



Dr. B. K. Das, Director receiving NAAS Fellowship



Secretary, DARE & DG, ICAR visiting Guwahati centre



QRT Meeting in progress

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सिफरी समाचार

(April - September 2019)



Director's Column



We have been saddened by the devastation caused by the severe super cyclonic storm Fani particularly in the state of Odisha. Though it did not cause significant changes in fish and fisheries but the life and livelihood of fishers, especially in the district of Puri have been damaged considerably. The Institute staff, as usual, donated generously for the victims. In addition to that truck load of relief materials have been distributed among the victims.

I am happy to share that the ICAR-WorldFish Collaborative project under Window-3 programme on "Small scale fisheries in wetlands for livelihood and nutritional security" was sanctioned. Another big project of Rs. 92.18 Lakhs on input cost and farm-gate prices of inland fisheries was sanctioned by the Ministry of Statistics and Programme Implementation, Govt. of India. Further, I have been elected Fellow of the National Academy of Agricultural Sciences and I am thankful to all the staff of the Institute for their support and cooperation.

Three of our scientists visited Australia, Nepal and Bangladesh during the period. Shri Radha Mohan Singh, Hon'ble former Union Minister of Agriculture & Farmers' Welfare took part in Fish Harvest mela at Kararia and Sirsa maun in East Champaran district of Bihar. He lauded the efforts of the Institute in doubling income of the fishers of the wetlands. The DG and DDG (Fisheries Sc.), ICAR, visited Guwahati and Bangalore centre, respectively.

The ranching programmes of the institute towards restoration of depleting IMC stock in the river Ganga are highly appreciated by various experts and national leaders. Two such ranching programmes were organized during the period. Training programmes for fishers (14), officers (6) and students (2) were organized for capacity building of the stakeholders. Besides, several mass awareness camps were conducted and the Institute also participated in several exhibitions to demonstrate the developed technologies.

Important meetings like QRT, mid term review meeting of RCM, 48th IMC, Hindi Workshop, Workshop on open water fisheries management of Nagaland, were organized. We have observed / celebrated many events; National Fish Farmers' Day, International Yoga Day, Independence Day, Hindi Week, to name a few. The Institute staff deserve accolades for successfully organizing such meetings and events. Six of our staff got promoted, I congratulate them and also congratulate the staff who received various awards / recognitions. Any suggestion from the learned readers to improve the quality of the Newsletter is welcome.

November, 2019

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 two Research Stations at Kolkata and Kochi, CIFRI has four Regional Research Centres at Allahabad, 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

Hindi translation
Ms. Sunita Prasad

Assistance
Sh. L. Chakraborty

Photography
Sh. Sujit Choudhury
and other staff

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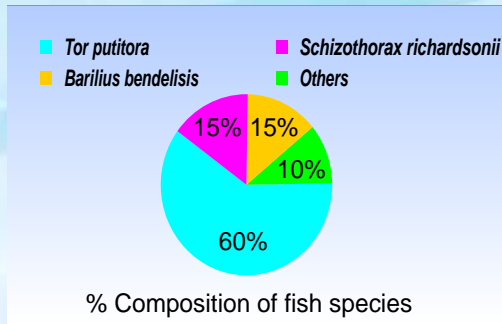
Research Highlights

Common carp : A threat to indigenous fish diversity in the hilly stretch of River Ganga

Tehri lake (4200 ha) is situated at Garhwal region of Uttarakhand, India, which was formed after the construction of world's highest Tehri dam on the confluence of the Bhagirathi and Bhilangana rivers. *Tor putitora* in the hill stream is witnessing depletion because of water shortage due to construction of dam including various anthropogenic factors. Information gathered by fishermen of these region obstruction in flow depicted the declining catch trend of Mahseer over the years. Catch data collected from two landing centres of Tehri lake namely, Dobrachatti and Tipri revealed that catch composition comprises of mainly two species i.e., *Tor*



Landing of common carp at Dobrachatti



putitora and *Cyprinus carpio*. Mean catch per unit efforts (CPUE) is significantly more ($P < 0.05$) (18.33 ± 6.06 kg/hr/boat) for common carp as compared to CPUE of Golden mahseer (12.22 ± 3.07 kg/hr/boat). Around 44 km stretch of river Bhagirathi and 25 km stretch of river Bhilangna have been converted into semistagnant water body from Chinyalisaur to Tehri and provides the favourable ecological condition for natural breeding of common carp. This exotic common carp in lake may interfere with the indigenous biodiversity on account of competition for food and habitat and thus pose more danger for the existence of Mahseer in the hill streams.

Monika Gupta, Upendra Singh, D. N. Jha, Absar Alam, Jeetendra Kumar, V. R. Thakur, R. S. Shrivastava and B. K. Das

Spawn prospecting: An approach for conservation of Golden Mahseer

Rivers Nayar and Havel, the tributaries of River Ganga and situated below Devprayag, are famous breeding grounds of hill stream fishes. Shallow pools on the side of tributaries are the hub of Mahseer seed. Around seven thousand spawn were collected with the traditional method using mosquito net before rainy season i.e., May to July 2019 from the breeding sites and transported them to Koteshwar hatchery (Tehri) for further rearing. Qualitative evaluation was done after two months of rearing and found that collected seed comprised of 60% *Tor putitora*, 15% *Schizothorax richardsonii*, 15% *Barilius bendalasis* and 10% other species with 50% survival rate. Rearing of spawn in captivity with better survival and growth can be used for the ranching in the suitable sites of river Ganga where brooders of Mahseer cannot reach due to obstruction of breeding migration and it can also be used for breeding purpose by further rearing upto maturity.



Packing of spawn for transporting to Koteshwar hatchery

Monika Gupta, Upendra Singh, D. N. Jha, Absar Alam, Jeetendra Kumar, V. R. Thakur, R. S. Shrivastava and B. K. Das

Pari, a traditional trap to catch eels (*Velangu*) in river Cauvery at Mayanoor

Pari is a traditional trap used at upstream of Mayanoor barrage ($10^{\circ} 56' N, 78^{\circ} 14' E$) in the middle stretch of Cauvery river to catch eels (*Anguilla bengalensis*). Fishers set the trap at river bottom near boulders where water level is around 1.5 - 2 m. Small boulders are also kept over the traps to prevent its displacement by river flow or by other means. The trap is set overnight and usually harvested in the early morning. The catch per trap per operation is highly uncertain, however up to 7 kg is reported. Around 250



(a) Eel trap (b) Entrance of the trap
(c) Exit of the trap

traps of this kind have been in use at the station. The trap is made of bamboo splits and is cylindrical in shape. It is fabricated in different lengths, ranging from 60-90 cm with a diameter of approx. 16 cm. The trap entrance is a unidirectional conical valve made of stitched midribs of coconut leaves that are flexible enough to allow entry of eels, but prevents exit through the same route. At the opposite end, the exit or outlet is covered using a PVC made circular plate with small holes which is fixed to the trap using twines. *A. bengalensis* has been assessed under 'Near Threatened' category in the IUCN Red List, hence, it is recommended that the diameter of the holes in PVC plate of its outlet cover of the trap may be made larger as per the head / body diameter of the eel to allow smaller ones to escape and breed at least once for the sake of its sustainable fishery. It is also necessary to create awareness among the fishers.



Large eels (*A. bengalensis*) caught using the trap

A. bengalensis has been assessed under 'Near Threatened' category in the IUCN Red List, hence, it is recommended that the diameter of the holes in PVC plate of its outlet cover of the trap may be made larger as per the head / body diameter of the eel to allow smaller ones to escape and breed at least once for the sake of its sustainable fishery. It is also necessary to create awareness among the fishers.

Sibina Mol S., R. K. Manna, Lohith Kumar K., Roshith C. M., S. K. Sharma, V. R. Suresh and B. K. Das

Tor khudree fishery in Chalakkudi river

Peringalkuthu Dam (10.3152°N 76.6344°E) situated across river Chalakkudi, is a west flowing river in Kerala originating from Western ghats. The upstream and downstream of this dam is inhabited by tribal fishermen. *Barbodes carnaticus*, *Systemus sarana* and Mahseers form the major fishery of this area during monsoon season. Hook and line is the main craft with occasional operation of gill net at dam site. *Tor khudree*, the deccan Mahseer is being fished from this area with an average catch of 100 kg/day and sold at Rs. 200-250/kg, depending on the size of individual fish. The fishes of average length and weight of 80 cm and 5.9 kg, respectively, were observed in the catch. *T. khudree* is categorized as endangered as per the IUCN Red List of Threatened Species, Version 2019, due to which the fishing of this species is banned as a conservation measure. The illiterate tribal fishermen are unaware of the conservation status of this fish and imparting knowledge on this aspect will be helpful in protecting this species in its natural environment.



