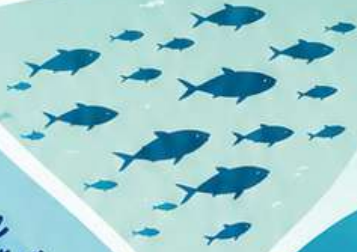




ICAR-CIFE

वार्षिक प्रतिवेदन
Annual Report

2025



ICAR-Central Institute of Fisheries Education

(University under Section 3 UGC Act, 1956)

Off Yari Road, Andheri (West),

Mumbai - 400061

www.cife.edu.in



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

CENTRAL INSTITUTE OF FISHERIES EDUCATION

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

PANCH MARG, YARI ROAD, VERSOVA, MUMBAI, MAHARASHTRA, INDIA

in the field of

TESTING

Certificate Number: TC-14607

Issue Date: 26/09/2024

Valid Until: 25/09/2026

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: ICAR-CENTRAL INSTITUTE OF FISHERIES EDUCATION

Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer

वार्षिक प्रतिवेदन
Annual Report
2025



ICAR-Central Institute of Fisheries Education
Mumbai, India
www.cife.edu.in



@Theme of Coverpage: The Fisheries + Innovation concept symbolises scientific exploration, aquatic biodiversity, and sustainable development. The flowing fish-shaped form integrates a research vessel, aquatic ecosystems, and a digitally connected net, highlighting the institute's multidisciplinary contributions to fisheries education and research. The blue and green colour palette represents harmony among water, life, growth, and environmental responsibility. This AI-generated design seamlessly blends nature, science, and academic excellence.

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The fisheries sector constitutes a critical component of the global food production system and contributes significantly to the attainment of multiple United Nations Sustainable Development Goals (SDGs). In India, the fisheries sector has demonstrated sustained growth driven by increasing demand for high-quality animal protein, technological advancements, and strategic policy interventions. Leveraging its extensive aquatic resources, scientific expertise, and entrepreneurial ecosystem, India achieved a record fish production of 19.77 million metric tonnes in 2025, accounting for nearly 8% of global fish production. During the past five years, the sector registered an average annual growth rate of 6.30%, reinforcing its status as one of the fastest-growing segments of the agricultural economy. India currently ranks second globally in total fish production, contributing roughly 8% to 9% of global aquatic output. India is also second in aquaculture production, and third in capture fisheries production. Aquaculture contributes approximately 65% of the total fish production and continues to expand at an annual rate of 7–8%, exceeding the growth trajectory of several allied agricultural sectors in India. The fisheries sector remains a significant contributor to the national economy. During 2023–24, the fisheries and aquaculture sector contributed about 7.55% to the Gross Value Added (GVA) of the agriculture and allied sector. India's seafood exports reached ₹73,890.46 crore (USD 8.46 billion) in 2025–26, with 16.98 lakh tonnes of exports, strengthening

the fisheries sector's contribution to the blue economy. Furthermore, the fisheries sector provides direct and indirect livelihood support to more than 30 million people. To accelerate sectoral transformation and enhance resilience, the Government of India launched the Pradhan Mantri Matsya Sampada Yojana (PMMSY) under the *Atmanirbhar Bharat* initiative, focusing on sustainable fisheries development, infrastructure modernization, value-chain strengthening, and entrepreneurship promotion.

The sustained expansion and long-term sustainability of the fisheries sector are intrinsically linked to advancements in research, education, innovation, and extension services across capture fisheries, aquaculture, and post-harvest management. Fisheries education has been instrumental in generating skilled human resources and facilitating technological progress within the sector. In this context, ICAR–Central Institute of Fisheries Education (ICAR-CIFE) has consistently served as a national leader in fisheries education, research, and extension. Through multidisciplinary and translational research, the institute has made substantial contributions to scientific innovation, sustainable aquaculture development, technology dissemination, capacity building, and fisheries entrepreneurship.

ICAR-CIFE has established itself as a centre of excellence through its commitment to academic quality, research excellence, and institutional governance. The institute is accredited by the National Accreditation Board for Testing and Calibration Laboratories (NABL), secured the 8th position in the National Institutional Ranking Framework (NIRF) rankings under Agriculture and Allied Sciences. The institute has also been accredited with an A+ grade by the Education Division of ICAR and recognized with the Green Campus Award. Its ISO 9001 certification further reflects adherence to internationally accepted quality management standards. The institute is NABL accredited for 31 test parameters. ICAR-CIFE maintains extensive collaborations with leading national and international organizations to advance research, education, and technology development.

During the academic year 2025, the institute admitted 96 students to various Master of Fisheries Science (M.F.Sc.) programmes and 60 students to Doctor of Philosophy (Ph.D.) programmes through the national-level entrance examinations conducted by the National Testing Agency (NTA). During the 18th Convocation, degrees were conferred upon 91 M.F.Sc. and 51 Ph.D. scholars, reaffirming the institute's commitment to producing highly qualified fisheries professionals, scientists, and future leaders. ICAR-CIFE continues to maintain a vibrant and impactful research portfolio. During 2025, the institute implemented 31 institutional and 29



externally funded research projects addressing priority areas in fisheries and aquaculture. Research efforts focused on strategic themes including aquaponics optimization, enhancement of growth and reproductive performance in cultured species, development of inbred zebrafish laboratory strains, genetically improved common carp and magur, advanced diagnostics for fish and zoonotic pathogens, development of climate resilient feeds, value addition and product diversification, nanotechnology applications, and identification of sustainable alternative feed ingredients.

The institute sustained a strong research output, publishing 202 research papers in national and international peer-reviewed journals, underscoring the institute's growing contributions to innovation, technology generation, and intellectual property development.

Among the institute's flagship initiatives, the Inland Saline Aquaculture (ISA) programme has emerged as a pioneering intervention for productive utilization of saline-alkaline inland resources. ICAR-CIFE has played a leading role in transforming unproductive saline lands into economically viable aquaculture production systems. The institute has successfully standardized culture technologies for species such as *Pangasianodon hypophthalmus* (striped catfish), *Litopenaeus vannamei* (Pacific white shrimp), and *Scylla serrata* (mud crab) under inland saline conditions at Rohtak Centre. Extensive training programmes, workshops, and technology demonstrations conducted in Haryana, Punjab, Rajasthan, and Gujarat have facilitated large-scale adoption of these technologies. Concurrently, the institute continues to investigate the ecological sustainability and environmental implications of inland saline aquaculture to ensure responsible resource utilization and long-term environmental stewardship.

Human resource development and stakeholder capacity enhancement remain integral components of ICAR-CIFE's mandate. The institute regularly conducts Short-Term Training Programmes (STPs) and Skill Development Programmes (SDPs) across its headquarters and regional centres to disseminate emerging technologies, entrepreneurial opportunities, and best management practices. During 2025, a total of 56 SDPs were organized, benefiting 1,304 stakeholders, including 1,043 men and 261 women. The Agri Business Incubation (ABI) Centre trained 902 prospective aquapreneurs and registered 104 incubatees, thereby strengthening the innovation and entrepreneurship ecosystem within the fisheries sector.

Under the Tribal Sub Plan (TSP) and Scheduled Caste Sub Plan (SCSP), the institute conducted 15 and 18 capacity-building programmes, benefiting 1,406 and 567 farmers, respectively, through targeted fisheries

and aquaculture interventions aimed at enhancing livelihood security and income generation. Additionally, seven North Eastern Hill (NEH) programmes provided training and technological support to 447 beneficiaries. The institute further strengthened its outreach through television, radio, and digital media platforms, delivering scientific and extension-oriented content to diverse stakeholder groups. Participation in 12 national and international exhibitions enabled engagement with approximately 4,300 stakeholders, while 3,680 visitors, including students, farmers, entrepreneurs, and researchers, visited ICAR-CIFE headquarters and regional centres during the year.

The remarkable evolution of ICAR-CIFE from a training institute to a premier national fisheries university reflects the collective vision, dedication, and sustained efforts of its faculty, staff, leadership, alumni, and the continued support of the Indian Council of Agricultural Research (ICAR). These contributions have established the institute as a nationally and internationally recognized centre of excellence in fisheries education, research, innovation, and extension.

I express my sincere gratitude to Dr. M. L. Jat, Secretary, DARE and Director General, ICAR, and Dr. J. K. Jena, Deputy Director General (Fisheries Science), for their constant guidance and unwavering support. I also acknowledge the valuable contributions of Dr. Shubhadeep Ghosh, ADG (Marine Fisheries), Dr. Devika Pillai, ADG (Inland Fisheries), and colleagues in the Fisheries Division for their cooperation and encouragement. Board of Management, Institute Research Council, Academic Council, Extension Council, Board of Examination and other institutional committees for their continued support. Finally, I congratulate the entire ICAR-CIFE fraternity and the Annual Report-2025 publication team for their dedication in documenting and showcasing the institute's achievements, accomplishments, and contributions to the sustainable development of the fisheries sector.



Director, ICAR-CIFE





EXECUTIVE SUMMARY

कार्यकारी सारांश

पिछले छह दशकों में भारत के मात्स्यिकी क्षेत्र की वृद्धि, इसके आधुनिकीकरण और स्थिरता को आगे बढ़ाने में मात्स्यिकी शिक्षा और अनुसंधान ने महत्वपूर्ण भूमिका निभाई है। साथ ही, देश की 'दूसरी नीली क्रांति' के लक्ष्य को साकार करने में ये मुख्य आधार बने रहेंगे। वर्ष 1961 में अपनी स्थापना के बाद से, भा.कृ.अनु.प.-केन्द्रीय मात्स्यिकी शिक्षा संस्थान ने मात्स्यिकी शिक्षा, अनुसंधान, क्षमता-निर्माण और मानव संसाधन विकास को आगे बढ़ाने में तथा शिक्षा जगत, उद्योग और नीति-निर्माताओं की बदलती ज़रूरतों को प्रभावी ढंग से पूरा करने में महत्वपूर्ण भूमिका निभाई है। पिछले कई वर्षों से, यह संस्थान मात्स्यिकी प्रशिक्षण केंद्र से विकसित होकर एक प्रमुख समतुल्य विश्वविद्यालय और मत्स्य विज्ञान के क्षेत्र में राष्ट्रीय स्तर पर मान्यता प्राप्त उत्कृष्टता केंद्र बन गया है।

वर्तमान में, यह संस्थान मात्स्यिकी विज्ञान के ग्यारह विशिष्ट विषयों में स्नातकोत्तर शिक्षा प्रदान करता है। इसके लिए संस्थान में वैज्ञानिक, तकनीकी और शैक्षणिक कार्मिकों की एक बहुत ही सुयोग्य टीम है। संस्थान में प्रत्येक वर्ष एक राष्ट्रीय स्तर के प्रवेश परीक्षा के माध्यम से लगभग 150 स्नातकोत्तर छात्रों को प्रवेश दिया जाता है। अपने मुख्यालय और पाँच क्षेत्रीय केंद्रों पर अत्याधुनिक प्रयोगशाला, उन्नत अनुसंधान सुविधाओं और विशेष अवसंरचना के साथ, संस्थान नवाचारोन्मुख अनुसंधान और प्रौद्योगिकी विकास के लिए एक अनुकूल वातावरण प्रदान करता है। संस्थान लगातार बहुत ही सक्षम मात्स्यिकी पेशेवर तैयार कर रहा है, जो अनुसंधानकर्ता, शैक, उद्यमी, परामर्शदाता, नीति-निर्माता और विस्तार विशेषज्ञ के रूप में मात्स्यिकी क्षेत्र को अहम योगदान देते हैं।

संस्थान की अनुसंधान-रूपरेखा मात्स्यिकी एवं जलकृषि के क्षेत्र में राष्ट्रीय प्राथमिकताओं और वैश्विक चुनौतियों के साथ रणनीतिक रूप से जुड़ा हुआ है, जिसमें वैज्ञानिक उत्कृष्टता और सामाजिक प्रभाव दोनों पर ज़ोर दिया गया है। वर्ष 2025 के दौरान, संस्थान ने मात्स्यिकी विज्ञान के विभिन्न विषय-क्षेत्रों पर 31 संस्थागत अनुसंधान परियोजना और 28 बाह्य वित्तपोषित परियोजना लागू किए। अनुसंधान के मुख्य क्षेत्रों में, अलग-अलग प्रजातियों के साथ अंतःस्थलीय खारे पानी में जलकृषि; पाली जाने वाली मछली प्रजातियों की वृद्धि और प्रजनन क्षमता में सुधार; मूल्यसंवर्धन के लिए समुद्री शैवाल

और मछली से जुड़े जैविक संसाधनों का उपयोग; प्रतिरक्षा-आधारित नैदानिक उपकरण और मछली के टीके विकसित करना; टिकाऊ वैकल्पिक जलजीव-आहार सामग्री की पहचान; कार्प मछलियों में प्रजनन-सुधार के लिए पोषण संबंधी उपाय; खारे पानी में एकापोनिक्स और एकीकृत बहु-पोषी जलकृषि; जलकृषि में प्रजातियों की विविधता और सटीक जलकृषि; आनुवंशिक रूप से बेहतर प्रजातियों का विकास; परीक्षणात्मक जेब्राफिश नस्ल का विकास; सजावटी मछली प्रजनन और लार्वा पालन तकनीक; सूक्ष्मजीवाणुरोधी के प्रति प्रतिरोध की निगरानी; समुद्री आहार के सूक्ष्माणु जोखिम का आकलन और संवेदनशील क्षेत्र में इस्तेमाल होने वाली त्वरित पहचान की विधियों का विकास; मछली के अपशिष्ट का मूल्यसंवर्धन और उसका बेहतर उपयोग; सूक्ष्मशैवाल की बायोप्रोस्पेक्टिंग; कम इस्तेमाल होने वाले मत्स्य संसाधनों का पोषण-शृंखला-आधारित प्रबंधन; कौशल विकास के उपायों के प्रभाव का आकलन; और अंतःस्थलीय मात्स्यिकी प्रबंधन के लिए पूर्वानुमान-विधियाँ, आदि क्षेत्र शामिल थे।

वर्ष 2025 के दौरान संस्थान ने वैज्ञानिक-उत्पादकता का उच्च स्तर बनाए रखा। संस्थान के वैज्ञानिकों ने प्रतिष्ठित राष्ट्रीय और अंतर्राष्ट्रीय पत्रिकाओं में 202 शोध पत्र प्रकाशित किए। इसके अलावा, संस्थान ने 10 किताबें, 36 पुस्तक अध्याय, 62 लोकप्रिय लेख, 31 प्रशिक्षण मैनुअल और 41 विस्तार प्रकाशन तैयार किए, जिनके माध्यम से वैज्ञानिक जानकारी के प्रसार, क्षमता-निर्माण और प्रौद्योगिकी-हस्तांतरण में महत्वपूर्ण योगदान दिया गया।

छात्रों में नवाचार, उद्यमशीलता और वैज्ञानिक सोच को बढ़ावा देने के लिए, संस्थान ने वर्ष भर कई तरह की शैक्षणिक, पेशेवर, और आउटरीच गतिविधियाँ आयोजित कीं। इनमें मात्स्यिकी क्षेत्र में नई उद्यमशीलता के अवसरों पर केंद्रित एकेडेमिया-इंडस्ट्री कॉन्क्लेव; युवाओं की उद्यमशीलता, स्टार्ट-अप विकास और बौद्धिक संपदा अधिकार प्रबंधन पर कार्यशाला; और सृजनात्मक तरीके से समस्याओं को हल करने को बढ़ावा देने के लिए नवाचार-आधारित प्रतियोगिताएं शामिल थीं। प्रत्येक वर्ष आयोजित होने वाला "फिश स्वाद" कार्यक्रम इस वर्ष भी एक महत्वपूर्ण जन-भागीदारी पहल के तौर पर जारी रहा, जिसमें भारत के अलग-अलग क्षेत्रों के मछली-आधारित विविध व्यंजनों को



प्रदर्शित किया गया और साथ ही आम जनता के बीच मछली के उपभोग और पोषण के बारे में जागरूकता पैदा किया गया।

वर्ष 2025 में, संस्थान ने उद्योग से जुड़ा एक अनोखा उद्यमशीलता कार्यक्रम प्रारंभ किया। इसमें मात्स्यिकी-मूल्यशृंखला से जुड़े कई हितधारक शामिल थे, जिससे उद्योग और शैक्षणिक क्षेत्र के बीच मज़बूत साझेदारी और नवाचार-आधारित उद्यम-विकास को बढ़ावा मिला।

संस्थान द्वारा शैक्षणिक उत्कृष्टता, नवाचार और सामाजिक महत्व पर आधारित संस्थागत संस्कृति को बढ़ावा देने की अपनी प्रकृति को निरंतर बनाए रखा जाता है। "ज्ञान का व्यावसायीकरण", "शैक्षणिक उत्कृष्टता" और "छात्र उद्यमिता" जैसी संस्थागत प्राथमिकताओं ने संस्थान की शैक्षणिक, अनुसंधान और विस्तार गतिविधियों को रणनीतिक दिशा दी है, जिससे मात्स्यिकी क्षेत्र पर इसका प्रभाव बढ़ा है। वर्ष 2025 में, संस्थान ने "सृजन, संपर्क और सहयोग" थीम को अपनाया, जो मात्स्यिकी शिक्षा, अनुसंधान और विकास में नवाचार को बढ़ावा देने, साझेदारियों को मजबूत करने और सहयोगी प्रयासों को प्रोत्साहित करने की इसकी प्रतिबद्धता को दर्शाता है।

क्षमता-निर्माण और कौशल-विकास संस्थान के अधिदेशों के अभिन्न अंग हैं। वर्ष 2025 के दौरान, संस्थान और उसके क्षेत्रीय केंद्रों ने 56 कौशल विकास कार्यक्रम आयोजित किए, जिनसे देश के अलग-अलग हिस्सों से 1,304 प्रतिभागियों को फ़ायदा हुआ। इन प्रशिक्षण कार्यक्रमों में कई नए और व्यावहारिक विषयों, जैसे मछली की गुणवत्ता सुनिश्चित करना और प्रमाणन प्रणाली, मछली की स्वास्थ्य और जल-गुणवत्ता प्रबंधन, शैवाल बायोमास उत्पादन तकनीकें, मछली के लिए नए प्रकार के आहार बनाने की तकनीकें, सजावटी मछली पालन और प्रजनन, और जलकृषि प्रणाली में सूक्ष्माणुरोधी प्रतिरोध का प्रबंधन आदि को शामिल किया गया। प्रतिभागियों में मछली पालक, उद्यमी, सलाहकार, गुणवत्ता सुनिश्चित करने वाले पेशेवर, राज्य कृषि विश्वविद्यालयों के संकाय सदस्य और छात्र शामिल थे। उत्तर पूर्वी पहाड़ी क्षेत्रीय कार्यक्रम के तहत, 447 लोगों को मात्स्यिकी-आधारित आजीविका और उद्यम-विकास को मज़बूत करने के लक्ष्य से विशेष प्रशिक्षण और तकनीकी सहायता दी गई।

संस्थान ने अनुसूचित जाति उप-योजना और जनजातीय उप-योजना के तहत कई समावेशी विकास पहल भी लागू कीं। अनुसूचित जाति उप-योजना के तहत, मीठे पानी में मछली पालन, पत्तों के चूर्ण से मछली का आहार बनाने, झींगा पालन की तकनीकों और कम लागत में आहार तैयार करने के तरीकों से जुड़े 18 प्रशिक्षण कार्यक्रम आयोजित किए गए, जिनसे 567 प्रतिभागी लाभान्वित हुए। इसी तरह, जनजातीय उप-योजना के तहत महाराष्ट्र, छत्तीसगढ़, मणिपुर, नागालैंड और त्रिपुरा के जनजातीय समुदायों के लिए आयोजित 15 प्रशिक्षण कार्यक्रमों से 1,406 प्रतिभागी लाभान्वित हुए। तकनीक अपनाने और आजीविका बेहतर बनाने में मदद के लिए, लाभार्थियों को मछली के बीज, मछली का आहार, मछली पकड़ने की जाल और मछली पालन से जुड़ी अन्य ज़रूरी सामग्रियाँ चीज़ें उपलब्ध कराई गईं।

विस्तार और बृहत जनसंपर्क अधिदेश के तहत, संस्थान ने वर्ष 2025 में मछली पालन से जुड़े मुद्दों पर वैज्ञानिक जानकारी के प्रसार और लोगों में जागरूकता बढ़ाने के लिए लगभग 15 टेलीविज़न और रेडियो कार्यक्रम किए। संस्थान ने 12 राष्ट्रीय और अंतर्राष्ट्रीय प्रदर्शनियों में भी हिस्सा लिया, जिनमें संस्थान के स्टॉल का लगभग 4,300 लोगों ने दौरा किया और यह तकनीकों के प्रदर्शन, साझेदारों से विचार-विमर्श और जानकारी के प्रचार-प्रसार के लिए एक उपयुक्त मंच साबित हुआ।

इस वर्ष के दौरान, संस्थान ने कई ज़रूरी और प्रशासनिक बैठकें सफलतापूर्वक आयोजित कीं, जिनमें अनुसंधान सलाहकार समिति, संस्थान अनुसंधान समिति, साहिकक्षणात्मक परिषद, विस्तार परिषद, और प्रबंधन मण्डल की बैठकें शामिल थीं। संस्थान ने सतर्कता जागरूकता सप्ताह, अंतर्राष्ट्रीय योग दिवस, स्वच्छता अभियान, हिंदी चेतना मास, उद्योग दिवस, किसान दिवस, गणतंत्र दिवस और स्वतंत्रता दिवस जैसे महत्वपूर्ण राष्ट्रीय और संस्थान-स्तरीय कार्यक्रमों का भी आयोजन किया, जिनसे संस्थान के मूल्यों, सामाजिक ज़िम्मेदारी और हितधारकों की भागीदारी को बढ़ावा मिला।

संस्थान ने विकसित कृषि संकल्प अभियान में सक्रिय रूप से भाग लिया। यह भारतीय कृषि अनुसंधान परिषद और



कृषि एवं किसान कल्याण मंत्रालय की एक देशव्यापी पहल है, जिसका मकसद वैज्ञानिक जानकारी और किसान समुदायों के बीच संबंध को मजबूत करना है। संस्थान ने मात्स्यिकी और जलकृषि की आधुनिक तकनीकों के प्रचार-प्रसार, टिकाऊ उत्पादन के तरीकों को बढ़ावा देने और हितधारकों के साथ चर्चा के दौरान सामने आने वाली चुनौतियों का समाधान करने में योगदान दिया।

मात्स्यिकी विज्ञान, शिक्षा, नवाचार या सामाजिक विकास के क्षेत्र में संस्थान की लगातार सफलता इसके संकाय सदस्यों, छात्रों, तकनीकी और प्रशासनिक कार्मिकों की सामूहिक प्रयासों और समर्पण का नतीजा है। संस्थान, भारतीय कृषि अनुसंधान परिषद मुख्यालय से लगातार मिल रहे सहयोग और मात्स्यिकी संस्थानों, विश्वविद्यालयों, उद्योगों से जुड़े लोगों और विकास एजेंसियों से प्राप्त सहयोगी साझेदारियों से, भारत के मात्स्यिकी क्षेत्र के टिकाऊ विकास और देश की 'नीली अर्थव्यवस्था' की उम्मीदों को पूरा करने में सार्थक योगदान देने की, संस्थान की क्षमता और मजबूत हुई है।

महत्वपूर्ण विशेषताएँ

- संस्थान को नैशनल इंस्टिट्यूट रैंकिंग फ्रेमवर्क द्वारा 8वीं रैंक दी गई है।
- वर्ष 2025 के दौरान 31 संस्थागत अनुसंधान परियोजनाएँ और 28 बाह्य वित्तपोषित परियोजनाएँ चलाई जा रही थीं।
- महाराष्ट्र और ऐसे ही दूसरे क्षेत्रों के खारे-क्षारीय पानी में टिकाऊ जलकृषि के लिए पंगैसियस की क्षमता प्रदर्शन किया गया।
- झींगा और समुद्री शैवाल की एक-साथ पालन का टिकाऊ मॉडल विकसित किया गया, जिससे पोषक

तत्व का जैवउपचार, झींगे की उत्पादकता, स्वास्थ्य और मूल्यावर्धित बायोमास उत्पादन में सुधार हुआ।

- महामगुर की एफ4 पीढ़ी और कॉमन कार्प की एफ2 पीढ़ी विकसित की गई, और अन्तर्स्थलीय खारे पानी में *पेनीयस मोनोडॉन* का सफलतापूर्वक पालन फिर से शुरू किया गया।
- प्रतिष्ठित राष्ट्रीय और अंतर्राष्ट्रीय पत्रिकाओं में 202 शोध पत्र प्रकाशित हुए।
- 62 लोकप्रिय लेख, 31 प्रशिक्षण मैनुअल और 41 विस्तार प्रकाशन विमोचित किए गए।
- समस्त मात्स्यिकी अनुसंधान संस्थानों में से सर्वाधिक एच-इंडेक्स (92) संस्थान का है।
- कुल 56 कौशल विकास कार्यक्रम आयोजित किए गए, जिनसे 1,304 प्रतिभागी (1,043 पुरुष और 261 महिला) लाभान्वित हुए।
- राष्ट्रीय और आंतरराष्ट्रीय वैज्ञानिक सम्मेलनों में 34 छात्रों को पुरस्कार और सम्मान मिले।
- भारतीय कृषि अनुसंधान परिषद ने 11 प्रौद्योगिकियों को प्रमाणीकृत किया।
- वर्ष 2025 में 13.90 लाख रुपये की कीमत वाली 9 प्रौद्योगिकी/उत्पाद (सीआइएफई-तिलाग्री, सीआइएफई-पंगास शक्ति, सीआइएफई-बीएसएफ, कैटफिश हैचरी और पालन प्रणाली, सीआइएफई-वृद्धि, सीआइएफई-ग्रीन, सीआइएफई-विंट, आवरित बॉम्बे डक और फिशएन्युरे) को व्यावसायीकृत किया गया।
- 2.68 करोड़ रुपये के बजट से मात्स्यिकी में उद्यमशीलता-विकास के लिए एक उत्कृष्टता केंद्र स्थापित किया गया।
- पहली बार रोहतक केंद्र में रोग-निदान प्रयोगशाला स्थापित की गई।



Fisheries education and research have been instrumental in driving the growth, modernization, and sustainability of India's fisheries sector over the past six decades and will continue to serve as key pillars in realizing the nation's vision of a second Blue Revolution. Since its inception in 1961, ICAR-CIFE has played a transformative role in advancing fisheries education, research, capacity building, and human resource development, effectively addressing the evolving needs of academia, industry, and policymakers. Over the years, the institute has evolved from a fisheries training centre into a premier Deemed-to-be University and a nationally recognized centre of excellence in fisheries science.

Currently, ICAR-CIFE offers postgraduate education in eleven specialized disciplines of fisheries science, supported by a highly qualified cadre of scientific, technical, and academic personnel. The institute admits approximately 150 postgraduate students annually through a rigorous national-level entrance examination process. Equipped with state-of-the-art laboratories, advanced research facilities, and specialized infrastructure at its headquarters and five regional centres, ICAR-CIFE provides a conducive environment for innovation-driven research and technology development. The institute continues to produce highly competent fisheries professionals who contribute significantly as researchers, academicians, entrepreneurs, consultants, policymakers, and extension specialists.

The research portfolio of ICAR-CIFE is strategically aligned with national priorities and global challenges in fisheries and aquaculture, emphasizing both scientific excellence and societal impact. During 2025, the institute implemented 31 institutional research projects and 29 externally funded projects covering diverse domains of fisheries science. Major research thrust areas included aquaculture in inland saline water with species diversification; enhancement of growth and reproductive performance in cultured fish species; utilization of

seaweeds and fishery bio-resources for value addition; development of antibody-based diagnostic tools and fish vaccines; identification of sustainable alternative aquafeed ingredients; nutritional interventions for reproductive improvement in carps; aquaponics and IMTA in brackish water; species diversification in aquaculture & precision aquaculture; development of genetically improved species; development of experimental zebrafish strains; ornamental fish breeding and larval rearing technologies; antimicrobial resistance surveillance; microbial risk assessment of seafood and development of sensitive field-applicable rapid detection methods; value addition and valorization of fish wastes; microalgal bioprospecting; trophic-chain-based management of underutilized fisheries resources; impact assessment of skill development interventions; and predictive modelling approaches for inland fisheries management.

The institute sustained a high level of scientific productivity during 2025. ICAR-CIFE scientists published 202 research papers in peer-reviewed national and international journals. In addition, the institute produced 10 books, 36 book chapters, 62 popular articles, 31 training manuals, and 41 extension publications, thereby contributing significantly to scientific dissemination, capacity building, and technology transfer.

To foster innovation, entrepreneurship, and scientific temperament among students, ICAR-CIFE organized a range of academic, professional, and outreach activities throughout the year. These included Academia-Industry Conclaves focusing on emerging entrepreneurial opportunities in the fisheries sector; workshops on youth entrepreneurship, start-up development, intellectual property rights management; and innovation-based competitions designed to promote creative problem-solving. The annual "*Fish Swad*" event continued to serve as a flagship public outreach initiative, showcasing the diversity of fish-based cuisines from different regions of India while



promoting fish consumption and nutritional awareness among the general public.

During 2025, ICAR-CIFE introduced a unique industry-linked entrepreneurship programme involving stakeholders from multiple segments of the fisheries value chain, thereby facilitating stronger industry-academia partnerships and promoting innovation-driven enterprise development.

ICAR-CIFE continues to nurture a theme-based institutional culture centered on academic excellence, innovation, and societal relevance. Institutional priorities such as “Knowledge Commercialization,” “Academic Excellence,” and “Student Entrepreneurship” have provided strategic direction to the institute’s educational, research, and extension activities, enhancing its impact on the fisheries sector. In 2025, CIFE adopted the theme “Create, Connect and Collaborate,” reflecting its commitment to fostering innovation, strengthening partnerships, and promoting collaborative efforts in fisheries education, research, and development.

Capacity building and skill development remain integral components of the institute’s mandate. During 2025, ICAR-CIFE and its regional centres organized 56 Skill Development Programmes (SDPs), benefiting 1,304 participants from various regions of the country. Training programmes covered a broad spectrum of emerging and applied topics, including fish quality assurance and certification systems, fish health and water quality management, algal biomass production technologies, innovative aquafeed formulation techniques, ornamental fish culture and breeding, and antimicrobial resistance management in aquaculture systems. Participants included fish farmers, entrepreneurs, consultants, quality assurance professionals, faculty members of State Agricultural Universities, and students. Under the North Eastern Hill (NEH) programme, 447 beneficiaries received specialized training and technological support aimed at strengthening fisheries-based livelihoods and enterprise development.

The institute also implemented several inclusive development initiatives under the Scheduled Caste Sub-Plan (SCSP) and Tribal Sub-Plan (TSP). Under SCSP, 18 training programmes benefited 567 participants through interventions in freshwater aquaculture, leaf meal-based aquafeed production, shrimp farming technologies, and low-cost feed preparation techniques. Similarly, under TSP, 15 training programmes benefited 1,406 participants from tribal communities in Maharashtra, Chhattisgarh, Manipur, Nagaland, and Tripura. To facilitate technology adoption and livelihood enhancement, beneficiaries were provided with critical inputs including fish seed, aquafeed, cast nets, and other aquaculture-related materials.

As part of its extension and outreach mandate, ICAR-CIFE delivered approximately 15 television and radio programmes during 2025 to disseminate scientific knowledge and enhance public awareness on fisheries-related issues. The institute also participated in 12 national and international exhibitions and expos, attracting nearly 4,300 visitors to its exhibition stalls and providing an effective platform for technology demonstration, stakeholder engagement, and knowledge dissemination.

During the year, the institute successfully conducted several statutory and administrative meetings, including those of the Research Advisory Committee (RAC), Institutional Research Committee (IRC), Academic Council, Extension Council, and Board of Management. ICAR-CIFE also commemorated important national and institutional events such as Vigilance Awareness Week, International Day of Yoga, Swachhta Abhiyaan, Hindi Pakhwada, Industry Day, Farmers’ Day, Republic Day, and Independence Day, thereby fostering institutional values, social responsibility, and stakeholder engagement.

CIFE actively participated in the *Viksit Krishi Sankalp Abhiyan* (VKSA), a nationwide outreach initiative of the Indian Council of Agricultural Research (ICAR) and the Ministry of Agriculture & Farmers’ Welfare aimed at strengthening the connection between scientific knowledge and



farming communities. The Institute contributed to the dissemination of advanced fisheries and aquaculture technologies, promotion of sustainable production practices, and addressing the challenges encountered direct interactions with stakeholders.

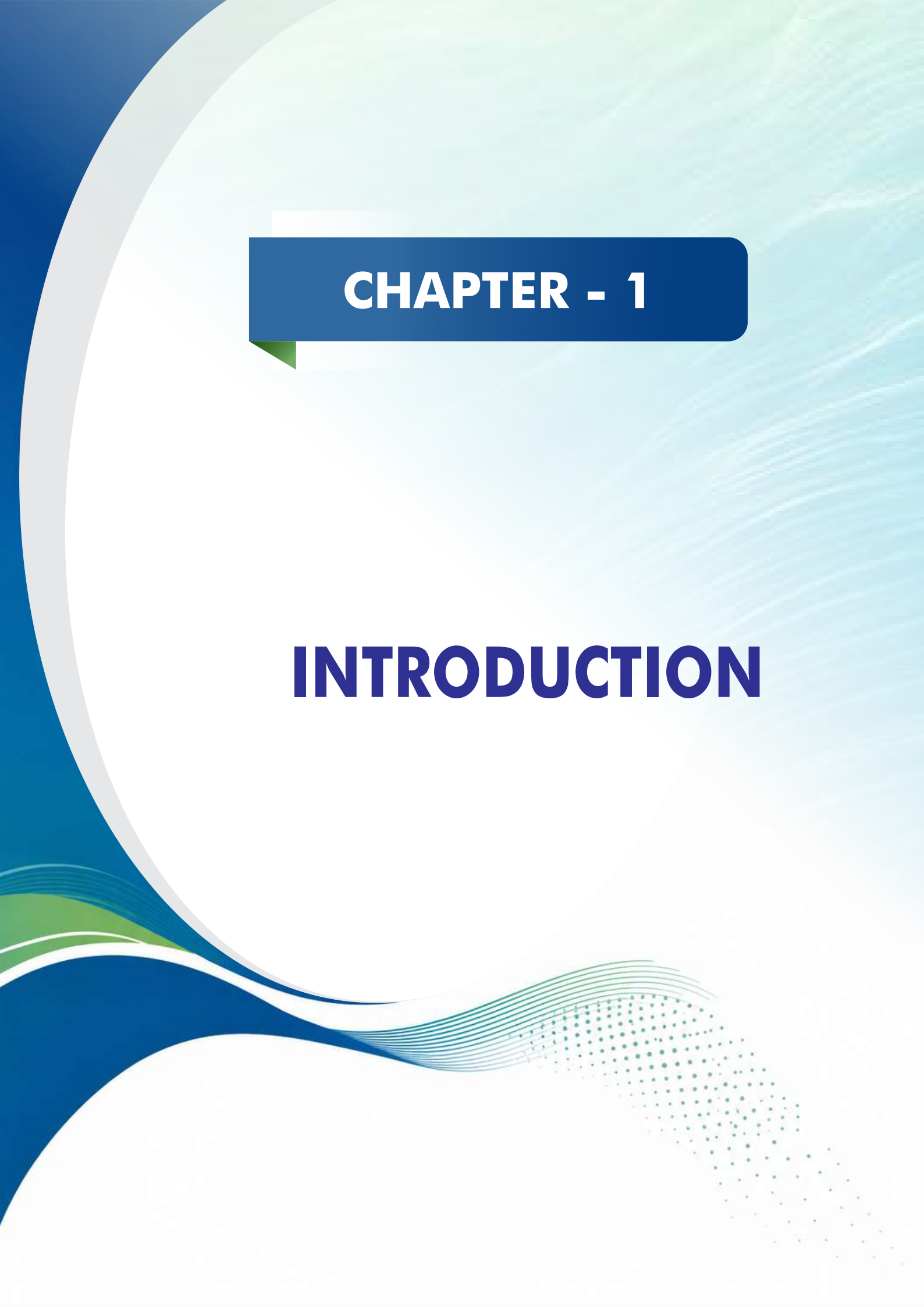
The continued success of ICAR-CIFE in advancing fisheries science, education, innovation, and societal development is a reflection of the

collective efforts and commitment of its faculty, students, technical personnel, and administrative staff. Sustained support from ICAR Headquarters and collaborative partnerships with fisheries institutions, universities, industry stakeholders, and development agencies have further strengthened the institute's capacity to contribute meaningfully to the sustainable growth of India's fisheries sector and the realization of the country's Blue Economy aspirations.

Highlights

- CIFE is ranked 8th by NIRF
- 31 institutional research projects and 29 externally funded projects were operational during 2025
- The potential of Pangasius for sustainable aquaculture in inland saline-alkaline waters of Maharashtra and similar regions was demonstrated.
- A sustainable shrimp-seaweed co-culture model was developed, enhancing nutrient bioremediation, shrimp productivity, health, and value-added biomass generation.
- F4 generation of Mahamagur and F2 generation of common carp were developed, and *Penaeus monodon* was successfully reintroduced for culture in inland saline waters.
- 202 research papers were published in national and international peer-reviewed journals.
- 62 popular articles, 31 training manuals, and 41 extension publications were released.
- CIFE has the highest h-index of 92 among all the fisheries research institutes
- A total of 56 Skill Development Programmes (SDPs) were conducted, benefiting 1,304 participants (1,043 male and 261 female).
- Thirty-four students received awards and recognitions at national and international scientific conferences.
- 11 technologies were certified by the ICAR
- 9 Technologies/products (CIFE-TilaGrow, CIFE-Pangas Shakti, CIFE-BSF, Catfish hatchery and rearing system, CIFE-Vrudhi, CIFE-GREEN, CIFE-WINT, Laminated Bombay Duck and FishANUre) worth Rs 13.90 lakhs were commercialized in 2025
- A Centre of Excellence in Entrepreneurship Development in Fisheries was established with Rs. 2.68 crore outlay
- A disease diagnosis lab was established in Rohtak centre





CHAPTER - 1

INTRODUCTION



1. INTRODUCTION

ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai, is the first and leading national University imparting quality fisheries education under the ambit of Indian Council of Agricultural Research. It has gained a reputation as a prestigious Institution in the field of fisheries education and research over the past 65 years, producing a talented group of specialized professionals, pioneering researchers, and practical technological solutions for the benefit of fishers, fish farmers, industry and entrepreneurs. CIFE boasts state-of-art facilities in a peaceful setting and has established five regional centres across different aqua-climatic regions in Rohtak (Haryana), Kolkata (West Bengal), Powarkheda (Madhya Pradesh), Kakinada (Andhra Pradesh), and Motipur (Bihar). Initially established in 1961 under the Ministry of Agriculture, Government of India with support from FAO/UNDP, its mandate was to strengthen the capacity of state fisheries departments and their personnel. In 1979, it became part of Indian Council of Agricultural Research

(ICAR), and in 1989, it transformed into a university dedicated to education, research, and extension.

The University has educated more than 2500 prominent scholars and developed the professional skills of over 5000 professionals from India and the Afro-Asian region with a strong focus on quality education. ICAR-CIFE offers post-graduate programs in 11 specialized disciplines in fisheries and aquaculture sciences with around 100 Masters and 75 doctoral seats every year, as well as demand-driven diploma programs, certificate courses, and customized short-term training programs. ICAR-CIFE has developed an ecosystem of teaching and research excellence, making it a preferred destination for students and scholars. Its broad range of disciplines, advanced facilities, research networks within and beyond the country, and supportive work environment provide unparalleled opportunities for exploration, excellence, and leadership in shaping the future of the fisheries sector.

	Vision	Mission	Mandate
	To be a world-class organization providing leadership in fisheries education and research	To achieve academic and research excellence by creating state-of-the-art infrastructure and attracting globally competent faculty and students	• Conduct post-graduate programmes in fisheries sciences • Basic and strategic research in frontier areas of fisheries science • Human resource development, capacity building and skill development through training, education and extension

ORGANOGRAM

ICAR-CIFE, Mumbai



Director



Joint Director

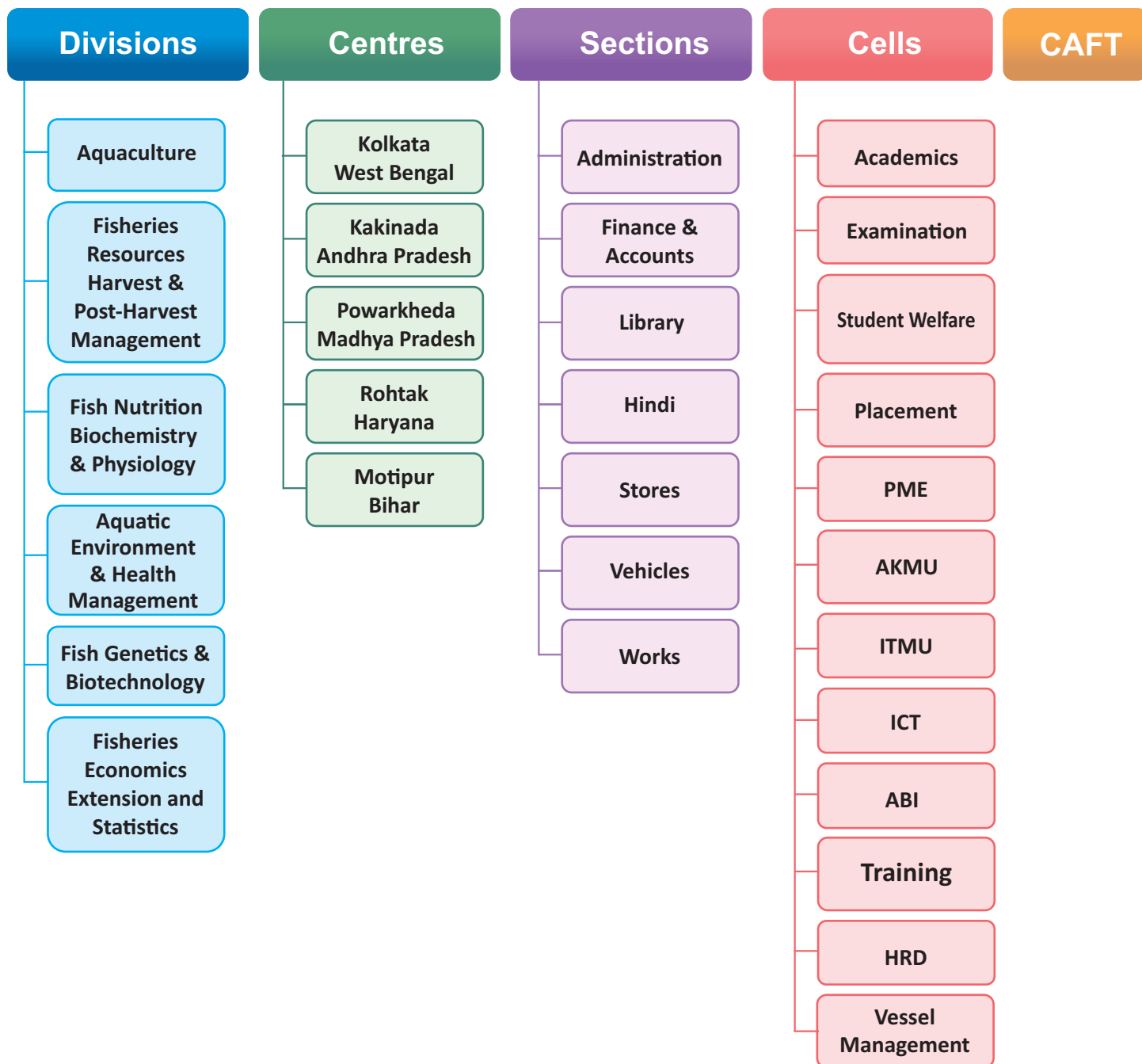
Board of Management

Research Advisory Committee

Institute Research Council

Academic Council

Extension Council





BOARD OF MANAGEMENT

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Joint secretary (Finance, ICAR)

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Dr. P.S. Ananthan

Dr. T.K. Srinivasa Gopal

Dr. Niteen Patil

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Shri Dinesh Prakash Kulkarni

Member-Secretary

Shri K.L. Meena, CAO (SG)



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Dr. S.P. Shukla

DDG, (Agril. Extension), ICAR, New Delhi

Fisheries Development Commissioner,

DOF, GoI

Dr. George Ninan

Commissioner of Fisheries

Joint Comm. of Fisheries

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Dr. Debajit Sarma

Dr. Kedar Nath Mohanta

Dr. Mukunda Goswami

Dr. B.B. Nayak

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Dr. S. Munilkumar

Dr. Swadesh Prakash

Dr. Md. Aklakur

Dr. Shashi Bhushan

Dr. Muralidhar P. Ande

Dr. Shivaji Argade

Member Secretary

Dr. Ananthan P.S.



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Dr. Krishna Srinath

Dr. Pravin Puthra

Dr. Sudhir Raizada

Dr. P. Jayasankar

Dr. P.K. Mukhopadhyaya

Dr. V. Kripa

Member Secretary

Dr. S.P. Shukla



ACADEMIC COUNCIL

Chairman

Dr. Ravishankar C.N., Director, CIFE

Members

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Dr. N.P. Sahu

Dean (Academics)

Dean (Students Welfare)

Head, Aquaculture Division

Head, FRHPHM Division

Head, FNBP Division

Head, AEHM Division

Head, FGB Division

Head, FEES Division

Dr. Aparna Chaudhari

Dr. B. B. Nayak

Dr. S. Jahageerdar

Dr. G .H. Pailan

Dr. K. Pani Prasad

Dr. R.P. Raman

Dr. Parimal Sardar

Dr. Rupam Sharma

Dr. Gayatri Tripathi

Dr. Ashutosh D. Deo

Dr. Ananthan P.S.

Dr. Babitha Rani A.M.

Dr. Sonwane Arvind Asaram

Dr. Gouranga Biswas

Dr. K. Syamala

Dr. Arun Sharma

Prof. (Dr.) Nazir Ah. Ganai

Dr. A. K. Singh

Dr. G. Sugumar

Dr. K. K. Lal

Dr. P.K. Sahoo

Dr. Triveni Dutt

Dr. S.D. Sawant

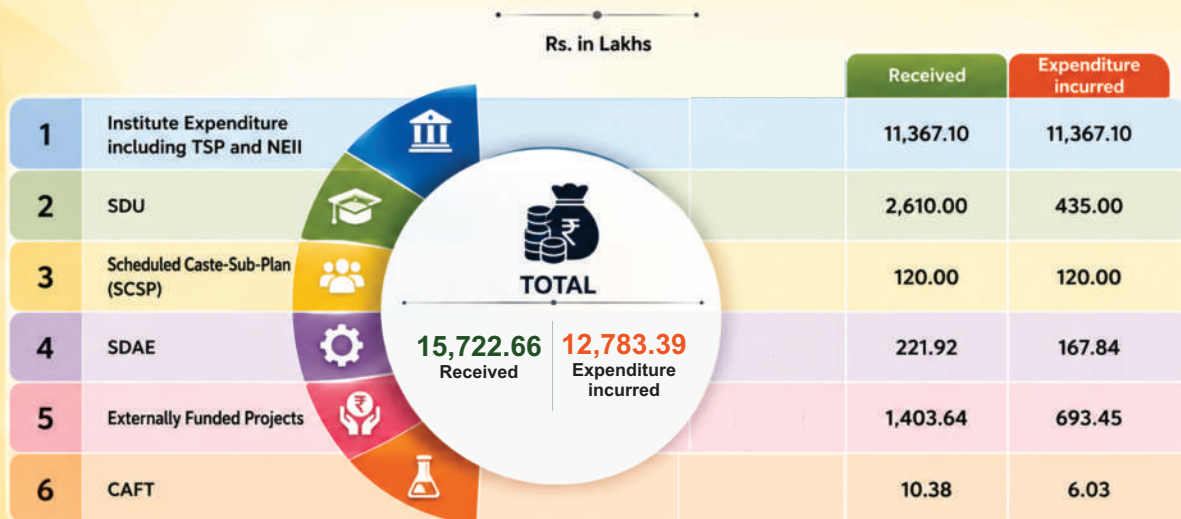
Student Member, ICAR-CIFE

Member Secretary

Joint Secretary (CIFE)



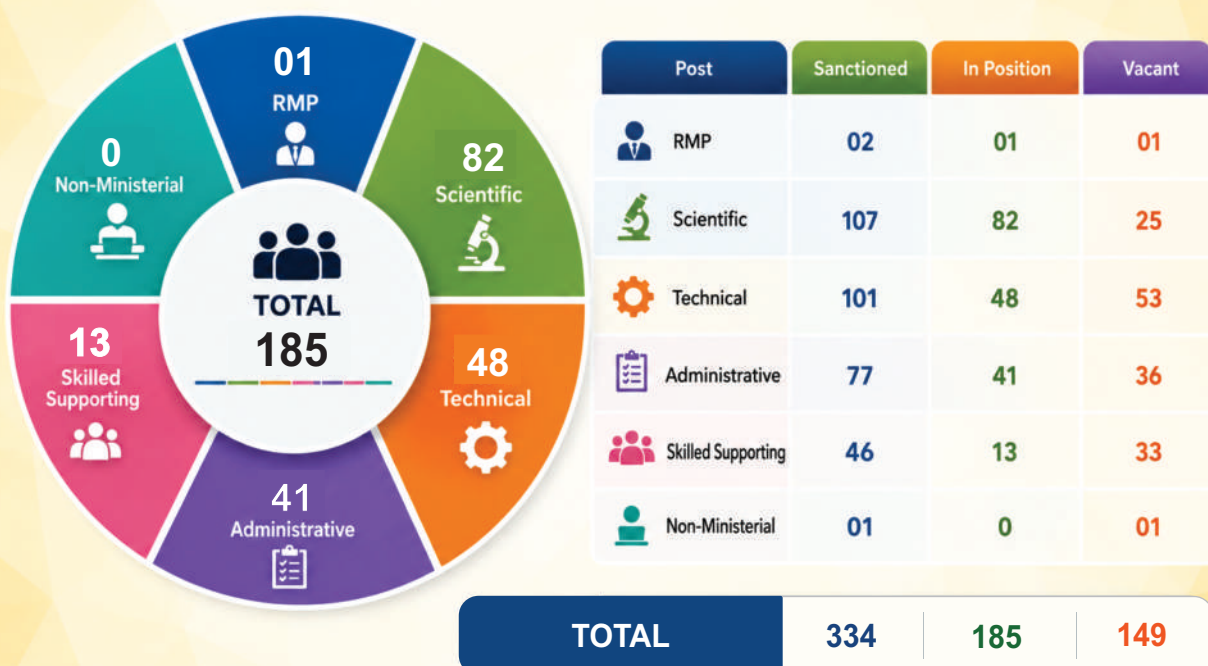
BUDGET



REVENUE GENERATION



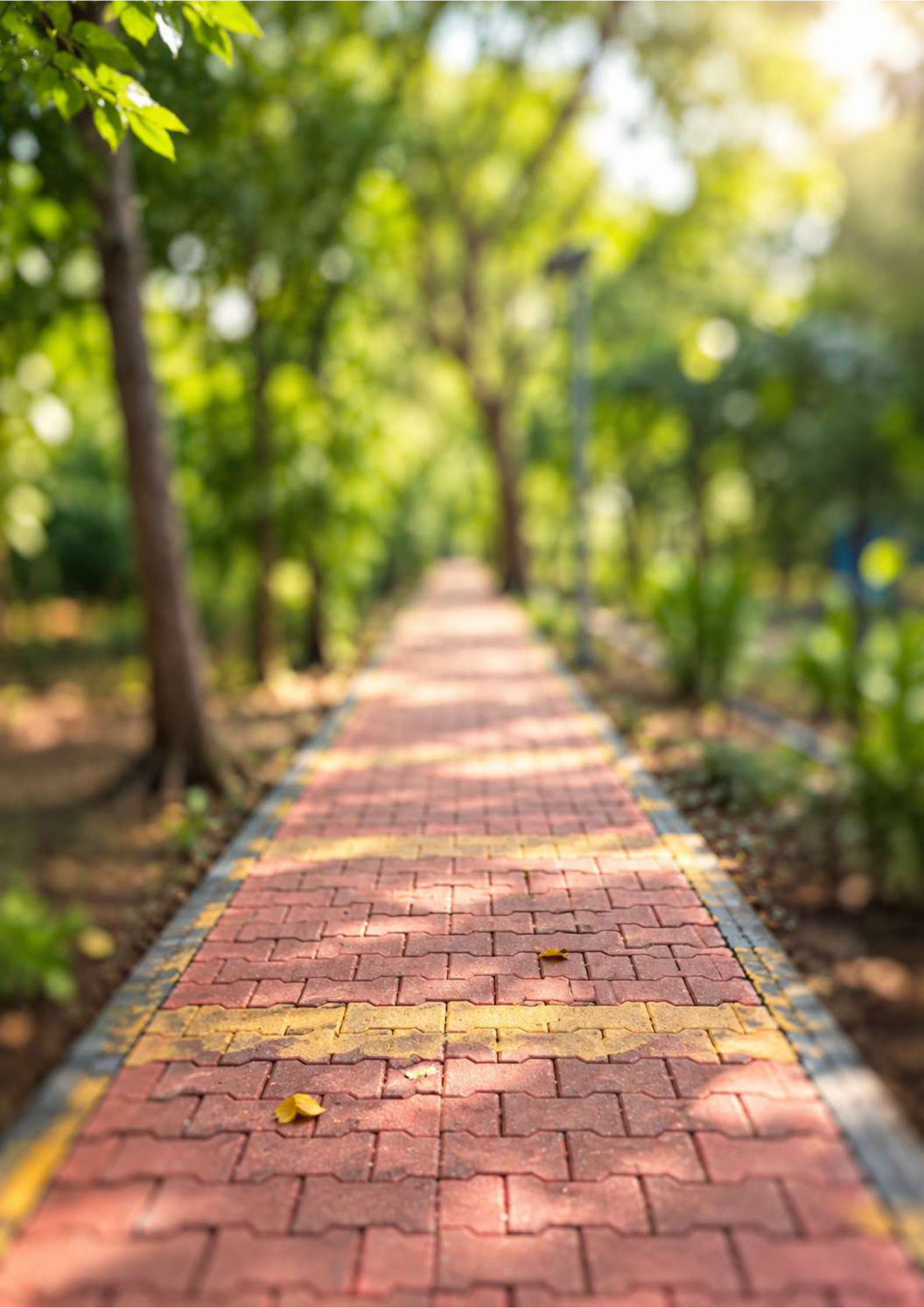
STAFF POSITION (2025)



CHAPTER - 2



ACADEMIC ACHIEVEMENTS



2.1 ENROLLMENT



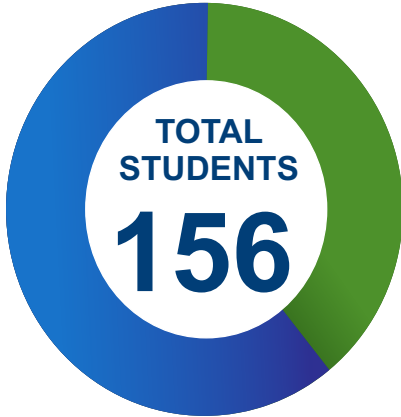
TOTAL M.F.Sc. STUDENTS

96

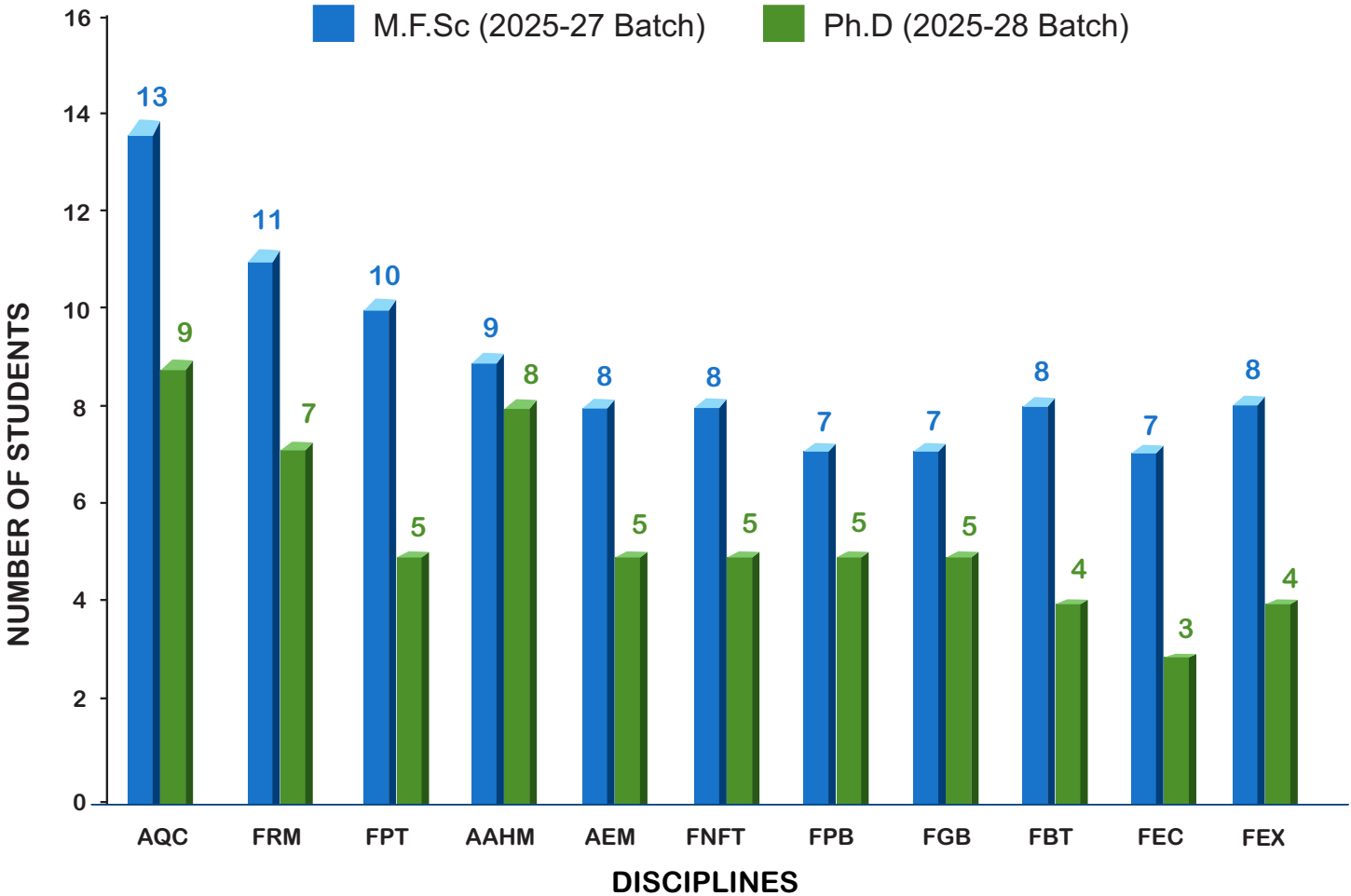


TOTAL Ph.D. STUDENTS

60



ENROLLMENT OF STUDENTS



Aquaculture	(AQC)	Fish Nutrition & Feed Technology	(FNFT)
Fisheries Resources Management	(FRM)	Fish Physiology & Biochemistry	(FPB)
Fish Processing Technology	(FPT)	Fish Genetic & Breeding	(FGB)
Aquatic Animal Health Management	(AAHM)	Fish Biotechnology	(FBT)
Aquatic Environmental Management	(AEM)	Fisheries Economics	(FEC)
Fisheries Extension	(FEX)		



LIST OF SUCCESSFUL STUDENTS DURING THE YEAR 01 JAN 2025 - 31 DEC 2025

DIVISION	M.F.Sc	Ph.D
Aquaculture (AQC)	12	9
Fisheries Resources Management (FRM)	11	10
Fish Processing Technology (FPT)	9	5
Aquatic Animal Health Management (AAHM)	9	3
Aquatic Environmental Management (AEM)	7	4
Fish Nutrition & Feed Technology (FNFT)	8	2
Fish Physiology & Biochemistry (FPB)	6	1
Fish Genetic & Breeding (FGB)	6	3
Fish Biotechnology (FBT)	8	3
Fisheries Economics (FEC)	7	4
Fisheries Extension (FEX)	8	7
TOTAL	91	51

M.F.Sc

91

Successful Students

Total Successful Students

142



Ph.D

51

Successful Students



10



2.3. Students awarded M.F.Sc and the research titles

Sr. No.	Name and Reg. No.	Title	Year	Research Guide
Aquaculture				
1.	Aarya Priya AQC-MB2-01	Effect of a flavonoid compound, quercetin on growth and captive maturation of highfin barb, <i>Oreochthys crenuoides</i> (Schäfer, 2009)	2022-24	Dr. Gouranga Biswas
2.	Anusiya P AQC-MB2-02	Effects of ionic manipulation on growth and survival of white leg shrimp, <i>Penaeus vannamei</i> (Boone. 1931) reared in inland saline- sodic water of Maharashtra	2022-24	Dr. Kapil Sukhdhane
3.	Atul Kumar Singh AQC-MB2-03	Substratum dependent reproductive dynamics of <i>Notopterus notopterus</i> (Pallas.1769) in captive rearing condition	2022-24	Dr. Debajit Sarma
4.	Bishu Das AQC-MB2-04	Assessment of phytoremediation potential of selected aquatic ornamental plants in populated aquariums	2022-24	Dr. Paramita B. Sawant
5.	Chauhan Nidhiben Haribhai AQC-MB2-05	Exogenous hormonal manipulation on oozing out of milt in male <i>Clarias magur</i> (Hamilton. 1822)	2022-24	Dr. Thongam Ibemcha Chanu
6.	Maria Jose AQC-MB2-07	Effect of LHRHa hormone pellet implantation on prematuration of <i>Anabas testudineus</i> (Bloch. 1792)	2022-24	Dr. Prem Kumar
7.	Prachurjya Das AQC-MB2-08	Evaluation of different culture media for the optimum production of <i>Tubifex tubifex</i> (Muller,1774) in recirculating rearing unit	2022-24	Dr. Upasana Sahoo
8.	Rohit Raj AQC-MB2-09	Co-culture efficiency of <i>Gracilaria foliifera</i> (Forsskal) Borgesen, 1932 with <i>Penaeus vannamei</i> (Boone. 1931) in culture ponds	2022-24	Dr. Madhuri S. Pathak
9.	S. T. Zhaiveilou AQC-MB2-10	Mapping and characterisation of low saline water and sodic soil for aquaculture development in Vidarbha region of Maharashtra	2022-24	Dr. Munil Kumar Sukham
10.	Sneha Sathyan G AQC-MB2-11	Effect of cow manure extract supplementation on growth performance and physiological responses of <i>Channa striata</i> (Bloch. 1793) and pak choi (<i>Brassica chinensis</i>) in aquaponics	2022-24	Dr. A.K.Verma
11.	Sureesh S AQC-MB2-12	Evaluation of de-oiled palm kernel meal (DPKM) based biomimetic systems in <i>Penaeus vannamei</i> (Boone. 1931) culture	2022-24	Dr. Karthireddy Syamala
12.	Vidya K AQC-MB2-13	Optimization of feeding for improved growth and gonadal maturation of the indigenous golden killifish <i>Aplocheius lineatus</i> (Valenciennes. 1846)	2022-24	Dr. Paramita B. Sawant
Fisheries Resources Management				
13.	Amin Binth Basheer FRM-MB2-01	Assessment of fish diversity in the Sardar sarovar reservoir along Maharashtra	2022-24	Dr. A.K.Jaiswar
14.	Ashpel Mano M.R FRM-MB2-02	Appraisal of Jellyfish blooms occurrence along the coast of Maharashtra	2022-24	Dr. Asha T. Landge



15.	Debashis Mohanta FRM-MB2-03	Assessment of trophic structure on Sardar sarovar reservoir along Maharashtra	2022-24	Dr. Karankumar K. Ramteke
16.	Kottapalli Nikhil FRM-MB2-05	Studies on life cycle assessment and energy use of stationary bagnet fishing system along Mumbai coastal waters	2022-24	Dr. Asha T. Landge
17.	Sangeeta Beck FRM-MB2-06	Trophic guild structure of fish community in the middle stretch of the Ulhas river, Maharashtra	2022-24	Dr. Sukham Monalisha Devi
18.	Sumanta De FRM-MB2-07	Fish assemblage and trophic guild structure of Thane creek, an Urban Ramsar site	2022-24	Dr. Shashi Bhushan
19.	Suryapraba V FRM-MB2-08	Enhancement of nutrient content of <i>Nannochloropsis sp.</i> through culture manipulation and possible transfer to bivalve	2022-24	Dr. B.B. Nayak
20.	Sushmitha B. R. FRM-MB2-09	Integrated taxonomy of fishes of the genus Garra (Hamilton, 1822) (Cyprinidae: Labeoninae) occurring in selected rivers of Maharashtra	2022-24	Dr. Sukham Monalisha Devi
21.	Treesa Maria Thomas FRM-MB2-10	A study on the reproductive biology of selected species of fishes from Sardar sarovar reservoir along Maharashtra	2022-24	Dr. A.K.Jaiswar
22.	Vineet Anand FRM-MB2-11	Trophic guild structure of pelagic fish community of Mumbai Coast, Maharashtra	2022-24	Dr. Shashi Bhushan
23.	Nandoskar Mahadev Vilas FRM-MB2-12	Evaluation of stationary bag net fishery along Alibag coast, Raigad, Maharashtra	2022-24	Dr. Karankumar Ramteke
Fish Processing Technology				
24.	Aiswarya R Krishnan FPT-MB2-01	Application of a viability PCR assay for detection of live <i>Salmonella enterica</i> in shrimps	2022-24	Dr. Manjusha L
25.	Aman Kumar Mishra FPT-MB2-02	Development of freshness prediction models for <i>Labeo rohita</i> (Hamilton, 1822) and <i>Penaeus vannamei</i> (Boone, 1931) stored in ice	2022-24	Dr. Layana P
26.	Anusree V FPT-MB2-03	Extraction of oil from tuna and its quality evaluation during storage	2022-24	Dr. Deepitha R. P.
27.	Devi Prasad Panda FPT-MB2-04	Effect of different stresses on colour, bacterioruberin and halocin production by archaea from salt fermented fish	2022-24	Dr. B.B.Nayak
28.	Murabiya Udit Maheshbhai FPT-MB2-05	Development of a solid growth medium for <i>Vibrio</i> spp. using fish waste-derived peptone	2022-24	Dr. Sanath Kumar H.
29.	Nada Fathima K FPT-MB2-06	Natural extracts-based hurdle application for enhanced microbial quality of fresh fish	2022-24	Dr. Manjusha L
30.	Pallavi Bhalavey FPT-MB2-07	Characterization of chitinases produced by selected microbes isolated from shrimp waste	2022-24	Dr. B.B.Nayak
31.	Praseed Sarkar FPT-MB2-08	Effect of brown seaweed (<i>Sargassum wightii</i>) inclusion on nutritional quality and storage stability of fish mince based product	2022-24	Dr. Hanjabam Mandakini Devi
32.	Purva Sharan FPT-MB2-09	Comparative emulsifying efficiency of different forms of fish myofibrillar protein in <i>Pangasius</i> oil -in water emulsion	2022-24	Dr. Layana P.



