



# सीफा समाचार CIFA NEWS

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भा.कृ.अनु.प.-केन्द्रीय मीठाजल जीवपालन अनुसंधान संस्थान  
( आई एस ओ 9001 : 2015 प्रमाणित संस्थान )

ICAR-CENTRAL INSTITUTE OF FRESHWATER AQUACULTURE  
(An ISO 9001 : 2015 Certified Institute)



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## DIRECTOR'S DESK

### Warm greetings to all reader!

In spite of the prevailing pandemic COVID-19 in this quarter, ICAR-CIFA made a very good progress in research, development and extension activities. The main research highlights during the period are: Captive breeding and larval rearing of maskara barb, *Dawkinsia assimilis*, exploring the possibility of increasing water productivity using a bio-floc



system for high-density fingerling rearing of pengba, study on the growth performance of koi (*Anabas*

*testudineus*) and singhi (*Heteropneustes fossilis*) reared at varied densities along with IMC during juvenile production, improving broodstock management and quality seed production of *Ompok bimaculatus*, evaluation of the protein requirement of *Hypselobarbus pulchellus*, antibacterial activity of *Lactobacillus* isolated from peninsular carps, aerobic nitrate and nitrite removal capacity of *Pseudomonas aeruginosa* WS-L9, rearing of *Puntius* fish species and marigold flower in FRP made NFT Aquaponic system and deriving its economic importance.

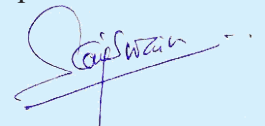
The important events organized during this period include visit of Sri Pratap Chandra Sarangi, Hon'ble Union Minister of State, Fisheries, Animal Husbandry & Dairying (FAHD) and Micro, Small and Medium Enterprises (MSME), Government of India and release of publications of different ICAR-CIFA technologies for the benefits of aqua-farmers of Odisha, observation of 72<sup>nd</sup> Republic Day, celebration of World Radio Day-2021, organization of virtual workshop on “Improved variety of carps and freshwater prawn for enhancing farmers’ income”, conductance of “34<sup>th</sup> Annual Research Advisory Committee Meeting”, celebration of “National Science Day”, organization of “International Women’s Day 2021” and the “World Water Day 2021”.

Under extension activities and technology transfer, nine Scientists-Farmers Interaction Meets were organized in Odisha, West Bengal and Andhra Pradesh. Five new Aquaculture Field Schools (AFS) were established in West Bengal under the different programmes of the Institute at Jaipaiguri; Saheberabad-I and II, Sonarpur; Chat Elajan and Elajaner Kuthi, Coochbehar; Fatepur, Karandighi and Dumutha Faridpur, Dakshin Dinajpur and one at Papumpare Ecoagro, Sonajuli, Arunachal Pradesh under the different programmes of the Institute. Under RKVY-AFS Project, the soil-water testing facilities were established in the existing Aquaculture Field

Schools (AFS) at Bhatapada, Banapur and Duba, Jagannathprasad in Odisha. ICAR-CIFA had signed a Memorandum of Understanding (MOU) with Uttar Banga Krishi Viswavidyalaya, Coochbehar for undertaking the research and extension activities in Agricultural Sciences. The Institute organized 21 virtual training programmes in the different aspects of aquaculture and 4536 farmers and stakeholders were trained. The Institute participated in three exhibitions and organized two health camps and five awareness programmes on the aspects of aquaculture of different commercial fish and shell fishes, feed and disease management.

Under TSP/STC, two training programmes were conducted in Odisha and a team of Scientists visited Koraput, Odisha for the sampling and partial harvesting of fish from the demonstration ponds. Under NEH activities, the Institute had undertaken different livelihood, training and demonstration programmes in Tripura, Arunachal Pradesh, Sikkim and Nagaland in collaboration with State Fisheries Department of the respective states and the local NGOs. Under SCSP, several Scientist-Farmers Interaction Meet, Training, Awareness and Input Distribution Programmes were organized in Odisha, West Bengal and Andhra Pradesh.