Tor khudree

Ramya V. L., Jesna P. K., B. K. Behera and B. K. Das

Barge induced hydrodynamic disturbances in phytoplankton: An impact assessment study in National Way 1 of river Ganga, India

The study by the institute found that hydrodynamic disturbances due to propeller movement cause deleterious effect on aquatic biota, including the phototrophic autotrophs. Investigations in six stations (Baranagar to Lalbag) in lower Ganges of National Waterway-1 have revealed decrease (from $3,513 \pm 2,239 \text{ ul}^{-1}$ to $1,997 \pm 1,510 \text{ ul}^{-1}$) in phytoplankton abundance during 'barge movement' coupled with 21% broken cell as compared to natural state. In addition, a steady decline (0.8756 mg/m^3 ; 50.03%) in chlorophyll *a* concentration as compared to before 'barge movement' is also evident which emphasizes the detrimental effect on members of lower trophic guild. Study also revealed significant spatial effect of barge movement at Barrackpore ($p < 0.01$), Tribeni ($p < 0.01$), Balagarh ($p < 0.01$) and Lalbag ($p < 0.01$), which was insignificant at Baranagar and Nabadweep and may be due to continuous and existing boat trafficking at latter places. Thus, the propeller induced disturbances trigger the detrimental effect on



Barge sailing at Baranagar (22°38'33.41"N; 88°21'21.29"E) on the National Way 1 in river Ganga

phytoplankton abundance and biomass, and also on cell architecture and underscore a base to understand the ecological implications of barge movement in Waterways.

Soma Das Sarkar, Malay Naskar, Pranab Gogoi, Abhijita Sengupta, S. Samanta, B. P. Mohanty and B. K. Das

Occurrences of *Clupisoma garua* from Sarankheda and Singalkanch areas of river Tapti

Clupisoma garua reappeared in catches of Sarankheda and Singalkanch fishing centers of river Tapti after a very long period of time. During the last two years, for the first time 36 samples of *C. garua* with size and weight ranges of 185-273 mm and 47.6-165.3 g, respectively could be collected. Initially, Karamchandani and Pisolkar (1967) reported the availability of *C. garua* in river Tapti and recently, Patole (2014) reported the availability of the species from Gomari as well as from the middle stretch of river Tapti. Since then, no reports are available regarding occurrences of *C. garua* in river Tapti. The specimens were harvested through gill net (10 - 40 mm mesh size) along with the species like *Salmostoma bacaila* and *Sperata seenghala*. The presence of *C. garua* in the riverine stretch during monsoon period might be due to the migration of the species from the Ukai dam where the fish has a well-established stock. The fish is commonly known as '*garua bachcha*' under the order Siluriformes and



Bulk harvest of *Clupisoma garua* through gill net (10-40 mm mesh size)

family Schilbeidae, a potamodromous species, demersal in habitat and found both in fresh as well as brackish water stretches. The species are categorized as Least Concern (LC) by IUCN but kept in Vulnerable (Vu) category by the CAMP and CAFF reports. The species have both food and ornamental values and the medium-size fishes are also treated as game fish in India.

Dibakar Bhakta, Vaishak, G., W. A. Meetei, S. P. Kamble, J. K. Solanki, and V. R. Suresh

Diversity and conservation status of ichthyofauna of canals of Indian Sundarbans, West Bengal, India

Canal system in Indian Sundarbans plays an important role by providing essential habitats and shelter for number of fish species and other aquatic invertebrates. Around 0.8 lakh hectares of canal resources are available in the state and are mostly located in Sundarban region. These canals are mostly tidal fed, have brackish water where salinity ranges between 0.2 and 20 ppt. During high tide, many fishes enter into these canals occasionally through sluice gate. Sampling in Barua in Bakkhali, Bhetkimari in Madanganj, Bishalaxhi in Sagar Island and Kailash in Gosaba using locally available fishing traps, drag net, cast net and gill net



revealed a total of 37 fish species. The fishes were composed both of freshwater as well as brackish water species belonging to 32 genera, 21 families and 11 orders. Among the fishes, one species i.e., *Oreochromis mossambicus* was exotic. Cyprinidae was the most dominant family, comprising of 8 species and contributing 38%, followed by Gobiidae (23%), ambassidae and bagridae (14%



Barua Canal



Fish diversity in Barua Canal

each) of the total fish diversity. According to IUCN Red List category, out of 37 fish species, one species have been listed under endangered (EN), two species near threatened (NT), twenty eight species are least count (LC), three species are data deficient (DD), and three species are not evaluated (NE).

Tasso Tayung, Archana Sinha, Nirupada ChanuThangjam, Pranab Gogoi, Mitesh H. Ramteke, Aparna Roy, Arunava Mitra and Subhendu Mondal

Ecology and fisheries of Borbeel, an unexplored wetland in Namsai district of Arunachal Pradesh

A baseline study was carried out to assess ecology and fisheries of Borbeel, Namsai district, Arunachal Pradesh for the first time by the Institute. This is an open beel connected to the River Dihing with a water-spread area of 234 ha. Limnological parameters assessed in the beel (e.g., water temperature: 32°C, DO: 4.8 mg/l, free CO₂: 8 mg/l, pH: 7.1, TDS: 112.9 mg/l, specific conductivity: 229 uS/cm and total alkalinity: 107.33 mg/l) indicated suitable environment for fish production. The beel was heavily infested with aquatic macrophytes (70% surface covered) and the macrophyte biomass was estimated as 15.7 kg/m². The most dominant species of free floating macrophyte was *Eichhornia crassipes*, followed by *Pistia stratoites*, *Salvania* sp. and *Azolla* sp. In addition, submerged macrophyte (mainly *Ceratophyllum demersum* and *Hydrilla* sp.) covered most of the open beel area. The plankton density in the beel was low with average density of 180 U/l. Cynophyceae (62.5%) dominated the plankton population followed by Bacillariophyceae (37.5%). The abundance of macrophyte-associated fauna was low (29 nos./ m²) and consisted of small fishes (4 species), insects (4 species), molluscs (1 species) and crab (1 species). The number of macro-benthic organisms was also low with average density of 17 no./ m². Macro-benthos was represented by *Pila globosa*, *Rana traelongata*, *Dysticus* sp., dragonfly larvae and may fly larvae. A total of 23 fish species were recorded during the monsoon season, belonging to 14 genera, 9 families and 5 orders. Family Cyprinidae (8 species) contributed highest number of species, followed by Channidae (4 species) and Bagridae (3 species). *Puntius* spp. were the most dominant genera of fish caught from the beel. The present fish yield of the beel was estimated at 155 kg/ha/yr. The beel is an open access water body under the administrative control of the Department of Fisheries, Arunachal Pradesh and is being managed for capture fisheries.



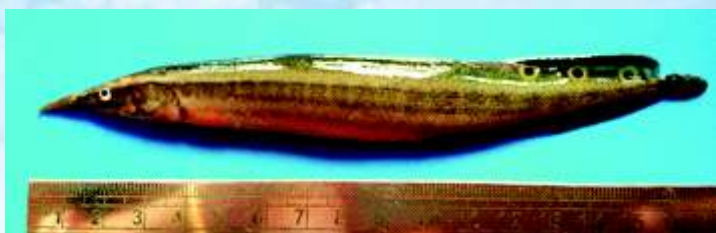
Bor beel

S. Yengkokpam, D. Debnath, B. K. Bhattacharjya, P. Das, A. K. Yadav, S. Borah and N. Sharma



Study on biometric, morphometric and reproductive biology of *Macrornathus aral* (Bloch & Schneider, 1801)

A study on biometric, morphometric and reproductive biology of *Macrornathus aral* was carried out during their breeding season, April to September, 2019. A total of 25 specimens were collected from Beltola Fish Market, Guwahati for the study having 11.9-20.7 cm total length and 5.76-29.4 g body weight, respectively. Standard length, head length, body depth, head width, pre-dorsal length, post-dorsal length and length of caudal peduncle were found to be highly correlated with increasing total length and body weight. Meristic count showed 19 dorsal spines, 45 dorsal soft rays, 15 caudal fin rays and 42 anal fin rays. The overall Male: Female ratio was recorded as 3: 1, where the average length and weight of male was 16.0 cm and 14.45 g, respectively and that of



Macrornathus aral & its ovaries

female was 15.1 cm and 13.72 g, respectively. Reproductive biology of the fish showed that most of the fishes were in maturing stage (48%, stage II), followed by mature (36%, stage-III) and ripe stage (12%, stage-IV), respectively. The average weight of the gonad of male and female were 0.17 g and 1.94 g respectively. The ripe ova were dark green in colour with average ova diameter and fecundity of 0.74 mm and 2250 numbers. The average length and weight of the gut were 4.95 cm and 0.16 g respectively. Stomach fullness indicated that 80% of the fish had 1/4 fullness of stomach and 20% had 1/2 fullness. The average GSI of male and female fish were 1.32 and 1.02, respectively.

