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THE NEOTIA UNIVERSITY
ज्ञानम् आत्म प्रदीपाय
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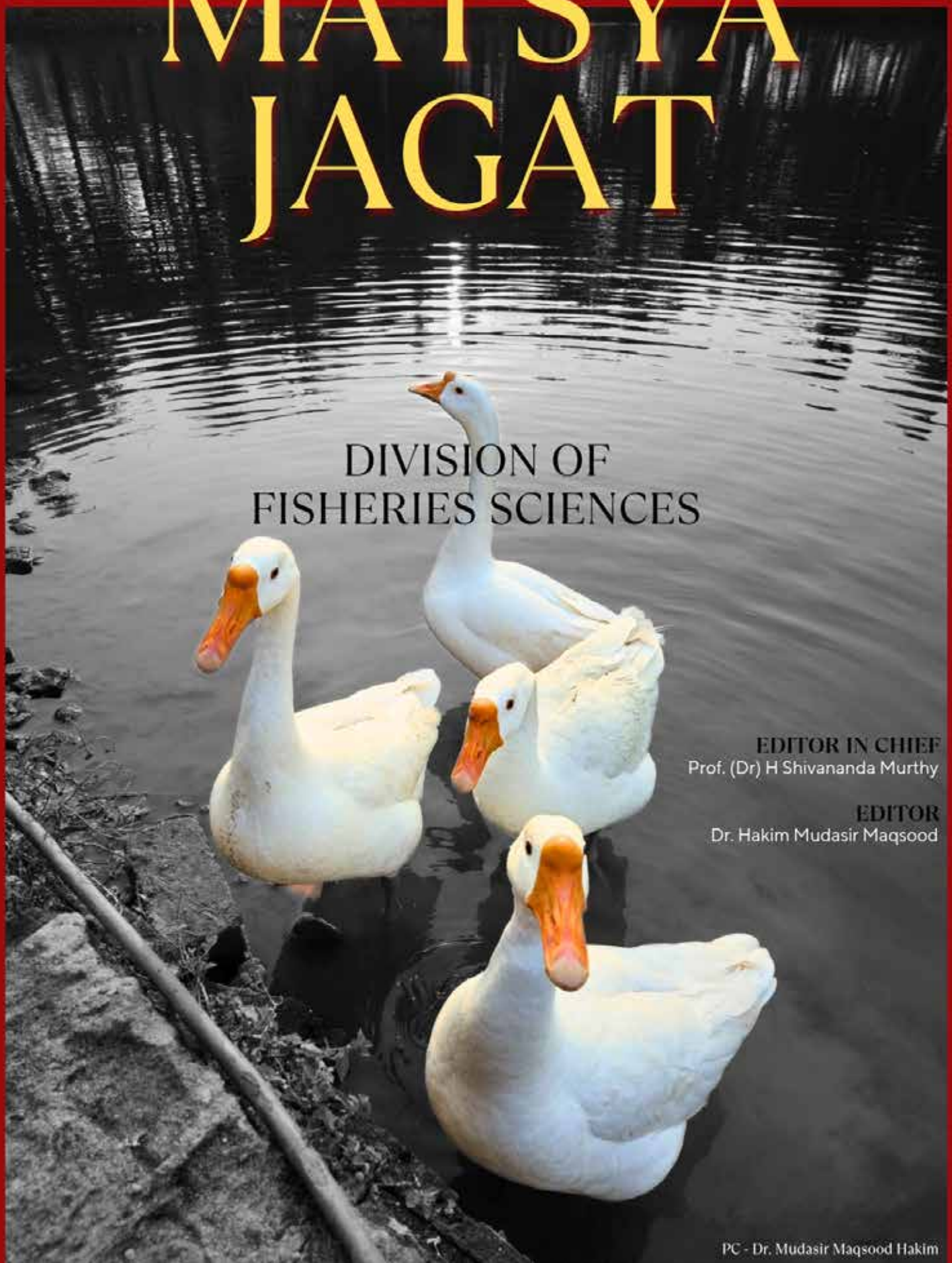
MATSYA JAGAT



DIVISION OF FISHERIES SCIENCES

EDITOR IN CHIEF
Prof. (Dr) H Shivananda Murthy

EDITOR
Dr. Hakim Mudasir Maqsood

PC - Dr. Mudasir Maqsood Hakim

Designed by Subrata Halder (Student/6th SEM)

Foreword

It is with immense pleasure that I present to you the fourth issue of year 2024's e-magazine, **Matsya Jagat**, published by the Division of Fisheries Science at our university. This publication continues to serve as an invaluable resource for students, faculty members, and other readers, offering the latest information and insights related to the ever-evolving fields of fisheries and aquaculture.

Our Fisheries Science division is committed to providing a diverse range of activities that benefit not only our students but also fish farmers and entrepreneurs. In a time when access to the most current reading materials and information on aquaculture can be challenging, *Matsya Jagat* aims to bridge this gap. This magazine is designed to cater to the growing demand for knowledge, particularly among those who are keen on staying abreast of the latest advancements in aquaculture and fisheries sciences. We hope it becomes a cornerstone in the dissemination of information on the latest infrastructure developments and emerging technologies that are revolutionizing fish production, marketing, and preservation.

