydrolysis, and Glycation

NA-EUN YANG, JUN HWANG, WOO-YOUNG SON, KYEONG-SOO KIM, EUN-JU JEONG, EUI-CHEOL SHIN, HYUN-WOOK KIM

<https://doi.org/10.33997/j.afs.2025.38.1.004>

This research enhanced the antioxidant properties of salmon viscera hydrolysates using a multi-step process involving swelling, enzymatic hydrolysis, and glycation. Alkali swelling followed by glycation with xylose yielded the highest antioxidant activity. The study highlights the potential of optimised processing to turn salmon waste into functional animal feed additives.

Prospects of Biodegradable Packaging in the Seafood Industry: A Review

SOURAV C., ABHILASH SASIDHARAN, MOHAN C.O., SARASAN SABU, KAPPAT VALIYAPEEDIYEKKAL SUNOOJ

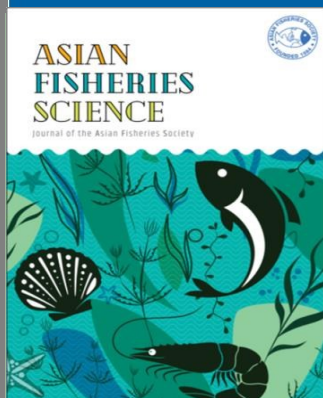
<https://doi.org/10.33997/j.afs.2025.38.1.005>

The review highlights biodegradable packaging as a sustainable alternative in the seafood industry, addressing environmental concerns about plastic waste. While offering ecological and market benefits, challenges remain in scalability, cost, and standardisation. The review underscores the potential of biodegradable solutions to meet consumer demand and improve sustainability in seafood packaging.

SYNOPSIS OF PAPERS VOLUME 38 (ISSUE 2) :

ASIAN FISHERIES SCIENCE JOURNAL

Asian Fisheries Science



Latest Articles

Asian Fisheries Science 38 (2) 2025

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E-ISSN: 2073-3720

Chemical Composition and Bioactive Properties of Aqueous Extracts From Four Species of Marine Bivalves

RHODA MAE C. SIMORA, MA. LORENA M. SERISOLA, NICOLE PAULINE P. PLAGATA, GLEANN P. SALIDO, SHARON N. NUÑAL

<https://doi.org/10.33997/j.afs.2025.38.2.001>

This study assessed the nutritional and bioactive characteristics of four marine bivalves. Among the species studied, *Marcia hiantina* had the highest amino acid content. Cold and hot aqueous extracts revealed antioxidant and anti-hypertensive activities, with *M. hiantina* showing the strongest DPPH and ferric-reducing power, *Placuna ehippium* the highest ABTS activity, and *Placuna placenta* the strongest ACE inhibition. These findings suggest potential for these bivalves as sources of natural supplements or drug alternatives.

Ecological Assessment of Heavy Metal Concentrations in Fish Species and Aquatic Environments in the Vicinity of the Baropukuria Coal Mine Industry of Bangladesh: A Seasonal Perspective

MD. SHAHANUR ALAM, MD. MASUD RANA, ZANNATUL FERDOUSHI, K.M. TOUFIQ HASSAN

<https://doi.org/10.33997/j.afs.2025.38.2.002>

This study analysed seasonal levels of heavy metals in water, sediment, and fish near a Bangladeshi coal mine. Chromium was the most prevalent metal, and the Gangetic leaf fish showed the highest accumulation. Although sediment was not severely polluted, river water exceeded safety levels for human use. The results underscore the health risks posed by industrial discharge and recommend immediate intervention to protect aquatic ecosystems.

Investigating the Role of Fisheries Production on Indonesia's Economic Growth: Long-Run and Short-Run Analysis

PUTRI RIZKA CITANINGATI, SRI HERIANINGRUM

<https://doi.org/10.33997/j.afs.2025.38.2.003>

Using time-series data and vector error correction model (VECM) analysis, this study found that both capture and aquaculture fisheries have significant short- and long-term positive impacts on Indonesia's economic growth, while international trade in the sector affects only short-term growth. The study recommends increased government investment in infrastructure and support for fishermen to strengthen the fishing industry's economic contribution.

Molecular Phylogenetic Analyses of Two Ray-Finned Fishes *Acanthurus mata* (Cuvier, 1829) and *Ephippus orbis* (Bloch, 1787) From the Odisha Coast, Bay of Bengal, India

BIJAYALAXMI SAHU, TAPAN KUMAR BARIK, AMIYA KUMAR PATEL

<https://doi.org/10.33997/j.afs.2025.38.2.004>

Two ray-finned fish species, *Acanthurus mata* and *Ephippus orbis*, were identified using traditional and DNA barcoding techniques. Phylogenetic trees and genetic analyses revealed high genetic variation in *A. mata* across regions, while *E. orbis* populations appeared genetically conserved. The study confirms the effectiveness of DNA barcoding for species tracking and adds valuable data on genetic diversity and population dynamics.