Fish Genetics and Breeding				
33.	Adithya B. S. FGB-MB2-01	Model development to predict the best age for the genetic selection for the growth in Maha Magur	2022-24	Dr. Shrinivas Jahageerdar
34.	Anjali Kumari FGB-MB2-03	Estimation of genetic variation in growth-related genes of selectively bred population of common carp. <i>Cyprinus carpio</i> Linnaeus, 1758)	2022-24	Dr. Mujahidkhan A. Pathan
35.	Bharathkumar K FGB-MB2-04	Effect of PLGA nanoconjugated kisspeptin on reproductive performance of <i>Labeo catla</i> (Hamilton, 1822)	2022-24	Dr. Rupam Sharma
36.	Inpent Campal E FGB-MB2-05	Evaluation of genotoxicity potential of nanoplastics in forked venus clam <i>Gafrarium divaricatum</i> (Gmelin. 1791) using cytogenetic and molecular markers	2022-24	Dr. Naresh S. Nagpure
37.	Kotagiri Shivarama Krishna FGB-MB2-06	Genetic analysis of growth and survival traits across the grow-out period of Maha Magur	2022-24	Dr. Shrinivas Jahageerdar
38.	Rajaram Hansda FGB-MB2-07	Performance evaluation of early growth traits of <i>Labeo rohita</i> (Hamilton,1822) in a cohort breeding programme	2022-24	Dr. Sunil Kumar Nayak
Fish Biotechnology				
39.	Banothu Divya FBT-MB2-01	Temperature stress induced gene expression changes in Bivalve <i>Gafrarium divaricatum</i> (Gmelin.1791)	2022-24	Dr. Manoj P. Brahmane
40.	Bipasha Nandi FBT-MB2-02	Differential protein expression analysis of selected tissues of <i>Labeo rohita</i> (Hamilton, 1822)	2022-24	Dr. Mukunda Goswami
41.	Borra Tejaswi FBT-MB2-03	Molecular characterization of RGR platform-mediated targeted transgenesis in zebrafish, <i>Danio rerio</i> (Hamilton, 1822)	2022-24	Dr. Arvind A. Sonwane
42.	Siyag Anant Dhere FBT-MB2-04	Understanding gene regulation in <i>Anabas testudineus</i> (Bloch 1972) during exposure to monocrotophos	2022-24	Dr. Kiran D. Rasal
43.	Rinu Fathima FBT-MB2-05	Isolation and characterization of myosatellite cells from <i>Clarias magur</i> (Hamilton, 1822)	2022-24	Dr. Mukunda Goswami
44.	Sajan D FBT-MB2-06	Expression profiling of the genes associated with PUFA biosynthesis and immune system in <i>Channa striata</i> (Bloch. 1793)	2022-24	Dr. Jitendra Kumar Sundaray
45.	Sushmitha K. M. FBT-MB2-07	Evaluation of selected type I microsatellite loci of <i>Clarias magur</i> for growth-relatedness	2022-24	Dr. Aparna Chaudhari
46.	Tuturanjan Gogoi FBT-MB2-08	Taxonomy and phylogeny of the family Dasyatidae using morphological and molecular markers	2022-24	Dr. Annam Pavan Kumar
Fish Nutrition and Feed Technology				
47.	Avanthika G FNFT-MB2-01	Utilization of green pea pod meal (GPM) in the diet of <i>Labeo rohita</i> (Hamilton,1822) fingerlings	2022-24	Dr. Shamna N
48.	Avvari Venkata Sai FNFT-MB2-02	Replacement of fish meal with blended protein sources in the diet of <i>Anabas testudineus</i> (Bloch, 1792) fingerlings	2022-24	Dr. Kedar Nath Mohanta



49.	Jenisha Mol J. G. FNFT-MB2-03	Nutritional evaluation of Mahua protein concentrate in the diet of <i>Labeo rohita</i> (Hamilton, 1822) fingerlings	2022-24	Dr. Manish Jayant
50.	Megha S Vinod FNFT-MB2-04	Combined effect of propylene glycol and L-carnitine on feed intake growth and survival of <i>Pangasianodon hypophthalmus</i> (Sauvage, 1878) reared at low temperature	2022-24	Dr. Ashutosh D. Deo
51.	Pankaj Kumar Singh FNFT-MB2-05	Combinatorial effect of dietary conjugated linoleic acid and quercetin on feed intake, growth and survival of <i>Pangasianodon hypophthalmus</i> (Sauvage, 1878) fingerling reared at low temperature	2022-24	Dr. Ashutosh D. Deo
52.	Patel Suraj Piyushkumar FNFT-MB2-06	Evaluation of selected ingredients and additives as attractants in the diet of <i>Heteropneustes fossilis</i> (Bloch, 1794)	2022-24	Dr. MD Aklakur
53.	Samrat Kumar Nirala FNFT-MB2-07	Combinatorial effect of selected lipid utilizing nutraceuticals on the growth performance & physio-metabolic responses of gift (<i>Oreochromis niloticus</i>) juveniles reared in inland saline water	2022-24	Dr. Parimal Sardar
54.	Simon Sandey FNFT-MB2-08	Evaluation of protein concentrate from black soldier fly larvae (BSFL) in the diet of <i>Penaeus vannamei</i> (Boone, 1931) juveniles	2022-24	Dr. Shamna N
Fish Physiology and Biochemistry				
55.	Anu Baiju FPB-MB2-01	Evaluating the effect of social hierarchies and hyperthermal stress in all-male <i>Oreochromis niloticus</i> (Linnaeus, 1758)	2022-24	Dr. Tincy Varghese
56.	Banu Dharshini M FPB-MB2-02	Eubiotic effect of mannan oligosaccharide and potassium diformate supplementation in the diet of <i>Labeo rohita</i> (Ham., 1822) fingerlings	2022-24	Dr. Subodh Gupta
57.	Dhivakar V FPB-MB2-03	Effect of Bisphenol-A on ovarian development and reproductive hormonal profile of <i>Anabas testudineus</i> (Bloch, 1792)	2022-24	Dr. Prem Kumar
58.	Haridarshan Thakur FPB-MB2-04	Effect of crowding stress on physio-metabolic and gut immune responses in <i>Labeo rohita</i> (Hamilton, 1822) fingerlings	2022-24	Dr. Dilip Kumar Singh
59.	Sonali Kumari FPB-MB2-06	Comparative evaluation of invasive and non-invasive methods against crowding stress in <i>Pangasianodon hypophthalmus</i> (Sauvage, 1878) fingerlings	2022-24	Dr. Sujata Sahoo
60.	Subashini M FPB-MB2-07	Responses of dietary folic acid on gonadal recrudescence and maturation in female <i>Anabas testudineus</i> (Bloch, 1792) exposed to hyperthermal stress	2022-24	Dr. G.H. Pailan
Aquatic Environmental Management				
61.	Ajeet Singh Dhakad AEM-MB2-01	Mapping and characterization of deep pools in seasonal river Parvati in central India using geospatial tools	2022-24	Dr. V. S. Bharti
62.	Anika Namdeo AEM-MB2-02	Assessment of biochar-nano fertilizer composite on the growth of <i>Cyprinus carpio</i> (Linnaeus, 1758) reared in inland saline aquaculture system	2022-24	Dr. V. S. Bharti



63.	Khandu Doma Bhutia AEM-MB2-03	Designing and performance evaluation of a fixed-bed column filtration system for simultaneous removal of microplastic and triclosan	2022-24	Dr. S.P.Shukla
64.	Mayuri Nag AEM-MB2-04	A study on amelioration of triclosan induced toxicity in <i>Labeo rohita</i> using microalgae <i>Spirulina (Arthrospira) platensis</i>	2022-24	Dr. Saurav Kumar
65.	Mekala Sneha AEM-MB2-05	Effects of nano fertilizers (Urea and Di Ammonium Phosphate) on haemato-physiological parameters of <i>Labeo rohita</i> (Hamilton. 1822)	2022-24	Dr. Saurav Kumar
66.	Rajiv Ranjan AEM-MB2-06	Development of filtration prototype for triclosan removal using bacterial consortia	2022-24	Dr. Kundan Kumar
67.	Routhu Urmila Devi AEM-MB2-07	Toxicity evaluation of e-waste leachate in selected freshwater microalgae and development of column filtration system for the remediation of the leachate	2022-24	Dr. S.P.Shukla
Aquatic Animal Health Management				
68.	Adarsh K AAHM-MB2-01	<i>In vitro</i> screening of selected heterotrophic bacteria against pathogenic <i>Vibrio spp.</i> prevalent in inland saline shrimp farming system	2022-24	Dr. Sreedharan K.
69.	Astha Deshmukh AAHM-MB2-02	Establishment of an <i>in vitro</i> model for the evaluation of trained immunity	2022-24	Dr. Jeena K
70.	Chandru G AAHM-MB2-03	Assessment of antibacterial efficacy of Indian Almond, <i>Terminalia catappa</i> Linn. leaf extract in <i>Anabas testudineus</i> (Bloch. 1792) against selected bacterial pathogen and nitrifying bacteria	2022-24	Dr. Arun Sharma
71.	Gulapi Bada AAHM-MB2-04	Characterization of <i>Vibrio spp.</i> associated with White Faecal Syndrome (WFS) in inland saline-farmed Pacific white shrimp. <i>Penaeus vannamei</i>	2022-24	Dr. Sreedharan K.
72.	Md Tausique Raza AAHM-MB2-05	Optimization of molecular method for screening of tilapia parvovirus (TiPV) in farmed tilapia	2022-24	Dr. Megha Kadam Bedekar
73.	Shaik Fazulun AAHM-MB2-06	Screening of emerging viral pathogen(s) infecting freshwater ornamental cyprinids in India	2022-24	Dr. Jeena K
74.	Shaik Haseena AAHM-MB2-07	Pharmacokinetics and <i>HSP 70</i> gene expression on administration of Ivermectin to common carp (<i>Cyprinus carpio</i>)	2022-24	Dr. Arun Sharma
75.	Suraj Saha AAHM-MB2-08	Screening of infectious spleen and kidney necrosis virus (ISKNV) from susceptible fish species in Maharashtra	2022-24	Dr. Megha Kadam Bedekar
76.	Yashwee Shrivastava AAHM-MB2-09	Isolation and characterization of bacterial pathogens from freshwater farmed Asian seabass. <i>Lates calcarifer</i>	2022-24	Dr. Gayatri Tripathi
Fisheries Economics				
77.	Aatepogu Revathi FEC-MB2-01	Fish consumer behavior and drivers of fish consumption in selected fish markets of Hyderabad,Telangana	2022-24	Dr. Swadesh Prakash
78.	Angelina Gurung FEC-MB2-02	Value chain analysis of Trout culture in Sikkim	2022-24	Dr. Neha Wajahat Qureshi



79.	Benu Kumari FEC-MB2-03	Fish consumption behavior and drivers of fish consumption in Mumbai, Maharashtra	2022-24	Dr. Swadesh Prakash
80.	Mahesh Sharma FEC-MB2-04	Economic costs of shrimp diseases and development of disease prediction model using computer vision & machine learning	2022-24	Dr. Vinod Kumar Yadav
81.	Ranjana Choudhury FEC-MB2-05	Mapping and economic valuation of blue carbon potential of mangrove areas along Palghar coast, Maharashtra	2022-24	Dr. Vinod Kumar Yadav
82.	Samiran Mukherjee FEC-MB2-06	Ecosystem valuation and human development of fish farmers in east Kolkata Wetlands, a Ramsar site	2022-24	Dr. Neha Wajahat Qureshi
83.	Vinitha S FEC-MB2-07	Fish buying and consumption behaviour of consumers in Thoothukudi District of Tamil Nadu	2022-24	Dr. Ankush L. Kamble
Fisheries Extension				
84.	Divya K FEX-MB2-01	Attitude to tilapia in India: A socio-cultural inquiry	2022-24	Dr. Ananthan P. S.
85.	Khimsali Difoie FEX-MB2-02	Governance assessment of multi-level fisheries cooperatives in Assam	2022-24	Dr. Shivaji Argade
86.	Khushboo Kumari FEX-MB2-03	Governance assessment of multi-level fisheries cooperatives in Bihar	2022-24	Dr. Shivaji Argade
87.	Nitika Singh FEX-MB2-04	State bifurcation and fisheries sector: Development performance in Chhattisgarh and Madhya Pradesh	2022-24	Dr. Ananthan P. S.
88.	Pugazhenthir P FEX-MB2-05	Governance assessment of multi-level inland fisheries cooperatives in Tamil Nadu	2022-24	Dr. Shivaji Argade
89.	Sayantan Das FEX-MB2-06	Occupational hazards faced by fish and shrimp farm workers in West Bengal	2022-24	Dr. Arpita Sharma
90.	Vijendra Kumar FEX-MB2-07	Impact of cage culture on the livelihoods of fishers in the Sardar sarovar reservoir, Maharashtra	2022-24	Dr. Arpita Sharma
91.	Zayeema Karim FEX-MB2-08	State bifurcation and fisheries sector: Development performance in Jharkhand and Bihar	2022-24	Dr. Ananthan P. S.



2.4. Students awarded Ph.D degree and the theses titles

Sr. No.	Name and Reg. No.	Title	Discipline	Batch	Research Guide
1	Rathod Rajeev Hanumantrao FEX-PA7-04	Livelihood impact assessment of fisheries development programmes in Vidarbha Region (Maharashtra)	Fisheries Extension	2017-20	Dr. Arpita Sharma
2	Lekshmi S PHT-PA7-04	Development of seaweed fortified fish products with enhanced nutritional quality and stability	Post-Harvest Technology	2017-20	Dr. A.K. Balange
3	Nidhi Katre FEX-PB0-06	Development of governance quality index for assessment of reservoir fisheries governance in Madhya Pradesh	Fisheries Extension	2020-23	Dr. Arpita Sharma
4	Kanchi Bhargavi FRM-PA8-11	Impact of research, development and governance on the reservoir fisheries and fishers in Telengana	Fisheries Resources Management	2018-21	Dr. P. Krishnan
5	Jerusha S PHT-PA7-02	Occurrence of <i>Salmonella</i> -specific phages in seafood environment and their applications	Post-Harvest Technology	2017-20	Dr. Sanath Kumar H
6	Atufa Regu FEX-PA9-02	Gendered analysis of value chain and ecosystem services in Walur lake, Jammu & Kashmir	Fisheries Extension	2019-22	Dr. Ananthan P.S.
7	Girkar Milind Madhukar AEM-PA9-04	Development of column bed filtration systems for the removal of fluoride from groundwater	Aquatic Environment Management	2019-22	Dr. S.P. Shukla
8	Mohammad Ashraf Malik FPB-PB0-02	Nano-formulation of GnRH analogue for induced breeding of female <i>Labeo rohita</i> (Ham., 1822) and <i>Clarias magur</i> (Ham., 1822)	Fish Physiology and Biochemistry	2020-23	Dr. Subodh Gupta
9	Naila Majid FEX-PB0-02	Fisheries extension intensity and development in Haryana and Punjab: assessment and action plan	Fisheries Extension	2020-23	Dr. Ananthan P.S.
10	Meenu Devassykutty AQC-PA7-02	Growth, survival and stress response of juvenile silver pompano, <i>Trachinotus blochii</i> (Lacepede, 1801) fed with selected nutraceuticals	Aquaculture	2017-20	Dr. Bobby Ignatius
11	Puja Chakarborty AQC-PA9-01	Nanotechnological interventions for detoxification of priority chemical and bacterial contaminants	Aquaculture	2019-22	Dr. Kishore Kumar Krishnani
12	Shakir Ahmad Mir FEX-PA9-01	Inland shrimp aquaculture: ecological externalities and trade-off with agriculture in Haryana and Punjab	Fisheries Extension	2019-22	Dr. Ananthan P.S.
13	Khemraj Bunkar FEC-PA8-02	The interplay of economics, human development and governance in reservoir fisheries of Chambal valley	Fisheries Economics	2018-21	Dr. Ananthan P.S.
14	Gomathy V FEC-PA7-01	Market integration, the trade barriers, and substitution in global shrimp markets	Fisheries Economics	2017-20	Dr. Ananthan P.S.



15	Shyam Datta Waghmare FEC-PB0-03	Economic and environmental assessment of Tilapia - sugarcane production system in Ujjani reservoir command area, Maharashtra	Fisheries Economics	2020-23	Dr. Swadesh Prakash
16	Kunjir Santosh Narayan FEX-PA9-06	Mapping of intellectual property rights in Indian fisheries sector and innovativeness of fisheries professionals	Fisheries Extension	2019-22	Dr. Arpita Sharma
17	Shahid Gul FEC-PA9-03	Ecosystem services, Fisheries Resources management and trade-offs in river Jhelum basin	Fisheries Economics	2019-22	Dr. Swadesh Prakash
18	Sneha Surendran FGB-PA7-02	Biogenic synthesis and pharmacokinetics studies of carbon nanotubes in zebrafish <i>Danio rerio</i> (Hamilton, 1822).	Fish Genetics and Breeding	2017-20	Dr. Rupam Sharma
19	Aswathy Ashokan AEM-PA7-01	Bioprospecting of seaweeds for extraction of phlorotannins with efficacy against microbial contaminants and biofouling microorganisms	Aquatic Environment Management	2017-20	Dr. S.P. Shukla
20	Chellamanimegalai P FRM-PA9-08	Taxonomy and biochemical analysis of genera <i>Dictyota</i> and <i>Padina</i> (Dictyoaceae, Phaeophyta) along Indian coast	Fisheries Resources Management	2019-22	Dr. Geetanjali Deshmukhe
21	Sathiyannarayanan A FBT-PA8-03	Development of a synthetic peptide vector and assessment of in vitro transfection efficiency	Fish Biotechnology	2018-21	Dr. Mukunda Goswami
22	Jesna P. K. AQC-PA8-09	Investigation on ectoparasite remediation using nano/micro-encapsulated formulation in cultured fish	Aquaculture	2018-21	Dr. Basanta Kumar Das
23	Rakhi Kumari FNFT-PA8-04	Ontogeny of gastrointestinal tract and digestive enzymes during larval development and subsequent responses to diets in Striped Murrel <i>Channa striata</i> (Bloch, 1793) larvae	Fish Nutrition and Feed Technology	2018-21	Dr. K. N. Mohanta
24	Anantharaja K AQC-PA8-13	Production performance of <i>Hypselobarbus pulchellus</i> (Day, 1870) in biofloc based seed rearing system	Aquaculture	2018-21	Dr. P. Routray
25	P Ramakrishna Reddy PHT-PA8-02	Application of haloarchaea and haloarchaeal extracts in fish Preservation	Post-Harvest Technology	2018-21	Dr. B.B. Nayak
26	Rahul Das AQC-PA8-11	Evaluation of growth performance of <i>Pangasianodon hypophthalmus</i> (Sauvage, 1878) in cages using <i>vanya</i> silkworm pupae based feed	Aquaculture	2018-21	Dr. Basanta Kumar Das
27	Jeevan T. M. FRM-PA9-05	Taxonomy, phylogeny and population structure of barbs of the genus <i>Hypselobarbus</i> Bleeker 1860 (Teleostei : Cyprinidae)	Fisheries Resources Management	2019-22	Dr. A.K. Jaiswar
28	Sahina Akter FRM-PA9-07	Impact of oceanographic parameters on primary productivity and phytoplankton diversity of selected sites off Maharashtra Coast	Fisheries Resources Management	2019-22	Dr. Geetanjali Deshmukhe
29	Uday Kumar Udit AQC-PA7-12	Visceral and subcutaneous fat accumulation and its implication on gonad maturation in catla (<i>Catla</i> , <i>Catla</i> , Ham.) brood female	Aquaculture	2017-20	Dr. Samiran Nandi



30	Riya Kumari FGB-PA7-01	Development of a genotoxicity assay system for evaluation of antibiotics using <i>Danio rerio</i> (Hamilton, 1822)	Fish Genetics and Breeding	2017-20	Dr. Naresh S. Nagpure
31	Rinchen Nopu Bhutia FRM-PA7-06	Fish trophic guild and food web structure of Matla estuary, Northeastern coast of India	Fisheries Resources Management	2017-20	Dr. Geetanjali Deshmukhe
32	Sonal Suman FBT-PA8-01	Identification and characterization of pearl formation-related genes in <i>Lamellidens marginalis</i> (Lamarck, 1819)	Fish Biotechnology	2018-21	Dr. A. Pavan Kumar
33	Pradeep Kumar Singh AQC-PA9-14	Mass production and nutrient enrichment of <i>Brachionus calyciflorus</i> (Pallas, 1766) for fish larviculture	Aquaculture	2019-22	Dr. Sukham Munilkumar
34	Suman Nama FRM-PA9-06	Identification and assessment of Ichthyoplankton along the selected sites off Maharashtra	Fisheries Resources Management	2019-22	Dr. B.B. Nayak
35	Thushar P. Kumar FBT-PA7-02	Molecular characterization and localization of kisspeptin system in <i>clarias magur</i>	Fish Biotechnology	2017-20	Dr. Aparna Chaudhari
36	Pritam Tripathy FEC-PA8-01	Growth Organizational structure Institutional support and development strategies for shrimp farming in Odisha	Fisheries Economics	2018-21	Dr. Swadesh Prakash
37	Niti Sharma FGB-PA8-02	Metagenomic study on microbial community of Brahmaputra river system	Fish Genetics and Breeding	2018-21	Dr. Basanta Kumar Das
38	Silpa S FRM-PB0-10	A study on diversity of species of family synodontidae and stock structure of <i>saurya lessepsianus</i> Russel, Golani & Tikochinski, 2015 of indian waters	Fisheries Resources Management	2020-23	Dr. A.K. Jaiswar
39	Kapparapu Sai Susmitha Bhargavi FEX-PB1-01	Risk assessment and management for sustainable shrimp farming - an empirical study	Fisheries Extension	2021-24	Dr. M. Kumaran
40	Arpit Acharya AAH-PB0-03	Characterization and expression of globin genes in <i>Labeo catla</i> and their regulation in response to stress	Aquatic Animal Health Management	2020-23	Dr. Gayatri Tripathi
41	Shahana S FRM-PB0-04	Stock characterisation of crescent Perch, <i>Terapon Jarbua</i> (Forsskal, 1775) along the Indian coast	Fisheries Resources Management	2020-23	Dr. Shashi Bhushan
42	Arabinda Das AQC-PB0-08	Propagation of the Indian spiny eel, <i>Macrogathus Pancalus</i> (Hamilton, 1822) through environmental manipulation	Aquaculture	2020-23	Dr. Subhendu Adhikari
43	Nisha Chuphal FNFT-PB0-03	Effect of dietary arginine and tryptophan on performances of gift juveniles reared in inland saline water exposed to crowding stress	Fish Nutrition and Feed Technology	2020-23	Dr. Parimal Sardar
44	David Waikhom AAH-PB0-02	Studies on induction and regulation of innate immune memory in Tilapia, <i>Oreochromis niloticus</i>	Aquatic Animal Health Management	2020-23	Dr. Jeena K.
45	Nahida Rasheed AQC-PA9-02	Study on the interactional effects of low fish meal diet and rearing environment in rainbow trout, <i>Oncorhynchus mykiss</i> (Walbaum, 1792)	Aquaculture	2020-23	Dr. N. N. Pandey



46	Chandana Dinakaran AAH-PB0-01	Inflammatory responses in Tilapia, <i>Oreochromis niloticus</i> to Tilapia lake virus during bacterial co-infection	Aquatic Animal Health Management	2020-23	Dr. K. Pani Prasad
47	Debiprasad Kantal AEM-PB0-01	Bio concentration and physiological effects of Triclosan in <i>Clarias magur</i> (Hamilton, 1822)	Aquatic Environment Management	2020-23	Dr. Kundan Kumar
48	Ashna Shanmughan FRM-PB0-01	A study on the population structure of <i>Labeo dussumieri</i> (Valenciennes, 1842) from selected rivers of Western Ghats	Fisheries Resources Management	2020-23	Dr. A.K.Jaiswar
49	Priya Varghese AEM-PB0-02	Effect of triclosan exposure on nitrification process and bacterial diversity in sediments of Versova creek	Aquatic Environment Management	2020-23	Dr. Kundan Kumar
50	Akhila S FNT-PB0-01	Studies on lipid metabolism of GIFT reared at high ambient temperature	Fish Nutrition and Feed Technology	2020-23	Dr. Tincy Varghese
51	Soibam Ngasotter PHT-PB0-04	Preparation, Characterization and Application of Micro-and/or Nano-Sized chitin from Shrimp shell waste	Post-Harvest Technology	2020-23	Dr. K.A. Martin Xavier

2.5. XVIII Convocation ceremony on 08 March 2025

ICAR-Central Institute of Fisheries Education is recognized as a Centre of Excellence in fisheries higher education in India. It is also regarded as the only university in the world offering master's and doctoral programmes in 11 highly specialized fisheries disciplines. Over the years, the institute has developed several technologies that have contributed significantly to the growth of the fisheries sector in the country.



ICAR-CIFE celebrated its XVIII Convocation on 8 March 2025, during which degrees were awarded to 91 Master's students and 51 Ph.D scholars by the Director and Vice-Chancellor, Dr. Ravishankar C.N. The Chief Guest for the occasion was Shri George Kurian, Minister of State for Fisheries, Animal Husbandry and Dairying and Minority Affairs, Government of India. The event was also graced by Guests of Honour, Dr. Joykrushna Jena, Deputy Director General (Fisheries Science) and Prof. Nazir Ahmad Ghani,

Vice Chancellor, Sher-e-Kashmir University of Agricultural Science and Technology (SKUAST), Srinagar.

Addressing the gathering, the Chief Guest highlighted the importance of professional fisheries education in strengthening a rapidly growing sector that supports the livelihoods of nearly 28 million people across India. He noted that capture fisheries and aquaculture now contribute equally to global fish production, reflecting a major shift towards advanced aquaculture systems that emphasize water and energy conservation, genetically improved strains, efficient feed utilization, and better health management practices.



He emphasized that these developments present significant opportunities for fisheries professionals to emerge as entrepreneurs and benefit from the country's expanding start-up ecosystem. He further stated that ICAR-CIFE, along with other ICAR fisheries institutes and agricultural universities, has developed several advanced



technologies with strong potential for enterprise development. He appreciated ICAR-CIFE's efforts in promoting student entrepreneurship, which can contribute to transforming India into a knowledge-based economy and achieving the vision of "Viksit Bharat" by 2047. The fisheries sector contributes nearly 1.2% to India's GDP, while seafood exports during 2023–24 reached Rs. 60,523.89 crore, with exports to 132 countries. The Government of India's *Pradhan Mantri Matsya Sampada Yojana*, launched in 2019, has supported around 32 lakh fishers and farmers across 22 States and seven Union Territories through insurance coverage. In addition, nearly seven lakh fishers received livelihood and nutritional support during lean and fishing ban periods. Continuing its focus on fisheries development, the Government launched the *Pradhan Mantri Matsya Kisan Samridhi Yojana* in 2024. As a result of these initiatives, India's per capita fish consumption has increased to 13.1 kg. The Chief Guest congratulated the graduating students, especially the medal winners, and encouraged ICAR-CIFE to continue strengthening its leadership in fisheries higher education and research.



2.5. Awards

Dr. Hiralal Chaudhuri Award (Gold Medal)

Subject / Discipline-wise Topper (2022-2024 batch)

S.No.	Discipline	Name of the student
1.	AQC	Ms. Vidya. K
2.	FRM	Ms. Amin Bintah Basheer
3.	FRM	Ms. Suryapraba V
4.	FPT	Mr. Devi Prasad Panda
5.	FGB	Ms. Adithya B.S.
6.	FBT	Ms. Borra Tejaswi
7.	FNT	Mr. Samrat Kumar Nirala
8.	FPB	Ms. Anu Baiju
9.	AEM	Ms. Anika Namdeo
10.	AAH	Ms. Yashwee Shrivastava
11.	FEC	Mr. Samiran Mukherjee
12.	FEX	Mr. Pugazhenthil P

Shri B.N. Sharma Award (Gold Medal)

Topper of Fisheries Extension Discipline (2022-24 batch)

S.No.	Discipline	Name of the student
13.	FEX	Mr. Pugazhenthil P

Shri M.A. Upare Award (Gold Medal)

Topper of Fisheries Economics Discipline (2022-2024 batch)

S.No.	Discipline	Name of the student
14.	FEC	Mr. Samiran Mukherjee

Prof. Ravindranath Kothapalli Award (Gold Medal)

Topper of AEHM Division (2022-2024 batch)

S.No.	Discipline	Name of the student
15.	AAH	Ms. Yashwee Shrivastava

Madhavprasad S. Jahageerda Award (Gold Medal)

Topper of Fish Genetics & Breeding Discipline (2022-2024 batch)

S.No.	Discipline	Name of the student
16.	FGB	Ms. Adithya B.S.

Dr. C.V. Kulkarni Award (Gold Medal)

Overall topper of 2022-2024 batch

S.No.	Discipline	Name of the student
17.	FEC	Mr. Samiran Mukherjee

Dr. S.C.Pathak Award (Gold Medal)

Overall topper most meritorious post graduate of 2022-24 batch

S.No.	Discipline	Name of the student
18.	FRM	Ms. Suryapraba V





2.6. Students awarded other National Research Fellowship

Name	Discipline	Batch	
UGC - JRF			
Benu Kumari	Fisheries Economics	2024-27	
Samrat Kumar Nirala	Fish Nutrition & Feed Technology	2024-27	
Sourya Dutta	Aquatic Animal Health Management	2025-28	
Kajal Kumari	Fish Physiology & Biochemistry	2025-28	
Ramya Veena	Aquatic Animal Health Management	2025-28	



Taniya Chandra	Fisheries Resources Management	2023-26	
DST – INSPIRE Fellowship			
Prerana	Fish Processing Technology	2023-26	
NFST Fellowship			
Na-i-sabet Dohtdong	Aquaculture Division	2023-26	

2.7. Student Placement

Name of student	Programme & discipline	Placed as (post held)	Organization
Madhurya Sharma	M.F.Sc Aquaculture	Fisheries Development Officer	Fishery Department, Govt. of Assam
Prachurya Das	M.F.Sc Aquaculture	Fisheries Development Officer	Fishery Department, Govt. of Assam
Anthony Debbarma	M.F.Sc Aquaculture	Fishery Officer	Department of Fisheries, Govt. of Tripura
Niharika Nama	M.F.Sc Aquaculture	Fishery Officer	Department of Fisheries, Govt. of Tripura
Susitharan V	Ph.D Aquaculture	Product development Executive	Gybro Animal Health Private Ltd
Ayushi Bhardwaj	Ph.D Aquaculture	Fisheries Inspector	Govt. of Chhattisgarh
Pralipta Priyanjali Panda	Ph.D Aquaculture	Assistant Fisheries Officer	Govt. of Odisha
Ashutosh Gajanan Danve	Ph.D Aquaculture	Probationary Officer	Bank of Baroda
Manoj Kumar	Ph.D Aquaculture	Technical Assistant	College of Fisheries, DRPCA, Dholi, Bihar



Jakir Hussain	Ph.D Aquaculture	Fisheries Development Officer	Govt. of Assam
Rajkumar Debarjeet Singh	Ph.D Aquaculture	Assistant Professor	Centurion University, Odisha
Kalpana Arambam	Ph.D Aquaculture	Assistant Professor	Techno India University, Tripura
Dheeran P.	Ph.D Aquaculture	Assistant Professor	APFU, Andhra Pradesh
Manjulesh Pai	Ph.D Aquaculture	Assistant Professor	College of Fisheries, Mangalore
Bidyasagar Singh	Ph.D Fisheries Resources Management	Assistant Professor	RPCAU, PUSA, Bihar
Mahendrajit Amom	Ph.D Fisheries Resources Management	Executive Assistant (Technical)	National Fisheries Development Board, Hyderabad
Nareshbhai Nathabhai Katira	Ph.D Fisheries Resources Management	Assistant Professor	CoF, Kamdhenu University Gujarat
Sumanta De	Ph.D Fisheries Resources Management	Fisheries Extension Officer	State Fisheries, West Bengal
Sahil Patel	M.F.Sc Fisheries Resources Management	Assistant Fisheries Officer	State Fisheries, Odisha
Rajesh Kumar	M.F.Sc Fisheries Resources Management	Fisheries Inspector	State Fisheries, Chhattisgarh
Deepika Koraam	Ph.D Fisheries Resources Management	Fisheries Inspector	State Fisheries, Chhattisgarh
Abhijit Mallik	Ph.D Fisheries Resources Management	TPSC Fishery Officer	State Fisheries, Tripura
Suman Nama	Ph.D Fisheries Resources Management	TPSC Fishery Officer	State Fisheries, Tripura
Pritam Das	Ph.D Fisheries Resources Management	TPSC Fishery Officer	State Fisheries, Tripura
Poonam Mazumder	M.F.Sc Fisheries Resources Management	TPSC Fishery Officer	State Fisheries, Tripura
Nirmal T	Ph.D Fisheries Resources Management	Assistant Professor	Tamil Nadu Dr. J. Jayalalithaa Fisheries University
Uday Ram Gurjar	Ph.D Fisheries Resources Management	Assistant Professor	Kamdhenu University, Gujarat
Pragati Shetty	Ph.D Fish Processing Technology	Technical Assistant	National Fisheries Development Board, Hyderabad
Sharath SP	Ph.D Fish Processing Technology	Technical Assistant	National Fisheries Development Board, Hyderabad



Praseed Sarkar	Ph.D Fish Processing Technology	Fisheries Extension Officer	State Fisheries, West Bengal
Moumita Goswamy	M.F.Sc Fish Processing Technology	Fisheries Officer, Grade 1	State Fisheries, Tripura
Abhilash Thapa	Ph.D Fisheries Economics	Assistant Professor	College of Fisheries, Dr. Rajendra Prasad Central Agricultural University, Dholi
Ram Kumar Kurmi	Ph.D Fisheries Extension	Assistant Professor	College of Fisheries, Dr. Rajendra Prasad Central Agricultural University, Dholi
Vinod Kumar	Ph.D Fisheries Extension	Fisheries Inspector	State Fisheries, Chhattisgarh
Nitika Singh	M.F.Sc Fisheries Extension	Fisheries Inspector	State Fisheries, Chhattisgarh
Sayantana Das	Ph.D Fisheries Extension	Fisheries Extension Officer	State Fisheries, West Bengal
Samiran Mukherjee	Ph.D Fisheries Economics	Fisheries Extension Officer	State Fisheries, West Bengal
Ranjana Choudhary	M.F.Sc Fisheries Economics	Fisheries Extension Officer	State Fisheries, West Bengal
Pragati Sonwani	M.F.Sc Fisheries Economics	Fisheries Inspector	State Fisheries, Chhattisgarh
Jitul Das	M.F.Sc Fisheries Economics	Fisheries Development Officer	State fisheries, Assam
Shubham Soni	Ph.D Fisheries Extension	Assistant Professor (Contractual)	College of Fishery Science, Morshi Dist Amravati, MAFSU, Nagpur
Mani Selvam	Ph.D Fisheries Economics	Assistant Inspector of Fisheries	State Fisheries, Tamil Nadu
Seenivasan P	Ph.D Fisheries Economics	Senior Researcher (Contractual)	IIT Madras, Chennai
Vignesh K	M.F.Sc Fisheries Economics	Young Professional	ICAR-CIBA, Chennai
Santhosh Kumar M	M.F.Sc Fisheries Extension	Intern Manager/Entrepreneur	MANAGE, Hyderabad
Vinitha S	M.F.Sc Fisheries Economics	Assistant Manager	Local Bank Officer, Indian Overseas Bank Kandamangalam, Villupuram
K. Sai Susmitha Bhargavi	Ph.D Fisheries Extension	Guest Faculty	College of Fisheries Narasapuram, Andhra Pradesh
Deepak Lal T S	M.F.Sc Fisheries Economics	Entrepreneur	Kochi, Kerala
Sourav Debnath	Ph.D Fisheries Extension	Fisheries Officer, Grade 1	State Fisheries, Tripura
Dinesh R.	Ph.D Fisheries Extension	Assistant Professor	Tamil Nadu Dr. J. Jayalalithaa Fisheries University
Nishant Kumar	M.F.Sc Fisheries Extension 2023-25	Senior Research Fellow	ICAR-CIFE, Mumbai
Mr. Prakash Patekar	Ph.D Fish Nutrition and Feed Technology	Assistant Professor	College of Fisheries, Central Agriculture University, Dholi, Bihar



Abhilipsa Biswal	Ph.D Fish Physiology and Biochemistry	Assistant Professor	College of Fisheries, Central Agriculture University, Dholi, Bihar
Md. Ashraf	Ph.D Fish Physiology and Biochemistry	Assistant Professor cum Junior Scientist	Fish Physiology and Biochemistry
Chandan GM	Ph.D Fish Nutrition and Feed Technology	Senior Scientist	Uday Aqua Connects, NFDB Integrated Coastal Aquaculture Facility, Mulapolam, Srikakulam Dist, Andhra Pradesh
Shivkumar	Ph.D Fish Nutrition and Feed Technology	Assistant Professor	Fisheries Research Station Undi, Andhra Pradesh Fisheries University.
Reena Halpati	Ph.D Fish Nutrition and Feed Technology	Assistant Professor	Kamdhenu University, Gujarat
Jenisha Mol	M.F.Sc Fish Nutrition and Feed Technology	Assistant Professor	St. Devasahayam Institute of Fisheries Science and Technology, Tamil Nadu
Suhas M	M.F.Sc Fish Nutrition and Feed Technology	Young Professional-I	ICAR-CIFT, Kochi
Sourav Deb Sharma	M.F.Sc Fish Nutrition and Feed Technology	Young Professional-2	ICAR CIFE, Kolkata centre
Sushila Ngairangbam	Ph.D Aquatic Animal Health Management	Assistant Professor	Kamdhenu University, Gujarat
Sanjay Rathod	Ph.D Aquatic Animal Health Management	Assistant Professor	Kamdhenu University, Gujarat
Chovatia Ravikumar	M.F.Sc Aquatic Animal Health Management	Fisheries Officer	State Government, Gujarat
Astha Deshmukh	Ph.D Aquatic Animal Health Management	Fisheries Extension Officer	State Govt., Chhattisgarh
David Waikhom	Ph.D Aquatic Animal Health Management	DBT-Research Associate	CAU, Lembucherra
Anisha V	Ph.D Aquatic Animal Health Management	ARS	ICAR-NBFGR, Lucknow
Pratapa M	Ph.D Aquatic Animal Health Management	ARS	ICAR – Mahatma Gandhi Integrated Farming Research Institute (MGIFRI), Piprakothi, Motihari
Naveen Rajeshwar	Ph.D Aquatic Animal Health Management	Assistant Professor	Nitte University, Mangaluru
Jayashri Sarjerao Shelke	Ph.D Fish Genetics and Breeding	Assistant Commissioner Fisheries (Class I)	Fisheries Department, Government of Maharashtra
Ms. Harshavarthini,	Ph.D Fish Genetics and Breeding	Sub-Inspector of Fisheries	Fisheries Department, Government of Tamil Nadu



2.8. Awards received by the students

Name of student	Award received	Details	Date
Venisza Cathy John Ph.D Scholar Aquaculture	Best MFSc Thesis Award-2022	Dr. N.R. Menon Best Post Graduate Thesis Award for the year 2022	12 July 2025
Sneha Sathyan G. Ph.D Scholar Aquaculture	Smt. Nirmala C. Kulkarni Gold Medal for M.F.Sc. Girl Student Research Award	Gold Medal for M.F.Sc. Girl Student Research Award for M.F.Sc. dissertation	06 June 2025
Dheeran P. Ph.D Scholar Aquaculture	Best Poster Presentation Award	First International Symposium on BioResources Technology held at Vijayapura, Karnataka, India	13 April 2025
Dheeran P. Ph.D Scholar Aquaculture	SAB Young Researcher Award	First International Symposium on BioResources Technology	13 April 2025
Manjulesh Pai Ph.D Scholar Aquaculture	RAAST Young Associate Fellowship Award 2025	Western Ghat Researchers Association of Agricultural Science and Technology	19 December 2025
Kamil Akamad Ph.D Scholar Aquaculture	Best Oral Presentation	ICIA, 2025 Chiang Mai, Thailand, on the Occasion Innovative Aquaculture for a Sustainable and Resilient Future. Organized by International Conference of Innovative Aquaculture (ICIA2025), Chiang Mai, Thailand	28 November 2025
Kamil Akamad Ph.D Scholar Aquaculture	Poster competition	Vigilance Awareness Week, ICAR-CIFE	28 October 2025
Guntapalli Sravani Ph.D Scholar Aquaculture	Essay Competition	Vigilance Awareness Week ICAR-CIFE	31 October 2025
Ms. Arushi Aarya Ph.D Scholar Aquaculture	Model Making Competition	National Entrepreneurship Development Workshop on Advanced Aquaculture Through Innovation Academia, Industry And Youth Synergies	7 October, 2025
Vikas Kumar Ujjania Ph.D Scholar Aquaculture	Young Researcher Award-2025	9th International Conference on Advances in Agricultural, Biological and Biodiversity Conservation for Sustainable Development (ABCD-2025)	15 November 2025
Tao Kara Ph.D Scholar Aquatic Environmental Management	Junior Scientist Award	Fisheries and Life Science Awards: 2025 Society of Fisheries and Life Sciences, Mangalore	12 September 2025
Tao Kara Aquatic Environmental Management	Best M.F.Sc Thesis Award	12th International Conference on Emerging Issues in Agricultural , Food Technology, Biological and Applied Sciences for Global Development held in Maharana Pratap University of Agricultural, Food Technology, Udaipur	17 November 2025



Shamika S. Sawant Ph.D Scholar Aquatic Environmental Management	Dr. C.V. Kulkarni International Travel Award for M.F.Sc. research work	ICAR-CIFE, Endowment Awards	14 May 2025
Rishikesh Venkatrao Kadam Ph.D Scholar Aquatic Animal Health Management	Best Paper Presentation	International Conference at College of Agricultural Science, UAS Dharwad, Karnataka	18 November 2025
Sooraj N.S. Ph.D Scholar Aquatic Animal Health Management	Best Research Paper (Oral Presentation)	International Conference on Fisheries Biotechnology' at ICAR-CIFE, Mumbai, 18-19 March 2025.	19-03-2025
David Waikhom Ph.D Scholar Aquatic Animal Health Management	Best Poster	International Conference on Fisheries Biotechnology' at ICAR-CIFE, Mumbai, 18-19 March 2025.	19 March 2025
Isha Kumari Ph.D Scholar Aquatic Animal Health Management	Best Oral Presentation	International conference on Innovations in Horticulture, Agriculture, Fisheries, and allied sciences in Sustainable Development and environment held in Goa	20-22 November 2025
Isha Kumari Ph.D Scholar Aquatic Animal Health Management	Best M.Sc. Thesis Award	International conference on Innovations in Horticulture, Agriculture, Fisheries, and allied sciences in Sustainable Development and environment held in Goa	20-22 November 2025
Dhanush C. K Ph.D Scholar Fish Processing Technology	Best Poster Award	World Antimicrobial Resistance Awareness Week (WAAW) 2025 held at ICAR-CIFE	25 November 2025
Prerana Ph.D Scholar Fish Processing Technology	Best Poster Award	World Antimicrobial Resistance Awareness Week (WAAW) 2025 held at ICAR-CIFE	25 November 2025
Akshata Thavai Ph.D Scholar Fisheries Extension	Best Poster Award	International Conference on Fisheries Biotechnology held in ICAR-CIFE	18 March 2025
Karthik Palsam Ph.D Scholar Fisheries Economics	Best Poster Award	2nd Indian Fisheries Outlook 2025 IFO event in Odisha	14 July 2025
Harshavarthini M Ph.D Scholar Fish Genetics and Breeding	Best Oral Presentation Award	International Conference on Fisheries Biotechnology, ICAR-CIFE	17-18 March 2025
Prakash Patekar Ph.D Scholar Fish Nutrition and Feed Technology	CLFMA of India Gold Medal, Citation and Cash Prize of Rs. 50,000/- Winner of the All India Essay Competition Award (Aqua)	66th National Symposium of CLFMA at Hyderabad	22 August 2025
Prakash Patekar Ph.D Scholar Fish Nutrition and Feed Technology	Best Innovative Students of the Year- 2024 (Awarded on 6th June 2025) of CIFE, Mumbai	Annual Day of ICAR-CIFE	06 June 2025

Megha S Vinod Ph.D Scholar Fish Nutrition and Feed Technology	Second prize in Model Presentation	By Falcon Feeds, On National Workshop on Empowering Student Entrepreneurship and Innovations in Aquafeed Industry	27 November 2025
Shreyasi Tanya M.F.Sc. Fish Physiology & Biochemistry	Dr. K.V. Devaraj Award Best Fisheries Graduate of India	From Shri Gokulananda Mallik on the occasion of 2 nd Indian Fisheries Outlook (IFO) held at College of Fisheries, OUAT, Orissa	12-14 July 2025
Madhulika Ph.D Scholar Fish Physiology & Biochemistry	Young Scientist in Fisheries Science Overall contribution in the field of Fish Physiology & biochemistry	12th International Conference on Emerging issues in Agricultural Food Technology, Biological & Applied Sciences For Global Development Organised by College of Dairy and Food Technology, Maharana Pratap University of Agriculture and technology, Udaipur	15-17 November 2025
Dhivakar V Ph.D Scholar Fish Physiology & Biochemistry	Best Prototype- FISHATHON 1.0	1st Indian Fisheries Students Innovation & Startup Conference 2025	14 March 2025
Saiprasad Bhusare Ph.D Scholar Fish Nutrition and Feed Technology	Best Paper/ Oral Presentation Award	11th International Conference on Aquaculture and Marine Biology. Organized by Conference Mind	27-28 October 2025
Saiprasad Bhusare Ph.D Scholar Fish Nutrition and Feed Technology	Best Poster Presentation Award	12th International Conference on Agriculture & Veterinary: Transformative Approach, Research & Innovations Forum (ICAVRI-2025 at Goa	16-18 November 2025
Saiprasad Bhusare Ph.D Scholar Fish Nutrition and Feed Technology	Best Poster Presentation Award	International Conference on Innovations in Horticulture, Agriculture, Veterinary, Fisheries and Allied Sciences for Sustainable Development & Environment (IHASE-2025) at Goa	20-22 November 2025
Saiprasad Bhusare Ph.D Scholar Fish Nutrition and Feed Technology	Best Poster Presentation Award	International Conference on Agricultural Resurgence Organized by ASCI - Agriculture Skill Council of India, Govt. of India and etc. at Moradabad	13-15 December 2025
Simon Sandey M.F.Sc. Fish Nutrition and Feed Technology	Best Oral Presentation Award	2nd Indian Fisheries Outlook 2025 on Envisaging Blue Transformation in Indian Fisheries and Aquaculture at College of Fisheries, OUAT, Rangailunda, Berhampur, India	12-14 July 2025
Jebarson Solomon B Ph.D Scholar Fish Physiology & Biochemistry	Best Oral Presentation Award	14th Asian Fisheries and Aquaculture Forum held at New Delhi	12-15 February 2025
Bhuvaneshwaran T Ph.D Scholar Fish Nutrition and Feed Technology	Best Oral Presentation Award	14th Asian Fisheries and Aquaculture Forum held at New Delhi	12-15 February 2025
Akhila S Ph.D Scholar Fish Nutrition and Feed Technology	Best Oral Presentation Award	14th Asian Fisheries and Aquaculture Forum held at New Delhi	12-15 February 2025
Dhivakar V Ph.D Scholar Fish Physiology & Biochemistry	Best Poster Presentation Award	National Workshop on Empowering Student Entrepreneurship and Innovation in Aquafeed Industries held organized by ICAR-CIFE	27 November 2025



Anvita Sreemathi M.F.Sc. Fish Nutrition and Feed Technology	Best Poster Presentation Award	VII National Convention and Annual Conference of National Academy of Veterinary Nutrition and Animal Welfare	16-17 October, 2025
Dhivakar V Ph.D Scholar Fish Physiology & Biochemistry	Best Poster	1st Indian Fisheries Students Innovation & Startup Conference 2025	14 March 2025
Dhivakar V Ph.D Scholar Fish Physiology & Biochemistry	Best Poster	Empowering Student Entrepreneurship and Innovations in Aquafeed Industry on 27 November 2025	22 November 2025
Sushmitha B.R. M.F.Sc. Fisheries Resources Management	Best M.F.Sc. Thesis	International Conference on Sustainable Innovations in Agriculture, Veterinary and Allied Sciences, SIAVAS-2025, University of Agricultural Sciences (UAS), Raichur, Karnataka	31 December 2025
Savaliya Bhautik Dilipbhai Ph.D Aquatic Environmental Management	Best Paper Presentation	UAS Dharwad, Karnataka	18 November 2025

2.9. Overseas Visit by Students

Name of the student	Name of the institute/country visited	Date	Purpose of visit	Funded by
Vijendra Kumar Samiran Mukherjee Dinesh R Seenivasan P Fisheries Extension, Economics and Statistics Division	Global Conference on Gender in Aquaculture and Fisheries GAF-9, AIT, Bangkok	1-3 October 2025	Conference	GAF



CHAPTER - 3



RESEARCH ACHIEVEMENTS



INSTITUTIONAL PROJECTS

Sl. No.	NAME OF PROJECT
1.	Amelioration of inland saline water for aquaculture use in Maharashtra
2.	Role of exogenous hormonal manipulation to elucidate possible environmental-endocrine relation in breeding performance and mating behaviour of <i>Clarias magur</i>
3.	Performance evaluation of <i>Channa striata</i> during fry rearing phase using bioaugmentation technique in zero/minimal water exchange system
4.	Propagation and utilisation of red seaweed, <i>Gracilaria</i> spp. for sustainable shrimp aquaculture
5.	Study on determination of air purification capacity in ornamental plants
6.	Risk assessment of e-waste leachates to aquatic microalgae and fish under climate change scenario and developing potential remediation approach
7.	Application of heterologous prime and boost strategies for augmentation of immunoprophylaxis in Nile tilapia, <i>Oreochromis niloticus</i>
8.	Development of nano-fertilizer enriched biochar and its effect on water productivity, fish growth and GHGs emission in aquaculture
9.	Toxicogenomic responses of microplastics in intertidal bivalve <i>Gafrarium divaricatum</i> (Gmelin, 1791)
10.	Genetic improvement of growth and breeding efficiency of <i>Clarias magur</i> through selective breeding
11.	Designing optimum cohort breeding programme for mass selection of IMC
12.	Comparative evaluation of carbohydrate-based prebiotics for enhancing gut eubiosis in fish
13.	Reproductive endocrinology and captive breeding of one-striped spiny eel, <i>Macrogathus aral</i>
14.	Evaluation of feeds for improved growth and survival of fishes during the winter season
15.	Utilization of jojoba (<i>Simmondsia chinensis</i>) and mahua (<i>Madhuca indica</i>) cake/ meals based products in aquafeed
16.	Enhancing physiological and metabolic adaptive mechanisms of tilapia to hyper-thermal stress
17.	A novel approach to fish biowaste utilization by marine bacteria-mediated production of industrially valuable collagenases
18.	Development of molecular methods for detection and quantification of <i>Cronobacter</i> spp. of human health significance in seafood
19.	Ecological assessment and multi-metric index development for selected riverine ecosystems in Maharashtra, India
20.	India's patented technological innovations in fisheries and aquaculture
21.	Optimization of stocking density and feeding strategies in brackish water polyculture models for enhanced production
22.	Strategies for quality fish production through species combination, environmental manipulation and nutritional interventions
23.	Performance effectiveness and impact assessment of selected ICAR-CIFE's technologies in Eastern and North-Eastern regions of India
24.	Evaluation of non-invasive detection methods for assessing stress response in fish
25.	Spatio-temporal distributions of inorganic pollutants in the sediments of East Kolkata wetlands, risk assessment and their mitigation measures



26.	Nutritional intervention for productivity enhancement of Asian stinging catfish (<i>Heteropneustes fossilis</i>) reared in intensified conditions
27.	Screening and evaluation of species-specific feeding stimulants and attractants for aquaculture
28.	Study on life history traits and fishery of Tor Mahseer, <i>Tor tor</i> (Hamilton, 1822) in upper and middle stretches of the Narmada River, Madhya Pradesh
29.	Evaluation of common carp (<i>Cyprinus carpio</i>) with suitable plants for sub-tropical climatic conditions in aquaponic system
30.	Development of strategies for the isolation and stage-specific markers in the shrimp microsporidian parasite, <i>Enterocytozoon hepatopenaei</i> (EHP)
31.	A study on the white faeces syndrome (WFS) in farmed <i>Penaeus vannamei</i> in inland saline areas and development of a management strategy

EXTERNALLY-FUNDED PROJECTS

Sl. No.	NAME OF PROJECT
1.	All india network project on ornamental fish breeding and culture: Technology development on captive breeding and seed production of selected indigenous ornamental fishes native to North Eastern Hill region and Western Ghats
2.	Environmental and nutritional intervention to farm white leg shrimp <i>Penaeus vannamei</i> in low saline water (LSW): a strategy for improving aquaculture production
3.	Investigations on ecological status, conservation, and enhancement of fisheries in Maharashtra part of Sardar Sarovar Reservoir
4.	Sensor based integrated vertical farming for horticultural crops and aquaponic system
5.	Characterization and utilization of sulfated polysaccharides extracted from red seaweed, <i>Gracilaria</i> spp. co-cultured with <i>Penaeus vannamei</i>
6.	Identification and comparative expression analysis of novel immune-related genes against prevalent bacterial infection and development of remedial measures in Asian seabass <i>Lates calcarifer</i>
7.	National surveillance project on aquatic animal diseases Phase-II
8.	All India network project on fish health
9.	Application of CRISPR/Cas system in molecular detection of fish and shrimp diseases
10.	Referral Laboratory – National surveillance programme for aquatic animal diseases (NSPAAD Phase II)
11.	Whole genome sequencing of <i>Labeo fimbriatus</i>
12.	Characterization of adaptive and resilient molecular responses to thermal stress in <i>Labeo rohita</i> through multi-omics approach
13.	Production and dissemination of Cohort-bred and selected seeds of Mrigal
14.	ICAR-Network program on precision agriculture (NePPA) (Precision aquaculture/small scale culture fishery for fish production)
15.	The pilot-scale demonstration of seed production of small indigenous fish species (SIS)



16.	Eco-friendly fish production using natural farming and circular economy approaches: Towards improving income and nutritional security
17.	All India network project on AMR in fisheries and livestock
18.	Development and application of recombinase polymerase amplification (RPA)-based visual detection method for zero-tolerant bacterial pathogens in commercially important seafood
19.	Technology-driven solutions for combatting ghost gear: Tackling abandoned, lost and discarded fishing gear (ALDFG) along Maharashtra coast
20.	Swachhta Action Plan (SAP) and commercial utilization of fish waste from urban fish markets
21.	Kisan Sarathi 2.0: Enhancement, operations, maintenance, and support
22.	Sustaining fisheries ecosystem in the Palk Bay region: Assessing management options, livelihoods and fishers' perspectives
23.	Agri-Drone technology demonstration project
24.	Changing dynamics of labour migration on employment, livelihoods and resource productivity patterns in indian marine fisheries sector
25.	Technical backstopping and demonstration of genetically selected <i>Clarias magur</i> (Mahamagur) breeding and aquaculture
26.	Demonstration and promotion of indigenous ornamental fisheries and aquaculture in Eastern Godavari region, Andhra Pradesh
27.	Technology demonstration of Singhi catfish culture in recirculatory aquaculture system (RAS) and entrepreneurship development in the region
28.	Genetic improvement of common carp <i>Cyprinus carpio</i> for inland saline aquaculture: Strain development for underutilized water resources
29.	Establishment of a bio-resource facility of zebrafish (<i>Danio rerio</i>): A national genetic repository for wild type and inbred Zebrafish strains

CONTRACT RESEARCH PROJECTS

Sl. No.	NAME OF PROJECT
1.	Performance evaluation of AQUALAABH in inland saline aquaculture systems
2.	Performance evaluation of microalgae derived from agro-industrial wastes for aquaculture applications
3.	A study on the algal biomass-based aquafeed on fish growth and immunological properties
4.	Toxicity evaluation of bio culture product personamedy*717 in freshwater ecosystem like algal and fish model
5.	Validation of Hi-PCR® EHP and WSSV detection and quantitation multiplex probe PCR kit (MBPCR254) developed by Hi Media Laboratories Private Limited
6.	Potency, safety, and toxicity testing of <i>Aeromonas veronii</i> inactivated vaccine
7.	Evaluation of feed additive in terms of growth performance, immune function and transportation stress mitigation in selected commercial fish species, <i>Labeo rohita</i>
8.	Effect of feeding ricebran supplemented with exogenous enzymes in carps





INSTITUTIONAL PROJECTS

3.1. AQUACULTURE DIVISION

3.1.1 Amelioration of inland saline water for aquaculture use in Maharashtra

Project Duration: 2023 - 2026

Project Code: IRC/CIFE/2023-3

Principal Investigator: Kapil Sukhdhane

Co-Principal Investigators: Debajit Sarma, Sukham Munilkumar, Thongam Ibemcha Chanu, Madhuri Pathak, Ananthan P. S.