I extend my heartfelt congratulations to the dedicated faculty members of the Division of Fisheries Science for their relentless efforts in advancing our fisheries division. However, the journey does not end here. There is a pressing need to amplify our outreach activities, ensuring that the knowledge generated here reaches fish farmers, entrepreneurs, and marketing professionals. This integration is vital for fostering economic growth, ecological balance, and the empowerment of communities, particularly those in rural and remote areas of our country.

Dr. Biswajit Ghosh
Hon'ble Vice Chancellor
The Neotia University

The Editor-in-Chief Message

It is my pleasure to introduce the 4th Issue of volume – II of e-Magazine **"Matsya Jagat"** published by Division of Fisheries Science, The Neotia University, started with the objective to propagate the latest divisional activities, and initiatives of the division and impact thereof among the students and readers.

Dissemination of technological information, particularly latest advancements and developments in the area is the need of the hour. "Matsya Jagat" showcases the progress of the activities carried out under Division of Fisheries Science and I strongly believe that this magazine would serve as a great platform for promoting diversified fisheries activities, ideas and experiences and will further welfare of fisher, fish farmers, students and other readers in addition to the dissemination of information on the various aspects. I am sure this e-magazine will serve as media to disseminate the latest developments and activities of the Division of Fisheries Science. I would like to place on record my appreciation for the consistent efforts put in by the editorial team towards making of this magazine.

Prof (Dr.) H Shivananda Murthy
Chair Professor
Division of Fisheries Science
The Neotia University

From the Editorial Desk

Dear Readers,

December issue of “Matsya Jagat” is the last issue for volume II. This edition is particularly special as it showcases the incredible talent within our BFSc students. The cover design, crafted by a BFSc graduate student, beautifully encapsulates the spirit of our aquatic world, while the cover photo, captured by me, adds a visual depth that resonates with the theme.

Inside, you’ll find insightful articles penned by both students and faculty, reflecting the vibrant academic and research culture across our departments. We are also delighted to feature the creative side of our students through their artwork and photography, highlighting the diversity of talents that make our community unique.

Thank you for being part of this journey. We hope this issue inspires you as much as it has inspired us.

Warm regards,

Dr. Hakim Mudasir Maqsood,
Assistant Professor (Fish Genetics and Breeding)
Head, Department of Aquaculture
Div. Of Fisheries Sciences, TNU

Foreword from **Faculty Head**

With immense pleasure and heartfelt enthusiasm, I welcome you to the latest edition of Matsay Jagat, Issue IV Vol.2. In the dynamic and ever-evolving field of Fisheries Science, Matsay Jagat stands as a beacon of knowledge and insight, serving the curiosity and intellect of both enthusiasts and professionals. As the Assistant Professor and Faculty Head of the Division of Fisheries Science at The Neotia University, I am profoundly aware of the significance of sharing valuable information and fostering a community dedicated to learning and collaboration. This issue promises to deliver a treasure trove of thought-provoking content, meticulously crafted to offer a comprehensive understanding of a diverse range of topics within Fisheries Science. Every article in this issue is designed with great care to provide both depth and breadth, ensuring a rich and enlightening experience for our readers.

As a researcher and educator deeply committed to this field, I commend the editorial team for their dedication and vision in curating such an enriching publication. Matsay Jagat continues to be an indispensable platform for sharing knowledge, fostering dialogue, and shaping the future of Fisheries Science. I extend my heartfelt gratitude to all contributors whose expertise and passion light up the pages of this issue. May their insights inspire and empower you to explore the boundless possibilities within the realm of Fisheries Science.

With best wishes for a captivating and enlightening read

Dr. Neeraj Pathak
Assistant Professor and Faculty Head
Division of Fisheries Science
The Neotia University

Division of Fisheries Sciences, TNU: **The Faculty**

Faculty

Prof. (Dr.) H. Shivananda Murthy

MFSc, PhD, PDF (USA, UK and Spain)
Chair Professor (with powers and position of Dean), Division of Fisheries Sciences

Department of Aquaculture

Dr. Hakim Mudasir Maqsood

Assistant Professor (Fish Genetics and Breeding)
Head, Department of Aquaculture

Key Research Area:
Nutrigenomics, Genome Editing, One Health Aquaculture

Department of Aquatic Environment Management

Dr. Suman Karmakar

Assistant Professor & Head,
Aquatic Environment Management

Key research area:
Aquatic Toxicology

Department of Fish Processing Technology

Dr. Neeraj Pathak

Assistant Professor and Head,
Fish Processing and Technology

Key Research Areas:
Emerging Fish Quality and Safety, Thermal Processing

Department of Aquatic Animal Health Management

Dr. Avishek Bardhan

Assistant Professor and Head (AAHM)

Key Research Area:
Antimicrobial resistance, Aquatic Health, Antibiotic Safety, Drug toxicity

Department of Fisheries Resources Management

Dr. Vikas Pathak

Assistant Professor and Head (FRM)

Key Research Area:
Fish diversity, Biology and Ecological studies

Department of Fisheries Economics, Extension and Statistics

Mr. Khemraj Bunkar

Assistant Professor and Head (FEES)

Key Research Area:
Supply/Value chain analysis and Economic analysis

Ms. Camelia Chattopadhyay

Assistant Professor (Ad hoc grade-II), FEES

Key research areas:
Fisheries Extension and Aquaculture

Department of Fisheries Engineering

Ms. Aditi Banasure

Assistant Professor (Fisheries Engineering)

Key Research Area:
Traditional fish traps, TKs, Collapsible trap, Destructive fishing practices.