Stock Performance of Leopard Coral Grouper (*Plectropomus leopardus*) and Orange-Spotted Grouper (*Epinephelus coioides*) in Saleh Bay, West Nusa Tenggara, Indonesia

REGI DARMAWAN, BUDY WIRYAWAN, ARI PURBAYANTO, IRFAN YULIANTO, SONJA KLEINERTZ

<https://doi.org/10.33997/j.afs.2025.38.2.005>

This research evaluated the stock status of two high-value groupers in Saleh Bay under fishing pressure. Both species showed slow growth and high catches of immature individuals. Exploitation rates indicate overfishing, particularly for *E. coioides*. Key influencing factors include gear type, engine power, and fishing zones. Recommendations include enforcing size limits, using selective fishing gear, and strengthening marine protected areas.

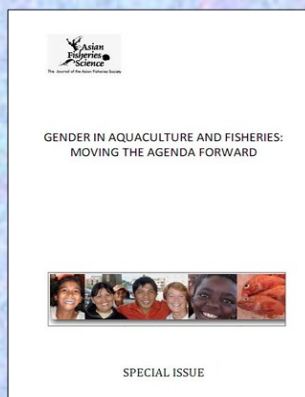
Influence of Fat Content on the Salt-Ripening Process of the Peruvian Anchovy (*Engraulis ringens*)

VERÓNICA VALVERDE-VERA, ESTRELLITA ROJAS DE-LOS-SANTOS, AARÓN MONDRAGÓN-MARTÍNEZ, JESSICA VELA, FABIOLA OLIVARES, MIGUEL ALBRECHT-RUIZ

<https://doi.org/10.33997/j.afs.2025.38.2.006>

This study examined how fat content affects the salting process of *Engraulis ringens*. Although fat levels influenced the rate of water activity decline, overall ripening times and sensory quality were similar across batches. Proteolysis and free amino acid levels increased during ripening, while histamine levels remained within safe limits complying with food safety standards.

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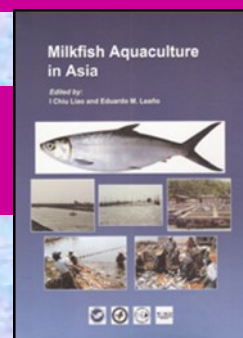


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Gender in Aquaculture and Fisheries: Moving the Agenda Forward
MERYL J WILLIAMS, MARILYN PORTER, POH SZE CHOO, KYOKO KUSAKABE, VEIKILA VUKI,

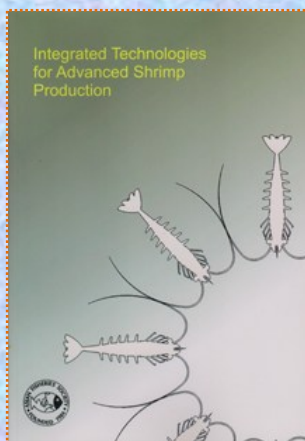
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Milkfish Aquaculture in Asia



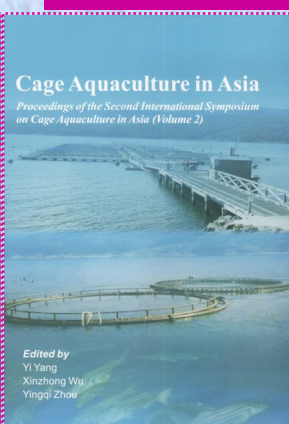
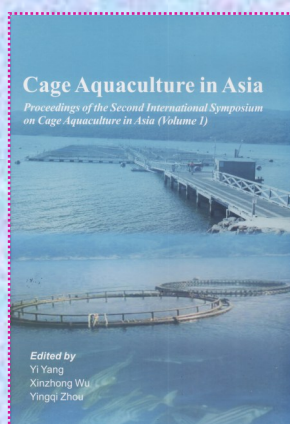
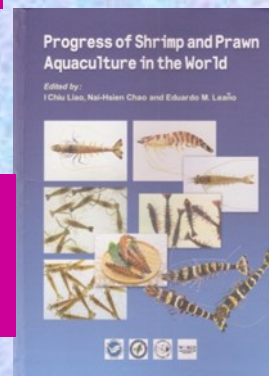
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