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ICAR

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Mahila Matsyajibi Sammelan 2.0 at Kultali, Sundarbans

Women beneficiaries of Kultali, Sundarbans

Awareness on bio-diversity on the occasion of World Fisheries Day

Contact

Phone :
91-033-25921190/25921191
Fax :
91-033-25920388
e-mail :
director.cifri@icar.gov.in
www.cifri.res.in

Inside

ICAR-CENTRAL INLAND FISHERIES RESEARCH INSTITUTE
(An ISO 9001 : 2015 Certified Organisation)
Barrackpore, Kolkata - 700 120

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Director's Column

The institute achieved a couple of great achievements during the last six months. Our laboratory has got NABL accreditation in line with ISO/IEC 17025: 2017 for chemical testing in the area of "Arsenic (as As) in Surface Water". We are successful in getting one patent for "A portable split beam transducer assembly on water craft for measuring exact transducer position below the water". Besides, 2 trademarks and 4 copyrights have also been registered. Non-exclusive license for 'CIFRI HDPE PEN' and 'CIFRI ARGCURE' for a period of five years for the manufacturing and sale in the territory of India was granted to private companies. I congratulate the scientists associated with this achievement.

The GC-MS/MS facility has also been installed at the institute HQs. This system can identify trace-level organic pollutants in diverse matrices, from food safety analysis to environmental monitoring. The Institute, in collaboration with the Delft University of Technology, Netherlands; NIT, Calicut, and Namami Gange Project, organized a River Field School on "Exploring the Food-Energy-Water Nexus in River Ecosystems". This was a unique programme with the objective on deepening the understanding of river ecosystems, taking Ganga as case study, focusing on the interconnections among food, energy, and water.

Four new externally funded projects were sanctioned. We have conducted 12 ranching programmes in which 21.71 lakh fingerlings were released into the river Ganga to restore the biodiversity of fish species, particularly IMC in the River. The institute declared 26th December as the '*Mahila Matsyajibi Diwas*' to recognize the crucial contributions of women in fisheries and aquaculture. The institute took significant steps to stood by the flood affected farmers of the Tripura state. Team of scientists visited the affected fish farms, provided technical guidance and aquaculture inputs.

I welcome the seven newly joined assistants to the institute. I congratulate all the staff who got promoted and also got awards/recognitions for the institute. I wish a happy and healthy retired life to all the staff who got superannuated during this period. I invite suggestions from the learned readers to improve the institute newsletter.

January 2025

Dr. B. K. Das
Director

About ICAR-CIFRI

Started as Central Inland Fisheries Research Station in March, 1947 at Barrackpore, West Bengal, ICAR-CIFRI has carved a niche in inland fisheries research. Induced fish breeding, composite fish culture and other scientific fish production practices developed during the sixties by the Institute helped in bringing the blue revolution in the country. Reservoirs and wetland fisheries management technologies developed and disseminated by the institute resulted in enhanced fish production from these resources. By the turn of the year 2000, the research and development agenda of the Institute concerning inland open waters shifted from fish as the only benefit to ecosystem health and ecological benefits with emphasis on sustainability, livelihood and nutritional security. In addition to the Headquarters at Barrackpore and Research Station at Kochi, CIFRI has four Regional Research Centres at Prayagraj, Guwahati, Bengaluru and Vadodara, through which the issues of inland open water fisheries are being addressed.

Publication Team

Published by **Dr. B. K. Das** Director

Compiled and edited by **Dr. Arun Pandit** **Dr. Dibakar Bhakta**

Editorial Assistance **Sh. Roshith C. M.**

Hindi Translation **Ms. Sunita Prasad**

Cover Page **Sh. Sujit Choudhury**

Photography **Sh. Sujit Choudhury** **and other staff**

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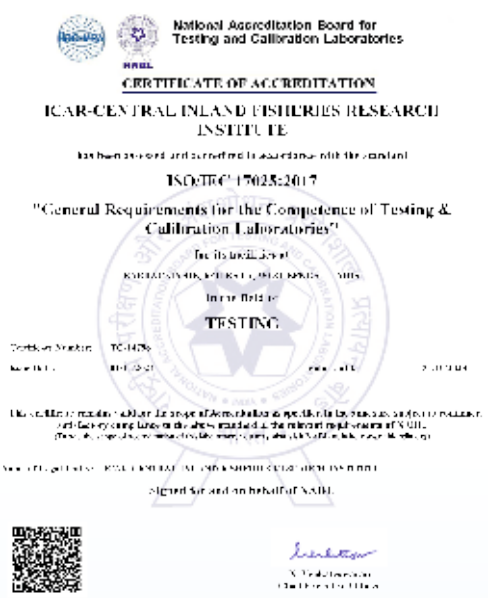
Institute Laboratory Gets NABL Accreditation

The National Accreditation Board for Testing and Calibration Laboratories (NABL) gave accreditation to one of the institute lab in accordance with ISO/IEC 17025: 2017 for chemical testing in the area of "Arsenic (as As) in Surface Water" from 01 November 2024 to 31 October 2028. The institute NABL team, led by the Director, Dr. B. K. Das, is comprised of Dr. S. K. Nag as Quality Manager, Dr. D. J. Sarkar as Technical Manager and Shri Lokenath Chakraborty (Technical Officer), Shri Anjan Talukder (Technical Assistant), and Ms. Sadrupa Bhowmick (Technical Assistant). Dr. S. K. Nag received the certificate in New Delhi on 09 December 2024.


National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ICAR-CENTRAL INLAND FISHERIES RESEARCH INSTITUTE

ISO/IEC 17025:2017

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

TESTING

Dr. S. K. Nag receiving the certificate

GC-MS/MS Facility Established at Institute HQs

Gas Chromatography Tandem Mass Spectrometer (GC-MS/MS) has been installed at the institute HQs as part of the "National Mission for Clean Ganga-Phase III" project under the guidance of Dr. B. K. Das, PI, NMCG, and Director. This high-end analytical instrument has a wide range of applications for identifying trace-level organic pollutants such as pesticides, polycyclic aromatic hydrocarbons (PAHs), etc., in diverse matrices like water, sediment & fish. The system will enable compliance with regulatory requirements for both domestic and export purpose.

Understanding Rivers Beyond Science: A Field School Experience


Inaugural programme

The Institute, in collaboration with the Delft University of Technology, Netherlands, National Institute of Technology (NIT), Calicut, and Namami Gange Project, organized a unique River Field School on "Exploring the Food-Energy-Water Nexus in River Ecosystems" during 21-26 October 2024. The event brought together 15 participants, including students,


Trainees and instructor at Farakka barrage

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NTPC authority discussing role of river water in thermal power geneation

Group discussion

scientists, and stakeholders from various parts of India. The 'School' was enriched by 15 resource persons from leading academic and research institutions such as ICAR-CIFRI, TU Delft, IIT Guwahati, IIT Roorkee, NIT Calicut, NTPC Farakka.

The primary objective of the River Field School was to enhance the understanding of river ecosystems, taking Ganga as a case study with emphasis on the interconnections between food, energy, and water. The River Ganga exemplifies its vital role in sustaining livelihoods, promoting biodiversity, and supporting cultural and spiritual practices. The program emphasized an interdisciplinary approach, integrating hydrology, ecology, socio-economics, and governance frameworks to manage river resources sustainably. Key contexts explored during the field school included stakeholder participation, river health assessment, the impact of hydrological alterations, and the spiritual and cultural significance of rivers.

Prof. Saket Pande (at the left)

Prof. G. Thampi

'Mahila Matsyajibi Sammelan 2.0' at Kultali

Dr. J. K. Jena, DDG (Fisheries Science) inaugurated the '*Mahila Matsyajibi Sammelan 2.0*' at the Kultali, Sundarbans on 18 August 2024, organized by the institute, in collaboration with the NFDB Hyderabad and NAAS Regional Chapter Kolkata. This is a part of the institute initiatives to empower the women fishers in the Indian Sundarbans who play a crucial role in the fisheries sector, often engaging in small-scale aquaculture to sustain their families. The region faces frequent threats from the natural disasters, jeopardizing the livelihood of the fishers. The fisheries provides a vital source of income for their families. The harsh environmental conditions, combined with socio-economic constraints, make it difficult for women fishers to sustain their livelihoods and achieve economic stability. Dr. B. K. Das, Director, ICAR-CIFRI; Dr. Pradip Dey, Director, ICAR-ATARI, Kolkata were also present on the occasion. During the program, fish feed and fish seed were distributed to 500 selected women beneficiaries.

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ICAR-CIFRI Declared 26th December as '*Mahila Matsyajibi Diwas*'

The institute declared 26th December as the '*Mahila Matsyajibi Diwas*' during a programme at Basanti, Sundarbans. The day was marked to acknowledge the contributions of women in fisheries and aquaculture. Since 2013, the institute has encouraged and supported over 5,000 fishers through capacity building training and provision of technological inputs for their backyard ponds and ornamental fish farming to boost the rural economy. The event at Kultali, attended by around 5000 SC women, was organized in collaboration with the NFDB, Hyderabad, NAAS Regional Chapter, Kolkata and Kultali Milon Tirtha Society.

The Institute Stood by the Flood-affected Fish Farmers of Tripura

Discussion with the Director of Fisheries, Govt. of Tripura

The state of Tripura witnessed heavy monsoon rainfall, resulting in severe flooding and landslides in different districts during 19-22 August 2024. This resulted in significant damages to fisheries in the state. The flood reportedly affected around 19875 ha of water bodies, causing harm to approximately 130,832 fish farmers. The institute took humble steps to stood by the flood affected farmers of the state under the NEH programme. A team of scientists, namely Dr. S. C. S. Das and Mr. P. Gogoi along with the fishery officials of the Govt. of Tripura visited many of the flood-affected areas of Gomati, Dhalai, and Sepahijala districts during 15-19 October 2024. The team discussed measures to be taken in a post-flood situation for the development of the fisheries sector in the state with the Director of Fisheries and other fishery officials of the Department of Fisheries, Government of Tripura.

Visit to water bodies by the team at Sepahijala district

Inputs being distributed

The institute also distributed inputs among selected flood-affected fish farmers on 24 December at Udaipur, Gomati district in the august presence of Dr. B. K. Das, Director of the institute and Shri S. Das, TCS, SSG, Director of Fisheries, Govt. of Tripura. Six hundred flood-affected fish farmers of Unakoti, West Tripura, Sipahijala, Gomati, and South Tripura districts of the state were provided with 30 tonnes of CIFRI CageGrow feed, 12 tonnes of lime, and 480,000 fish seeds. The Director advised to adopt scientific fish culture with diversified fish species to combat the natural calamities like floods. The program was also witnessed by Shri Jitendra Majumder, Hon'ble MLA.

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Research Highlights

New report of freshwater planarians (*Polycelis* sp.) from the river Ramganga at Chaukhutiya, Uttarakhand

During a survey of the Ramganga River during August-September 2024 under the NMCG Project, the freshwater planarians (family Planariidae), *Polycelis* sp. (Ehrenberg, 1831), was reported for the first time from the upper zone of the river at Chaukhutiya (Latitude: 29.821469^0 N, Longitude: 79.280205^0 E). The species is associated with streams with higher shelter availability and microhabitat occurrence within woody landscapes. Till now, there has been no record of the *Polycelis* sp. from the Himalayan River system of Uttarakhand. Most of the *Polycelis* sp. are found in Northern Japan, Russia, and China. Planarians are generally zoophagous organisms feeding mainly on small living invertebrates and decaying organisms occurring in their ecosystem. Most of the species that live in streams are particularly sensitive to organic pollution and water quality, as in the case of the genera *Polycelis* Kenk, 1930. Some of the important habitat parameters, *viz*., water temperature, dissolved oxygen, pH, specific conductivity, total dissolved solids, turbidity, alkalinity, salinity, and transparency, were 20.4 °C, 8.0 ppm, 7.75, 93.7 µS/cm, 66.6 ppm, 86.2 NTU, 44.00 ppm, 0.011 ppm, and 30.00 cm, respectively.

Polycelis sp. dorsal view

Ventral view

Lateral view

V. R. Thakur, S. K. Verma, U. Singh, V. Kumar, A. Alam, D. N. Jha, J. Kumar, S. K Mishra, D. Verma, J. S. Rana and B. K. Das

First documentation of *Pethia ambassis* in Jharkhand water bodies

Dorsal view of *Pethia ambassis*

Data Deficient (DD) species often receive limited attention in conservation efforts. *Barbus ambassis* was later thought to be *Puntius ambassis* by Fricke et al. (2024), despite Pethiyagoda (2012) did not specify its placement within the genus *Puntius* during his revision. However, the characteristics of *B. ambassis*-including its small size, serrated dorsal fin ray, incomplete lateral line, and distinct body markings-align with the genus *Pethia*. Consequently, *B. ambassis* can be validly recognized as *Pethia ambassis*. Institute's recent survey recorded *Pethia ambassis* in Panchet Reservoir, Jharkhand, marking the first confirmed occurrence of this species in the state. This discovery carries significant ecological and conservation implications, particularly given its IUCN "Data Deficient" status. The results also make it easier to tell *P. ambassis* from related species by certain characteristics. This facilitates our understanding of the diversity of species within the genus *Pethia.* Such insights are vital for exploring the biogeography and distribution of these species across South Asia.

K. Kumari, A. Sinha, S. Kumari, D. Bhakta and B. K. Das

Efforts towards conservation of the endangered Golden Mahseer in the upper stretch of river Ganga

The group of game fishes belonging to the genus *Tor* of the family Cyprinidae is generally known as mahseer. This natural inhabitant of pristine fresh waters (lentic water), usually equated with indomitable wilderness, acts as an indicator of a healthy freshwater ecosystem. Some Mahseer species, such as the golden mahseer (*Tor putitora*), is facing the threat of extinction due to peculiar genetic characters like delayed maturation, reduced fecundity and prolonged incubation period. Habitat loss, blocking migration routes, and irresponsible fishing exacerbate these problems. Mining nearby spawning areas poses another major hazard. To address these issues, it was attempted to breed mahseer using the dry stripping method at the Koteswar hatchery in the upper and foothill Ganga River of Uttarakhand. A total of 1500 eggs were released by stripping, with a 50% fertilisation rate. The fertilised eggs were kept in clean water for 25-30 min and washed repeatedly. The water-hardened eggs were transferred to hatching trays.

Mahseer species

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Most eggs were hatched, although the survival rate was low. Efforts are underway to standardise the breeding practices of mahseer in the Tehri region to achieve maximum survival for its conservation.