Technical Staff

Laboratory Technician: 01

Mr. Rohit Khatua (MSc Marine Biology)

Field Staff: 03

Activities at Division of Fisheries Sciences

Representation of TNU at International Level Conference

Prof (Dr) H Shivananda Murthy, Dean & Chair Professor, participated and Chaired the 1st Technical Session in the International Conference “Sustainable Fisheries and Aquatic Resources Management: Life below the Water” (SFARM-2024). Dr S J Koushik from France, Dr Krishna Das from Belgium and other international speakers presented keynote addresses in this Technical Session. The conference was organised by various organizations including the Ministry of Fisheries & Dairying, GOI; Ministry of Agriculture; Ministry of Science and Technology and other organizations during 12-14 September, 2024 at Science City, Kolkata.

Visit of the Dean to ICAR-CMFRI Regional Center

Prof (Dr) H Shivananda Murthy, Dean & Chair Professor, visited the Regional Center of ICAR-Central Marine Fisheries Research Institute, Vizhingam, Trivandrum, Kerala as Member of the Research Advisory Committee (RAC) and went around the facilities and interacted with the scientists.

Visit to University of Kerala, Trivandrum

Prof (Dr) H Shivananda Murthy, Dean & Chair Professor, visited the University of Kerala (Department of Aquatic Biology & Fisheries) as Chairman of the Ph.D Examination Committee and conducted the Open Defense Viva voce.

Participation in International Workshop

Prof (Dr) H Shivananda Murthy, Dean & Chair Professor, participated in the International Workshop on "Sustainable fisheries development - Way forward" organized by the College of Fisheries, Mangalore and Chaired 1st Technical Session

All India Study Tour

The Division of Fisheries, The Neotia University organized an all-India study tour for final-year BFSc students to provide them with nationwide exposure to premier fisheries institutes. As part of the tour, students visited esteemed national institutes, research centers, and universities, including the ICAR-Central Institute of Fisheries Education, Mumbai; College of Fisheries, Mangalore; ICAR-Central Marine Fisheries Research Institute (Regional Centre, Mangalore, and Headquarters, Kochi, Kerala); ICAR-Central Institute of Fisheries Technology, Kochi, Kerala; National Institute of Fisheries Post Harvest Technology and Training, Kochi, Kerala; Marine Products Export Development Authority, Kochi, Kerala; Central Institute of Fisheries Nautical and Engineerin Training, Kochi, Kerala; and Kerala University of Fisheries and Ocean Studies, Kochi, Kerala.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CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
CMFR
All India Study Tour


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CIFNET
CENTRE FOR DEEP SEA FISHERY TRAINING
Division of Fisheries Science
The Neotia University, West Bengal
All India Study Tour
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Admission Outreach Programme Participation of Faculty of Division of Fisheries Sciences

NeoCon 2024-25 Teacher's Meet

Dr. Avishek, Dr. Suman, Dr. Vikas, Ms. Camelia and Dr. Neeraj participated in TNU's admission outreach programme NeoCon 2024-25. The faculty visited local school viz., Muchisha Haridas Krishi Shilpa Vidyapith, Dongariya Anumati Balika Vidyalaya, Raipur Sri Sri Ramkrishna Vidyalaya, Hasnecha High School, Birlapur Vidyalaya, Deshbandhu Sevasangha Santosh Kumari Sikshanikatan, Ranaghat Municipality Hall, Nadia and Kalna Bardhman; and apprised the school children and teacher about B.F.Sc Degree programme, prospects and future scope.

Neo-Con 2024-25 Teachers Meet" on 14th December 2024

Prof. (Dr.) H.S. Murthy, Dean Div of Fisheries Sciences delivered a key note speech on the event organised by TNU's Admission Division.

Department of **Aquaculture**

Stocking of Indian Major Carps (IMC)

Department of Aquaculture in collaborating with Department of Fish Engineering, stocked the advance fingerling of IMCs in Pond No. 2 and Pond No. 3. The event was inaugurated by Dean, Div.of Fisheries Sciences Prof. (Dr.) H.S.Murthy. HoDs from other departments like FPT, FEE were also present during the occasion. A total 2000 Catla, 200 Mirgal and 200 Rohu advance fingerlings were stocked on December 11, 2024.

Cage Culture

Cage culture activity of IMCs were initiated in collaboration with Department of Fish Engineering. The project PI and Co-PI, Ms. Aditi and Dr. Mudasir, respectively, kickstarted the feeding trial in Pond. No. 2.

Sale of Fish and Duck eggs

Department of Aquaculture during finical year 2024 managed to sale fish and duck eggs worth 10,171 INR. A total 31.35 KGs of Fish and 481 number of ducks eggs were produced from fish ponds and fish-cum-duck demonstration unit, respectively. Department of Aquaculture also initiated the breeding programme of ornamental fish sp including gold fish, koi carp, Molly, zebrafish etc.