S. Yengkokpam, D. Debnath, N. Sharma, B. R. Parvin, S. Das, S. Saikia, T. V. Anal and A. Sinha

Socio-economic status of beel fishers in three districts of Assam, India

Floodplain wetland (*beel*) fishers of Assam are facing hardships, mainly due to uncertain livelihood owing to vulnerable ecosystem of the resources. The fisheries resources are depleting due to anthropogenic and natural changes like siltation, eutrophication and overfishing. Changes in climate also directly or indirectly affect socio-economic condition of beel fishers. In the present study, socio-economic status of beel fishers in Dhubri, Kamrup (Rural) and Morigaon was assessed by randomly selecting fishers from Dhubri (30 nos.), Kamrup (R) (37 nos.) and Morigaon (35 nos.) districts. Literacy of fishers was the highest in Kamrup (R) (81%), followed by that of Dhubri (63%) and Morigaon (48.6%). Agricultural activity was the most common subsidiary occupation in Kamrup (R) (81.1%), followed by Morigaon (45.7%) and Dhubri (43%). Fishers of Kamrup (R) earned and spent more amount per year (INR 2,36,202 & 1,26,973) as compared to Dhubri (98,000 & 97,881) and Morigaon (94,000 and 79,900) districts. Major expenditure was on food, which was significantly higher in Dhubri (INR 68,200/y) and Kamrup (R) (62,891) as compared to Morigaon (47,857). Fishers spent significantly higher amount in Kamrup (R) for education as compared to other two districts. Most of the fishers in Morigaon (85%) were having kaccha houses, followed by Kamrup (R) (81%) and Dhubri (80%). Large family-size (51% fishers had >5 members), boats on hire (57% fishers), illiteracy (51% fishers) may be related to poverty of fishers in Morigaon district. Higher expenditure on education by fishers of Kamrup (R) could be a consequence of higher income. Habitat quality of beels of Kamrup (R) was worse, than Morigaon and Dhubri but because of agriculture in own lands, fishers of Kamrup (R) earned more.

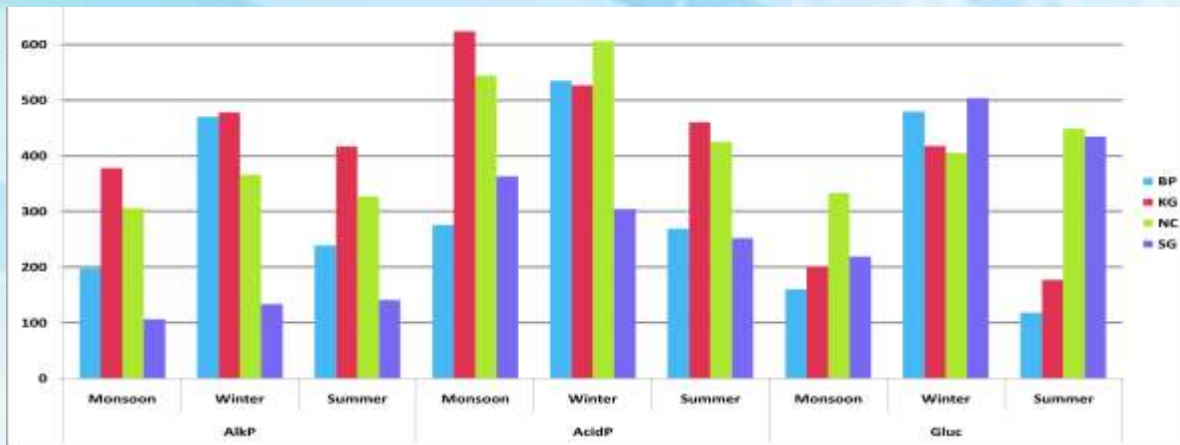
D. Debnath, Kabin Medhi, B. K. Bhattacharjya, S. Yengkokpam, U. K. Sarkar and B. K. Das

Sediment enzyme activities vary with geographical location, season and nature of wetlands

Sediment enzymes are of microbial origin and can be used as indicators for assessment of wetland health. Sediment enzymes



associated with nutrient cycling and wetland health may be affected by wetland location, nutrient input, as well as management intervention. Activities of enzymes, namely alkaline phosphatase, acid phosphatase, glucosidase and dehydrogenase and sediment organic matter and moisture content were assessed in sediments of four wetlands of West Bengal, Nayarchara (NC) and Sahebganj (SG) from North Bengal (Coochbehar) in Teesta-Torsa basin and Katiganga (KG) and Bishnupur (BP) from Middle Bengal (Murshidabad) in Ganges basin during monsoon, winter and summer of 2017-18. Nayarchara (62 ha) wetland is ecologically distinct with respect to its fisheries, mainly comprising of stocked fishes and it is nearly clear with respect to floating macrophytes while fisheries of Sahebganj (23ha) wetland are mainly comprised of stocked and indigenous fish species and



Sediment enzyme activities ($\mu\text{g/g}$ dry sediment/h) in four wetlands of West Bengal

infested with floating and submerged macrophytes. Katiganga is a natural wetland with macrophyte dominance and Bishnupur is a sewage fed wetland. Alkaline phosphatase, and dehydrogenase activities were higher in wetlands of Middle Bengal (MB) than that of North Bengal (NB) while glucosidase showed opposite trends. The North Bengal wetlands were more organic matter rich

than that of Middle Bengal wetlands. Enzyme activities also changed with season. In all the wetlands the activities of all the enzymes except acid phosphatase and organic matter content in sediment were higher during winter than monsoon and summer months. Acid phosphatase activity decreased in KG and SG while increased in NC and BP. The study revealed higher acid phosphatase activity than alkaline phosphatase activity in studied beels and difference between the two enzymes were higher in NB than MB beels. Sewage fed wetland, Bishnupur showed higher dehydrogenase, lower acid phosphatase and glucosidase activities and lower organic matter content than other three natural wetlands.

Md. Aftabuddin, Mishal P., A. K. Bera, U. K. Sarkar, B. K. Das, B. Naskar and Y. Ali

New externally funded projects sanctioned

- An externally funded project entitled “A study on input cost and farm-gate prices of inland fisheries in India” was sanctioned by the National Statistical Organization, National Accounts Division, Ministry of Statistics and Programme Implementation, Govt. of India. The Budget of the project is Rs. 92.18 lakhs. The outcome of the project will be utilized for the estimation of Gross Value Added (GVA) in fisheries sector, hence, the project is of national importance. The project is coordinated by Dr. B. K. Das, Director while Dr. Arun Pandit, Principal Scientist is the Principal Investigator. The Allahabad, Bangalore, Guwahati, Kochi and Vadodara regional centres of the institute are also involved in the project.
- ICAR-WorldFish Collaborative project under Window-3 programme on “Small scale fisheries in wetlands for livelihood and nutritional security” was sanctioned by the WorldFish, Penang, Malaysia. The budgetary provision is Rs.17.08 lakh. The project is led by Dr. B.K. Das, Director. Disseminating ICAR-CIFRI technology (pen culture) for enhancing productivity and resilience of the beels / wetlands through community participation; addressing the livelihood and nutritional security of the inland fishers by improving wetlands productivity are the major objectives of the study.



Activities under NEH Programme

Workshop on 'Openwater Fisheries Management in Nagaland'



Felicitation of the Director, ICAR- CIFRI by Fishery Department, Nagaland

The Institute organized this workshop in collaboration with the Department of Fisheries & Aquatic Resources, Govt. of Nagaland and ICAR-NRC on Mithun at Medziphema on 19 July 2019. A total of 60 participants, including fishery officials, fishers, fish farmers, representatives from Angler's Association of Nagaland and Scientists/technical officers from ICAR-CIFRI and ICAR-NRCM participated in the day-long workshop. The main purpose of the workshop was to educate the planners, fishery officials and fishers about the management guidelines/ technologies developed by the Institute for the NE region. Dr. B. K. Das, Director, ICAR-CIFRI; Dr. B. K. Bhattacharjya, Head, Guwahati Regional Centre of ICAR-CIFRI; Sri R. Ao, Addl. Director, Dept. of Fisheries & Aquatic Resources, Govt. of Nagaland and Dr. Abhijit Mitra, Director, ICAR-NRCM were among the dignitaries present in the workshop.