B. K. Das, V. R. Thakur, U. Singh, D. K. Verma, R. A. Bhat, S. K. Mishra, S. K. Verma, V. Kumar, A. Alam, J. Kumar and D. N. Jha

Exotic fish species in River Narmada: A growing concern

The Narmada River holds immense social and religious importance in Indian culture. The river sustains numerous native fish species, playing a vital role in preserving the region's biodiversity. However, a recent study by the institute revealed an increasing presence of exotic fishes in the river, particularly the common carp (*Cyprinus carpio*). In winter, when the abundance of common carp is at its zenith, each fisher nets about 5-7 kg of the carp per day from the downstream area of the Bargi Dam, Jabalpur. There have also been reports of bighead carp (*Hypophthalmichthys nobilis*), Pangasius (*Pangasianodon hypophthalmus*), and tilapia (*Oreochromis niloticus*). Some of these exotics are stocked in the reservoirs, which could potentially reach the river. The fishing villages near the Barna and Tawa reservoirs in the middle stretches of the river have observed a similar catch pattern of exotics. This proliferation coincides with a noticeable decline in populations of the native fish species, such as Mahseer and Rohu, as reported by fishers in the upper stretches. This highlights an urgent need for sustainable management practices to protect the river's rich fish diversity and the livelihoods it supports.

Exotic fishes caught in the River Narmada

M. H. Ramteke, C. Johnson, D. Bhakta, S. P. Kamble, P. Gogoi and S. K. Manna

Sahasradhara, Maheshwar - a unique habitat and breeding ground of fish in the Narmada River necessitates declaration as a "Protected Area"

Sahasradhara of Narmada River at Maheshwar during winter season
(inset: Calbasu, Mahseer and their breeding grounds)

The multi-threaded channels of Sahasradhara in the river Narmada at Maheshwar in Madhya Pradesh formed shallow pools, making them favourable environments for aquatic organisms. The interplay of clean, flowing, oxygenated water, varied habitats, and economically important, plentiful food resources fosters a vibrant ecosystem capable of sustaining numerous fish species. During the survey, researchers recorded a total of 30-35 species of fish juveniles, despite minimal fishing activities. Economically important fishes such as Mahseer, Catla, Rohu, Calbasu, Olive barb, Mrigal, and others present in the river benefit from these habitats. The natural vegetation in the area provides essential shelter and breeding habitats, safeguarding juvenile fish from potential predators. Sahasradhara's significance for fish breeding and conservation warrants its classification as a protected area to safeguard its ecological integrity.

S. P. Kamble, D. Bhakta, C. Johnson, M. H. Ramteke, P. Gogoi, P. Debroy, Sitanshu Kumar, S. K. Manna and B. K. Das

Moi jal: A traditional fishing gear used in lower stretches of the river Brahmaputra

Locally known as 'Moi jal,' this dragged gear net was found to be operated in the shallow riverine waters, primarily in the lower stretches of the river Brahmaputra during the post-monsoon season. It measures approximately 3-4 m in length and 1.5-2.0 m in width.

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The net derives its name from the ladder (Moi), the net's lower margin features bag-like pockets that effectively trap fish. The mesh size at the bottom of the net is about 1.0 cm, which gradually increases to 4.0–5.0 cm near the headrope. Suitable sinkers keeps the net vertical while dragging through water. The major catch in gear comprises of *Gagata* spp., *Mystus* spp., small prawns, etc. The quantity of catch varies from 2.5 kg to 5.0 kg in a day.

S. C. S. Das, A. Kakati, P. Gogoi, B. K. Bhattacharjya, S. K. Majhi and B. K. Das

View of *Moi jal*

A haul of fishes of *Moi jal*

Non-biodegradable plastic materials in the Hooghly-Matlah estuary serve as breeding grounds for migrating marine invertebrates

The non-biodegradability of plastics, often viewed negatively due to their environmental impact, provide long-term substrates for various marine organisms, including invertebrates. Recent surveys in the Hooghly-Matlah estuary have highlighted the role of discarded plastic materials, such as ropes and nets, as stable surfaces for the attachment of eggs and the growth of periphyton. For instance, researchers have found that even thin ropes with diameters as small as 2 mm support colonies of hydroids like *Bougainvillia* sp. and *Eudendrium* sp., as well as a variety of other invertebrates such as anthozoans, brittle stars, polychaetes, small gobioid fishes, micro-molluscs, isopods, and small crabs. This duality of impact, where plastics can both harm and support marine life-underscores the need for a nuanced understanding of plastic pollution's role in marine ecosystems.

R. K. Manna, A. Sen, D. Bhakta, S. M. Nair, S. Samanta and B. K. Das

Rope as substrate for a) sea anemone; b, c, e) rope occupied by hydroids, medium, fine and thick rope; d) polychaeta; f) rope with mollusk and eggs

New size record of Spotted Scat *Scatophagus argus* (Linnaeus, 1766) from Indian waters

The ichthyofaunal surveys conducted in September 2024 recorded a specimen of *Scatophagus argus* with a total length of 32.3 cm and weight of 942 g at the Jatirampore area of the Indian Sundarbans. The previous maximum length recorded for the species from Indian waters was 30 cm for a specimen collected at Mandapam, Tamil Nadu. *S. argus is* a euryhaline species which can be distinguished by a deep, quadrangular-shaped, and compressed body and a small head with a steep dorsal profile. The other diagnostic characters include a dorsal fin with the presence of a deep notch between spinous and soft rays; a caudal fin-round in juveniles, truncated to emarginated in adults; ctenoid scales covering the body, head portion, and extending to the dorsal and anal fin base. The body is silvery greyish, with well-separated black or brown spots. The reproduction of this spotted scat mainly occurs in marine environments, but juveniles and sub-adults inhabit freshwater, estuaries, and mangrove swamps.

Scatophagus argus

S. M. Nair, Roshith C. M, P. Gogoi, A. Saha, S. Sahoo and B. K. Das

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Indigenous fishing traps in the open waters of Sikkim

Indigenous fishing traps of Sikkim

'Buk trap' with indigenous fish storage basket

Numerous rivers, lakes, and streams in the Sikkim state harbour a diverse range of fishes. Cast nets, rods, and lines are the primary fishing gears in the rivers and lakes of Sikkim. Among the indigenous and traditional traps, tubular-shaped 'Buk trap' and the box trap 'Minno trap' to catch snow trout, *Schizothorax richardsonii* (commonly known as *Asala*), *Garra* sp. (commonly known as *Buduna*), and *Pseudecheneis* sp. (commonly known as *Kabrey*) are common. The 'Buks' traps, constructed from split bamboo and tethered with nylon thread, feature a valve near the trap's lateral side. The trap's valve functions as a trapdoor, allowing fish to enter but preventing them from escaping. The trap typically ranges from 0.5–1.0 m in length and 0.3–0.4 m in width. Stainless steel and GI pipe frames make up the 'Minno Trap,' a box trap. The minnow trap features an opening valve that allows fish to enter. The shape and size of a trap can vary based on the area of operation. The fisherman operates these traps in shallow water, positioning them horizontally and allowing the water current to carry them for a day or overnight, with the assistance of stones to provide coverage. As a precautionary measure towards conservation of fish, the Department of Fisheries, Govt. of Sikkim, has enforced the State Fishery Act, 1980, and restricted the use of fishing traps in open water bodies.

N. Sharma, S. C. S. Das, S. K. Majhi, D. Bhakta, A. K. Sahoo and B. K. Das

Paadu system: A traditional and unique fishing practice at Pulicat Lake

The *Paadu* system is a traditional, community-based fishery management system employed by the fishing villages around the Pulicat Lake, India's second-largest brackish water lake. By reducing overfishing and allowing fish populations to regenerate, the system promotes sustainable fishing. Fishing in the *Paadu* system is done with stake nets (*suthu valai*) for shrimp and dragnets (*badi valai*), which are like shore seines, for all finfish species. According to a recent survey, *Fenneropenaeus indicus*, along with *Penaeus monodon*, are the most targeted shrimp species, while finfish species include *Mugil cephalus*, *Crenimugil seheli*, *Leiognathus splendens*, *Pomadasys maculatus*, *Siganus javus*, *Terapon jarbua*, *Strongylura strongylura*, and others. The *Paadu* system emphasises the importance of traditional environmentally friendly knowledge and community-based resource management in promoting sustainability and protecting local populations' livelihoods.

Suthu valai in operation at Pulicat Lake

D. Bhakta, S. K. Das, R. Sarkar, C. Johnson, S. M. Nair, A. K. Sahoo, A. Roy, S. K. Manna and B. K. Das

Transforming abandoned coal pits into fisheries venture in Jharkhand

With the objective of assessing fish biodiversity and the feasibility of scientific fish production in the abandoned coal pits located in the Ramgarh district, three pits have been selected for detailed study *viz*. Ara Khadan No. 8, Ara Khadan No. 13, both in Kuju village, and Sondha Khadan in the Patratu Block. The depth of this pit varies from 10.7 to 40.8 meters. Experimental fishing conducted in these pits has yielded a variety of species, including *Mastacembelus armatus*, *Channa punctata*, *Oreochromis mossambicus*, *Puntius sophore*,

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Pethia conchonius, *P. ticto*, *Rasbora daniconius* (Danio), *Garra* sp., *Salmostoma phulo* as well as crabs, prawns, and other aquatic organisms. Cage culture is going on in all the three pits at a depth of 37.8 meters. At Ara Khadan No. 8, 48 cages have been installed, focusing on the monoculture of *Pangasianodon hypophthalmus*, monosex *Oreochromis niloticus*, and a combination of both species. At Ara Khadan No. 13, 38 cages have been set up for similar aquaculture practices. In Sondha Khadan 37, cages were installed for aquaculture, with the first crop stocked in November 2023. This research highlights the potential of repurposing abandoned coal pits for aquaculture, creating opportunities for sustainable fish production while addressing environmental challenges associated with coal mining in the region. The research analyzed key limnological parameters such as water depth, dissolved oxygen, and nutrient levels *vis a vis* optimal conditions of fish growth.

Ara Khadan No. 8

Fish harvested from Ara Khadan No. 8

S. Kumari, Sajina A. M., Y. Ali, S. Das, R. K. Manna, S. K. Koushlesh, P. Majhi and A. K. Das

Cavernicole fish diversity in East Jaintia Hills, Meghalaya: Threats and conservation needs

A recent survey in two unexplored caves, Krem Tyngheng (25°25'28.8516" N and 92°32'22.0128" E) located near Samasi village and Krem Lymmit (25°25'51.312" N and 92°36'7.4484" E) located near Kseh village of East Jaintia Hills, Meghalaya recorded a total of 11 fish species from 6 families. One of the important findings is the occurrence of *Channa aristonei*, a highly valued ornamental fish from Krem Lymmit cave. Additionally, Krem Tyngheng cave recorded the exotic *Cyprinus carpio*. Both caves recorded not only these fin fishes but also crabs and freshwater prawns. It has been noticed that these cave ecosystems face several challenges, such as pollution, mining, quarrying, and deforestation, leading to acid mine drainage-a runoff from coal mines and open coal storage areas that leaches into the soil and ultimately drains into the caves and impairs these unique habitats, and this needs urgent attention.

Exploration of cave fisheries in Meghalaya

Documenting cave fishes of East Jaintia Hills, Meghalaya

S. Borah, S. K. Majhi, R. Kumar and B. K. Das

Maithon Reservoir study reveals the vital role of lotic zones in fish breeding and sustainable reservoir fisheries

A recent exploratory study in Maithon Reservoir, located on the border of Jharkhand and West Bengal, underscores the importance of the lotic zone in sustaining breeding grounds of commercially important fish species. Indian major and medium carps (*Labeo calbasu*) juveniles, large catfishes (*Sperata seenghala*), murrels (*Channa* spp.), and other native species were found in the lotic zone of this reservoir. Connected to the Barakar River, a main tributary of the Damodar River in eastern India, the lotic zone of Maithon reservoir (23°50'59"N, 86°44'54"E) plays a crucial role in the reproductive cycles of these species, serving as a nursery and breeding ground for

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several freshwater fish. With mild, steady water flow and shallow depths (<2 m in marginal zones and 3 to 8 m in deeper zones), the lotic zone is a great place to breed. Underwater plants provide important shelter and spawning grounds, and the water is moderately clear (transparency 1.5 m), has enough dissolved oxygen (>7.5 ppm), and has a slightly alkaline pH to support plant growth and overall aquatic productivity.

A fish landing site in Magurdih village located in the upstream lotic zone of Maithon reservoir

Sajina A. M., Lianthuamluaia, R. K. Manna, S. Kumari, P. Majhi, Y. Ali and R. Pal

Designed and installed circular cages at Hirakud reservoir

Cage culture in reservoirs has been considered a potential technology to augment fish production without cross-sectoral conflict for water and land. The institute has innovated a circular cage with a diameter of 16 meters and a total volume of 1,000 cubic meters, which has the capacity to produce 25-30 tonnes of fish. Research data has revealed that fish groups such as carps, which were previously unsuccessful in generating profits in rectangular cages, have demonstrated superior growth and profitability in circular cages. Therefore, ICAR-CIFRI has installed four circular cages in the Hirakud reservoir of Sambalpur district of Odisha. This new infrastructure will be a hub for research, development, and technology demonstrations for stakeholders in India.

Circular cages installed at the Hirakud reservoir

R. Baitha, B. K. Das, A. U. Muzaddadi, G. Karnatak, D. K. Meena, R. Das and M. Ramteke

Tapping the cage culture potential of the indigenous catfish *Sperata seenghala*

S. seenghala fingerling stocked in cages at Maithon

Sperata seenghala, commonly called "Giant River catfish" or "Aor" belongs to the family Bagridae. Fingerlings, collected from the Barakar river near Maithon dam, were stocked in the ICAR-CIFRI cage, Maithon on 20 October 2024 (initial body weight 12.45 ± 1.94 g). The fish had an average body weight gain of 4.05 g in 40 days while being fed submerged pellet feed dough that had 42% crude protein and 6% crude fat. Advanced fingerlings of *S. seenghala* (average 14-16 g size) was seen at the Kharapathar landing centre (Lat: 23°40'43"; Long: 86°35'58") of Panchet dam. This species is often caught regularly by local fishermen using gill nets or drag nets at night, which shows the availability of seeds. Cage rearing of this species would be a promising venture in the near future.

R. Das, A. U. Muzaddadi and B. K. Das

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Indian River Shad, *Gudusia chapra*, dominated the catch of Tamranga Beel, Assam

Tamranga (26°18′21″ N; 90°35′32″ E), an open beel (400 ha) connected to Brahmaputra, is in Abhyapuri, Bongaigaon district of Assam. The Assam Fisheries Development Corporation (AFDC) is responsible for managing the beel in accordance with capture fisheries norms. The beel is rich in fish diversity, and more than 90 fish species have been recorded. The Indian River Shad *Gudusia chapra*, dominated the catch and contributed more than 60% of the total catch. *G. chapra* fetches a good market price and significantly contributes to the income, livelihood, and nutrition of beel fishers.

Fishers and fishing boat in Tamranga beel

A haul of Indian River Shad recorded from Tamranga beel

P. Das, S. Borah, B. K. Bhattacharjya S. K. Majhi and B. K. Das

Prevalence of *Ecytonucleospora hepatopenaei* (EHP) disease in shrimp farms (*Litopenaeus vannamei*) of Eastern India

During the fish disease surveillance and health management program in West Bengal, India *Ecytonucleospora hepatopenaei* (EHP), a microsporidian parasite was found to be associated with the shrimp farms which causes growth retardation, soft shells, lethargy, reduced feeding, and empty midguts and poses a significant threat to the aquaculture. Floating white faeces were observed on the surface of the pond water. A nested PCR was used to confirm the causative agent.