Department of **Fisheries Economics, Statistics & Extension**

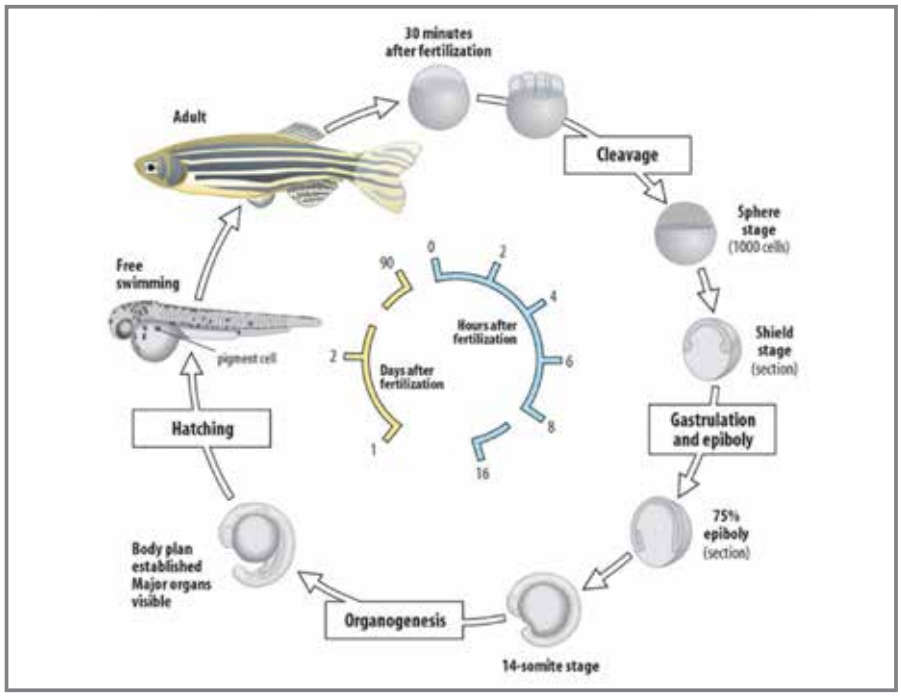
The Rural Fisheries Work Experience (RFWE) survey was successfully conducted by final-year Bachelor of Fisheries Science (BFSc) students in South 24 Parganas, West Bengal, under the mentor of Ms. Camelia C. The survey, aimed at collecting baseline data on fish farming practices, involved the use of a comprehensive questionnaire covering various aspects of aquaculture and fisheries operations.

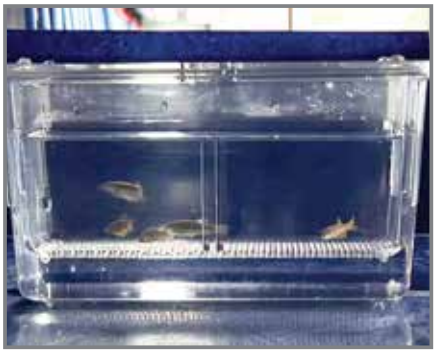
Zebrafish breeding and raising pure lines

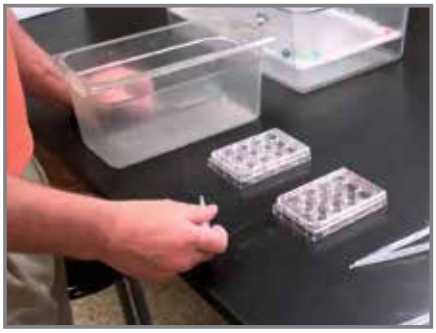
***1Hakim Mudasir Maqsood, 2Dip Sahoo, 2Tridish Harbab**

**1Laboratory of Fish Genetics and Breeding, Department of Aquaculture, Div. of Fisheries Sciences, TNU-Kolkata*

2Div. Of Fisheries Sciences, TNU-Kolkata







Zebrafish (Danio rerio) have become a pivotal model organism in scientific research due to their rapid development, transparent embryos, and genetic tractability. Establishing pure lines through controlled breeding is essential for ensuring experimental consistency and reproducibility. This article outlines standard breeding protocols and strategies for developing inbred zebrafish lines

1. Breeding Zebrafish

Effective zebrafish breeding requires meticulous attention to environmental conditions, mating strategies, and embryo collection.

1.1. Environmental Conditions

Housing: Maintain zebrafish in a well-aerated tank system with a controlled temperature of 28.5°C and a 14-hour light/10-hour dark photoperiod to simulate natural conditions.

Water Quality: Regularly monitor and maintain optimal water parameters, including pH (7.0–8.0), conductivity (300–500 µS), and ammonia/nitrite levels (undetectable), to ensure a healthy environment.

1.2. Mating Strategies

Pairwise Breeding: Place one male and one female in a breeding tank equipped with a mesh or marbles at the bottom to protect the eggs from being eaten. Spawning typically occurs at dawn, triggered by the onset of light.

Group Breeding: Introduce multiple males and females into a larger breeding tank. This method can yield a higher number of embryos but may result in increased variability.

1.3. Embryo Collection

After spawning, collect the fertilized eggs from the bottom of the tank. Rinse them with system water to remove debris and unfertilized eggs. Incubate the embryos in Petri dishes containing E3 medium at 28.5°C.

2. Raising a Pure Line

Developing inbred zebrafish lines involves successive generations of controlled breeding to achieve genetic homogeneity.

2.1. Inbreeding Strategies

Full-Sib Mating: Pair full siblings for multiple generations (typically 20 or more) to produce an inbred line. This approach can lead to inbreeding depression, characterized by reduced fertility and viability.