Ranching Programme for Restoration of Fish Stock in River Ganga

The indigenous prized fishes of River Ganga like Rohu (*Labeo rohita*), Catla (*Catla catla*), Mrigal (*Cirrhinus mrigala*) and Kalbasu (*Labeo calbasu*) have declined sharply from 43.50 % in few years back to only 1.48% at present in the total annual catch. Thus, it is need of the hour to re-establish these highly demanded fishes of Ganga. In this context, the Institute has been continuously striving for replenishing the stock with ranching of IMC seeds. During the last two years under Namai Gange project, the Institute ranched 16 lakh seeds of IMC and Mahaseer in the river Ganga. In the last six months, the Institute has organized two ranching-cum-awareness programmes at Barrackpore and Ichhapur in North 24 Parganas district of West Bengal. At Barrackpore 30,000 seeds of IMC and at Ichhapur 60,000 seeds of IMC have been released in the river on 10 and 27 July 2019, respectively. Dr. C. Vasudevappa, VC, NIFTEM and Chairman QRT and other members of Institute QRT were present on 27 July. While Shri Bankim Hazra, MLA, Sagardwip; Dr. V.V. Sugunan, ex ADG (Fy, ICAR); Dr. Madhumita Mukherjee, Jt. Director, W. B. Fisheries were present on 10 July 2019.



Ranching at Barrackpore



Awareness programme by the Director at Ichhapur



Technology Demonstration

Upscaling of pen aquaculture using CIFRI-HDPE pen in Takmu pat, Manipur

Pen culture technology developed by ICAR-CIFRI was upscaled in Takmu pat, Bishnupur district, Manipur by using CIFRI-HDPE Pen in participatory approach. Five CIFRI-HDPE pen enclosures each measuring 0.1 ha installed in the pat were stocked with fingerlings of Catla (*Labeo catla*), Rohu (*L. rohita*), Grass carp (*Ctenopharyngodon idella*), Amur common carp (*Cyprinus carpio*), Kuri (*Labeo gonius*) and Pengba (*Osteobrama belangeri*) @ of 3 no./m³ during March, 2019. The fishes were fed daily (CIFRI CageGrow feed, containing 30% crude protein) @ 3% of their body weight. The total fish production achieved after six months from the five pens was 5343 kg with a productivity of 10,686 kg/ha/yr which registered 48% higher productivity from the previous pen culture trial conducted by the Institute in the wetland in 2014-15. The fish produced generated a gross revenue of Rs.11,19,232 which was shared equally among 30 fishers. Thus, pen culture using CIFRI-HDPE pen resulted in an increase of income of the fishers.

B. K. Bhattacharjya, D. Debnath, S. Yengkokpam, T. V. Anal, N. D. Singh, B. R. Parvin, S. Saikia and B. K. Das



Harvested fishes from Takmu pat



Trainings conducted

Training for fishers/fish farmers

Sl. No.	Name of the training	Date	Participants	Venue
1.	Wetland fisheries development (sponsored by NFDB)	27 to 30 Apr 2019	Beneficiary fishers / fish farmers of Rulhi, Majharia, Kararia and Sirsa wetlands of Bihar	CIFRI, H.Q., Barrackpore
2.	Wetland fisheries management for livelihood improvement (SCSP)	24 to 27 Jun 2019	21 fishers / fish farmers of Nadia, W. B.	CIFRI, H.Q., Barrackpore
3.	Inland open water fisheries management & development (sponsored by ATMA)	28 Jun to 02 Jul 2019	31 fishers / fish farmers of Mayurbhanj, Odisha	CIFRI, H.Q., Barrackpore
4.	Wetland fisheries management for livelihood improvement (SCSP)	08 to 11 Jul 2019	42 fishers / fish farmers of Chumurdaha & Beledanga beels, W.B.	CIFRI, H.Q., Barrackpore
5.	Alternative livelihood options for inland fishers (SCSP)	02 Aug 2019	46 SC fishers of reservoirs of Karnataka	CIFRI, Kochi Res. Station
6.	Inland open water fisheries management (sponsored by DoF, Bihar)	31 Aug to 04 Sept 2019	22 fishers / fish farmers of ATMA, Madhubani, Bihar	CIFRI, H.Q., Barrackpore
7.	Inland open water fisheries management & development (sponsored by DoF, Bihar)	19 to 23 Sept 2019	30 fishers / fish farmers of Muzaffarpur, Bihar	CIFRI, H.Q., Barrackpore
8.	Skill development programme in inland fisheries sector (sponsored by Nehru Yuva Kendra and ICICI Foundation)	19 to 23 Sept 2019	Fishers / fish farmers of Haroa, N 24 Parganas, W.B.	CIFRI, H.Q., Barrackpore
9.	Inland open water fisheries management & development, (sponsored by DoF, Bihar)	24 to 30 Sept 2019	30 fishers / fish farmers of Sitamarhi, Bihar	CIFRI, H.Q., Barrackpore



Training for the fishers of wetlands of Bihar



Training of the Mayurbhanj fishers



NFDB sponsored skill development trainings for fishers / fish farmers

Sl. No.	Name of the training	Date	Participants	Venue
1.	Reservoir fisheries management for employment generation	30 Jul-01 Aug 2019	50 fishers of Salem, T. N.	Mettur, T. N.
2.	Conservation and culture of small indigenous fishes for livelihood and nutritional security	01-03 Aug 2019	44 fishers of Sundarbans and other places of W. B.	CIFRI, H.Q., Barrackpore
3.	Inland ornamental fisheries management for income generation	06-08 Aug 2019		CIFRI, H.Q., Barrackpore
4.	Beel fisheries management for livelihood improvement	13-15 Aug 2019	50 fishers of Assam	CIFRI Regional Centre, Guwahati
5.	Reservoir fisheries management for employment generation	28-30 Aug 2019	50 fishers of Kodagu, Karnataka	Kodagu, Karnataka



Skill development programme activities at Mettur, T. N.



Skilled development training programme at ICAR-CIFRI RC, Guwahati

Training for students

Sl. No.	Name of the training	Date	Participants	Venue
1.	Inland fisheries management	07-13 May 2019	18 nos. B.Sc. (Ag.) students of BHU, Varanasi	CIFRI, H.Q., Barrackpore
2.	Inland fisheries management	24 -30 May 2019	38 nos. M.Sc. students of Vinoba Bhave University, Hazaribagh	CIFRI, H.Q., Barrackpore



Students from Vinoba Bhave University



Students from BHU



Trainings for officials

Sl.No.	Name of the training	Date	Participants	Venue
1.	Reservoir fisheries management for employment generation (ToT, sponsored by NFDB)	11-15 Jun 2019	Officers from State Fisheries Department and KVKs	IIHR, Hessaraghatta, Bengaluru
2.	BIS in house training on laboratory quality management and internal audit as per IS/ISO/IEC17025: 2017	24-27 Jun 2019	Officials of ICAR-CIFRI	CIFRI, H.Q., Barrackpore
3.	Enclosure culture (Cage & Pen) for inland fisheries management (sponsored by NFDB)	02-06 Jul 2019	21 nos. officials from various states	CIFRI, H.Q., Barrackpore
4.	Management of floodplain wetlands for sustainable fisheries (ToT, sponsored by NFDB)	23-27 Jul 2019	29 participants including Fishery Officers and Entrepreneurs from Assam, Arunachal Pradesh, Bihar, Manipur and Meghalaya	CIFRI Regional Centre, Guwahati
5.	Statistical foundation course for fisheries data analysis	02-09 Aug 2019	11 participants including Asstt. Professor, Scientists and students	CIFRI, H.Q., Barrackpore
6.	Inland fisheries management	07-10 Sep 2019	20 nos. Officials from Chattarpur, M. P.	CIFRI, H.Q., Barrackpore