V. Kumar and B. K. Das

(A-B) The shrimp farms infected with White Feces Syndrome (WFS) and (C-D) white feces observed in the cultured water

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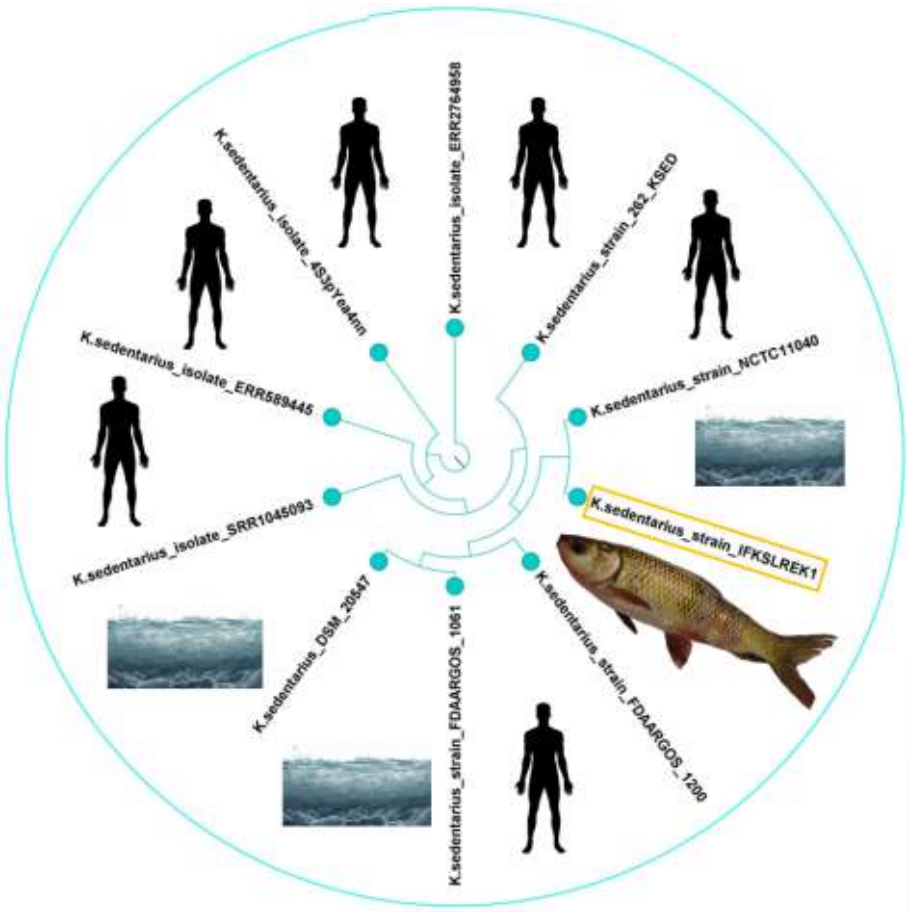

The phylogenetic tree comprises isolated Kytococcus sedentarius and bacterial strains from different sources and countries

First report of novel pathogenic and multidrug-resistant bacteria (*Kytococcus sedentarius*) causing mortality in fish species (*Labeo rohita*)

A new pathogenic *Kytococcus sedentarius* CP169391, resistant to multiple drugs was found in *Labeo rohita* grown in Sardar Bherry in the East Kolkata Wetland in West Bengal, India. Based on *in vitro* and *in vivo* characterisation and an antibiogram assay, the isolate was also confirmed for high virulence and multiple antibiotic resistance (MAR). The bacterium belongs to the Micrococcales order and has a genome consisting of 2.59 Mb in length and 71.7% GC content. *K. sedentarius* contains 2393 coding gene sequences, 6 rRNA, 51 tRNA, 1 tm RNA, and 2173 AMR genes. This study assembled a genome that was 97.6% complete and free of contamination. It consisted of a closed, circular chromosome of 2,598,617 bp with a G+C content of 71.7%. Different antimicrobial resistance genes like: sta, novA, macB, tetA, vanS, adeF, and rphA were identified. The strain was closely related to each other, and they formed a clade with humans and sea-water isolates from Germany, the USA, China, and France.

V. Kumar, B. K. Das and S. Roy

New Externally Funded Project Started

- '*Nutritional profiling of fishes of Sessa river, Dibrugarh, Assam and sensitization on health benefit of fish consumption*' was sponsored by the Brahmaputra Cracker and Polymer Limited (BCPL), Dibrugarh, Assam with a budget of Rs. 25.00 lakhs. The project will be led by Dr. B. K. Das, Director. Assessment of status of indigenous fish species in the river, nutritional profiling of prioritized indigenous fish species occurring in the River, and sensitizing potential health benefits of fish consumption among local communities are the major objectives under this project.
- '*Benchmarking microplastic pollution in the river Ganga and Brahmaputra in relation to native edible fish fauna*' was sponsored by the Department of Biotechnology, Government of India. Dr. B. K. Das, Director is the Principal Investigator. Characterization and quantification of the microplastics in the various trophic niches and benchmarking microplastics interaction with native fish fauna in relation to river health are the major objectives under this Rs. 22 lakh project.
- Maharashtra Pollution Control Board, Mumbai is sponsoring two new research projects: *'Environmental impact assessment of cage culture in inland open waters'* and *'Study on incidence on fishes due to chemical water discharged into Jagbudi and Vasishta River at Ratnagiri which meets Dabhol creek in Maharashtra'*. Dr. B. K. Das, Director is the Principal Investigator of both these projects. Impact Assessment of cage culture and impact assessment of industrial effluent on environmental parameters including biotic communities are the major objectives under these projects. The budgets are Rs. 46.35 lakh and Rs. 32.24 lakh, respectively.

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Technology Management News

Patent/trademark/copyright

Sr. No.	Kind of IPR	Name	Status	Number	Date
1.	Patent	A Portable Split Beam Transducer Assembly on Water Craft for Measuring Exact Transducer Position below the Water	Granted	550182	12 September
2.	Trademark	RESHMEEN	Registered	6232063	11 June
3.	Trademark	CIFRI Alga S+	Registered	6364884	05 October
4.	Copyright	Documentary film 'Video Sarana - A Lucrative species in Pen Based model in Wetland for Auto Recruitment'	Registered	CF-5720/2024	23 July
5.	Copyright	Book on 'Success Stories Wetlands of Bihar Series II'	Registered	L-152230/2024	06 August
6.	Copyright	Book on 'Inland Fisheries Development in Mayurbhanj'	Registered	L-152231/2024	06 August
7.	Copyright	Book on 'Indian Major Carps Conservation Plans and Fish spawn prospecting in River Ganga'	Registered	L-153837/2024	18 September

Technologies commercialized:

Two technologies have been commercialized through Agrinnovate India Ltd. platform and license agreement were granted for 5 years on non-exclusive basis.

- CIFRI PEN HDPE: This technology was commercialized on 04 September 2024 to M/s. M. R. Aquatech, Bhubaneswar, Odisha, with a license fee Rs. 7.5 Lakh
- CIFRI ARGCURE®: This technology was commercialized on 12 November 2024 to M/s. Envozyme Technology Pvt. Ltd., Hyderabad, Telangana, with a license fee Rs. 7.5 Lakh

Transfer of CIFRI PEN HDPE® technology license to M/s. M. R. Aquatech

Transfer of CIFRI ARGCURE® technology license to M/s. Envozyme Technology Pvt. Ltd.

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Memorandum of Understanding (MoU) Signed during July - December 2024

Sr. No.	Date	With	Purpose
1.	31 July	Ramakrishna Sevashrama, Kulana, Manjuri Road, Bhadrak, Odisha	Establishing training facility at Ramakrishna Sevashrama, Kulana, Manjuri Road, Bhadrak, Odisha
2.	04 September	M/s M.R. Aquatech, Bhubaneswar, Odisha through Agrinnovate India Ltd. (AgIn)	Non-exclusive license agreement of "CIFRI PEN HDPE®" technology
3.	20 September	CSB-Central Tasar Research & Training Institute, Ranchi, Jharkhand	Nutraceutical solution for sustainable aquaculture: Extraction and utilization of tasar pupae oil and meal in feed formulation
4.	12 November	M/s Envozyme Technology Pvt. Ltd., Hyderabad, Telangana through Agrinnovate India Ltd. (AgIn)	Non-exclusive license agreement of "CIFRI ARGCURE®" technology
5.	23 December	State Bank of India, Kolkata	CSR Project: Backyard pond aquaculture in Sunderban through model village development for sustainable livelihood development

Staff Corner

New appointments during July-December 2024 at Barrackpore HQs

Name & designation ►	**Mr. Soham Adhikari** Assistant	**Mr. Kanhaiya Kumar** Assistant	**Mr. Naveen Kumar** Assistant	**Ms. Aditi Biswas** Assistant
Date of joining ►	13 September (F.N.)	18 September (F.N.)	20 September (F.N.)	26 September (F.N.)

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New appointments during July-December 2024 at Barrackpore HQs

Name & designation ▶	**Mr. Gaurav Kumar** Assistant	**Mr. Vishal Kumar** Assistant	**Ms. Meghasree Nandy** Assistant
Date of joining ▶	18 October (F.N.)	27 November (A.N.)	02 December (F.N.)

Transfers

Name & Designation	From	To
Intra-institutional transfer		
Mr. Arijit Ghosh, Sr. Technical Assistant	HQs Barrackpore	Guwahati RRC
Mr. Soham Adhikary, Assistant	HQs Barrackpore	Guwahati RRC
Mr. Kanhaiya Kumar, Assistant	HQs Barrackpore	Prayagraj RRC
Mr. Gaurav Kumar, Assistant	HQs Barrackpore	Bengaluru RRC
Mr. Bijoy Kumar Roy, Assistant	Guwahati RRC	HQs Barrackpore
Inter institutional		
Ms. Ambily M. N.	ICAR-CIFRI, Barrackpore	Regional Station – PAGR Centre, ICAR-NBFGR, Kochi

Superannuation

Name & Designation	Last Place of posting	Date of superannuation
Mr. Raban Chandra Mandi, Chief Technical Officer	ICAR-CIFRI, Barrackpore	31 December 2024

Mr. R. C. Mandi (at the left)

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Promotions

Scientist

Name, Designation	With effect from
Promoted to Senior Scientist with RGP ₹ 9000; Revised Pay Level 13A as per 7th CPC	
Dr. Absar Alam, Senior Scientist	14 August 2022
Dr. Deepa Sudheesan, Senior Scientist	01 September 2022
Dr. Sajina A.M, Senior Scientist	01 September 2022
Dr. Soma Das Sarkar, Senior Scientist	01 September 2022
Dr. Pronob Das, Senior Scientist	15 September 2023
Dr. Anil Kumar Yadav, Senior Scientist	09 November 2022
Dr. Ajoy Saha, Senior Scientist	27 April 2023
Dr. Dhruba Jyoti Sarkar, Senior Scientist	23 January 2024
Promoted to Scientist with RGP ₹ 9000; Revised Pay Level 13A as per the 7th CPC	
Shri Roshith C.M, Scientist	15 December 2022
Ms. Chayna Jana, Scientist	15 December 2022
Promoted to Senior Scientist with RGP ₹ 8000; Revised Pay Level 12 as per the 7th CPC	
Dr. Pranaya Kumar Parida, Scientist	19 April 2022
Dr. Dibakar Bhakta, Scientist	01 January 2023

Name, Designation	With effect from
Dr. Kavita Kumari, Scientist	01 January 2023
Dr. Lianthuamluaia, Scientist	01 January 2023
Dr. Suman Kumari, Scientist	04 June 2023
Dr. Suhas Prakash Kamble, Scientist	01 July 2023
Dr. Raju Baitha, Scientist	04 December 2023
Dr. Gunjan Karnatak, Scientist	01 January 2024
Dr. Suvra Roy, Scientist	01 January 2024
Dr. Venkatesh R. Thakur, Scientist	01 January 2024
Dr. Vikash Kumar, Scientist	01 January 2024
Dr. V. L. Ramya, Scientist	01 January 2024
Dr. Piyashi DebRoy, Scientist	21 January 2024
Promoted to Scientist with RGP ₹ 8000; Revised Pay Level 12 as per the 7th CPC	
Ms. Anjana Ekka, Scientist	23 June 2019
Promoted to Scientist with RGP ₹ 7000; Revised Pay Level 11 as per the 7th CPC	
Dr. Sangeetha M. Nair, Scientist	24 August 2022
Dr. Santhana Kumar V., Scientist	31 January 2023

Technical staff

Name, Designation	With effect from
Promoted to Chief Technical Officer; Level 12 as per the 7th CPC	
Shri Sujit Chowdhury, Assistant Chief Technical Officer	22 July 2023
Smt. Abhijita Sengupta, Assistant Chief Technical Officer	27 August 2023
Ms. Sunita Prasad, Assistant Chief Technical Officer	04 October 2023
Promoted to Assistant Chief Technical Officer; Level 11 as per the 7th CPC	
Shri Bipul Chandra Ray, Senior Technical Officer	14 September 2021
Promoted to Senior Technical Officer; Level 10 as per the 7th CPC	
Dr. Vijay Kumar M.E., Technical Officer	01 November 2022
Promoted to Technical Officer; Level 7 as per the 7th CPC	
Shri Rabiul Sk., Senior Technical Assistant	12 June 2023

Name, Designation	With effect from
Promoted to Senior Technical Assistant; Level 6 as per the 7th CPC	
Shri Anjon Kumar Talukder, Technical Assistant	02 November 2023
Mrs. Sumedha Das, Technical Assistant	02 November 2023
Ms. Sadrupa Bhowmick, Technical Assistant	03 November 2023
Mrs. Sangeeta Chakraborty, Technical Assistant	12 November 2023
Shri Kausik Mondal, Technical Assistant	13 November 2023
Dr. Avishek Saha, Technical Assistant	08 January 2024
Shri Mohammed Naim, Technical Assistant	01 February 2024
Shri Rakesh Pal, Technical Assistant	20 February 2024
Mrs. Ambily M.N., Technical Assistant	27 February 2024

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Awards & Recognition

- Dr. B. K. Das, Director was awarded with the *Fellowship* of Academy for Advancement of Agricultural Sciences, Kalyani, West Bengal in the National Conference on 'Advances in Innovative Technologies & Plant Health, Management Strategies in Climate Resilient Agriculture" during 26-27 September 2024 at College of Agriculture, Tripura. He also received the *Reviewer Excellence Award*, 2024 from the Agricultural Research Communication Centre on 17 June 2024.