Gynogenesis: Utilize techniques to activate eggs without sperm contribution, resulting in offspring that are genetic clones of the mother. This method accelerates the development of homozygosity but requires specialized procedures.

2.2. Monitoring Genetic Homogeneity

Molecular Markers: Employ microsatellite markers and High-Resolution Melting Curve analysis to assess genetic uniformity across generations. This ensures the integrity of the inbred line.

Phenotypic Assessment: Regularly evaluate physical and behavioral traits to detect any deviations that may indicate genetic anomalies.

2.3. Mitigating Inbreeding Depression

Selection: Implement strong positive selection for desired traits to maintain line vitality.

Outcrossing: Occasionally introduce individuals from other lines to increase genetic diversity and reduce deleterious effects, followed by renewed inbreeding.

3. Applications of Inbred Zebrafish Lines

Inbred zebrafish lines serve as valuable genetic repositories for various research applications:

Genetic Studies: Provide a consistent genetic background for identifying gene functions and interactions.

Disease Models: Facilitate the study of disease phenotypes and therapeutic interventions with reduced genetic variability.

Toxicological Assessments: Offer uniform test subjects for evaluating environmental toxins and drug effects.

Establishing and maintaining inbred zebrafish lines is a meticulous process that demands careful breeding strategies and continuous monitoring. Despite challenges such as inbreeding depression, these lines are indispensable for advancing genetic and biomedical research.

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Blockchain Technology in Seafood Processing: Transforming The Industry

Neeraj Pathak* & H Shivananda Murthy

**Department of Fish Processing Technology, Division of Fisheries Science, The Neotia University, Sarisha, West Bengal*

Background

The seafood industry is able to address pertinent issues touching on trust in their products traceability, transparency and sustainability by integrating blockchain technology also well known for applications in cryptocurrencies. The seafood supply chain suffers sorely from unscrupulous practices such as frauds, mislabelling and Illegal, Unreported and Unregulated (IUU) Fisheries since it is highly complex, there are many players involved between the making of a catch and the end consumer. This gap is filled to some extent by blockchain which offers an effective strategy through storage of all transactions in a distributed ledger that is immutable and openly visible to everyone.

Improving research and development in traceability and food safety

Even if the fish is harvested, this information can be stored in the blockchain and the system can guarantee that catch data, processing, transportation, and storage conditions will cut any chances of fraud or manipulation. Such a system helps to secure seafood products from false claims about their origin and the treatment received during the production processes. When there is a problem concerning food safety practices, the process of identifying where the problem started will be easy because of the features of Blockchain.