Salinity and sodicity are major constraints to agricultural productivity and land sustainability in several semi-arid regions of Maharashtra. Continuous canal irrigation, inadequate drainage, shallow groundwater tables, and salt accumulation have contributed to the formation of extensive saline-sodic soils and inland saline-alkaline water bodies, particularly in Western Maharashtra. To assess the extent of degradation and explore alternative resource utilization, a comprehensive geo-referenced survey was conducted across affected regions of Pune, Satara, Sangli, and Kolhapur districts. The survey identified approximately 40,102 ha of saline-sodic land, with the largest affected area recorded in Sangli (14,500 ha), followed by Satara (12,450 ha), Kolhapur (9,402 ha), and Pune (3,750 ha). The study generated a valuable spatial database for identifying potential inland saline aquaculture development zones. Considering the limited agricultural utility of such degraded lands and the growing need for species suitable for saline-alkaline aquaculture, the adaptability of *Pangasianodon hypophthalmus* was evaluated under varying saline-alkaline conditions. A completely randomized design comprising freshwater and saline controls, along with four saline-alkaline treatments, was employed to assess growth, survival, and physiological responses. Fish were exposed to a constant salinity of 4 g L⁻¹ combined with alkalinity levels ranging from 200 to 500 mg L⁻¹. The results revealed significant differences among treatments. Fish reared under lower alkalinity conditions (200–300 mg L⁻¹) exhibited superior growth performance compared to those exposed to higher alkalinity levels (400–500 mg L⁻¹). Elevated alkalinity and associated increases in pH adversely affected growth and physiological performance. Digestive enzyme activities, particularly protease and amylase, declined significantly with increasing alkalinity, indicating reduced digestive efficiency under saline-alkaline stress. Higher alkalinity levels also increased the energetic demands of osmoregulation, causing fish to allocate more energy towards maintaining physiological



Site characterization and water quality monitoring of saline-alkaline waters



homeostasis rather than growth. Overall, the study demonstrated that *Pangasianodon hypophthalmus*

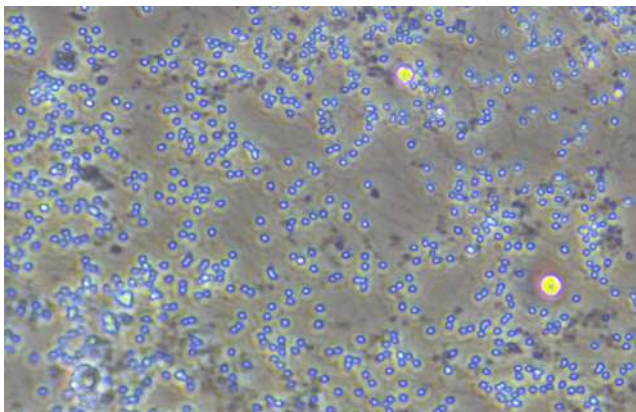
possesses considerable tolerance to moderate saline-alkaline conditions and can achieve satisfactory growth in such environments. The findings highlight its potential as a suitable candidate species for sustainable aquaculture-based utilization of inland saline-alkaline water resources in Maharashtra and other similar regions of India.



3.1.2 Role of exogenous hormonal manipulation to elucidate possible environmental-endocrine relation in breeding performance and mating behaviour of *Clarias magur*

Project Duration: 2022-2025
Project Code: IRC/CIFE/2022-3
Principal Investigator: Thongam Ibemcha Chanu
Co-Principal Investigators: S. Jahageerdar, Arun Sharma, Dhalongsai Reang, Kapil S. Sukhdhane, Babitha Rani A.M.
Technical Associates: Narendra K. Aglave, Hasan Javed

Three experiments were carried out in this study. The first experiment was conducted for 90 days to evaluate the effect of peptide hormone on synchronization of spermiation and milt production. The second experiment was conducted for 48 hrs to analyze the effect of steroid hormone on induction of mating behavior of magur. The third experiment was conducted for 48 hrs based on the output of experiments I and II with exogenous peptide and steroid hormones, either combined or separately. Enhanced captive maturation and spermiation of male fish, leading to oozing out of milt while stripping was observed. Increase in sperm quality i.e sperm volume, spermatocrite value, sperm density, etc., was observed. The mating behaviour of magur was observed for 48 hrs after the induction with steroid hormone (0.2ug/L), which started after around 12 hrs of induction.

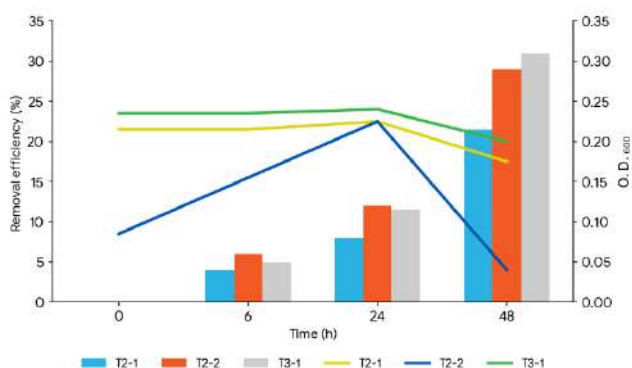


Microscopic image (100x) of Magur spermatocytes

3.1.3 Performance evaluation of *Channa striata* during fry rearing phase using bioaugmentation technique in zero/minimal, water exchange system

Project duration: 2024-27
Project code: IRC/CIFE/2024-1
Principal Investigator: Upasana Sahoo
Co-Principal Investigators: Debajit Sarma, B. B. Nayak, Babitha Rani, Saloni Shivam
Technical Associates: Satya Prakash

Bioaugmentation-based zero water exchange system in aquaculture relies on beneficial microorganisms to manage water quality. *Channa striata* exhibits a strong cannibalistic tendency, which is controlled through feeding strategies. During the rearing phase (approximately two months), fries of 2 cm are grown to fingerlings of 6–8 cm. This stage requires feeding 3–4 times daily with a 42% protein diet, resulting in heavy water usage. Under conventional hatchery practice, complete water exchange is performed twice daily to maintain water quality. By applying bioaugmentation techniques, the rearing phase of *Channa striata* can be managed with significantly reduced water usage while sustaining optimal growth conditions. To formulate a bioaugmentation agent, experiments were carried out to isolate and evaluate



Ammonia removal efficiency (%) at different time intervals

indigenous ammonia oxidizing microbes, along with the evaluation of selected commercial strains of microbes. The of isolates used were Isolate 1: *Enterobacter quasirooggenkampii*, Gram-negative, rod-shaped bacterium (GenBank Accession No. PV819344), Isolate 2: *Serratia oryzae*, Gram-negative, rod-shaped bacterium (GenBank Accession No. PV819345). Isolate 3: *Enterobacter quasirooggenkampii*, Gram-negative, rod-shaped bacterium (GenBank Accession No. PV819346); Isolate 4: *Enterobacter quasimorggenkampii*, Gram-negative, rod-shaped bacterium (GenBank Accession No. PV819347). Out of the all the isolated AOB (Ammonia Oxidizing Bacteria), Isolate 3 (*Enterobacter quasirooggenkampii*) showed the highest ammonia removal efficiency of 31.89%

and a reduction from 75 mg/L to 51.53 mg/L of TAN. During performance evaluation of *Channa striata* during fry rearing phase using bioaugmentation technique in zero/minimal, water exchange system, the best results were obtained using a combination of indigenous microbes and introduced strains, specifically *Bacillus subtilis* (1×10^{10} CFU/mL at 0.2 g/L),



Lactobacillus sporogenes (3×10^8 CFU/ml at 0.2 g/L), and AOB (2.54×10^6 CFU/ml at 10 ml/L). This formulation achieved a weight gain of 9.77 ± 0.26 g in 60 days, with an initial weight of 2.0 ± 0.2 g and a final mean body weight of 12.26 ± 0.23 g, and an FCR of 1.22 ± 0.04 . Nitrogen waste was effectively managed, with TAN at 0.86 ± 0.07 mg/L, nitrite at 0.13 ± 0.01 mg/L, and nitrate at 0.25 ± 0.009 mg/L. Physiological responses were favorable, with SOD at 74.61 ± 9.45 ng/ml, catalase at 74.61 ± 9.45 ng/mL, and cortisol at 183.31 ± 26.24 ng/mL, confirming the effectiveness of bioaugmentation in maintaining water quality and promoting healthy growth under zero water exchange conditions.

3.1.4 Propagation and utilisation of red seaweed, *Gracilaria* spp. for sustainable shrimp aquaculture

Project Duration: 2023-2025

Project Code: IRC/CIFE/2023-3

Principal Investigator: Madhuri Pathak

Co-Principal Investigators: Sukham Munilkumar, T.I. Chanu, Kapil Sukhdhane, Jeena K., Vaibhav A. Mantri

Seaweeds, as inorganic extractive species in Integrated Multi-Trophic Aquaculture (IMTA), offer sustainable solutions for coastal pollution. This study developed a co-culture strategy to address challenges in intensive shrimp farming, limited seaweed cultivation, and production efficiency. Six red seaweeds from Maharashtra coast were screened in shrimp wastewater; *Gracilaria foliifera* showed the best performance with high nutrient uptake (TAN: 64%, PO_4 : 99.87%, NO_2 : 32%, NO_3 : 13%) and yield (4.56 kg/m^3), along with improved biochemical profiles. A 96-hour trial identified the optimal stocking density of 1–3.5 g/L for effective nutrient removal. In the next phase, *G. foliifera* (3.5 g/L) was co-cultured with *Penaeus vannamei* at varying densities (20–100 shrimp/ m^2). Densities of 20 - 60 shrimp/ m^2 showed the best shrimp growth, water quality, feed efficiency, and reduced stress indicators. To field-adapt the system, tubenet and monoline

methods were tested; only monoline supported seaweed survival. Co-culture at 30, 45, and 60 days of culture (DOC) revealed that 45 DOC was optimal for seaweed biomass, nutrient uptake, shrimp growth, and stress reduction. Overall, co-culturing *P. vannamei* at 60 shrimp/ m^2 with *G. foliifera* (1–3.5 g/L), especially from 45 DOC, offers a viable, sustainable co-culture model for shrimp aquaculture.



Kappaphycus alvarezii Monoline Installation in Shrimp Pond



Land Based IMTA: Seaweed and shrimp co-cultured pond



3.1.5 Study on determination of air purification capacity in ornamental plants (Interinstitutional Project)

Project Duration: 2023-2027

Co-Principal Investigator: Paramita Banerjee Sawant

The study was conducted in two phases to evaluate the role of ornamental plants in environmental remediation and ecosystem health. In the first phase, 25 indoor ornamental plant species were assessed for their potential to mitigate indoor air pollution and improve air quality. Plants were evaluated under varying indoor pollution levels using physiological, anatomical, and biochemical parameters, including antioxidant enzyme activities, chlorophyll content, proline, phenols, flavonoids, ascorbic acid, leaf pH, relative water content, Air Pollution Tolerance Index (APTI), and carbon dioxide sequestration capacity. Measurements using NDIR pollution sensors demonstrated significant differences among species in their pollutant tolerance and air-purification efficiency. *Dypsis lutescens*, *Sansevieria trifasciata*, and *Saribus rotundifolius* exhibited superior oxygen-releasing efficiency, while *Sansevieria trifasciata*, *Dypsis lutescens*, *Chlorophytum comosum*, and *Epipremnum aureum* were identified as highly tolerant species suitable for long-term indoor air purification. Additionally, *Saribus rotundifolius*, *Dypsis lutescens*, and *Ficus elastica* showed high carbon sequestration potential. The findings provided a scientific basis for developing plant-based technologies for indoor environmental management and were disseminated through a copyright application, technical factsheet, social media outreach, and a master's thesis. The second phase focused on understanding physiological tolerance mechanisms of aquatic ornamental plants under polluted water conditions. Five freshwater aquatic ornamental plants *Vallisneria gigantea*, *Echinodorus grisebachii*, *Hygrophila difformis*, *Hydrilla verticillata*, and *Cabomba caroliniana* were evaluated in both fish-populated and non-populated aquaria. The plants significantly improved water quality by reducing total ammonia nitrogen, nitrite, and nitrate concentrations while increasing dissolved oxygen levels. Fish reared in planted aquaria exhibited enhanced growth, feed utilization, physiological health, and more intense coloration compared to those in non-planted systems. *Hygrophila difformis* emerged as the most effective phytoremediator, whereas *Echinodorus grisebachii* and *Cabomba caroliniana* demonstrated superior photosynthetic performance in fish-populated aquaria. Overall, the study highlighted the potential of ornamental plants as sustainable, nature-based solutions for improving indoor air quality and aquatic environmental health.



P1- Giant Vallisneria
(*Vallisneria gigantea*)



P2- Amazon sword plant
(*Echinodorus grisebachii*,



P3- Water wisteria
(*Hygrophila difformis*)



P4- Water thyme
(*Hydrilla verticillate*)



P5- Fanwort
(*Cabomba caroliniana*)



P1+P2+P3+P4+P5

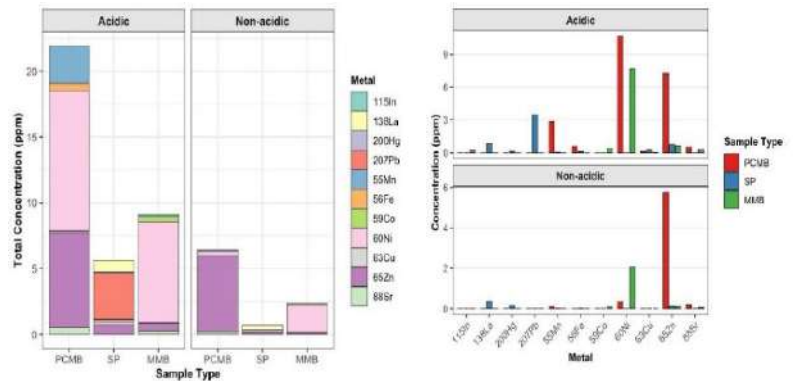


3.2. AQUATIC ENVIRONMENT & HEALTH MANAGEMENT DIVISION

3.2.1 Risk assessment of e-waste leachates to aquatic microalgae and fish under climate change scenario and developing potential remediation approach

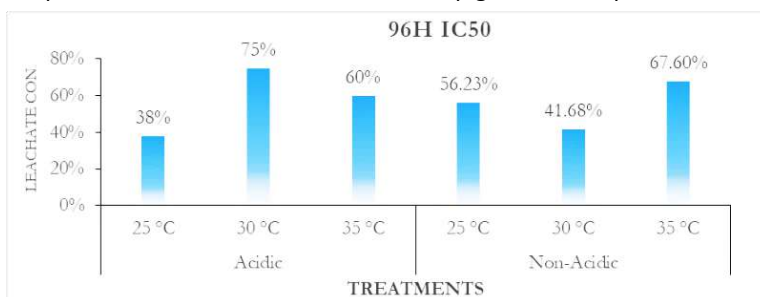
Project Duration: 2024-2027
Project Code: IRC/CIFE/2024-8
Principal Investigator: Saurav Kumar
Co-Principal Investigators: S. P. Shukla, Megha Bedekar, Kundan Kumar, Vidya Shree Bharti

This study investigates heavy metal leaching from solar, Personal Computer Mother Board (PCMB) and electronic waste, its environmental toxicity under varying conditions, and the biochemical responses of algae and screen microbes for potential bioremediation applications. A homogeneous sample of crystalline silicon solar panels (cell-to-glass ratio ~1:4 w/w) was prepared after removing frames, cables, glass, and copper strips. The cells were cut into <1 cm pieces. To simulate landfill conditions, a Toxicity Characteristic Leaching Procedure (TCLP) test was conducted under acidic and non-acidic environments using both static and dynamic conditions over 90 days. Metal concentrations in leachates were



Comparative assessment of heavy metals profiles in various e-waste leachates; Effect of pH and condition on metal leaching process from different e-waste sources

analyzed using ICP-MS for different e-waste resources. Significant levels of heavy metals—Hg, Pb, Cu, Zn, and Mn—were detected in solar panel waste leachates (Fig.1). Metal release was strongly influenced by pH, with acidic conditions greatly increasing concentrations (Fig.2). Ni was highest in acidic PCMB and mobile samples, while Pb was primarily detected in solar panel leachates. Dynamic and acidic conditions enhanced metal mobility, often by an order of magnitude. Hg showed minimal pH dependence, unlike Pb and Cu, which were prominent under acidic conditions. In a second trial, the toxicity of PCMB leachates on *Chlorella vulgaris* was evaluated at 25°C, 30°C, and 35°C. Acute exposures (96 h) showed 40–70% reduction in cell density at high leachate concentrations (75–100%) at 25°C (Fig.3). At 30°C, growth improved at lower concentrations but declined at higher doses. At 35°C, toxicity increased across all concentrations due to heat stress. Growth rate decreased and doubling time increased significantly, indicating stress-induced inhibition. Non-acidic leachates showed similar but less severe effects. Chronic exposure (14 days) revealed biochemical changes. Moderate conditions (30°C, low concentration) enhanced chlorophyll and carotenoids, indicating adaptive responses. High temperature and concentration reduced pigments and protein levels due to oxidative damage. Enzyme activity (SOD)



Growth inhibition (%) of different concentrations of PCMB leachates exposed *C. vulgaris* for 4 days

showed an initial decline followed by partial recovery, reflecting stress adaptation. In the third trial, microbial strains capable of tolerating e-waste leachates were isolated and identified using VITEK-2 automated microbial identification system as *Rhizobium radiobacter*, *Micrococcus* sp., *Ralstonia insidiosa*, *Kodamaea ohmeri*, *Candida parapsilosis*, and *Macrobacterium* sp., indicating it can be further potential for bioremediation.

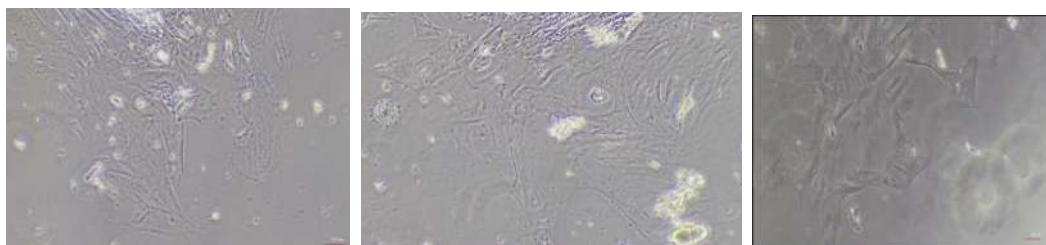
3.2.2 Application of heterologous prime and boost strategies for augmentation of immunoprophylaxis in Nile tilapia, *Oreochromis niloticus*

Project Duration: 2022-2025
Project Code: IRC/CIFE/2022- 15
Principal Investigator: Jeena K.
Co-Principal Investigators: Megha K. Bedekar, Gayatri Tripathi, Madhuri S. Pathak

The project focused on elucidating trained immunity mechanisms and evaluating their application for enhancing disease resistance in Nile tilapia (*Oreochromis niloticus*). An *in vitro* head kidney macrophage model was established and



standardized as a platform for investigating innate immune memory in teleosts. Macrophage identity was validated through IBA1 immunofluorescence, morphological characterization, and functional assays including phagocytosis, reactive oxygen species (ROS) production, and nitric oxide (NO) release following immune stimulation. The study demonstrated the induction of trained immunity-associated immune reprogramming on employing optimised training stimuli as standardized. Significant upregulation of key metabolic and epigenetic regulators, including mTOR, HIF-1 α , and HDAC, together with increased enrichment of activating histone modifications H3K27ac and H3K4me3, confirmed the establishment of trained immunity in tilapia macrophages. The mechanistic basis of immune training was further investigated using metformin-mediated inhibition, which attenuated trained immunity-associated responses and validated the involvement of metabolic pathways in innate immune memory. Building on the *in vitro* findings, an *in vivo* heterologous prime-boost vaccination strategy employing priming followed by boosting (using a training ligand and an immunogen) was developed and optimized. Multiple prime-boost intervals were evaluated to determine the temporal window required for effective immune training. Intervals of 6–13 days were identified as optimal, resulting in enhanced myeloperoxidase activity, respiratory burst, phagocytic activity, serum bactericidal activity, and transcriptional activation of trained immunity-associated genes. The optimized vaccination strategy conferred both homologous and heterologous protection. Enhanced serum bactericidal activity against *Aeromonas veronii* demonstrated the potential of broad-spectrum cross-protective immunity against phylogenetically unrelated bacterial pathogens. Challenge studies with virulent *Streptococcus agalactiae* resulted in survival rates of up to 75.8% in trained groups, with a progressive decline in protection observed at longer prime–boost intervals. The study provides mechanistic evidence for trained immunity in teleosts and establishes a scientific basis for developing broad-spectrum immunoprophylactic strategies and optimizing vaccination schedules for disease management in aquaculture.



Primary culture of tilapia head kidney macrophage



Clinical signs on challenge with *S. agalactiae* in Tilapia

3.2.3 Development of nano-fertilizer enriched biochar and its effect on water productivity, fish growth and GHGs emission in aquaculture

Project Duration: 2023-2026

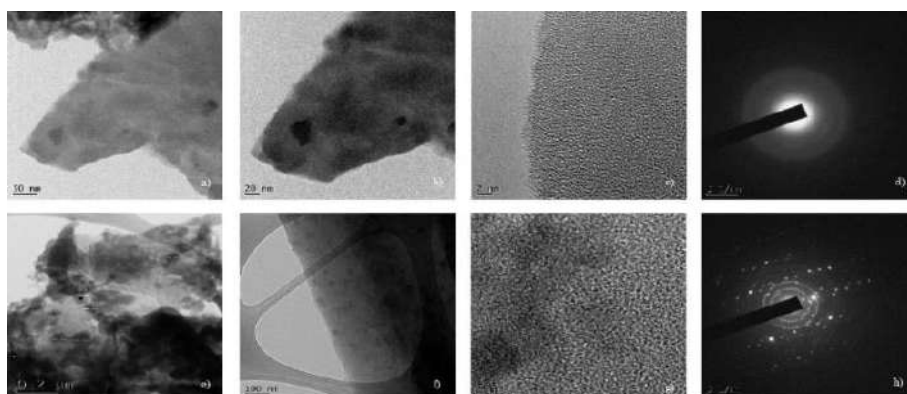
Project Code: IRC/CIFE/2023-5

Principal Investigator: Vidya Shree Bharti

Co-Principal Investigators: Rupam Sharma, A. K. Verma, Saurav Kumar, Suman Manna

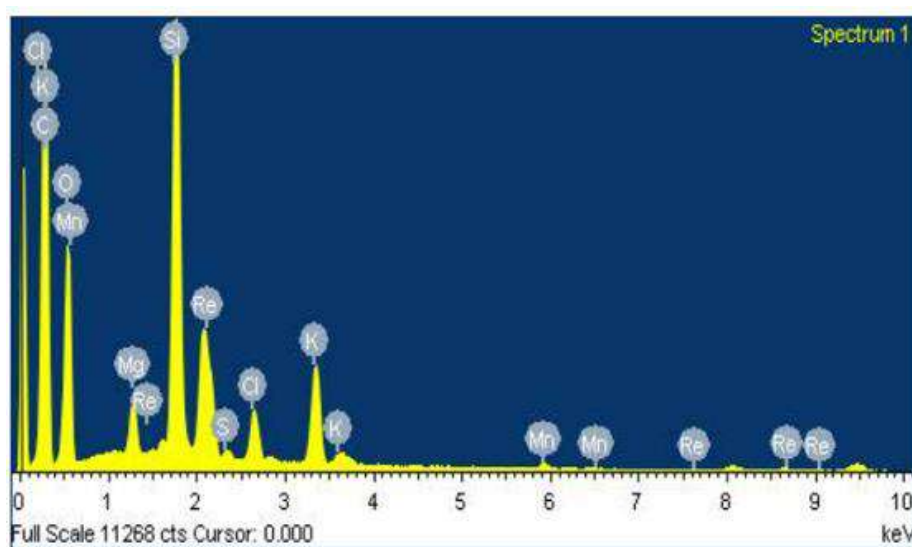
This study investigates the effect of nanofertilizer and nanofertilizer-biochar composite on pond productivity, soil-water quality and GHGs emission. In the first experiment, evaluation of the acute toxicity of nano fertilizers, specifically nano urea and nano diammonium phosphate (Nano DAP), on *Labeo rohita* (rohu) was conducted and the 96-hour LC50 values were 9.77 ppm for nano urea and 15.137 ppm for Nano DAP. Under chronic toxicity test different parameters were studied with the model organism *L. rohita*. Based on the LC50 value of the nanofertilizer, Nano DAP was selected for further study. In the 2nd experiment nano iron-biochar composite was prepared through biogenic process using *Spirulina* extract as a reducing agent. Further, impact of nanofertilizer alone and in composite form with biochar was evaluated using the model organism common carp in ISA. Different parameters such as weight gain, survival percentage, specific growth rate of fish was significantly higher in treatment Biochar-NanoDAP composite> Biochar –





a), b) and c) HR-TEM images for PSB600; e), f) and g) HR-TEM images for BCNP d) ; h) SAED results of PSB600 and BCNP

nanofertilizer composite enhances the primary productivity of the culture system,



SEM-Energy-dispersive X-ray spectroscopy (EDS) spectrum of paddy straw biochar



DAP> DAP> Nano-DAP> Control. The dose of the nanofertilizer was based on the traditional dose of nitrogen and phosphorus through urea and SSP. These findings suggest dose dependent risks of nanofertilizers to aquatic organisms. The dose of the nanofertilizer was based on the traditional dose of nitrogen and phosphorus through urea and SSP. These findings suggest dose dependent risks of nanofertilizers to aquatic organisms. The application of biochar nanofertilizer composite enhances the primary productivity of the culture system, enhances carbon content of the sediment and improves the sediment and water parameters in the common carp culture. In the third experiment, biochar nanofertilizer composite was applied for rearing the fish. In the culture, the availability of phosphorus is higher in sediment and water column where the composite of biochar and Nano-DAP is applied as soil amendment compared to fertilizer DAP and Nano-DAP alone in the culture. In biochar-nano DAP composite treatment the concentration of ammonia is less as compared to other treatment.



3.3. FISH GENETICS & BIOTECHNOLOGY DIVISION

3.3.1 Toxicogenomic responses of microplastics in intertidal bivalve *Gafrarium divaricatum* (Gmelin, 1791)

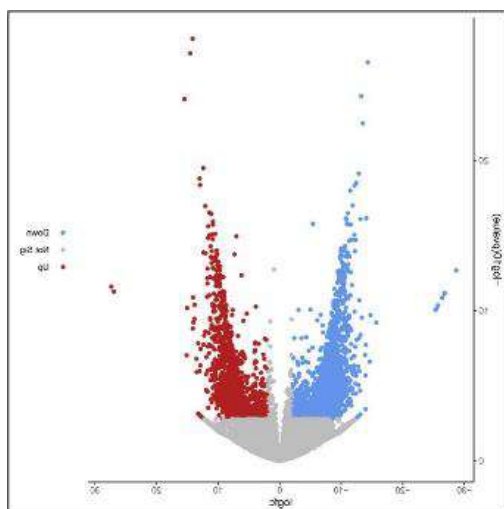
Project Duration: 2024-2026

Project Code: IRC/CIFE/2024-6

Principal Investigator: N. S. Nagpure

Co-Principal Investigators: Mukunda Goswami, Rupam Sharma, Manoj Brahmane, Kiran Rasal

Microplastics (MPs) and nanoplastics (NPs) are emerging environmental pollutants and can potentially cause negative impacts on aquatic organisms. In view of the limited ecotoxicological studies, the present investigation studied the toxicity pathways of MPs and NPs in forked venus clam, *Gafrarium divaricatum* (Gmelin 1791), using a combination of biomarkers. For transcriptome analysis, the clams were exposed to polystyrene (PS) NPs (10 mg/L for 96 h) and the gill samples were processed for RNA-seq. The *de novo* transcriptome assembly generated a total of 661,554 Trinity genes with a BUSCO completeness of 91.60%. The differential gene expression analysis revealed 531 differentially expressed genes (DEGs), of which 268 genes were upregulated, and 263 were downregulated. Based on the gene ontology enrichment analysis, the DEGs were primarily linked to molecular function categories like catalytic activity, transporter activity, oxidoreductase activity, nucleic acid binding, molecular function regulation, transmembrane transporter activity, hydrolase activity, protein kinase activity, DNA binding, and enzyme regulator activity. For genotoxicity assessment, the clams were exposed to polyamide 6,6 microfibres (PA MF), for a period of 96 h and 15 days at three different concentrations (T1-0.1 mg/L, T2-1 mg/L and T3- 10 mg/L). The comet assay revealed statistically significant ($p < 0.01$) DNA damage in a concentration-dependent manner after 96 h exposure. The cytotoxicity analysis in gills after 96 h revealed



Volcano plot for differentially expressed genes on exposure to polystyrene nanoparticles

an increase in micronuclei (MNi) frequency from zero in control to 1.84%, 3.72%, and 4.42% in T1, T2, and T3, respectively. While other nuclear abnormalities such as nucleoplasmic bridges and karyorrhexis were observed in gills from T3, the intestinal tissues remained largely unaffected. After 15 days, the MNi frequency in gills further increased to 6.10%, 11.80%, and 16.40% in T1, T2, and T3, respectively along with increase in other nuclear abnormalities. The gene expression analysis of *Cu-sod*, *cat*, *xpd*, *p53* and *hsp70*, revealed tissue- and duration-specific differential stress responses. The histopathological analysis confirmed these findings, as gill tissues showed progressive damage after 96 h leading to severe lamellar fusion, epithelial hyperplasia, oedema, hemocytic infiltration, necrosis, and lipofuscin accumulation after 15 days. Thus the acute and chronic exposure of *G. divaricatum* to PAMF induced concentration-dependent DNA damage, nuclear abnormalities, histopathological lesions and transcriptional alterations, with pronounced effects in gill tissues than intestines.

3.3.2 Genetic improvement of growth and breeding efficiency of *Clarias magur* through selective breeding

Project Duration: 2022-2027

Project Code: IRC/CIFE/2022-10

Principal Investigator: Shrinivas Jahageerdar

Co-Principal Investigators: M.A. Pathan, Sunil Kumar Nayak, Dhalongsai Reang, Shamna N, Arun Sharma, Thongam Ibemcha Chanu, Muralidhar Ande, Angom Lenin Singh

Technical Associate: Hasan Javed

This study aims to continue genetic selection for growth traits while also enhancing the reproductive performance of Maha magur. Therefore, the selection objectives and criteria will encompass productive and reproductive traits. The analysis revealed that reproductive traits were significantly influenced by spawning age and spawning year. 45 full-sibs and 22 half-sib families of Maha magur were produced, 3 mass breeding trails was carried out at Balabhadrapuram and Powarkheda. Seed produced from mass breeding were distributed to the farmers. Maha magur variety of 2313 fishes from 98 families was tagged at Balabhadrapuram and Powarkheda. The Maha magur genetic stock was exchanged between Balabhadrapuram to Powarkheda and vice versa. Feeding trials were conducted to compare the reproductive performance of natural stock and genetically selected broodstock fed with fishmeal (FM) and insect meal (IM) diets. Genetically



selected broodstock demonstrated significantly higher final body weight, weight gain percentage, SGR, and PER, with a lower FCR compared to natural stock ($p < 0.05$). Replacement of fish meal with insect meal did not significantly affect growth in either stock, suggesting insect meal can fully substitute fishmeal for broodstock growth. Natural broodstock exhibited significantly higher gonadosomatic index, relative fecundity, fertilisation rate, hatching rate, and larval survival than genetically selected broodstock ($p < 0.05$). Genetically selected broodstock had a higher hepatosomatic index (HSI) and absolute fecundity, indicating a growth–reproduction trade-off. Insect Meal substitution had no significant impact on reproductive indices compared to FM diets. This study indicates the optimum Arachidonic acid/ Eicosapentaenoic acid (ARA/EPA) level is 0.35 and the combination of high vegetable oil with insect meal had enhanced the reproductive performance in magur better than high fish oil with insect meal.

3.3.3 Designing optimum cohort breeding programme for mass selection of IMC

Project Duration: 2022-2025

Project Code: IRC/CIFE/2022-11

Principal Investigator: Sunil Kumar Nayak

Co-Principal Investigators: Shrinivas Jahageerda, M.A. Pathan, Dhalongsaih Reang, Angom Lenin Singh, Arun Sharma, Harsha Haridas, Shashi Bhushan

Technical Associate: Mr. Hasan Javed

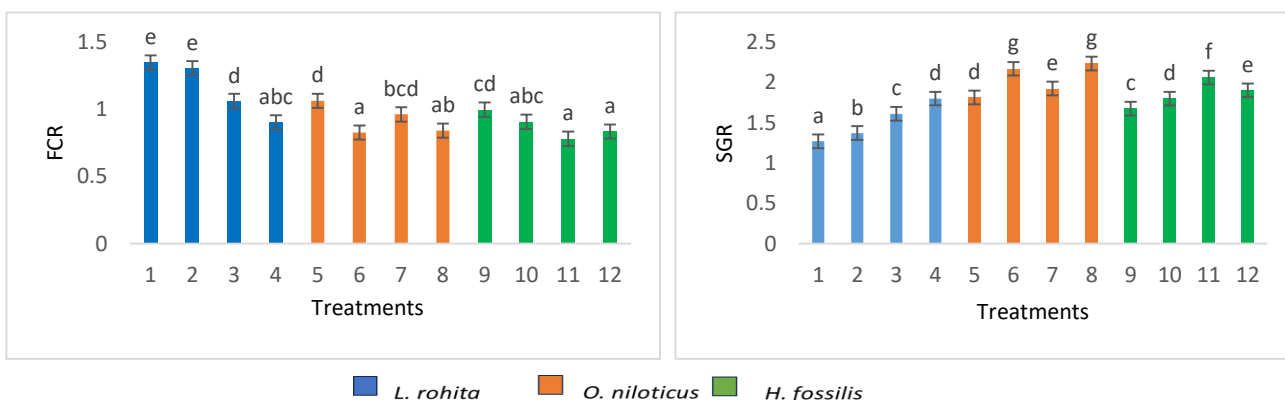
Six different germ plasm collection of *Labeo rohita* were assembled from Madhya Pradesh (MP), Maharashtra (MH), Odisha (OD) and Chhattisgarh (CG) at Powarkheda centre. Mating design was planned for cohort breeding; MP1 male X MP2 female, MP2 male X MP3 female, MP3 male X MH female, MH male X CG female, CG male X MP1 female. From the genetic stock six rohu cohorts were produced and disseminated to farmers field at Sehore, Sohagpur (Narmadapuram District), Nasrullaganj (Sehore district), Betul and Harda district of Madhya Pradesh and Balabhadrapuram (Andhra Pradesh) for performance evaluation.



3.4.1 Comparative evaluation of carbohydrate-based prebiotics for enhancing gut eubiosis in fish

Project Duration: 2024-2027
Project Code: IRC/CIFE/2024
Principal Investigator: Subodh Gupta
Co-Principal Investigators: Ashutosh D. Deo, Aparna Chaudhari, Parimal Sardar

A 60-day feeding trial was conducted on fish with different digestive tract morphologies, namely *Labeo rohita*, *Oreochromis niloticus* and *Heteropneustes fossilis*, to evaluate the effects of selected prebiotics, namely mannanoligosaccharide (MOS) and xylooligosaccharide (XOS), administered individually at 1% inclusion level and in combination at 0.5% each. Growth performance parameters indicated that the weight gain percentage (WGP) was highest in *O. niloticus* fed MOS and MOS+XOS diets, followed by the XOS-fed groups of *O. niloticus* and *H. fossilis*. Similarly, the specific growth rate (SGR) was highest in *O. niloticus* under MOS and MOS+XOS treatments, followed by the XOS treatment in *H. fossilis*. Feed Conversion Ratio (FCR) was lowest in the MOS-fed group of *O. niloticus* and in the XOS and MOS+XOS groups of *H. fossilis*, followed by the MOS+XOS group of *O. niloticus*, indicating improved feed utilization efficiency. The enhanced growth performance observed in the prebiotic-fed groups compared to the control may be associated with modulation of gut microbiota, particularly increased abundance of *Actinobacteria* and reduced abundance of *Proteobacteria*. The comparatively better growth performance of *O. niloticus* and *H. fossilis* over *L. rohita* may be attributed to differences in feeding habits and digestive physiology. Among all treatments, the MOS+XOS combination group demonstrated superior growth performance across all three fish species. Prebiotic supplementation also altered digestive enzyme activities in all treatment groups, indicating improved digestive efficiency and metabolic activity. Metagenomic analysis revealed variation in microbial species diversity among treatments, with treatment T12 exhibiting the highest number of observed microbial species. In pathogen challenge studies, the XOS and MOS+XOS supplemented groups exhibited the lowest mortality rates across all three fish species, suggesting enhanced disease resistance and immune modulation. Similar beneficial effects of MOS supplementation have been reported in previous studies; however, the synergistic effect of combined MOS and XOS supplementation. Similar result with MOS has been seen in other studies However, the combined effect of these prebiotics is not much studied yet.



Growth Performance of *Labeo rohita*, *Oreochromis niloticus* and *Heteropneustes fossilis* fingerlings fed with different experimental diets

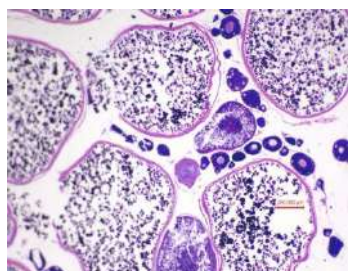
3.4.2 Reproductive endocrinology and captive breeding of one-striped spiny eel, *Macrogathus aral*

Project Duration: 2023-2026
Project Code: IRC/CIFE/2023-4
Principal Investigator: Prem Kumar
Co-Principal Investigators: Sukham Munilkumar, Rupam Sharma
Technical associates: Aruna Devi, Pritam Kumar

Macrogathus aral (peacock eel) is a commercially important food and ornamental fish widely distributed in Assam, Bihar, Chhattisgarh, North-Eastern India, and West Bengal. A comprehensive captive seed production technology has been developed, encompassing broodstock development, induced breeding, and larval rearing under controlled conditions. Considering the burrowing nature of the species, a 90-day experiment was conducted to identify the ideal substrate for broodstock development using four treatments: no substrate, sand, pond soil, and a mixture of sand and



pond soil. Fish were fed with bloodworms, tubifex worms, and frozen gel feed. The pond soil treatment resulted in superior growth and ovarian development. Broodstock maintained with pond soil exhibited higher serum vitellogenin, estradiol, and ovarian aromatase levels, along with lower serum cortisol concentrations, indicating enhanced reproductive performance and reduced stress. In captivity, peacock eels attained sexual maturity within one year at a body weight of 18–25 g. Mature males and gravid females were first observed in mid-June. Females showed a mean oocyte diameter of $1145 \pm 5 \mu\text{m}$ and a gonadosomatic index (GSI) of approximately 12%. Histological examination



Histological observation of ovary



Hatchery produced fingerlings of Peacock eel

revealed group-synchronous ovarian development. Successful induced breeding was achieved during July using mature females (22 g average body weight) and oozing males (14 g average body weight) at a sex ratio of 2:1 (male: female). Graded doses of a commercial hormone ($2.5\text{--}10 \mu\text{L g}^{-1}$ body weight) were evaluated, and $10 \mu\text{L g}^{-1}$ was found optimal. Spawning was of the prolonged type and occurred after an average latency period of 18 h. Functional fecundity was approximately 3,500 eggs per female. Fertilized eggs were adhesive, spherical, greenish, and incubated on *Pistia* roots. Fertilization and

hatching rates were about 45% and 20%, respectively. Eggs hatched within 18 h at 28°C . Newly hatched larvae measured 1.65–1.85 mm and possessed a large yolk sac. Larvae were reared in outdoor tanks with *Pistia* as shelter, fed *Artemia nauplii* from 5 to 30 days post-hatching, and gradually weaned onto micro-particulate feed. Larval survival remained low, ranging from 8–10%, indicating the need for further optimization of larval rearing protocols.

3.4.3 Evaluation of feeds for improved growth and survival of fishes during the winter season

Project Duration: 2023-26

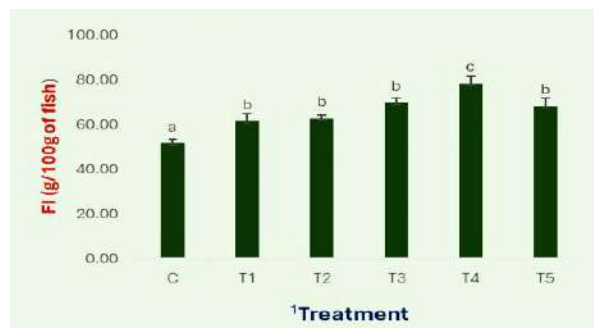
Project Code: IRC/CIFE/2023-4

Principal Investigators: Ashutosh D. Deo

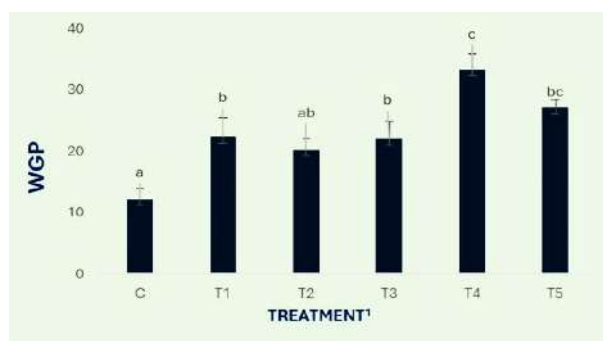
Co-Principal Investigators: Manish Jayant, Shamna N, Md. Aklakur, Subodh Gupta, Dhalongsaih Reang

This study aims to address the challenges faced by *Pangasius* juveniles (striped catfish) in northern India during winter.

During this season, these fish experience increased mortality rates and reduced growth performance, primarily due to decreased feed intake. The experiment was conducted for 8 weeks in a low-temperature Recirculatory Aquaculture System (RAS). The low temperature ($18 \pm 1^\circ\text{C}$) was maintained by an online chiller (6.0 tonnes). The flow rate was maintained at 1.6 L/min. The RAS comprises proper inlets and outlets fitted with mechanical cum biological filtration system. Six isonitrogenous (37.0%), iso-lipidic (10.0%), and isocaloric (412 kcal DE/100 g) diets with varying levels of trikatu {a herbal formulation comprising equal parts of dried ginger (Sunthi), black pepper (Kali Mirch), and long pepper (Pippali)} viz. 0, 0.125, 0.250, 0.50, 1.0 and 1.25% were prepared. The diets were denoted as C, T1, T2, T3, T4 and T5, respectively. The control diet (C) was devoid of trikatu. The feed intake was significantly ($p < 0.05$) higher in all the treatment groups compared to the control. Fish fed with 1.0% Trikatu showed highest feed intake among different treatments. Dietary trikatu supplementation significantly enhanced ($p < 0.05$) the growth rates (weight gain %, and thermal growth coefficient) in striped catfish, *Pangasianodon hypophthalmus* reared at low temperature. The T4 group, fed with 1.0% trikatu, demonstrated the highest growth rates, whereas the control group, receiving no Trikatu, exhibited the lowest growth rates. However, the growth rates did not vary in T4 and T5 group. Feed conversion ratio was significantly lower in dietary treatment groups than control ($P < 0.05$). The lowest FCR value was recorded in fish, which received 1.0% and 1.25% Trikatu, while the control group, with no Trikatu supplementation, exhibited the highest FCR values. The treatment group receiving 1.0% Trikatu (T4) showed the highest protein and lipid efficiency ratios, while the



Feed intake of *P. hypophthalmus* reared at low temperature



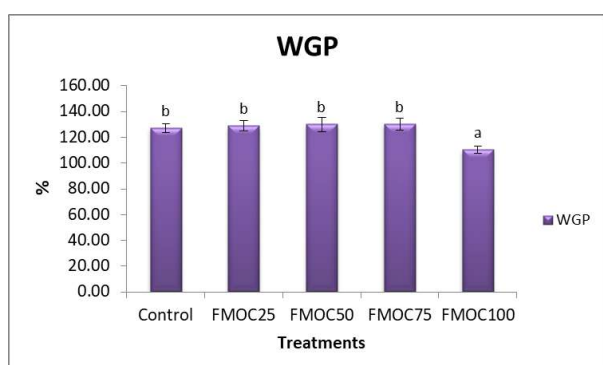
Weight gain (%) of *P. hypophthalmus* reared at low temperature



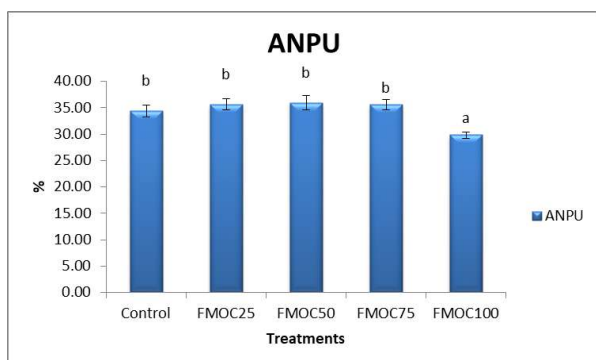
lowest values were found in the control group. The survival (%) did not differ between control and Trikatu fed groups. Digestive enzyme activities (amylase and lipase) were significantly affected ($P < 0.05$) except protease activity. Trikatu fed groups showed significantly higher lipase activities compared to control. The highest lipase activity was recorded in the T4 and T5 groups, while the most significant amylase activities were observed in T3, T4, and T5 groups. Moreover, malate dehydrogenase and lactate dehydrogenase activities were found to be significantly higher in striped catfish fed with diet supplemented with trikatu compared to the control ($P < 0.05$) under low temperature conditions. 1% trikatu supplementation is recommended to enhance feed intake and growth performance in *Pangasius* fingerlings during colder environments.

3.4.4 Utilization of jojoba (*Simmondsia chinensis*) and mahua (*Madhuca indica*) cake/ meals based products in aquafeed

Project Duration: 2022-25
Project Code: IRC/CIFE/2022-7
Principal Investigators: Manish Jayant
Co-Principal Investigators: K. N. Mohanta, Subodh Gupta, Parimal Sardar, Ashutosh D. Deo, Kiran D. Rasal, Arun Sharma and Shamna N



Effect of fermented mustard oilcake on weight gain (%) of *Labeo rohita* fingerlings



Effect of fermented mustard oilcake on apparent net protein utilization (ANPU %) of *L. rohita* fingerlings

The process for the preparation of concentrates/ isolates from jojoba and mahua oil seedcakes has been standardized at laboratory scale. Nutritional profile of jojoba protein concentrates (JPC) and jojoba protein isolates (JPI) are comparable to soybean meal/ soy protein concentrates and whole egg protein and better than cake/ meal. JPC and JPI exhibited lower anti-nutritional factors compared to the cake/meal. Soybean meal at the rate of 50% can be replaced with jojoba protein concentrates whereas complete replacement of soy protein isolates could be possible with jojoba protein isolates in the diet of rohu, *Labeo rohita* fingerlings. The process for the preparation of protein concentrates or isolates from mahua seed cake has proven to be unviable. This is primarily due to its inability to effectively reduce the major anti-nutritional factor (ANF), specifically the saponin content. Additionally, the protein content obtained from this process is significantly lower when compared to that derived from other non-edible oil seed cakes. 25% dietary soybean meal substitution with mahua protein concentrates/ isolates is possible without affecting the growth performance of rohu fingerlings. However more than 25% SM replacement with MPC negatively affected the growth rates, digestive and metabolic enzymes activities. Solid-state fermentation of mahua oil cake using the fungal, *Aspergillus niger* (MTCC 281) for 7 days at 30 °C (with inoculum of 3×10^8 CFU/mL) significantly improved the nutritional value of mahua oilcake. This process reduced saponin content by 87.50% and increased crude protein from 18.12% to 23.08%. Solid-state fermented mahua oilcake can replace 75% soybean meal in the diet of rohu, *L. rohita* fingerlings without negatively impacting growth performance, nutrient utilization, body indices, survival rates and activities of digestive and metabolic enzymes.



3.4.5 Enhancing physiological and metabolic adaptive mechanisms of Tilapia to hyper-thermal stress

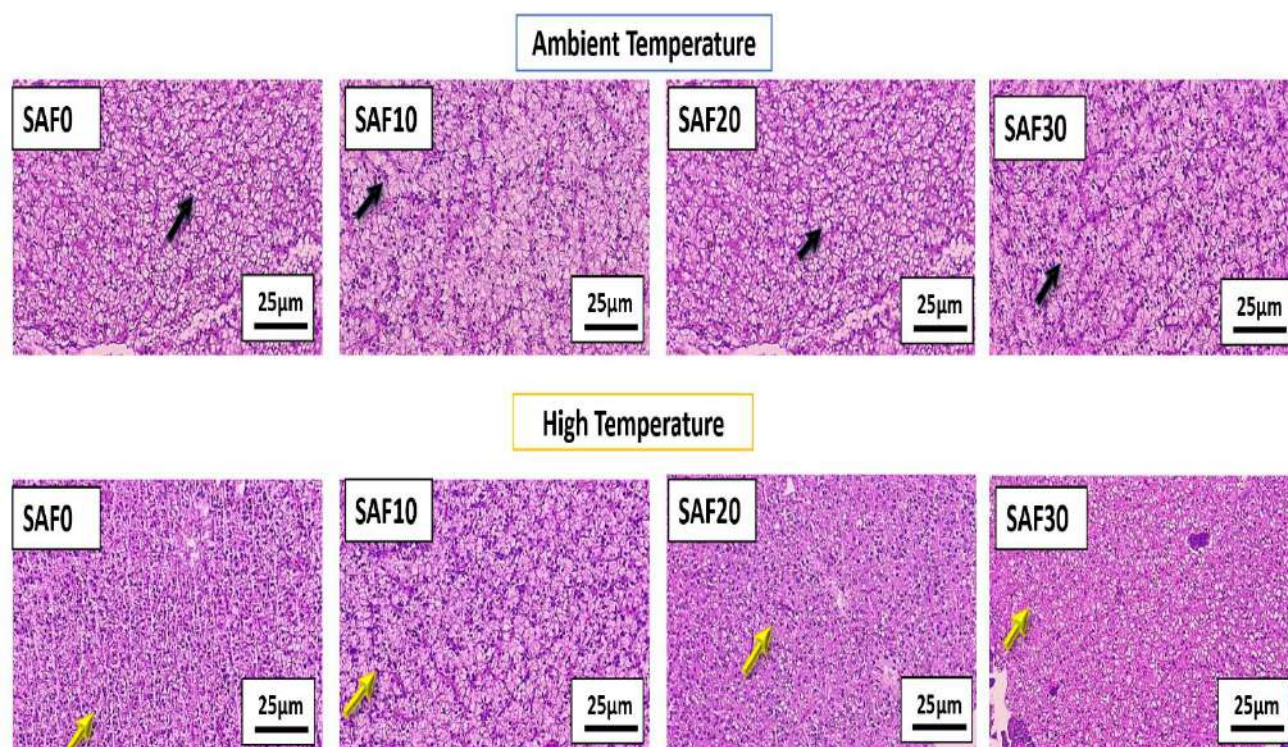
Project Duration: 2022-25

Project Code: CIFE-2022/13

Principal Investigator: Tincy Varghese

Co-Principal Investigators: Subodh Gupta, Kedar Nath Mohanta, Sikendra Kumar, Saurav Kumar, Md. Aklakur

The project has systematically addressed the challenges posed by hyperthermal stress in Genetically Improved Farmed Tilapia (GIFT), a species of global importance in aquaculture. At first, the CT_{max} (Critical Thermal Maxima) was determined using an acute thermal ramp rate of 0.5 °C per hour. Later, we evaluated the thermal stress responses through long-term exposure of 60 days to elevated water temperatures (33–36°C). This trial showed that chronic thermal stress significantly altered lipid metabolism, thereby influencing growth and stress resilience. Through controlled feeding trials, the team identified four specific dietary additives that enhance thermal tolerance, optimise lipid utilisation, and mitigate social stress during hyperthermal exposure. A novel thermo-resilient feed formulation was developed, integrating lipid remodelling principles with targeted supplementation strategies. The response parameters tested were growth, feed utilisation, lipid metabolism, fatty acid composition and primary and secondary stress responses. Specific additives for Inland saline water conditions at 10 and 15 ppt were also tested and found to be effective, broadening the feed's applicability across diverse aquaculture environments. Another strategy of environmental manipulation to enhance thermal tolerance was tested by providing an isotonic environment, but it did not yield the expected results. The optimised dietary lipid composition ensured consistent performance during thermal extremes, thereby safeguarding productivity under climate-induced stress scenarios. These findings not only advance the scientific understanding of metabolic adaptations to hyperthermia but also provide practical solutions for farmers facing rising water temperatures.



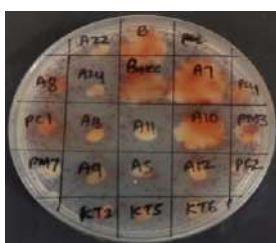
Effect of high temperature and altered dietary saturated fat composition on liver lipid deposition of GIFT

3.5. FISHERIES RESOURCES HARVEST & POST-HARVEST MANAGEMENT DIVISION

3.5.1 A novel approach to fish biowaste utilization by marine bacteria-mediated production of industrially valuable collagenases

Project Duration: 2024-2027
Project Code: IRC/CIFE/2024-9
Principal Investigator: Sanath Kumar H.
Co-Principal Investigators: B. B. Nayak, Manjusha L.

A total of 33 scale-degrading bacteria were isolated from seawater, out of which three strains were selected for detailed study. The selected strains were *Bacillus subtilis* (A10), *Bacillus safensis* (A12), and *Stutzerimonas stutzeri* (B1). Whole genome sequencing of these strains was carried out and analyzed. Primers targeting putative collagenase-encoding genes were designed. These genes were amplified using PCR and cloned into an expression vector. Collagenase production was evaluated using the azocoll assay with culture supernatants grown in peptone broth containing fish scales. Strain A10 showed the highest azocoll degradation over 6 hours of incubation. Strains A12 and B1 also exhibited significant azocoll degradation, indicating collagenase activity. Proteases from strain A10 were partially purified, confirming collagenase activity, and future work will focus on optimizing production and recombinant expression in *E. coli*.



Collagenase activity on agar plate

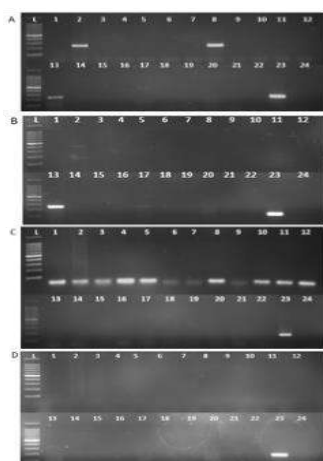


Azocoll-Enzyme Assay



3.5.2 Development of molecular methods for detection and quantification of *Cronobacter* spp. of human health significance in seafood

Project Duration: 2022-2025
Project Code: IRC/CIFE/2022-18
Principal Investigator: Manjusha L.
Co-Principal Investigators: B. B. Nayak, Sanath Kumar H.



Specificity of designed primers determined with *Cronobacter* and non-*Cronobacter* strains

A. *rpo II* (231 bp); B. *glu II* (114 bp); C. *wzz II* (182 bp);

A molecular detection method was developed for the specific identification of *Cronobacter sakazakii* in market shellfish samples. The method was based on PCR and real-time PCR assays targeting genes unique to *Cronobacter sakazakii*. The developed assays were evaluated for their specificity and sensitivity using both pure bacterial cultures and artificially inoculated shrimp meat samples. Specificity studies demonstrated that amplification occurred exclusively with *Cronobacter sakazakii* DNA, while no amplification was observed with non-*Cronobacter* or closely related bacterial species, confirming the high specificity of the method. Sensitivity analysis further revealed that the assay was capable of detecting as few as 100 bacterial cells in shrimp meat samples. These findings indicate that the developed molecular method is highly sensitive and reliable for the detection of *Cronobacter sakazakii*. This will be eventually useful in devising control measures to prevent seafood contamination and frame regulatory requirements for this pathogen in commercially important seafood. The study also isolated *C. sakazakii* from fresh and dried seafood, and the isolates were characterized. Virulence PCR *Cronobacter* sp. showed the presence of genes such as *ompA*, *ompX* coding for outer membrane proteins, *flid* coding for flagellar protein and *cpa* coding for plasminogen activator. All isolates tested positive for the genes *ompA*, *ompX I* and *flid*, whereas *cpa* was found to be present in 40% of the isolates. These results indicate the pathogenic potential of *Cronobacter sakazakii* and *C. malonaticus* isolates of seafood. The complete genome sequence of seafood-associated *Cronobacter sakazakii* D5 isolated from dried marine shrimp was analyzed and the whole-genome shotgun project is deposited at NCBI GenBank under the accession number JBNFPW000000000.



3.5.3 Ecological assessment and multi-metric index development for selected riverine ecosystems in Maharashtra, India

Project duration: 2024-2027
Project Code: IRC/CIFE/2024-5
Principal Investigator: Sukham Monalisha Devi
Co-Principal Investigators: Asha Landge, Sangeeta Mandal, Shivaji Argade, Karankumar Ramteke, Shobha Rawat, Dayal Devadas, Abuthagir Ibrahim

This study reports the first documented occurrence of the invasive Trimac cichlid, *Amphilophus trimaculatus* (Günther, 1867) (Cichliformes: Cichlidae), from the Ulhas River near Karjat, Maharashtra, India. Native to Central America, the species distribution extends from Laguna Coyuca in Mexico through El Salvador to the Río Lempa in Guatemala. A total of 59 fish species, belonging to 11 orders, 21 families and 42 genera, were identified. The most common fish orders and families were Cypriniformes (n = 28), followed by Siluriformes (n = 10), Anabantiformes (n = 5), Cyprinidae (n = 19) and Danionidae (n = 7), respectively. According to the IUCN Red List of Threatened Species, 48 species fall under Least Concern, 4 are Vulnerable, 3 are Data Deficient, 3 are Near Threatened and one is Endangered. Seven exotic species were reported, viz., *Amphilophus trimaculatus*, *Oreochromis mossambicus*, *Oreochromis niloticus*, *Cyprinus carpio*, *Clarias gariepinus*, *Pterygoplichthys pardalis* and *Pangasianodon hypophthalmus*. Spatial variation in species composition was evident, with the highest diversity recorded at S5 (Apati, Ambarnath), likely reflecting greater habitat heterogeneity and reduced anthropogenic pressure. This study evaluated seasonal variations in water quality, chlorophyll concentrations, and plankton diversity in the Ulhas River, Maharashtra, from December 2024 to June 2025. Air and water temperatures ranged from 21–34°C and 23–35°C, respectively, while dissolved oxygen varied between 2.6–20.0 mg/L. Nutrient concentrations showed seasonal fluctuations, indicating varying levels of enrichment. Chlorophyll-a, b, and c concentrations also varied seasonally, reflecting changes in primary productivity. A total of 60 phytoplankton genera and 12 zooplankton genera were recorded, with Chlorophyta and Rotifera being dominant groups. Phytoplankton diversity was highest at Karjat (Site-3) during the pre-monsoon season, where algal blooms were observed in March and April, likely linked to nutrient loading from anthropogenic activities. Despite developmental pressures, the Ulhas River supports a moderately healthy plankton community, emphasizing the need for regular ecological monitoring and integrated river management.