ACADEMY FOR ADVANCEMENT OF AGRICULTURAL SCIENCES

Presented the Fellowship of the Academy to

Dr. Basanta Kumar Das

for his significant contribution to Fisheries Sciences

National Conference on Advances in Innovative Technologies & Plant Health Management Strategies in Climate Resilient Agriculture

September 26-27, 2024

College of Agriculture, Tripura, Lembucherra, Tripura

- Dr. B. K. Das, Director served as the *Keynote Speaker* in the National Conference on Hill Agro-Ecosystem: Challenges and Opportunities for Achieving Sustainable Development Goals during 29-30 November 2024 at ICAR Research Complex for NEH Region, Nagaland. He also delivered *Dr. V. G. Jhingran Memorial Lecture* in National Seminar on "Advances in Environment Management for Sustainable Fisheries & Livestock Production" at College of Fisheries, Kishanganj on19 November 2024. He was also one of the *Panellists* in the Odisha Research Conclave 2024 in the session on 'R & D in Science and Technology for Higher Education System' at Fakir Mohan University, Odisha during 26 to 28 December 2024.

- Dr. Soma Das Sarkar received the *Best Oral Presentation* award at the 2nd International Conference on Sustainable Fisheries and Aquatic Resource Management: Life Below Water (SFARM-2024) at Science City Kolkata on the topic 'Pernicious Weed *Salvinia molesta* into Microalgal Media: An Economically Viable Solution to the Weed Choking Issue in Drinking Water Treatment Plant' held during 12-14 September 2024.


Dr. Soma Das Sarkar receiving *Best Oral Presentation* award


Certificate
Of Achievement

The Executive Committee of the Society confers it's

SCIENTIST OF THE YEAR AWARD

Dr. Pronob Das

1st International Conference on

Dr. Pronob Das awarded with 'Scientist of the Year' Award

- Dr. Pronob Das was awarded with the *Scientist of the Year* award for his outstanding contribution in the field of fisheries science during the 1st International Conference on 'Emerging Technologies in Agriculture and Allied Sciences" organised by the Society for Agriculture, Allied Sciences and Technology, Odisha; School of Agriculture, SR University, Warangal; and Meadow Agriculture Pvt. Ltd., UP, during 10-11 August 2024.

- Dr. B. K. Bhattacharjya, Dr. Pronob Das, and Dr. S.C.S. Das acted as *Expert Members* of the selection committee for the recruitment of Assistant Professors & equivalent under the College of Fisheries, Assam Agricultural University, Jorhat.

- Dr. B. K. Bhattacharjya, Dr. Pronob Das, and Dr. Simanku Borah acted as *External Examiners* for the comprehensive viva voce of Ph.D. scholars of the Department of Aquatic Environment Management (AEM) and the Department of Aquaculture, College of Fisheries, AAU, Raha on 16 December 2024.

भाकृअनुप ICAR

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Awards & Recognition

- Dr. Pronob Das acted as an *External Examiner* for the evaluation of the Ph.D. thesis of the ICAR-Central Institute of Fisheries Education, Mumbai, on 10 December 2024.
- Dr. Pronob Das was inducted to the editorial board as an *Associate Editor* for the BMC Aquaculture Science and Management journal published by Springer Nature.
- Dr. Simanku Borah awarded *3rd Best Oral Presentation* for his paper "असम, भारत के संरक्षित क्षेत्रों के आर्द्रक्षेत्र में छोटी स्वदेशी मछलियों की विविधता" presented in the Hindi Workshop on 'सतत विकास लक्ष्यों (एसडीजी) की पूर्ति में अन्तस्थलीय मत्सय पालन और जलकृषि की भूमिका' at ICAR-CIFRI.
- Dr. Simanku Borah acted as *Guest Editor* for the special issue on "Ecotourism and Conservation of Biodiversity" of the journal BMC Environmental Science.

Training and Capacity Building

Training of the Bihar fishers/fish farmers: During July-December 2024, the institute organised nine training programs at the Barrackpore Headquarters on "Inland fisheries management" for fishers and fish farmers in Bihar. The details are as follows:

Sl. No.	Date	No. of participants
1.	02-08 July	30 fishers/fish farmers from Muzaffarpur district
2.	10-16 July	30 fishers/fish farmers from Bhagalpur district
3.	04-10 September	30 fishers/fish farmers from Nawada district
4.	11-17 September	30 fishers/fish farmers from East Champaran district
5.	18-24 September	30 fishers/fish farmers from Siwan district
6.	26 September-02 October	30 fishers/fish farmers from Patna district
7.	19-25 November	30 fishers/fish farmers from Madhepura district
8.	03-09 December	30 fishers/fish farmers from Madhubani district
9.	17-23 December	30 fishers/fish farmers from Bhagalpur district

Other trainings for farmers/fishers conducted at the institute HQs during July-December 2024

Sl. No.	Title of the training programme	Date	No. of participants
1.	Inland Fisheries Management (under STC)	02-04 September	34 tribal fishers of Purulia and Sundarbans, WB
2.	Ornamental Fish Farming for Income Generation (under STC)	25-27 September	24 tribal fishers of Shantiniketan, Birbhum, WB
3.	Inland Fisheries Management (DoF, Odisha sponsored)	04-08 November	30 fish farmers from Keonjhar and Mayurbhanj districts of Odisha
4.	Inland Fisheries Management (DoF, Odisha sponsored)	11-15 November	27 fish farmers from Bhadrak and Baleswar districts of Odisha
5.	Inland Fisheries Management (DoF, Odisha sponsored)	26-30 November	30 fish farmers from Jagatsighpur, Kendrapara and Cuttack districts of Odisha

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Trainings for the Students

Sl. No.	Title of the training programme	Date	No. of participants	Venue
1.	Concept Building in Basic Statistics for Biological Data Analysis	31 July-02 August	21 students, researchers and departmental staff	Prayagraj RRC
2.	Exploring the Food-Energy-Water Nexus in River Ecosystems	21-26 October	15 particpnats including students, scientist from different parts of the country	CIFRI HQs
3.	Ecosystem Based Management of Wetland Fisheries	23-29 October	22 students from various Universities and research institutes of West Bengal, Tripura, and Madhya Pradesh	CIFRI HQs
4.	Inland Fisheries Management	03-09 November	11 nos. of M.F.Sc. (FRM) students of CIFE, Mumbai	CIFRI HQs
5.	Application of Scientific Tools for Management of Inland Fisheries	05-07 November	26 (students, officials from KVKs, Universities and State Departments)	Bengaluru RRC (Online mode)
6.	Concept Building in Basic Statistics for Biological Data Analysis	18-20 November	21 students, researchers and departmental staff	Prayagraj RRC
7.	Management of Open Water Fisheries to Doubling the Farmers' Income	26-28 November	20 farmers, students, entrepreneurs and fisheries officers	Prayagraj RRC
8.	Advances in Heavy Metal Analysis (ICPMS)	09-13 December	20 students from different Universities and research institutes across the country	CIFRI HQs
9.	Inland Fish Taxonomy and Biodiversity Assessment	12-18 November	11 nos. of students and research scholars from the WBUAFS (WB) RLCAU (Jhansi), CIFRI (WB), NSOU and NMCG project	CIFRI HQs

Training programme at Prayagraj

Training on inland fish taxonomy and biodiversity

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Trainings for the Officials at the Institute HQs

Sl. No.	Name of the training	Date	Participants
01.	Inland Fisheries Management	25-27 July	10 nos. of DoF officials from Chhattisgarh
02.	Lab Testing and Fish Disease Management	28-30 August	30 nos. DoF officials from Odisha

Exposure visits to the Institute HQs

Sl. No.	Particulars of visitors	Date of visit
1.	42 nos. of fishery officials from DoF, Odisha	18 July
2.	23 nos of B.Sc. Zoology Hons. 2nd semester students of Lady Brabourne College, Kolkata	06 August
3.	40 farmers of Odisha sponsored by DoF, Odisha (JFTA and SFTA)	09 August
4.	45 nos. of 4th year B.F.Sc. students of CoF, Mangalore	19 August
5.	20 nos. of B.Sc. Zoology Hons. 2nd semester students of Serampore College, Hooghly	29 August
6.	27 nos. of B.Sc. Zoology Hons. 2nd semester students of SBSS Mahavidyalaya, Goaltore, Midnapore	30 August
7.	28 nos of trainee-fishers under training programme of ICAR-CRIJAF, Barrackpore, WB	05 September
8.	37 nos. of B.F.Sc. students of Dr. Rajendra Prasad Central Agriculture University, Dholi, Samastipur, Bihar	14 October
9.	46 nos. of B.F.Sc final year students of CoF, Ratnagiri, Maharashtra	30 October
10.	28 nos. of B. Tech students (Electronics and Communication/ Electronics and Instrumentation) of Narula Institute of Technology, WB	07 November
11.	98 students of Class XI, XII of PM Shri Kendriya Vidyalaya, Cossipore, Kolkata	12 November
12.	102 students of Class XI, XII from PM Shri Kendriya Vidyalaya, Army, Barrackpore	13 November
13.	13 nos. of 2nd year M.F.Sc. (FNBP) students of ICAR-CIFE, Mumbai	22 November
14.	31 students of Class IX of the God's Grace School, Barrackpore	05 December
15.	26 nos. of rural youth from Jhargram, West Bengal under Biodiverse Farming Pvt. Ltd (TONA Organization Farm) for formulating agri and allied community business	13 December
16.	10 nos. of fish farmers from Raigarh district of Chhattisgarh	13 December
17.	26 nos. of rural youth from Maldah, West Bengal under Biodiverse Farming Pvt. Ltd (TONA Organization Farm) for formulating agri and allied community business	20 December
18.	40 farmers from ATMA, Samastipur, Bihar	24 December

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Exhibitions / Mela participated during July-December 2024

Sl. No.	Date	Particulars	Place
1.	12 July	2nd Fisheries Summer Meet at Madurai	Ida Scudder Auditorium, Madurai
2.	11-14 September	27th Agriculture Exhibition organized by Central Calcutta Science and Culture Organization for Youth at Science City, Kolkata	Science City, Kolkata
3.	29-30 November	Exhibition at national conference on "Hill Agro-Ecosystem: Challenges and Opportunities for Achieving Sustainable Development Goals" organized by ICAR Research Complex for NEH Region, Nagaland Centre	ICAR Nagaland Centre, Jharnapani, Medziphema, Nagaland
4.	21-25 December	22nd National Agril. Exhibition organized by Shree Srikhetra Soochchana, Puri	Puri, Odisha
5.	22-31 December	Sundarbans Yuba Mela organised by Taldi Bohurupee Sangha	Taldi, South 24 Pgs, Sundarban, WB
6.	26-29 December	3rd A. P. C. Roy Smarak Vigyan Mela o Pradarshani organized by WBUAFS, WB	Belgachia, Kolkata
7.	26-28 December	Exhibition at Odisha Research Conclave 2024 organized by Fakir Mohan University, Balasore, Odisha	Balasore, Odisha

Students from Mangalore


Students from Universities and Research Institutes

2nd Fisheries summer meet at Madurai


Trainee-fishers of Muzaffarpur, Bihar

Training on heavy metal analysis (ICP-MS)

Activities under Scheduled Caste Sub-Plan (SCSP)

Promotion of backyard pond fish culture in Sundarbans

The institute has been striving to improve the livelihoods of fishers of the Sundarbans especially women fishers by providing support for inland fisheries management through various sensitization programs, training and capacity building, technology demonstrations, and distribution of fisheries implements. On 17 August 2024, '*Mahila Matsyajibi Sammelan* 2.0' was organized in which Dr. J. K. Jena, DDG (Fisheries Science), ICAR, New Delhi was the Chief Guest. During the program, fish feed and fish seed were distributed to 500 women beneficiaries from 50 villages in the Gosaba and Basanti Blocks of Sundarbans, empowering them to develop sustainable livelihoods through backyard pond fish culture.

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Input distribution at Kultali

Demonstration of drones at Kultali

The Institute declared 26 December as "*Jatiya Mahila Matsyajibi Diwas*" at Kultali, Basanti, Sundarbans. The celebration witnessed the participation of about 5000 SC women. Five hundred women received fish feed and seed for backyard pond fish farming during the event.

Awareness program and input distribution at Manchanbele and Gayathri reservoirs

The Bengaluru centre arranged an awareness camp on reservoir fisheries management on 21 September 2024 at Manchanbele reservoir in Ramanagara district, Karnataka. Fisheries inputs were also distributed on the occasion to 50 fishers. The centre also distributed crates to 20 fishers on 30 September 2024. Forty thousand fingerlings of IMC and endemic carps, such as carnatic carp and fringe-lipped carp were also stocked in the reservoir. Fifty thousand *Labeo rohita* fingerlings were stocked at Gayathri reservoir.

Stocking at Manchanbele reservoir

Ornamental fish culture kit distribution in Odisha

The institute distributed 150 ornamental fish culture units, comprising FRP tanks, heaters, aerators, and other accessories at different places of Odisha, including Kendrapara, Jagatsingpur, Ganjam, and Angul districts. Demonstration of ornamental fish culture was carried out in collaboration with the Directorate of Extension Education, Odisha University of Agriculture and Technology, Bhubaneswar, through its various Krishi Vigyan Kendras (KVKs) at Kendrapara, Jagatsingpur, Ganjam I, Ganjam II, and Angul.

Pen culture demonstration in 8 wetlands of West Bengal

Fisheries inputs, including 825 kg of fish seed and 13 tons of fish feed were distributed to the SC fishers of eight wetlands in North 24 Parganas and Nadia districts of West Bengal. The inputs were distributed to demonstrate pen culture technology for seed raising in the wetlands under the culture-based fisheries (CBF).

Pen culture demonstration

Activities under Scheduled Tribe Component (STC)

Ornamental tank distribution at Birbhum, WB

The institute conducted a sensitization and input distribution program at Visva-Bharati, Santiniketan, Birbhum, West Bengal on 07

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October 2024, in collaboration with Visva Bharati and NAAS Regional Chapter Kolkata. Ornamental tanks, along with ornamental kits, were distributed to the tribal fish farmers of the district. The program was graced by Dr. B. K. Das and Prof. Debasis Bhattacharya. Before giving inputs, the farmers were initially trained at the CIFRI Barrackpore campus on ornamental fish culture.

Popularization of CIFRI-ARGCURE among fish farmers of Assam

To popularise the CIFRI-ARGCURE product among the fish farmers of Assam, the Guwahati Regional Centre in collaboration with the Department of Fisheries (DoF), Govt. of Assam, organised a "Demonstration-cum-input distribution programme" at Boko, Kamrup (R) District, Assam, on 04 October 2024 for the benefit of 50 tribal fish farmers of the locality. An interactive session, among the scientists, officials and fishers were also organized. On the occasion, a total of 200 no. (100 ml/no.) of CIFRI ARGCURE was distributed among 50 tribal fish farmers (including 22 fisherwomen).

Popularization of CIFRI-ARGCURE at Kamrup

Popularization of CIFRI-ARGCURE at Darrang

Similar programme was organized by the Guwahati Regional Centre of the institute on 11 December 2024 at Darrang district. Dr. S. K. Majhi, Head, ICAR-CIFRI RC, Guwahati; and Mr. Bipul Khataniar, DFDO, Darrang district, and 100 fish farmers, officials, scientists, and media personnel attended the programme.