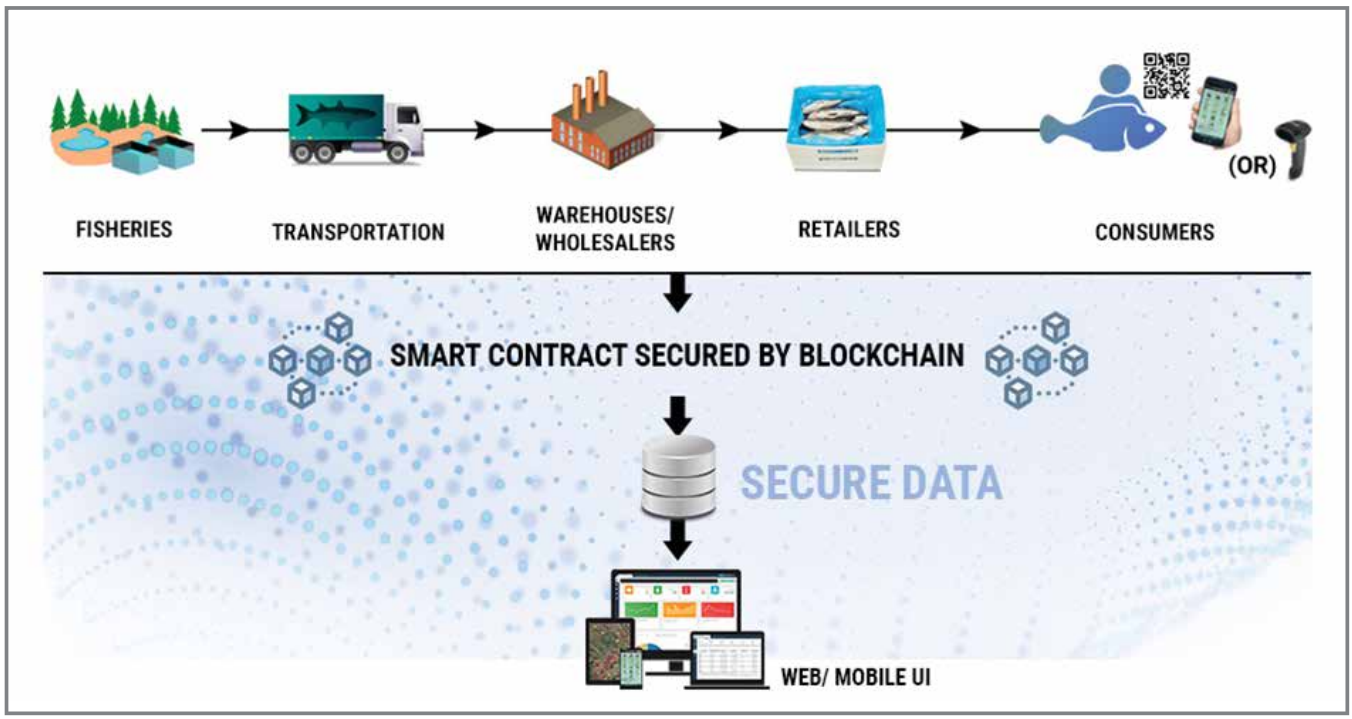

Fig. 1.1. Blockchain secures seafood traceability

Facilitating sustainable development

The growth of the seafood industry is undermined by sustainability issues such as over-fishing and other detrimental activities. Blockchain can aid in the promotion of such objectives by being able to guarantee that organisations have delivered acceptable environmental management practices. Fisheries operating sustainably can inscribe their certifications into the blockchain enabling consumers to be assured about the morality of the sources of their seafood. This awareness further assists in the fight against IUU fishing since it minimizes the chances of seafood sourced illegally finding its way into the supply chain.

Building consumer trust

Nonetheless, in a market where regular consumers are becoming more concerned to ask where their food comes from, the proof of such information is positioned with regard to the amount of detail available in relation to the whole life cycle of the seafood from the ocean to the table, which can be ensured via blockchain technology. This not only boosts consumers' trust, but also boosts the image of the brands owned by the companies that are quality and sustainability-oriented.

Implementation of blockchain in seafood processing

The last stage for the implementation of the blockchain in the seafood industry consists of the following stages in order to identify the connection between the two.

1. Data Collection

The stages in the implementation of a blockchain that are the most necessary when it comes to education are the gathering of information at multiple nodes in the supply chain. These include the catch information (e.g. location information, time information, species etc), processing information, transport conditions, and temperatures. This data is sometimes gathered with the use of sensors, internet of things devices and manual inputs.

2. Blockchain Entry

Data that has been gathered is thereafter transferred to a blockchain. Each contribution or 'block' is encoded and connected to the prior block to form a complicated structure.

This process guarantees that the information is permanent and cannot be changed in retrospective, hence offering secure and reliable information on the product's history.

3. Stakeholder Access

Fisher folk, processors, distributors, target retail and regulators, among other relevant actors have access to the blockchain. All actors are able to audit the information which is pertinent to their contact in the supply chain literally in processes and guarantees of quality.

4. Verification And Certification

The verification of sustainable nations practices, compliance and existence of certifications is possible with blockchains technology. For instance, when a fishery desists from practices that are destructive to the environment, there are blockchain records that can be used to validate that.

5. Consumer Interaction

At the end users, the blockchain technology enables the tracing of the sources of seafood. For example, QR code scanning can give details of movement of the product from water body to tables at homes on catch control measures, where it was done and how it was done.

6. Integration with Other Technologies

The blockchain is also integrated with other advanced technologies like the Internet of Things (IoT), artificial intelligence (AI), and smart contracts for better performance and accuracy. Data entry can be performed by IoT devices while AI can perform trend analysis and even supply chain anomalies detection.

Challenges and rising opportunities

While its advantages need philosophical impetus, there are hurdles towards the adaptation of blockchain in the seafood industry, such as high initial costs, the need for technological infrastructure, and the need for collaboration across the supply chain and beyond. But as these barriers are reduced with advancing technology, and coupled with other technologies like IoT and AI, the automation of seafood processing can be further optimized.

Seafood processing is an industry that can benefit out of blockchain technology as this technology promises traceability, improving the food safety, promoting sustainable practices, and increasing consumer trust. This could facilitate a more transparent, and efficient, and responsible seafood industry for the future– a future where technology is intricately tied to sustainability.

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An Overview of Indian Fish Markets: Challenges and Strategic Recommendations

Khemraj Bunkar* and Aditi Banasure
Division of Fisheries Science, The Neotia University

India is one of the leading fish producers globally, with an annual output of over 16.24 million tons (DoF, 2022). Fisheries contribute significantly to food security, employment, and income generation for millions, particularly in coastal and rural areas. However, despite this robust production, the sector faces challenges in marketing infrastructure and efficiency that hinder its full economic potential. Addressing these challenges is critical to ensuring the sustainable growth of fisheries in India.

Fig.1 Women fish sellers in Indian fish markets

Market Infrastructure: The Backbone of Fisheries Economy

Market infrastructure forms the foundation for the efficient distribution of fish from producers to consumers. In India, this infrastructure is often fragmented and underdeveloped, leading to post-harvest losses estimated at 20-25% annually (CMFRI, 2023).

Key Infrastructural Gaps Include:

1. **Insufficient Cold Storage and Transport Facilities:** The lack of adequate cold chain systems results in spoilage, particularly for high-value species like shrimp and tuna. Many small-scale fishers rely on traditional methods of preservation, which are insufficient for modern markets.

2. **Poorly Equipped Fish Landing Centers:** Many landing centers lack basic amenities such as ice plants, auction platforms, and hygienic handling areas. This reduces the quality of fish and its market value.

3. **Limited Access to Modern Markets:** Most fish markets are informal, with inadequate links to retail chains and export facilities. Modern retail outlets, e-commerce platforms, and international markets remain underutilized.