3.6. FISHERIES ECONOMICS, EXTENSION & STATISTICS DIVISION

3.6.1 India's patented technological innovations in fisheries and aquaculture

Project Duration: 2022-2025
Project Code: IRC/CIFE/2024-1
Principal Investigator: Arpita Sharma
Co-Principal Investigators: Vinod K. Yadav

This study highlights key trends and the evolving innovation landscape within the fisheries and aquaculture sector. The sector has demonstrated growing engagement with various forms of IPRs notably patents, industrial designs, trademarks, and copyrights as revealed through a detailed analysis covering data from 1913 onwards. In the area of patents, the majority (53.54%) were granted in fish processing technology, followed by aquaculture (33.72%) and fishing technology (12.74%). Notably, foreign applicants accounted for 51.41% of the total patents, underscoring international interest and investment in Indian fisheries innovations. Contribution of fisheries patents to India's overall patent portfolio has been 0.13% over the last decade. For industrial designs, aquaculture dominated with 67.24% of registrations. Unlike patents, Indian applicants constituted 93.10% of total design registrations, suggesting strong domestic engagement in product design. Nonetheless, fisheries related designs contributed 0.04% to India's total registered designs in the past decade. In terms of trademarks, 92.58% were filed by Indian applicants, reflecting robust branding activity within the country. Most trademarks (61.72%) were related to fish processing technology. Fisheries related trademarks represented 0.01% of India's total over the past decade. In the copyrights domain, the sector registered highest share in literary and dramatic works (51.52%), followed by artistic works (31.82%) and computer softwares (16.67%). These copyrights accounted for 0.07% of the national total over the last ten years. While these contributions to the national IPR portfolio remain modest, they reflect a steady upward trajectory, particularly in patents. A broader analysis of IPR trends across agricultural, veterinary, dairy, and fisheries sectors revealed that agriculture leads in patent growth, while veterinary and dairy show fluctuations. Fisheries sector displays consistent growth, as confirmed by linear regression models and ARIMA forecasts, which project an average annual growth rate of 13.42% across the combined sectors. Sector specific forecasts have also been conducted to support strategic planning and innovation management along with development of IPR databases.



3.7. KAKINADA CENTRE

3.7.1 Optimization of stocking density and feeding strategies in brackishwater polyculture models for enhanced production

Project Duration: 2024-27

Project Code: IRC/CIFE/2024/3

Principal Investigator: Murlidhar Ande

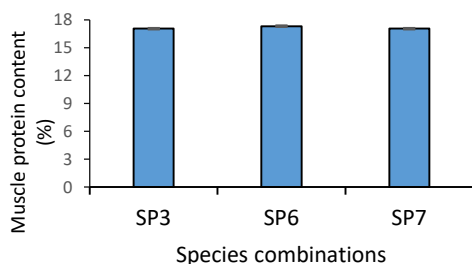
Co-Principal Investigators: Karthireddy Syamala, Gauranga Biswas, Shamna N.

A 90-day hapa-based feeding trial was conducted to evaluate the effects of selected functional feed additives, namely insect meal, algal meal, betaine, and taurine, on the growth performance, feed utilization, digestive enzyme activity, antioxidant response, and body composition of *Mugil cephalus*. The experimental diets were formulated to be isonitrogenous and contained 30% crude protein. Among the tested treatments, algal meal at 4% inclusion and betaine at 1% inclusion consistently produced superior results in terms of final body weight, weight gain, specific growth rate, feed conversion ratio, feed efficiency ratio, and protein efficiency ratio. These treatments also enhanced digestive enzyme activities, indicating improved nutrient digestion and assimilation. The antioxidant enzyme profile suggested a lower oxidative burden in the better-performing dietary groups, particularly those receiving algal meal and insect meal supplementation. Proximate composition analysis further revealed improved crude protein and ether extract content in the treated fish, confirming the beneficial impact of functional feed inclusion on tissue quality. Subsequently, a 6-month field trial was carried out in earthen ponds using the best-performing diets from the hapas experiment. Water quality remained within the optimal range throughout the trial, supporting satisfactory growth and survival. Under pond conditions, betaine at 1% inclusion yielded the best growth and feed utilization performance, while algal meal at 4% also showed marked improvement over the control. Overall, the findings demonstrate that dietary supplementation with algal meal and betaine can significantly improve production efficiency in grey mullet culture under brackishwater polyculture systems.

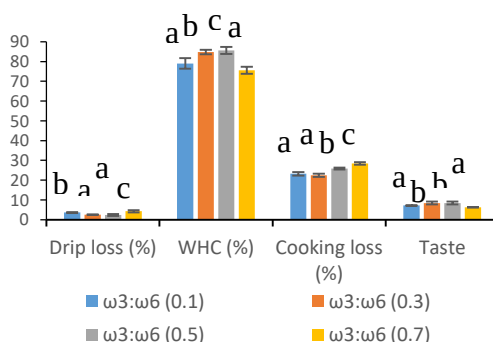


3.8.1 Strategies for quality fish production through species combination, environmental manipulation and nutritional interventions

Project duration: 2022-2025
Project code: IRC/CIFE/2022-2
Principal Investigator: Gouranga Biswas
Co-Principal Investigators: G.H. Pailan, P. Sardar, S. Sahoo, H. Mandakini Devi, D.K. Singh, Suman Manna, S. Pradhan, Leesa Priyadarsani
Technical Associate: P.K. Behera

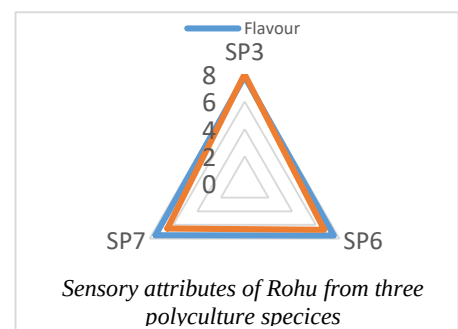


Muscle protein content of rohu collected from three polyculture species combinations



Fillet quality parameters of Rohu diets with different $\omega 3:\omega 6$

The protein, lipid and total ash contents of rohu from polyculture of different species combinations range from 17 ± 0.23 to 17.31 ± 0.10 , 2.71 ± 0.13 to 3.00 ± 0.13 and 2.69 ± 0.20 to 3.01 ± 0.14 %, respectively. However, there is no significant ($P > 0.05$) difference in protein and amino acid, lipid and fatty acid and mineral contents among the rohu of three (SP3, catla, rohu and mrigal), six (SP6, catla, rohu, mrigal, silver carp, common carp, grass carp) and seven (SP7, catla, rohu, mrigal, silver carp, common carp, grass carp & silver barb) species combinations. Better fillet quality of rohu in terms of dressing yield, water holding capacity and organoleptic attribute is recorded in the rohu from polyculture of three species (catla, rohu and mrigal) combination. A-90 day feeding trial was conducted to optimize the dietary $\omega 3$ and $\omega 6$ fatty acid ratio in relation to physical and organoleptic quality of rohu advanced juveniles (mean wt. 195 ± 7 g). Accordingly, 192 fish were randomly distributed in four experimental groups in triplicate with the stocking density of 16 fish/ m^3 . Four isonitrogenous (28% CP) and isolipidic (8%) experimental diets viz. T1, T2, T3 and T4 with $\omega 3:\omega 6$ fatty acids of 0.1, 0.3, 0.5 and 0.7, respectively on basis. The result indicates better taste with higher water



Sensory attributes of Rohu from three polyculture species

holding capacity (WHC) and lower drip and cooking losses. Thus, dietary level of $\omega 3:\omega 6$ fatty acids between 0.3-0.5 must be assured during carp culture to improve the taste of fish for better consumer preference.

3.8.2 Performance effectiveness and impact assessment of selected ICAR-CIFE's technologies in Eastern and North-Eastern regions of India

Project Duration: 2024-2027
Project Code: IRC/CIFE/2024-10
Principal Investigator: G.H. Pailan
Co-Principal Investigators: D.K. Singh, H. Mandakini, S. Manna, S. Pradhan, Leesa P., Shivaji Argade, Prasenjit Pal
Technical Associates: P.K. Behara, Partha Das

A seven-month field demonstration and trial were conducted in 30 farmers' ponds at Canning I to evaluate the effectiveness of CIFE Green Feed for carp culture. The floating feed, containing 28% crude protein, was developed by completely replacing de-oiled rice bran (DORB) with groundnut leaf meal. Information collected from farmers before and after the trial was analyzed using the Wilcoxon Signed Rank Test. Results showed significant improvements (at the 5% significance level) in feed palatability and intake, fish growth and health, water quality, and cost-effectiveness. Indian Major Carps fed with CIFE Green Feed demonstrated higher weight gain, specific growth rate, and protein efficiency ratio, along with lower feed conversion ratio (FCR), compared with conventional feeding practices. Farmers reported higher satisfaction with the feed, indicating its potential for wider adoption. In addition, demonstrations and awareness programs on mechanical fish drying were conducted for 20 beneficiaries in East Medinipur. Participants, mostly engaged in traditional sun drying, received training on hygienic fish handling, modern drying techniques, and equipment required



for small-scale mechanical drying units. One beneficiary subsequently adopted improved drying technology. Technology dissemination activities also promoted ornamental fish breeding and freshwater pearl culture. Training on breeding and seed production of high-value ornamental fish reached 33 beneficiaries in West Bengal, leading to adoption by two self-help groups. Freshwater pearl culture technology was demonstrated to 50 beneficiaries across West Bengal and Assam. A Memorandum of Understanding was signed between ICAR-CIFE Kolkata Centre and Assam Pearl Development Cooperative Society for technical support in pearl culture. Furthermore, 10 incubatees from various states registered under this technology, while fish pickle production was integrated into the catering business of women trainees in Koloriang, promoting entrepreneurship and value-added fish products.



Demonstration of fish-based value added product preparation

3.8.3 Evaluation of non-invasive detection methods for assessing stress response in fish (Fish Welfare Part 2)

Project Duration: 2023-2026

Project Code: IRC/CIFE/2023-6

Principal Investigator: Sujata Sahoo

Co-Principal Investigators: Leesa P., Suman Manna, D.K. Singh, G. Biswas, G.H. Pailan

To compare stress indicators using invasive and non-invasive methods in *Labeo rohita* reared in different culture systems, fish and water samples are collected from sewage-fed, extensive, and semi-intensive fish ponds across different locations in West Bengal. Fish sampling was conducted in the early morning, with all precautions to minimize stress. Fish with no visible abnormalities/lesions in skin, fins, eyes, and gills are used in sampling. A platform is selected and appropriately sanitized with 70% ethanol to collect fish blood, mucus, faeces, scales, and fins in accordance with standard protocols at the farm. Further analysis of samples was carried out at ICAR-Central Institute of Fisheries Education (CIFE), Kolkata Centre. Water quality analysis revealed that parameters such as ammonia, TDS, hardness, and alkalinity exceeded permissible limits in the sewage-fed system. Hematological parameters, including total erythrocyte count and hemoglobin, were significantly lower ($p < 0.05$) in fish from the sewage-fed system, while leukocyte counts were elevated, indicating pathogenic stress. Serum stress biomarkers (cortisol, glucose, SOD, and catalase), serum metabolic enzyme activities (aspartate aminotransferase and alanine aminotransferase), Total bilirubin, direct bilirubin, serum protein, albumin, albumin/globulin ratio, and serum calcium levels were estimated in different culture systems. Biochemical markers such as glucose, SOD, catalase, AST, and ALT were also significantly ($p < 0.05$) higher in the sewage-fed system, suggesting elevated stress levels. Additionally, protein content and albumin: globulin ratios were lower in these fish, pointing to compromised physiological health. Cortisol levels in serum, mucus, fin, and scale were significantly ($p < 0.05$) elevated in sewage-fed fish, confirming chronic stress exposure. Among non-invasive matrices, scale sampling proved to be the most effective and welfare-friendly method for long-term stress monitoring, while mucus was better suited for detecting short-term stress.

3.8.4 Spatio-temporal distributions of inorganic pollutants in the sediments of East Kolkata Wetlands, risk assessment and their mitigation measures

Project Duration: 2025-2028

Project Code: IRC/CIFE/2025-3

Principal Investigator: Suman Manna

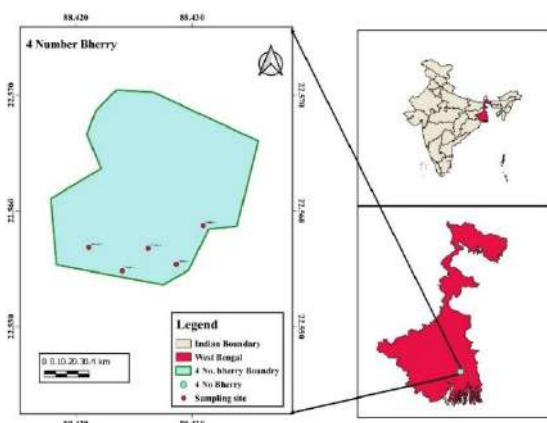
Co-Principal Investigators: T.K. Ghoshal, V.S. Bharti, D.K. Singh, Sweta Pradhan, Leesa Priyadarsani

Technical Associates: P.K. Behera, Partha Das

A comprehensive assessment of nutrient and pollutant loads was conducted in two sewage-fed fisheries (bherries) of the East Kolkata Wetlands (EKW) - Nalban Fisheries Project and 4 No. Fishermen Cooperative Society, Nawabhanga - during monsoon and post-monsoon seasons. Water, sediment, fish, and plankton samples were collected from multiple geo-



referenced locations. Water quality analysis revealed seasonal variations in physicochemical characteristics. In Nalban, post-monsoon waters exhibited slightly higher pH and total hardness, whereas total alkalinity was higher during the monsoon. In 4 No. Bherry, both total hardness and alkalinity increased during the post-monsoon period. Ionic composition generally declined in post-monsoon waters, except for potassium (K^+), which increased in both bherries.



Sampling stations for 4 no bherry

Sediment analysis showed a decline in pH during the post-monsoon season, accompanied by a significant increase in organic carbon content. Electrical conductivity also increased in post-monsoon sediments of 4 No. Bherry. Heavy metal analysis indicated the presence of lead (Pb) in Nalban sediments, with concentrations ranging from 0.409–0.863 ppm. However, Pb levels in the muscle tissues of mrigal and catla were 0.160 and 0.144 mg/kg, respectively, remaining below the FSSAI permissible limit of 0.300 mg/kg. Geo-accumulation index (Igeo) values classified Nalban sediments as unpolluted to moderately polluted with Pb. In contrast, sediments from 4 No. Bherry contained elevated concentrations of cadmium (Cd), chromium (Cr), lead (Pb), and arsenic (As). Igeo assessment indicated that most sites were unpolluted to moderately polluted, whereas Cd contamination was categorized as extremely polluted in both

seasons, highlighting a significant environmental concern. Biological assessment identified *Microcystis*, *Nitzschia*, *Euglena*, *Arthrospira*, *Chlorella*, and *Pediastrum* as dominant phytoplankton, while *Daphnia*, copepods, rotifers, *Trichocerca*, and *Keratella cochlearis* dominated the zooplankton community. Plankton density reached 1.5×10^8 organisms/L in 4 No. Bherry. Higher post-monsoon activities of dehydrogenase, urease, acid phosphatase, and alkaline phosphatase indicated enhanced microbial activity. Microbial biomass carbon was consistently higher in 4 No. Bherry, reflecting its greater organic load and nutrient enrichment.

3.8.5 Nutritional intervention for productivity enhancement of Asian stinging catfish (*Heteropneustes fossilis*) reared in intensified conditions

Project Duration: 2024-2027

Project Code: IRC/CIFE/2024-4

Principal Investigator: T.K. Ghoshal

Co-Principal Investigators: P. Sardar, G. Biswas, Sujata Sahoo, D.K. Singh, Dhalongsai Reang, L. Priyadarsani, Sweta Pradhan, Sikendra Kumar

The data on optimizing the stocking density of *Heteropneustes fossilis* (singhi) juveniles obtained through wet laboratory trial is currently being validated in field condition through conducting feeding trial in 10,000 L tarpaulin tanks. The fish of 150 and 300 fish/m³ stocking density group had similar ($p > 0.05$) growth whereas 450 fish/m³ stocking density group exhibited lowest ($p < 0.05$) growth. Another three feeding trials of 60 days duration were separately conducted to evaluate the rice distiller's dried grains with soluble (RDDGS), black soldier fly larvae meal (BSFLM) and silkworm pupae meal (SWPM) as fish meal (FM) alternatives in the diet of singhi juveniles. Fish were fed with isonitrogenous (40%) and isolipidic (7%) diets. Results indicate that up to 24.36% RDDGS could be incorporated in singhi diet with the replacement of 60% FM protein equivalent without compromising the growth performance, survival and health condition of fish. On the other hand, dietary inclusion of BSFLM and SWPM upto 21.40 and 26.61%, respectively in replacement of 75% FM protein equivalent could not compromise the growth performance, survival and health status of fish. In another experiment, eight herbal essential oils were screened through *in vitro* antioxidant activity and the best one was the sandalwood (*Santalum album*) essential oil (SWEO) followed by ginger, garlic and cumin essential oils. At the end of 60 days *in vivo* experiment, singhi juveniles fed with SWEO at 4 ml/kg diet exhibited significantly ($p < 0.05$) the highest growth performance, activities of digestive (protease, lipase and amylase) and antioxidant (superoxide dismutase and catalase) enzymes and serum total protein and the lowest serum glucose. Thus, dietary SWEO is promising to enhance singhi production in intensified condition.



3.9. MOTIPUR CENTRE

3.9.1 Screening and evaluation of species-specific feeding stimulants and attractants for aquaculture

Project Duration: 2022-2025

Project Code: IRC/CIFE/2022-8

Principal Investigator: Md. Aklakur

Co-Principal Investigators: Ashutosh D Deo, D.K. Singh, Tincy Varghese, Manish Jayant, Udipta Roy

A series of studies were conducted to evaluate the efficacy of amino acids, feed stimulants, attractants, and alternative protein sources in enhancing feed intake, growth, and physiological performance of commercially important aquaculture species. In Indian major carp, supplementation of specific amino acids significantly improved growth, digestive enzyme activities, and feeding behavior. Alanine (1.5%), arginine (1.25%), and hydroxyproline (1%) produced superior growth responses, while betaine (0.5%) and hydroxyproline exhibited the strongest feeding stimulation in Y-maze assays. In plant protein-based diets for rohu, arginine (12.5 g/kg) and DMPT (260 mg/kg) enhanced growth and digestive performance, whereas a combination of arginine and DMPT showed the highest attractant effect, highlighting the synergistic potential of feeding stimulants. In stinging catfish, Black Soldier Fly (BSF) meal at 5% inclusion significantly improved feed intake, growth, feed utilization, metabolic enzyme activities, antioxidant status, and overall health, demonstrating its suitability as a sustainable alternative ingredient. Preliminary results in Pacific white shrimp reared under oligohaline semi-biofloc conditions suggest that gastropod meal, squid liver meal, and shrimp head meal possess strong chemoattractant properties. Similarly, in climbing perch, floc meal and chicken hydrolysate emerged as promising attractants, with floc meal achieving 160% growth and an FCR of 1.4.

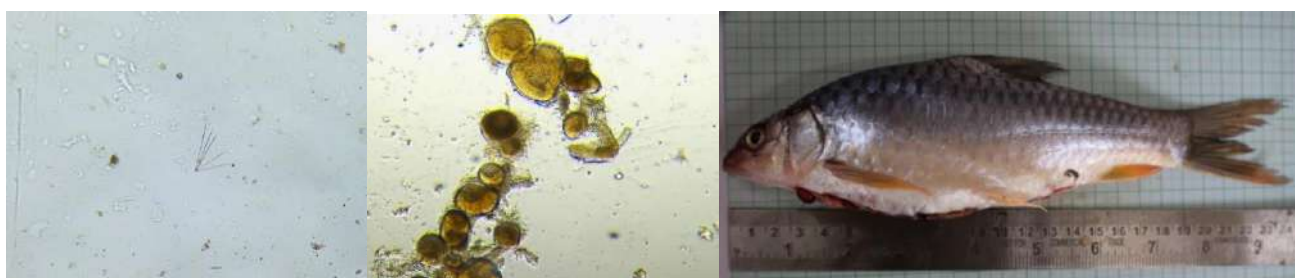


3.10. POWARKHEDA CENTRE

3.10.1 Study on life history traits and fishery of Tor Mahseer, *Tor tor* (Hamilton, 1822) in upper and middle stretches of the Narmada River, Madhya Pradesh

Project Duration: 2025-28
Project Code: IRC/CIFE/2025-2
Principal Investigator: Shashi Bhushan
Co-Principal Investigators: Harsha Haridas, A Pavankumar, Karan K Ramteke, Dayal Devdas
Technical Associates: Hasan Javed

For the reporting year 2025, significant progress was made on the *Tor tor* (Mahseer) research project under different objectives, a total of 432 fish samples were successfully collected from four key sites across the Narmadapuram and Jabalpur districts to analyze how habitat locations affect their life history traits. The study on feeding habits and reproductive biology was conducted using key metrics like the Gastro Somatic Index, fecundity, and maturity stages. The analysis is underway to analyze the ontogenic diet shifts by analyzing the stomach contents of the fish across various length categories. Finally, steps were taken toward captive cultivation by successfully acclimatizing the fish in both cement tanks and earthen ponds. The fish have adapted well to both farm-made and commercial feeds, and the water quality parameters of both housing systems are being monitored daily to establish ideal ecological conditions for farming.



Stomach content analysis of mahseer

Egg diameter of mahseer

Length & Weight analysis of mahseer collected from Narmada

3.10.2 Evaluation of common carp (*Cyprinus carpio*) with suitable plants for sub-tropical climatic conditions in Aquaponic system

Project Duration: 2024-27
Project Code: IRC/CIFE/2024-2
Principal Investigator: Harsha Haridas
Co-Principal Investigators: A.K. Verma, S.K. Nayak, Dhalongsai Reang, Debajit Sarma, Shashi Bhushan
Technical Associates: Hasan Javed



Okra plants in pond based Nutrient Film Technology Aquaponics

Under the project, detailed studies were conducted to evaluate the suitability of different plant species in pond-based aquaponic systems under subtropical climatic conditions. In the floating raft aquaponic system, mint (*Mentha* sp.) was assessed as a potential plant component by stocking mint plants with an average initial length of 7 cm in three raft units installed across three ponds. The experiment demonstrated the successful establishment and growth of mint under raft culture conditions. Further, a pond-based nutrient film technique (NFT) aquaponics system was developed and evaluated for mint cultivation over a period of 90 days without partial harvesting. Mint cuttings with an average initial length of 8 cm were stocked in NFT channels, and the plants exhibited satisfactory growth performance, attaining an average height of 10 cm with nearly

18 branches per cup, indicating the suitability of mint for NFT-based aquaponics integration. In another experiment, okra was evaluated in the pond-based NFT system using 32 plants in each setup. The plants adapted well to the system, with flowering initiated within 15 days after stocking and an overall plant survival of approximately 80% recorded during the 120-day experimental period. Observations on vegetative growth and fruiting characteristics indicated the feasibility of integrating okra into pond-based aquaponics production systems for diversified crop production under subtropical conditions.



3.11.1 Development of strategies for the isolation and stage-specific markers in the shrimp microsporidian parasite, *Enterocytozoon hepatopenaei* (EHP)

Project Duration: 2025-2028
Project Code: IRC/CIFE/2025-1
Principal Investigator: Saloni Shivam
Co-Principal Investigators: Megha Bedekar, R. Bharathi Rathinam, Satya Prakash

Under this project, during the reporting period field surveys were conducted across eleven aquaculture farms located in the states of Haryana, Punjab, Rajasthan, and Maharashtra to assess the occurrence of *Enterocytozoon hepatopenaei* (EHP) infection. The survey aimed to generate baseline information on the prevalence of EHP in inland saline shrimp farming in these geographic regions. A total of eleven farms were sampled following standard protocols for collection and handling of shrimp specimens. The samples were subjected to PCR-based diagnosis to ensure accurate and sensitive detection of the pathogen. The results of the analysis revealed that ten out of the eleven farms screened negative for EHP, indicating the absence of detectable infection in the majority of the surveyed locations in the reporting season. However, one farm located in Malot, Punjab tested positive for EHP. The detection of EHP in this farm highlights the importance of regular monitoring.

3.11.2 A study on the white faeces syndrome (WFS) in farmed *Penaeus vannamei* in inland saline areas and development of a management strategy

Project duration: 2022-2025
Project code: IRC/CIFE/2022-16
Principal Investigator: Sreedharan K.
Co- Principal Investigators: Babitha Rani A.M, Sanath Kumar H., Gayatri Tripathi
Technical associates: Ashok Kumar, Satyendar Singh

White faecal syndrome (WFS) in shrimp is suspected to be associated with infections by EHP and *Vibrio* spp.; therefore, management strategies focused on controlling both pathogens. In this study, indigenous probiotic bacteria with antagonistic activity against *Vibrio* spp. were isolated and characterized. A total of 140 heterotrophic bacterial isolates were recovered from shrimp tissue, water, and sediment samples collected from three shrimp farms. Different media, including nutrient agar, actinomycete isolation agar, and MRS agar, were used for the isolation of heterotrophic bacteria, actinomycetes, and lactobacilli, respectively. Antagonistic activity against ten *Vibrio* isolates was evaluated using the disc diffusion method. Among the isolates, strain L2-13, obtained from the gut of *Penaeus vannamei* on MRS agar, exhibited inhibitory activity against all tested *Vibrio* spp. In addition, a preliminary investigation was conducted on the antimicrobial efficacy of selected medicinal plant extracts against *Vibrio* spp. isolated from inland saline-farmed *P. vannamei*.

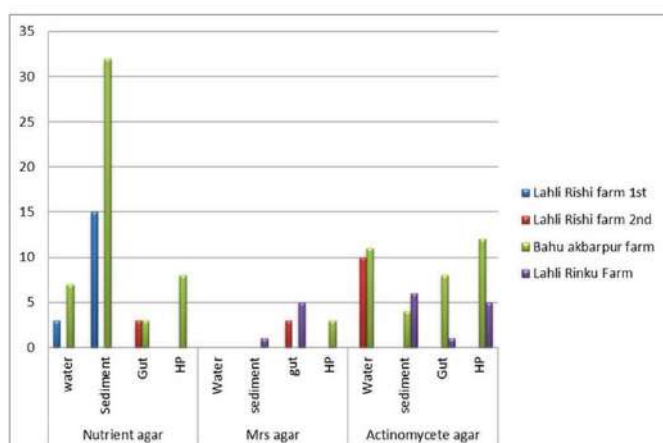
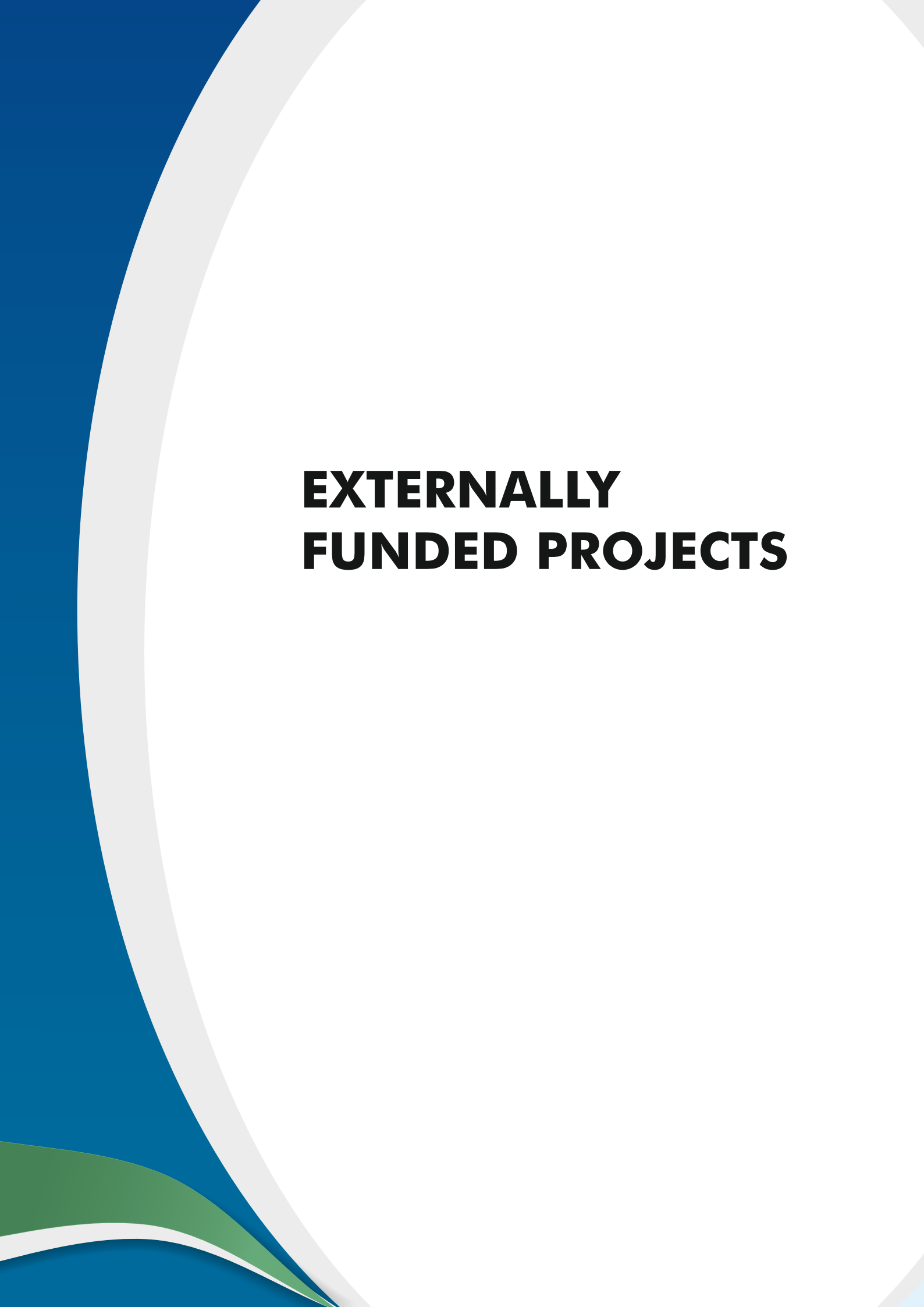


Diagram showing total isolated bacteria from different sources using different media



A WFS affected pond



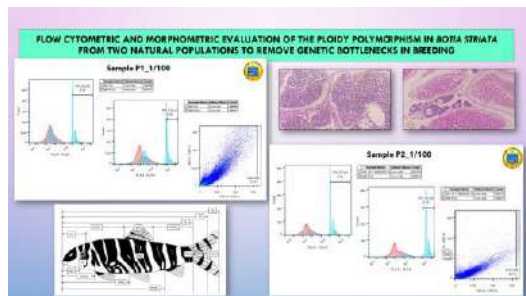


EXTERNALLY FUNDED PROJECTS

3.1.6 All India network project on ornamental fish breeding and culture: technology development on captive breeding and seed production of selected indigenous ornamental fishes native to North Eastern Hill region and Western Ghats

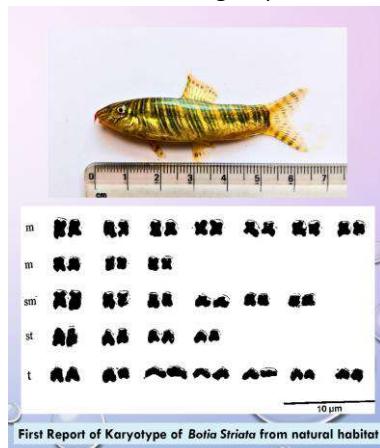
Project Duration: 2023-31
Principal Investigator: Paramita Banerjee Sawant
Co-Principal Investigators: Debajit Sarma, Gouranga Biswas, Udipta Roy
Budget: Rs. 107.00 lakhs
Funding agency: ICAR

Significant progress was achieved in ornamental fish breeding, broodstock development, and conservation aquaculture through a series of species-specific interventions. The F1 generation of captive bred striped panchax/golden wonder



killifish (*Aplocheilichthys lineatus*) was successfully reared using the specially formulated CIFEFLAK feed. The feed exhibited excellent structural stability and floatability, resulting in higher acceptance and feeding efficiency in this surface-feeding species, thereby supporting broodstock development. A comprehensive investigation on zebra loach (*Botia striata*) combined cytogenetic, morphometric, and phenotypic approaches to identify reproductively active populations and distinguish fertile diploids from sterile tetraploids. This study provided the first karyotype report of the species from its natural habitat and established a

practical framework for conservation aquaculture and selective breeding. Flow cytometric analyses of wild populations from Maharashtra and Karnataka revealed stable diploid chromosome complements with no evidence of ploidy variation, indicating reproductive compatibility among populations and simplifying future breeding programs.



Successful captive maturation, breeding, and larval rearing protocols were developed for red-tailed black shark (*Epalzeorhynchus bicolor*) and rainbow shark (*E. frenatum*) through dietary vitamin E supplementation. Optimal supplementation enhanced broodstock maturation, spawning success, embryonic development, hatching, larval survival, and growth, leading to reliable seed production under captive conditions. Broodstock development of Siamese algae eater (*Crossocheilus oblongus*) is currently progressing through nutritional manipulation strategies. Breeding and seed production technologies were standardized for Kohaku koi carp (*Cyprinus rubrofuscus*) under controlled conditions. Induced breeding resulted in high fertilization and hatching rates, while optimized larval feeding protocols ensured production of quality fry with good survival. Additionally, a low-cost homestead production model was developed for bicolor and tricolor lionhead goldfish (*Carassius auratus*). Standardized broodstock management, breeding, and larval rearing protocols

enabled the production of approximately 2,000 juveniles, which were distributed to farmers. The model demonstrated strong potential as a sustainable livelihood and income-generation option for small-scale ornamental fish producers.

3.1.7 Environmental and nutritional intervention to farm white leg shrimp *Penaeus vannamei* in low saline water (LSW): A strategy for improving aquaculture production

Project Duration: 2023-26
Principal Investigator: Sukham Munilkumar
Co-Principal Investigators: Prem Kumar, Thongam Ibemcha Chanu
Budget: Rs. 50.39 lakhs
Funding agency: NASF

Three laboratory trials were conducted using inland saline groundwater (ISGW) from Lonarghat, Gandhigram, and Satara districts, each having different ionic profiles, to evaluate amelioration strategies for *Penaeus vannamei* culture.



The first trial demonstrated that potassium-deficient ISGW (5 ppt) from Lonarghat caused severe tissue damage, oxidative stress, and low survival, whereas potassium supplementation improved histology, immune response, antioxidant activity (CAT and SOD), and survival. The second 90-day trial using ameliorated 5 ppt ISGW from Gandhigram achieved optimal growth (30.03 ± 0.75 g) and 89.3% survival at a mineral composition of Ca:Mg:K = 288:306:288 mg/L, with minimal stress indicators. The third 45-day trial in 2 ppt ISGW from Satara showed highest biomass gain in Ca:K treatment and maximum survival (93.33%) in Mg:K treatment. Additionally, water sampling was expanded to Kolhapur district, revealing suitable salinity and ionic profiles for inland shrimp culture.



3.1.8 Investigations on ecological status, conservation, and enhancement of fisheries in Maharashtra part of Sardar Sarovar Reservoir

Project Duration: 2023-26

Principal Investigator: Sukham Munilkumar

Co-Principal Investigators: Arpita Sarma, Karan Kumar Ramteke, Kapil Sukhdhane

Budget: Rs. 1.17 Crores

Funding agency: Department of Fisheries, Govt. of Maharashtra



This study assessed the ecological status, fisheries potential, and conservation strategies of the Sardar Sarovar Reservoir, covering approximately 6,000 ha across 33 villages in Akkalkuwa and Dhadgaon talukas of Maharashtra. Plankton analysis documented 32 phytoplankton and 17 zooplankton species, with their abundance and distribution strongly influenced by prevailing environmental conditions. Heavy metal accumulation in water, sediment, and fish tissues was also evaluated to determine ecological and food safety implications. Fish diversity assessment recorded 33 fish species, which were validated using morphometric characterization and DNA barcoding techniques.

Experimental fishing trials and trophic modelling were employed to understand food web interactions and ecosystem functioning within the reservoir. Furthermore, biological attributes such as

growth patterns, feeding ecology, and reproductive characteristics were investigated through length–weight relationships, gut content analysis, and fecundity studies. The comprehensive fisheries development plan has been submitted.

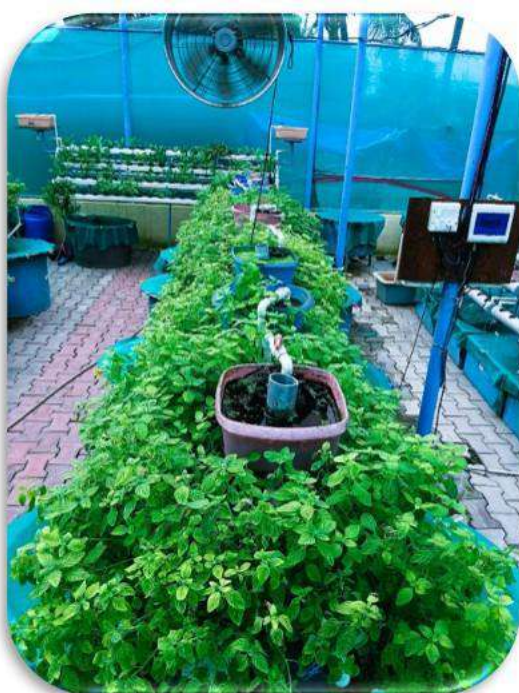


3.1.9 Sensor based integrated vertical farming for horticultural crops and aquaponic system

Project Duration: 2023-26
Principal Investigator: A. K. Verma
Co-Principal Investigators: Prem Kumar
Budget: Rs. 178.68 Lakhs
Funding agency: NASF

Research activities focused on the development and optimization of integrated aquaponic systems have resulted in the successful design and establishment of hydroponic/soilless and recirculating aquaponics-based vertical farming systems. Experimental evaluations demonstrated that vermicompost extract supplementation significantly improved overall system performance, including plant growth, fish production, water quality, nutrient composition of lettuce, and fish welfare indicators. Based on comprehensive assessment, a vermicompost dose of 27.5 mg/L was identified as the optimum level for maximizing system efficiency. Further studies on hydraulic loading rates (HLR) revealed that an HLR of 5.6 m/day in combination with vermicompost supplementation at 27.5 mg/L provided the best compromise for achieving superior performance in *Channa striata*–lettuce aquaponic systems. Similarly, quadratic regression analysis established an optimal cow manure extract dose of 30.20 mg/L for enhancing the production performance of pak choi

and murrel in aquaponics. Investigations on salinity effects indicated significantly higher plant growth at a salinity level of 6‰. Water quality assessments showed that alkalinity, hardness, and turbidity increased with increasing salinity levels, providing important insights for the management and optimization of saline aquaponic production systems.



Effect of seaweed liquid extract in aquaponic system



Effect of organic fertilizers in aquaponic system

3.1.10 Characterization and utilization of sulfated polysaccharides extracted from red seaweed, *Gracilaria* spp. co-cultured with *Penaeus vannamei*

Project Duration: 2024-2027
Project Code: 37WS(0145)/2023-24/EMR-II/ASPIRE
Principal Investigator: Madhuri Pathak
Co-Principal Investigators: Jeena K, Layana P
Budget: Rs. 28.00 lakhs
Funding agency: CSIR- ASPIRE, New Delhi

Seaweeds possess strong bioremediation potential and offer a sustainable approach to mitigating the environmental impacts associated with intensive shrimp farming while enabling the development of integrated co-culture systems. The study conducted in semi-intensive pond conditions along the Maharashtra coast evaluated the co-culture performance of Pacific white shrimp, *Penaeus vannamei*, with the seaweeds *Gracilaria foliifera* and *Kappaphycus alvarezii*. The investigation focused on nutrient dynamics, shrimp growth performance, physiological responses, and





Maraponics System for Seaweed and Shrimp Land Based IMTA



Gracilaria foliifera cultivation in maraponics system using Tubenet method



Gracilaria edulis cultivation in maraponics system using Tubenet method

the enhancement of seaweed nutritional and bioactive properties. A 56-day pond study was conducted to evaluate the co-culture of *Penaeus vannamei* with the seaweeds *Gracilaria foliifera* and *Kappaphycus alvarezii* under semi-intensive farming conditions along the Maharashtra coast. The co-culture system significantly improved water quality through nutrient bioremediation, with *G. foliifera* showing superior removal of nitrate, nitrite, ammonia, and phosphate. Shrimp reared in co-culture exhibited enhanced growth, better health status, reduced oxidative stress, and improved immune responses compared to monoculture. Additionally, both seaweed species exhibited improved nutritional quality following co-culture, including increased protein and lipid contents, enhanced elemental composition, and elevated levels of bioactive compounds such as phenolics and antioxidant activity compared with their pre-culture state. Overall, the integration of seaweeds with shrimp farming provides an effective and scalable strategy for nutrient bioremediation, improves shrimp productivity and health, and generates value-added seaweed biomass. The findings highlight the potential of shrimp-seaweed co-culture systems as a sustainable approach for environmentally responsible aquaculture development.

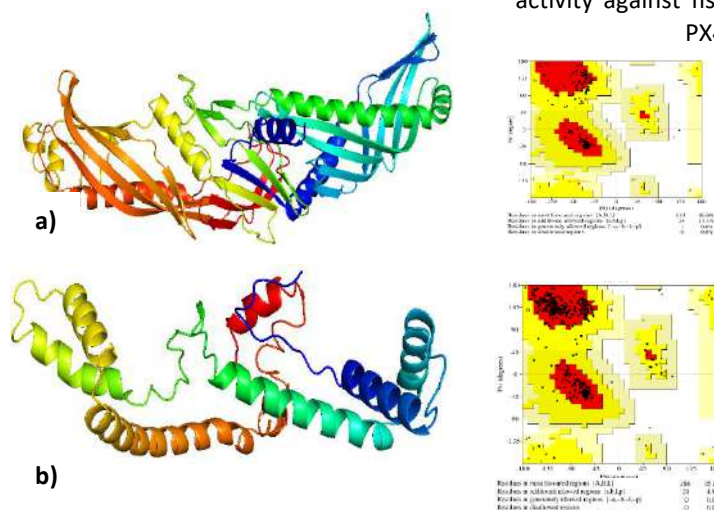


3.2.4 Identification and comparative expression analysis of novel immune-related genes against prevalent bacterial infection and development of remedial measures in Asian seabass *Lates calcarifer*

Project Duration: 2023-2026
Project Code: BT47267
Principal Investigator: Gayatri Tripathi
Co-Principal Investigators: D. K. Meena, Kiran Rasal, Manish Jayant, R. Bharathi Rathinam
Budget: Rs. 61.05 lakhs
Funding agency: DBT

An exploratory survey of 12 freshwater Asian seabass farms across Andhra Pradesh, Karnataka, Maharashtra, and Gujarat identified 44 gram-negative bacterial isolates, with *Aeromonas*, *Vibrio*, and *Plesiomonas* species being the predominant pathogens; virulence profiling revealed *Aeromonas veronii* and *Vibrio cholerae* as highly virulent, carrying multiple pathogenicity-associated genes such as *aerA*, *ahh*, *act* genes. The virulent *astA*, *astB*, and *aphA* genes were detected in *Plesiomonas* isolates, while 90% of *Vibrio* isolates displayed *hlyA* and *rtxA* genes. The study established the first comprehensive repository of prevalent bacterial pathogens associated with freshwater-farmed Asian seabass in India, providing valuable baseline data for disease surveillance and management. Challenge studies demonstrated that *Pseudomonas putida* ($LD_{50} = 2.6 \times 10^4$ CFU mL⁻¹) was more virulent than *Aeromonas veronii* ($LD_{50} = 1.5 \times 10^5$ CFU mL⁻¹), causing significant alterations in haematological, biochemical, stress, and histopathological parameters in Asian seabass fingerlings. The immune-related genes *Lipopolysaccharide Binding Protein* (LBP) and *High Mobility Group Box 1* (HMGB1) were characterized as potential early biomarkers of bacterial infection, exhibiting highest expression in the spleen and strong in silico binding interactions with bacterial ligands. Transcriptomic profiling of kidney tissues in healthy and infected Asian seabass generated high-quality RNA-seq data (80–105 million reads/sample, Q30 >91%) with 85–89% mapping efficiency, revealing 1,403 and 1,209 significant DEGs during *Aeromonas veronii* and *Pseudomonas putida* infections, respectively. While *P. putida* infection predominantly activated cytokine-mediated immune and antibacterial defence pathways, *A. veronii* infection induced hemostasis, blood coagulation, and oxidative stress responses, accompanied by suppression of non-essential neurological signalling, indicating distinct host immune strategies against the two pathogens. A total of 37 gut-associated probiotic bacteria were isolated from freshwater farmed Asian seabass and evaluated for probiotic attributes, with strains PS36 and PS29 showing strong antagonistic activity against fish pathogens; PS36 was identified as *Bacillus cereus*

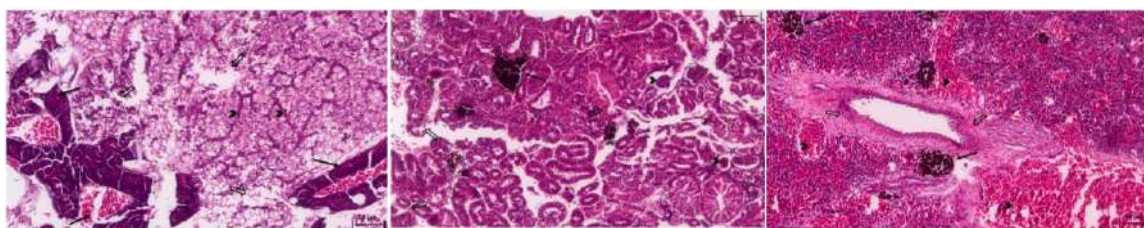
PX472023 and characterized through whole-genome sequencing, revealing multiple bacteriocin and siderophore gene clusters associated with probiotic functionality. Dietary supplementation with *B. cereus* PX472023 improved growth performance, enhanced immune responses, and increased disease resistance in Asian seabass, demonstrating its potential as an effective probiotic for sustainable aquaculture.



Predicted 3D protein structure and Ramachandran plot of the predicted model a) LBP and b) HMGB1 visualized using PyMol



Clinical signs noticed in the infected *L. calcarifer* collected from freshwater farm in Raigad, Maharashtra



Histopathological changes observed in the liver, kidney and spleen tissues of fish infected with *A. veronii*

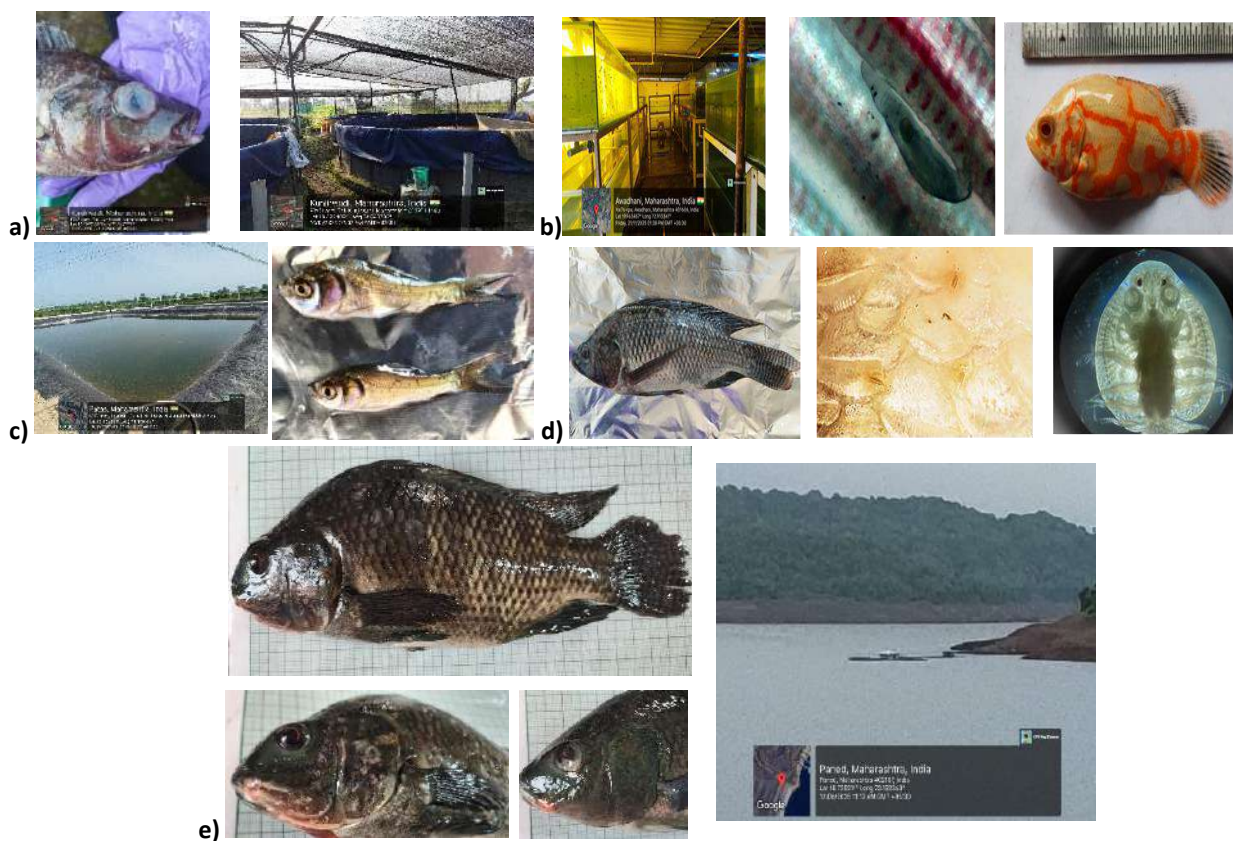
3.2.5 National surveillance project on aquatic animal diseases Phase-II

Project Duration:	2023-2027
Project Code:	483
Principal Investigator:	Gayatri Tripathi
Co-Principal Investigators:	Babitha Rani, Sreedharan K, R. Bharathi Rathinam
Budget:	Rs. 57.59 lakhs
Funding agency:	Pradhan Mantri Matsya Sampada Yojana

Comprehensive monitoring and sampling were conducted at 72 aquaculture farms across Maharashtra, Haryana, Gujarat, Rajasthan and Madhya Pradesh States. During the reporting period, White Spot Syndrome Virus (WSSV) infection in *Penaeus vannamei* was detected at Palghar (Maharashtra), Rohtak (Haryana) and Jhajjar (Rajasthan). Coinfection of WSSV and *Enterocytozoon hepatopenaei* (EHP) in *P. vannamei* was observed at Palghar (Maharashtra) and Sonipat (Haryana). EHP infection was recorded from Palghar and Mumbai (Maharashtra), Jhajjar (Haryana) and Churu (Rajasthan) districts. The gill fluke infestation in Oscar fish at Palghar (Maharashtra) and Argulus infection in Amur carp at Pune (Maharashtra) districts were also reported. Bacterial diseases were also documented, including Aeromoniasis in *Oreochromis niloticus* at Pune, Panvel and Raigad (Maharashtra), and Streptococcosis in *O. niloticus* at Pune (Maharashtra). In addition to surveillance, extension activities were undertaken to improve farmers' awareness and their capacity building. Three awareness programmes and four training programmes were conducted at Panvel, Palghar and Mumbai (Maharashtra), as well as Jhajjar (Haryana) and Churu (Rajasthan) districts. These programmes witnessed active participation from 111 farmers and 39 State Fisheries Officials. The "Report Fish Disease App" was demonstrated and popularized during field visits and all training and awareness programmes. Efforts were made to strengthen disease reporting, improve early diagnosis and better communication among farmers, fisheries officials and other stakeholders with project personnel.



Diseased cases reported in *P. vannamei* a) White Spot Disease at Saphale, Maharashtra b) Co-Infection of WSSV and EHP at Saphale, Maharashtra c) WSSV infection at Rohtak, Haryana d) EHP infection at Churu District, Rajasthan e) WSSV infection at Jhajjar, Haryana



Disease cases reported in fishes a) Streptococcosis in Tilapia at Kunjirwadi, Pune, Maharashtra b) Gill Fluke (*Dactylogyrus*) infestation in Oscar at Awadhani, Palghar, Maharashtra c) Aeromoniasis in Tilapia at Patas, Pune, Maharashtra d) Argulus infestation in Amur carp at Patas, Pune, Maharashtra and e) Aeromoniasis in Tilapia at Raigad, Maharashtra

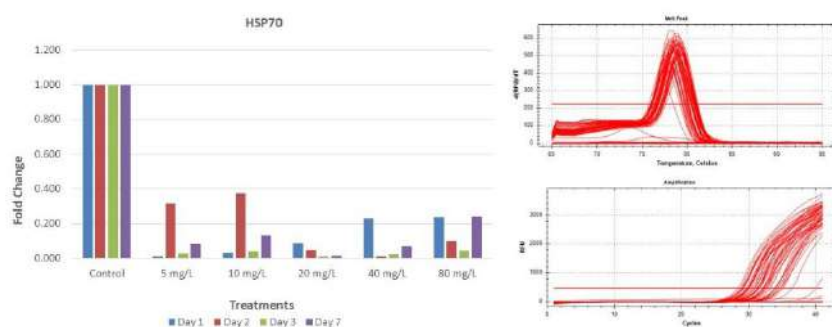


Awareness and Training Programmes organized under NSPAAD Phase II

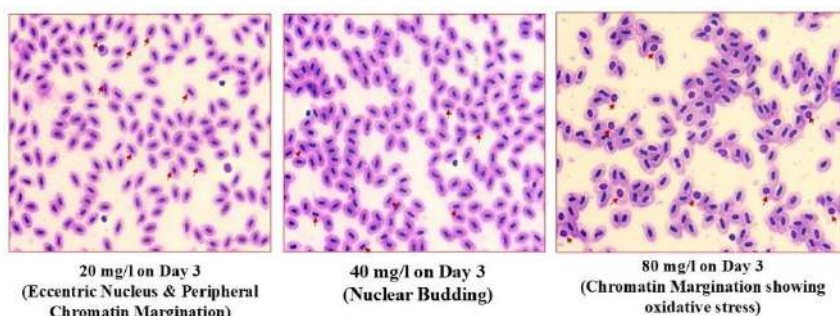
3.2.6 All India network project on fish health

Project Duration: 2015-2026
Project Code: 98494
Principal Investigator: Megha K. Bedekar
Co-Principal Investigators: Arun Sharma, Saurav Kumar
Budget: Rs. 16.00 Lakhs
Funding agency: ICAR

The toxicity profile was established in *Cyprinus carpio* with LD₅₀ of 8.91 ± 3.46 mg kg⁻¹ and dose-dependent effects on haematological, biochemical, immunological, and molecular parameters 2024-25. Validated ivermectin incorporation in feed with 80–120% recovery and high analytical precision (R² = 0.99). Generated dose–response data defining safe and toxic exposure ranges for ivermectin in aquaculture systems. Determined MIC values showing iodophore effective against *Edwardsiella tarda* at 100 ppm and formaldehyde at 450 ppm. The project provided critical insights into drug safety, dosage optimization, and disinfectant efficacy, supporting evidence-based aquaculture health management and food safety. The biosafety, tissue distribution and withdrawal characteristics of lufenuron following dietary and bath administration in common carp were determined. Acute toxicity studies established an LC₅₀ value of 15.73 mgL⁻¹, while LC-MS/MS analysis revealed maximum tissue accumulation in liver followed by muscle and kidney. Biosafety evaluation indicated dose-dependent alterations in haematological and biochemical parameters and enabled the determination of a safe dose. Pharmacokinetic studies demonstrated tissue-specific C_{max} and T_{max} values with double concentration peaks, possibly resulting from delayed absorption, lipid redistribution and enterohepatic recirculation. Molecular analyses showed suppression of HSP70 expression and transient induction of CYP450 genes, indicating adaptive detoxification responses. Genotoxicity assessment using the micronucleus assay revealed no abnormalities at the dietary dose of 5 mg·kg⁻¹, suggesting the suitability of lufenuron for safe therapeutic use in aquaculture.



Relative expression of HSP70 gene following dietary exposure to lufenuron at 5,10,20,40 and 80 mg/L



Representative blood smear photomicrographs of erythrocytes from fish exposed to lufenuron

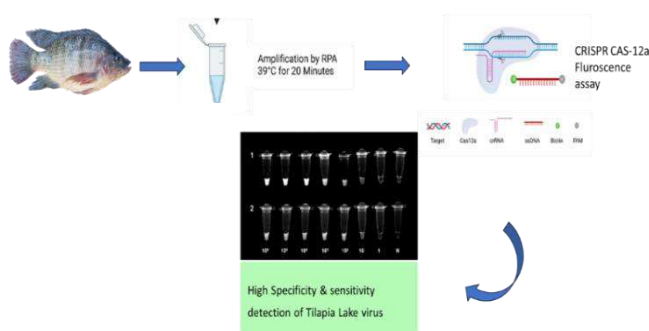
3.2.7 Application of CRISPR/Cas system in molecular detection of fish and shrimp diseases

Project Duration: 2022-2026
Principal Investigator: Megha K. Bedekar
Co-Principal Investigators: Jeena K, Kundan Kumar, Kiran Rasal
Budget: Rs. 40.00 lakhs
Funding agency: ICAR – Consortia Platform for Vaccines and Diagnostics (CRPVD)

Developed RT-RPA-CRISPR-Cas12a assay (Cr-TiLV) with detection limit of 10 copies and ~100% specificity, suitable for field-level detection. Developed dual-target assay (VP28, WSSV366) with sensitivity up to 20–200 copies, 100% specificity, and rapid detection within 90 minutes, including latent infections. The lateral flow assay developed has

point of care detection ability. The technology was selected as top 10 technologies of ICAR for 2024-25. Assays validated against PCR and RT-qPCR showing high specificity (~99.9–100%) and reliable detection across infection levels.

Conducted one specialized CRISPR training programme, along with invited lectures and postgraduate training. Developed two diagnostic platforms, enhancing institutional capability in advanced molecular diagnostics.



3.2.8 Referral Laboratory – National surveillance programme for aquatic animal diseases (NSPAAD Phase II)

Project duration: 2022-2026

Principal Investigator: Megha K. Bedekar

Co-Principal Investigators: Jeena K

Budget: Rs. 17.00 lakhs

Funding agency: Fisheries Department, Government of India under PMMSY



ICAR-CIFE Aquatic Animal Health Management Laboratory was designated as the National Referral Laboratory under NSPAAD Phase II (2024–25), obtained NABL accreditation (ISO/IEC 17025), and successfully cleared the surveillance audit in 2025–26. Successfully cleared RING tests (IMNV, YHV, IHNV) with the University of Arizona (2024) and Inter-laboratory comparison evaluations with SIFT, ICAR-CIFA, ICAR-CIBA and ICAR-NBFG (2025), demonstrating diagnostic reliability. Functioned as a national diagnostic hub, testing import-export samples from animal quarantine and certification services (AQCS), farm, research to support surveillance and biosecurity. Wenzhou 8 virus was detected in shrimp from co-infected farms, while Tilapia Parvovirus (TiPV), previously reported at 41% prevalence (2024–25), was undetected during the current year. Surveillance in Mumbai markets showed absence of ISKNV compared to earlier prevalence of 31.8%, while screening included CyHV-2, KIRV, and CEV. Co-infections involving WSSV, EHP, IMNV, and *Vibrio* spp. were identified, indicating complex disease interactions. Testing of imported fish, shrimp, feed, and biofertilizers for OIE-

listed pathogens under AQCS strengthened national biosecurity. Conducted six training programmes and three farmer workshops, along with outputs including two publications, three postgraduate theses, and six GenBank submissions.