Mass awareness and handing over of FRP boat and OBM engine

Bangalore Regional Centre of the Institute conducted a mass awareness program on "Significance of Sustainable Fishing" at Kabini Reservoir in Mysore District, Karnataka, on 22 October 2024. The Girijanara Meenugarara Sahakara Sangha at Kabini received one FRP boat and an OBM engine. The program was attended by 50 fishers of Mysore district.

Empowerment of women fishers of Sundarbans

The Institute, in collaboration with the Kultali Milan Tirtha Society, organised an input distribution and awareness programme at Kultali, Sundarbans. The initiative was aimed at promoting sustainable livelihoods for marginalised Scheduled Caste (SC) women. In the event, 100 women beneficiaries were each provided with 6 kg of fingerlings and 100 kg of fish feed to support sustainable fish farming in the region. Dr. B. K. Das, Director announced that a "modern village," with enhanced livelihood opportunities, particularly focussing on women's empowerment will soon be established in the Sundarbans.

Input distribution at Kultali, Sundarbans

Awareness Programme at Jaygopalpur

Input distribution cum awareness programme among the rural tribals of Sundarbans

An 'Input Distribution cum Awareness Programme' was organised for the tribal community of Sundarbans on 06 September 2024 at Joygopalpur, Basanti, in collaboration with Joygopalpur Gram Vikas Kendra under the 'Scheduled Tribe Component. In addition to 130 local tribal community members, government officials, NGO representatives, and subject matter experts also attended.

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River Ranching Programme

The institute continued its endeavour to conserve native fish stock as well as to enhance fish production in the rivers, focussing on Ganga. During July-December 2024 twelve river ranching programs were organized by the Institute under the 'National Ranching Mission-3.0.' A total of 21.71 lakh fingerlings of Indian Major Carps (IMC), 0.06 lakh of Mahseer, 0.50 lakh of Chitala (*Chitala chitala*) and 1.52 lakh of Sarana were ranched at different locations of the Ganga. In West Bengal, the ranching programmes were conducted on 05 July, 24 September, 24 October, 29 and 30 December at Farakka, Barrackpore, Balagarh, Tribeni, Kalna and Nabadwip. Sultanganj, Patna and Munger are the places where ranching was done in Bihar, whereas, Rajmahal, Ballia and Haridwar hosted the sites for Jharkhand, UP and Uttarakhand, respectively. Every ranching programme was accompanied by awareness programmes where the PI of the NMCG project of Dr. B. K. Das discussed and informed the fishers regarding the significance of responsible fishing to maintain the riverine fisheries and fishers' livelihood.

Similarly the Prayagraj centre organized a series of ranching cum mass awareness programs under the National Ranching Programme 3.0 in the rivers Ganga and Yamuna. Around 10,000 advanced fingerlings of Indian Major Carp were ranched into the Yamuna River on 07 May 2024, while 10,000, 15,000 and 25,000 fingerlings were ranched into the Ganga River at Kadadham, Sirsa, and Mirzapur, respectively on 09, 11 and 15 May 2024.

Ranching at Haridwar

Ranching at Ballia

The 'Ganga Utsav' was marked by ranching at Haridwar on 04 November 2024 in which 6,000 Mahseer fingerlings were released into the River Ganga in the august presence of Shri C. R. Patil, Hon'ble Union Minister of Jal Shakti and Shri Rajbhushan Chaudhary, Hon'ble Union Minister of State, Ministry of Jalshakti. The event was also attended by Srimati Rekha Arya, Hon'ble Minister, Govt. of Uttarakhand, Shri Trivendra Singh Rawat, former CM of Uttarakhand and the sitting Member of Parliament (LS), Haridwar, Shri Rajeev Kumar Mital, IAS, DG NMCG, Dr. Sandeep Behra, Senior Consultant (Biodiversity), NMCG and Dr. B. K. Das, Director ICAR-CIFRI.

The Patna ranching programme was witnessed by Dr. N. Vijaya Lakshmi, IAS, Principal Secretary, Fisheries, Government of Bihar and Shri Taranjot Singh, IAS, Director, Animal and Fisheries Resources Deptt., Govt. of Bihar. At Munger, the event was graced by the District Magistrate, Shri Avneesh Kumar, IAS, Dr. Abhilaksh Likhi, Secretary, Department of Fisheries, Government of India and Dr. Bijay Kumar Behera, Chief Executive, National Fisheries Development Board were part of the ranching programme at Barrackpore whereas, Dr. Sandeep Behera, NMCG was present at Balagarh. Besides the CIFRI NMCG Project members, all events were attended by the local DoF officials.

Ranching at Rajmahal

Ranching at Patna

Ranching at Barrackpore

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Distinguished Visitors to the Institute Hqs

Date	Visitor(s)
10 July	• Shri Biplab Roy Chowdhury, Hon'ble Minister of State (Independent Charge), Department of Fisheries, Government of West Bengal • Shri Gabriel D. Wangsu, Hon'ble Minister, Agriculture, Horticulture, Animal Husbandry & Veterinary & Fisheries, Food & Civil Supply, Legal Metrology & Consumer Affairs, Govt. of Arunachal Pradesh • Shri Moloy C. Chakraborty, Jute Commissioner, Govt. of India • Shri Hage Tari, Secretary (Fisheries), Govt. of Arunachal Pradesh
10 August	• Prof. Swapan Dutta, Former DDG (Crop Sc.), ICAR and Former Vice Chancellor, Visva Bharati University
16 August	• Dr. Joykrushna Jena, DDG (Fisheries Science), ICAR, New Delhi
19 August	• Dr. S. Ayyappan, Former Secretary DARE & DG, ICAR
13 September	• Shri Santosh Das, Director and Addl. Secretary, Fisheries, Govt. of Tripura
24 September	• Dr. Abhilaksh Likhi, Secretary, Department. of Fisheries, Government of India • Dr. Bijay Kumar Behera, Chief Executive, NFDB
03 October	• Ms. Priyanka Basu Ingty (IAS), Secretary, Labour & Employment, Printing & Stationery, Fisheries, and Youth Services & Sports, Government of Himachal Pradesh
04 October	• Major General Balakrishnan, Commandant CMDC (EC) & Comd. Dental Advisor, Alipore, Kolkata
21 October	• Dr. Saket Pande, Professor, TU-Delft, The Netherlands • Dr. Subashisa Dutta, Professor, IIT, Guwahati
	• Dr. Jörn Schmidt, Director for Sustainable Aquatic Food Systems, WorldFish, Malaysia • Dr. Arun Padiyar, WorldFish Lead, India • Dr. Sourabh Kumar Dubey, WorldFish, India
23 October	• Dr. Santosh G Thampi, Asso. Prof NIT, Calicut


Shri Biplab Roy Chowdhury


Ms. Priyanka Basu Ingty (at the left)

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Distinguished Visitors

Date	Place	Visitor(s)
24 October	Guwahati Regional Centre	• Dr. Joykrushna Jena, DDG (Fisheries Science), ICAR, New Delhi
25 October	Barrackpore HQs	• Dr. Sandeep Behera, Sr. Biodiversity Consultant, NMCG, New Delhi
04 November	Barrackpore HQs	• Shri Chandrasekhar Meena, Deputy Director, DGGI, SNU (East), Kolkata
18 November	Environmental & Aquatic Animal Health Monitoring Laboratory, ICAR-CIFRI, Hirakud reservoir	• Shri Dharmendra Pradhan, Hon'ble Minister of Education, Govt. of India
04 December	Barrackpore HQs	• Dr. Nabarun Bhattacharyya, Professor and Director of the School of Information and Technology at MAKAUT, West Bengal • Dr. Atul Kumar Singh, Former Director of ICAR-DCFR • Dr. Sudhir Raizada, Former ADG, ICAR, New Delhi

Dr. S. Ayyappan (2nd from left) at ICAR-CIFRI, Barrackpore

Dr. J. K. Jena (3rd from right) at Guwahati Regional Centre

Shri Chandrasekhar Meena (left) at ICAR-CIFRI, Barrackpore

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Meetings/Seminars/Conferences/Workshops Organized

Interactive meeting on development of cave fisheries of Meghalaya

The institute's Guwahati centre, represented by Dr. S. K. Majhi, Head, and Dr. Simanku Borah, Scientist, attended the meeting, with officials of the Department of Fisheries, Meghalaya on 04 July 2024. Ms. A. L. Mawlong, MCS, Director of Fisheries, Meghalaya, informed that cave fisheries of the state are a potential area for scientific research. The researchers have explored fish diversity in two caves of the state, Krem Um Ladaw (East Khasi Hills) and Krem Chympe (East Jaintia Hills).

Field day on fish safety and wetland management at Manika Maun, Bihar

Field day at Manika Maun

The institute organised a field day on 24 July 2024 at Manika Maun, Muzaffarpur (Bihar), focussing on fish safety, wetland management, and the impact of climate change on small indigenous fish species. Experts from ICAR-CIFRI, College of Fisheries (Dholi), and state fisheries offices addressed farmers' concerns about low yields and fish health. Dr. Archana Sinha. Mr. Pranab Gogoi and Dr. Kavita Kumari were present from the institute.

IMC meeting

IMC meeting

The 53rd meeting of the Institute Management Committee of the institute was held in hybrid mode at Barrackpore on 21 August 2024. The external members namely, Dr. H. N. Dwivedi, Prof. Shyam Sundar Dana, Shri Madhu Sudan Das, Shri Anupam Bera, Dr. Gayatri Tripathi, Dr. Pravata Kumar Pradhan, Dr. Subhendu Kumar Otta, Dr. Devika Pillai and Shri Ravindra Kumar joined the meeting on-line. The Director, all the HoDs, HoRCs, CAO and SFAO also attended the meeting. A total of 13 agenda was discussed in the meeting.

Workshop on "Better health management practices in cage culture and aquaculture farms"

The institute, in collaboration with the DoF, MP, conducted a two-day workshop on cage culture and aquaculture disease diagnosis and better management practices under the All India Network Project on Fish Health for capacity building of fish farmers and fishery officials of the state. The CCPI of the project, Dr. S. K. Manna, conducted the workshop from 5-6 Sept 2024 at the Department of Fisheries, Bhopal, MP. Dr. A. K. Bera and Mr. N. Das delivered lectures on various topics of fish disease diagnosis, preventive measures, intensive aquaculture, aquaculture drug use planning, etc. to 31 cage culture farmers and 30 aquaculture farmers, besides 30 state fishery officers.

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Interaction among the participants at Gangtok

Interactive meeting on 'Exploring fish diversity and catch estimation of major rivers in Sikkim'

Guwahati centre of the institute and the Department of Fisheries (DoF), Govt. of Sikkim, jointly organised this interactive meeting on 23 September 2024 at the Department of Fisheries, Gangtok, Sikkim. Mrs. Roshni Rai, Secretary of Fisheries, Govt. of Sikkim and Shri K. K. Shrestha, Director, DoF, Sikkim were among the dignitaries attended the meeting. Dr. Niti Sharma and Dr. S. C. S. Das discussed through presentations about the major rivers of Sikkim and methodology for collecting data to estimate fish population structures.

Dr. Abhilaksh Likhi, Union Secretary, Dept. of Fisheries, GoI reviewed the activities on drone application for fisheries management

The institute is attempting to design and develop an efficient drone-based solution to transport up to 100 kg of live fish from fishers to the fish market. In this connection, Dr. Abhilaksh Likhi, Union Secretary, Department. of Fisheries, visited ICAR-CIFRI, Barrackpore, on 24 September 2024, for reviewing the institute's research and development work in drone application for fisheries management. Dr. B. K. Das, Director, elaborately presented the institute achievements and progress made in drone-based technologies.

Field day at Gayathri reservoir

The Bangalore Regional Centre conducted a field day to create awareness among fishermen on sustainable fisheries management on 30 September 2024. On this occasion, 50,000 *Labeo rohita* fingerlings were stocked in Gayathri reservoir, Chitradurga district, Karnataka, and crates were distributed among 20 fisher beneficiaries. Dr. Preetha Panikkar, Principal Scientist & Head, Regional Centre, elaborated various issues of reservoir fisheries management. Mr. Shrinivas S. T., Assistant Director of Fisheries, Karnataka, spoke on the fisheries development schemes of the state.

Sensitization program on application of drone technology for fish disease management and feed application

Drone technology has the potential for precise and periodical monitoring of water body health status, spraying disinfectants, and insecticides to control pathogens, estimating macrophyte infestation, and applying feed in the large fish farm with less time, inputs, and human resources. The Institute organised a demonstration cum awareness program to showcase the potential of drone technology in fisheries at Charcharia wetland, East Kolkata Wetland, on 03 October 2024 under the ICAR Agri-Drone and NSPAAD Phase II project.

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ICAR-World Fish collaborative project meeting

ICAR-World Fish collaborative project meeting (ICAR-Window 3) held at the Institute HQs, Barrackpore, during 22–24 October 2024. Dr. Jörn Schmidt, Director for Sustainable Aquatic Food Systems, WorldFish, Malaysia; Dr. Arun Padiyar, WorldFish Lead, India; Dr. Sourabh Kumar Dubey, WorldFish; and a multidisciplinary team of scientists & scholars from ICAR-CIFRI attended the meeting. The purpose of the meeting was to review the work done under the ongoing ICAR-W3 World Fish collaborative project and also to discuss the potential for future collaborations and explore scientific and management interventions specific to inland fisheries.

ICAR-World Fish collaborative project meeting

Mid-term IRC meeting

Mid term IRC meeting

The Mid-term Institute Research Committee (IRC) Meeting for the 2024-25 period was held on 28 October 2024 at the Institute headquarters. All scientists from the headquarters attended in-person, while those from regional centers and stations joined online. Project and Sub-project Principal Investigators (PIs) presented the interim progress and achievements. Dr. B. K. Das, Director and Chairman of the IRC reviewed the interim progress of ongoing projects, and the Action Taken Reports. He also emphasized on the importance of IPRs such as products, patents, and technology development to enhance the institute's standing among the ICAR Institutes. All the 21 institute projects and 10 sub-projects were discussed in details and recommendations were given.

Workshop on "Futuristic approach for inland fisheries informatics: Role of tools and techniques hybridization"

The institute organised this one-day workshop on 04 December 2024 highlighting the development of data systems based on environmental and biological parameters, taxonomic information, catch assessment methodologies, and generic data science pipelines. The event was attended by 60 participants from Agricultural and Fisheries Universities, technology institutes, C-DAC, and ICAR institutes across the country. The inaugural session was graced by Dr. Nabarun Bhattacharyya, Professor and Director of the School of Information and Technology at MAKAUT, West Bengal; Dr. Atul Kumar Singh, Former Director of ICAR-DCFR; and Dr. Sudhir Raizada, Former ADG, ICAR.