4. **Transportation Issues:** Poor road conditions and political disruptions can make it challenging to transport fish, leading to spoilage and lower prices.

5. **Poor sanitation:** Poor sanitation and unhygienic conditions can be a problem.

6. **Lack of Credit Facilities:** A lack of credit facilities can hinder long-term sustainability.

Fig. 2 Kolkata Fish Market

Enhancing Marketing Efficiency

Marketing efficiency refers to the ability to maximize value through streamlined supply chains, reduced intermediaries, and better price realization for producers. In India, the fisheries marketing system is often characterized by inefficiencies, including the dominance of middlemen and the lack of market intelligence.

Strategies to Improve Marketing Efficiency:

1. **Promoting Digital Platforms:** Leveraging digital marketplaces can connect fishers directly to buyers, reducing dependence on intermediaries. Platforms like eNAM (Electronic National Agriculture Market) could be expanded to include fisheries.

2. **Building Cooperatives and Producer Organizations:** Strengthening fishers' cooperatives can enhance their bargaining power, ensuring fairer prices and reducing exploitation by middlemen.

3. **Improving Market Intelligence:** Providing fishers with real-time information on market prices, demand trends, and export opportunities can help them make informed decisions and maximize profits.

4. **Encouraging Value Addition:** Investments in processing facilities for activities like filleting, packaging, and branding can increase the marketability of fish products and open new revenue streams.

Government Initiatives and Policy Recommendations

Recognizing these challenges, the Government of India has launched several initiatives to enhance fisheries infrastructure and marketing efficiency. The Pradhan Mantri Matsya Sampada Yojana (PMMSY) is a scheme launched by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry, and Dairying. The scheme's total investment is Rs 20,050 crore, which is to be implemented over five years from 2020-21 to 2024-25. The PMMSY aims to invest in modernizing fish markets, developing cold chain networks, and promoting aquaculture clusters (MoFPI, 2022). However, effective implementation and collaboration with state governments and private stakeholders are crucial to realizing these goals.

The National Fisheries Development Board (NFDB) offers a number of schemes for infrastructure development in India, including:

Fisheries and Aquaculture Infrastructure Development Fund (FIDF)

This fund can be used for a variety of activities, including:

- Establishing fishing harbours and fish landing centers
- Building ice plants and cold storage
- Developing fish transport facilities
- Constructing modern fish markets

Blue Revolution:

This scheme focuses on increasing productivity, creating better post-harvest and marketing infrastructure, and generating livelihoods.

Additionally, targeted subsidies for cold storage facilities, incentives for adopting e-commerce platforms, and training programs on best marketing practices could further empower fishers. These recommendations aim to enhance the infrastructure of India's fish market by improving wholesale markets, enforcing hygiene and sanitation standards, promoting fish farmer producer organizations, offering financial assistance, and fostering a supportive policy environment that encourages the involvement of entrepreneurs and private agencies in the fisheries sector.

Conclusion

India stands as one of the leading global fish producers, but still, its fisheries sector faces significant challenges related to infrastructure and marketing efficiency. These gaps, particularly in cold storage, transport facilities, and access to modern markets, contribute to considerable post-harvest losses and hinder the sector's growth potential. By addressing these challenges through targeted investments in infrastructure, promoting digital platforms, enhancing market intelligence, and fostering cooperatives, India can improve the efficiency of its fisheries marketing system. Government initiatives such as the Pradhan Mantri Matsya Sampada Yojana (PMMSY) and the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) offer promising avenues for modernizing the sector. With a concerted effort from both public and private stakeholders, the development of robust fish markets and marketing systems will not only boost the fisheries economy but also create sustainable livelihoods, improve food security, and strengthen India's position in the global fish market.

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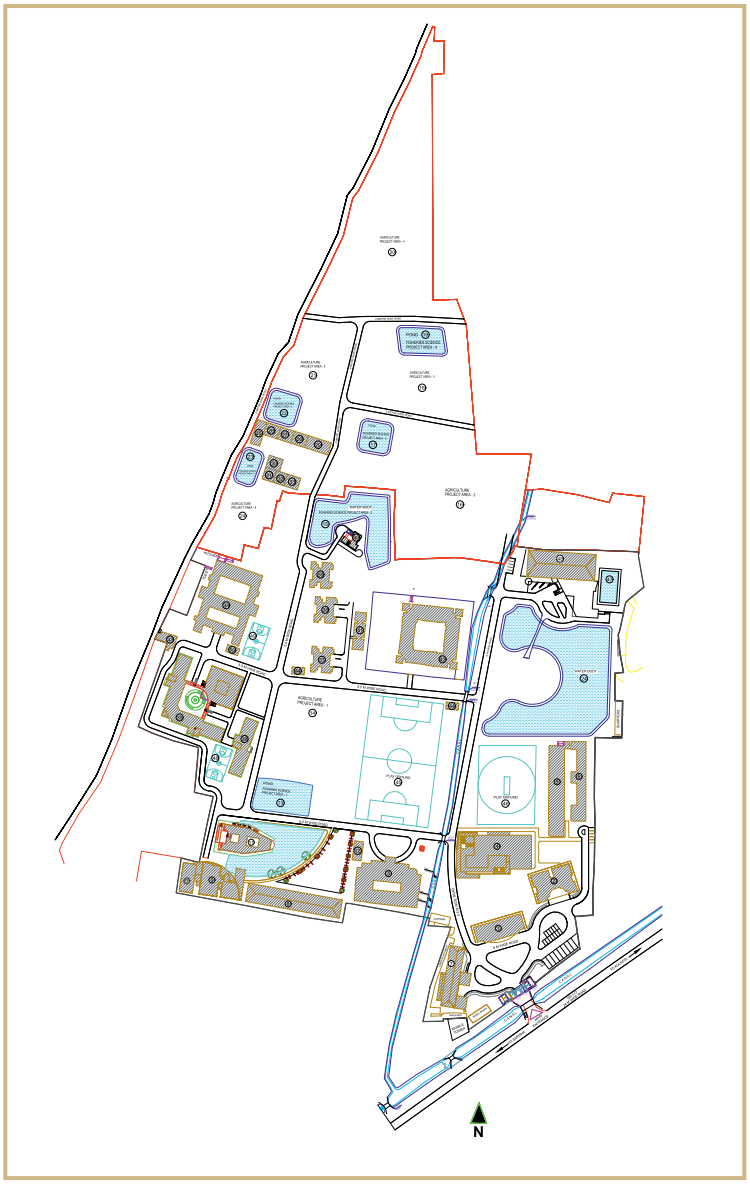