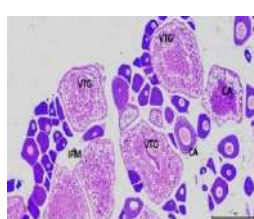
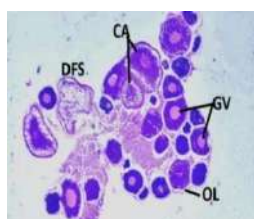
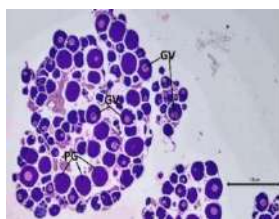
Nested EHP PCR amplification of shrimp DNA samples from hepatopancreas M: 100 bp ladder; Sample 1-15: hepatopancreas samples, PC: positive control, NC: Negative Control



3.3.4 Characterization of adaptive and resilient molecular responses to thermal stress in *Labeo rohita* through multi-omics approach

Project Duration:	2022-2026
Principal Investigator:	N. S. Nagpure
Co-Principal Investigators:	Mukunda Goswami, Manoj P. Brahmane, Kiran D. Rasal, Sunil Kumar, Sudhir Srivastava
Budget:	Rs. 20.00 lakhs
Funding agency:	ICAR

The histological and transcriptomic responses to thermal stress were studied in ovaries of *Labeo rohita* following a 36-day chronic diurnal thermal exposure under three temperature regimes. The control group was exposed to ambient temperature conditions ranging from 25.15 to 27.56 °C, while Treatment 1 (T1) and Treatment 2 (T2) were subjected to elevated temperatures of 27.59–30.98 °C and 28.49–32.32 °C respectively. Histological observations revealed clear temperature-dependent alterations in ovarian structure. The control group exhibited normal ovarian architecture dominated by early-stage oocytes. In contrast, T1 showed larger oocytes with enhanced cytoplasmic differentiation, suggesting accelerated ovarian development. However, T2 displayed advanced-stage oocytes accompanied by structural abnormalities such as irregular morphology, uneven cytoplasm, and widened inter-follicular spaces. Correspondingly, oocyte size distribution shifted towards larger diameter classes in T2, indicating developmental progression but with compromised structural integrity. Hormonal analysis further supported these observations, with estradiol (E2) levels significantly elevated in T1, indicating enhanced vitellogenesis. Although T2 maintained higher E2 levels compared to the control, it remained lower than T1, suggesting possible endocrine disruption under higher thermal stress. Transcriptomic analysis revealed distinct molecular responses between treatments. T1 was characterized by upregulation of genes associated with tissue remodelling, immune response, and metabolism, indicative of an adaptive physiological response, although downregulation of *igf3* suggested partial reproductive suppression. In contrast, T2 showed pronounced downregulation of key reproductive genes, including *igf3*, *lhcg*, and *hsd17b3*, indicating impaired steroidogenesis and follicular development. Additionally, stress-related and oxidative damage-associated genes were upregulated, whereas mitochondrial function-related genes were suppressed.



Representative H&E-stained ovarian sections of female *Labeo rohita* from A) Control B) T1 C) T2 (PG: Primary growth, CA: Cortical alveoli, GV: Germinal vesicle, DFS: Disrupted follicular structure, OL: Ovarian lamellae, IFM: Irregular

Overall, the findings suggest that moderate thermal elevation may enhance ovarian activity, whereas higher thermal stress disrupts endocrine, histological, and molecular pathways, potentially compromising reproductive performance in *Labeo rohita* under changing climatic conditions.

3.3.5 Production and dissemination of cohort-bred and selected seeds of Mrigal

Project Duration:	2025-2026
Principal Investigator:	Angom Lenin Singh
Co-Principal Investigators:	Shrinivas Jahageerda, Sunil Kumar Nayak, Shashi Bhushan, Harsha Haridas
Budget:	Rs. 36.07 lakhs
Funding agency:	NFDB

Germ Plasm of *Cirrhinus mrigala* Mrigal from different geographical locations of Powarkheda, Goharganj (Bhopal), Amrawati (Maharashtra) and Balabhadrapuram, Eluru (Andhra Pradesh) was assembled at Powarkheda. From the genetic stock six cohorts were produced and disseminated to the farmers field for performance evaluation at Sehore, Sohagpur (Narmadapuram District), Nasrullaganj (Sehore district), Betul and Harda districts of Madhya Pradesh and Balabhadrapuram (Andhra Pradesh).



3.4.6 ICAR-network program on precision agriculture (NePPA) (precision aquaculture/small scale culture fishery for fish production)

Project Duration: 2021-2027

Co-ordinating Centre Principal Investigator: Ashutosh D. Deo

Co-Principal Investigators: B.B. Nayak, A.K. Verma, Vinod Kumar Yadav, Vidya Shree Bharti, Karankumar K. Ramteke, Layana P, Manish Jayant, Arun Sharma

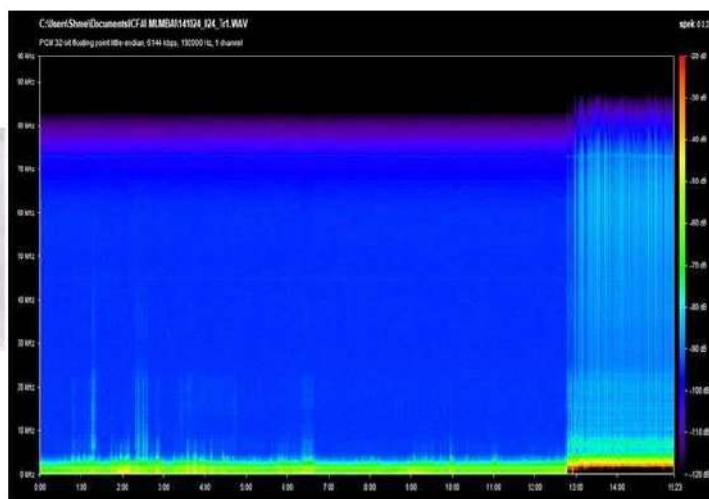
Budget: Rs. 390.00 lakhs

Funding Agency: ICAR

The project developed an AI-IoT based Intensive Aquaculture System for high-density culture of *Penaeus vannamei*. The system integrated sensors for real-time monitoring of pH, temperature, salinity, and dissolved oxygen, showing high accuracy (94–98%) compared to manual methods. The IAS achieved efficient water use (40–50% reduction), FCR of 1.17–1.31, and survival rates of ~68–72% by using acoustic sensor the sound produced by the shrimp was captured. Moreover, the segregation of acoustic signals was initiated to study the feeding behaviour and to develop acoustic based shrimp feeder. A Decision Support System (DSS) was developed using machine learning models to analyse water quality and shrimp behaviour, enabling early detection of stress and diseases like White Spot Syndrome Virus. Computer vision tools (YOLO-based models) successfully performed shrimp detection, tracking, counting, and biomass estimation.

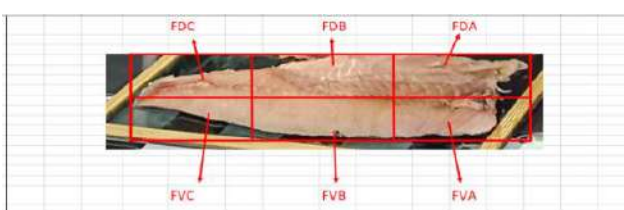
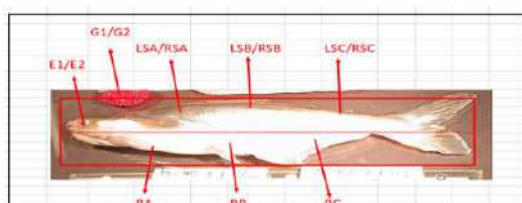


Hydrophone



Masking effect of shrimp acoustic signals

Additionally, sensor-based and imaging techniques (including hyper-spectral imaging) were developed for fish and shrimp spoilage detection. Key quality indicators identified include TVBN, pH, and microbial load. The project resulted in commercialization of a drum filter and development of AI tools like VISTA, demonstrating strong potential for sustainable and smart aquaculture.

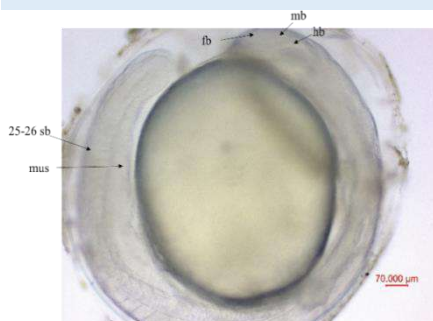


Pangas fish quality analysis using Hyper-spectral analysis



3.4.7 The pilot-scale demonstration of seed production of small indigenous fish species (SIS)

Project Duration:	2025-2026
Project Code:	IRC/CIFE/671
Principal Investigator:	Prem Kumar
Co-Principal Investigators:	Kedar Nath Mohanta, Sukham Munilkumar
Technical Associates:	Aruna Devi and Pritam Kumar
Budget:	Rs. 19.55 lakhs
Funding Agency:	NFDB



Gastrula stage of *M. cavasius*



Larvae of *M. cavasius*

Gangetic catfish, *Mystus cavasius* is a commercially important freshwater catfish of Southeast Asia. However, the commercial farming of this species is hindered due to the unavailability of quality seed. In the first experiment, different doses of human chorionic gonadotropin (HCG) (5, 10, and 15 IU g⁻¹) and commercial hormone (CH) (5, 10, and 15 µL g⁻¹) were administered separately to determine the optimal hormone dose for induced breeding. The second experiment was conducted to study the embryonic and larval development of the species. The third experiment aimed to optimize the larval rearing protocol by testing two stocking densities (SD) (30 and 60 larvae L⁻¹) and three feeding frequencies (FF) (2, 4, and 6 feedings day⁻¹) using newly hatched *Artemia* nauplii. The treatments were conducted in triplicates. The results showed that the effective hormone dose for breeding of *M. cavasius* was 15 IU g⁻¹ for HCG and 10 µL g⁻¹ for CH. Larvae hatched (tail first) after an incubation period of 16.30 ± 0.30 h. The newly hatched larvae (total length: 2.339 ± 0.21 mm) possessed a single yolk sac (volume: 0.221 ± 0.114 mm³). Larvae began exogenous feeding at 36 h post-spawning, before complete exhaustion of the yolk sac (2 days post-hatching). Significantly higher ($P < 0.05$) survival (77.88%), weight gain (0.26 g), and weight gain percentage (2461%) were recorded at a stocking density of 30 larvae L⁻¹ with four feedings per day of *Artemia* nauplii.

3.4.8 Eco-friendly fish production using natural farming and circular economy approaches: Towards improving income and nutritional security

Project Duration:	2025-27
Project Code:	NMNF-CRG-226 (CIFE-745)
Budget:	Rs. 23.20 lakhs
Funding Agency:	ICAR-Indian Institute of Farming Systems research
Principal Investigator:	Kedar Nath Mohanta
Co-Principal Investigator:	Prem Kumar, Sikendra Kumar



Broodstock of *Puntius sarana*

To promote circular economy approaches through recycling of farm waste (waste-to-wealth) and reduce the carbon footprint of aquaculture through low-input and resource-efficient practices. A preliminary survey for demonstration of eco-friendly fish production using natural farming and circular economy approaches has been initiated. In the current year, with the collaboration of KVK and State Fisheries Department, Palghar, Mumbai, a preliminary survey has been carried out to find suitable farmers for demonstration of the project work. *Puntius sarana* is a tropical freshwater fish belonging to the genus *Puntius* of the family Cyprinidae. The species is commonly known as Sarputi or Olive Barb and possesses both food and ornamental value. Fingerling size of *P. sarana* (mean weight: 3.38 g and mean length: 6.60 cm) were randomly distributed in six different experimental groups viz. (T1, 25% P X 8% L; T2, 25% P X 10% L; T3 30% P X 8% L; T4 30% P X 10% L; T5 35% P X 8% L, T6 35% P X 10% L) in triplicates

(N = 3) stocked to the broodstock rearing tanks (250 litres). Fish are fed with three different level of protein (25, 30, 35%) and lipids (8, 10%).



3.5.4 All India Network Project on AMR in fisheries & livestock

Project Duration: 2024-2026
Principal Investigator: Sanath Kumar H.
Co-Principal Investigators: Manjusha L., Jeena K., Saloni Shivam
Budget: Rs. 54.00 lakhs
Funding agency: ICAR

A total of 162 samples were collected from shrimp farms across four districts: Thane, Ratnagiri, Surat, and Valsad. The samples included 58 *Penaeus vannamei*, 32 *Penaeus monodon*, and 72 shrimp farm water samples. From these samples, 29 *E. coli*, 15 *Staphylococcus aureus*, 116 coagulase-negative *Staphylococcus* (CONS), and 71 *Vibrio* species were isolated. Antimicrobial susceptibility of all isolates was determined. The isolates were screened for selected antimicrobial resistance genes (ARGs). *E. coli* isolates showed significant resistance to ampicillin. *Staphylococcus aureus* exhibited high resistance to penicillin G and ciprofloxacin. CONS showed higher resistance to penicillin G and cefoxitin. The resistance genes *mecA* and *mecC* were detected in 15 and 6 isolates, respectively. *Vibrio* species showed high resistance to ampicillin and cefoxitin, and an awareness programme was conducted for farmers on antimicrobial resistance and its impact.

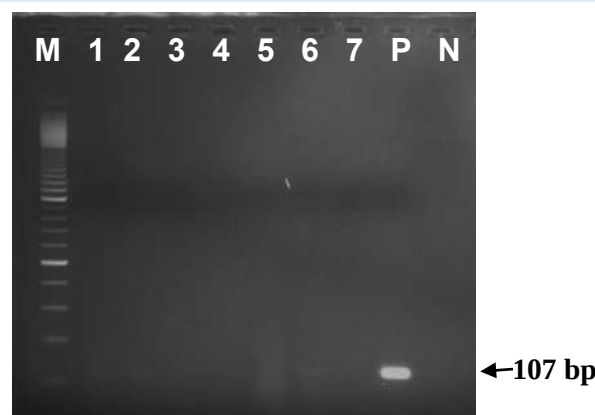


AMR awareness program

3.5.2 Development and application of recombinase polymerase amplification (RPA)-based visual detection method for zero-tolerant bacterial pathogens in commercially important seafood

Project Duration: 2025-2028
Project Code: NASF/BGAM-11008/2025-26
Principal Investigator: Manjusha L.
Co-Principal Investigators: B. B. Nayak, Sanath Kumar H.
Budget: Rs. 48.00 lakhs
Funding agency: NASF

Primers targeting the *invA* gene coding for invasion protein were designed and custom-synthesized for RPA detection of *Salmonella enterica* in seafood. RPA conditions such as temperature and reaction time were optimized and the amplification products were visualized through agarose gel electrophoresis. Primer specificity was studied by testing with two *Salmonella* serotypes and six non-*Salmonella* strains which revealed their specificity in amplifying the target *invA* gene exclusively in *Salmonella*.



Specificity of *invA* RPA for detection of *Salmonella*

3.5.3 Technology-driven solutions for combatting ghost gear: Tackling abandoned, lost and discarded fishing gear (ALDFG) along Maharashtra Coast

Project Duration: 2025-2026
Principal Investigator: Abuthagir Ibrahim S.
Co-Principal Investigators: B. B. Nayak, Karankumar Ramteke, Bharathi Rathinam
Budget: Rs. 26.15 lakhs
Funding agency: NFDB

By working closely with local communities, the project team successfully mapped ghost gear sightings along Maharashtra's Arabian Sea coast, creating a clear picture of underwater litter hotspots. The field assessments brought to light the harsh reality facing local marine life, documenting 30 dead and 5 live affected animals including seabirds, hermit crabs, live crabs, and ornamental fishes with abandoned gillnets standing out as the primary threat. To tackle gear loss at its source, the team designed an eco-friendly,



Students' training on open water diving course



Awareness program on ghost fishing nets in Malvan coast

Foldable Lobster Trap built with a multi-layered HDPE mesh and an epoxy-coated iron frame, an innovation that is currently tracking toward a design patent. Breaking new ground for ICAR-CIFE, six students and team members stepped up to become certified PADI SCUBA Open Water divers, empowering them to lead hands-on underwater monitoring and retrieval efforts. The initiative also brought people together on the ground, organizing active beach and mangrove cleanups. This included CIFE's first-ever specialized Swachh Bharat cleanup drive in Malvan, made possible through a heartening collaboration with local dive centers and NGOs.



Sensitization program on trap Fishing for the fishermen of Saswane, Alibaug



3.6.2 Swachhta Action Plan (SAP) and commercial utilization of fish waste from urban fish markets

Project Duration:	2023-2026
Principal Investigator:	Arpita Sharma
Co-Principal Investigators:	Swadesh Prakash, Ajit Verma, Prem Kumar
Technical Associates:	N. Aglawe, Pranay Biswal
Budget:	Rs. 20.00 Lakhs
Funding agency:	ICAR

Cleaning activities were undertaken at 7 Fish Markets in Mumbai, Delhi, and Nagpur focusing on hygiene and waste management. Work of flooring, wall tiling, platform, drain, roof repair works for the fish market in Juhu has been done. Four training programmes conducted on FishANUre®: Development of organic manure from fish waste. These programmes were organized at Nagpur, Gazipur, Delhi and Mumbai which were attended by 200 participants (138 women, 62 men). Two training sessions were organised as an entrepreneurship model for fish farmers from Bihar. Three training programmes on Digital payment transactions were organised for fish retailers of Mumbai and Gazipur. 'FishANUre®' was displayed at five exhibitions in Mumbai and Delhi. This technology is SMD Fisheries certified, has 2 trademarks and has been commercialised to 2 parties. Inputs were distributed to fish market societies in Mumbai. Design of ergonomic trolley Fish on Wheels for fish transport was completed using CAD software. The participatory design process included inputs from fisherwomen. An AI-enabled ergonomic smart bin prototype for shrimp and fish waste has been developed with support from Bajaj Steel Industrial Limited, Nagpur. The dustbin has been tested at fish landing centres, 3 demonstrations have been done for experts and the prototype finalised as per the feedback. Data has been collected for assessment of shrimp waste generated in Mumbai fish landing centres and its complete value chain along with role of cleaning workers. Laboratory experiments on odour adsorbents using different materials with specific infusions have been completed with encouraging results. Based on the results, odour adsorbent material for multi gas mitigation has been developed. Prior art search has been completed to establish novelty. Review of literature on health and citizens' issues due to fish odour and adsorption as a mitigation measure has been compiled. Evaluation of fish waste as a fertilizer for culturing live feed (Daphnia/Moina) performed. Experiments on fish bone char as heavy metal adsorbent has shown encouraging results. It can be an additional livelihood generation source for farmers. Awareness on heavy metals among fish farmers studied. Methodological model of multidimensional risk perception and knowledge-attitude-practice for heavy metals in water bodies developed.

3.6.3. Kisan Sarathi 2.0: Enhancement, operations, maintenance, and support

Project Duration:	2025-27
Principal Investigator:	Arpita Sharma
Co-Principal Investigators:	P.B. Sawant, Vinod Kumar Yadav, Sunil Nayak, Sikendra Kumar, Saloni Shivam
Technical Associates:	N. Aglawe, Pranay Biswal
Budget:	Rs. 5.00 lakhs
Funding agency:	ICAR

Excel sheets for fisheries and aquaculture domains and sub domains for developing workflows and codings for advisory management systems initiated to support the design of workflows and coding for advisory management system. Under the fisheries domain, sub-domains including aquaculture, marine capture fisheries, and inland capture fisheries developed. Within these sub-domains, thematic areas such as feed management, fish health, fish genetics, and related components have been incorporated for developing advisories to be uploaded on the Kisan Sarathi portal. Reading materials about Kisan Sarathi prepared in various languages to ensure wider outreach and accessibility among diverse stakeholder groups.



3.6.4 Sustaining fisheries ecosystem in the Palk Bay region: Assessing management options, livelihoods and fishers' perspectives

Project Duration: 2024-26
Principal Investigator: P. S. Ananthan
Budget: Rs. 50.00 Lakhs
Funding agency: BoBP-IGO-BIMReN

Field visits and interaction with stakeholders in the southern part of Palk Bay region, and review of existing regulations and secondary data about fish landings and craft details provided preliminary insights about the present status. About 2000 fish & shrimp trawlers (38% of TN), 7000 motorised (19% of TN) & 270 non-motorised boats (10% of TN) fish along the narrow 150 km long Indian side of Palk Bay region; 15+ craft & gear combinations targeting 20+ major commercial finfish (sardine, trevally, tuna, barracuda, barramundi, seerfish, pomfret), shrimp (*P. semisulcatus*; *P. indicus*), crab, squid, cuttlefish; ray; trawl bycatch; juvenile catch abound; About 1.2 lakh fishers depend on Palk Bay fisheries; Crisis of fisheries; cries of fishers are evident –limited; exploited fisheries, excess capacity; fishing pressure, strongly organised mechanised; motorised fishers; Formal (TNMFRA; Gos), semi-formal; informal (Sangams, Caste Panchayats) regulations exist: varying levels of implementation effectiveness; Evidence of seaweed farming taking roots along Palk Bay as a viable livelihood option among fisher women in many villages.



Discussion with members of the Trawl Boat Owners' Association on fishing operations and institutional issues in



Stakeholder consultation with a key informant during field data collection in Palk Bay

3.6.5 Agri-Drone technology demonstration project

Project duration: 2022-27
Principal Investigator: Ananthan P.S.
Co-Principal Investigators: A. K. Verma, Shivaji Argade, Abuthagir Iburahim, Gouranga Biswas, Muralidhar Ande, Sunil Kumar Nayak, and Md. Aklakur
Budget: Rs. 35.00 Lakhs
Funding agency: Ministry of Agriculture and Farmers' Welfare

The project aims to provide hands-on demonstrations to fish farmers and stakeholders, focusing on the potential benefits of drone technology in the areas of fisheries and aquaculture management. A total of 35 agri-drone



Hands-on demonstration of drone technology to farmers at Karjat, Maharashtra

demonstrations were successfully conducted across 19 villages in Raigad, Palghar and Thane districts, covering applications in crop spraying, aquaculture pond input application, weed management, dam reservoir monitoring (Tungarli and Valvan), and water sampling, demonstrating the multi-sectoral utility of drone technology in agriculture and fisheries. The programme benefited around 1,434 stakeholders, including farmers, fishers, rural youth, students, entrepreneurs, DoF Officials, etc., enhancing awareness on precision farming, efficient input use, and environmental monitoring. The programme also created awareness about government subsidy schemes and highlighted





Hands-on demonstration of drone technology for fisheries extension professionals of Fisheries Dept., Odisha

opportunities for start-up and service-based entrepreneurship in agri-drone operations. Overall, the demonstrations significantly improved awareness, encouraged technology adoption, and generated strong interest among farmers and youth to establish village-level drone service enterprises, contributing to modernization of agriculture and aquaculture sectors.

3.6.6 Changing dynamics of labour migration on employment, livelihoods and resource productivity patterns in Indian marine fisheries sector

Project Duration: 2023-26
Co- Principal Investigator: Ananthan P.S.
Budget: Rs. 58.55 Lakhs
Funding agency: NASF

Primary data from 450 migrant and native labour / fishers and market intermediaries have been collected in Mumbai, Palghar and Thane districts. Preliminary analysis revealed the following: Overall socioeconomic status of migrant labour is worse off than the native labour (paid 10-15% less), but better off than in native places; often collect wages in advance; 40-45% of migrant labour are from tribal sections of Palghar and Thane dist. While the rest are from UP, West Bengal, and Bihar; Telangana; Migrants retain ration card and other civic entitlements in their native villages/state, even after decades ; have no domicile / civic entitlements here; Boat owners are in acute need of migrant labour due to shortage of native labour; Most migrants appear to be fine with wages / share system but wish they have better living conditions; Many native fishers in urban/sub-urban areas no longer keen to remain in fishing profession but reluctant to relinquish ownership of boats; Availability of low cost migrant labour seem to keep the labour productivity almost unchanged; Fishers complain of high uncertainty in catch from known fishing grounds – look for newer; farther grounds leading to higher fishing costs.



Stakeholder consultation with fisher leaders in Satpati Fishermen Cooperative Society, Satpati, Palghar



3.7.2 Technical backstopping and demonstration of genetically selected *Clarias magur* (Mahamagur) breeding and aquaculture

Project Duration:	2025-2026
Principal Investigator:	Shamna N
Co-Principal Investigators:	Shrinivas Jahageerdar, Shobha Rawat
Technical associate:	Rajeev
Budget:	Rs. 35.29 Lakh
Funding agency:	NFDB

During the reporting period, significant progress was achieved under the NFDB-supported project on genetically improved Maha Magur (*Clarias magur*) breeding and aquaculture. A total of 180 brooders were successfully conditioned and bred, resulting in satisfactory fertilization (82.39%), hatching (72.40%), and larval survival rates. Demonstration units were established across Andhra Pradesh and Meghalaya under different farming conditions to validate the field performance of genetically improved stocks. The genetically improved Maha Magur exhibited superior growth performance compared to natural stock, recording weight gains between 213.76 g to 231.46 g, in different farmer units, while the control stock showed only 102.33 to 130 g weight. Best Management Practices (BMPs) related to feeding, water quality, disease management, and culture operations were effectively demonstrated at farm level. Farmer awareness programs, demonstrations, and training activities were conducted for farmers, students, and entrepreneurs across multiple states, benefiting more than 100 participants and promoting sustainable and scientific Magur aquaculture practices.



Genetically selected *Clarias magur* harvested from demonstration ponds

3.7.3 Demonstration and promotion of indigenous ornamental fisheries and aquaculture in Eastern Godavari region, Andhra Pradesh

Project Duration:	2025-2026
Principal Investigator:	Shobha Rawat
Co-Principal Investigators:	Shamna N
Technical Associates:	Rajeev
Budget:	Rs. 28.75 lakhs
Funding agency:	NFDB

The project achieved significant progress in the conservation, breeding, and awareness promotion of indigenous ornamental and food fishes. Successful induced spawning of indigenous ornamental fishes *Rasbora daniconius* and *Puntius chola* was achieved, along with seed production and larval rearing of the indigenous catfish *Heteropneustes fossilis*. The project documented 60 fish species from the riverine ecosystem and identified serious encroachment of invasive species such as *Pterygoplichthys* spp. and *Oreochromis mossambicus*. An aquatic biodiversity museum repository gallery and a live fish repository comprising indigenous and exotic ornamental species were established to create awareness and sensitization among stakeholders, students, and farmers. Facilities including outdoor broodstock





Aquatic biodiversity museum repository gallery

rearing units, nursery tanks, aquaponic systems, and dedicated hapa-based broodstock conditioning units were developed and maintained for breeding, demonstration, and revenue generation activities. In addition, facilities for algal culture and larval rearing are under development to strengthen indigenous fish breeding and conservation programmes in the region.



Live fish repository



3.9.2 Technology demonstration of Singhi catfish culture in recirculatory aquaculture system (RAS) and entrepreneurship development in the region

Project Duration:	2025-2026
Principal Investigator:	Md. Aklakur
Co-Principal Investigators:	Ashutosh D. Deo
Budget:	Rs. 38.95 Lakhs
Funding agency:	NFDB



Farmers' visit and exposure to Motiras



Installation of Motiras at Motipur centre

A 75-day experiment was planned to evaluate the growth and physio-metabolic performance of stinging catfish in an RAS-based aquaculture system. The system was modified with the aim of cost-effectiveness, where most of the electricity costs were eliminated by maintaining gravitational water flow, and a sedimentation tank was installed to reduce the filtration load on the filters. The system was designed and installed in CIFE, Motipur, where fish were stocked in 9 covered poly tanks with 30,000 litre capacity. During the experiment, water flow was maintained at 11.7 litre/second and water was exchanged at 10% rate at 15-day intervals. Fish weighing 4.37 ± 0.27 gm was stocked at various stocking densities i.e. 200 m^{-3} (T1), 250 m^{-3} (T2) and 300 m^{-3} (T3), with optimum water quality. The results indicated the highest growth performance in T1 and T2, and a similar trend was reported in FCR, FER, PER and SR. Economic and water use efficiency analysis demonstrated sustainable and economically feasible culture in T2, though the values are statistically similar. Therefore, it can be concluded that sustainable culture of Singhi catfish can be done at $200\text{-}250 \text{ m}^{-3}$ stocking density in the innovative and commercial RAS system.



Sampling and demonstration of singhi culture in Motiras



3.11.3 Genetic improvement of common carp *Cyprinus carpio* for inland saline aquaculture: Strain development for underutilized water resources

Project Duration: 2023- 2026

Principal Investigator: Mujahidkhan A. Pathan

Co-Principal Investigators: Sreedharan K, Aparna Chaudhari, Dhalongsiah Reang, Mohd. Aklakur, Udipta Roy, Shashi Bhusan, Satya Prakash, Babita Rani A. M., Sunil Kumar Nayak

Technical Associate: Ashok Kumar

Budget: Rs. 928.00 Lakhs

Funding agency: Department of Fisheries, GoI



Spawning and hatching unit of common carp

The Nucleus Breeding Centre (NBC) for common carp was established at CIFE Rohtak and Satellite NBCs at CIFE Powarkheda and Motipur. The 12 geographical stocks of common served as founder stocks for genetic improvement. Three generations of selective breeding was performed. About 840 families were produced (2 generations, 4 batches), 18000 fish were PIT tagged and evaluated for growth at varying salinities. For the reporting period, F2Batch1 was produced, and the genetic evaluation of F1Batch2 was completed. The growth traits exhibited high heritability and genetic correlation. A genetic gain of 28% is achieved for growth. The NBC has distributed 2 lakh advanced fingerlings of saline carp to fish farmers across Haryana, Rajasthan, and Punjab. In addition, 4,000 kg of saline carp broodfish were supplied to the State Fisheries Department. These multipliers subsequently produced approximately 2.5 crore advanced fry, which were further distributed to farmers throughout the state.



Nucleus Breeding Centre of common carp



3.11.4 Establishment of a bio-resource facility of zebrafish (*Danio rerio*): A national genetic repository for wild type and inbred Zebrafish strains

Project Duration: 2023- 2026
Principal Investigator: Mujahidkhan A. Pathan
Co-Principal Investigators: Aparna Chaudhari, Jeena K.
Budget: Rs.70.00 lakhs
Funding agency: NFDB, Hyderabad



A new facility for zebrafish bioresource centre is developed in new campus of CIFE Mumbai. Four lines (three inbred and one random bred) of zebrafish viz., Line1, Line 2, Line3 and NS with an inbreeding coefficient value F_x 0.63, 0.59, 0.25 and 0 respectively were reared in the CZeBraG facility. A total of 110 full sib families were produced employing full sib mating design. The heritability values for all traits ranged between 0.36 - 0.75. The traits exhibited moderate to high heritability. Fecundity, survival at 5dpf & survival at 45dpf, and growth traits viz., Body weight (BW), Standard length (SL) & Body depth (BD) were studied. There was no difference in performance for trait fecundity whereas the performance for growth traits was in decreasing order with increasing F_x . About 30,000 zebrafish seed were provided from CZeBraG lab (SaFORD, ICT Mumbai, BARC Mumbai, Bombay College of Pharmacy etc including CIFE).





CONTRACT RESEARCH PROJECTS

3.3.11 Performance evaluation of AQUALAABH in inland saline aquaculture systems

Project Duration:	March-September 2025
Principal Investigator:	Debajit Sarma
Co-Principal Investigators:	Kapil Sukhdhane
Budget:	Rs. 5.60 Lakhs
Funding agency:	Agrocel Industries Pvt. Ltd., Gujarat

This study investigated the effects of the supplementation of Aqualaabh on the culture of *Penaeus vannamei* in saline water over a 45-day period using a completely randomized design. *P. vannamei* (Post larvae 8) were brought from Marakkanam, Tamil Nadu. The daily ration of commercial feed (WATER BASE) has 35% protein, 5% fat, 12% moisture, and 3% fiber. Shrimps were fed with 2.5-5% of body weight three times in day. To maintain the water quality, uneaten feed, and shrimp excreta were siphoned regularly and a constant water level was maintained by adding aerated and treated water. Water quality parameters such as dissolved oxygen, temperature, pH, salinity,



Penaeus vannamei fed with Aqualaabh

hardness, alkalinity, TAN, nitrite, and nitrate were analysed by following APHA 2005 method. Calcium, sodium, potassium were analysed by using flame photometer, whereas magnesium was estimated by using APHA 2005 method. Statistical analysis of water quality, growth, and physiological parameters was conducted using one-way ANOVA in SPSS 27.0 for Windows. Among the water quality parameters, temperature, pH, dissolved oxygen, TAN, NO₂-N, and NO₃-N showed no significant variation, whereas salinity, total alkalinity, total hardness, and concentrations of Ca²⁺, Mg²⁺, and K⁺ ions varied significantly ($p < 0.05$) across treatments. Initial and final sampling was done to analyse growth performance. The length and weight of the shrimp were recorded. Significant differences were also observed in growth, survival, biomass gain, percentage weight gain, specific growth rate (SGR), and feed conversion ratio (FCR) ($p < 0.05$). The highest survival rate was observed in the Aqualaabh treatment, with T2 (K⁺ + Mg²⁺) and T3 (Ca²⁺ + Mg²⁺) also showing high survival rates. Treatments T1 (K⁺ + Ca²⁺) and T4 (Aqualaabh) showed significantly greater growth performance compared to other treatments. Overall, the addition of Aqualaabh significantly improved survival, growth, biomass gain, SGR, FCR, average daily weight gain (ADWG), and parameters related to osmotic regulation and stress response in *P. vannamei*.

3.3.12 Performance evaluation of microalgae derived from agro-industrial wastes for aquaculture applications

Project Duration:	2025-26
Principal Investigator:	Debajit Sarma
Co-Principal Investigators:	Sukham Munilkumar, Babitha Rani, Madhuri Pathak
Budget:	Rs. 15.00 lakhs
Funding agency:	Sahyadri Farm, Nashik

Graded levels of dried *Chlorella vulgaris* (0.25%, 0.5%, 1%, 1.5%) were incorporated into experimental diets to assess dose-dependent effects on fish performance and physiology. Experimental diets were formulated, isonitrogenous, isocaloric with 30% protein and 5% lipid through pelletization feed technology. Experimental design CRD (Completely Randomised Design) implemented with 90 days experimental period and periodic sampling. An optimum dose-response relationship between freeze-dried *Chlorella vulgaris* levels in *Piaractus brachipomus* will be established. The study aims to develop a sustainable nutritional strategy for enhancing growth performance, food conversion



ratio (FCR), digestive activity, immune response, antioxidant capacity and overall health of *Piaractus brachipomus* using freeze-dried *Chlorella vulgaris*. The focus of the study is to validate *Chlorella vulgaris* as an eco friendly functional feed additive capable of prompting efficient and environmentally responsible aquaculture practices. An experiment on depuration-mediated quality improvement of agro-industry wash-water grown *Chlorella vulgaris* for aquafeed application in Koi carp is going on.

Sampling & Analysis



3.2.9 A study on the algal biomass-based aquafeed on fish growth and immunological properties

Project Duration: 2024-2025
Principal Investigator: S. P. Shukla
Co-Principal Investigators: Kundan Kumar, Saurav Kumar, Manish Jayant
Budget: Rs. 5.93 Lakhs
Funding Agency: Reliance Industries Pvt. Ltd.

The project evaluates algal biomass supplied by RIL as a sustainable ingredient in aqua feed, focusing on growth performance and immune responses in *Labeo rohita* fingerlings. Replacing 25% of fish meal protein with algal protein significantly enhanced growth, feed efficiency, and nutrient utilization, yielding the lowest FCR and highest PER, weight gain, SGR, ADG, and final weight. In contrast, 50% replacement showed no advantage over the control. Fish fed algal diets also exhibited improved haematological parameters, including higher haemoglobin, erythrocyte count, and PCV, along with elevated muscle MDH activity. Post bacterial challenge, these fish demonstrated higher survival rates. Similarly, partial substitution of soybean meal with algal biomass improved growth, with 25% replacement showing optimal results. While 50% replacement increased muscle LDH activity, 25% replacement minimized liver ALT levels and slightly improved survivability. Overall, moderate algal inclusion enhances growth, physiology, and disease resistance.



Sampling and growth performance evaluation of experimental *L. rohita*

3.2.10 Toxicity evaluation of bio culture product personamedy*717 in freshwater ecosystem like algal and fish model

Project Duration: 2024-2025
Principal Investigator: Kundan Kumar
Co-Principal Investigators: S. P. Shukla, Saurav Kumar
Budget: Rs. 6.76 Lakhs
Funding Agency: J.M. Infra and Enviro Technologies Pvt. Ltd.

J. M. Infra and Enviro Technologies Pvt. Ltd. are the manufacturers of Bio-culture for applications in bioremediation treatment of waste water and solid waste management projects. In the experiment, the bio culture product personamedy *717 series was found to be non-toxic on freshwater algae, *Chlorella vulgaris* and cyanobacteria,



Test organisms are exposed to various concentrations of test bio-culture product

Spirulina platensis. Further, the test material was found to be non-toxic in the tested range on freshwater rohu (*Labeo rohita*) fingerlings. The bio-culture product Personamedy 717 Series was found to be non-toxic to the early life stages of freshwater fry of Gulsa Tengra (*Mystus cavasius*). The bio-culture

product has no antimicrobial activity tested against the freshwater bacteria *Bacillus licheniformis*, *Kocuria* sp., *Providencia rettgeri*. The bio-culture product was found to have no detectable heavy metal content (less than 0.1 parts per billion) for the following heavy metals: ^{60}Ni , ^{75}As , ^{111}Cd , ^{118}Sn , ^{202}Hg , and ^{208}Pb . However, ^{66}Zn and ^{56}Fe were reported concentrations of 64.25 ppb and 0.85 ppb, respectively, which are within the safe range. The heavy metal analysis was performed using Inductively Coupled Plasma Mass Spectrometry (ICP-MS).

3.2.11 Validation of Hi-PCR® EHP and WSSV detection and quantitation multiplex probe PCR kit (MBPCR254) developed by Himedia Laboratories Private Limited

Project Duration: 2024 –2025
Principal Investigator: Megha K. Bedekar
Co- Principal Investigator: Jeena K.
Budget: Rs. 4.95 Lakhs
Funding Agency: HiMedia, India

The qPCR assay was standardized and the analytical performance against WOAHP-recommended nested PCR protocols for detection of WSSV and EHP was evaluated. The kit performance was evaluated against WOAHP-recommended nested PCR to assess diagnostic sensitivity, specificity, and reliability. The Kit demonstrated high amplification efficiency ($\sim 101\%$) and acceptable linearity ($R^2 \approx 0.96$), confirming assay robustness in EHP detection. Achieved superior diagnostic sensitivity (100%) compared to nested PCR (82.76%) in hepatopancreas samples. The limit of detection was established at 1 copy/reaction, indicating high analytical sensitivity of the kit. Confirmed 100% specificity with no cross-reactivity against non-target (*Vibrio* spp.) DNA. Validated hepatopancreas as the preferred diagnostic tissue for detection of EHP and confirmed reliability through cross-validation studies. Demonstrated robust qPCR performance with high amplification efficiency ($\sim 102\%$) and strong linearity ($R^2 \approx 0.97$) in WSSV detection. Achieved 100% diagnostic sensitivity and specificity for WSSV detection, outperforming nested PCR in low-copy detection. Established limit of detection at 1 copy/reaction, confirming high analytical sensitivity of the HiMedia kit. Confirmed absence of cross-reactivity with non-target (*Vibrio* spp.) DNA, validating assay specificity. Cross-validation with conventional PCR reinforced assay accuracy, supporting its application in rapid aquaculture diagnostics.



3.2.12 Potency, safety, and toxicity testing of *Aeromonas veronii* inactivated vaccine

Project Duration:	2024 –2025
Principal Investigator:	Megha K. Bedekar
Co-Principal Investigator:	Gayatri Tripathi
Budget:	Rs. 4.00 Lakhs
Funding Agency:	India Immunologicals Pvt. Ltd., Hyderabad

Based on the technology of vaccine developed by CIFE for CIFE-AVAc, a formalin-inactivated whole-cell vaccine batch prepared by India Immunologicals Pvt Ltd, Hyderabad (IIL-AV Vac Batch), against *Aeromonas veronii* (isolate: CIFE-2020) was evaluated in Indian Major Carps (Rohu, Catla, Mrigal) under collaborative studies between IIL, Hyderabad and ICAR-CIFE, Mumbai. The vaccine (1×10^{11} CFU/mL) met quality standards, showing sterility and stability (PCR confirmed; stable up to 30 days at temperatures up to 37°C), and ensuring suitability for field application. Vaccination was carried out in 1000 fry (0.5–1.5 g) using immersion method (1-hour exposure), with a two-dose schedule (Day 0 and Day 14), followed by rearing under field conditions (HAPA system at Isapura Hatcheries). Potency assessment through pathogen challenge (dose: 4.21×10^8 ; LD₅₀: 4.21×10^7) demonstrated strong protection, with relative percentage survival (RPS) of 69.4% at 3 months and 59.6% at 6 months, indicating sustained immunity with slight decline over time. The immersion-based challenge model provided reliable efficacy outcomes, avoiding artefacts observed in earlier injection-based trials. Safety evaluation showed no mortality or toxicity at 1X dose, with only transient behavioural responses resolving within 5–6 days, confirming field-level safety. Repeat dose toxicity studies (up to 28 days) indicated no abnormal clinical signs, establishing safety even under prolonged exposure. Growth performance remained unaffected, with post-booster weight gain recorded at 175 ± 15 g, indicating no adverse impact on fish health or productivity. The inactivated *Aeromonas veronii* vaccine demonstrated safety, stability, and field-level efficacy with sustained protection and no adverse effects, supporting its suitability for commercial application in aquaculture.



3.4.9 Evaluation of feed additive in terms of growth performance, immune function and transportation stress mitigation in selected commercial fish species, *Labeo rohita*

Project Duration: 2025-26
Project Code: CIFE/001/702
Principal Investigator: Kedar Nath Mohanta
Co-Principal Investigators: Prem Kumar, N.P Sahu
Budget: Rs. 18.55 lakhs
Funding Agency: Advance Enzymes, Mumbai

An experiment was conducted to evaluate the effect of the feed additive on growth performance (weight gain, specific growth rate, feed conversion ratio), immunomodulation and transportation stress mitigation in *Labeo rohita*. Around 375 of *Labeo rohita* fingerlings (mean weight: $4.85 \text{ g} \pm 1.25$) were randomly distributed in five different experimental groups viz. (control, 0.5, 1.0, 1.5 and 2%) in triplicate ($n=3$). Each tank has a capacity of 500 L hold 25. Fish were reared for 60 days under a natural photoperiod. During the rearing, fish were fed with different experimental diets to satiation. To maintain ideal water quality parameters, our feed and faecal matter were siphoned out daily, and water loss due to evaporation and siphoning was compensated for by adding fresh water. During the experiment, fish weight, total length and physico-chemical parameters of water (dissolved oxygen, temperature, pH, total ammonia, water conductivity and hardness) were recorded at 15-day intervals. At the end of the experiment, stress markers (SOD, CAT, glucose, cortisol), immune parameters (blood counts, A, G, and TP, NBT, lysozyme), digestive enzymes (amylase, protease and lipase), immune gene expression (TNF, C3, iNOS), serum lipid profile, challenge study and histology of vital organs were carried out. Overall, the study showed that the *L. rohita* fed with 1.5% supplemented feed additive gave better growth (7.50 ± 1.25) and survival (100%).



3.7.4 Effect of feeding rice bran supplemented with exogenous enzymes in carps**Project duration:** 2024-2025**Principal Investigator:** Shamna N**Co-Principal Investigators:** Muralidhar Ande, Shobha Rawat**Budget:** Rs. 3.12 lakhs**Funding agency:** M/s Venkatarama Gia Pvt Ltd, Andhra Pradesh

Two feeding experiments were conducted to evaluate the effect of de-oiled rice bran (DORB) supplemented with exogenous enzymes on the growth and metabolic well-being of rohu fingerlings. In Experiment 1, enzyme supplementation significantly improved in vitro protein digestibility and growth performance in raw DORB-based diets. Xylanase supplementation at 0.1% produced the highest weight gain (3.89 g), approximately 26% higher than the control, along with improved feed conversion ratio and digestive enzyme activity. Combination enzyme treatments also enhanced feed efficiency and carbohydrate digestion. In Experiment 2, pelleted DORB-based diets supplemented with xylanase and phytase showed reduced phytic acid levels and significantly enhanced digestibility. The combination treatment TE0.5P0.1 yielded the best performance, recording the highest weight gain (4.40 g), lowest FCR (1.70), and highest protein efficiency ratio. Both experiments maintained 100% survival and stable antioxidant responses, indicating improved nutrient utilization without adverse physiological stress in rohu fingerlings.



Harvested carps fed with rice bran supplemented with enzymes



CHAPTER - 4



EXTENSION ACHIEVEMENTS

4.1 Training Programs Organized under Tribal-Sub Plan (TSP)

Nodal Officer: Dr. Sukham Munilkumar

During the year 2025, the Tribal Sub Plan (TSP) initiatives implemented by ICAR-Central Institute of Fisheries Education, Mumbai & its regional centres successfully organized 15 training programs, demonstrations, awareness campaigns, farmers' meets and capacity-building events across several tribal and rural regions of India, including Maharashtra, Andhra Pradesh, Jharkhand, and West Bengal. These programs were strategically designed to strengthen livelihood opportunities, improve fisheries and aquaculture practices, promote sustainable resource utilization, and enhance technical and entrepreneurial skills among tribal fish farmers, youth, women, and stakeholders.



Major thematic areas covered under the programs included Integrated Multi-Trophic Aquaculture (IMTA), cage culture technologies, integrated agri-aquaculture systems, genetically improved fish species, sustainable aquaculture management practices, freshwater aquaculture methods, fishing technology skill development, taxonomy and phylogenetics, and professional communication skills. Significant outreach activities such as the “Farmers Meet 2025” and the “Agriculture Education Fair” conducted at Rampachodvaram, Andhra Pradesh, attracted large participation from farming and fishing communities, creating awareness regarding integrated fish farming and advanced aquaculture technologies. Several demonstration and awareness programs conducted in tribal-dominated regions of Nandurbar, Palghar, Vasai, Purulia, and Hazaribagh focused on improving productivity through scientific fish farming practices and dissemination of improved fish varieties. The programs also emphasized inclusive participation, with women beneficiaries actively participating in multiple training activities, particularly in IMTA, sustainable aquaculture, and communication skill development programs. Altogether, about 15 TSP initiatives benefitted 1406 participants consisting of 1224 males and 182 females, thereby contributing substantially towards capacity building, technology adoption, livelihood enhancement, and socio-economic empowerment of tribal and rural fisheries communities.



Training programs organized under TSP scheme

Sr. No.	Title	Date & Place	Name of Coordinator(s)	No. of Participants (Male, Female)
1.	Integrated Multi-Trophic Aquaculture Model	23-25 January 2025 Hazaribagh (Jharkhand)	Prem Kumar	60 (M:23, F:37)
2.	Integrated Taxonomy and Phylogenetics	19-28 February 2025 Mumbai (Maharashtra)	Dayal Devadas	05 (M:02, F:03)
3.	Farmers Meet 2025	1 March 2025 Rampachodavaram (Andhra Pradesh)	Shamna N. Shobha Rawat	275 (M:220, F:55)
4.	Agriculture Education Fair	2 March 2025 Rampachodavaram (Andhra Pradesh)	Shamna N. Shobha Rawat	250 (M:250)
5.	Cage Culture in Sardar Sarovar Reservoir	14 March 2025 Nandurbar (Maharashtra)	Kapil Sukhdhane	174 (M:167, F:07)
6.	Better Management Practices for Sustainable Aquaculture	17-18 March 2025 Rampachodavaram (Andhra Pradesh)	Muralidhar P. Andhe	30 (M:18, F:12)
7.	Sustainable Fishing Technology	19 March 2025, Mumbai (Maharashtra)	Karankumar Ramteke	51 (M:33, F:18)
8.	Cage Culture	23-25 March 2025 Nandurbar (Maharashtra)	Kapil Sukhdhane	100 (M:92, F:08)
9.	Genetically Improved Fish Species	24-25 March 2025 Nandurbar (Maharashtra)	Kiran Rasal	98 (M:98)
10.	Professional English Course for Effective Communication & Writing	27 June - 5 December 2025 Mumbai (Maharashtra)	Aparna Chaudhari	17 (M:06, F:11)
11.	Modern Methods of Freshwater Aquaculture	8-10 September 2025 Purulia (West Bengal)	Suman Manna Dhalongsaih Reang	20 (M:19, F:01)
12.	Rearing of Genetically Improved Fish Species in Aquaculture	15-16 September 2025 Palghar (Maharashtra)	Mukunda Goswami Kiran Rasal	110 (M:107, F:03)
13.	Integrated Agri Aquaculture Fish Farming	17-18 September 2025 Vasai (Maharashtra)	Kapil Sukhdhane S. Munilkumar Debajit Sarma	61 (M:59, F:02)
14.	Integrated Multi trophic Aquaculture Technology Farming Method	13-15 October 2025 Hazaribagh (Jharkhand)	Prem Kumar	70 (M:45, F:25)
15.	Genetically Improved Fish Species in Aquaculture	4-5 November 2025 Nandurbar (Maharashtra)	Kiran Rasal	85 (M:85)
Total				1406 (M: 1224, F:182)

4.2 Training Programs Organised under Scheduled Caste Sub Plan (SCSP)

Nodal Officer: Dr. Sukham Munilkumar

During the year 2025, the Scheduled Caste Sub Plan (SCSP) initiatives implemented by ICAR-Central Institute



of Fisheries Education, Mumbai and its regional centres successfully organized 18 training programs across the States including Bihar, Assam, Chhattisgarh, Maharashtra, West Bengal and Andhra Pradesh. These programs were designed to strengthen technical capacity, improve livelihood opportunities, promote scientific aquaculture practices, and support socio-economic empowerment among Scheduled Caste beneficiaries engaged in fisheries and aquaculture sectors. The programs addressed a wide range of thematic areas such as ornamental fisheries, fish health management, integrated fish farming, DNA sequencing and Next-Generation Sequencing (NGS) technologies, taxonomy and phylogenetics, breeding and seed production of carp species, Integrated Multi-Trophic Aquaculture (IMTA), freshwater aquaculture, freshwater pearl culture, hatchery management, biofloc systems, fish drying technologies, freezing techniques, and value-added fish products. Specialized programs on disease management, fish seed production, and



genetically selected magur fish farming contributed significantly towards enhancing technical knowledge and entrepreneurship skills among participants. Several training-cum-demonstration programs conducted in rural and coastal regions of West Bengal, Bihar, Assam, Andhra Pradesh, and Chhattisgarh focused on promoting sustainable aquaculture technologies, improved post-harvest management, and scientific fish farming practices for income enhancement and employment generation. Capacity-building activities organized at ICAR-CIFE, Motipur, Kolkata, and Kakinada provided hands-on exposure and practical learning opportunities for trainees, researchers, farmers, and rural youth. The programs also encouraged women's participation, particularly in fish processing, pearl culture, ornamental fisheries, and health management activities, thereby promoting gender-inclusive fisheries development. Altogether, about 18 SCSP initiatives benefited 567 beneficiaries comprising 418 males and 149 females.



Training programs organized under SCSP scheme

Sr. No.	Title	Date & Place	Name of Coordinator(s)	No. of Participants (Male, Female)
1.	Advancing Ornamental Fish Farming, Feeding, Disease Management & Market Opportunities	15-20 January 2025 Motipur, Bihar	Udipta Roy Md. Aklakur	45 (M:40, F:05)
2.	DNA Sequencing using Ion Torrent NGS Platform and Data Analysis	29 January- 5 February 2025 Mumbai, Maharashtra	Aparna Chaudhari A. Pavan Kumar	20 (M:12, F:08)
3.	Scientific Methods of Integrated Fish Farming	3 February 2025 Puthimari, Assam	Debajit Sarma	100 (M:70, F:30)
4.	Integrated Taxonomy and Phylogenetics	19-28 February 2025 Mumbai, Maharashtra	Dayal Devadas	20 (M:15, F:05)
5.	Fish Health Management	27 February-1 March 2025 Mungeli, Chhattisgarh	Jeena K. Arun Sharma Saloni Shivam	30 (M:16, F:14)
6.	Fish Health Management	2-4 March 2025 Mungeli, Chhattisgarh	Saloni Shivam Arun Sharma Jeena K.	30 (M:15, F:15)
7.	Fish Health Management	5 March 2025 Mungeli, Chhattisgarh	Arun Sharma Saloni Shivam Jeena K.	30 (M:22, F:08)
8.	Breeding and Seed Production of Common and Koi Carp	17-22 March 2025 Motipur, Bihar	Udipta Roy Md. Aklakur	45 (M:37, F:08)
9.	Best Management Practices in Aquaculture	19-21 March 2025 Gaya, Bihar	Kundan Kumar Saurav Kumar	35 (M:30, F:05)
10.	Health Management in Aquaculture	20-21 March 2025 Gaya, Bihar	Saurav Kumar Kundan Kumar	35 (M:33, F:02)
11.	Seaweed and Clam Based Integrated Multi-Tropic Aquaculture System	10-11 July 2025 Kakinada, Andhra Pradesh	Muralidhar P. Ande	10 (M:10)
12.	Modern Methods of Freshwater Aquaculture	2-4 September 2025 Jalpaiguri, West Bengal	G. H. Pailan D. K. Singh P. K. Behera	20 (M:17, F:03)
13.	Modern Fish Drying Techniques and Product Diversification	2-4 September 2025 East Medinipur, West Bengal	H. Mandakini Leesa P.	20 (M:16, F:04)
14.	Commercial Seed Rearing of IMC in P-lined Semi Biofloc System	8-12 September 2025 Motipur, Bihar	Udipta Roy Md. Aklakur	32 (M:29, F:03)
15.	Freshwater Pearl Culture Technology	22-24 September 2025 North 24 Parganas, West Bengal	Sweta Pradhan	20 (M:13, F:07)



16.	Refinement in Carp Culture Induced Breeding and Hatchery Management	22-26 September 2025 Balabhadrapuram, Andhra Pradesh	Shamna N. Shobha Rawat	20 (M:12, F:08)
17.	Aquaculture of Genetically Selected Magur Fish	11-13 October 2025 Balabhadrapuram, Andhra Pradesh	Shobha Rawat Shamna N.	15 (M:12, F:03)
18.	Freezing Techniques and Value Added Fish Products	20-22 November 2025 Murshidabad, West Bengal	H. Mandakini Sujata Sahoo	40 (M:19, F:21)
Total:				567 (M:418, F:149)

4.3 Training Programs Organised under North-Eastern Hill (NEH) Scheme

Nodal Officers: Dr. A. K. Verma (till 13.8.2025); Dr. Shivaji Argade (from 14.8.2025)

During the year 2025, the North Eastern Hill (NEH) region development initiatives implemented by ICAR-Central Institute of Fisheries Education, Mumbai & its regional centres successfully organized seven (7) training programs, awareness campaigns, and skill development activities across the North Eastern states of Tripura, Assam, and Arunachal Pradesh. These programs were designed to promote sustainable aquaculture practices, strengthen livelihood opportunities, enhance technical skills, and improve fisheries-based income generation among rural and tribal communities of the NEH region. The programs focused on key thematic areas such as freshwater aquaculture, fish genetics and biotechnology, freshwater pearl culture technology, quality fish seed production, genetically improved fish species, A major emphasis was placed on scientific aquaculture practices suitable for small water bodies and resource-poor farming systems prevalent in the North Eastern states. and training programs conducted in Gomati District and Lefunga Block of Tripura. Specialized capacity-building activities on fish genetics and biotechnology conducted at ICAR-Central Institute of Fisheries Education provided participants with advanced knowledge in emerging fisheries technologies and research methodologies. In

Assam, large-scale training and awareness programs on quality fish seed production and freshwater pearl culture technology contributed significantly towards promoting entrepreneurship, scientific seed production, and sustainable aquaculture productivity enhancement. The initiatives also witnessed substantial participation of women beneficiaries, particularly in pearl culture, fish



seed production, and awareness programs on genetically improved fish species, thereby encouraging inclusive and gender-sensitive fisheries development in the region. Altogether, the NEH programs benefited 447 participants comprising 278 males and 169 females.