Popularization of CIFRI HDPE Pen and CIFRI CAGEGROW feed among beel fishers of Assam

Distribution of CIFRI HDPE Pen and CIFRI CAGEGROW feed

With the objective of popularizing ICAR-CIFRI-developed high-density polyethylene (HDPE) pen culture technology and CIFRI CAGEGROW feed, an awareness-cum-input distribution program was organized under the NEH programme among the beel fishers in Tamranga Beel, Bongaigaon, Assam, on 05 December 2024. Ten tonnes of CIFRI CAGEGROW feed and twelve CIFRI HDPE Pens (each 1000 m^2) were given to twenty beel fishermen as part of the program which was organized by Drs.S. Borah, P. Das, B. K. Bhattacharjya and S. K. Majhi.

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Inception workshop of the project on East Kolkata Wetland

The inception workshop of the project entitled "Multiple Value Assessment: Fisheries & Agriculture, Culture of Indigenous Fish Species & Management of Invasive Fish Species" was held on 6 December 2024, at Salt Lake, Kolkata, in the gracious presence of Dr. Rajesh Kumar, IPS, Principal Secretary, Dept. of Environment; Dr. Kalyan Rudra, Chairman, WBPCB; Shri Atanu Kumar Roy, Sr. SPL Secretary, DoF; Shri Smrutiranjan Mohanty, IAS, Director, DoF; Ms. Sarmistha Das, IAS, MD, BENFISH; Dr. B. K. Das, Director, ICAR-CIFRI and officials from local ICAR institutes.

Inception workshop of East Kolkata wetland project

Workshop on "Drone technology and its applications"

This one-day training cum workshop was organized on 11 December 2024 at the institute HQs, Barrackpore. This was the first-ever initiative focussing on the potentials of drone technology in inland fisheries management. These unmanned aerial vehicles (UAVs) offer a range of applications, from monitoring and precision spraying to data analysis, empowering Indian farmers with valuable insights for efficient and sustainable farming.

Awareness-cum-field days for fishers of the Narmada river

The institute conducted a series of awareness-cum-field day programs for the fishers of the Narmada River focussing on sustainable fisheries management, improving the livelihoods of fishers, and increasing awareness of conservation practices. The awareness programs were organised at several places along the river course of Gujarat and Madhya Pradesh, including Bharuch (27.11.2024), Narmada (28.11.2024), Mandla (28.11.2024), Alirajpur (29.11.2024), Jabalpur (29.11.2024), and Khargone (03.12.2024) districts. The events saw active participation of more than 250 local fishers, stakeholders, and representatives from fisheries cooperatives. Scientists from ICAR-CIFRI provided important insights into sustainable fishing techniques, resource conservation, and efficient and safe post-harvest practices.

Awareness-cum-field day at Alirajpur, MP

Awareness-cum-field day at Jabalpur, MP

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Observance/Celebration

National fish farmers' day

Fish farmers being awarded at Barrackpore

Celebration at Guwahati Centre

The institute celebrated "National Fish Farmers Day" in Barrackpore in the august presence of Shri Biplab Roy Chowdhury, Minister of the Department of Fisheries, Government of West Bengal, and Shri Gabriel D. Wangsu, Honourable Minister, Agriculture, Horticulture, Animal Husbandry & Veterinary & Fisheries, Food & Civil Supply, Legal Metrology & Consumer Affairs, Govt. of Arunachal Pradesh, in collaboration with the Kolkata NAAS Chapter on 10 July 2024. Arround 150 fishers and fish farmers, including 17 women, entrepreneurs, NGOs, and researchers participated in the event. The institute awarded eleven progressive farmers from West Bengal, Bihar, Jharkhand, Odisha, Manipur, Kerala, Gujarat, and Uttar Pradesh.The day was also celebrated in all the Regional Centres of the Institute.

78th Independence day

The Institute, along with all the centres, celebrated 78th Independence Day on 15 August 2024 with great fervour. As part of Aazaadi Ka Amrit Kaal, the Har Ghar Tiranga campaign was launched from 9-15 August. Dr. Basanta Kumar Das, Director, hoisted the national tricolour in the grand event at the institute. Officers, staff members, research scholars, and contractual staff, along with their family members and locals of Barrackpore, have attended the flag-hoisting ceremony. The Director, in his address, greeted and congratulated all the members of the ICAR-CIFRI family and emphasise on our duty to attain Viksit Bharat by 2047.

DDG (Fisheries Sciences) laid the foundation stone of new laboratory building of the institute

Dr. J. K. Jena, DDG, Fisheries Science, ICAR visited the institute Headquarters, Barrackpore, on 16 Aug 2024 and addressed the staff. He laid down the foundation stone of a new a laboratory building adjacent to the administrative building. He also inaugurated the curtain of 'Selfie Point' in front of 'Block A' of the main building and also inaugurated the new GC-MS/MS facility.

Foundation stone laying for laboratory building

Inauguration of GCMS/MS laboratory

World Rivers' Day

The institute celebrated the World Rivers' Day on 24 September 2024 through ranching of 50,000 wild-

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Ranching at Barrackpore ghat on the occasion of World River Day

bred carp fingerlings in River Ganga (Barrackpore Ghat) for improving the riverine ecosystem and fishers' livelihoods. Dr. Abhilaksh Likhi, Secretary, Department of Fisheries, Government of India, and Dr. Bijay Kumar Behera, Chief Executive, NFDB, were present on the occasion. Besides the Institute staff, about 100 fishermen and women participated in the event.

National dolphin day

The Institute celebrated the 'National Dolphin Day' on 5 October 2024 at the Daspara Ghat and Sheoraphuli Ghat, on the bank of the river Hooghly under the Namami Gange Program. This special day highlighted the importance of protecting the 'Gangetic River dolphin' (*Platanista gangetica*) and their ecosystems, which are in jeopardy because of pollution, dam construction, and climate change. More than 100 personnel, including active fishermen, social activists, and students residing on the banks of the river, participated in the programme.

Ranching at Haridwar

Hon'ble Union Minister of Jalshakti ranched endangered Mahaseer at Haridwar

On the occasion of Ganga Utsav, Sri C. R. Patil, Honourable Union Minister, Ministry of Jalshakti, ranched endangered Mahaseer at Haridwar. He released arround 6,000 mahseer fingerlings in the river Ganga on 04 November 2024, at Chandi Ghat to conserve and restore them. The event was organised under the National Mission of Clean Ganga project with the aim to restore and increase the population of Mahseer in the Himalayan stretch of the Ganga River.

Vigilance awareness week

The institute observed Vigilance Awareness Week during 28 October-3 November 2024 with the theme “Culture of Integrity for Nation's Prosperity.” The observance included administering a pledge, displaying posters, banners, and placards, formation of human chain, walkathon to the local ferry ghat. The event attracted considerable interest from locals and commuters. Drawing and extempore speech competition were also organized which included participation from staff, students, young professionals, and others.

The Director administering the oath

Shri Chandrasekhar Meena, Deputy Director, DGGI, SNU (East), Kolkata speaking at the valedictory session

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Hon'ble Union Minister of Education inaugurated "Environmental and aquatic animal health monitoring laboratory at Sambalpur

Shri Dharmendra Pradhan, Hon'ble Minister of Education, Govt. of India, inaugurated the "Environmental & Aquatic Animal Health Monitoring Laboratory," developed by the Institute at Sambalpur, Odisha. The laboratory was established to assess the environmental impact of cage culture operation, aquatic animal health surveillance in the cage culture, and to monitor the water and sediment quality parameters in the Hirakud reservoir.

Antimicrobial resistance awareness week

On World Antimicrobial resistance awareness week 2024, an awareness program was organised under "All India Network Project on Antimicrobial Resistance (AINP-AMR) in fisheries and livestock," focusing the theme on "Educate. Advocate. Act now" during 18-24 November 2024. The inaugural event was witnessed by Dr. Gopal Krishna, former director of ICAR-CIFE, Mumbai, and Dr. B. K. Das, director of ICAR-CIFRI, along with trainees and fishermen from Madhepura district, Bihar. On 21 November 2024, the event was conducted with the gracious presence of esteemed dignitaries, Dr. Purnendu Biswas, former Vice Chancellor of WBUFAS; Dr. B. K. Das, Director of ICAR-CIFRI, Barrackpore; Mr. Ganesh Sengupta, Chairman of IGF, Denmark; and Mr. Niels Bo Karlsson from Denmark at Basanti block, Sundarbans, in collaboration with Joygopalpur Gram Vikash Kendra (JGVK).

World fisheries day

World Fisheries Day was celebrated on 21 November to raise the global awareness about the critical contributions of fisheries to food security, nutrition, and livelihoods. The theme for World Fisheries Day 2024 was "Let the waters teem with living creatures," which highlights the indispensable role of small-scale fisheries in promoting sustainable aquatic ecosystems and safeguarding biodiversity.

His Excellency Governor of Nagaland inaugurated ICAR-CIFRI exhibition stall in HAES-COSDG 2024

The institute participated in the exhibition on the National Conference on Hill Agro-Ecosystem: Challenges and Opportunities for Achieving Sustainable Development Goals (HAES-COSDG, 2024) organised by the Indian Association of Hill Farming & ICAR Research Complex for NEH Region, Nagaland Centre, Medziphema, Nagaland during 29-30 November 2024. His Excellency, Hon'ble Governor of Nagaland, Shri La. Ganesan, visited and inaugurated the CIFRI Exhibition Stall. Dr. B. K. Das, Director briefed the activities of ICAR-CIFRI in the eight North-East Indian states. Dr. B. K. Das co-chaired a session and delivered a keynote lecture in the conference.

Fish angling event held in hornbill festival of Nagaland

The annual Hornbill Festival in Nagaland is celebrated in the first week of December and is often referred to as the "Festival of Festivals" because it brings together a vibrant collection of cultural displays, music, dance, art, and traditional rituals from the diverse tribes of Nagaland. As part of this festival, the Department of Fisheries and Aquatic Resources (DoF&AR) of the Government of Nagaland organized an angling event. Dr. B. K. Das, Director of the institute inaugurated this angling on 01 December 2024. On 30 November 2024, the Institute, represented by Dr.

Dr. B. K. Das inaugurating fish angling event

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Interactive meeting with the DoF officials

B. K. Das, Director; Dr. R. Baitha, Senior Scientist; and Dr. S. Borah, Scientist participated in the interactive meeting with the DoF officials. They discussed several issues including sustainable development of reservoir fisheries, mapping of resources, cataloguing of fish diversity, conservation of fisheries and aquatic resources, skill development of fish farmers, and fish seed shortage.

Awareness cum feed distribution programme for the fish farmers of Sikkim

The Guwahati Regional Centre of the Institute, in collaboration with the Department of Fisheries (DoF), Govt. of Sikkim, organised an awareness cum feed distribution programme for popularisation of CIFRI CAGEGROW feed among fish farmers of Sikkim in Pakyong and Soreng districts, Sikkim, on 05 December, 2024. Ten tonnes of feed were distributed among 50 beneficiaries in the 5 (Gangtok, Soreng, Geyzing, Namchi, and Mangan) districts of Sikkim. Ms. Roshni Rai, Secretary, DoF, Shri K. K. Shrestha, Director, DoF; Dr. S. K. Majhi, Head, ICAR-CIFRI, Guwahati were present on the occasion. In Rangpo Fish Farm, Pakyong District, the feed was distributed to 25 fish farmers of 3 districts, namely Gangtok, Namchi, and Mangan. Similarly, 25 fish farmers from Gyalshing and Soreng districts received feed from the Rothak carp fish farm. Drs. N. Sharma and S. C. S. Das actively participated in the programme.

CIFRI Cagegrow distribution at Rangpo Sikkim

CIFRI Cagegrow distribution at Rothak, Sikkim

Other Major Events

Plantation on the occasion of *Ek ped maake naam*

Lecture by the Director at the Army Public School on 'Digital aquaculture for enhancing productivity' on 23.12.24

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Activities under Swachh Bharat Mission

Swachh Bharat Oath

Swacchta selfie point

Vermicompost demonstration

Swachhta outreach at Sindrani beel, West Bengal

Swachhta awareness among the fishers in Kulia beel, West Bengal

Swacchta activities at Vadodara centre

Swacchta activities at Kariyala village, Karnataka

Swacchta activities at Averahalli village, Karnataka

भाकृअनुप
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अनुसंधान उपलब्धियां

रामगंगा नदी (चौखुटिया, उत्तराखंड) से पहली बार मीठेपानी के प्लैनरियन (*पॉलिसेलिस* प्रजाति) की उपस्थिति

अगस्त–सितंबर 2024 में नमामि गंगे (NMCG) परियोजना के तहत रामगंगा नदी के सर्वेक्षण में प्रथम बार मीठापानी प्रजाति, प्लैनरियन (*पॉलिसेलिस* प्रजाति) को नदी के ऊपरी क्षेत्र, चौखुटिया से दर्ज किया गया। प्लेनेरीडा परिवार की यह प्रजाति उन नदी धाराओं में पाई जाती है, जिनमें मत्स्य आवास अधिक उपलब्ध होता है और उनके चारों ओर गहन वन पाए जाते हैं। अबतक विभिन्न शोधकर्ताओं द्वारा नदियों, झीलों और नदीधाराओं की मैक्रो–बेन्थिक जैव विविधता के अध्ययन उत्तराखंड की हिमालयी नदी प्रणाली में *पॉलिसेलिस* प्रजाति की कोई रिपोर्ट दर्ज की गई थी। यह प्रजाति मुख्य रूपसे उत्तरी जापान, रूस और चीन में पाई जाती है। प्लैनरियन आम तौर पर मांसाहारी होते हैं और छोटे अकशेरुकी जीवों एवं अपने आसपास के सड हुए जैविक पदार्थों को खाते हैं। नदी की अधिकांश यह प्रजातियाँ जैविक प्रदूषण और जलगुणवत्ता के प्रति अत्यधिक संवेदनशील होती हैं।

वी. आर. ठाकुर, ए. के. वर्मा, यू. सिंह, वी. कुमार, ए. आलम, डी. एन. झा, जे. कुमार, एस. के. मिश्रा, डी. वर्मा, जे. एस. राणा और बि. के. दास

झारखंड के जल निकायों में पहली बार *पेठिया एमबासीस* की उपस्थिति

आमतौर पर संरक्षण प्रयासों में आंकड़ों की कमी एक प्रमुख मुद्दा है। Fricke et al. (2024) के अनुसार, *बारबस एमबासिस* (*Barbus ambassis*) को कालांतर में *पुनटियस एमबासिस* के नाम से जाना गया, पर इसका *पुनटियस जीनस* के अंतर्गत वर्गीकरण करने का कोई स्पष्ट प्रमाण नहीं मिलता है। हालांकि, *बारबस एमबासिस* की कुछ विशेषताएँ जैसे इसका छोटा आकार, कटीले पृष्ठीय पंख, अधूरी पार्श्वरेखा आदि इसे *पेठिया जीनस* से संबंधित करते हैं। इसलिए, इसे वैज्ञानिक रूप से *पेठिया एमबासीस* के रूप में जाना जाता है। हाल के सर्वेक्षण में, झारखंड के पंचेत जलाशय में *पेठिया एमबासीस* दर्ज की गई, जो राज्य में इस प्रजाति की पहली पुष्ट सूचना है। इस खोज का पारिस्थितिक और संरक्षण की दृष्टि से महत्व है, क्योंकि विशेष तौर पर यह प्रजाति IUCN की "डेटा डिफिशिएंट" सूची में शामिल है। इसके अलावा, इस अध्ययन से *पी. एमबासिस* और संबंधित प्रजातियों के बीच कुछ विशेषताओं के आधार पर स्पष्ट अंतर करना आसान हो गया है जो हमें *पेठिया जीनस* की प्रजाति यों की विविधता को बेहतर ढंग से समझने में मदद करता है।