ToT training at IIHR



ToT training conducted by Guwahati Regional Centre



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Exhibitions participated

Sl. No.	Date	Details	Venue
1.	14-15 Jun 2019	Fish Harvest Mela at Kararia and Sirsa Mauns	Purbi Champaran, Bihar
2.	19-21 Jul 2019	“Asian Pacific Aquaculture”, organized by World Aquaculture Society -Asian Pacific	Chennai, T. N.
3.	28-31 Aug 2019	23 rd National Agriculture Exhibition organised by the Central Calcutta Science & Culture Organisation for Youth	Amaravati Ground Sodepur, W. B.
4.	24-25 Sep 2019	National Symposium on “Coldwater fisheries development in India: Innovative approaches and way forward for enhancing hill farmers income”, organised by ICAR-DCFR & CFSI, Bhimtal	DCFR, Bhimtal, Uttarakhand
5.	20-22 Sep 2019	National Workshop on “Ornamental Fisheries”, organised by S. K. Mahila College, Begusarai, Bihar	Begusarai, Bihar
6.	28 Sep 2019	National Conference on “Efficient value chain in fisheries and aquaculture” at Bhubaneswar, organised by Smart Agripost	Bhubaneswar, Odisha

Exposure / Educational Visits

Sl. No.	Particulars of visitors	Date of visit
1.	23 nos. of farmers from <i>Meen Mitra</i> , SRLM, Govt. of W.B.	06 Apr 2019
2.	12 nos. of student & 2 nos. of teachers from Vidyasagar College, Kolkata	21 May 2019
3.	8 nos. of students from Dhanamanjuri University, Imphal	06 Jun 2019
4.	24 nos. of students from VKSCOA Dumraon, Bihar	26 Jun 2019
5.	23 nos. of farmers from Manipur	04 Jul 2019
6.	26 nos. of students from CoF, Nellore, Andhra Pradesh	11 Jul 2019
7.	10 nos. of farmers from Deogarh, Odisha	16 Jul 2019
8.	23 nos. of students from Bijoykrishna Girls College, Howrah, W. B.	29 Jul 2019
9.	21 nos. of progressive fish farmers from Assam	17 Aug 2019
10.	23 nos. of farmers from Pakur, Jharkhand	22 Aug 2019
11.	15 nos. trainees from Raja Bazar Science College, Kolkata	24 Aug 2019
12.	55 nos. of trainees under DAESI program from North 24 Parganas, KVK, Ashoknagar, W. B.	04 Sep 2019
13.	11 nos. of trainees from Africa under the training program on ‘Advances in Freshwater Aquaculture’, organized at ICAR-CIFE, Kolkata	25 Sep 2019



Students of Raja Bazar Science College, Kolkata with the Director, ICAR-CIFRI



Trainees under DAESI programme with the Director, ICAR-CIFRI



Mass Awareness Programmes

- Training-cum-awareness programme on “Livelihood improvement through fisheries” was conducted in Baksa district, Assam on 4 May, 2019 under TSP by ICAR-CIFRI Regional Centre, Guwahati in collaboration with Department of Fisheries, Govt. of Assam for the tribal fishers.
- ICAR-CIFRI has conducted two awareness programmes for the fisheries development in hill region in Mirik, Darjeeling, West Bengal during 11 and 12 May 2019. A total of 400 fishers were sensitized on the different aspects of fisheries livelihoods.
- Awareness programme on beel fisheries was organized on 7 June 2019 at Keshpura, Jaleswar, Odisha in which around 300 villagers participated. The main objective was to revive and conserve the fisheries of Keshpura Picasida beel.
- Awareness-cum-interactive meeting on 'Pen aquaculture in pats of Manipur' was organized by Guwahati Regional Centre of ICAR-CIFRI at Moirang, Bishnupur district, Manipur on 09 Jun 2019 in which 35 fishers/ fish farmers participated.



Awareness programme at Darjeeling



Awareness camp at Moirang, Manipur



Awareness on Hilsa improvement at Balia, UP



Awareness camp at Baksa



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- Awareness camps were organized on Hilsa conservation and improvement for the fishers of middle stretch of River Ganga at Ballia, Buxar, Patna, Bhagalpur, Sahebganj and Malda. Around 1000 fishers participated in the programme.
- Awareness programme on 'Nutrifish' and their role in eradicating the malnutrition was organized on 01 Aug 2019. Around 700 villagers of Mayurbhanj district participated in this programme which was organized by Odisha-World Fish and USAID.
- Similar programmes were organized at Anantpur, Soro, Balasore district and Jaipur block of Jagatsighpur district of Odisha on 02 August 2019 and 14 August 2019, respectively.
- Awareness campaign was conducted at Kumli wetland of Nadia District of West Bengal on importance of culture and conservation of Small Indigenous Fishes (SIFs). The awareness campaign was held on 10 Sept 2019 under Scheduled Caste Sub Plan (SCSP) in which around 60 fishers participated.



Demonstration at Kumli *beel*, Nadia, W. B.



Awareness camp at Kumli *beel*, Nadia, W.B.

Staff Corner

Transfer

Sl. No.	Name of the staff	From	To
1.	Shri Anil Kumar, Skilled Support Staff	ICAR-CIFRI Barrackpore	ICAR-CIFRI Regional Centre, Allahabad
2.	Shri S.C. Sukla Das, Scientist	ICAR-CIFRI Regional Centre, Allahabad	ICAR-CIFRI Regional Centre Guwahati

Promotion

Sl. No.	Name	Promoted to	With effect from
1.	Shri L. R. Mahavar	Assistant Chief Technical Officer	01 Jan 2010
2.	Shri Vijay Kumar ME	Technical Officer	01 Nov 2017
3.	Shri Arijit Ghosh	Senior Technical Assistant	02 Jan 2018
4.	Shri Rabiul Sk.	Senior Technical Assistant	12 Jun 2018
5.	Md. Quasim	Chief Technical Officer	29 Jun 2018
6.	Shri Bablu Naskar	Senior Technical Assistant	02 Apr 2019



Superannuation

Sl. No.	Name	Date of Superannuation
1.	Shri L. R. Mahavar, ACTO	31 May 2019
2.	Shri Samir Kumar Paul, STO	31 Aug 2019
3.	Shri M. K. Joarder, Assistant	30 Sep 2019
4.	Shri R. K. Roy, Assistant	30 Sep 2019



Shri L. R. Mahavar (at the left)

MACP awarded

Sl. No.	Name and designation of the staff	Date of effect	Next higher grade pay (as per 7 th CPC Pay Scales)
1	Shri Hemanta Das, Skilled Support Staff	2 nd MACP w.e.f. 19 Feb 2019	Level-3 (Rs. 2000 G.P. in PB-1 as per 6 th CPC)
2	Mrs. Bindu Singh, Skilled Support Staff	2 nd MACP w.e.f. 15 Mar 2019	Level-3 (Rs. 2000 G.P. in PB-1 as per 6 th CPC)
3	Shri Somenath Banerjee, LDC	2 nd MACP w.e.f. 04 Jun 2019	Level-3 (Rs. 2000 G.P. in PB-1 as per 6 th CPC)
4	Shri Anil Kumar, Skilled Support Staff	2 nd MACP w.e.f. 07 Sep 2019	Level-3 (Rs. 2000 G.P. in PB-1 as per 6 th CPC)
5	Mrs. Jolly Saha, Private Secretary	3 rd MACP w.e.f. 22 Sep 2019	Level-8 (Rs. 4800 G.P. in PB-2 as per 6 th CPC)

Awards/Recognitions

- Dr. B. K. Das, Director has been elected as Fellow of the National Academy of Agricultural Sciences (NAAS) on 1 Jan 2019.
- Dr. Dibakar Bhakta, Scientist was awarded with the Research Excellence Award at Biotic Science Congress (BioSCon) 2019 held at Salem, Tamil Nadu, India during 26-27 July 2019. The award was given by the Society for Biotic and Environmental Research (SBER), Khowai, Tripura for the contribution in the field of "Fisheries Resource Management" during the year 2018-2019.
- Dr. B. K. Bhattacharjya, Principal Scientist and Head, ICAR-CIFRI Regional Centre, Guwahati was recognized as Member, Technical Expert Committee of Assam Fisheries Development Corporation Ltd., Guwahati and Assam State Wetlands Authority, Environment & Forest Department, Govt. of Assam to render technical advice to the Corporation. He was also the Member, Technical Committee, Directorate of Fisheries, Govt. of Assam and Member of Advisory committee, Incubation unit of ICAR-NRC on Pig, Rani, Guwahati.