Training programs organized under NEH scheme

Sr. No.	Title	Date & Place	Name of Coordinator(s)	No. of Participants (Male, Female)
1.	Culture of Magur for Improvement of Livelihood	24 March 2025 Gomati, Tripura	Dhalongsaih Reang	50 (M:43, F:07)
2.	Modern methods of Freshwater Aquaculture	18-20 March 2025 Lower Dibang Valley, Arunachal Pradesh	G. Biswas G. H. Pailan D. K. Singh	40 (M:27, F:13)
3.	Fish Genetics and Biotechnology	15-19 March 2025 Mumbai, Maharashtra	Rupam Sharma Kiran Rasal	12 (M:08, F:04)
4.	Culture of High Value Catfish for Improvement of Livelihood	12-14 November 2025 Lefunga, Tripura	Sujata Sahoo Dhalongsaih Reang	40 (M:32, F:08)
5.	Freshwater Pearl Culture Technology	25-27 November 2025 Murigaon, Assam	Sweta Pradhan	20 (M:13, F:07)
6.	Quality Fish Seed Production for Enhancing Aquaculture Productivity	6-8 December 2025 Kamrup, Assam	Debajit Sarma	200 (M:104, F:96)
7.	Genetically Improved Fish Species for Aquaculture	19-21 December 2025 Agartala, Tripura	Kiran Rasal Dhalongsaih Reang	85 (M:50, F:35)
Total Beneficiaries				447 (M:278; F:169)



4.4 Skill Development Programs (SDPs)

Sl. No.	Title	Name of Coordinator(s)	Duration & Place	No. of Participants (Male, Female)
Aquaculture Division				
1.	Recent Advances in Aquaculture towards Enhancing Sustainable Production & Productivity	All Faculty of Aquaculture Division	4-8 August 2025 Mumbai (Maharashtra)	25 (M:17, F:08)
2.	Inland Cage Culture Fish Farming and Its Management	Kapil Sukhdhane	16 October 2025 Mumbai (Maharashtra)	51 (M:51)
FEES Division				
3.	Social Science Approaches to Sustainable Aquaculture and Livelihood	Arpita Sharma Prasenjit Pal Swadesh Prakash	23-27 October 2025 Mumbai (Maharashtra)	22 (M:17, F:05)
FRHPHM Division				
4.	Advances in Fisheries Resources Management	B. B. Nayak Abuthagir I. S.	17-21 November 2025 Mumbai (Maharashtra)	25 (M:20, F:05)
AEHM Division				
5.	Emerging Infectious Diseases & Challenges for Health Management in Aquaculture	Gayatri Tripathi Babitha Rani V. S. Bharti Saurav Kumar R. Bharathi Rathinam	8-12 September 2025 Mumbai (Maharashtra)	24 (M:10, F:14)
FGB Division				
6.	Genetic Management of Hatchery Stocks for Sustainable Aquaculture	Sunil Kumar Nayak Kiran Rasal Angom Lenin Singh	28 July – 1 August 2025 Mumbai (Maharashtra)	25 (M:15, F:10)
FNBP Division				
7.	Advances in Fish Nutrition and Feed Technology for Sustainable Aquaculture	K. N. Mohanta Sikendra Kumar	21-25 July 2025 Mumbai (Maharashtra)	25 (M:17, F:08)
8.	Fish Nutrition, Feed Formulation, Feed Packaging and Marketing	K. N. Mohanta Sikendra Kumar	13-16 October 2025 Mumbai (Maharashtra)	25 (M:15, F:10)
9.	Physiology of Sex Steroidogenesis & Gonad Development	Prem Kumar Manish Jayant	15-16 December 2025 Mumbai (Maharashtra)	30 (M:25, F:05)
ICAR-CIFE, Kolkata				
10.	Mithe Pani Me Machli Palan	H. Mandakini Devi Sweta Pradhan	7-13 January 2025 Jamui (Bihar)	30 (M:30)
11.	Biotechnological Applications in Aquaculture	Sujata Sahoo Leesa Priyadarsani	7-13 January 2025 Kolkata (West Bengal)	18 (M:11, F:07)

12.	Mithe Pani Me Machli Palan	Suman Manna D. K. Singh	15-21 January 2025 Khagaria (Bihar)	30 (M:30)
13.	Mithe Pani Me Machli Palan	Leesa Priyadarsani Sujata Sahoo	22-28 January 2025 Aurangabad (Bihar)	30 (M:30)
14.	Mithe Pani Me Machli Palan	Sujata Sahoo Leesa Priyadarsani	4-10 February 2025 Lakhisarai (Bihar)	30 (M:30)
15.	Live Food Culture & Entrepreneurship Development in Ornamental Fish Breeding & Culture	G. H. Pailan T. K. Ghoshal G. Biswas	5-11 February 2025 Kolkata (West Bengal)	24 (M:14, F:10)
16.	Mithe Pani Me Machli Palan	G. H. Pailan H. Mandakini Devi	21-27 February 2025 Gopalganj (Bihar)	30 (M:30)
17.	Mithe Pani Me Machli Palan	T. K. Ghoshal Leesa Priyadarsani	4-10 March 2025 Rohtas (Bihar)	30 (M:30)
18.	Advances in Freshwater Aquaculture	T. K. Ghoshal	3-17 April 2025 Gumla (Jharkhand)	14 (M:06, F:08)
19.	Advances in Aquaculture Practices	G. Biswas P. Sardar Sweta Pradhan	21-27 May 2025 Kolkata (West Bengal)	29 (M:14, F:15)
20.	Advances in Aquaculture Practices	T. K. Ghoshal	3-17 June 2025 Kolkata (West Bengal)	3 (M:02, F:01)
21.	Fish Processing & Value-Added Fish Products	H. Mandakini Devi Sujata Sahoo D. K. Singh	15-21 July 2025 Kolkata (West Bengal)	11 (M:03, F:08)
22.	Entrepreneurship Development in Ornamental Fish Breeding & Culture	Dhalongsaih Reang Leesa Priyadarsani Sweta Pradhan	20 August - 18 September 2025 Kolkata (West Bengal)	13 (M:11, F:02)
23.	Entrepreneurship Development in Freshwater Pearl Farming	Sweta Pradhan Suman Manna	01-05 September 2025 Kolkata (West Bengal)	13 (M:08, F:05)
24.	Mithe Pani Me Machli Palan	P. Sardar H. Mandakini Devi	9-15 September 2025 Madhepura (Bihar)	30 (M:30)
25.	Fish Nutrition & Feeding Strategies	P. Sardar D. K. Singh	16-22 September 2025 Kolkata (West Bengal)	45 (M:31, F:14)
26.	Mithe Pani Me Machli Palan	T. K. Ghoshal Dhalongsaih Reang	08-14 October 2025 Katihar (Bihar)	30 (M:30)
27.	Farm Made Feed Formulation & On-Farm Feeding Management	T. K. Ghoshal G. H. Pailan	28 October - 03 November 2025 Kolkata (West Bengal)	30 (M:18, F:12)
28.	Modern Fish Farming Techniques	Dhalongsaih Reang	06-10 November 2025 Kolkata (West Bengal)	23 (M:0, F:23)
29.	Entrepreneurship Development in Fish Feed Manufacturing & Feeding Management	D. K. Singh H. Mandakini Devi Suman Manna	10 November - 9 December 2025 Kolkata (West Bengal)	17 (M:16, F:01)



30.	Mithe Pani Me Machli Palan	H. Mandakini Devi Sweta Pradhan	25 November – 1 December 2025 Bhagalpur (Bihar)	30 (M:30)
31.	Mithe Pani Me Machli Palan	Sweta Pradhan G. H. Pailan	09-15 December 2025 Araria (Bihar)	30 (M:30)
32.	Mithe Pani Me Machli Palan	Suman Manna D. K. Singh	16-22 December 2025 Banka (Bihar)	30 (M:30)
ICAR-CIFE, Kakinada				
33.	Fish & Prawn Culture	Muralidhar P. Ande K. Syamala Shamna N. Shobha Rawat Amit Kumar Verma Rajeev	28 January - 03 February 2025 Nalanda (Bihar)	20 (M:20)
34.	Ornamental Fish Culture	Shamna N. Shobha Rawat Rajeev	30 January - 5 February 2025 Balabhadrapuram (Andhra Pradesh)	08 (M:06, F:02)
35.	Fish & Prawn Culture	K. Syamala Muralidhar P. Ande Shamna N. Shobha Rawat Amit Kumar Verma Rajeev	11-17 February 2025 Jehanabad (Bihar)	24 (M:24)
36.	Improved Fish Culture & Management Practices	Muralidhar P. Ande K. Syamala Amit Kumar Verma	24-25 April 2025 Pedapalli (Telangana)	21 (M:18, F:03)
37.	Fish & Prawn Culture	Muralidhar P. Ande K. Syamala Shamna N. Shobha Rawat Amit Kumar Verma Rajeev	17-23 June 2025 West Champaran (Bihar)	24 (M:24)
38.	Fish & Prawn Culture	K. Syamala Muralidhar P. Ande Shamna N. Shobha Rawat Amit Kumar Verma Rajeev	15-21 July 2025 Bhojpur (Bihar)	24 (M:24)
39.	In-Plant Training - Student Ready Programme	Muralidhar P. Ande K. Syamala Amit Kumar Verma	25 July - 20 September 2025 Raha (Assam)	26 (M:06, F:20)
40.	Seaweed and Clam based Integrated Multi-Trophic Aquaculture Systems	Muralidhar P. Ande K. Syamala Amit Kumar Verma	20-21 August 2025 Kakinada (Andhra Pradesh)	10 (M:10)
41.	Advancement in Carp Breeding & Hatchery Management Technologies	Shamna N. Shobha Rawat Rajeev	25-29 August 2025 Balabhadrapuram (Andhra Pradesh)	05 (M:05)



42.	Aqua Feed Preparation & Management	Shamna N. Shobha Rawat Rajeev	15-19 September 2025 Balabhadrapuram (Andhra Pradesh)	24 (M:14, F:10)
43.	Culture & Seed Production of Maha Magur	Shamna N. Shobha Rawat Rajeev	08-13 October 2025 Balabhadrapuram (Andhra Pradesh)	13 (M:08, F:05)
44.	Basics in Aquaculture	Shamna N. Shobha Rawat Rajeev	15 October 2025 - 15 January 2026 Balabhadrapuram (Andhra Pradesh)	03 (M:03)
45.	Fish & Prawn Culture	Muralidhar P. Ande K. Syamala Shamna N. Shobha Rawat Amit Kumar Verma Rajeev	26 November - 02 December 2025 Saharsa (Bihar)	20 (M:20)
46.	Aquaculture Experimental Programme Core Concepts & Advance Hands-On Practices	Shamna N. Shobha Rawat Rajeev	01 December 2025 - 30 March 2026 East Godavari (Andhra Pradesh)	18 (M:10, F:08)
47.	Fish & Prawn Culture	K. Syamala Muralidhar P. Ande Shamna N. Shobha Rawat Amit Kumar Verma Rajeev	16-22 December 2025 Bhojpur (Bihar)	24 (M:24)
ICAR-CIFE, Powarkheda				
48.	Matsya Evam Jhinga Palan Ki Adhunik Vidhiyan	Shashi Bhushan Harsha Haridas	03-09 February 2025 Katihar (Bihar)	15 (M:15)
49.	Matysa Plan Ke Liye Jal Evam Mruda Prabandhan	Shashi Bhushan Dhalongsai Reang Hasan Javed	26 February - 07 March 2025 Powarkheda (Madhya Pradesh)	15 (M:09, F:06)
50.	Jaliy Krishi Ke Liye Sarvottam Prabandhan Padhatiyan	Shashi Bhushan Hasan Javed	8-17 September 2025 Powarkheda (Madhya Pradesh)	15 (M:11, F:04)
ICAR-CIFE, Rohtak				
51.	Inland Saline Shrimp Culture Practices	Sreedharan K. Ashok Kumar	3-5 February 2025 Rohtak (Haryana)	07 (M:04, F:03)
52.	Inland Saline Shrimp Culture Practices	Sreedharan K. Ashok Kumar	17-21 March 2025 Mathura and Agra (Uttar Pradesh)	18 (M:18)
53.	Standard Operating Protocol for Emerging Fish Species in Biofloc Culture System	Sreedharan K.	20-22 March 2025 Rohtak (Haryana)	14 (M:10, F:04)
54.	Inland Saline Shrimp Culture Practices	Sreedharan K. Ashok Kumar	24-28 March 2025 Aligarh (Uttar Pradesh)	18 (M:18)



55.	Analysis of Soil & Water Quality Parameters	Sreedharan K. Satya Prakash	9-13 June 2025 Rohtak (Haryana)	02 (M:01, F:01)
ICAR-CIFE, Motipur				
56.	Aquaculture Enterprise Management	Md. Aklakur Udipta Roy	1 September 2025 - 31 March 2026 Motipur (Bihar)	05 (M:05)
Total				1304 (M:1043, F:261)

4.5 CAFT/Winter School/Summer School/Short Courses

Sl. No.	Title	Duration & Place	Name of Coordinator(s)	No. of Participants (Male, Female)
1.	Winter School on "Analytical Tools in Seafood Quality Management & Risk Assessment"	08-28 January 2025, ICAR CIFE, Mumbai	B. B. Nayak Manjusha L. Sanath Kumar	13 (M:07, F:06)
2.	CAFT on "Current Approaches & New Strategies In Aquatic Animal Disease Diagnostics And Vaccination"	08-28 January 2025, ICAR CIFE, Mumbai	Megha Bedekar Jeena K. Kundan Kumar	14 (M:13, F:01)
Total				27 (M:20, F:07)

4.6 Workshops, Seminars, Farmer Meets, etc. Organised

Sr. No.	Title	Name of Coordinator(s)	Date & Place	No. of Participants (Male, Female)
Aquaculture Division				
1.	National Workshop on "Advancing Aquaculture through Innovation: Academia, Industry & Youth Synergies"	All Aquaculture Faculty	7 October 2025 Mumbai (Maharashtra)	150 (M:95, F:55)
AEHM Division				
2.	Swachhata Action Plan for Commercial Utilization of Fish Waste in Urban Fish Markets	Vidya Shree Bharti	16 January 2025 Palghar (Maharashtra)	85 (M:62, F:23)
3.	Mahine Ke Antim Brihaspathivar: Mann Ki Baat Matsya Kisan Ke Sath -Importance of Fish Health Management in Aquaculture	Arun Sharma Saurav Kumar Saloni Shivam	30 January 2025 Mumbai (Maharashtra)	70 (M:64, F:06)
4.	Training-cum-Awareness Programme on "Emerging Diseases in Fish and Shrimp Aquaculture"	Gayatri Tripathi R. Bharathi Rathinam	02 May 2025 Panvel (Maharashtra)	11 (M:05, F:06)
5.	Awareness-cum-Training Programme on "Health Management in Aquaculture"	Gayatri Tripathi Babitha Rani R. Bharathi Rathinam	31 July 2025 Palghar (Maharashtra)	15 (M:08, F:07)
6.	Awareness Programme on "Fish Disease Diagnosis, Preventive Measures and Eco-Friendly Post-Harvest Technologies"	Gayatri Tripathi Babitha Rani R. Bharathi Rathinam	19 November 2025 Navi Mumbai (Maharashtra)	20 (M:11, F:09)



7.	World Antibiotic Awareness Week 2025	Jeena K. Manjusha L. Sanath Kumar H.	26 November 2025 Mumbai (Maharashtra)	25 (M:15, F:10)
FEES Division				
8.	National Statistics Day 2025	Prasenjit Pal Ananthan P. S.	27 June 2025 Mumbai (Maharashtra)	37 (M:20, F:17)
9.	National Fish Farmers Day 2025	Arpita Sharma Swadesh Prakash Ananthan P. S. Prasenjit Pal Shivaji Argade	10 July 2025 Palghar (Maharashtra)	206 (M:150, F:56)
10.	Release of 20 th Instalment of PM-KISAN Scheme	Arpita Sharma Swadesh Prakash Neha W. Qureshi	2 August 2025 Mumbai (Maharashtra)	60 (M:25, F:35)
11.	Awareness Program on “PM Dhan Dhaanya Krishi Yojana & National Mission on Pulses”	Arpita Sharma Swadesh Prakash Neha W. Qureshi	11 October 2025 Mumbai (Maharashtra)	40 (M:18, F:22)
12.	Release of 21 st Instalment of PM-KISAN	Arpita Sharma Swadesh Prakash	19 November 2025 Mumbai (Maharashtra)	49 (M:14, F:35)
13.	Kisan Diwas	Arpita Sharma	23 December 2025 Mumbai (Maharashtra)	50 (M:15, F:35)
FNBP Division				
14.	National Workshop on “Empowering Student Entrepreneurship & Innovations in Aquafeed Industry”	All Faculty of FNBP Division	27 November 2025 Mumbai (Maharashtra)	165 (M:102, F:63)
FRHPHM Division				
15.	Seminar on “IS 15000 (HACCP) & IS 2491: A Comprehensive Approach to Food Safety & Hygiene”	C. N. Ravishankar Manjusha L.	24 February 2025 Mumbai (Maharashtra)	98 (M:54, F:44)
16.	National Seminar on “AMR & Food Safety” during the World Antimicrobial Awareness Week -2025	Sanath Kumar Manjusha L B. B. Nayak	20-21 November 2025 Mumbai (Maharashtra)	75 (M:42, F:33)
ICAR-CIFE, Powarkheda				
17.	Fish Farmers Day & Farmers Meet	Shashi Bhushan Harsha Haridas Hasan Javed	10 July 2025 Powarkheda (Madhya Pradesh)	40 (M:30, F:10)
18.	Kisan Diwas	Shashi Bhushan Harsha Haridas Hasan Javed	23 December 2025 Powarkheda (Madhya Pradesh)	86 (M:86)
ICAR-CIFE, Kolkata				



19.	National Seminar on Role of Official Language Management in the Scenario of Developed India	D. K. Singh Jagadeesan A. K.	21-22 April 2025 Kolkata (West Bengal)	55 (M:40, F:15)
20.	National Fish Farmers Day	All Scientists of Kolkata Centre	10 July 2025 Kolkata (West Bengal)	60 (M:43, F:17)
21.	PM-Kisan Samman Nidhi Programme	All Scientists of Kolkata Centre	2 August 2025 Kolkata (West Bengal)	82 (M:55, F:27)
22.	Workshop on High Value Aquaculture Agroforestry Integration for Income Augmentation	Dhalongsaih Reang	19-20 September 2025 Lembucherra (Tripura)	10 (M:10)
23.	Kisan Diwas	T. K. Ghoshal Suman Manna	16-31 December 2025 South 24 Parganas (West Bengal)	97 (M:67, F:30)
ICAR-CIFE, Kakinada				
24.	Farmer's Meet-2025: A Platform to Know Maha Magur Strategies to Enhance Production from Integrated Fish Farming	Shamna N. Shobha Rawat Rajeev	1 March 2025 Sitarama Raju (Andhra Pradesh)	250 (M:205, F:45)
25.	PM-Kisan	Muralidhar P. Ande K. Syamala	19 November 2025 Kakinada (Andhra Pradesh)	15 (M:15)
26.	Kisan Diwas	Muralidhar P. Ande K. Syamala	23 December 2025 Kakinada (Andhra Pradesh)	35 (M:35)
Total				1886 (M:1186, F:700)

4.7 Fisheries Advisory Services

Sr. No.	Name / Beneficiary / Organisation	Date	Topic / Type of Support
ICAR-CIFE, Kolkata			
1.	Navendu Bikash Das Medinipur, West Bengal	31 January 2025	Fish drying
ICAR-CIFE, Kakinada			
2.	Amar Varma Bihar	31 January 2025	Magur culture
3.	Nandalal Kumar Choudhary Bihar	31 January 2025	Feed & feeding management
4.	P. Nageswara Rao Balabhadrapuram	12 February 2025	Disease management in carp pond
5.	D. S. V. Varma Yanam	19 February 2025	Ornamental fish culture, fish feed, live feed
6.	Ch. Sravanth Reddy Komaripalem	06 March 2025	Freshwater fish farming
7.	Rohith Shanu Kawardha, Chhattisgarh	10 March 2025	Feed mill installation



8.	K. Vinod Kumar Anaparthi	03 April 2025	Water quality assessment
9.	Mavi Subrata Rajanagaram	22 May 2025	Disease management in carp pond
10.	B. Rajasekhar Singampalli	03 July 2025	Carp seed production
11.	K. Ramireddy Rayavaram	03 July 2025	Breeding of magur
12.	G.V. Ravi Krishna Chintapalli	26 August 2025	Polyculture of carp and shrimp
13.	P. Sattibabu & P. Dontamooru Rayavaram	26 August 2025	Disease management in freshwater ponds
14.	S. Prem Kumar Kannapuram	09 October 2025	Breeding and seed production of carps
15.	S. Srikanth Reddy Ravulapalem	09 October 2025	Feed additives from agriculture by-products
Aquaculture Division			
16.	Sahyadri Krishi Udyojak Gat Padoshi Ahilyanagar	01 December 2025	Community-based cage aquaculture of tilapia and pangas for sustainable livelihood development
17.	M/S Shree Aquaculture	11 August 2025	Ornamental fish breeding and culture
18.	M/S Atharva Aquaculture	18 November 2025	Ornamental fish breeding and culture
19.	TNS Foundation, Andheri, Mumbai	22 September 2025	Fish culture in farm ponds
20.	Mahakisan NGO, Nashik	18 October 2025	Fish culture in farm ponds

4.8 TV Talks / Radio Talks / YouTube Videos / Print Media

4.8.1 TV / Radio Talk

Sr. No.	Name of Faculty	Topic	Date	Language	Programme / Aired On / Channel
ICAR-CIFE, Kolkata					
1.	G. Biswas	Bharat Sarkarer Matsya Daptarer Bibhinna Prakalpa / Dialogue	20 August 2025	Bengali	Krishi Kathar Aasar; All India Radio, Kolkata
ICAR-CIFE, Mumbai					
2.	Manish Jayant	Vikshit Krishi Sankalp Abhiyan - Kisano ke liye Matsya Palan ka Mahatva	07 June 2025	Hindi	Akashvani-Daman; AIR Daman
3.	Prem Kumar	Shrimp Farming	20 June 2025	Hindi	Hello Kisan; DD Kisan



4.8.2 Print Media

Sr. No.	Title / Headline of Article	Date	Name of Newspaper	Language
ICAR-CIFE, Kolkata				
1	আধুনিক পদ্ধতিতে মাছ চাষের প্রশিক্ষণ	22 February 2025	২৪ পরগনা, আনন্দবাজার পত্রিকা	Bengali
2	ICAR Tripura Centre, Purty Agrotech wrap up Pearl Grafting Workshop	20 September 2025	Tripura Observer	English
3	Adhunik padhyati te Mach Chasher Karmashala Falakatai	27 November 2025	Uttarbanga Sangbad	Bengali
4	Jal Mati Pariksha Shikhlen Matsya Chashira	27 November 2025	Uttarbanga Sangbad	Bengali
5	Shibir Shesh	28 November 2025	Uttarbanga Sambad	Bengali
ICAR-CIFE, Kakinada				
6	Alankara Chepalu Labhalu Pondhuta	10 January 2025	Eenadu	Telugu
7	Raithula Samavesam	01 March 2025	Eenadu, Sakshi	Telugu
8	Okkaroju Vyavasaya Vidhya Pradharsana	02 March 2025	Eenadu, Sakshi	Telugu
9	Saamketikathone Raitula Abhyunathi	30 May 2025	Sakshi	Telugu
10	Adunika Vyavasaya Padhathulu Avalambhimchali	31 May 2025	Eenadu	Telugu
11	Sannarakam Vari Vangadalu Saagu Pai Raitulu Drushti Saarimchali	31 May 2025	Pen Paper	Telugu
12	Vikasitha Krushi Samkalpa Abhiyaan Karyakramamlo Bhagamga Raitulaku Avagahana Sadassu	31 May 2025	Surya	Telugu
13	Balabhadrapuram Chepala Kendram Variche Raithulaku Avagahana Sadhassu	12 June 2025	Jana Samudram News	Telugu
14	Ghanamga Jaatiya Matsya Raitula Dinostavam	11 July 2025	Sakshi	Telugu
Aquaculture Division				
15	আধুনিক পদ্ধতিতে মাছ চাষের প্রশিক্ষণ	22 February 2025	২৪ পরগনা, আনন্দবাজার পত্রিকা	Bengali
16	Release of 20 th Instalment of PM-KISAN Scheme	03 August 2025	নবভারত	Hindi
17	Pearl Grafting Workshop	20 September 2025	Tripura Observer	English
18	Adhunik Padhyati Te Mach Chasher Karmashala Falakatai	27 November 2025	Uttarbanga Sangbad	Bengali
19	Jal Mati Pariksha Shikhlen Matsya Chashira	27 November 2025	Uttarbanga Sangbad	Bengali
20	Shibir Shesh	28 November 2025	Uttarbanga Sambad	Bengali
21	শাশ্বত উৎপাদনসাধী একামিক মত্স্যশেতী আবহ্যক	22 September 2025	Sakal	Marathi
22	উৎপাদনসাধী মত্স্যশেতী আবহ্যক	22 September 2025	Navarashtra	Marathi
23	একামিক মত্স্যশেতীতুন শীতক-যাংনা মিচ্ণার শাশ্বত উত্পন্ন	22 September 2025	Lokmat	Marathi
AEHM Division				
24	Farhad Mei Matsya Rog Prabhandan par Kisano va Mahila Samuha Ki Prashikshan	28 February 2025	Bilaspur Anchalik	Hindi
25	Gram Farhada Main Matsya Rog Prabhandan par Tin Divasiya Prashikshan Shuru	28 February 2025	Sughar Gaon	Hindi
26	Gram Farhada Mei Matsya Rog Prabhandan par Tin Divasiya Prashikshan Shuru	28 February 2025	Samay Darshan	Hindi
27	Machliyoke Rog Ki Bare Mai Ki Gai Charcha	28 February 2025	Neidunia News	Hindi
28	Matsya Rog Prabhandan par Diya Gaya Prashikshan	28 February 2025	Lomri Patrika	Hindi



4.9 Exhibitions participated

Sr. No.	Event / Exhibition	Organizer & Venue	Date	No. of Visitors
ICAR-CIFE Kolkata Centre				
1	29 th Sundarban Krishi Mela aur Lok Sanskriti Utsav	Kultali Milan Tirtha Society South 24 Parganas, West Bengal	20-29 December 2025	500
ICAR-CIFE, Mumbai				
2	Vesava Koli Seafood Festival	Versova Fishing Village Mumbai, Maharashtra	10-12 January 2025	1000
3	Juhu Koliwada Seafood Festival	Sunil Dutt Garden Mumbai, Maharashtra	8-9 February 2025	400
4	14 th Asian Fisheries and Aquaculture Forum	NASC Complex Pusa, New Delhi	12-15 February 2025	320
5	36 th All India Congress of Zoology and International Conference on Innovations in Life Sciences for Sustainable Development	University of Lucknow Uttar Pradesh	24-26 April 2025	250
6	Coastal States Fisheries Meet: 2025	Taj Mahal Palace Mumbai, Maharashtra	28 April 2025	100
7	International Fishery Tech Expo	Bombay Exhibition Centre Mumbai, Maharashtra	12-13 June 2025	350
8	2 nd Indian Fisheries Outlook (IFO)-2025	College of Fisheries OUAT, Odisha	12-14 July 2025	300
9	12 th Symposium on Diseases in Asian Aquaculture	ICAR-CIBA Chennai, Tamil Nadu	23-27 September 2025	830
10	World Aquaculture 2025	World Aquaculture Society Hyderabad	10-13 November 2025	200
11	Fish Health Management in Aquaculture	ICAR-CIFE Gaya, Bihar	20-21 March 2025	50
Total:				4300



4.10 Visits Coordinated

Sr. No.	Date	Name of Coordinator(s)	Organisation / University / College / Category of Visitors	No. of Visitors (Male, Female)
ICAR-CIFE, Powarkheda				
1	29 January 2025	Shashi Bhushan Hasan Javed	Fishermen of Narmadapuram District, Madhya Pradesh	30 (M:30)
2	04 April 2025		C.M. Rise Government Higher Secondary School, Powarkheda, Madhya Pradesh	52 (M:31, F:21)
3	14 June 2025		Pradhanmantri College of Excellence, Jayawanti Hoksar Post Graduate Government College, Betul, Madhya Pradesh	50 (M:18, F:32)
4	02 August 2025		Government Higher Secondary Girls School, Narmadapuram, Madhya Pradesh	41 (M:14, F:27)
5	10 September 2025		Trainees from MANAGE, Hyderabad	40 (M:40)
6	19 September 2025		Government Higher Secondary School, Rohana, Narmadapuram, Madhya Pradesh	44 (M:18, F:26)
7	23 September 2025		Government High Secondary School, Pathrota, Narmadapuram, Madhya Pradesh	56 (M:30, F:26)
8	17 October 2025		Centre for Advanced Research & Development, CARD Trainees, Bhopal, Madhya Pradesh	25 (M:24, F:01)
9	24 November 2025		St. Joseph Convent Higher Secondary School, Narmadapuram, Madhya Pradesh	76 (M:40, F:36)
10	04 December 2025		Shri Makhanlal Chaturvedi Government College, Narmadapuram, Madhya Pradesh	42 (M:18, F:24)
11	10 December 2025		Centre for Advanced Research & Development, CARD Trainees, Bhopal, Madhya Pradesh	25 (M:24, F:01)
12	11 December 2025		Government High Secondary School, Sadhpura, Narmadapuram, Madhya Pradesh	62 (M:30, F:32)
13	24 December 2025		Mata Shabri Government Girls Higher Secondary School, Narmadapuram, Madhya Pradesh	33 (M:00, F:33)
14	30 December 2025		Government Kusum PG College, Siwni Malwa, Narmadapuram, Madhya Pradesh	35 (M:14, F:21)
ICAR-CIFE, Kolkata				
15	21 February 2025	T. K. Ghoshal	Progressive community fish farmers nominated by NFDB	15 (M:15)
16	11 March 2025	D. K. Singh	Officials from Directorate of Fisheries, Govt. of Uttar Pradesh	15 (M:15)
17	04 April 2025	Dhalongsaih R. P. K. Behera	B.F.Sc. students from College of Fisheries, Lembucherra, Tripura	33 (M:15, F:18)
18	06 May 2025	T. K. Ghoshal Partha Das	Students from Department of Zoology, Durgapur Government College, Bardhaman, West Bengal	26 (M:12, F:14)
19	28 May 2025	T. K. Ghoshal Sweta Pradhan	M.Sc. Zoology students from Bidhannagar Govt. College, Bidhannagar, West Bengal	34 (M:13, F:21)
20	01 July 2025	T. K. Ghoshal P. K. Behera	B.Sc. Zoology students from Vedanta College, Phoolbagan, West Bengal	27 (M:05, F:22)
21	04 July 2025	Sweta Pradhan Partha Das	Students from Loreto Day School, Kolkata, West Bengal	13 (F:13)
22	14 July 2025	Gouranga Biswas P. K. Behera Partha Das	B.F.Sc. students from West Bengal University of Animal & Fishery Sciences, Kolkata, West Bengal	11 (M:03, F:08)
ICAR-CIFE, Kakinada				
24	10 February 2025	Shamna N. Shobha Rawat	B.Sc. students from PR College, Kakinada	23 (M:15, F:08)



25	17 February 2025	Rajeev	B.Sc. students from Adikavi Nannaya College, Rajahmundry	32 (M:20, F:12)
26	19 February 2025		B.F.Sc. students from College of Fisheries, Chhattisgarh	63 (M:25, F:38)
27	19 February 2025		B.Sc. students from D.N.R College, Bhimavaram	25 (M:14, F:11)
28	13 March 2025		Students from Government Polytechnic College, Anaparthi	18 (M:18)
29	17 March 2025		B.Sc. students from Government Polytechnic, Kakinada	10 (M:10)
30	03 April 2025		Andhra Pradesh Fisheries officials, trainees from SIFT, Kakinada	35 (M:35)
31	03 April 2025		Senior secondary school students, ZPH Boys High School, Anaparthi	10 (M:10)
32	25 April 2025		Andhra Pradesh Fisheries officials and trainees from SIFT, Kakinada	19 (M:19)
33	22 September 2025		ICAR-CMFRI, Vishakhapatnam	4 (M:04)
34	17 February 2025	Muralidhar P. Ande	Adikavi Nannaya University, Rajamahendravaram	30 (M:18, F:12)
35	27 May 2025	K. Syamala	State Institute of Fisheries Technology, Kakinada	26 (M:16, F:10)
36	10 June 2025		State Institute of Fisheries Technology, Kakinada	26 (M:09, F:17)
37	22 August 2025		Little Woods School, Panasapadu	115 (M:47, F:68)
38	29 August 2025		Aditya Degree College of Fisheries & Aquaculture, Kakinada	57 (M:30, F:27)
39	11 September 2025		Sri Sai Madhavi Degree College, Anaparthi	38 (M:20, F:18)
40	12 September 2025		Andhra Pradesh Fisheries officials and trainees from SIFT, Kakinada	25 (M:10, F:15)
41	25 September 2025		Government Degree College, Rajamahendravaram	15 (M:09, F:06)
42	26 September 2025		Dr. S.R.K Govt. Arts College, Yanam	46 (M:30, F:16)
ICAR-CIFE, Mumbai				
44	20 January 2025	Ankush Kamble	Students and Faculty, SKUAST, Jammu	35 (M:17, F:18)
45	24 January 2025	Abuthagir I. S.	Students and Faculty, Faculty of Agriculture, Wadura Sopore, Kashmir	52 (M:20, F:32)
46	24 January 2025	Shivaji Argade	Students and Faculty, SIES College of Arts, Science and Commerce, Sion, Mumbai	8 (M:03, F:05)
47	24 January 2025	Abhijit Jadhav	College of Fisheries Science, Udgir, Latur, Maharashtra	29 (M:17, F:12)
48	27 January 2025	Satya Prakash	College of Food Technology, Central Agricultural University, Manipur	20 (M:06, F:14)
49	28 January 2025	Avinash Sable	College of Horticulture, Bengaluru, Karnataka	55 (M:24, F:31)
50	12 February 2025	G. Aruna Devi	Dr. Radhakrishnan International School, Malad, Mumbai, Maharashtra	100 (M:45, F:55)
51	14 February 2025	Pritam Kumar	Kidz World Pre-School, Andheri West, Mumbai	61 (M:24, F:37)
52	14 February 2025	Reshma Raj	Ramnarain Ruia Autonomous College, Matunga East, Mumbai	62 (M:37, F:25)
52	20 February 2025	Nitish Singh		
		Simant Kumar		
		Amit Kumar		

53	28 February 2025	Somaiya Vidyavihar, Vidyanagar, Vidyavihar East, Mumbai	43 (M:06, F:37)
54	04 March 2025	Tamil Nadu Agricultural University, Thoothukudi, Tamil Nadu	125 (M:67, F:58)
55	05 March 2025	Regional Agriculture Extension Management Training Institute, Raigad	39 (M:24, F:15)
56	13 March 2025	PGP College of Agricultural Sciences, Namakkal, Tamil Nadu	137 (M:58, F:79)
57	27 March 2025	The Indian Agriculture College, Tirunelveli, Tamil Nadu	117 (M:58, F:59)
58	04 April 2025	Dr. J. Jayalalithaa Fisheries University, Chennai	37 (M:16, F:21)
59	07 April 2025	Dr. M.G.R. Fisheries College and Research Institute, Nagapattinam, Tamil Nadu	53 (M:19, F:34)
60	08 April 2025	College of Agriculture, Jodhpur	54 (M:43, F:11)
61	11 April 2025	SIES College, Department of Zoology, Sion (W), Mumbai	67 (M:32, F:35)
62	15 April 2025	College of Fisheries Science, Kamdhenu University, Navsari, Gujarat	23 (M:11, F:12)
63	15 April 2025	Fisheries College and Research Institute, Thoothukudi, Tamil Nadu	56 (M:29, F:27)
64	16 April 2025	Dr. M.G.R. Fisheries College and Research Institute, Ponneri, Tamil Nadu	87 (M:50, F:37)
65	23 April 2025	College of Fisheries, WBUAFS, Kolkata	31 (M:24, F:07)
66	25 April 2025	Sonopant Dandekar Arts, V.S. Apte Commerce and M.H. Mehta Science College, Palghar	74 (M:34, F:40)
67	28 April 2025	College of Fisheries, MAFSU, Nagpur	27 (M:17, F:10)
68	02 May 2025	College of Fisheries Engineering, Nagapattinam, Tamil Nadu	31 (M:14, F:17)
69	23 May 2025	College of Fisheries, Kamdhenu University, Veraval, Gujarat	56 (M:13, F:43)
70	11 June 2025	College of Fisheries, Mangalore, Karnataka	45 (M:26, F:19)
71	28 July 2025	K.C. College, Churchgate, Mumbai	53 (M:20, F:33)
72	22 August 2025	School of Fisheries, Centurion University, Odisha	24 (M:14, F:10)
73	24 September 2025	K.K. Wagh College of Agricultural Biotechnology, Nashik	8 (M:02, F:06)
74	25 September 2025	Ismail Yusuf College, Jogeshwari (E), Mumbai	27 (M:11, F:16)
75	13 October 2025	College of Agricultural Information Technology, Anand Agricultural University	59 (M:39, F:20)
76	15 October 2025	Faculty of Ocean Science and Technology, KUFOS, Kochi	29 (M:17, F:12)
77	16 October 2025	Buddhist International School, Ambajogai, Maharashtra	20 (M:11, F:09)
78	03 November 2025	Faculty of Fisheries Science, The Neotia University, West Bengal	12 (M:07, F:05)
79	18 November 2025	Kerala University of Fisheries and Ocean Studies, Kochi	72 (M:35, F:37)
80	21 November 2025	K.J. Somaiya College of Science and Commerce, Mumbai	35 (M:15, F:20)



81	26 November 2025	Annamalai University, Tamil Nadu	54 (M:28, F:26)
82	26 November 2025	College of Fisheries, Dr. Balasaheb Sawant Konkan Krushi Vidyapeeth, Dapoli	50 (M:25, F:25)
83	01 December 2025	College of Fisheries, Mangalore, Karnataka	51 (M:30, F:21)
84	10 December 2025	PGP College of Agriculture Science, Namakkal	105 (M:32, F:73)
85	11 December 2025	College of Fisheries, Rani Lakshmi Bai Central Agricultural University, Jhansi	33 (M:20, F:13)
86	15 December 2025	College of Fisheries, G.B. Pant University, Uttarakhand	24 (M:07, F:17)
87	17 December 2025	Kasturi Charitable Trust's Guardian Degree College, Dombivli, Maharashtra	18 (M:07, F:11)
88	17 December 2025	Sonopant Dandekar College, Palghar	56 (M:30, F:26)
Total:			3679 (M:1865, F:1814)



4.11. Distinguished Visitors to the Centre/Lab

Name of the Visitor	Designation and name of institute/place/country etc.	Purpose of visit	Date
CIFE, Mumbai			
Shri D.V. Swamy	IAS, Chairman, MPEDA	Official	27 January 2025
Dr. Karthikeyan	Director, MPEDA	Official	27 January 2025
Dr. Abhilaksh Likhi	IAS, Secretary, Department of Fisheries, Gol	Official	7 April 2025
Shri Ram Nath Thakur	Minister of State, Ministry of Agriculture and Farmers Welfare	Official	8-9 April 2025
Mrs. Alka Arora	Additional Secretary (DARE) & Financial Advisor (ICAR)	Meeting with Directors of ICAR DUs	23 April 2025
Shri Rajiv Ranjan Singh	Minister for Fisheries, Animal Husbandry and Dairying, Panchayati Raj, Govt. of India	Official	2 August 2025
Shri Nitesh Rane	Hon'ble Minister of Fisheries & Ports Development, Govt. of Maharashtra	Official	22 September 2025
Dr. Mohammad Muslem Uddin	University of Chittagong, Govt. of Bangladesh	Official	8 December 2025
Dr. Meenakumari Dr. Shamasundar Dr. Pravin P. Dr. Rina Chakrabarti Dr. A Gopalakrishnn Dr. S. Raizada Dr. C.V.Mohan	Quinquennial Review Team	Official	9-11 December 2025
Dr. Koji Hamasaki	Professor, Ocean Research Institute, The University of Tokyo	Official	12 December 2025
Rohtak Centre			
Dr. Mangi Lal Jat	Secretary, Department of Agricultural Research and Education (DARE) and Director General (DG) of the Indian Council of Agricultural Research (ICAR)	Interactive Farmers' meet and Harvest Mela	26 October 2025
Dr. J. K. Jena	DDG Fisheries, Department of Agricultural Research and Education (DARE) of the Indian Council of Agricultural Research (ICAR)	Interactive Farmers' meet and Harvest Mela	26 October 2025
Dr. Meenakumari Dr. Shamasundar Dr. Pravin P. Dr. Rina Chakrabarti	Quinquennial Review Team	Official	21 November 2025



Dr. Koji Hamasaki, Professor, Ocean Research Institute, The University of Tokyo visited CIFE, Mumbai





Dr. M. L. Jat, Secretary, Department of Agricultural Research and Education (DARE) and Director General (DG), ICAR visited to ICAR-CIFE, Rohtak Centre



Quinquennial Review Team (QRT) visit to ICAR-CIFE, Rohtak Centre



4.12. Visits Abroad

Name of the faculty	Purpose of visit	Organized by	Place	Date
Babitha Rani A. M.	International Conference and Expo on Aquaculture and Fisheries, Aquaculture Horizons 2025	PRISM Scientific	Sethubal, Portugal	28-30 April 2025
Mujahid A. Pathan	GRO FTP training	Govt. of Iceland	Marine and Freshwater Research Institute (MFRI), Iceland	17 November 2025 to 20 May 2026



4.13 Agri-Business Incubation (ABI) Centre, ICAR-CIFE

Project Team: Dr. S. P. Shukla (PI); Dr. Shivaji Argade, Dr. Layana P. (Co-PIs); Dr. Paramita Banerjee Sawant, Dr. Md. Aklakur, Dr. Manish Jayant, Dr. D. Bhoomaiah (Members)

ABI Registration: During the year 2025, 104 incubatees were registered, comprising of individual incubatees (18), student incubatees (15), start-up incubatees (12) and SHG women incubatees (59).

Incubation awareness and entrepreneurship development programs

Sl. No.	Name of the program	Duration & Venue	Total Participants
1.	Entrepreneurship Development through Aquaculture	21 February 2025 Motipur	99
2.	Samudra Swad-2025	02 March 2025 Mumbai	210
3.	Jal Udyogini 1.0	06 May 2025 Mumbai	116
4.	Jal Udyogini 2.0	09 June 2025 Mumbai	56
5.	National Fish Farmers Day	10 July 2025 Palghar	206
6.	Skill Development Program on Value Added Product: Jawla Chutney	28-29 July 2025 Mumbai	11
7.	Skill Development Program on Value Added Product: Prawn Pickle	22 August 2025 Mumbai	8
8.	Skill Development Program on Value Added Product: Fish Chakli Sticks	25 August 2025 Mumbai	9
9.	Empowering Student Entrepreneurship and Innovations in Aquafeed Industry	27 November 2025 Mumbai	187
Total			902

Recognition/awards received by ABI incubatees

- 1) Raftech Solutions Pvt. Ltd. Start-up received award 'Best start-up' in fisheries at Coastal States Fisheries Meet 2025 on 28 April, 2025.
- 2) Raftech Solutions Pvt. Ltd. Start-up received 'Women Power Young Entrepreneurs of the Year' award at the 10th Annual Women Power Summit & Awards 2025, organised by Billennium Divas Pvt. Ltd. on 10 May, 2025.
- 3) Mr. Amey Naik (Start-up: Longshore Technologies Private Limited) received grant of Rs. 25 lakhs under RKVY-RAFTAAR Scheme, Ministry of Agriculture & Farmers Welfare, GoI.
- 4) Sensoact Innovations Pvt. Ltd. received investment of Rs. 65 lakhs from Mr. Shrikant Joshi and team Maven tech solutions, Nashik, India.





4.14 Technology Portfolio, Institute Technology Management Unit (ITMU), ICAR-CIFE, Mumbai

Project Team: Dr. S. P. Shukla (PI); Dr. Manjusha L., Dr. Kapil Sukhdhane (Co-PIs)

Members: Dr. Arvind Sonwane, Dr. Arun Sharma, Dr. Neha Qureshi

Patents Filed

Sr. No.	Patent Filing Date	Patent Application No.	Name of Technology	Subject Area
1.	10 January 2025	202521002398	Apparatus for the preparation of pellets and a method thereof	Aquaculture
2.	01 March 2025	202521018205	Miniaturized MPN RT-PCR for the identification of <i>Arcobacter butzleri</i> and a kit thereof	Fish Processing Technology
3.	24 April 2025	202521039588	Aquaculture feed and a process for its preparation	Fish Nutrition
4.	12 June 2025	202521056751	Recirculating aquaculture system for producing tubifex worms	Aquaculture
5.	28 August 2025	202521082271	A fish-sorting assembly for a Dol net	Fisheries Resources Management
6.	14 October 2025	202521099250	A process for preparing a microbial floc	Aquaculture

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Sr. No.	Title	Registration No.	Registration Date	Subject Area
1.	Maripep-A Fish Peptone-based Marine Bacteriological Medium	L-161850/2025	03 March 2025	Fish Processing Technology
2.	CIFE-HC VALUATOR: Decision Support Dashboard for Human Capital Valuation in Fisheries Academia	SW-2026022548	20 March 2025	Fisheries Extension
3.	Diseases of Aquatic Invertebrates	4633/2025-CO/L	16 April 2025	Aquatic Animal Health Management
4.	SCUBA Diving and Reef Study: Immersive Virtual Reality Experience for Education	LD-20250171279	13 June 2025	Fisheries Resources Management
5.	Captive Maturation and Induced Breeding of Peacock Eel (<i>Macrogathus aral</i>) through Environmental and Hormonal Manipulation	LD-20250176163	04 July 2025	Aquaculture
6.	Methodological framework of Site Suitability Index for Inland and Saline Aquaculture (SiSI-ISA)	LD-20250168649	23 July 2025	Aquaculture

Trademarks

Sr. No.	Trademark type	Title	Trademark No. & Date	Subject Area
1.	Trademark Word	CIFEasta: Organic Astaxanthin from Biowaste	6420132/14 June 2025	Aquaculture
2.	Trademark Logo/Device	CIFEasta: Organic Astaxanthin from Biowaste	6411094/16 May 2025	Aquaculture

Designs

Sr. No.	Application No.	Title	Design Reg. No.	Date of Registration
1	471773-001	Table for shrimp peeling	471773-001	29 August 2025

Technology Licensing

Sr. No.	Technology	Details of Licensee	Date of Licensing	Revenue Generated (Rs. in Lakhs)
1	CIFE-Pangas-Shakti	M. M. Fish Seed Cultivation Pvt. Ltd., Bilaspur, Chhattisgarh	06 February 2025	2.90
2	Black soldier fly larvae-based feed for shrimp and catfish	Sharma Feed Supplements Trading Co., Punjab	06 March 2025	1.15
3	Catfish hatchery and rearing system	Mr Shiv Marot Saroj, Fish Farmer, Pratap Gadh, UP	03 January 2025	0.22
4	CIFE - Vruddhi	Amnion Biosciences Pvt. Ltd., Bangalore	06 March 2025	1.10
5	Processing of leaf meal for fish feed	Mahabahu Fisheries Pvt. Ltd., Assam	23 April 2025	1.00
6	CIFE-WINT: A winter growth promoter feed for fishes	Anmol Feeds Pvt. Ltd., West Bengal	25 April 2025	2.00
7	CIFE - Tila Grow	M. M. Fish Seed Cultivation Pvt. Ltd., Bilaspur, Chhattisgarh	06 June 2025	4.00
8	Laminated Bombay Duck	Daryavardi Producer Company Ltd., Mumbai	24 November 2025	1.03
9	FishANUre: Manure from fish waste	Cardion Correct International Foundation (CCIF), Nashik	28 November 2025	0.50
Total:				13.90

Contract Services

Sr. No.	Title of the Project	Company Details	Project Personnel	Duration of Contract	Revenue Generated (Rs. in Lakhs)
1	Evaluation of feed additive in terms of growth performance, immune function and transportation stress mitigation in <i>Labeo rohita</i>	Advanced Enzyme Technologies Ltd., Mumbai	K. N. Mohanta Prem Kumar N. P. Sahu	2025-26	18.55
2	Performance Evaluation of AQUALAABH in Inland Saline Aquaculture systems	Agrocel Industries Pvt. Ltd., Gujarat	Debajit Sarma Kapil Sukhdhane	March-September 2025	5.6
3	A study on the algal biomass-based aquafeed on fish growth and immunological properties	Reliance Industries Pvt. Ltd.	SP Shukla Kundan Kumar Saurav Kumar Manish Jayant	2024-25	5.93
4	Toxicity evaluation of bio culture product personamedy*717 in freshwater ecosystem like algal and fish model	J.M. Infra and Enviro Technologies Pvt. Ltd.	Kundan Kumar Saurav Kumar SP Shukla	2024-25	6.76
5	Validation of Hi-PCR® EHP and WSSV detection and quantitation multiplex probe PCR kit (MBPCR254) developed by Hi Media Laboratories Private Limited	HiMedia, India	Megha Bedekar Jeena K.	2024-25	4.95
6	Potency, safety, and toxicity testing of <i>Aeromonas veronii</i> inactivated vaccine	India Immunologicals Pvt. Ltd., Hyderabad	Megha Bedekar Gayatri Tripathi	2024-25	4.0
7	Effect of feeding rice bran supplemented with exogenous enzymes in carps	M/s Venkatarama Gia Pvt Ltd, Andhra Pradesh	Shamna N Muralidhar Ande Shobha Rawat	2024-25	3.12
8	Performance evaluation of microalgae derived from agro-industrial wastes for aquaculture applications	Sahyadri Farms, Nashik	Debajit Sarma S. Munilkumar Babitha Rani Madhuri Pathak	2025-26	15.0
9	Oregostim forte and oregostim liquid trial for immunity against vibriosis in shrimp	Saife Vetmed Pvt. Ltd., Noida, UP	Megha Bedekar Saloni Shivam	2025-26	3.98
Total:					21.21



CHAPTER - 5



HRD



पुरुष छात्र
BOYS HO

5.1. Faculty & Staff

CIFE HEAD QUARTER MUMBAI

RMP

Director

Dr. Ravishankar C.N. (upto 25.04.2025)
Dr. N.P. Sahu (Acting) (w.e.f. 30.4.2025)

Joint Director

Dr. N.P. Sahu

SCIENTIFIC STAFF

Heads of the Division

Dr. Debajit Sarma
Dr. Kedar Nath Mohanta
Dr. Arpita Sharma
Dr. Mukunda Goswami
Dr. Megha Kadam Bedekar
Dr. B.B. Nayak

Principal Scientists

Dr. Ravishankar C.N. (w.e.f. 26.04.2025-upto 30.04.2025)
Dr. Naresh S. Nagpure
Dr. Aparna Chaudhari
Dr. S. Jahageerdar
Dr. P.P. Srivastava (upto 30.04.2025 On deputation)
Dr. Rupam Sharma
Dr. Gayatri Tripathi
Dr. Satya Prakash Shukla
Dr. Swadesh Prakash
Dr. Subodh Gupta
Dr. Sukham Munil Kumar
Dr. Ashutosh D. Deo
Dr. P.S. Ananthan
Dr. Sanath Kumar H.
Dr. Manoj Pandit Brahmane
Dr. Paramita Banerjee Sawant
Dr. Ajit Kumar Verma
Dr. Asha T. Landge
Dr. Babitha Rani A.M.
Dr. Sonwane Arvind Asaram
Dr. Annam Pavan Kumar (wef 07.01.2024)
Dr. Prem Kumar (wef 10.02.2024)

Senior Scientists

Dr. Vidya Shree Bharti
Dr. A. Pavan Kumar (upto 06.01.2024)
Dr. Prem Kumar (upto 09.02.2024)
Dr. Kundan Kumar
Dr. Vinod Kumar Yadav
Dr. Ankush Lala Kamble
Dr. Manjusha L.
Dr. Prasenjit Pal (wef 06.05.2025)
Dr. Nimit Kumar D. Joshi (wef 30.06.2025)
Dr. Sangeeta Mandal
Dr. Sukham Monalisha Devi
Dr. Sunil Kumar Nayak
Dr. Arun Sharma
Dr. Thongam Ibemcha Chanu
Dr. Sikendra Kumar
Dr. Saurav Kumar
Dr. Tincy Verghese (upto 30.04.2025)
Dr. Shivaji Dadabhau Argade
Dr. Jeena K. (wef 01.01.2024)
Dr. Karankumar K. Ramteke (wef 01.01.2024)
Dr. Kiran Dashrath Rasal (wef 01.01.2024)
Dr. Neha Wajahat Qureshi (wef 13.03.2024)

Scientists

Dr. Layana P.
Dr. Saloni Shivam
Dr. Manish Jayant
Dr. Sukhdhane Kapil Sukhdeo
Dr. Upasana Sahoo
Dr. Madhuri Shrikant Pathak
Mr. Angom Lenin Singh (upto 31.10.2025)
Dr. Deepitha R.P
Mr. Dayal Devadas
Ms. Shobha Rawat
Mr. Abuthagir Ibrahim S.
Ms. R. Bharathi Rathinam
Dr. Paramasivam R. (wef 07.07.2025)
Dr. Lidiya Wilwet (wef 27.10.2025)
Dr. Nalinikanta Choudhury (wef 27.10.2025)
Dr. Aditya D. Deshpande (wef 27.10.2025)

TECHNICAL STAFF

Chief Technical Officers (T-9)

Dr. Dasari Bhoomaiah (upto 30.11.2025)
Mr. P.K. Das
Dr. Nalini Poojary
Mr. Subhash Chand
Mrs. Rekha Nair



Asstt. Chief Technical Officers (T-7/8)

Mrs. Rajani H.
Khandgale
Mr. S. Maity

Technical Officer (T-5)

Mr. B.J. Rathod (upto 31.05.2025)
Mr. N.K. Aglave (upto 30.11.2025)
Dr. Pawan Kumar
Mrs. G. Aruna Devi
Mr. Avinash Sable
Mr. Sagar Suresh Sawant
Mr. Rajarshee Moitra
Mr. Mohd. Baqar
Mrs. Reshma K. Raje

Technical Assistant (T-3)

Mr. Pranaya Kumar Biswal
Mr. Abhijeet Vijay Jadhav

Sr. Technician (T-2)

Mr. T.G. Gaikwad (upto 31.08.2025)
Mr. G.B. Kamble

Technician (T-1)

Mr. Arvind M. Lavande
Mrs. R. H. Chavan
Mr. Ankush N. Joyashi
Mrs. Reshma Naik
Mr. Amit Kumar
Mr. Nitish Singh
Mr. Akshay Parag Aate
Mr. Satya Prakash
Mr. Pritam Kumar
Mr. Simant Kumar

ADMINISTRATIVE STAFF**Joint Director (A) /Sr. Registrar**

Shri Sanjay Bokolia (wef 20.02.2025)

Chief Administrative Officer (SG)

Shri Kishan Lal Meena (upto 17.02.2025)

Comptroller

Shri Rajneesh Kumar Singh (upto 31.12.2025)

Joint Director (OL)

Shri Jagadeesan A. K.

Sr. Administrative Officer

Shri Navin Kumar (wef 06.01.2025)
Smt. Poonam N. Behl (wef 01.01.2025)

Law Officer (Zone 3)

Mr. Jitender Khanna

Administrative officer

Mr. Sahil Yadav (upto 04.07.2025)
Mr. Vijaypal Bijaraniya (wef 21.04.2025)

Sr. Finance & Accounts Officer

Mr. S.V. Kasabe (wef 01.01.2025)

Asstt. Finance & Accounts Officer

Mr. Pradeep Kumar

Assistant Administrative Officer

Mrs. Swati S. Koli
Mr. V.S. Kuveskar
Mr. Suraj Gupta
Mr. Devendra V. Raorane
Mrs. Sanyuja S. Parab
Mr. A.G. Kolambkar (upto 30.09.2025)
Mr. Bharat P. Chauhan (wef 01.01.2025 – upto 31.10.2025)
Mr. Nandu L. Ghane (wef 01.01.2025)

Principal Private Secretary

Mr. B. M. Chavan

Private Secretary

Mrs. Pragati R. Gadre

Stenographer (Grade – III)

Mr. Amey A. Sakpal

Assistant

Mr. M.B. Waghela
Mrs. Anu Grover
Mr. Saurabh Mahendra Jain
Ms. Shivani Modi
Mr. Sumit Singh Phartyal (upto 03.09.2025)
Mr. Surender
Mr. Vineet Kumar Yadav
Ms. Aruna Kumawat
Mr. Ramniwas
Mr. Himanshu Singh

Mrs. C.C. Raut (wef 01.01.2025)
Mr. Shashank Singh (wef 22.08.2025)
Mr. Rajesh Ramesh Pujari (wef 26.08.2025)

Upper Division Clerk

Mr. S.H. Bhosale
Mr. Shirish P. Malvankar
Mr. Prasenjit P. Sonawane
Mr. Raju N.Kamble

Lower Division Clerk

Mr. Ninad V. Kandalgaonkar
Mr. Sambhaji S. Shelke
Ms. Ujjawala V. Tiwari

Skilled Support Staff

Mr. J.K. Makwana
Mr. M.P. Kotian (upto 31.07.2025)
Mr. Ashok R. Shingade
Mr. Jagdish N. Dhanu
Mr. Vasant N. Ondkar
Mr. Ganesh N. Zendeckar
Mr. Anil D. Sonawane
Mrs. Sabita Devi
Mr. Akhtar Fakirmiyani Mullaji
Mr. Vaibhav Milan Tawade

CIFE KAKINADA CENTRE

Officer Incharge

Dr. Muralidhar P. Ande (upto 25.04.2025)
Dr. Karthireddy Syamala (wef 26.04.2025)

Senior Scientists

Dr. Muralidhar P. Ande (wef 26.04.2025)
Dr. Karthireddy Syamala (upto 25.04.2025)
Dr. Shamna N.