कविता कुमारी, अर्चना सिन्हा, सुमन कुमारी, दिबाकर भक्त और बि. के. दास

गंगा नदी के ऊपरी प्रवाह क्षेत्र में संकट ग्रस्त गोल्डन महसीर के संरक्षण के प्रयास

महासीर मछलियों का एक विशेष समूह (साईप्रीनिडा परिवार के टोर जीनस से संबंधित) को आमतौर पर आखेटगेम फिश के रूप में जाना जाता है। इन मीठा जल प्रजातियों को स्वस्थ जलीय पारिस्थितिकी तंत्र के संकेतक के रूप में देखा जाता है। हालांकि, कुछ प्रजातियाँ, जैसे गोल्डन महासीर (ज्वत चनजपजवत) विलुप्ति के कगार पर देखे गए हैं। इनकी परिपक्वता आयु अधिक होने, कम प्रजनन दर और अंडों के लंबे समय तक निषेचित होने की प्रक्रिया के कारण इनका अस्तित्व और भी अधिक चुनौती पूर्ण होता जा रहा है। इसके अलावा, आवासीय क्षति, प्रवासन मार्ग में रुकावट और मछली के अत्यधिक दोहन जैसी समस्याएँ भी इस संकट को बढ़ा रही हैं। प्रजनन स्थलों के पास खनन कार्य एक और प्रमुख खतरा है। इन चुनौतियों से निपटने के लिए, उत्तराखंड के कोटेश्वर मत्स्य प्रजनन केंद्र (ज्ञवजमूंत भ्जबीमतल) ने गंगा नदी के ऊपरी और निचले क्षेत्रों में महसीर के कृत्रिम प्रजनन का प्रयास किया है। इसके अंतर्गत ड्राई स्ट्रिपिंग विधि द्वारा 1500 अंडे एकत्र किए गए, जिनमें से 50ः निषेचित हुए। निषेचित अंडों को 25–30 मिनट तक स्वच्छ पानी में रख कर बार–बार धोया गया। पानी में कठोर हो चुके अंडों को हैचिंग ट्रे (भ्जबीपदह ज्तंल) में स्थानांतरित किया गया, जिससे अधिकांश अंडों का निषेचन सफल रहा। हालांकि, अंडों की अतिजीविता दर अपेक्षाकृत कम देखी गई। वर्तमान में, टिहरी क्षेत्र में महासीर के संरक्षण के लिए अधिकतम अतिजीविता दर प्राप्त करने हेतु प्रजनन विधियों को मानकीकृत करने के प्रयास जारी हैं।

बि. के.दास, वी. आर. ठाकुर, यू. सिंह, डी. के. वर्मा, आर. ए. भट, एस. के. मिश्रा, एस. के. वर्मा, वी. कुमार, ए. आलम, जे. कुमार और डी. एन. झा

नर्मदा नदी में विदेशी मछलियों की बढ़ती उपस्थितिः एक चिंताजनक विषय

भारतीय संस्कृति में नर्मदा नदी का एक सामाजिक और धार्मिक महत्व है। यह नदी अनेक देशी मछली प्रजातियों का संरक्षण के साथ इस क्षेत्र की जैवविविधता को बनाए रखने में महत्वपूर्ण भूमिका निभाती है। हालांकि, एक हालिया अध्ययन में नदी में विदेशी मछलियों की बढ़ती संख्या दर्ज की गई है, विशेष रूप से कॉमन कार्प (*Cyprinus carpio*) की। शीत ऋतु में, जब कॉमन कार्प की संख्या अपने चरम पर होती है, तब जबलपुर में बर्गी बांध के डाउनस्ट्रीम में एक मछुआरा प्रतिदिन लगभग 5–7 किलोग्राम कॉमन कार्प पकड़ता है। इसके अलावा, बिगहेड कार्प (*Hypophthalmichthys nobillis*), पंगेसियस (*Pangasianodon hypophthalmus*) और तिलापिया (*Oreochromis niloticus*) की भी मौजूदगी दर्ज की गई है। इनमें से कुछ विदेशी प्रजातियों को जलाशयों में कृत्रिम रूप से छोड़ा जाता हैं, जो अंततः नदी में पहुँच सकती हैं। नर्मदा नदी के मध्य प्रवाह क्षेत्र में स्थित बरना और तवा जलाशयों के पास के मछली पकड़ने वाले गाँवों में भी इसी प्रकार की विदेशी प्रजातियों की पकड़ में बढ़त का पैटर्न देखा गया है। इस बढ़ती संख्या के साथ–साथ, देशी मछलियों, जैसे महासीर और रोहू की जनसंख्या में गिरावट देखी गई है। अतः नदी की समृद्ध मछली जैवविविधता और इससे जुड़े आजीविका संसाधनों को संरक्षित करने के लिए तत्काल और टिकाऊ प्रबंधन रणनीतियों की आवश्यकता है।

एम. एच. रामटेके, सी. जॉनसन, डी. भक्ता, एस. पी. कांबले, पी. गोगोई और एस. के. मन्ना

सहस्रधारा, महेश्वर – नर्मदा नदी में एक अनूठा संभावित आवास और मछलियों का प्रजनन स्थल को "संरक्षित क्षेत्र" घोषित करने की आवश्यकता

मध्यप्रदेश के महेश्वर में नर्मदा नदी के सहस्रधारा क्षेत्र में उथले जलाशयों का निर्माण किया गया है, जो जलीय जीवों के लिए अनुकूल पर्यावरण प्रदान करते हैं। स्वच्छ, प्रवाहित और ऑक्सीजन युक्त जल; विविध आवास; और समृद्ध खाद्य संसाधनों के संयोजन ने एक सक्रिय पारिस्थितिकी तंत्र को जन्म दिया है, जो कई मछली प्रजातियों के अस्तित्व का समर्थन करता है। सर्वेक्षण के दौरान, शोधकर्ताओं ने 30–35 प्रकार की किशोर मछलियों को दर्ज किए,

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जबकि इस क्षेत्र में मत्स्यन (मछली पकड़ने) की गतिविधियाँ बहुत कम थीं। यहाँ पाई जाने वाली आर्थिक रूप से महत्वपूर्ण मछलियाँ, जैसे महासीर, कतला, रोहू, कालबासु, ऑलिव बार्ब, मृगल हैं। इसके अलावा, इस क्षेत्र में मौजूद प्राकृतिक वनस्पति मछलियों के लिए आवश्यक वास और प्रजनन स्थल प्रदान करती है, जो उन्हें संभावित शिकारी जीवों से सुरक्षित रखती है। सहस्रधारा की मछली प्रजनन और संरक्षण में महत्वपूर्ण भूमिका को ध्यान में रखते हुए, इसके पारिस्थितिकीय संतुलन की रक्षा के लिए इसे "संरक्षित क्षेत्र" के रूप में घोषित किया जाना आवश्यक है।

एस. पी. कांबले, डी. भक्त, सी. जॉनसन, एम. एच. रामटेके, पी. गोगोई, पी. देबरॉय, सितांशु कुमार, एस. के. मन्ना और बि. के. दास

'मोईजाल': ब्रह्मपुत्र नदी के निचले प्रवाह क्षेत्र में पारंपरिक मत्स्य पकड़ने का उपकरण

ब्रह्मपुत्र नदी के निचले प्रवाह क्षेत्र में, विशेष रूप से मानसून के बाद एक पारंपरिक मछली पकड़ने वाले जाल को 'मोईजाल' के नाम से जाना जाता है। यह लगभग 3–4 मीटर लंबा और 1.5–2.0 मीटर चौड़ा होता है। इस जाल का नाम 'मोई' (सीढ़ी के समान संरचना) से प्रेरित है और इसकी निचली सीमा थैलेनुमा पॉकेट से युक्त होती है, जो प्रभावी रूप से मछलियों को फँसाने में मदद करती हैं। जाल के तल की जाली का आकार 1.0 से.मी. होता है, जो धीरे–धीरे 4.0–5.0 से.मी. तक बढ़ सकता है। यह जाल फ्लोटर्स और सिंकर्स के सही उपयोग से जाल पानी में खड़ा रहता है, जबकि फुट रोप से जुड़े सिंकर्स इसे नदी तल के साथ आसानी से खिसकने में मदद करते हैं। इस जाल से आमतौर पर गागाटा (*Gagata* spp.), *मिस्टस* (*Mystus* spp.) और छोटे झींगों को पकड़ा जाता हैं। इसकी मछली पकड़ क्षमता प्रतिदिन 2.5 से 5.0 किग्रा है।

एस. सी. एस. दास, ए. काकाती, पी. गोगोई, बी. के. भट्टाचार्य, एस. के. माझी और बि. के. दास

हुगली–मातला मुहाना में गैर–बायोडिग्रेडेबल प्लास्टिक सामग्री: प्रवासी समुद्री अकशेरुकी जीवों के प्रजनन स्थल

आमतौर पर प्लास्टिक के गैर–बायोडिग्रेडेबल प्रकृति के कारण इसे पर्यावरण के लिए हानिकारक माना जाता है पर यह कई समुद्री जीवों के लिए दीर्घकालिक उपयुक्त सतह प्रदान कर सकता है। हाल के सर्वेक्षणों से यह पता चला है कि हुगली–मातला ज्वारनदमुख में फेंकी गई प्लास्टिक सामग्री, जैसे रस्सियाँ और जाल, विभिन्न समुद्री अकशेरुकी जीवों के लिए अंडे देने और पेरिफाइटन के विकास के लिए स्थिर सतहों का कार्य कर रही हैं। उदाहरण के लिए, सिर्फ 2 मिमी मोटी रस्सियाँ भी *Bougainvillia sp.*, *Eudendrium sp.* जैसी हाइड्रोइड प्रजातियों के साथ–साथ एंथोज़ोआ, ब्रिटलस्टार, पॉलीकीट, छोटे गोबियोइड मछली, माइक्रो–मोलस्क, आइसोपोड और छोटे केकड़ों का वासस्थल हो सकता है। इससे यह स्पष्ट होता है कि प्लास्टिक प्रदूषण का प्रभाव दोहरा है, जैसे यह समुद्री जीवन के लिए हानिकारक होता है पर और कुछ जलीय जीवों के लिए वासस्थल प्रदान कर सकता है। अतः यह समुद्री पारिस्थितिकी तंत्र में प्लास्टिक प्रदूषण की भूमिका को अधिक गहराई से समझने की आवश्यकता है।

आर. के. मन्ना, ए. सेन, डी. भक्त, एस. एम. नायर, एस. सामंत और बि. के. दास

भारतीय जल में स्पॉटेड स्कैट (*Scatophagus argus*) की नई आकार रिकॉर्डिंग

सितंबर 2024 में भारतीय सुंदरबन क्षेत्र के जतीरामपुर में किए गए मछली सर्वेक्षण के दौरान, शोधकर्ताओं ने 32.3 से.मी. लंबी और 942 ग्राम वजनी *Scatophagus argus* दर्ज की, जो भारतीय जल से पहले दर्ज की गई अधिकतम लंबाई (30 से.मी., मांडपम, तमिलनाडु) से अधिक है। यह प्रजाति एक अति लवणीय जलीय (यूरीहलाइन) प्रजाति है, जिसकी पहचान इसके गहरे, चतुर्भुज के आकार के संकुचित शरीर और खड़ीडॉर्सल प्रोफाइल वाले छोटे सिर से की जा सकती है। यह मछली मुख्य रूप से समुद्री पर्यावरण में प्रजनन करती है, लेकिन इसके किशोर और अपरिपक्व मछलियाँ मीठेपानी, मुहाना और मैंग्रोव दलदलों में पाए जाते हैं।

संगीता एम. नायर, रोशिथ सी. एम., प्रणब गोगोई, अजय साहा, एस. साहू और बि. के. दास

सिक्किम की खुली जलधाराओं में स्वदेशी मछली पकड़ने के पारंपरिक फंदे

सिक्किम राज्य में स्थित नदी, झीलें और नाले विभिन्न प्रकार की मछली प्रजातियों के लिए आश्रय प्रदान करते हैं। राज्य की प्रमुख नदियाँ तीस्ता और रंगीत हैं। यहाँ पारंपरिक मत्स्य पकड़ने के उपकरणों में "बुक ट्रैप" (Buk Trap) और "मिनो ट्रैप" (Minno Trap) मुख्य रूप से उपयोग किए जाते हैं। "बुक ट्रैप" बाँस की पतली छड़ियों से बनाया जाता है, जिसमें एक वॉल्व (फाटक) होता है जो मछलियों को अंदर जाने देता है, लेकिन बाहर आने से रोकता है।"मिननो ट्रैप"–स्टेनलेस स्टील और जीआई पाइप से बना होता है और इसका उपयोग मुख्य रूप से *साइजोथोरेक्स रिचर्डसोनी* (*Schizothorax richardsonii*), गारा (*Garra* sp.), और *स्यूडोचेनेसीस* (*Pseudecheneis* sp.) को पकड़ने में किया जाता है। इन जालों को छोटे जलनिकायों में जल प्रवाह की दिशा में रखा जाता है और पत्थरों की मदद से ढका जाता है। हालांकि, सिक्किम सरकार ने राज्य मत्स्य अधिनियम, 1980 के तहत खुली जलधाराओं में इन जालों के उपयोग पर प्रतिबंध लगाया है ताकि मछलियों का संरक्षण सुनिश्चित किया जा सके।

नीति शर्मा, एस. सी. एस. दास, एस. के. माझी, डी. भक्त, ए. के. साहू और बि. के. दास

पुलिकट झील मत्स्य संपदा का आकलन

पुलिकट झील की मत्स्य संपदा की स्थिति की समीक्षा के लिए, वैज्ञानिकों की एक टीम ने 02–08 अगस्त 2024 के दौरान तमिलनाडु और आंध्रप्रदेश के विभिन्न स्थानों पर सैंपलिंग अध्ययन में पाया गया कि अत्यधिक मत्स्यन, अतिक्रमण, गाद जमाव, और मैंग्रोव पारिस्थितिकी तंत्र में गिरावट के कारण पुलिकट झील का पारिस्थितिकी तंत्र और जैवविविधता खतरे में है। सरकारी एजेंसियाँ और पर्यावरण संगठन प्रदूषण के स्तर की निगरानी और झील के पारिस्थितिकी तंत्र को पुनर्स्थापित करने के लिए संरक्षण कार्यक्रमों का संचालन कर रहे हैं। संसाधनों के संरक्षण और समुदाय की आजीविका के बीच संतुलन बनाना इसकी दीर्घकालिक स्थिरता के लिए अत्यंत आवश्यक है।