Dr. B. K. Das



Dr. Dibakar Bhakta



Dr. B. K. Bhattacharjya



Foreign visits

- Dr. A. K. Das, Principal Scientist visited Pokhara, Nepal during 17-19 April 2019 as focal point expert for SAARC regional consultation on cage culture in rivers, lakes, wetlands and marine waters for aquaculture diversity.
- Dr. P. K. Parida, Scientist is in Australia with Endeavour Research Leadership Award-2019 by Australian Government and continuing his research programme on Aptasensorns in Royal Melbourne Institute of Technology (RMIT) University, Melbourne, Australia under the supervision of Prof. Vipul Bansal, Director, Sir Ian Potter Nano BioSensing Facility, RMIT.
- Dr. Piyashi Debroy and Ms. Sukanya Som, Scientists visited Bangladesh for the 1st International Conference on Sustainable Fisheries (ICSF) 2019 organized by the Faculty of Fisheries, Sylhet Agricultural University at Sylhet, Bangladesh with the major collaboration of Too Big to Ignore (TBTI), the global partnership for small-scale fisheries research from 25 to 27 August 2019.



Dr. Piyashi DebRoy (third from right) and Ms. Sukanya Som (fifth from right)



Dr. P. Parida in the RMIT lab

Meetings

ISO surveillance audit meeting

The first surveillance audit, after getting certification of Quality Management System (QMS) of the Institute headquarter as per the ISO 9001:2015 standard in 2018 by M/s. URS Certification NOIDA, was conducted on 22-24 April 2019. Dr. Subrata Basu was the lead auditor. All the research divisions, extension and training units, PME, HRD, admin section, stores, utility, medical units were audited during the three days to check how the ISO 9001:2015 International Standard is being followed. The continuation of certification of the QMS was recommended. The next (second) surveillance audit will be conducted in April, 2020.



Brainstorming on “Social implication and fisheries of Ganga River basin with special reference to Hilsa”

The brainstorming session was organized on 02 May 2019. Apart from the experts working in this area, a number of fishermen and representatives of Fishermen's Organizations from Kakdwip, Digha and Godakhali participated in the programme. Prof. B. N. Pandey, Working President, ZSI; Prof. P. N. Pandey, President, ZSI; Prof. Amalesh Choudhury, Former Prof. of Zoology, Calcutta University; Dr. Dilip Kumar, Aquaculture, Fisheries and Rural Development Adviser, Govt. of India & Former Director, ICAR-



Brainstorming on Hilsa

CIFE, Mumbai; Dr. B. K. Das, Director, ICAR-CIFRI spoke in the inaugural programme. In the panel discussion, eminent experts, such as Dr. D. K. De, Former Pr. Scientist, ICAR-CIFRI, Dr. B. C. Jha, Former Head of Division, ICAR-CIFRI, Prof. Asim Nath, Professor, Sidho-Kanho-Birsha University, Purulia; Dr. A. K. Saxena, Former General President, Indian Science Congress Association; Dr. D. N. Chattopadhyay, Principal Scientist, Rahara Centre, ICAR-CIFA; Dr. G. H. Pailan, In-Charge, Kolkata Centre, ICAR-CIFE; Dr. V. R. Suresh, Head REF Division; Dr. B. P. Mohanty, Head FREM Division; Dr. U. K. Sarkar, Head RWF Division, ICAR-CIFRI and other scientists of ICAR-CIFRI were present. The hilsa fishers presented fishermen's perception on Hilsa conservation.

48th Institute Management Committee meeting

The 48th Institute Management Committee (IMC) meeting was held at the Institute headquarters on 20 May 2019 under the chairmanship of the Director. The Chairman briefed the members about activities carried out by the Institute since last meeting in the field of research, extension, overall Institute management and linkages established with other stakeholders. The members appreciated progress of research work at the Institute and complemented the Director and Scientists of the Institute. Dr. B. K. Behera, Principal Scientist delivered a presentation on biotechnological applications in inland open waters.



48th IMC meeting

Mid-term review meeting of ICAR Regional Committee II

The mid-term review meeting of ICAR Regional Committee II (West Bengal, Odisha, Andhra Pradesh, Telangana and UT of Andaman and Nicobar Islands) was held at the Institute headquarters, Barrackpore on 12 June 2019. The objective of the meeting was to discuss the progress in action taken on the recommendations made in 23rd and 24th meetings of the Committee, held at ICAR-NAARM, and Institute of Management on Agricultural Extension, Bhubaneswar, respectively. Around 60 delegates from ICAR Institutes, SAUs and Agriculture/Animal husbandry/Horticulture/Fisheries Departments of the states/UTs, including Vice Chancellors of BCKV, ANGRAU and seven Directors of ICAR institutes and ADG (TC)-ICAR, participated in the review meeting. Dr. J.K. Jena, DDG (Fisheries Science & Animal Science) and Chairman highlighted the importance of this region and its contribution in country's food grain production and its richness in animal and fishery resources. He stressed upon the importance of centre-state coordination for effective technology transfer.



Mid-term review meeting of RC II



Meeting with NHPC officials on improvement of fish pass

A meeting on “Possible ways towards improving fish passage of the Teesta Low Dam project (TLDP-III and TLDP-IV) situated on river Teesta” was organized with NHPC officials at ICAR-CIFRI, Barrackpore on 27 June 2019. The meeting was chaired by Dr. B. K. Das, Director and Principal Investigator of the ongoing project on Fish pass. Shri Mahesh Kumar, General Manager, Civil Engineering (Design), NHPC expressed views on the design of fish passages and the importance of fish behavior for designing the same. Dr. S. K. Bajpayee, DGM (Env.), NHPC recognized the role of Fish pass and its importance in river connectivity. Provision of natural fish habitat along the passages, behavioural based fish passage design and improved methodologies for the fish migration study with multidisciplinary approach were some of the recommendations for better ecosystem for migratory fish species in river.



Meeting with NHPC officials



Chairman making a point in QRT meeting

Quinquennial Review Team (QRT) meeting

The QRT meeting for 2013-2018 was organized at the Institute Head Quarters during 26-27 July. Dr. C. Vasudevappa was the Chairman and while Dr. V. R. Chitranshi, Dr. Usha Mauza, Dr. S. C. Pathak, Dr. A. K. Sahoo were the Members of the team. Dr. B. K. Das, Director along with Heads of Divisions and Incharges of Regional Stations/Centres presented the achievements of research conducted during the last 5 years. The team assessed the achievements critically and made their recommendations. Subsequently, the team also visited Regional Centres of the Institute and assessed their achievements.

Meeting with NMHS-MLE audit panel team at Guwahati

A meeting was organized with the NMHS-Monitoring, Learning and Evaluation (MLE) Audit panel on 21 Aug 2019 for reviewing the progress of the project “Up-scaling of climate-friendly pen aquaculture technology for improved livelihood, employment generation and enhanced income of wetland fishers of North-eastern India”. A 5-member team comprising of Dr. R.M. Pant, Director, NIRD&PR, Guwahati; Dr. K.P. Sarma, Professor, Tezpur Central University; Dr. S.K. Nandi, Former Scientist-'G' & Group Head, Biotechnological Applications & Environmental Physiology, GBPNIHESD, Almora; Er. M.S. Lodhi, Scientist-'E' & Incharge, NER Unit, GBPNIHESD, Itanagar and Shri Puneet Sirari, PMO, NMHS-PMU, Almora were present in the meeting.



Meeting with NMHS-MLE audit panel



Interactive meeting on pen aquaculture in Borbeel, Arunachal Pradesh

The Guwahati Centre of the Institute conducted an interactive meeting with the *beel* fishers of Borbeel, Namsai district, Arunachal Pradesh in collaboration with the Fisheries Department of Arunachal Pradesh on 'Pen aquaculture' on 02 Aug 2019 at Jonai III, Namsai. A total of 30 fishers participated in the meeting and provided inputs to formulate plan for pen installation, fish species to be stocked, community participation, etc. under the NMHS project.



Interactive meeting at Borbeel

Training workshop for newly recruited administrative staff of ICAR institutes

A Training Workshop was organized by ICAR-CIFRI, Barrackpore at the Institute Headquarters for the newly recruited administrative staff of four ICAR Institutes from 02 to 04 Sep 2019. Eighteen participants from ICAR-NRC Mithun, Nagaland; ICAR-CRIJAF, Barrackpore ICAR-NINFET, Kolkata and ICAR-CIFRI, Barrackpore took part in the training. The three day workshop involved deliberations on a wide variety of topics like rate contracts and works, GFR and financial matters, establishment matters, GeM and E-procurement, handling of Court cases, pension matters, noting drafting, RTI and office procedure etc.