Scientist

Mrs. Shobha Rawat

Sr. Technical Assistant (T-4)

Mrs. Usharani Maradana

Sr. Technicians (T-2)

Mr. Sheikh Valisha
Mr. G.V.V. Satyanarayana

Technicians (T-1)

Mr. Amit Kumar Verma

Mr. Rajeev
Mr. Kurru Suresh (wef 20.08.2025)

Assistant

Mrs. M. Rama Mani (wef 01.01.2025)

Multi-Tasking Staff

Mr. T. Satyanarayana
Mr. Kurru Suresh (upto 19.08.2025)

CIFE KOLKATA CENTRE

Head Incharge/Principal Scientist

Dr. Tapas Kumar Ghoshal

Principal Scientists

Dr. G.H. Pailan
Dr. Parimal Sardar
Dr. Gouranga Biswas

Senior Scientist

Dr. Sujata Sahoo

Scientists

Dr. Dilip Kumar Singh
Mr. Dhalongsaigh Reang (wef 01.05.2025)
Dr. Suman Manna
Dr. Hanjabam Mandakini Devi
Mrs. Sweta Pradhan
Dr. Leesa Priyadarsani

Asstt. Chief Technical Officer (T-7/8)

Mr. Sanjeevan Kumar

Technical Officer (T-5)

Mr. Prakash Kumar Behera
Mr. Tapas Kumar Ghosh (upto 28.02.2025)

Technical Assistant (T-3)

Shri Partha Das

Assistant

Ms. Anushna Mitra (wef 22.08.2025)

Upper Division Clerk

Mr. Kishore Bose
Mr. Ram Milan Singh (upto 31.07.2025)

Multi-Tasking Staff

Mrs. Suman Pandey
Mr. Rajesh Mahato

CIFE POWARKHEDADA CENTRE

Officer Incharge/ Senior. Scientist

Dr. Shashi Bhushan

Scientist

Mr. Dhalongsai Reang (upto 30.04.2025)
Dr. Harsha Haridas

Asstt. Chief Technical Officer

Mr. Hasan Javed

Sr. Technical Assistant (T-4)

Mr. Raghuvir Prasad (upto 31.07.2025)

Sr. Technician (T-2)

Mr. S. Prajapati

Technician (T-1)

Mr. Raghuveer Singh Meena

Asstt. Administrative Officer

Mrs. Asha Dhurve (upto 19.05.2025)

Assistant

Mr. Devesh Tripathi (upto 25.04.2025)

Multi-Tasking Staff

Mr. Manohar Lal (upto 30.06.2025)
Mr. Ram Swarup (upto 31.10.2025)
Mr. Deepak Kumar Kushwaha

CIFE ROHTAK CENTRE

Officer Incharge/Sr. Scientist

Dr. Mujahid Khan Pathan

Scientists

Dr. Pankaj Kumar (upto 10.01.2025)
Dr. Sreedharan K.
Dr. Satya Prakash
Dr. Saloni Shivan (wef 05.08.2025)
Dr. Ravindra Sontakke (wef 25.10.2025)

Chief Technical Officer (T-9)

Mr. Ashok Kumar

Technical Officer (T-5)

Mr. Satyendra Singh (upto 22.10.2025)
Mr. Krishan Kumar (wef 13.04.2025)

Technical Assistant(T-3)

Mr. Kuldeep Singh (wef 12.05.2024-upto 31.12.2025)

Sr. Technician (T-2)

Mr. Laves Kumar

Technician (T-1)

Mr. Gyan Chand
Mr. Munesh Agrawal
Mr. Raman Gupta (wef 23.10.2025)

Assistant

Mrs. Neha

CIFE MOTIPUR CENTRE

Officer Incharge/ Sr. Scientist

Dr. Mohd. Aklakur

Scientist

Mr. Udipta Roy

Technician (T-1)

Mr. Deepak Kumar

Assistant

Mr. Harkesh Meena



5.2. Appointments and Promotions

Appointments

Sl.No.	Name of the Officials	Designation	Date of Joining
1	Shri Navin Kumar	Sr. Administrative Officer	06.01.2025
2	Shri Sanjay Bokolia	Joint Director (Admn.) / Sr. Registrar	20.02.2025
3	Shri Vijaypal Bijaraniya	Administrative Officer	21.04.2025
4	Dr. Prasenjit Pal	Sr. Scientist	06.05.2025
5	Dr. Nimit Kumar D. Joshi	Sr. Scientist	30.06.2025
6	Dr. Paramasivam R.	Scientist	07.07.2025
7	Mr. Shashank Singh	Assistant	22.08.2025
8	Mr. Rajesh Ramesh Pujari	Assistant	26.08.2025
9	Ms. Anushna Mitra	Assistant, Kolkata Centre	22.08.2025
10	Mr. Raman Gupta	Technician, Rohtak Centre	23.10.2025
11	Dr. Ravindra Sontakke	Scientist, Rohtak Centre	25.10.2025
12	Dr. Lidiya Wilwet	Scientist	27.10.2025
13	Dr. Nalinikanta Choudhury	Scientist	27.10.2025
14	Dr. Aditya D. Deshpande	Scientist	27.10.2025

Retirements

Sl.No.	Name of the Employee	Date of Retirement
1	Shri Tapas Kumar Ghosh, Technical Officer, Kolkata Centre	28.02.2025
2	Shri Devesh Tripathi, Assistant, Powarkheda Centre	25.04.2025(Resigned)
3	Dr. Ravishankar C.N., Principal Scientist / Former Director	30.04.2025
4	Dr. P.P. Srivastava, Principal Scientist (on Deputation)	30.04.2025
5	Shri Bharat J. Rathod, Technical Officer	31.05.2025 (VRS)
6	Shri Manohar Lal, MTS, Powarkheda Centre	30.06.2025
7	Shri Raghuvir Prasad, Sr. Technical Assistant, Powarkheda Centre	31.07.2025
8	Shri Ram Milan Singh, UDC, Kolkata Centre	31.07.2025
9	Shri Mahesh P. Kotian, MTS	31.07.2025
10	Shri Tulsiram G. Gaikwad, Sr. Technician	31.08.2025
11	Smt. Poonam N. Behl, Sr. Administrative Officer	30.09.2025
12	Shri Ashok G. Kolambkar, Asstt. Administrative Officer	30.09.2025
13	Shri Bharat P. Chauhan, Asstt. Administrative Officer	31.10.2025
14	Shri Ramswarup, MTS, Powarkheda Centre	31.10.2025
15	Dr. D. Bhoomaiah, Chief Technical Officer	30.11.2025
16	Shri Narendra K. Aglave, Technical Officer	30.11.2025



Transfers to CIFE

Sl. No.	Name of the Officials	Transfer from	Date of Joining
1	Shri Navin Kumar Sr. Administrative Officer	ICAR-CIRCOT, Mumbai	06.01.2025
2	Shri Sanjay Bokolia Joint Director (Admn) /Sr. Registrar	ICAR-IASRI, New Delhi	20.02.2025

Transfers from CIFE

Sl. No.	Name of the Employee	Transfer to	Date of Relieving
1	Dr. Pankaj Kumar, Scientist	ICAR-DCFR, Bhimtal	10.01.2025
2	Shri K.L. Meena, Chief Administrative Officer (SG)	ICAR Hqrs., New Delhi	17.02.2025
3	Dr. Tincy Varghese, Sr. Scientist	ICAR-CIFT, Kochi	30.04.2025
4	Mrs. Asha Dhurve, Asstt. Administrative Officer	ICAR-IISS, Bhopal	19.05.2025
5	Shri Sahil Yadav, Administrative Officer	ICAR Hqrs., New Delhi	04.07.2025
6	Shri Sumit Singh Phartyal, Assistant	ICAR-VPKAS, Almora	03.09.2025
7	Shri Satyendra Singh, Technical Officer, Rohtak Centre	ICAR-CAZRI, RRS, Bikaner	22.10.2025
8	Shri Angom Lenin Singh, Scientist	ICAR-RC NEH Region Umiam, Meghalaya	31.10.2025
9	Shri Rajneesh Kumar Singh, Comptroller	ICAR Hqrs., New Delhi	31.12.2025
10	Shri Kuldeep Singh, Technical Assistant, Rohtak Centre	ICAR-IARI, New Delhi	31.12.2025

Promotion of Scientists to Next Higher Designation

Career Advancement Scheme for Promotion of Senior Scientist to Principal Scientist

Sl. No.	Name of the Employee	From	To	w.e.f.
1	Dr. Prem Kumar	Senior Scientist	Principal Scientist	10.02.2024
2	Dr. Annam Pavan Kumar	Senior Scientist	Principal Scientist	07.01.2024



Career Advancement Scheme for Promotion of Scientist to Senior Scientist

Sl.No.	Name of the Employee	From	To	w.e.f.
1	Dr. Shamna N.	Scientist	Senior Scientist	14.11.2023
2	Dr. Pankaj Kumar	Scientist	Senior Scientist	01.01.2024
3	Dr. Jeena K.	Scientist	Senior Scientist	01.01.2024
4	Dr. Kiran D. Rasal	Scientist	Senior Scientist	01.01.2024
5	Dr. Hanjabam Mandakini Devi	Scientist	Senior Scientist	02.04.2023
6	Dr. Neha Wajahat Qureshi	Scientist	Senior Scientist	13.03.2024
7	Dr. Karankumar K. Ramteke	Scientist	Senior Scientist	01.01.2024

Career Advancement Scheme for Promotion of Scientist to the next Higher Grade

Sl. No.	Name of the Employee	Designation	w.e.f.
1	Dr. Ankush Lala Kamble	Senior Scientist (8000-9000)	20.04.2022
2	Dr. Sangeeta Mandal	Senior Scientist (8000-9000)	18.07.2025
3	Dr. Sukham Monalisha Devi	Senior Scientist (8000-9000)	15.09.2025
4	Mr. Angom Lenin Singh	Scientist (6000-7000)	01.07.2022

Five Yearly Assessment Meeting

S. No.	Name of the Employee	From	To	w.e.f.
Field & Farm Technician Group I - Cat. III				
1	Shri Ashok Kumar	Asstt. Chief Technical Officer (T-7/8)	Chief Technical Officer (T-9)	01.09.2024
Workshop Group III - Cat. II				
2	Shri Krishan Kumar	Sr. Tech. Assistant (T-4)	Technical Officer (T-5)	13.04.2025

Promotions

Sl. No.	Name of the Employee	From	To	w.e.f.
1	Smt. Poonam N. Behl	Administrative Officer	Sr. Administrative Officer	01.01.2025
2	Shri Shailesh V. Kasabe	Finance & Accounts Officer	Sr. Finance & Accounts Officer	01.01.2025
3	Shri Bharat P. Chauhan	Assistant	Asstt. Administrative Officer	01.01.2025
4	Shri Nandu L. Ghane	Assistant	Asstt. Administrative Officer	01.01.2025
5	Ms. M. Ramamani, Kakinada Centre	Upper Division Clerk	Assistant	01.01.2025
6	Mrs. Chaitali C. Raut	Upper Division Clerk	Assistant	01.01.2025
7	Shri Kurra Sures, Kakinada Centre	Skilled Support Staff	Technician (T-1)	20.08.2025



5.3. Training & Capacity Building of Faculty

Name of the Faculty	Name of the Training Program Attended	Organizer and Place	Period
Vinod K Yadav	Geospatial Computing and Application	Thadomal Engineering College, Mumbai	6-11 January 2025
Upasana Sahoo	Winter school on “Analytical tools in seafood quality management and risk assessment”	ICAR-CIFE, Mumbai	8-28 January 2025
Jeena K.	FAO-ATLASS Training & Multisectorial AMR Lab Networking Meeting	ICAR-CIFT, Cochin	20-23 January 2025
Vinod K Yadav	Advanced Machine Learning Techniques: From Concepts to Real-World Implementation	Electronics & ICT Academy, NIT Warangal	3-12 February 2025
Kapil Sukhdhane	Hands-on Training on Diversified Aquaculture at MPEDA-RGCA facilities	Rajiv Gandhi Centre for Aquaculture, RGCA Facilities	16- 25 February 2025
Leesa Priyadarsani, Suman Manna	Winter School on Ecosystem Health Monitoring and Fisheries Management in Inland Open Waters	ICAR-CIFRI, Barrackpore, Kolkata	20 February - 12 March 2025
Megha Bedekar	NABL Assessors training	ICAR-CIFE, Mumbai	30 May - 4 June 2025
Jeena K.	School on Aquatic Animal Epidemiology	ICAR-CIBA, Chennai	29 September - 3 October 2025
Neha W. Qureshi	Webinar Talk Series on Shrimp Insurance- Managing Risk for Sustainable Blue Transformation Confirmation	FAO, CAFI-SSF Network, Online	26 November 2025
H. Mandakini Devi	ICAR short course on Empowering Farmers: Building sustainable enterprise through FPOs and Start-Ups	Central Agricultural University, Imphal	09-18 December 2025
Shivaji Argade	Agri-Tourism Workshop on Development and Doubling the Farmer's Income through Agri-Tourism	Pune	25-27 December 2025



5.4 Conference/Symposium/Workshop Attended by Scientists

Name of the Faculty	Name of the Program Attended	Organized by	Venue	Date
R. Bharathi Rathinam	Meeting on Fish Disease surveillance programme	Department of Fisheries	Online	10 January 2025
Vinod K. Yadav	International Conference on Climate Change	SNDT women University, Mumbai collaboration with City University of New York	SNDT women University, Mumbai	16-18 January 2025
Sreedharan K	International Workshop on "Aquaculture Medicine and Aquatic Animal Health Management in Asia-Pacific".	National Centre for Aquatic Animal Health (NCAAH)	Seminar Complex, Cochin University of Science and Technology, Kochi, Kerala	16-18 January 2025
Upasana Sahoo	3 Days International Conference on Global Research Initiatives for Agriculture, Science and Technology, GRIAST-2025	Indira Gandhi Krishi Vishwavidyalaya and National Agriculture Development Cooperative Ltd	Raipur, Chattisgarh	20 to 22 January 2025
Ankush L. Kamble	International Conference on Global Research Initiatives for Agriculture, Science and Technology (GRIAST-2025)	Indira Gandhi Krishi Vishwavidyalaya (IGKV) Raipur, Chhattisgarh and National Agriculture Development Cooperative Ltd. (NADCL) Baramulla, UT of J & K	Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chhattisgarh	20- 22 January 2025
Kapil Sukhdhane	Conference on Accelerating the Blue Economy Wave towards Viksit Bharat organised by ASOCHEM, Mumbai in association with ICAR-Central Institute of Fisheries Education, Mumbai.	The Associated Chambers of Commerce and Industry of India	ICAR- CIFE Mumbai	22 January 2025
Madhuri Pathak	6th India International Seaweed Conference & Expo	Indian Chamber of Commerce (ICC)	National Institute of Ocean Technology (NIOT) Chennai, Tamil Nadu	29-30 January 2025
Arun Sharma, Saurav Kumar, Kundan Kumar, Babitha Rani A M	Man Ki Baat: Kisan Bhaiyo Ke Saath	ICAR-CIFE	Online	30 January 2025



Dhalongsaih Reang	Expert member, One day programme Mahine ke Antim Thursday: Mann Ki Baat Matsya Kisan Ke Sath on Importance of Fish Health Management in Aquaculture	ICAR-CIFE, Mumbai	ICAR-CIFE, Mumbai	30 January 2025
All CIFE Faculty	14th International Asian Fisheries & Aquaculture Forum (AFAF) conference, New Delhi	Asian Fisheries Society and ICAR	ICAR Convention Centre, NASC Complex New Delhi	12-15 February 2025
Gayatri Tripathi, R. Bharathi Rathinam	Symposium on “Aquatic Animal Diseases: Emerging Challenges and Preparedness” (SAAD-ECP)	ICAR	NASC Complex, New Delhi	13 February 2025
Shamna N	BIMSTEC-India Marine Research Network (BIMReN) Networking Workshop	BoBP	Chennai	13 February 2025
Ananthan P.S.	ICSSR-IIT Madras Conference on Emerging Issues in Blue Economy	Indian Council of Social Science Research and Indian Institute of Technology Madras	Chennai	14 February 2025
Sreedharan K	XXVIII Meeting of ICAR Regional Committee No. V	ICAR-IASRI	AP Shinde Symposium Hall, The National Agricultural Science Complex (NASC), New Delhi	18 February 2025
Madhuri Pathak	XII Agricultural Science Congress	National Academy of Agricultural Sciences (NAAS)	GB Pant University of Agriculture and Technology (GBPUA&T), Pantnagar, Uttarakhand	20-22 February 2025
Dhalongsaih Reang	WGM fish seed grower for grade 11 and 12 as expert member	(PSSCIVE, Bhopal)	(PSSCIVE, Bhopal) Pandit Sunderlal Sharma Central Institute of Vocational Education	20-21 February 2025
Sreedharan K Ashok Kumar	Meeting in connection with the Integrated Aqua Park-Centre excellence for development of saline affected areas	Department of Fisheries, Government of Haryana	Garwa, Bhiwani District, Haryana	24 February 2025
Vidya Shree Bharti	National seminar on Agri-diversification and Eco-regional Farming	ICAR-MGIFRI, Motihari	Online	04-05 March 2025



R. Bharathi Rathinam	Meeting with the Coordinator, NSPAAD and DDG (Fisheries Science)	ICAR-NBFGR	Online	06 March 2025
Paramita Banerjee Sawant	Fisheries Startup Conclave 2.0"	Hyderabad, Telangana	Agri Business Incubation Centre, ICAR-CIFE Mumbai	08 March 2025
Shivaji D. Argade	Global Conference on Innovations to Impact: A Gender-Transformative Approach for Sustainable Agri-Food Systems	ICAR-CIWA Bhubaneswar	Bhubaneswar, Odisha	08-10 March 2025
All CIFE Faculty	International Conference on Fisheries Biotechnology	ICAR-CIFE and Indian Fisheries Association	ICAR-Central Institute of Fisheries Education, Mumbai	17-18 March 2025
Arun Sharma, Vidya Shree Bharti Vinod K. Yadav	Training cum workshop on Drone and Sensor Technologies In Fisheries	ICAR-CIFE, Mumbai	ICAR-CIFE, Mumbai	24 - 25 March 2025
Saurav Kumar	National conference on Circular Bioeconomics: Wealth from Waste	ICAR-CIFT Navi Mumbai	ICAR-CIFT Navi Mumbai	25 March 2025
Sukham Munilkumar	Review meeting of Department of Fisheries, Govt of India with Maharashtra Fisheries Dept and FSI, Govt of India	Online	Department of Fisheries, Govt of India	07-08 April 2025
Saurav Kumar Kundan Kumar	Best Aquaculture practices in Inland Saline Aquaculture: review meeting with Secretary GOI, Fisheries and Chairperson NFDB	GOI, New Delhi	ICAR-CIFE Mumbai	07 April 2025
Saurav Kumar	DBT/RGCTC sensitization meeting	DBT, New Delhi	IIT Bombay, Mumbai	08 April 2025
Sukham Munilkumar, Kapil Sukhdhane	Consultative Meeting on Integrated Fisheries Management in Sardar Sarovar Reservoir	ICAR-CIFE, Mumbai in collaboration with Narmada Control Authority, Department of Fisheries, Maharashtra and ICAR-CIFRI, Barrackpore	ICAR-CIFE, Mumbai	11 April 2025



Kapil Sukhdhane	Participated as member in State Level Approval and Monitoring Committee (SLAMC) Meeting for the Action plan Fy 2024-25 Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA) under Pradhan Mantri Matsya Sampada Yojana	Department of Fisheries, Maharashtra	Department of Fisheries, Maharashtra	13 April 2025
Sreedharan K Satyendar Singh	36th All India Congress of Zoology and International Conference on Innovations in Life Sciences for Sustainable Development: Biodiversity, Environment, Health and Food Security-2025 (ILSSD-2025)	Department of Zoology, University of Lucknow in collaboration with Zoological Society of India	Department of Zoology, University of Lucknow	24-26 April 2025
Babitha Rani A M	International conference and Expo on Aquaculture and Fisheries, Aquaculture Horizons 2025	PRISM Scientific	Sethubal, Portugal	28-30 April 2025
Manjusha L.	National Conference on Antimicrobial Resistance: Strategies for Prevention and Alternatives	Karnataka Science & Technology Academy, Bangalore, Karnataka	Karnataka Science & Technology Academy, Bangalore, Karnataka	14-16 May 2025
Madhuri Pathak	Review Meetings of the Inter Ministerial Committee and Technical Advisory Committee for Promotion and Development of Seaweed Farming and Value Chain	Department of Fisheries, Government of India	Online	24 February & 26 May 2025
Shashi Bhushan	Workshop on Aligning academic research with National marine fisheries resource Assessment needs	Organized by BOBP and ICAR-CMFRI Duration:	Hotel Four Points, Kochi, Kerala	29-31 May 2025
Babitha Rani A M	21 days National refresher course on current developments in veterinary and fisheries sciences	RAJUVAS, KUFOS and NACDL	KUFOS, Kochi	04-24 June 2025
Megha Bedekar	Workshop-cum-Brainstorming Session on Current status & development of a roadmap on genome editing for aquaculture species in India	ICAR CIFA	Offline	12 June 2025
Debajit Sarma	Technical Presentation on Vision documents of Viksit Maharashtra-2047 for Fisheries Development	Commissioner of Fisheries, Maharashtra	Department of Fisheries, Maharashtra	18 June 2025



Ashutosh Deo	Review meetings of ICAR-NePPA	ICAR	ICAR-NDRI, Karnal	24-25 June 2025
Saurav Kumar	Farmer Sampark Yatra Viksit Krishi Sankalp Abhiyan	KVK, Lanja, Ratnagiri	Department of Agricultural Research and Education (DARE), Indian Council of Agricultural Research (ICAR)	29 May - 12 June 2025
Kundan Kumar	Farmers Sampark Yatra Viksit Krishi Sankalp Abhiyan	KVK, Vayara, Tapi, Gujarat	Department of Agricultural Research and Education (DARE), Indian Council of Agricultural Research (ICAR)	29 May - 12 June 2025
Arun Sharma	Farmers Sampark Yatra Viksit Krishi Sankalp Abhiyan	KVK, Vadodara, Gujarat	Department of Agricultural Research and Education (DARE), Indian Council of Agricultural Research (ICAR)	29 May - 12 June 2025
Manish Jayant	Viksit Krishi Sankalp Abhiyan (VKSA)- Phase 1	KVK, Valsad (Gujarat)	Department of Agricultural Research and Education (DARE), Indian Council of Agricultural Research (ICAR)	29 May- 12 June 2025
Sikendra Kumar	Viksit Krishi Sankalp Abhiyan (VKSA)- Phase 1	KVK, Navsari (Gujarat)	Department of Agricultural Research and Education (DARE), Indian Council of Agricultural Research (ICAR)	29 May- 12 June 2025
Ashutosh Deo	Use of satellite and drone in Indian agriculture	ISRO	Online	09 July 2025
Shashi Bhushan, Harsha Haridas	National Fish Farmers Day	ICAR-CIFE, Powarkheda Centre	ICAR-CIFE Powarkheda Centre	10 July 2025
Madhuri Pathak	Entrepreneurship Development of Ornamental Fish Farmers: Problems and Solutions	College of Fisheries, Ratnagiri	College of Fisheries, Ratnagiri	11 July 2025
All CIFE Faculty	2nd Indian Fisheries Outlook Envisaging Blue Transformation in Indian Fisheries and Aquaculture	College of Fisheries, OUAT, Berhampur, Odisha, IFSI, CIFRI Barrackpore and PFGF Mumbai	College of Fisheries, OUAT, Berhampur, Odisha	12-14 July 2025



Debajit Sarma	Development of Fisheries in Amrit Sarovar" of all the states/UTs	Online	Ministry of Fisheries, Animal Husbandry and Dairying	16 July 2025
Madhuri Pathak	Meeting on Carbon footprint, Carbon credits and Carbon trade in Fisheries and Aquaculture	Department of Fisheries, Govt. of India	Online	23 July 2025
Sukham Munilkumar, Kapil Sukhdhane	Stakeholder Consultation meeting on Fisheries Management Plan of Sardar Sarovar Reservoir	ICAR-CIFE, Mumbai	Kevadiya village, Gujarat	24 & 28 July 2025
Vidya Shree Bharti	11th International Conference on Recent Advances in Agricultural, Biological & Applied Sciences for Eco-friendly Development	Maya Devi University, Dehradun, Uttarakhand, India,	Online	25-27 July 2025
Arpita Sharma	Stakeholder meeting at Kevadia, Nandurbar under the Consultancy project Ecological Status, Conservation, and Enhancement of Fisheries in Sardar Sarovar Reservoir, Maharashtra	ICAR-CIFE, Mumbai and DoF, Maharashtra	Kevadia, Nandurbar	27 July 2025
Prasenjit Pal	10th International Webinar on Recent Trends in Statistical Theory and Applications (WSTA 2025)	Department of Statistics, University of Kerala, in collaboration with the Indian Society for Probability and Statistics (ISPS) and the Kerala Statistical Association	Online	29 June to 02 July 2025
Gayatri Tripathi, Babitha Rani, R. Bharathi Rathinam, Dinesh Patil, Sandeep Jadhav	One-day Awareness-cum-Training Programme on Health Management in Aquaculture	CIFE-NSPAAD Project and Department of Fisheries, Maharashtra	Office of the Assistant Commissioner of Fisheries, Palghar	31 July 2025
Sunil Kumar Nayak	International virtual workshop on Molecular Phylogenetics in Bioscience research: From Theory to Practice	Quaxon Bio & IT Solutions, India	Online	06-08 August 2025
Shashi Bhushan	Meeting on Stocking of fish seed in Omkareshwar reservoir in Madhya Pradesh. Organized by Matsya Mahasangh, Bhopal Madhya Pradesh.	Matsya Mahasangh, Bhopal Madhya Pradesh.	Matsya Mahasangh, Bhopal Madhya Pradesh.	06 August 2025



T. K. Ghoshal	State Level Workshop under Viksit Krishi Sankalp Abhiyan-2025 (VKSA-2025) Rabi Season	ICAR-CIFRI, Barrackpore	ICAR-CIFRI, Barrackpore	19 August 2025
Ashutosh Deo	Space Day workshop on Research and Development in Space Technology for Agricultural Transformation	ICAR	Online	23 August 2025
Kapil Sukhdhane	Meeting for New Tilapia Hatchery Accreditation under State of Maharashtra.	Department of Fisheries, Maharashtra	Department of Fisheries, Maharashtra	24 August 2025
Kapil Sukhdhane	Participated as member in State Level Pradhan Mantri Matsya Sampada Yojna, State Level Approval and Monitoring Committee	Department of Fisheries, Maharashtra	Department of Fisheries, Maharashtra	25 August 2025
Debajit Sarma	2 days national workshop on Species Prioritization in Aquaculture and Genetic Improvement	ICAR- CIFA	ICAR-CIFA, Bhubaneswar	1-2 September 2025
Paramita Banerjee Sawant, G. Biswas, Madhuri Pathak, Suman Manna, Sweta Pradhan	6th International Congress on Engineering and Life Science (ICELIS)	Online	Kyrenia, Turkish Republic of Northern Cyprus University of Kyrenia & Academic Edge Press, Ltd. (Manchester, United Kingdom)	02 - 04 September 2025
Vidya Shree Bharti	National Conference on Sustainable Development in Science and Technology 2025	Maulana Azad National Institute of Technology, Bhopal	Online	04-06 September 2025
T.I. Chanu	11th National Conference: Future Ag- advancing food and farming for sustainable future	Online	Suresh Gyan Vihar University, Jaipur and Just Agriculture Communications Group	09-10 September 2025
Jeena K	Expert Committee meeting to revisit the Standard Operating Procedure (SOP) for import of SPF shrimp broodstock, Parent Post Larvae and Live feed including Artemia cysts	CAA, Chennai and ICAR-CIBA	Online	15 September 2025; 01 December 2025 & 19 December 2025
Babitha Rani A M	12th International conference on Fisheries and Aquaculture 2026	TIKIM, Srilanka	Nha Trang, Vietnam	16-17 September 2025



T.I. Chanu	2nd National Seminar On Emerging Trends In Agriculture and Allied Sciences: A Pathway To Food Security	Online	Agritech Publication and Encourage Society	20-21 September 2025
Hanjabam Mandakini Devi	2nd National Seminar on Emerging trends in agriculture and allied sciences: A pathway to food security	Encourage Society and AgriTech Publication, Bengaluru	Online	20-21 September 2025
Megha Kadam Bedekar, Jeena K Saurav Kumar, R. Bharathi Rathinam	12th Symposium on DAA 2025 Disease in Asian Aquaculture	ICAR-CIBA, Chennai	The Leela, Chennai	23-27 September 2025
Kapil Sukhdhane	Participated in the meeting on State Level Monitoring committee on Pradhan Mantri Matsya Sampada Yojna Sanctioning committee	Department of Fisheries, Maharashtra	Department of Fisheries, Maharashtra	09 October 2025
Shamna N	National Academy of Veterinary Nutrition and Animal Welfare (VII NAVNAW conference)	ICAR-NIANP, Bengaluru	at ICAR-NIANP, Bengaluru	16-17 October 2025
Sikendra Kumar	Training for the Agricultural Statistical Data Analysis and Skills Development (TASDASD-Oct 2025)	Sustainable Agriculture and Learning Foundation (SALF)	Online	21-30 October 2025
Megha Bedekar	Annual Review Meeting of CRPV on Vaccine and Diagnostics	IVRI, Bangalore	IVRI, Bangalore	23-24 October 2025
Debajit Sarma, Babitha Rani A M., Arpita Sharma, Shamna N, Shobha Rawat	World Aquaculture India 2025	World Aquaculture Society	Novotel Convention Centre, Hyderabad	10-13 November 2025
Ashutosh Deo	ISAE Convention on Engineering Innovations for Agriculture 5.0	ICAR-CIAE, Bhopal	Online	10-12 November 2025
Paramita Banerjee Sawant	9th International Conference on Advances in Agricultural, Biological and Biodiversity Conservation for Sustainable Development (ABCD-2025)	Online	University of Mysore, Karnataka	13-15 November 2025



Vidya Shree Bharti Deepa R.P.	12th International Conference on Emerging Issues in Agricultural , Food Technology, Biological and Applied Sciences for Global Development	Maharana Pratap University of Agricultural, Food Technology, Udaipur, Rajasthan, India	Online	15-17 November 2025
Saurav Kumar, Kundan Kumar	12th international Conference (ICAVRI-2025) on Agriculture & veterinary: transformation approach, Research & innovation forum	ICAVRI	GOA University	16-18 November 2025
Gayatri Tripathi, Babita Rani, R. Bharathi Rathinam, Asha K.K, Abhay Kumar	One-day Awareness Programme on Fish Disease Diagnosis, Preventive Measures and Eco-Friendly Post-Harvest Technologies	CIFE-NSPAAD Project and ICAR-CIFT	ICAR-CIFT Regional Centre, Vashi, Navi Mumbai	19 November 2025
Arpita Sharma	Global Resilience in Animal Nutrition: Innovations for Sustainable Future	ANSICON-2025	ANDUAT., Kumarganj Ayodhya	19-21 November 2025
Deepitha R.P. Saurav Kumar, Kundan Kumar, Vidya Shree Bharti	National Seminar on Safeguarding Seafood - National Seminar on AMR & Food Safety in connection with the World Antimicrobial Awareness Week (WAAW) 2025	ANRF & ICAR-CIFE	ICAR-CIFE, Mumbai	20-21 November 2025
N. S. Nagpure	Meeting of the Committee for technical evaluation of work done under the research projects funded by Maharashtra Gene Bank Project (MGB).	Maharashtra State Biodiversity Board, Nagpur.	Department of Environmental Sciences, MIT, Pune	20 November 2025
Debajit Sarma	Sustainability of marine and freshwater resources	World Fisheries Day	St. Anthony's college, Shillong	21 November 2025
Sukham Munilkumar, Kapil Sukhdhane	Agrovision, agricultural summit	Agrovision Foundation, Nagpur	Agrovision Foundation	21-24 November 2025
Prasenjit Pal	2nd International Extension Education Congress - 2025 on Rethinking Social Ecology in a Digital landscape	Society of Extension Education and Siksha O Anusandhan in collaboration with Central University of Odisha	Society of Extension Education, Agra	24-26 November 2025



Arpita Sharma	National Workshop on Empowering Student Entrepreneurship and Innovations in Aquafeed Industry	ICAR-CIFE, Mumbai	ICAR-CIFE, Mumbai	27 November 2025
N. S. Nagpure	Meeting of the Committee for technical evaluation of work done under the research projects funded by Maharashtra Gene Bank Project (MGB).	Maharashtra State Biodiversity Board, Nagpur.	S. R. M. Mahavidyalaya, Kudal, Dist. Sindhudurg	28 November 2025
Shivaji Argade	International Roundtable on Enhancing Contributions and Competitiveness of Cooperatives and MSMEs through Policy, Governance, and Technology Interventions	AARDO, New Delhi	VAMNICOM, Pune	01-06 December 2025
Neha W. Qureshi	33rd Annual Conference of the Agricultural Economics Research Association (AERA)	Agricultural Economics Research Association (AERA), New Delhi, with (ICAR-NAARM), Hyderabad)	ICAR-NAARM, Hyderabad	01-03 December 2025
T. K. Ghoshal	Consultative meeting with exporters in connection with the Matsya Manthan - Chintan Shivir on Seafood Value Addition	MPEDA, Kolkata	MPEDA, Kolkata	02 December 2025
Karthi reddy Syamala	Advances in Fish Hatchery Techniques		Online	02-04 December 2025
Saloni Shivam	International Conference on Bridging Science and Society: Biotechnology for Sustainable One health 2025	LUVAS, Hisar, Haryana	Lala Lajpat Rai University of Veterinary and Animal Sciences (LUVAS), Hisar, Haryana	03-05 December 2025
Ankush L. Kamble	Expert Session and exposure visit for Training Programme at CIFE Mumbai	Vaikuntha Mahata national Institute of Co-Operative Management	ICAR-CIFE Mumbai	04 December 2025
N. S. Nagpure	Meeting of Maharashtra Gene Bank for evaluation of Project proposals under the theme Freshwater Biodiversity	Maharashtra State Biodiversity Board, Nagpur	Online	08 August & 12 December 2025
Shamna N, Shobha Rawat	Training on Meta Analysis	ICAR-NAARM	Online	8-12 December 2025



Arpita Sharma	International Workshop on Best Practices in Agricultural Cooperatives in the Global Arena: Empowering Cooperatives in India for Sustainable Economic Growth and Rural Transformation	National Academy of Agricultural Sciences (NAAS) and ICAR, New Delhi	NAAS Complex, New Delhi	15-16 December 2025
Manjusha L. Sunil Kumar Nayak	International Conference on Blue Horizon 2025: Rethinking Fisheries for Sustainable Future	TNJFU	M.G.R. Fisheries College and Research Institute, Thalainayeru	17-18 December 2025
Suman Manna	25th Annual Convention of Clay Minerals Society of India	Clay Minerals Society of India, New Delhi	ICAR-IARI, New Delhi	18-19 December 2025
Megha Bedekar	Research Advisory Committee meeting of meeting held on GBRC,	GBRC Ahemdabad	Online	24-25 2025



Name of the Faculty	Title of the Lecture Delivered	University / Institute / Place	Date
Neha W. Qureshi	Research tools for behavioural economic assessment	14th Asian Fisheries and Aquaculture Forum - 14AFAF organised by Asian Fisheries Social Science Network under Asian Fisheries Society, New Delhi, India	14 February 2025
T. K. Ghoshal	Relevance of farm made feed for aquaculture production	ISCAR and ICAR-CRIJAF	28 February 2025
G. Biswas	Crab farming in Sundarban area	North 24 Parganas KVK, WBUAFS, Ashokenagar, West Bengal	13 March 2025
Neha W. Qureshi	Underdogs of statistics: Understanding parametric and non-parametric tests	Faculty of Fisheries, Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir	17-18 March 2025
Manjusha L.	Biotechnological valorization of fish waste bioresources	National Hindi Seminar on “Towards Circular Economy - Waste to Wealth” organized by ICAR-CIFT, Mumbai Research Centre	25 March 2025
Arpita Sharma	Digital innovations for aquaculture development	Centre for ICT in Agriculture Extension Management, MANAGE, Hyderabad	28 March 2025
Neha W. Qureshi	DAREFIS-2025: Data analytics for research in fisheries & social sciences	Dr. M.G.R. Fisheries College & Research Institute, Ponneri, Tamil Nadu	2-13 May 2025
Sanath Kumar	Aquatic foods as sources of antimicrobial resistant bacteria: Risk identification and mitigation	Karnataka Science and Technology Academy (KSTA)	14-16 May 2025
Babitha Rani A M	Sustainable and eco-friendly aquaculture practices	KUFOS, RAJUVAS and NADCL, Baramulla	18 June 2025
Shamna N.	RAJUVAS-KUFOS-NADCL-Refresher Course on Virtual mode	KUFOS, Kochi	19 June 2025
Sukham Munilkumar	Towards sustainable fisheries: Ecological insights and developmental strategies for the Sardar Sarovar Reservoir, Maharashtra	2nd Indian Fisheries Outlook themed on ‘Envisaging Blue Transformation in Indian Fisheries and Aquaculture’ jointly organized by the Inland Fisheries Society of India (IFSI), Barrackpore	12-14 July 2025



Name of the Faculty	Title of the Lecture Delivered	University / Institute / Place	Date
Neha W. Qureshi	Framework for assessing the impact of agricultural education	National Workshop on Methodological Frameworks for Impact Assessment, ICAR-IARI, New Delhi	25 July 2025
Shamna N.	Farm-level perspectives on Mugil cephalus culture with special attention to feeding management	ICAR-CMFRI, Digha	30 July 2025
Arpita Sharma	Social construction of gender	Department of Agricultural Extension Education, Post Graduate Institute, Mahatma Phule Krishi Vidyapeeth (MPKV) Rahuri Dist. Ahilyanagar, Maharashtra	10 August 2025
Debajit Sarma	Advance in species diversification and breeding strategies	BASU-College of Fisheries, Kishanganj, Bihar	6-26 September 2025
Kedar Nath Mohanta	Feed innovations and alternative protein sources for low-emission aquaculture	BASU-College of Fisheries, Kishanganj, Bihar	11 September 2025
Manjusha L.	Thermal process calculations	Dr. MGR Fisheries College & Research Institute, Ponneri, TNJFU	12 September 2025
Dhalongsaih Reang	Catfish culture as a high value aquaculture enterprise for small holders	ICAR Research complex for NEH region, Tripura Centre, Lembucherra	20 September 2025
Shamna N.	Candidate species suitable for intensive fish farming and their commercial potentials	ICAR-Central Institute of Coldwater Fisheries Research (ICAR-CICFR)	19 November 2025
R. Bharathi Rathinam	Fisheries and antimicrobial resistance	Fisheries College and Research Institute, Thalainyayiru	19 November 2025
Arpita Sharma	Driving impact: How behavioural approaches enhance communication strategies	ANSICON-2025: Global Resilience in Animal Nutrition: Innovations for Sustainable Future, ANDUAT, Ayodhya	19-21 November 2025
Debajit Sarma	Sustainability of marine and freshwater resources	Department of Fishery Science, St. Anthony's College, Shillong	21 November 2025



Name of the Faculty	Title of the Lecture Delivered	University / Institute / Place	Date
Karthireddy Syamala	Antimicrobial resistance (AMR)	Training Programmes for Aquaculture Technicians across maritime states conducted by MPEDA, Sub-Regional Division, Kakinada	21 November 2025
Sukham Munilkumar	Shrimp farming inland saline areas of Vidarbha, Maharashtra- The way forward	Fisheries Workshop organised by Agrovision 2025	21-24 November 2025
Arpita Sharma	Gender dynamics in patenting innovation: A decadal analysis of Indian fisheries and aquaculture technologies	Global Research Experts Meeting on Improving Women's Participation in Innovation, Creativity, and IP and Innovation, World Intellectual Property Organisation (WIPO), Switzerland.	24-25 November 2025
Shivaji Argade	From idea to market: The strategic role of incubators in fisheries startup scaling	MANAGE-FishHub, Hyderabad	2 December 2025
Shivaji Argade	Climate-smart aqua-business models for fisheries cooperatives	VAMNICOM, Pune	5 December 2025
Muralidhar P. Ande	Antimicrobial resistance and sustainable aquaculture	Technician Training conducted by MPEDA, Sub-Regional Division, Kakinada,	12 December 2025
Arpita Sharma	Fisheries cooperatives	National Academy of Agricultural Sciences (NAAS), ICAR, New Delhi	15-16 December 2025
Sweta Pradhan	Freshwater aquaculture practices	SSKVK, Arapanch, Sonarpur, South 24 Parganas	17 December 2025
Arpita Sharma	Gender as a system: The social construction of identity	MANAGE, Hyderabad	17-19 December 2025



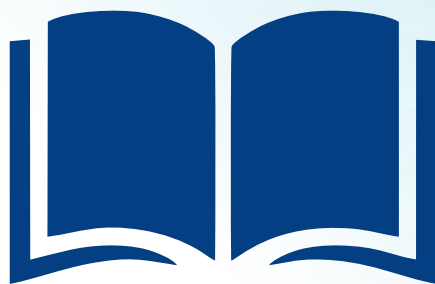
5.6 Guest faculty invited from other institutions

Name of the Faculty	Designation and Institution	Title of the Lecture	Date
Dr. Iddya Karunasagar	Research Advisor at Nitte University, Mangalore and International Consultant in Food Safety	International regulations related to aquatic animal health and trade	08 January 2025
Dr. Jyoti Iravane	Head, Department of Microbiology, Government Medical College, Aurangabad	Newer methodologies for antimicrobial susceptibility testing	10 January 2025
Dr. K.V. Rajendran	Former Head and Principal Scientist AEHM Division, ICAR-CIFE, Mumbai	Holistic approaches in precision diagnosis	13 January 2025
Dr. Indrani Karunasagar	Director Projects & DST NU-TEC Nitte University Mangalore	Harnessing the bacteriophages for disease prevention in aquaculture	13 January 2025
Dr. Gaurav Rathore	Principal Scientist, Fish Health Management & Exotics Division, ICAR-NBFGR, Lucknow,	Immunodiagnostic assays	15 January 2025
Dr. Santhosh M.	Deputy Commissioner, Animal Quarantine and Certification Services GoI, Navi Mumbai	International regulations related to aquatic animal health and trade	21 January 2025
Dr. Priyabrat Swain	Principal Scientist, Fish Health Management Division, ICAR-CIFA, Bhubaneswar	Principle and method of serological techniques for disease diagnosis and assay of vaccination	23 January 2025
Dr. M. Sashi Sekhar	Principal Scientist and Head, Aquatic Animal Health and Environment Division, ICAR-CIBA Chennai	White spot syndrome virus diagnosis: single genes to genome	24 January 2025
Dr. Koji Hamasaki	Professor, Ocean Research Institute, The University of Tokyo, Japan	Salmon gut microbiome	12 December 2025





CHAPTER - 6



PUBLICATIONS



6.1. Peer Reviewed Publications with NAAS Score & Impact Factor

Publication with NAAS Score ≥ 10.0 (NAAS Impact; ISI)

1. Arisekar, U., Arivukumar, E., Iburahim, A., Shalini, R., Sivaraman, B., Selvaraj, M., Ghramh, H.A., Kalidass, B., Renuka, V. and Ramkumar, S., 2025. Unveiling microplastic contamination in seafood: Source, fate, analytical methods, health impacts, mitigation strategies and scientometric trends. *Marine Pollution Bulletin*, 220, p.118414. **10.9; 4.9**
2. Campal, E.I., Harshavarthini, M., Singh, S., Sharma, R., Brahmane, M.P., Jaiswar, A.K., Rasal, K.D., Goswami, M., Dheeran, P., Bharathkumar, K. and Nagpure, N.S., 2025. Evaluation of genotoxic and mutagenic potential of polystyrene nanoplastics in forked Venus clam, *Gafrarium divaricatum* (Gmelin, 1791). *Journal of Hazardous Materials Advances*, p.100858. **13.70; 7.70**
3. Chattopadhyay, K., Xavier, K.M., Porayil, L., Balange, A.K. and Nayak, B.B., 2025. Effects of chitosan molecular weight on proteins and lipids interactions in fish mince emulsion sausages. *International Journal of Biological Macromolecules*, 319, p.145562. **14.5; 8.5**
4. Dar, S.A., Kumar, S., Saini, V.P., Abhiman, Rani, S., Iqbal, G., Swain, S., Kumar, R., Keer, N.R. and Sharma, A., 2025. Quercetin as a nutritional intervention: Enhancing growth, metabolism, and immune gene modulation in *Labeo rohita*. *ACS Omega*, 10(42), pp.49402-49412. **10.3; 4.3**
5. Das, R., Xavier, K.M., Ghosh, S.K., Nayak, B.B., Balange, A.K., Mehta, N.K. and Narasimhamurthy, L., 2025. Development and techno-functional evaluation of ready-to-serve sous vide shrimp in chitosan-spice mix dispersion. *Future Foods*, p.100869. **14.20; 8.20**
6. Debbarma, R., Singh, S.K., Ngasotter, S., Biswas, P., Waikhom, G., Chouhan, N., Priyadarshini, M.B., Choudhury, T.G. and Mehta, N.K., 2025. Insect shell chitosan nanoparticle as novel flocculants in biofloc system: An innovative resource recovery approach for sustainable aquaculture. *Bioresource Technology Reports*, p.102465. **10.3; 4.3**
7. Harini, G., Pathak, M.S., Munilkumar, S., Sukhdhane, K.S., Chanu, T.I., Balange, A.K. and Jeena, K., 2025. Unlocking synergies: Enhancing bioremediation, growth, and physiological responses of *Penaeus vannamei* co-cultured with seaweed. *Algal Research*, 85, p.103816. **11.0; 5.0**
8. Iqbal, G., Pinto, N., Sonwane, A.A., Rasal, K.D., Sushil Singh, L., Chikkathimmashetty, N.N., Pawaskar, D. and Goswami, M., 2025. Myogenic potential in *Labeo rohita* dorsal muscle cell line and development of CRISPR-Cas9 construct for myostatin gene. *ACS Omega*. **10.3; 4.3**
9. John, V.C., Verma, A.K., Hasan, M., Krishna, H., Sahu, P., Krishnani, K.K., Munilkumar, S., Kumar, P., Varghese, T. and Hittinahalli, C.M., 2025. Aquaponics performance optimization: The impact of hydraulic loading rate on striped murrel (*Channa striata*) and lettuce (*Lactuca sativa* L.) production in a vermicompost-supplemented system. *Aquacultural Engineering*, p.102598. **10.3; 4.3**
10. Kara, T., Bharti, V.S., Shukla, S.P., Bedekar, M.K., Ngasotter, S. and Jha, A.K., 2025. Micro biochar derived from mango leaves and banana peduncle for efficient oxytetracycline removal from aquatic environments. *Journal of Hazardous Materials Advances*, 18, p.100690. **13.70; 7.70**
11. Koreti, K., Lahiri, B., Singh, S.K., Ghosh, A., Pal, P., Debbarma, R. and Singh, H.P., 2025. Optimal to excessive: Pragmatic use of chemical and biological products and crucial determinants in carp aquaculture in the Northeastern Himalayas. *Environmental Development*, 56, p.101271. **10.2; 4.20**
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CHAPTER - 7



HONOURS & AWARDS



HONOURS AND AWARDS

Name of Faculty	Award/Honours	Awarded for	Received from	Date	Venue/Occasion
Kedar Nath Mohanta	Fellow of Inland Fisheries Society of India-2025	Distinguished research contribution	ICAR-CIFRI Barrackpore	12 July 2025	2 nd Indian Fisheries Outlook 2025: College of Fisheries (OUAT), Odisha
	Lifetime Achievement Award	Significant contribution to life science research	Environmental and Social Welfare Society, Khajuraho, M.P.	1-2 February 2025	ESW XII Annual National Research Conference on "Impact of Climate change on Ecosystem, Environment and Agriculture" at Khajuraho, M.P.
	Lifetime Achievement Award-2025	Significant contribution to fisheries science	Society of Life Science, Satna, M.P.	7-8 March 2025	National Conference on "Innovative and Modern Technology for Environmental Management" at APS University, Rewa, M.P.
	Vice-President	Significant contribution in fish and fisheries science	Association of Aquaculturists, CIFA, Bhubaneswar	2023 -2026	ICAR-CIFA, Bhubaneswar
Debajit Sarma	Adjunct Faculty	Appointed as Adjunct Faculty	Department of Fishery Science, St. Anthony's College (Affiliated to NEHU, a Central University)	27 October 2025	St. Anthony's College, Shillong, Meghalaya
	Member of National Committee	Member of Technical Evaluation Committee constituted by DBT, Govt. of India during 2023-26	DBT, Govt. of India	2025-26	Technical Evaluation Committee
	Lead Guest Editor	Special Issue on Advances in Aquaculture and Species Diversification	Journal of Applied Ichthyology	15 August 2025	Journal of Applied Ichthyology
	Editorial Board Member	Editorial Board Member	Scientific Reports	2025-26	Springer Nature
Paramita Banerjee Sawant	Certificate of Appreciation	Member of the Organizing Sub-committee	14th AFAF & Deputy Director General (Fisheries Sciences), ICAR	12-15 February 2025	14 th Asian Fisheries and Aquaculture Forum, New Delhi
	Best Oral Presentation	Paper presentation	School of Chemical Sciences, Goa University, Goa	24-26 April 2025	8 th International Conference -CRISEA 2025, Goa



	Editorial Board Member	Editorial Board Member	Scientific Reports BMC Marine Science	2025-2026	Springer Nature
	Lead Guest Editor	Special Issue on IMTA	Scientific Reports		
Madhuri Pathak	Best Oral Presentation	Paper Presentation	International Conference on Fisheries Biotechnology, Mumbai	18 March 2025	ICAR-CIFE, Mumbai
	Member of the Board of Studies in Fishery Science	BoS member for Fishery Science Discipline	Swami Ramanand Teerth Marathwada University, Nanded	2024-25	Swami Ramanand Teerth Marathwada University, Nanded, Maharashtra
S.P. Shukla	Best Extension Scientist	Recognition of contribution towards extension activities	Institutional Award	6 June 2025	ICAR-CIFE, Mumbai
Gayatri Tripathi	Cash Award of Rs. 99,900/-	Commercialization of CIFAX- a medicine against EUS in fishes	Director, ICAR-CIFA	25 March 2025	ICAR-CIFA, Bhubaneswar
	Certificate of Appreciation	Significant contribution as organizer in 14 th AFAF subcommittee	DDG (FS), ICAR	16 February 2025	NASC, New Delhi
Sukham Munilkumar	Certificate of appreciation	Expert for Fisheries Workshop	Agrovision, Agricultural Summit	22 November 2025	Agrovision Foundation, Nagpur
Babitha Rani A M	Certificate of appreciation	Invited speaker	International conference and Expo on Aquaculture and Fisheries, Aquaculture Horizons 2025	28-30 April 2025	Polytechnic University of Sethubal, Portugal
	Certificate of appreciation	Session chair Technical session Scientific Committee Member	International Institute of Knowledge management, Sri Lanka	16-17 September 2025	12 th International conference on Fisheries and Aquaculture 2025, Nha Trang, Vietnam, 2025
	Recognition	National Session Co-Chair, Biofloc culture system	World Aquaculture Society	10-13 November 2025	World Aquaculture - 2025 at Hyderabad
Vidya Shree Bharti	Best Oral presentation Award	Paper presentation	Maharana Pratap University of Agricultural, Food	17 November 2025	12 th International Conference on Emerging Issues in



			Technology, Udaipur, Rajasthan		Agricultural, Food Technology, Biological and Applied Sciences for Global Development at Udaipur
	Best Oral presentation Award	Paper presentation	Maya Devi University, Dehradun, Uttarakhand	27 July 2025	11 th International Conference on Recent Advances in Agricultural, Biological & Applied Sciences for Eco-friendly Development at Dehradun
Ankush L. Kamble	Appreciation Award	मूल रूप से हिन्दी में कार्य करने हेतु लागू की प्रोत्साहन योजना के लिए प्रोत्साहन पुरस्कार	ICAR-CIFE, Mumbai	15 October 2025	Hindi Pakhwada ICAR-CIFE, Mumbai
Vinod Kumar Yadav	Certificate of Appreciation	Significant contribution as organizer in 14 th AFAF subcommittee	DDG (FS), ICAR	16 February 2025	NASC, New Delhi
Prasenjit Pal	Young Scientist Award	Outstanding Contribution in Extension Education	Society of Extension Education, Agra	24-26 November 2025	2 nd International Extension Education Congress - 2025 at Central University of Odisha, Koraput
	Best Oral Presentation Award	Oral presentation			
Karthireddy Syamala	Young woman scientist award	Women scientist	ICAVRI-2025	16-18 November 2025	12th International Conference on Agricultural & Veterinary: Transformative approach, research & Innovation Forum, Goa
	Best Oral Presentation Award	Abstract presentation			
	Best Oral Presentation Award	Paper presentation	Tamil Nadu Dr. J. Jayalalithaa Fisheries University	17-18 December 2025.	Blue Horizon 2025: Rethinking Fisheries for Sustainable Future
Arun Sharma	Hindi Ratna Puruskar: 2025	Best overall Work in Hindi	ICAR-CIFE, Mumbai	15 October 2025	ICAR-CIFE Mumbai
	Hindi Protsahan Yojna Puruskar: 2 nd prize	Administrative work in Hindi			
	Best oral presentation award	Paper presentation	ENCOURAGE Society and Agritech	21 September 2025	2 nd National Seminar On Emerging Trends In



			Publication, Bengaluru		Agriculture And Allied Sciences: A Pathway To Food Security, Bengaluru
	Best oral Presentation	Paper presentation	SGVU, Jaipur	10 September 2025	11 th National Conference on FutureAG-2025 at Jaipur
Thongam Ibemcha Chanu	Best Oral Presentation	Paper presentation	ENCOURAGE Society and Agritech Publication, Bengaluru	20-21 September 2025	2 nd National Seminar on Emerging Trends In Agriculture and Allied Sciences: A Pathway To Food Security, Bengaluru
Sukham Monalisha Devi	Best Oral Presentation	Paper presentation	University of Agricultural Sciences (UAS), Bengaluru	29-31 December 2025	International Conference on Sustainable Innovations in Agriculture, Veterinary and Allied Sciences, SIAVAS-2025 at Bengaluru
Fish Nutrition, Biochemistry and Physiology	Best Division Award 2024	Significant contribution in research, academic and extension activities in Institute	ICAR-CIFE, Mumbai	06 June 2025	ICAR-CIFE, Mumbai
FEES Division	Shield and Certificate	Best Work in Hindi	ICAR-CIFE, Mumbai	15 October 2025	Hindi Pakhwada ICAR-CIFE, Mumbai
Manoj P. Brahmane, Sanath Kumar, Kundan Kumar, Sunil Kumar Nayak, Ankush Kamble, Arun Sharma, Saurav Kumar, Sikendra Kumar, Kiran D. Rasal, Karan K. Ramteke, Manish Jayant, Kapil S. Sukhdane and All faculties from Centres	Appreciation letter	Active participation in Viksit Krishi Sankalp Abhiyan (VKSA)	DG and Director, ICAR-CIFE, Mumbai	10 September 2025	ICAR-CIFE, Mumbai



Shivaji D. Argade	Best Oral Presentation Award	Paper presentation	ICAR-CIWA, Bhubaneswar	8-10 March 2025	Global Conference on “Innovations to Impact: A Gender-Transformative Approach for Sustainable Agri-Food Systems” at Bhubaneswar, Odisha
	Best Teacher Award	Teaching and Guiding	ICAR-CIFE, Mumbai	6 June 2025	ICAR-CIFE, Mumbai
Neha W. Qureshi	Certificate of Appreciation	Contributing as a Member of the Organizing Sub-committee	14th AFAF & Deputy Director General (Fisheries Sciences), ICAR	12-15 February 2025	New Delhi, India
	Best Young Agricultural Economist Award, 2025	Announced by AERA, India at ICAR-NAARM during 33rd Annual Conference of AERA, India	ICAR-NAARM, Hyderabad	1-3 December 2025	ICAR-NAARM, Hyderabad
	Elected as a Execom Member of Agricultural Economics Research Association, India				
Saurav Kumar	CIFE Institutional Annual Award	Best Young Scientist	ICAR-CIFE, Mumbai	6 June 2025	ICAR-CIFE, Mumbai
	Young Scientist Award	Significant contribution in research and academics in Fisheries Sciences	Indian Society of Agricultural Science & Technology Research (ISASTR), New Delhi	18 November 2025	ICAVRI, Goa University, Goa
Jeena K.	Best Oral Presentation	Paper presentation	ICAR-CIBA, Chennai & Asian Fisheries Society	26 September 2025	12 th Symposium on Diseases in Asian Aquaculture (DAA12) at Chennai
Shamna N	Dr. S Ayyappan Gold Medal & Best young Scientist Award	Best Young Scientist	2 nd Inland Fisheries Society of India (IFSI), IFO2, Bhubaneswar	12-14 July 2025	OUAT, Odisha
	Best Oral presentation Award	Paper presentation			



	Best Scientist (Regional Centre)	Recognition of contribution towards extension activities	ICAR-CIFE, Institutional Award	6 June 2025	ICAR-CIFE, Mumbai
Satya Prakash	Cum Laude	Excellent Ph.D. thesis	Wageningen University & Research	12 December 2025	Wageningen, The Netherlands
R. Bharathi Rathinam	Certificate of Appreciation	Significant contribution as a member of the organizing sub- committee of the 14 th AFAF	DDG (FS), ICAR	16 February 2025	NASC, New Delhi



Dr. Jeena K receiving AFSIB Best Oral Presentation Award during DAA12 held at Chennai



Dr. Neha Qureshi receiving Young Agricultural Economist award-2025 during 33rd annual conference of AERA, India



Dr. Prasenjit Pal receiving Young Scientist award from Society of Extension Education, Agra.



Dr. Satya Prakash receiving *Cum Laude* Excellent Ph.D. thesis award from the Wageningen University, The Netherlands



CHAPTER - 8



LINKAGES AND COLLABORATIONS



8.1. Linkages with ICAR-CIFE

A. Government of India Organizations

- Bhabha Atomic Research Centre, Mumbai
- Central Institute of Fisheries Nautical and Engineering Training, Kochi
- Department of Biotechnology, New Delhi
- Department of Earth Sciences, New Delhi
- Department of Science and Technology, New Delhi
- Fishery Survey of India, Mumbai
- Government Polytechnic, Mumbai
- Indian Institute of Foreign Trade, Kolkata
- Indian Institute of Technology, Kharagpur
- Indian National Centre for Ocean Information Services, Hyderabad
- Indira Gandhi Institute of Development Research (IGIDR), Mumbai
- Krishi Vigyan Kendra, Banswara, Rajasthan
- Marine Products Export Development Authority, Kochi
- National Bank for Agriculture and Rural Development, Mumbai
- Nuclear Power Corporation of India Limited, Mumbai
- Satellite Application Centre, Ahmedabad
- Tata Cancer Research Centre, Mumbai
- Tata Institute of Fundamental Research, Mumbai
- Zoological Survey of India, Kolkata
- Vaikunth Mehta National Institute of Cooperative Management, Pune

B. ICAR Institutes

- ICAR -Central Coastal Agricultural Research Institute, Goa
- ICAR Research Complex for Eastern Region, Patna
- ICAR Research Complex for North-Eastern Hill Region, Barapani
- ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar
- ICAR-Central Inland Fisheries Research Institute, Barrackpore
- ICAR-Central Institute of Agricultural Engineering, Bhopal
- ICAR-Central Institute of Brackishwater Aquaculture, Chennai
- ICAR-Central Institute of Fisheries Technology, Kochi
- ICAR-Central Marine Fisheries Research Institute, Kochi
- ICAR-Central Institute of Coldwater Fisheries Research, Bhimtal
- ICAR-Indian Agricultural Research Institute, New Delhi
- ICAR-National Academy of Agricultural Research Management, Hyderabad
- ICAR-National Bureau of Fish Genetic Resources, Lucknow
- ICAR-Central Tuber Crops Research Institute, Bhubaneswar
- ICAR-Directorate of Medicinal and Aromatic Plants Research, Anand
- ICAR-Indian Institute of Farming Systems Research, Modipuram
- ICAR-Indian Institute of Millets Research, Hyderabad

C. CSIR Institutes

- Central Drug Research Institute, Lucknow
- Indian Institute of Toxicology Research, Lucknow
- Central Food Technological Research Institute, Mysore
- Central Institute of Medicinal and Aromatic Plants, Lucknow
- Centre for Cellular and Molecular Biology, Hyderabad
- Indian Institute of Chemical Biology, Kolkata
- Indian Institute of Integrative Medicine, Jammu
- Institute of Genomics and Integrative Biology, New Delhi
- National Institute of Oceanography, Goa

D. International

- Curtin University, Australia
- University of Idaho, Idaho, USA
- University of Kentucky, Lexington, KY, USA

E. Universities

- Acharya N. G. Ranga University, Guntur
- Andhra Pradesh Fisheries University (APFU)
- Annamalai University, Chidambaram
- B. S. Konkan Krishi Vidyapeeth, Dapoli
- Babasaheb Bhimrao Ambedkar University, Lucknow
- Barkatullah University, Bhopal
- Bharathiar University, Coimbatore
- Bidhan Chandra Krishi Viswa Vidyalaya, Nadia, West Bengal
- Central of Agriculture University, Imphal
- Chhattisgarh Kamdhenu Vishwavidyalaya, Chhattisgarh
- Cochin University of Science and Technology, Kochi
- Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur
- Jawaharlal Nehru University, New Delhi
- Kalyani University, Kalyani, West Bengal
- Maharana Pratap University of Agriculture and Technology, Udaipur
- Mangalore University, Mangalore
- Mumbai University, Mumbai
- West Bengal University of Animal & Fishery Sciences, Kolkata
- Acharya Narendra Deva University of Agriculture & Technology, Ayodhya

F. State Governments

Maharashtra, Haryana, Uttar Pradesh, Bihar, Tamil Nadu, Andhra Pradesh, Tripura, Arunachal Pradesh, Madhya Pradesh, Meghalaya, Nagaland, Assam, Manipur, Mizoram, Sikkim, Punjab and Telangana

G. NGOs

- The NGO Fish Welfare Initiative India
- United Artists' Association, Ganjam, Odisha
- Yusuf Meherally Centre, Kutch, Gujarat

H. Other Organizations

- Action Aid International, Port Blair
- Advanced Enzymes, Mumbai
- Akhil Bhartiya Machimar Sanghatna, Mumbai
- Amnion Biosciences Ltd.
- Anmol Feeds Pvt. Ltd.
- APC Nutrient, Mumbai
- Aarey Fish Farm Central Calcutta Science and Culture Organization for Youth, Kolkata
- Coreline Exports, Kolkata
- CPWD, Hoshanagabad, M.P.
- Digha Sea Food Exports, Kolkata
- Falcon Marine Exports Ltd.
- Godrej Agrovvet Pvt. Ltd., Vijayawada
- Government Polytechnic, Mumbai
- Haryana Kishan Ayog, Chandigarh

- ICT, Mumbai
- IFB Agro Industries Ltd., Aquatic & Marine Products Div., Kolkata
- KVK, Palghar
- M. M. Fish Seed Cultivation Pvt. Ltd.
- M. S. Swaminathan Research Foundation, Chennai
- Madhya Pradesh Fish Federation, CPWD, Bhopal, M.P.
- Maharashtra Machimar Kriti Samiti, Mumbai
- Ministry of Industries and DoF, Government of Maharashtra
- Nezami Rekha Sea Foods Pvt. Ltd., Kolkata
- NRG Feeds
- NSZA Sea Food Pvt. Ltd, Kolkata
- RN Agarwal Trading LLP
- Saguna Baugh Farm, Neral
- Sharma Feeds and Supplements Trading Comp Ltd.
- Shimpo Exports, Kolkata
- Shramajivi Janata Sahayyak Mandal, Mahad, Raigarh, Maharashtra
- State Electricity Board, M.P.
- State Institute of Fisheries Technology, Kakinada
- Tata Power Co. Mahseer Farm, Lonavala
- Telecom Department, M.P.
- The Seafood Exporters Association of India, Kolkata

8.2. MoUs

MoA Signing Ceremony between ICAR-CIFE, Mumbai and M.M. Fish Seed Cultivation Pvt. Ltd., Bilaspur, Chhattisgarh

A Memorandum of Agreement (MoA) was signed between the ICAR- CIFE, Mumbai, and M.M. Fish Seed Cultivation Pvt. Ltd., Bilaspur, Chhattisgarh for a period of five years in a non-exclusive basis on 06 February 2025 for the commercialization of "CIFE-PangasShakti", a specially developed grow-out feed for freshwater catfish, *Pangasianodon hypophthalmus*.





CHAPTER - 9



EVENTS AND MEETINGS



IMPORTANT EVENTS AND MEETINGS ORGANISED

Sl. No.	Name of the Event & Meeting	Date
1.	76th Republic Day	26 January 2025
2.	Fish Swad-2025	26 January 2025
3.	Vesava Koli Seafood Festival	10-12 January 2025
4.	Mann Ki Baat Matsya Kisano ke Saath: Fish Health Management in Aquaculture	30 January 2025
5.	Second Edition of Advantage Vidarbha- Khasadar Audyogik Mahotsav	7-9 February 2025
6.	Seminar: IS 15000 (HACCP) & IS 2491: A Comprehensive Approach to Food Safety & Hygiene	24 February 2025
7.	National Science Day	28 February 2025
8.	Inauguration of Dr. S.N. Dwivedi Aquaculture Complex	8 March 2025
9.	RAC 2025	11-12 March 2025
10.	International Conference on Fisheries Biotechnology (ICFB-2025)	17 March 2025
11.	Hindi Workshop	25 March 2025
12.	Ocean Film Festival of India	06 April 2025
13.	Launch of CIFE Aqua-Skill Hub (CASH) Portal	17 April 2025
14.	Jal Udyogini 1.0: Promoting Women Aquapreneurship	06 May 2025
15.	Viksit Krishi Sankalp Abhiyan (VKSA)	29 May –14 June 2025
16.	65th Foundation Day	06 June 2025
17.	Jal Udyogini 2.0: Promoting Women Aquapreneurship	09 June 2025
18.	11th International Day of Yoga	21 June 2025
19.	National Statistics Day	27 June 2025
20.	National Fish Farmers Day	10 July 2025
21.	79th Independence Day	15 August 2025
22.	National Sports Day	31 August 2025
23.	Hindi Chetna Maas	15 September -14 October 2025
24.	ANRF-Sponsored National Seminar on “Safeguarding Seafood-National Seminar on AMR & Food Safety”	20-21 November 2025
25.	Meeting of the Quinquennial Review Team (QRT)	10-11 December 2025

76th Republic Day

ICAR-CIFE, Mumbai celebrated the 76th Republic Day of India with great enthusiasm and patriotic spirit. The National Flag was hoisted by Dr. Ravishankar C. N., Director ICAR-CIFE, who addressed the gathering in the presence of Dr. Raghavendra Bhatta, Dr. N. P. Sahu, Heads of Divisions, scientists, officers, staff, students, and trainees. In his address, Dr. Ravishankar paid tribute to the sacrifices of India's freedom fighters and highlighted the nation's progress towards the vision of a developed and self-reliant India, particularly in food and nutritional security. He emphasized India's



achievements in agricultural research, education, space, health, and infrastructure sectors, and acknowledged ICAR-CIFE's significant contributions to fisheries education, human resource development, technology innovation, commercialization, start-ups, and national fisheries development. He appreciated the dedicated efforts of the institute's scientists, officers, and employees. The celebration also featured cultural performances by students and staff, while similar Republic Day programs with patriotic themes were organized across the institute's five regional centres.



Fish Swad 3.0: A Celebration of India's Rich Fish Cuisine

Fish Swad 3.0 organized by ICAR-Central Institute of Fisheries Education, was successfully conducted on 26 January 2025 at Mumbai, from 6:00 PM to 11:00 PM, attracting nearly 1,500 visitors. The program was supported by PMMSY, ICAR, SBI, NFDB, MPEDA, and the Indian Fisheries Association, the event celebrated India's rich and diverse fish culinary heritage while promoting awareness about the nutritional, cultural, and economic importance of fisheries. The event



was inaugurated by Dr. Raghavendra Bhatt, Deputy Director General (Animal Science), ICAR, New Delhi in the presence of Dr. J. K. Jena, Deputy Director General (Fisheries Science), ICAR, New Delhi and Dr. B. K. Behera, Chief Executive Officer, NFDB, Hyderabad. The event was conceptualised and organised under the guidance of Dr. Ravishankar, C. N., Director and Dr. N. P. Sahu, Joint Director, and coordinated by Dr. S. Munilkumar, Principal Scientist. The event featured participation from 18 states and regional stalls collectively presenting more than 90 traditional and innovative dishes.



Vesava Koli Seafood Festival

ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai, participated in the exhibition held during the Vesava Koli Seafood Festival from 10 to 12 January 2025. The festival was organised by the Koli fishing community of Mumbai, with the involvement of various fisheries cooperative societies and organisations, including Vesava Machimar Sahakari Society Ltd., Vesava Machhimar Vividh Karyakari Sahakari Society Ltd., Vesava Koli Jamat Public Religious and Charitable Trust, Vesava Koli Machhimar Nakhwa Mandal Trawler, and Vesava Koli Sahakari Sarvoday Society Ltd. During the festival, CIFE stall attracted 300+ visitors, many of whom expressed keen interest in fisheries education and how ICAR-CIFE, Mumbai is enriching the knowledge of the fisher community for betterment.