दिबाकर भक्त, एस.के. दास, रिकेश सरकार, सी. जॉनसन, एस. एम. नायर, ए. के. साहू, अपर्णा रॉय, एस. के. मन्ना और बि. के. दास

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पाडु प्रणाली : पुलिकट झील में पारंपरिक और अनूठी मछली पकड़ने की पद्धति

पाडु प्रणाली पुलिकट झील के आसपास के मछली पकड़ने वाले गांवों द्वारा अपनाई गई एक पारंपरिक, सामुदायिक मत्स्य प्रबंधन प्रणाली है। यह प्रणाली स्थानीय मछुआरा समुदायों द्वारा मछली पकड़ने की गतिविधियों को घूर्णन प्रणाली (रोटेशन सिस्टम) के माध्यम से प्रबंधित करती है, जिससे मछली के संसाधनों का सतत संरक्षण सुनिश्चित किया जाता है। इससे अत्यधिक मछली पकड़ने (ओवरफिशिंग) को रोका जाता है और मछली की आबादी के पुनरुद्धार किया जा सकता है। पाडु प्रणाली के तहत झील के स्थान और लक्षित मछली की प्रजातियों के आधार पर मछली पकड़ ने की विधि अलग – अलग होती है। इस प्रणाली में झींगा पकड़ने के लिए स्टेक नेट (सुथुवलाई) और सभी प्रकार की फिनफिश प्रजातियों के लिए ड्रैग नेट (बाड़ी वलाई) का उपयोग किया जाता है। हाल के एक सर्वेक्षण के अनुसार, *फेनरोपिनियस इंडिकस* और *पिनियस मोनोडोन* प्रमुख झींगा प्रजातियां हैं जिनका अधिकतम शिकार किया जाता है। फिनफिश प्रजातियों में *मुगिल सेफालस, क्रेनिमुगिल सेहेली, लियोग्नाथस स्प्लेंडेंस, पोमाडा सिसमैकुलेटस, सिगानस जावस, टेरापोन जारबुआ, स्ट्रॉन्गिलुरा स्ट्रॉन्गिलुरा* आदि शामिल हैं। यह प्रणाली पारंपरिक, पर्यावरण – अनुकूल ज्ञान और सामुदायिक संसाधन प्रबंधन के महत्व को उजागर करती है, जो सतत मछली पालन को बढ़ावा देने और स्थानीय समुदायों की आजीविका की रक्षा करने में सहायक है।

दिबाकर भक्त, एस. के. दास, रिकेश सरकार, सी. जॉनसन, एस. एम. नायर, ए. के. साहू, अपर्णा रॉय, एस. के. मन्ना और बि. के. दास

झारखंड के परित्यक्त खुले कोयला खदानों की खोज

संस्थान के वैज्ञानिकों की एक टीम ने झारखंड के रामगढ़ में परित्यक्त कोयला खदानों में मत्स्य पालन पर एक अध्ययन किया। यह क्षेत्र कोयला संसाधनों से समृद्ध है, जो इसकी अर्थव्यवस्था के लिए अत्यंत महत्वपूर्ण हैं। अध्ययन में पता चला कि रामगढ़ की 56 परित्यक्त कोयला खदानों को मत्स्य विभाग को विकास के लिए सौंप दिया गया है। इन खदानों को पालन आधारित मात्स्यिकी (CBF) और मंडू तथा पतरातू ब्लॉक में केज कल्चर के माध्यम से मत्स्य पालन को विकसित किया जा रहा है। इन खदानों की गहराई 15 से 50 मीटर के बीच है और इनमें मुख्य रूप से तिलापिया और पंगास मछलियों का पालन किया जा रहा है।

सुमन कुमारी, सजीना ए. एम., वाई. अली, सुब्रत दास, आर. के. मन्ना, सतीश कौशलेश, प्रीतिज्योति माझी और ए. के. दास

पूर्व जयंतिया हिल्स, मेघालय में गुफा मछलियों की विविधता: खतरे और संरक्षण की आवश्यकता

हाल ही में पूर्व जयंतिया हिल्स, मेघालय की दो अनदेखी गुफाओं – क्रीमताइन्हेंग (समासी गांव) और क्रीमलिमिट (क्षेह गांव) में किए गए सर्वेक्षण में कुल 11 मछली प्रजातियाँ दर्ज की गईं। इस अध्ययन की एक महत्वपूर्ण खोज क्रीमलिमिट गुफा में *चन्ना एरिस्टोनेई* (*Channa aristonei*) की उपस्थिति थी, जो एक अत्यधिक मूल्यवान अलंकारी मछली है। इसके अतिरिक्त, क्रीमताइन्हेंग गुफा में विदेशी *साइप्रिनस कार्पियो* पाई गई। इन दोनों गुफाओं में केवल मछलियाँ ही नहीं, बल्कि केकड़े और मीठे पानी के झींगे भी पाए गए। यह देखा गया है कि इन गुफाओं के पारिस्थितिकी तंत्र कई चुनौतियों का सामना कर रहे हैं, जैसे प्रदूषण, खनन, पत्थर खनन और वनों की कटाई। कोयला खदानों और खुले कोयला भंडारण क्षेत्रों से निकलने वाला अम्लीय खदान अपवाह मिट्टी में रिस कर अंतत : इन गुफाओं में प्रवेश करता है, जिससे इन आवासों को गंभीर क्षति पहुँच रही है जिस पर तत्काल ध्यान देने की आवश्यकता है।

सिमांकु बोरा, एस. के. माझी, राकेश कुमार और बि.के.दास

मैथन जलाशय अध्ययन ने मछली प्रजनन और स्थायी जलाशय मत्स्यपालन में प्रवाही क्षेत्र की महत्वपूर्ण भूमिका

झारखंड (धनबाद जिला) और पश्चिम बंगाल (पश्चिम बर्दमान जिला) की सीमा पर स्थित मैथन जलाशय में हाल ही में किए गए एक अध्ययन ने प्रवाही (लोटिक) क्षेत्र की महत्वपूर्ण भूमिका को उजागर किया है, जो व्यावसायिक रूप से महत्वपूर्ण मछली प्रजातियों के प्रजनन स्थलों को बनाए रखने में सहायक है। इस जलाशय के प्रवाही क्षेत्र में भारतीय प्रमुख एवं मध्यम आकार की कार्प मछलियाँ (*लेबिओ कलबासु*), बड़े कैटफिश (स्पेराटा सिंघाला), मरेल (चन्ना प्रजाति) और अन्य देशी मछलियाँ पाई गईं। पूर्वी भारत की दामोदर नदी की एक मुख्य सहायक नदी बराकर नदी से जुड़ा हुआ मैथन जलाशय इन मछलियों के प्रजनन चक्रों में महत्वपूर्ण भूमिका निभाता है और कई मीठापानी मछलियों के लिए नर्सरी एवं प्रजनन स्थल के रूप में कार्य करता है। इस क्षेत्र में हल्का और स्थिर जलप्रवाह होता है, साथ ही गहराई भी अनुकूल होती है (किनारों पर <2 मीटर और गहरे क्षेत्रों में 3 से 8 मीटर तक)। जलमग्न पौधे आश्रय एवं अंडे देने के लिए उपयुक्त स्थल प्रदान करते हैं। जल मध्यम रूप से स्वच्छ (1.5 मीटर पारदर्शिता), पर्याप्त घुलित ऑक्सीजन (>7.5 पीपीएम) और हल्का क्षारीय pH होने के कारण जलीय उत्पादकता को बनाए रखने में सहायक होता है।

साजिना ए. एम., लियंथुआमलुआइया, आर. के. मन्ना, सुमन कुमारी, प्रीतिज्योति माझी, वाई. अली और राकेश पाल

हीराकुंद जलाशय में परिपत्र पिंजरों (सर्कुलर केज) का डिजाइन और स्थापना

जलाशयों में पिंजरा पालन को मछली उत्पादन बढ़ाने की एक संभावित तकनीक के रूप में देखा गया है, जो जल एवं भूमि उपयोग से जुड़े अन्य क्षेत्रों के साथ किसी प्रकार का टकराव उत्पन्न नहीं करता है। इस दिशा में संस्थान ने 16 मीटर व्यास और कुल 1,000 घन मीटर आयतन वाला एक नवीन परिपत्र पिंजरा (सर्कुलर केज) विकसित किया है, जिसकी क्षमता 25–30 टन मछली उत्पादन की है। अनुसंधान आंकड़ों से यह पता चला है कि कार्प मछली समूह, जो पहले आयताकार पिंजरों में लाभकारी उत्पादन नहीं दे पा रहे थे, वे परिपत्र पिंजरों में बेहतर वृद्धि एवं लाभप्रदता दिखा रहे हैं। इसी कारण, सिफ़री ने ओडिशा के संबलपुर जिले के हीराकुंद जलाशय में चार परिपत्र पिंजरों की स्थापना की है। यह नया ढांचा भारत में मत्स्य पालन क्षेत्र के लिए अनुसंधान, विकास और तकनीकी प्रदर्शन का एक प्रमुख केंद्र बन सकता है।

राजू बैठा, बि.के. दास, ए. यू. मुजद्ददी, गुंजन कर्नाटक, डी. के. मीना, राहुल दास और मितेश रामटेके

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स्वदेशी कैटफ़िश, स्पेराटा सिंघाला (*Sperata seenghala*) का पिंजरे में पालन की संभावनाएँ

बैग्रीडे परिवार का *स्पेराटा सिंघाला* को आमतौर पर "जायंट रिवर कैटफ़िश" या "एओर" कहा जाता है। इसकी अंगुलिकाओं को 20 अक्टूबर 2024 को आईसीएआर–सीआईएफआरआई केज, मैथन में बाराकर नदी से एकत्र कर स्टॉक किया गया था। इन अंगुलिकाओं का प्रारंभिक शरीर भार 12.45 ± 1.94 ग्राम था। लगभग 40 दिनों में इनका औसत भार 4.05 ग्राम बढ़ गया, जब इन्हें 42% क्रूड प्रोटीन और 6% क्रूड फैट युक्त पैलेट फ़ीड खिलाया गया। इस प्रजाति के उन्नत अंगुलिकाओं (औसतन 14–16 ग्राम) को पानचेत डेम के खरापथार लैंडिंग सेंटर में पकड़ा गया। स्थानीय मछुआरे रात में गिलनेट या ड्रैग नेट का उपयोग कर इस मछली को नियमित रूप से पकड़ते हैं, जो इसके बीजों की उपलब्धता को दर्शाता है। भविष्य में इस प्रजाति का पिंजरे में पालन एक लाभदायक पहल साबित हो सकता है।

राहुल दास, ए. यू. मुझद्दी और बि. के. दास

असम के तमरंगा बील के मत्स्य उत्पादन में भारतीय रिवर शैड, *गुडूसीआ चापरा* का प्रभुत्व

असम के अभयापुरी, बोंगाईगांव जिले में स्थित ब्रह्मपुत्र नदी से जुड़ा तमरंगा 400 हेक्टेयर क्षेत्र में फेला का एक खुला बील है। इस बील का प्रबंधन असम मत्स्य विकास निगम (AFDC) द्वारा किया जाता है। यह बील मत्स्य विविधता से भरपूर है, जहाँ 90 से अधिक मछली प्रजातियाँ दर्ज की गई हैं। भारतीय रिवर शैड, गुडूसीआ चापरा का इस जलाशय में मत्स्य उत्पादन में प्रमुख रूप से योगदान (कुल मत्स्य उत्पादन का 60% से अधिक) है। यह मछली बाजार में अच्छी कीमत पर बेची जाती है जिसका बील मछुआरों की आय, जीवन यापन और पोषण में महत्वपूर्ण भूमिका है।

प्रणब दास, सिमान्कु बोरा, बी. के. भट्टाचार्य, एस. के. माझी और बि. के. दास

पूर्वी भारत के झींगा पालन केंद्रों में *Ecytonucleospora hepatopenaei* (EHP) रोग का प्रकोप

पश्चिम बंगाल, भारत में मछली रोग निगरानी और स्वास्थ्य प्रबंधन कार्यक्रम के दौरान, झींगा पालन केंद्रों में *Ecytonucleospora hepatopenaei* (EHP) नामक माइक्रोस्पोरिडियन परजीवी पाया गया, जो झींगों में वृद्धि को मंद करता है। इसके संक्रमण से मछलियों में सुस्ती, कम भोजन ग्रहण, खाली मध्यांत्र (midgut) जैसी समस्याएँ उत्पन्न होती हैं जो मत्स्य पालन के लिए गंभीर खतरा है। तालाब के पानी की सतह पर सफेद तैरते मल के कण देखे गए। इस रोग के निदान के लिए नेस्टेड पीसीआर (Nested PCR) तकनीक का उपयोग कर पुष्टि की गई।

विकाश कुमार और बि. के.दास

मछली प्रजाति (*लेबीओ रोहिता*) में मृत्यु कारक नए रोग जनक और बहु–औषधि प्रतिरोधी बैक्टीरिया (*Kytococcus sedentarius*) की पहली रिपोर्ट

पूर्वी कोलकाता वेटलैंड, पश्चिम बंगाल, भारत के सरदार भेरी में पाली गई *लेबीओ रोहिता* मछलियों में एक नया रोगजनक *Kytococcus sedentarius* CP169391 पाया गया, जो कई दवाओं के प्रति प्रतिरोधी था। इन–विट्रो और इन–विवो लक्षणों के आधार पर एक एंटीबायोग्राम परीक्षण से यह पुष्टि हुई कि यह बैक्टीरिया उच्चविषाणुता और बहु–औषधि प्रतिरोधक (MAR) है। यह बैक्टीरिया माइक्रो कोक्केलेस (Micrococcale) वर्ग का है। इस अध्ययन में 97.6% पूर्ण और संदूषण–मुक्त जीनोम तैयार किया गया, जिस में 2,598617 bp लंबा एक संपूर्ण, वृत्ताकार गुणसूत्र था, जिसका G+C मान 71.7% थी। इसमें विभिन्न जैविक प्रतिरोधी जीन जैसे sta, novA, macB, tetA, vanS, adeF, और rphA पाए गए। यह बैक्टीरिया आपस में निकट रूप से संबंधित थे और जर्मनी, अमेरिका, चीन और फ्रांस के मानव और समुद्री जल स्रोतों से अलग किए गए नमूनों के साथ एक क्लैड बनाते हैं।

विकाश कुमार और बि. के.दास

The chel snakehead spotted in India after 85 years!

After being thought to have become extinct in the early 20th century, the *Chana amphibeus*, also called the Chel snakehead, was sighted three times in 2024 at the Chel River system in the West Bengal town of Kalimpong. The report was published in Zootaxa. 5583: 87-100 by Jayasimhan et al. (2025).

FISHERIES FACT

Chana amphibeus

Photo Courtesy : Mumbai news - Hindustan Times