Training workshop for newly recruited administrative staff



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Events/Day Celebrated

Fish harvest mela at Barua canal, Sundarbans

A Fish Harvest Mela-cum-awareness programme was conducted in Barua canal, Frasergunj of Sundarbans (W.B.) during 7-8 May 2019. Though the recent cyclone "FANI" has damaged the net partition, but on the day, team could harvest a total of 150 kg of fish. It has encouraged the community to culture fish in canals. After six months of culture period, the maximum size reported for catla, rohu and mrigal was 1.2 kg., 1.0 kg and 0.800 kg, respectively. The indigenous fish of the canal also contributed well in the harvest. Freshwater prawns were eye catching. The CIFRI team was led by Dr. Archana Sinha, Principal Scientist.



Barua canal



Rabindra Jayanti celebration

Rabindra Jayanti celebration

The Institute celebrated the birth anniversary of Gurudev Rabindra Nath Tagore with fervour, zeal and enthusiasm on 09 May 2019. The staff had put up a cultural programme based on Tagore's composition. Many recited poems and showed deep respect to the Bard by their exclusive performances. The celebration commenced with garlanding Gurudev by the Officiating Director, Dr. V. R. Suresh. A mesmerizing performance by Ms. Keya Saha and other enthralled the audience. Dr. Suresh discussed Tagore's contribution and feelings towards Agriculture and farmers. Wonderful messages by the Heads of the Divisions made the audience spellbound. They remarked that Tagore and his compositions should be imbibed in every soul and every heart. We need to inculcate the values of life through his compositions.



Hon'ble Minister & the Director at the Fish Harvest Mela

Fish harvest mela at Kararia and Sirsa Mauns of Bihar

ICAR-CIFRI has organised two days "Fish Harvest Mela" at Kararia and Sirsa maun (freshwater wetlands) of Purbi Champaran District of Bihar during 14-15 June 2019 as a part of "Wetland Fisheries Development Projects of Bihar under Central Sector Scheme (CSS) Blue Revolution". The Mela was inaugurated by Shri Radha Mohan Singh, Hon'ble Former Union Minister of Agriculture and Farmer's Welfare, and Member of Parliament (Loksabha) Purbi Champaran. In his address, Shri Singh appreciated that the ongoing NFDB

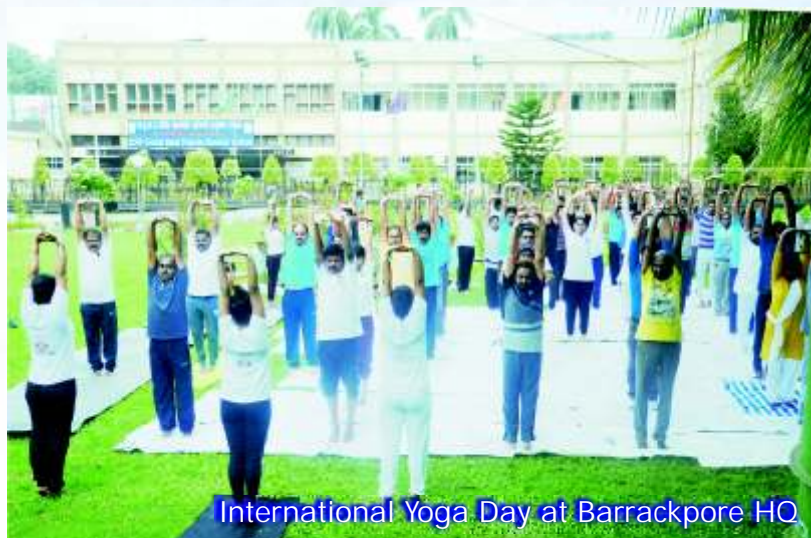


funded programmes benefitting 800-900 fisher's family of five wetlands of Purbi Champaran District in doubling their income through scientific interventions made by ICAR-CIFRI. Dr. B. K. Das, Director, briefed the management interventions made in these wetlands. He further informed that the interventions could enhance the fish yield (kg/ha/yr) many folds in the mauns, viz. 180 to 675 in Kararia maun; 190 to 320 in Sirsa maun; 70 to 140 in Rulhi maun and 60 to 120 in Majharia maun. Additionally, the fishers have also been benefited by getting more employment. More than 250 fishers participated in this programme.



Hon'ble Minister & the Director at the Fish Harvest Mela

International Yoga Day



International Yoga Day at Barrackpore HO

The Institute celebrated 5th International Yoga Day on 21 June 2019 at Barrackpore Head Quarters and its Regional Centres. At Barrackpore the Yoga Session was conducted under the guidance of eminent yoga expert, Ms. Jayashri Marjit and her group. Around 150 staff members and their family attended the program in the morning of 21 June in the Krishna Garden. On the previous day, a lecture on "Health benefits of Yoga" was also organized in the Institute Auditorium. ICAR-CIFRI Regional Centres Guwahati, Allahabad, Bangalore and Vadodra also celebrated Yoga Day on this occasion.

National Fish Farmers' Day



Dr. V. V. Sugunan making remarks at the National Fish Farmer's Day

The Institute celebrated National Fish Farmers' day like every year on 10 July 2019 at its Headquarter at Barrackpore. This day is celebrated to commemorate the great achievement of induced breeding technique by Prof. Hiralal Chaudhary. The event was inaugurated by a ranching programme in River Ganga by releasing fingerlings of Indian Major Carps with the aim of sustaining and conserving biodiversity in the river. The event was witnessed by a gathering of more than 100 fish farmers, entrepreneur and fish production groups from West Bengal, Bihar, Jharkhand, Odisha and Madhya Pradesh. Eight farmers among them also received 'Best Fish Farmer Award' by the Institute for their outstanding contribution in inland fisheries development of the country. Sri Bamkim Hazra, Hon'ble MLA, Sagar Island, Dr. V. V. Sugunan, Former ADG (Inland Fishery), ICAR, Dr. Madhumita Mukherjee, Additional Director



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Important visitors



Dr. Trilochan Mohapatra, Secretary, DARE and Director General, ICAR visited ICAR-CIFRI Regional Centre, Guwahati on 14 September 2019. He interacted with the staff of the Centre and visited various laboratories and facilities of the Centre along with Dr. S. Rajkhowa, Director (Acting), ICAR-NRCP and Dr. A.K. Tripathi, Director, ATARI-VI, Guwahati.



Dr. J. K. Jena, DDG (Fisheries Sc.) visited Bangalore centre on 20 May 2019. He again visited the centre on 07 September 2019. Dr. A. Gopalakrishnan, Director, ICAR-CMFRI, Dr. C. N. Ravishankar, Director, ICAR-CIFT, Dr. P. Paul Pandian, Fisheries Development Commissioner, Govt. of India and Dr. K. Palanisamy, General Manager (Fisheries), NABARD, Bangalore, accompanied the DDG on 07 September 2019.

Smt. Mercykuttyamma, Hon'ble Minister for Fisheries, Harbour Engineering and Cashew Industry, Govt. of Kerala visited ICAR-CIFRI Research Centre, Bangalore on 06 Aug 2019. She was accompanied by Mr. B. Ignatius Mandro, Joint Director of Fisheries (Inland), Dept. of Fisheries, Govt. of Kerala and Dr. T. Mahesh, Dy. Director, Directorate of Fisheries, Govt. of Karnataka.



Smt. Mercykuttyamma, (7th from left in the front row)



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Dr. Mukesh Kumar Sinha, Executive Member, Narmada Control Authority visited the institute on 24 April 2019.



Prof. Bruce Frayne, Director, School of Environment, Enterprise and Development, University of Waterloo (second from right) and **Dr. Prateep Nayak**, Associate Prof, SEED, University of Waterloo (third from right) visited the institute on 27 July 2019.

Dr. Sunil Kr Gulati, IAS, Principal Secretary (Fisheries), Govt. of Haryana visited the institute.





ICAR-CIFRI stood by the Victims of severe super cyclonic storm "FANI"



The institute staff have always extended their help and support at the time of crisis/natural calamity. Continuing the same tradition, the staff donated generously for the victims of severe super cyclone Fani in the state of Odisha. The staff donated one day salary, cloths and other items. The Director took a lead in distributing the relief materials among the victims.



Tribal Sub-plan (TSP) / Scheduled Caste Sub-Plan (SCSP) activities

The Institute has been striving hard for livelihood improvement of marginalized tribal population across the states under TSP programme. From this year another such development effort has been directed towards SC community through SCSP programme. During the period from April to Sept 2019, the Institute has conducted several trainings, awareness camp-cum-scientist-fish farmer/fishers interface programmes and input distribution programmes under these plans.