LEGEND- BUILDING

A. ADMINISTRATIVE BLOCK

1. ADMINISTRATIVE BUILDING (G + V)

B. ACADEMICS BLOCK

2. SCHOLASTIC BUILDING - 1 (G + III)
3. SCHOLASTIC BUILDING - 2 (G + II)
4. SCHOLASTIC BUILDING - 3 (G + III)
5. SCHOLASTIC BUILDING - 4 (G + III)
6. SCHOLASTIC BUILDING - 5 (G + III)
7. WORKSHOP BUILDING
8. NEW WORKSHOP BUILDING
9. NEW PHARMACY BUILDING (G + III)
10. PHARMACY BUILDING (G + III)
11. SHIP IN CAMPUS (G + III)

C. AGRICULTURE & FISHERY SCIENCE BLOCK

12. POLY HOUSE & NET HOUSE
13. FISHERY SCIENCE PROJECT AREA - 1
14. AGRICULTURE PROJECT AREA - 1
15. FISHERY SCIENCE PROJECT AREA - 2
16. AGRICULTURE PROJECT AREA - 2
17. FISHERY SCIENCE PROJECT AREA - 3
18. AGRICULTURE PROJECT AREA - 3
19. FISHERY SCIENCE PROJECT AREA - 4
20. AGRICULTURE PROJECT AREA - 4
21. AGRICULTURE PROJECT AREA - 5
22. FISHERY SCIENCE PROJECT AREA - 5
23. FISHERY SCIENCE PROJECT AREA - 6
24. AGRICULTURE PROJECT AREA - 6
25. MUSHROOM UNIT
26. FIELD LAB
27. STORE HOUSE
28. SERICULTURE UNIT
29. THRESHING FLOOR
30. BIO GAS PLANT
31. CATTLE SHED
32. VERMI COMPOST PIT
33. BIO FERTILIZER PLANT

D. RESIDENTIAL BLOCK

34. BOY'S HOSTEL - 1 & 2 (G + III)
35. BOY'S HOSTEL - 1 & 2 (G + III)
36. BOY'S HOSTEL - 1 & 2 (G + III)
37. OLD STAFF QUARTERS (G + III)
38. NEW STAFF QUARTERS (G + III)
39. NEW STAFF QUARTERS (G + III)
40. DIRECTOR'S RESIDENCE (G + I)
41. OLD STAFF QUARTERS (G + III)
42. GIRL'S HOSTEL - 3 (G + II)

E. UTILITY & SERVICES BLOCK

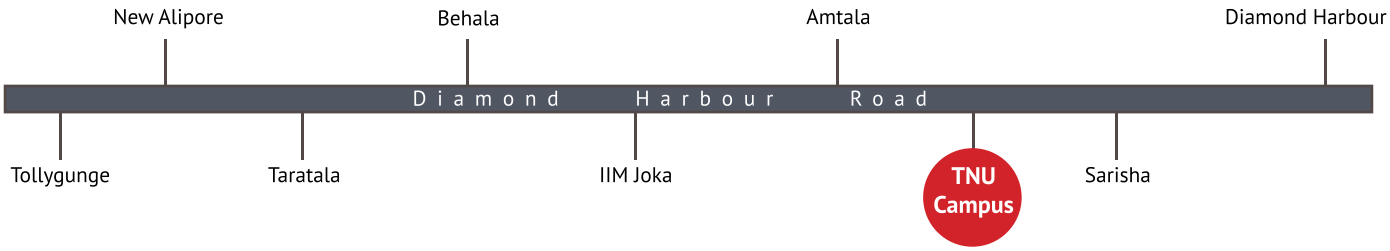
43. ELECTRICAL ROOM
44. PUMP ROOM

F. RECREATIONAL BLOCK

45. FOOTBALL GROUND
46. CRICKET GROUND
47. SWIMMING POOL
48. MULTI PURPOSE HALL
49. BASKETBALL COURT (3 NOS.)

G. HEALTH BLOCK

50. MEDICAL UNIT



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Approved Under Sec.2(f) of UGC Act 1956

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