Mann Ki Baat Matsya Kisano ke Saath: Fish Health Management in Aquaculture

The Aquatic Environment & Health Management Division (AEHMD), ICAR-CIFE, Mumbai successfully organized the event "महीने का अंतिम वृहस्पतिवार: मन की बात मत्स्य किसानों के साथ" on 30th January 2025, focusing on the Importance of Fish Health Management in Aquaculture. A total of 69 participants including farmers from various states viz. Bihar, Maharashtra, West Bengal, Madhya Pradesh, Uttar Pradesh, Jharkhand, and Haryana, actively participated in the program virtually. The event aimed to educate farmers on health management of aquatic environment and stocked animals, best management practices, disease prevention, and adequate culture practices to ensure sustainable fish farming. The primary focuses of the discussion was the prevention and treatment of diseases in aquaculture. The program was

directed by Dr. Megha K. Kedekar, and coordinated Dr. Arun Sharma, Dr. Saurav Kumar, and Dr. Saloni Shivam, from the Aquatic Environment and Health Management Division.

Second Edition of Advantage Vidarbha-Khasadar Audyogik Mahotsav Vidarbha Advantage Mega Industrial Expo Business and Investment Conclave

ICAR-CIFE, Mumbai participated in the second edition of Advantage Vidarbha, held from 7-9, February 2025 at Rashtrasant Tukadoji Maharaj Nagpur University, (RTMNU) Grounds, Nagpur, Maharashtra. Advantage Vidarbha 2025 was organized under the aegis of "Khasdar Audyogik Mahotsav" by The Association for Industrial Development (AID). The Advantage Vidarbha, had participation from more than 250 exhibitors, over 4000 participants, and 70000 visitors, with investor participation from different countries. The event was graced by various dignitaries including Shri. Devendra Fadnavis, Chief Minister of Maharashtra, Shri. Piyush V. Goyal, Union Minister of Commerce and Industry, Shri. Nitin Gadkari, Union Minister of Road Transport and Highways, Government of India, Shri. Praful Patel, Member of Parliament (Rajya sabha), industry representatives, academicians, researchers and various stakeholders. The CIFE team comprising of Dr. Arpita Sharma, Principal Scientist/HoD, FEES Division and Ph.D Scholars participated and organised Swachhta Programme at Gokulpeth Fish Market Nagpur, Training Programme on Development of Manure from Fish Waste-FishANUre®, Inauguration of 'CIFE Ergonomic Smart Bin Prototype for Shrimp and Fish Waste' during conclave.

Seminar on IS 15000 (HACCP) & IS 2491: A comprehensive approach to food safety & hygiene

The Bureau of Indian Standards, New Delhi in association with ICAR-CIFE, Mumbai organized a seminar on "IS 15000 (HACCP) & IS 2491: A Comprehensive Approach to Food Safety & Hygiene" at ICAR-CIFE, Mumbai on 24 February 2025. The seminar emphasized on discussing the recently revised IS 15000 & IS 2491 standards and the latest technological advancements in food safety. Dr. Ravishankar C. N.,

Director & Vice-Chancellor, ICAR-CIFE and Chairperson, FAD 15 sectional committee of BIS emphasized the importance of framing and implementation of food safety standards. The inaugural address was delivered by Ms. Lavika Singh, Scientist-C/Deputy Director BIS who gave a brief overview of the BIS initiatives. Dr. B. B. Nayak, Head, FRPHM Division and panel member of FAD 12 sectional committee of BIS talked on standards



specific to fish and fishery products. This was followed by sessions on “IS 15000 (HACCP): Principles, Implementation & Best Practices” by Ms. Chinmayee Deulgaonkar, Managing Director, Food Chain ID, and “Understanding General Principle for Food Hygiene: IS 2491” by Dr. Prabodh Halde, Head, Regulatory Marico Ltd. The seminar concluded with a panel discussion on “Strengthening Food Safety Frameworks Through Standardization” in which eminent panellists including

Dr. R. Visvanathan, Retired Professor, Tamil Nadu Agricultural University representing the academia, Dr. Nitin Wagh, from seafood industry and Mr. Harbans Wadhwa, from Consumer Voice, New Delhi, representing the consumer organization participated in fruitful deliberations on standardization of food safety regulations for the benefit of consumers. The seminar was attended by 100 participants and was coordinated by Dr. Manjusha L., Senior Scientist, FRPHM Division.

National Science Day

A half-day Intellectual Property (IP) Sensitization Programme was organized in hybrid mode on 28 February 2025 by NAIF-ITMU and the Academic Cell to create awareness among students and faculty on Intellectual Property Rights (IPR), application procedures, filing processes, and infringement-related aspects. The programme commenced with a welcome address by Dr. Aparna Chaudhari, who introduced the resource persons. Mr. Kumar Raju delivered a session on Intellectual Property Laws and their implementation in India, covering IP audits, licensing strategies, and commercialization opportunities. Adv. Alka Varma provided practical guidance on the IPR application process and infringement issues. The programme witnessed participation from 84 students and included



an interactive discussion addressing queries related to research and entrepreneurship. In his concluding remarks, Dr. S. P. Shukla emphasized the importance of timely IPR protection for technologies and products emerging from student research.

Inauguration of Dr. S.N. Dwivedi Aquaculture Complex



Dr. S. N. Dwivedi Aquaculture Complex at ICAR-CIFE, Mumbai, was inaugurated on 8 March 2025 by Hon'ble Shri George Kurian, Union Minister of State for Fisheries, Animal Husbandry & Dairying and Minority Affairs, Government of India. The facility serves as a centre for

advanced aquaculture research, education, training, and public outreach. The complex comprises an Experimental Wetlab for freshwater aquaculture research, an Ornamental Fish Breeding Unit, a Public Aquarium with 48 display tanks showcasing indigenous and exotic ornamental fishes, Recirculatory Aquaculture Systems (RAS), aquaponics and biofloc units, outdoor rearing facilities, and a recreational angling zone. These facilities support hands-on learning, technology demonstration, sustainable aquaculture research, and public engagement. The complex was developed through the dedicated efforts of Dr. Debajit Sarma, Dr. Sukham Munilkumar, Dr. A. K. Verma, Dr. Paramita B. Sawant, Dr. Babitha Rani, Dr. T. I. Chanu, Dr. Kapil Sukhdhane, Dr. Upasana Sahoo, Dr. Madhuri Pathak, Mr. Abhijeet Jadhav and Mr. Satya Prakash. It stands as a flagship facility of ICAR-CIFE, fostering innovation, skill development, and excellence in aquaculture.

Research Advisory Committee (RAC) Meeting

The Meeting of the Research Advisory Committee (RAC) of the ICAR-Central Institute of Fisheries Education (CIFE), Mumbai, was held during 11-12 March, 2025 in hybrid mode. Dr. S. Ayyappan Former Director General, ICAR chairperson of RAC, Dr. J. K. Jena, Deputy Director General (Fishery Science), ICAR; Dr. C. N. Ravishankar, Director, CIFE; Dr. P. K. Mukhopadhyay, Dr. (Ms.) Krishna

Srinath, Dr. P. Jayasankar, Dr. Sudhir Raizada, Dr. Pravin Puthra, Dr. (Ms.) V. Kripa, Dr. N. P. Sahu, Joint Director, CIFE; and Dr. S. P. Shukla, Member Secretary (RAC), the Heads of Divisions and Scientists at the Headquarters, Mumbai, as well as Regional centres. viz., Kolkata, Rohtak, Powarkheda, Motipur and Kakinada participated in the meeting, in person or in a virtual mode.



The presentations by the Heads of the Divisions at the Headquarters and the Scientist In charges (SICs) of the Regional Centres highlighted the ongoing research activities, collaborations, along with the teaching & training activities and related aspects. The RAC provided valuable inputs on the new concept notes for consideration in the forthcoming IRC of the Institute. Based on the above, the RAC recommended that the previous recommendations will remain effective for the current year (2025-26) and the new recommendations for the Divisions and Regional centres are made for addressing the emerging issues in the sector.



Ocean Film Festival of India

The Ocean Film Festival of India was organized by Ecofolks, National Film Development Corporation (NFDC), ICAR-Central Institute of Fisheries Education (CIFE), AquaSail Ltd., and Veermata Jijabai Bhosale Botanical Udyan and Zoo, Mumbai on 6th April 2025. The event, held at the 3D Auditorium of the Zoo—followed by a sailing event at the Gateway of India—served as a continuation of SEAmposium 2.0, furthering the mission of promoting marine conservation and sustainable ocean practices. The festival featured film screenings, expert talks, and a sailing experience designed to educate and inspire students, researchers, and the public about ocean ecosystems and their protection. Distinguished guests, including Shri D.

Ramakrishnan (NFDC), Shri Paresh Pimple (Ecofolks), Zia Hajeeshboy (AquaSail Pvt. Ltd.), Dr. Abhishek Satam, and Dr. Arpita Sharma (ICAR-CIFE), graced the occasion, with a special message from Prahlad Kakkar on ocean conservation. Films such as Khalasis of Malabar, Dolphins of Maharashtra, and others showcased India's maritime heritage and community-based conservation efforts. The event successfully combined cinema, education, and experiential learning, creating a platform for dialogue, collaboration, and youth engagement in ocean preservation.

Jal Udyogini 1.0: Promoting Women Aquapreneurship

The Agribusiness Incubation (ABI) Centre of ICAR Central Institute of Fisheries Education (CIFE), Mumbai, successfully organized a one-day Women Aquapreneurship Development Programme (WAD) titled “Jal Udyogini 1.0” on 6th May 2025. The event brought together 102 fisherwomen associated with Daryavardi Producer Company Limited (DPCL), Mumbai, to explore entrepreneurial opportunities in the fisheries sector. The programme was inaugurated by Dr. N.P. Sahu, Director (Acting), ICAR-CIFE, who emphasized the significance of women-led entrepreneurship and the role of CIFE's ABI Centre in empowering women through training and incubation support. Dr. S.P. Shukla, Principal Scientist and In-Charge, ABI, outlined the objectives of the initiative, describing it as a milestone in promoting fisheries-based enterprises among women. Mrs. Raghini B. (CEO, Vrutti Foundation) and Mr. Sameer Desai (CEO, Seagull Advertising and Branding Solutions), shared insights on collective entrepreneurship, branding, and business development. Technical sessions covered diverse topics such as algal culture, ornamental fish farming, aquaculture, fish nutrition, processing, and financial support mechanisms, conducted by CIFE scientists. The programme concluded with an interactive discussion and feedback session, fostering motivation and practical understanding among the participants.



International Conference on Fisheries Biotechnology (ICFB-2025)

ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai, in collaboration with the Indian Fisheries Association, organized the International Conference on Fisheries Biotechnology from 17-18 March 2025 on the theme “Biotechnology for Alternative Protein, Cultivated Seafood & Blue Revolution.” The conference provided a global platform for scientists, researchers, academicians, industry representatives, and policymakers to deliberate on recent advances and emerging challenges in fisheries biotechnology, with special emphasis on alternative proteins, cultivated seafood, and sustainable blue growth. The conference was inaugurated by Dr. Raghavendra Bhatta, Deputy Director General (Animal Science) ICAR, New Delhi who highlighted the importance of scientific dialogue and collaboration in advancing the sector. Dr. W. S. Lakra, Former Director, ICAR-CIFE & Secretary NAAS emphasized the role of fish

biotechnology in accelerating fisheries and aquaculture development, while Dr. Ravishankar C. N., Director, ICAR-CIFE welcomed participants and outlined the vision behind the conference. Dr. Mukunda Goswami, Organising Secretary presented current developments in research related to cultivated seafood and alternative protein systems. The conference witnessed participation of more than 300 delegates, including international experts from Canada, Japan, the Netherlands, Singapore, and the USA, along with leading Indian institutions, government agencies, and industry partners. Discussions highlighted the potential of biotechnology-driven innovations such as lab-grown seafood and smart proteins to complement conventional fisheries and aquaculture while addressing challenges related to environmental sustainability, overfishing, and climate change.



Hindi Workshop

An online workshop on “Standard Spelling and Terminology” was organized for the staff members of the Headquarters and Sub-Centres at ICAR-CIFE, Mumbai on 25 March 2025. A total 24 participants from the Institute and Sub-Centres participated in this workshop, in which 16 officers and 08 other officials were present. The workshop started with the welcome address of Shri Jagdeesan A.K., Joint Director (OL). After this, Shri Sanjay Bokolia, Joint Director (Administration) and Senior Registrar highlighted that as per the Official Language Guidelines, our institution comes under “B” region, therefore we have to do 90% of our work in Hindi and if all the staff members work diligently in accordance with it, then the dissemination of Hindi can be done.

Thereafter, the guest speaker, Smt. Gargi Gadgil, Assistant Director and Head of Office, Hindi Teaching Scheme, while starting the session, discussed in detail about standard spelling, consonants, vowels, case signs, usage of local words and foreign words in Hindi etc. She also threw light on the pronunciation of Hindi numbers and common mistakes in writing. She further said that while using words, pay attention to their spelling. She urged all the participants to use Hindi as much as possible in their official work so that the target set by the Department of Official Language can be achieved. Along with this, she also resolved the doubts raised by the participants.



Launch of CIFE Aqua-Skill Hub (CASH) Portal: A Leap Towards E-empowerment in Fisheries

In a landmark move to digitize and streamline training and capacity building activities, ICAR-Central Institute of Fisheries Education (CIFE), Mumbai, launched the CIFE Aqua-Skill Hub (CASH) Portal on 17th April 2025. The portal, inaugurated by Dr. Ravishankar C. N., Director, ICAR-CIFE, in the presence of Dr. N.P. Sahu, Joint Director, serves as a one-stop digital platform offering end-to-end solutions—from training proposal submission to bilingual certificate generation and real-time analytics. Designed to enhance transparency, accessibility, and efficiency, the

portal supports NEH, TSP, SCSP, and HRD programs and enables trainees to access learning materials, certificates, and performance insights. Both dignitaries highlighted the portal's role in promoting digital inclusion, innovation, and impact assessment in fisheries education. The initiative marks a major step toward creating a National Digital Platform for fisheries and aquaculture training, reinforcing CIFE's leadership in capacity building and sustainable aquaculture development.

Viksit Krishi Sankalp Abhiyan (VKSA)-2025

ICAR-CIFE is a key participant of the Viksit Krishi Sankalp Abhiyan (VKSA), which is a nationwide collaborative effort of the Indian Council of Agricultural Research (ICAR) and the Ministry of Agriculture & Farmers' Welfare, GoI, to bridge the gap between farmers' knowledge and modern agricultural practices. It aims to directly engage with approximately 1.5 crore farmers across 700 districts in the country. The programme started on 29th May and will run up to 12th June 2025, reaching farming communities with the help of over 2000 scientist groups. On 28th May 2025, Dr. N. P. Sahu, Director, ICAR-CIFE flagged off the group of twenty-seven ICAR-CIFE scientists who are currently travelling to villages of Maharashtra, Gujarat, Andhra Pradesh, and West Bengal with teams of scientists from KVKs, ATARIs and other institutes of ICAR to disseminate aquaculture techniques to farmers to improve production and rural livelihoods. In Andhra Pradesh, the focus is on villages of Kakinada. In Gujarat, the programme covers Tapi, Vadodara, Valsad, and Navsari districts. In Maharashtra, villages in Ratnagiri, Raigad, Palghar, and Sindhudurg districts are being covered. In West Bengal, CIFE scientists are covering Kolkata, Howrah, Murshidabad, Nadia, North 24 Parganas, and South 24 Parganas districts. This



extensive outreach is designed to promote agricultural innovations and facilitate direct interactions with farmers, enabling them to adopt new technologies and government schemes effectively. The programme will also help collect feedback from farmers for future research and innovations.

65th Foundation Day

The 65th Foundation Day of ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai was celebrated with great enthusiasm on 06 June 2025 in the presence of Chief Guest Ramaswamy N., IAS, Secretary, Animal Husbandry, Dairy Development and Fisheries and Guests of Honours Haroon Khan Ji, MLA of Versova Assemble Constituency and Dr. Dilip Kumar. The programme was attended by staff, students, and alumni. During the celebration, the dignitaries highlighted ICAR-CIFE's 65-year legacy of excellence in fisheries education, research, human resource development, technology



innovation, and livelihood improvement for fishing communities across India. The Chief Guest emphasized the strategic importance of fisheries and aquaculture in strengthening India's economy, food and nutritional security, and appreciated the institute's contributions toward improving the socio-economic conditions of fish farmers and fishers. Dr. N.P. Sahu, Director ICAR-CIFE acknowledged the contributions of present and retired staff members and emphasized ICAR-CIFE's role in nurturing distinguished professionals and advancing fisheries development in Maharashtra and across the country.

Jal Udyogini 2.0: Promoting Women Aquapreneurship

Following JU 1.0; ABI, CIFE organized a one-day Women Entrepreneurship Development Programme (WAD) – “Jal Udyogini 2.0” on 9th June 2025, focusing on enterprise opportunities in the fish processing sector. The event brought together 56 participants, including fisherwomen from self-help groups, the Vrutti Foundation, and Daryavardi Producer Company Limited (DPCL). The programme emphasized women-led entrepreneurship and institutional support through the ABI Centre. Guest speakers Mrs. Ujjwala Patil, Mr. Lalit Jadhav, and Mrs. Sonia Garcha shared insights on the role of

DPCL and Vrutti Foundation in strengthening women’s producer groups and promoting fisheries-based startups. Technical sessions on fish processing and financial support for entrepreneurship were conducted by Dr. Layana P. and Dr. Shivaji Argade, followed by a visit to fish processing facilities. The event concluded with an interactive discussion, reflecting the collaborative efforts of ICAR-CIFE, DPCL, and Vrutti Foundation in empowering fisherwomen through entrepreneurship and capacity building.

11th International Day of Yoga: Yoga for One Earth, One Health

ICAR-CIFE celebrated the 11th International Day of Yoga on 21 June 2025 under the theme “Yoga for One Earth, One Health” at 9:30 AM. The programme witnessed active participation of 63 participants, including scientists, technical officers, administrative staff, students, and trainees. On the occasion, Dr. N. P. Sahu addressed the gathering and highlighted the importance of incorporating yoga into daily life to maintain physical, mental, and emotional well-being amidst busy work schedules. He emphasized that regular practice of yoga and pranayama enhances focus, concentration, and overall wellness while contributing to the purification of body and mind. The event concluded with participants collectively practicing various yoga postures (asanas) and pranayama techniques, reinforcing the message of healthy living and holistic well-being.



National Statistics Day

National Statistics Day 2025 was celebrated on 27 June 2025 at ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai, organized by the Fisheries Economics, Extension and Statistics (FEES) Division. The event was conducted in advance of the official observance date to maximize participation and commemorated the birth anniversary of Prasanta Chandra Mahalanobis, recognizing his pioneering contributions to statistics and national planning. The 2025 theme, “75 Years of National Sample Survey,” highlighted the vital role of the National Sample Survey in generating reliable data for evidence-based policy and governance. The programme began with a welcome address by Dr. Arpita Sharma, followed by a lecture from Dr. Prasenjit Pal on the life and contributions of Professor Mahalanobis. An interactive statistics quiz engaged participants and rewarded winners with instant prizes, while Dr. Ananthan P. S. shared anecdotes highlighting the relevance of statistics in everyday and scientific contexts. Dr. S. N. Ojha also interacted with

participants. In the closing session, Dr. N. P. Sahu, Director, ICAR-CIFE emphasized the importance of statistical literacy and encouraged students to apply statistical methods effectively in fisheries research.



National Fish Farmers Day

The National Fish Farmers Day 2025 was jointly celebrated by ICAR-Central Institute of Fisheries Education (ICAR-CIFE), Mumbai and Krishi Vigyan Kendra (KVK), Dahanu, Palghar at Kosbad Hill, Palghar, with participation of over 200 fish farmers, officials, and stakeholders. The event commemorated the pioneering achievement of Hiralal Chaudhury and K. H. Alikunhi, whose work in 1957 induced breeding of Indian major carps revolutionized aquaculture in India. The 2025 theme, “Drones & AR/VR Technology: Practical Applications for Fish Farmers,” highlighted the role of emerging technologies in transforming fisheries and empowering farmers. The programme, chaired by Dr. N. P. Sahu, Director, ICAR-CIFE, began with traditional lamp lighting and floral offerings to Goddess Saraswati. Key addresses emphasized scientific

aquaculture practices, livelihood enhancement, and schemes like Pradhan Mantri Matsya Sampada Yojana (PMMSY). Several progressive fish farmers were felicitated, including Best Fish Farmer Shri Yadnesh Vasant Save and other successful practitioners from the region. The technical sessions featured AR/VR demonstrations on fish anatomy, pond management, and disease control, along with drone-based fish feed application, showcasing precision aquaculture innovations. A mini-exhibition on fisheries technologies and agribusiness innovations was also organized, highlighting value-added products, hatchery techniques, and fish-based enterprises. A new initiative, “Know Your Farmer/Fisher (KYF)”, was launched to build a comprehensive farmer database for improved outreach and policy support.



79th Independence Day

ICAR-CIFE celebrated India's 79th Independence Day with patriotic spirit. The event was held on 15 August 2025 at ICAR-CIFE and Regional Centres. At Mumbai, Director and Vice-Chancellor Dr. N. P. Sahu hoisted the National Flag and addressed the gathering. He remembered the sacrifices of freedom fighters and highlighted India's progress in agriculture, education,

health and infrastructure. He also explained the important role of fisheries in future nutritional security, employment and economic growth. Students, staff, scientists and officers attended the function. Cultural programmes were organised, and similar celebrations were held at ICAR-CIFE regional centres



National Sports Day

ICAR-CIFE celebrated National Sports Day for three days in honour of Major Dhyan Chand and in support of the Fit India Mission. The event was held from 29 to 31 August 2025 at ICAR-CIFE, Mumbai. The celebration promoted fitness, teamwork, discipline and sportsmanship among students, scholars, faculty and staff. Activities included a Fit India pledge, walkathon, table tennis, volleyball, badminton and slow cycling competitions. Participants showed enthusiasm and healthy competitive spirit throughout the event. Winners were felicitated with medals and certificates during the closing ceremony. The programme encouraged the institute community to include fitness in daily life.



Hindi Chetna Maas

ICAR-CIFE organised the valedictory and prize distribution function of Hindi Chetna Maas 2025 under the chairmanship of Dr. N. P. Sahu. The event was held on 15 October 2025 at ICAR-CIFE, Mumbai. Dr. N. P. Sahu, Dr. Mrigendra Rai, Head of the Hindi Department, Guru Nanak Khalsa College, Mumbai, was the chief guest. He spoke about the inclusive nature of Hindi and the contribution of non-Hindi speakers to its growth. He encouraged the use of Hindi throughout the year, not only during one month. The Director also stressed the need to increase the use of Hindi in official work while respecting all languages.



ANRF-Sponsored National Seminar on “Safeguarding Seafood-National Seminar on AMR & Food Safety”

The National Seminar on “Safeguarding Seafood-National Seminar on AMR & Food Safety” sponsored by ANRF was organized at the Fish Processing Technology section of FRHPHM Division, ICAR-CIFE, Mumbai, during 20-21 November 2025, in connection with the World Antimicrobial Awareness Week (WAAW) 2025. The seminar focused on the growing global concern of Antimicrobial Resistance (AMR) and its implications for seafood safety, food systems, and public health. The seminar also emphasized on national and international policies with regard to AMR, regulatory and mitigation measures for combating AMR in livestock and aquaculture systems. The seminar was inaugurated by Dr. T. Ramamurthy, Senior Scientific Consultant, ICMR-NIRBI,



Kolkata, by releasing the book of abstracts. His inaugural lecture on “Antimicrobial Resistance in Foods – A Global Perspective and the Indian Context” explained how AMR threatens food systems worldwide and stressed the need for stronger national surveillance. This was followed by lectures by eminent speakers, including Prof. Shrikrishna Isloor, Professor, Veterinary College, KVAFSU, Bengaluru; Dr. Syed Dastager, Senior Principal Scientist, CSIR-NCL, Pune; Prof. Mohamed Hatha, Emeritus Professor, CUSAT,

Kochi; Prof. Iddya Karunasagar, Director, International Relations, NITTE University, Mangalore; Dr. Neetu Taneja, Assoc. Professor, NIFTEM, Haryana, Dr. Krishnakumar B., Assoc. Professor, NITTE University, Mangalore, and Dr. Shivasharanappa N., Senior Scientist, ICAR-NIVEDI, Bengaluru. The lecture topics encompassed diverse aspects of AMR, its challenges and mitigation measures such as novel alternatives to mitigate AMR in livestock; unexplored microorganisms as potential sources of novel antimicrobial compounds; impact of AMR on food Security, safety and production systems; international resources and networks for understanding and mitigating AMR; AMR in food-borne pathogens and GRAS microorganisms in food systems; genomic approaches to



AMR research, and surveillance and monitoring of AMR pathogens in food animals. The seminar was attended by more than 75 participants, including students and faculty from ICAR-CIFE, Mumbai and other institutes such as ICAR-CIFT, and colleges affiliated to Mumbai University. The seminar was coordinated by Dr. Sanath Kumar, Principal Scientist, Dr. B. B. Nayak, Principal Scientist & HoD and Dr. Manjusha L., Senior Scientist from FRHPHM Division.

25. Visit of the Quinquennial Review Team (QRT)

The Quinquennial Review Team (QRT) visited the CIFE Headquarters on 10–11 December 2025. The team consisted of Chair Dr. B. Meenakumari (Former DDG, Fisheries Science) and members Dr. Sudhir Raizada (Former ADG, Inland Fisheries), Dr. Pravin P. (Former ADG, Marine Fisheries), Dr. A. Gopalakrishnan (Former Director, ICAR-CMFRI), Dr. C.V. Mohan (Former Principal Scientist, WorldFish, Penang, Malaysia), Dr. B.A. Shamasundar (Former Professor & Head, College of Fisheries, Mangalore) and Dr. Rina Chakrabarti (Senior Professor, Department of Zoology, University of Delhi). The team held discussions with the Director, Heads of Divisions, Officers-in-Charge of Centres, scientists, technical officers, administrative and finance staff, IJSC representatives, and students. Detailed deliberations covered the

Institute’s organizational structure, infrastructure, academic programmes, research, and extension activities. The team visited various divisions, laboratories, classrooms, hostels, and other facilities at the Mumbai campus. Presentations by Heads of Divisions and Centre Officers highlighted progress in education, research, and extension, providing the QRT with first-hand insights into institutional functioning. The QRT also interacted with technical staff, students, and key administrative and finance officers to review their contributions and obtain feedback on the Institute’s overall performance





संस्थान में 01 जनवरी 2025 से 31 दिसंबर 2025 के दौरान आयोजित राजभाषा गतिविधियों का विवरण निम्नलिखित है:

I) राजभाषा कार्यान्वयन समिति की बैठकें

- संस्थान की राजभाषा कार्यान्वयन समिति की 110, 111, 112 और 113वीं बैठकें क्रमशः दिनांक 06 फरवरी 2025, दिनांक 25 अप्रैल 2025, दिनांक 05 अगस्त 2025 और दिनांक 05 जनवरी 2026 को आयोजित की गईं।

II) हिन्दी कार्यशालाओं का आयोजन

- दिनांक 25 मार्च, 2025 को संस्थान मुख्यालय एवं क्षेत्रीय केंद्रों के समस्त अधिकारियों एवं कर्मचारियों के लिए भौतिक एवं ऑनलाइन माध्यम से **"मानक वर्तनी एवं पारिभाषिक शब्दावली"** विषय पर एक कार्यशाला का आयोजन किया गया, जिसमें राजभाषा विभाग के उपनिदेशक (कार्यान्वयन) श्रीमती गार्गी गाडगिल ने उक्त विषय पर व्याख्यान दिया।
- दिनांक 26 जून 2025 को संस्थान के निदेशक/कुलपति डॉ. एन.पी. साहू की अध्यक्षता में संस्थान के वैज्ञानिकों, अधिकारियों एवं कर्मचारियों हेतु **"राजभाषा कार्यान्वयन : समस्या एवं समाधान"** विषय पर भौतिक एवं ऑनलाइन माध्यम से एक हिन्दी कार्यशाला का आयोजन किया गया, जिसमें डॉ. विश्वनाथ झा, पूर्व उपनिदेशक (कार्यान्वयन), राजभाषा विभाग ने उक्त विषय पर व्याख्यान दिया।
- दिनांक 24 सितंबर 2025 को संस्थान के विभिन्न विभागों के अधिकारियों एवं कर्मचारियों के लिए **"राजभाषा और प्रौद्योगिकी"** विषय पर एक कार्यशाला का आयोजन किया गया, जिसमें श्री विमलेन्द्र पाल भदौरिया, उपनिदेशक (राजभाषा), नौसेना महानिदेशालय, मुंबई ने उक्त विषय पर व्याख्यान दिया।
- दिनांक 24 दिसंबर 2025 को संस्थान के प्रशासनिक वर्ग के अधिकारियों और कर्मचारियों के लिए **"राजभाषा कार्यान्वयन : समस्याएं और समाधान"** विषय पर एक कार्यशाला का आयोजन किया गया। इसमें श्री जगदीशन ए.के., संयुक्त निदेशक (राजभाषा) ने उक्त विषय पर व्याख्यान दिया तथा इसी के साथ प्रतिभागियों को प्रायोगिक एवं व्यवहारिक प्रशिक्षण भी दिया गया।



II) हिंदी चेतना मास/ हिंदी सप्ताह

भा.कृ.अनु.प.- केंद्रीय मात्स्यिकी शिक्षा संस्थान के मुंबई स्थित मुख्यालय में दिनांक 15 सितंबर 2025 से 15 अक्टूबर 2025 तक हिंदी चेतना मास मनाया गया तथा क्षेत्रीय केंद्रों में सितंबर 2025 के दौरान हिंदी सप्ताह मनाया गया, जिनका विवरण निम्नलिखित है:

क) भा.कृ.अनु.प.- केंद्रीय मात्स्यिकी शिक्षा संस्थान, मुख्यालय

भा.कृ.अनु.प.-केंद्रीय मात्स्यिकी शिक्षा संस्थान, मुंबई में दिनांक 15 सितंबर 2025 से 15 अक्टूबर 2025 तक हिंदी चेतना मास आयोजित किया गया। दिनांक 15 सितंबर 2025 को हिंदी चेतना मास – 2025 का शुभारंभ समारोह संस्थान के निदेशक एवं कुलपति डॉ. एन.पी. साहू की अध्यक्षता में आयोजित किया गया, जिसमें महाराष्ट्र राज्य हिंदी साहित्य समिति के पूर्व कार्याध्यक्ष डॉ. शीतला प्रसाद दुबे मुख्य अतिथि थे।

मुख्य अतिथि ने कहा कि भाषा इंद्रधनुषी रंग की होती है, जो भाषा की विविधता को द्योतित करती है। हिंदी के महान साहित्यकार भारतेन्दु हरिश्चंद्र ने बहुत पहले ही कहा था कि निज भाषा का सम्मान करना हमारा मूल कर्तव्य है। उन्होंने 'रसोई', 'घर' जैसे कई शब्दों का उदाहरण देते हुए कहा कि हम अपनी भाषा और संस्कृति को भूलते जा रहे हैं और रोजमर्रा की ज़िंदगी में उपयोग किए जाने वाले शब्दों को हम भूलते जा रहे हैं। हमें अंग्रेज़ियत की मानसिकता से मुक्त होना चाहिए। भारतीय भाषाओं में कई समानताएँ हैं। किसी एक भाषा में प्रयुक्त शब्द उसी अर्थ में कई अन्य भाषाओं में भी पाए जाते हैं। सामान्य तौर पर मनुष्य, जल और भाषा का स्वभाव एक जैसा होता है, जैसे कठिनता से सरलता की ओर आने की प्रवृत्ति। कठिन शब्द समाज में बहुत समय तक प्रयोग में नहीं रहते, लेकिन सरल शब्द हमेशा के लिए टिक जाते हैं और वे दूसरे शब्दों के साथ घुल-मिल जाते हैं। प्रौद्योगिकियों के त्वरित विकास के कारण आजकल किसी भी भाषा में काम करना कठिन नहीं है। लेकिन प्रौद्योगिकी पर अत्यधिक निर्भरता के कारण हम अपने हाथों से अपनी भाषा लिखना भूलते जा रहे हैं। उन्होंने देवनागरी लिपि की वैज्ञानिकता पर ज़ोर देते हुए कहा कि देवनागरी लिपि का उच्चारण करना योग करने जैसा है। हिंदी वर्णमाला के सभी वर्गों के अक्षरों के उच्चारण पर ध्यान देंगे तो लगेगा कि हमारा शरीर योग क्रिया से गुज़र रहा है। अपनी संस्कृति की पहचान अपनी भाषा से होती है। इसलिए अपनी भाषा को बढ़ावा देना हमारा पहला कर्तव्य बन जाता है। हमें उस भाषा का ऋण चुकाने की ज़रूरत है, जिस भाषा ने हमें अपनी पहचान दी है।

निदेशक एवं कुलपति डॉ. एन.पी. साहू ने कहा कि भाषा हमारी संस्कृति से जुड़ी है और इसी कारण से हमें अपनी भाषा का सम्मान करना चाहिए, उसके विकास के लिए कार्य करना चाहिए। स्वतंत्रता संग्राम के दौरान लोगों को आपस में जुड़ने के लिए और संप्रेषण के लिए एक भाषा की ज़रूरत थी, वह भाषा हिंदी थी। इसीलिए देश भर में हिंदी लोकप्रिय हुई है। प्रौद्योगिकी के इस युग में किसी भी कार्य करने के लिए भाषा अब बाधा नहीं है। विभिन्न तकनीकी साधनों के माध्यम से हम किसी भी भाषा-भाषी के साथ आसानी विचारों का आदान-प्रदान कर सकते हैं। हिंदी चेतना मास के आयोजन की



सफलता तब मालूम पड़ेगी, जब इसके प्रभाव का आकलन किया जाएगा। इसलिए कार्यालयीन कार्य में कितनी प्रगति हुई है, इसका आकलन हमें करना चाहिए।

वरिष्ठ प्रशासनिक अधिकारी श्रीमती पूनम बहल ने कहा कि केंद्र सरकार की राजभाषा हिंदी है। इसलिए हमें हिंदी में कार्य करना अनिवार्य है। हिंदी में कार्य केवल हिंदी चेतना मास के दौरान ही नहीं, बल्कि वर्ष भर किया जाए, तभी हम हिंदी को राजभाषा के रूप में वास्तविक सम्मान दिला सकते हैं।



इससे पूर्व श्री विजयपाल बिजारणियाँ, प्रशासनिक अधिकारी ने केंद्रीय कृषि मंत्री के संदेश और भारतीय कृषि अनुसंधान परिषद के महानिदेशक का अपील पढ़ा। श्री जगदीशन ए.के., संयुक्त निदेशक (राजभाषा) ने अतिथियों का स्वागत किया और श्रीमती रेखा नायर, मुख्य तकनीकी अधिकारी ने आभार प्रकट किया। उद्घाटन समारोह के दौरान अतिथियों के कर-कमलों से संस्थान की न्यूज़ लेटर 'मत्स्य दर्पण' का विमोचन भी किया गया।

हिंदी चेतना मास के दौरान संस्थान के कर्मचारियों, छात्रों, कर्मचारियों के बच्चों के लिए विभिन्न प्रतियोगिताओं का आयोजन किया गया, जैसे –

- दिनांक 16 सितंबर 2025 को कर्मचारियों के लिए निबंध प्रतियोगिता आयोजित की गई, जिसमें 'वस्तु एवं सेवा कर (GST): आपके विचार', 'एशिया कप में भारत-पाकिस्तान क्रिकेट मैच होना चाहिए या नहीं?' और 'लव कम अरेंज मैरिज: मजा या सजा' आदि विषय दिए गए थे।
- दिनांक 17 सितंबर 2025 को विद्यार्थियों के लिए निबंध प्रतियोगिता आयोजित की गई, जिसमें 'कृत्रिम बुद्धिमत्ता का मात्स्यिकी में उपयोगिता', 'अमृतकाल में मात्स्यिकी शिक्षा का आयाम एवं योगदान', 'उद्यमियता का प्रारूप एवं भविष्य मात्स्यिकी के क्षेत्र में', 'इलेक्ट्रॉनिक अपशिष्ट के दुष्प्रभाव एवं उपचार' आदि विषय दिए गए थे।
- दिनांक 18 सितंबर 2025 को संस्थान के कर्मचारियों के लिए टिप्पण एवं आलेखन प्रतियोगिता आयोजित की गई।
- दिनांक 19 सितंबर 2025 को संस्थान के कर्मचारियों एवं छात्रों के लिए आशुभाषण प्रतियोगिता आयोजित की गई।
- दिनांक 22 सितंबर 2025 को संस्थान के कर्मचारियों एवं छात्रों के लिए प्रश्नोत्तरी प्रतियोगिता आयोजित की गई।
- दिनांक 24 सितंबर 2025 को संस्थान के कर्मचारियों के लिए "राजभाषा एवं प्रौद्योगिकी" विषय पर एक कार्यशाला आयोजित की गई, जिसमें श्री वी.पी. सिंह भदौरिया, उप निदेशक (राजभाषा), नौवहन महानिदेशालय, मुंबई ने उक्त विषय पर व्याख्यान दिया।
- दिनांक 25 सितंबर 2025 को संस्थान के कर्मचारियों के लिए हिंदी में प्रस्तुतीकरण कुशलता प्रतियोगिता आयोजित की गई।
- दिनांक 26 सितंबर 2025 को संस्थान के कर्मचारियों एवं छात्रों के लिए हिंदी कविता पाठ प्रतियोगिता आयोजित की गई।
- दिनांक 29 सितंबर 2025 को संस्थान के कर्मचारियों एवं छात्रों के लिए हिंदी विविधा प्रतियोगिता आयोजित की गई।
- दिनांक 30 सितंबर 2025 को संस्थान के छात्रों के लिए 2 मिनट का वीडियो फिल्म प्रतियोगिता आयोजित की गई।
- दिनांक 03 अक्टूबर 2025 को संस्थान के कर्मचारियों के बच्चों के लिए चित्रकला प्रतियोगिता आयोजित की गई।
- दिनांक 06 अक्टूबर 2025 को संस्थान के हिंदीतर भाषी छात्रों के लिए शब्द ज्ञान प्रतियोगिता आयोजित की गई।
- दिनांक 10 अक्टूबर 2025 को संस्थान के छात्रों के हिंदी में प्रस्तुतीकरण कुशलता प्रतियोगिता आयोजित की गई।

हिंदी चेतना मास का समापन एवं पुरस्कार वितरण समारोह दिनांक 15 अक्टूबर 2025 को आयोजित किया गया, जिसमें प्रसिद्ध साहित्यकार प्रोफेसर मृगेन्द्र राय मुख्य अतिथि थे। कार्यक्रम की अध्यक्षता संस्थान के निदेशक डॉ. एन.पी. साहू ने की।

हिंदी चेतना मास की झलकियाँ



ख) कोलकत्ता केंद्र में हिंदी सप्ताह का आयोजन

भा.कृ.अनु.प. - केन्द्रीय मात्स्यिकी शिक्षा संस्थान, कोलकाता केन्द्र में दिनांक 12 से 18 सितंबर 2025 तक हिन्दी सप्ताह का आयोजन किया गया। दिनांक 12 सितंबर 2025 को प्रातः 11.30 बजे डॉ. तापस कुमार घोषाल, केंद्र प्रमुख और मुख्य अतिथि डॉ. विमल कांता, प्रधानाचार्य, केन्द्रीय विद्यालय, साल्ट लेक, सेक्टर - 3, कोलकाता ने दीप प्रज्जलित कर कार्यक्रम का उद्घाटन किया। इस के बाद राजभाषा प्रतिज्ञा पत्र शपथ लिया गया। केंद्र प्रमुख ने अपने स्वागत सम्बोधन में सभी वैज्ञानिकों, अधिकारियों और कर्मचारियों से हिन्दी में अधिक से अधिक कार्य करने के लिए प्रोत्साहित किया। उन्होंने हिन्दी सप्ताह कार्यक्रम की रूपरेखा सभा को बताया। डॉ. विमल कांता महोदय ने हिंदी भाषा के अतीत और वर्तमान के बारे में बहुत विस्तृत में बताये जिसे प्रतिभागियों को बहुत अच्छा लगा। अंत में हिंदी अधिकारी डॉ. दिलीप कुमार सिंह के द्वारा धन्यवाद ज्ञापन के साथ उद्घाटन कार्यक्रम सम्पन्न किया गया। दिनांक 15 से 18 सितंबर 2025, 3.00 से 5.30 बजे तक विभिन्न प्रतियोगिता जैसे भाषण, गीत, काव्य पाठ, हांस्य-व्यंग, चुटकुले, पत्र लेखन, निबंध लेखन, साइंस क्लब व्याख्यान, चित्रकला, वाद-विवाद एवं अंताक्षरी प्रतियोगिता का आयोजन किया गया। इस दौरान प्रतियोगिता में सभी अधिकारियों, कर्मचारियों एवं छात्र-छात्राये ने उत्साहपूर्वक भाग लिया। दिनांक 22 सितंबर 2025 को 2.30 बजे से समापन सत्र का आयोजन किया गया। समापन में केंद्र प्रमुख महोदय के द्वारा सभी प्रतिभागियों को पुरस्कार और प्रमाणपत्र प्रदान किया गया। अंत में हिन्दी प्रभारी अधिकारी डॉ. दिलीप कुमार सिंह ने धन्यवाद प्रस्ताव के साथ कार्यक्रम का समापन कर दिया गया।



ग) पवारखेडा केंद्र में हिंदी सप्ताह का आयोजन

भा.कृ.अनु.प.-केन्द्रीय मात्स्यिकी शिक्षा संस्थान केन्द्र पवारखेड़ा में प्रतिवर्षानुसार इस वर्ष भी हिन्दी सप्ताह का आयोजन दिनांक 15-23 सितम्बर 2025 के दौरान किया गया। इस दौरान वर्ष 2025-26 की प्रगति रिपोर्ट हिन्दी कार्यान्वयन समिति के सदस्य सचिव हसन जावेद ने प्रस्तुत की तथा हिन्दी के कार्यों को बढ़ाने हेतु सभी के सुझाव भी लिए गए। साथ ही साथ प्रतिदिन कार्यालय के विभिन्न श्रेणी के कर्मचारियों एवं अधिकारियों के लिए मत्स्य सामान्य ज्ञान प्रतियोगिता, पत्र लेखन, शुद्धलेखन प्रतियोगिता का आयोजन किया गया। इन कार्यक्रमों के दौरान प्रशिक्षण कार्यक्रम में आए प्रशिक्षणार्थियों ने विभिन्न प्रतियोगिताओं में भाग लिया। उपरोक्त सभी प्रतियोगिताओं में विजेताओं को प्रथम,



द्वितीय व तृतीय पुरस्कार भी प्रोत्साहन स्वरूप दिए गए। प्रभारी अधिकारी के निर्देशन में हिन्दी प्रतियोगिता का संचालन सदस्य सचीव सचिव श्री हसन जावेद के द्वारा किया गया।

घ) रोहतक केंद्र में हिंदी सप्ताह का आयोजन

रोहतक केंद्र में दिनांक 14-21 सितंबर 2025 के दौरान हिन्दी सप्ताह मनाया गया। इस अवसर पर केंद्र के समस्त अधिकारी, कर्मचारी और छात्र-छात्राओं ने अधिक से अधिक कार्य हिंदी में किए। हिंदी सप्ताह के दौरान चित्रकला, निबंध एवं प्रश्नोत्तरी प्रतियोगिताएँ आयोजित की गईं। हिंदी सप्ताह का समापन 21 सितंबर 2025 को आयोजित किया गया। इस समारोह में उपस्थित सभी प्रतिभागियों को हिंदी के महत्व के बारे में बताया गया।

ङ) काकीनाडा केंद्र में हिंदी सप्ताह का आयोजन

भा.कृ.अनु.प.-सीआईएफई, काकीनाडा केंद्र में 23 से 29 सितंबर 2025 तक हिंदी सप्ताह का आयोजन किया गया। इस अवसर पर काकीनाडा केंद्र के विभिन्न विभागों में कई प्रतियोगिताओं का आयोजन किया गया। उद्घाटन के दिन यानी 23 सितंबर 2025 को केंद्र के सभी सदस्यों द्वारा राजभाषा शपथ ली गई। सप्ताह के दौरान हिंदी सुलेख, रंगोली, चित्रकला, गीत और कविता पाठ जैसी विभिन्न प्रतियोगिताएँ सभी सदस्यों के लिए आयोजित की गईं। हिंदी सप्ताह का समापन 29.09.2025 को किया गया, जिसमें सभी प्रतियोगिताओं के विजेताओं को पुरस्कार वितरित किए गए। कार्यक्रम का समापन औपचारिक धन्यवाद ज्ञापन के साथ किया गया, जिसमें काकीनाडा केंद्र के सभी सदस्यों ने सक्रिय रूप से भाग लिया।



III) राष्ट्रीय राजभाषा संगोष्ठी का आयोजन

भा.कृ.अनु.प.-केंद्रीय मात्स्यिकी शिक्षा संस्थान, मुंबई द्वारा अपने कोलकाता केंद्र में दिनांक 21-22 अप्रैल 2025 के दौरान “विकसित भारत की संकल्पना में राजभाषा प्रबंधन की भूमिका” विषय पर राष्ट्रीय राजभाषा संगोष्ठी आयोजित की गई। दिनांक 21.04.2025 इस दो दिवसीय राष्ट्रीय राजभाषा संगोष्ठी का उद्घाटन समारोह आयोजित किया गया, जिसमें भा.कृ.अनु.प.-केंद्रीय अंतर्स्थलीय मात्स्यिकी अनुसंधान संस्थान, बैरकपुर, कोलकाता के निदेशक डॉ. बी.के. दास मुख्य अतिथि थे। संस्थान के निदेशक एवं कुलपति डॉ. रविशंकर सी.एन. ने कार्यक्रम की अध्यक्षता की। इस कार्यक्रम में केंद्र के प्रमुख डॉ. तापस कुमार घोषाल और संस्थान के संयुक्त निदेशक (राजभाषा) जगदीशन ए.के. भी उपस्थित थे।

मुख्य अतिथि ने कहा कि किसी देश के त्वरित विकास के लिए मातृभाषा का विकास भी ज़रूरी है। उन्होंने कहा कि मातृभाषा को महत्व देकर ही चीन और जापान जैसे दुनिया के कई देशों ने विकसित देश की श्रेणी में आयी है। उन्होंने यह भी कहा कि मातृभाषा के माध्यम अर्जित ज्ञान हमेशा के लिए दिमाग में बना रहता है। उन्होंने उपस्थित वैज्ञानिकों और अन्य प्रतिभागियों से आग्रह किया कि शोध पत्र हिंदी में लिखें, सरल हिंदी में वैज्ञानिक विषयों पर किताबें लिखें, जो आम किसान भी समझ सकें। हिंदी में काम छोटे-



छोटे रूप में शुरू करें। अंग्रेज़ी के लिए हम ज़्यादा समय देते हैं, हिंदी के लिए भी कुछ समय देकर देखिए। आजकल कृत्रिम बुद्धिमत्ता का उपयोग करते हुए भी आसानी से हिंदी में काम किया जा सकता है। हिंदी राष्ट्रीय एकता के लिए और लोगों के बीच अपनापन लाने के लिए ज़रूरी है। मन में भ्रम होता है कि हम अंग्रेज़ी ज़्यादा अच्छी तरह जानते हैं, लेकिन वास्तविकता इससे कोसों दूर है। हिंदी में काम करने के लिए प्रशिक्षण और क्षमता-निर्माण पर अधिक ध्यान देना चाहिए। एक भारत, श्रेष्ठ भारत की संकल्पना को साकार करने के लिए हिंदी की भी महत्वपूर्ण भूमिका है।

अपने अध्यक्षीय संबोधन में संस्थान के निदेशक एवं कुलपति डॉ. रविशंकर, सी.एन. ने कहा कि भारत में बहुत-सी भाषाएँ हैं, लेकिन देश की एकता को बनाए रखने में हिंदी की महत्वपूर्ण भूमिका है। इसके अलावा देश की संपर्क भाषा के रूप में भी हिंदी ने अपनी पहचान बनाई है। उन्होंने उपस्थित सभी प्रतिभागियों से आग्रह किया कि हिंदी को दिल से अपनाए। उन्होंने आगे कहा कि राजभाषा के रूप में हिंदी विकास तो हुआ है, लेकिन और भी बहुत अधिक गुंजाइश है। यह संगोष्ठी इसी उद्देश्य से आयोजित की गई है। कुछ क्षेत्र में हुए विकास के संदर्भ में देखा जाए तो भारत किसी भी देश से कम नहीं है। मात्स्यिकी क्षेत्र को लें तो भारत सबसे आगे है। ऐसे ही हिंदी का भी विकास होना चाहिए। मछुआरों तक मात्स्यिकी की नवीन तकनीकियाँ पहुँचनी चाहिए। इसके लिए विभिन्न तकनीकी जानकारी हिंदी और अन्य भारतीय भाषाओं में उपलब्ध होनी चाहिए। भारत को विकसित देश के रूप में देखना है तो इसमें हिंदी की भी महत्वपूर्ण भूमिका है।



कार्यक्रम के प्रारंभ में भा.कृ.अनु.प.-केंद्रीय मात्स्यिकी शिक्षा संस्थान, कोलकाता केंद्र के प्रमुख डॉ. तापस कुमार घोषाल ने प्रतिभागियों का स्वागत किया और संयुक्त निदेशक (राजभाषा) श्री ए.के. जगदीशन ने दो दिवसीय संगोष्ठी की रूपरेखा प्रस्तुत की। केंद्र के वैज्ञानिक डॉ. दिलीप कुमार सिंह ने आभार प्रकट किया तथा मुख्य तकनीकी अधिकारी (राजभाषा) श्री प्रताप कुमार दास ने कार्यक्रम का संचालन किया।

इस अवसर पर निम्नलिखित प्रकाशनों का विमोचन भी किया गया :

1) **प्रशिक्षण मैनुअल**

- मीठे पानी में मछली पालन

2) **पुस्तिकाएँ**

- मूल्यवर्धित मछली उत्पाद : मत्स्य उद्यमियों के लिए एक अवसर
- पश्चिम बंगाल के कार्प मछली में जीवाणु रोग का क्षेत्रीय अवलोकन
- उच्च मूल्यवाली द्विरंगी/त्रिरंगी लायनहेड गोल्डफिश के उत्पादन के लिए एक व्यवहार्य गृहस्थी मॉडल
- मिश्रित मछली पालन के लिए आहार रणनीतियाँ

उद्घाटन समारोह के बाद राजभाषा का प्रभावी कार्यान्वयन विषय पर आयोजित तकनीकी सत्र-1 के अंतर्गत कोलकाता विश्वविद्यालय के प्रोफेसर राम आह्लाद चौधरी ने “हिंदी का वैश्विक संदर्भ : विकसित भारत के परिप्रेक्ष्य में” विषय पर व्याख्यान दिया; क्षेत्रीय कार्यान्वयन कार्यालय, भारत सरकार, कोलकाता के उप निदेशक डॉ. विचित्रसेन गुप्त ने “राजभाषा प्रबंधन एवं कुशल कार्यान्वयन” विषय पर तथा सी.एस.आई.आर.-केंद्रीय काँच एवं सेरामिक अनुसंधान संस्थान, कोलकाता के हिंदी अधिकारी श्री संजीव कुमार सिंह ने “राजभाषा एवं इसकी संप्रेषणीयता” विषय पर व्याख्यान दिया। व्याख्यानों के बाद सांस्कृतिक कार्यक्रम भी आयोजित किया गया।

दिनांक 22 अप्रैल 2025 को दूसरे और तीसरे सत्र आयोजित किए गए। “राजभाषा और अनुवाद” विषय पर आयोजित दूसरे सत्र के अंतर्गत केंद्रीय अनुवाद ब्यूरो, कोलकाता के पूर्व प्रभारी डॉ. नवीन प्रजापति ने “वैज्ञानिक सामग्रियों का अनुवाद एवं अनुवाद में पारिभाषिक शब्दावली का चयन” विषय पर तथा राष्ट्रीय पुस्तकालय, कोलकाता के अनुवाद अधिकारी श्री विनोद कुमार यादव ने “अनुवाद के विभिन्न साधन और कंठस्थ 2.0” विषय पर व्याख्यान दिया। “राजभाषा और प्रौद्योगिकी” विषय पर आयोजित तीसरे सत्र के अंतर्गत कोलकाता विश्वविद्यालय के प्रोफेसर राम प्रवेश रजक ने “प्रौद्योगिकियों का विकास और भाषा का बदलता स्वरूप” विषय पर तथा माइक्रोसॉफ्ट भारत के निदेशक श्री बालेंदु शर्मा



दाधीच ने “भाषा प्रौद्योगिकी एवं राजभाषा हिंदी तथा राजभाषा प्रबंधन में कृत्रिम बुद्धिमत्ता” विषय पर व्याख्यान दिया। डॉ. जी.एच. पैलान, डॉ. परिमल सरदार, डॉ. गौरांग बिश्वास, डॉ. तापस कुमार घोषाल, डॉ. सुजाता साहू, डॉ. हंजाबाम मन्दाकिनी देवी और श्री ए.के. जगदीशन ने विभिन्न सत्रों के अध्यक्ष रहे तथा डॉ. सुमन मन्ना, श्रीमती स्वेता प्रधान, डॉ. दिलीप कुमार सिंह, डॉ. लीसा प्रियदर्शनी, श्री प्रताप कुमार दास, श्रीमती रेखा नायर और श्री संजीवन कुमार विभिन्न सत्रों के प्रतिवेदक रहे।



इस दो दिवसीय राष्ट्रीय राजभाषा संगोष्ठी का समापन समारोह दिनांक 22.04.2025 को कोलकाता केंद्र के प्रमुख डॉ. तापस कुमार घोषाल की अध्यक्षता में आयोजित किया गया, जिसमें कृषि प्रौद्योगिकी अनुप्रयोग अनुसंधान संस्थान, कोलकाता के निदेशक डॉ. प्रदीप डे मुख्य अतिथि थे। मुख्य अतिथि ने कहा कि विकसित भारत की संकल्पना में राजभाषा प्रबंधन की भूमिका विषय पर आयोजित यह राष्ट्रीय संगोष्ठी वर्तमान समय में बहुत ही प्रासंगिक है। भारत के आर्थिक एवं सामाजिक विकास के साथ भाषा विकास भी महत्वपूर्ण है। इस

संदर्भ में राजभाषा हिंदी के विकास की ओर ज़्यादा ध्यान देने की ज़रूरत है। हिंदी देश के करोड़ों लोगों की मातृभाषा है। अपनी-अपनी मातृभाषा में ही प्रारंभिक पढ़ाई होनी चाहिए। इस दिशा में भारत सरकार द्वारा लाई गई नई शिक्षा नीति एक सफल कदम है। उन्होंने प्रतिभागियों से आग्रह किया कि राजभाषा हिंदी में ज़्यादा-ज़्यादा कार्य करें और विकसित राष्ट्र बनने की दिशा में भारत को आगे बढ़ाने में महत्वपूर्ण योगदान दें।

इससे पूर्व डॉ. दिलीप कुमार सिंह, वैज्ञानिक ने सभी का स्वागत किया और संस्थान के मुख्य तकनीकी अधिकारी श्री प्रताप कुमार दास ने संगोष्ठी की रिपोर्ट सभा के सामने रखी। डॉ. दिलीप कुमार सिंह, वैज्ञानिक ने अतिथियों व प्रतिभागियों का स्वागत किया तथा संयुक्त निदेशक (राजभाषा) श्री ए.के. जगदीशन ने आभार प्रकट किया। श्रीमती रेखा नायर, मुख्य तकनीकी अधिकारी ने आभार प्रकट किया।

IV) राजभाषा निरीक्षण

1) मुख्यालय के विभागों और अनुभागों का निरीक्षण

राजभाषा विभाग द्वारा जारी वार्षिक कार्यक्रम में निर्धारित लक्ष्यों की पूर्ति के लिए संस्थान के मुख्यालय में स्थित समस्त विभागों और अनुभागों में राजभाषा प्रगति का जायजा लेने के लिए दिनांक 16 एवं 17 जुलाई, 2025 को संस्थान के हिंदी विभाग के अधिकारियों के द्वारा निरीक्षण किया गया और निरीक्षण के दौरान पाई गई कमियों को दूर करने के सुझाव भी दिए गए। विवरण निम्नलिखित है:

- दिनांक 16 जुलाई 2025 को प्रशासन अनुभाग, वित्त एवं लेखा अनुभाग और शैक्षणिक अनुभाग का निरीक्षण किया गया।
- दिनांक 17 जुलाई 2025 को जलकृषि विभाग; मत्स्य पोषण, जैव रसायन एवं कार्बिकी विभाग; मत्स्य आनुवंशिकी एवं जैव प्रौद्योगिकी विभाग; मत्स्य विस्तार, सांख्यिकी एवं अर्थशास्त्र विभाग; मात्स्यिकी संसाधन एवं प्रग्रहणोपरांत विभाग; जलीय जीव स्वास्थ्य प्रबंधन विभाग; कार्य अनुभाग; परीक्षा अनुभाग और पुस्तकालय अनुभाग का निरीक्षण किया गया।

2) क्षेत्रीय केंद्र का निरीक्षण

- दिनांक 28 मई 2025 को संस्थान के वित्त नियंत्रक श्री रजनीश कुमार सिंह ने संस्थान के रोहतक केंद्र का राजभाषा निरीक्षण किया।



V) प्रोत्साहन योजना

क) राजभाषा चल वैजयंती

संस्थान में राजभाषा हिंदी की उत्तरोत्तर प्रगति हेतु हिंदी में कामकाज को बढ़ावा देने के लिए इस वर्ष से राजभाषा चल वैजयंती योजना प्रारंभ की गई। इस वर्ष यह पुरस्कार राजभाषा के क्षेत्र में उत्कृष्ट कार्य के लिए संस्थान के मत्स्य विस्तार, सांख्यिकी एवं अर्थशास्त्र विभाग को प्रदान किया गया। यह पुरस्कार हिंदी चेतना मास के समापन एवं पुरस्कार वितरण समारोह के दौरान प्रदान किया गया।

ख) हिन्दी रत्न पुरस्कार

- संस्थान में वैज्ञानिक क्षेत्र में भी हिन्दी में किए जाने वाले कार्यों को बढ़ावा देने के लिए **हिन्दी रत्न पुरस्कार योजना** लागू की गई है। इस योजना में संस्थान के विभिन्न वैज्ञानिकों ने अपना नामांकन दिया और मूल्यांकन समिति द्वारा सर्वश्रेष्ठ कार्य करने वाले वैज्ञानिक के रूप में डॉ. अरुण शर्मा, वरिष्ठ वैज्ञानिक को “हिन्दी रत्न पुरस्कार” के लिए चयनित किया गया।

ग) मूल रूप से हिंदी में कार्य करने के लिए लागू की गई प्रोत्साहन योजना

संस्थान में राजभाषा हिंदी में मूल रूप से कार्य करने को बढ़ावा देने के लिए प्रोत्साहन योजना लागू की गई है। संस्थान के कई कर्मचारी इस योजना में भाग ले रहे हैं। इस योजना के तहत इस वर्ष निम्नलिखित अधिकारियों व कर्मचारियों को नगद पुरस्कार प्रदान किया गया :

1.	श्री देवेंद्र रावराणे	प्रथम
2.	श्री प्रसेनजीत सोनावणे	प्रथम
3.	श्री संभाजी शेळके	द्वितीय
4.	श्रीमती चैताली राऊत	द्वितीय
5.	डॉ. अरुण शर्मा	द्वितीय
6.	श्रीमती अनु ग्रोवर	तृतीय
7.	श्रीमती संयुजा परब	तृतीय
8.	सुश्री अरुणा कुमावत	तृतीय
9.	श्री जगदीश धनु	तृतीय
10.	श्री मोहम्मद बाकर	प्रोत्साहन पुरस्कार
11.	डॉ. अंकुश कांबले	प्रोत्साहन पुरस्कार
12.	श्री निनाद कांदलगाँवकर	प्रोत्साहन पुरस्कार

VI) हिंदी जलवाणी पाठ्यक्रम

- इस संस्थान में छात्र-छात्राओं के लिए मात्स्यिकी विषय से संबंधित उच्च शिक्षा प्रदान की जाती है। इन छात्र-छात्राओं को हिन्दी का ज्ञान बढ़ाने हेतु इस संस्थान के एम.एफ.एसएसी. के प्रथम वर्ष के छात्र-छात्राओं के लिए वर्ष 2003 से नियमित रूप से हिन्दी जलवाणी नामक पाठ्यक्रम संचालित किया जा रहा है। पाठ्यक्रम की रचना इस प्रकार से की गई है कि हिन्दी का कार्यसाधक ज्ञान रखनेवाले और नहीं रखनेवाले छात्र-छात्रा अलग-अलग समूहों में इसका अध्ययन कर सकें। इसी क्रम में, सत्र 2025-27 का हिन्दी जलवाणी पाठ्यक्रम संचालित किया गया, जिसमें कुल 97 छात्रों का नामांकन किया गया।



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