The Institute staff of Barrackpore Headquarters surveyed Kumli, Chumurdaha, Pancheta, Beledanga *beels* of West Bengal for TSP programme during 08-09 May. They also conducted a meeting on 16 May at Kumli and Pancheta with the respective cooperatives. In hill region of Mirik, Darjeeling West Bengal, the Institute has conducted two awareness programmes under TSP for the fisheries development during 11 and 12 May. A total of 400 fishers were sensitized on the different aspects of fisheries livelihoods for the hill region. Demonstration was conducted on HDPE pen in Salia dam, a *Fani* affected area of Odisha. Fifty thousand IMC seeds were stocked to produce fingerlings which will be subsequently released into the reservoir. In the disadvantaged areas of Sundarbans, the institute stocked 16,000 fingerlings in 2 canals of Hingalganj block under TSP in Oct 2018. Capacity building of the fishers, dissemination of technical know how and distribution of inputs led to spectacular fish harvest of 1670 kg during 22-23 Aug.

Under the SCSP programme, trainings have been conducted for 63 fishers of Nadia and North 24 Parganas districts on wetland fisheries management for livelihood improvement during 24-27 June and 08-11 July 2019.



Training under SCSP during 24-27 June 2019



Training under SCSP during 08-11 July 2019



Awareness programme at Brynihat, Ri-Bhoi district, Meghalaya on 02 May 2019



Training-cum-awareness programme at Baksa, Assam on 04 May 2019 under TSP



The Kochi Centre of ICAR-CIFRI organized a training programme on 27 April at Kochi for 25 tribal fishers of Kottayam, Allapuzha and Ernakulam districts. Another training programme on alternate livelihood of the fishers for 27 tribal fishers of Kottayam, Kollam, Ernakulam and Allapuzha districts was conducted by the centre on 14 June 2019. The Guwahati Regional Centre organized awareness programmes on 'Fisheries enhancement in derelict water bodies of Ri-Bhoi district, Meghalaya' in collaboration with Rubber Board, Zonal Office, Guwahati at Brynihat, Meghalaya on 02 May 2019. Twenty five tribal fishers attended the programme.

A training-cum-awareness programme on "Livelihood improvement through fisheries" was organized by the Centre for tribal fishers of Baksa district of Assam at Mushalpur on 04 May 2019. A total of 66 no. of tribal fishers attended the training programme. At Darrang giri, Goalpara district, Assam, another training-cum-awareness programme on 'Use of aquafeed for enhancing fish production' was also organized on 10 May 2019. Rubber growers were encouraged for utilizing their small ponds for additional income generation through scientific fish rearing. In all the awareness programmes, CIFRI CageGrow Feed was distributed among the tribal fishers to encourage them to take up scientific fish farming.



Distribution of fish feed (CIFRI-CageGrow) to farmers



Technical session on cage culture for the farmers of Ri-Bhoi district, Meghalaya

A stakeholder consultation-cum-training programme on 'Cage culture in Umiam reservoir, Meghalaya' was organized by the Guwahati Centre in collaboration with ICAR Research Complex for NEH Region at Umniuh Khwan village of Umiam, Meghalaya on 24 Sept 2019. The programme was attended by 50 fishers and farmers under Ri-Bhoi Farmers' Union. Different aspects of cage culture including feeding schedules and monitoring were discussed.

Swachh Bharat activities

The Institute including all the Regional/Research Centres have been executing the activities under *Swachh Bharat* mission regularly. *Swachhata Hi Seva* campaign was performed during 11 Sept- 02 Oct 2019 with focus on shunning use of single use plastics. Apart from regular *Shramdaan* activities by the staff members towards collection and segregation of plastic wastes from the campus and the surrounding locality, the institute also conducted awareness campaigns at various local schools during the said period. Workshop, guest lecture, sensitization of farmers and drawing competition for the wards of staff members were also organized at the Institute. The Institute undertook mass awareness generation activities at the local bus stop and ferryghat by displaying banners, posters, wall paintings and distributing pamphlets. Similar activities were undertaken at all the centres of the Institute.



सिफरी समाचार

(April - September 2019)



Inauguration of *Swachhta hi seva* campaign



Awareness among school children on harmful effects of plastics



Distribution of leaflets on ill effects of plastics



Director leading the campaign on harmful effects of plastics



Pasting of posters on swachhta



Vermicomposting from organic wastes



सिफरी समाचार

(April - September 2019)



Homage to the Father of Nation at Allahabad centre



Cleaning programme at Institute premises, Bangalore



Workshop on plastic pollution at Guwahati Centre



Swachhata Hi Seva at Umiam in Meghalaya



Swachhata Hi Seva at Kochi centre



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ekSudk xlrkj mi æ fl g] Mh-, u->kj vcl kj vkye] thrtæ dækj] ohvkj- Bkdj] vkj-, l - JhokLro vS fc- ds nkl

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fl fcuk esy , l - vkj- ds elukj ykgr dækj ds j k f k l h , e-] 'kelZ, l - ds oh vkj- l j s k vS fc- ds nkl



सिफरी समाचार

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eNqjkadh I k{kjrk dke: i ftysea81 cfr'kr /kqjh ea63 cfr'kr vks ejsghkx ea48-6 cfr'kr ntZfd; k x; kA bu rhukaftyseavf/kdkk ysk -f'k I sthsgg sgA dke: i dseNqjkadsvk; vks 0; ; #i; s2]36]202 vks 1]26]9731/2vU; nksukaftyka tS s/kqjh #i; s98]000 vks 97]8811/2vks ejsghkx #i; s94]000 vks 79]9001/2dh ruyuk ea cfr o"kvf/kd n[k x; kA bu eNqjkausHkstu ij I cl svf/kd 0; ; fd; kj tks ejsghkx #i; s47]857 cfr o"kv dh ruyuk ea/kqjh #i; s68]200 cfr o"kv vks dke: i #i; s62]891 cfr o"kv eavf/kd ik; k x; kA dke: i ftydsenqjkausf' kfk ij vfkj k [kpf; kA ejsghkx ds85 cfr'kr eNqjksdPps?kjkaejrgsgA ejsghkx ftyseaNqjkadsvf/kdrj ifjokj 1/61 cfr'kr 1/2ea5; k bl I svf/kd I nL; n[ksx, ft I smueaxjch vfk ik; h x; hA; g I Hkrouk 0; ä dh xbzgSfd dke: i ftyds eNqjkaf' kfk ij vfkj 0; ; djrgsbl fy, mudsvk; dk cfr'kr vfkj gA bl ftydsvf/kdrj eNqjkadsikl -f'k Hke dk LokRo gkrk gSbl fy, mudh vk; dk cfr'kr vfkj n[k x; kA

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eks vkQrkc[h] fe'ky ih] , -ds cjk] ; wds I jdkj] fc-ds nkl] ch- uldj vks okbz vyh

vkSM'k eakRL; dh eNyh i ky vks vktfodk ij fouk'kdjkh p0okr Okuh dk chko

caky dh [kMh eacgn Hk; dj p0okrh rOku 'Okuh' vkSM'k dsijh rV ij 03 eb2019 dksyxHx 200 fdeh cfr ?k/sdh gok dh xfr dsl kfk vk; k Fk ft I dsifj. keLo: i 4 ftyk ih] dVd] daiMk vks txfll gij eadkOh upl ku gq/kA I LFku dsoKkfudkadh , d Vhe us vkSM'k dschkfor {s-kaekRL; dh {s- ea gq supl ku dk vkdyu fd; kA bl vkdyu eal Hh tSod vks vtSod eki nMkad fo'ySk.k fd; k x; k FkA cjkHkd fo'ySk.k eNyh i dM-eadkZegRo i wZvarj ughak; k x; k ij ; g Hh ntZfd; k x; k fd pfydk yxw vks egkunt] dkB t kMh&nsh ufn; kads kuh dh xqokk Lrj viuh I keU; fLFkr rd igp pds gsvks mRiknu cf0; k ea; ksnku dj I drsgA Vhe us yxHx 15 eNqjk xkxak nsk fd; k vks vkMh, d= fd, A ; g ik; k x; k fd ih] ftyeadPps?kjka eNyh i dMusokyh ukk vks tky] ?kjs wl keku vkfn dks0; ki d vks xhkh upl ku gq/k gA pfydk yxw dsl kriMk {s- eayxHx 90 cfr'kr eNyh i dMusokysuko vks tkykau"V gksx, gA dPps?kj yxHx ijh rjg I s(frxLr gksx, Fksvks v/k&i Dds?kj kadsNr mM+x, gA