We hope to continue our good work both in research and developmental fronts in the future also in a new normal following all government guidelines and precautions of the current Covid-19 pandemic and put our sustained effort for developing the need-based technologies and practices for the benefit of our valued farmers, entrepreneurs, researchers, policy makers and other stakeholders in aquaculture.



**Saroj K. Swain**

**DIRECTOR**

## RESEARCH HIGHLIGHTS

### **Captive breeding and larval rearing of mascara barb, *Dawkinsia assimilis***

Mascara barb, *Dawkinsia assimilis* was first time successfully bred in captivity at RRC-CIFA, Bathinda under Network Project on “Ornamental Fish Breeding and Culture” under guidance of Dr S.K.Swain, Director, ICAR-CIFA and the PI of the project. The

fishes were procured from Bangalore, Karnataka. The length and weight of the fishes at the time of procurement were  $9.5 \pm 0.5$  cm and  $13 \pm 2$  g, respectively. Fishes were fed with protein supplementary diet (35% crude protein). At alternate day, the zooplanktons and boiled chicken liver were also fed to fishes. Male female reared separately after

the secondary sexual characters were identified. The broodstock development was carried out in glass tanks (200 L).

The breeding trial was conducted in April, 2021. In this breeding trial, 3 matured males (Avg. weight: 18.5 g and length: 11.5 cm) and 3 matured females (avg. weight 23.5 g and length 11.5 cm) were taken. Breeding of fish was done in glass tanks itself (200 L capacity). Inducing hormone, Ovatide was given to male and female (Dose: 0.025 ml/Individual) at intramuscular. After injection, brooders were released in breeding hapa placed in breeding tank. The spawning of fish was observed 36 h after the injection was given. The brooders were taken out after

spawning. The unfertilized eggs were removed to prevent fungal infection and to ensure better larval survival.

Larval rearing was done using 200 L glass tank. Larval feeding was started on 2<sup>nd</sup> day after hatching of spawn. Larval density was maintained at 3 numbers/L in first 2 weeks, after that it was reduced to 1 number/L. In first 2 weeks, the larvae were fed with egg custard and commercial powder feed (35% crude protein). On 3<sup>rd</sup> week onwards the larvae were fed with commercial powder feed only. Mean weight and length of larvae after one month was 200 mg and 21 mm, respectively. In this breeding trial, approximately 750 fry (from 1500 spawn with 50% survival) were produced.



**Male maskara barb**

**Female maskara barb**

**One month old maskara barb**

### Exploring the possibility of increasing water productivity using a bio-floc system for high-density fingerling rearing of pengba

A three months study on fingerling rearing of pengba (*Osteobrama belangeri*) was conducted in a biofloc system in 12 large tanks (50 m<sup>2</sup> each). The tanks were covered with PPE net (50% light incidence) and provided with aeration from 3.5 HP turbo air blowers (3 blowers operated alternatively for 7-8 h/day). Four treatments T-1, T-2, T-3 and T-4 were stocked with advanced fry of pengba (1.25±0.05 g, 4.74±0.70 cm) at 50, 60, 70 and 80 fry/m<sup>3</sup>, respectively. Fishes were fed with 1 mm floating pellet (CIFA-starter, 32% protein). In every week, the daily ration was determined from observing feed consumption within 30 min of feeding for two days and the ration continued for the next week days. The daily ration was split to two meals (10.00 AM and 4.00 PM). Molasses and urea were used as C and N sources to maintain a suitable C:N ratio of 15:1.

At the end of the experiment, the average body weight of the fingerling varied between 5.43-6.36 g (7.6-8.5

cm) and reduced with increasing density from 50 to 80 fry/m<sup>3</sup>. High survival (98.3-99.4%) and size uniformity in harvested fingerlings in all the treatments were the significant outcomes of the study, attributed to the additional continuous availability of natural food in the form of floc enriched with microbial protein in such biofloc system. There were no significant size differences of fingerlings reared at 50-70 fry m<sup>-2</sup>, but the same was lower in T-4 (5.43±0.16 g, 75.6±8.7 mm). The number of fingerling produced being more crucial in seed rearing, the increasing trend and high survival even at 80/m<sup>2</sup> suggested further scope to increase rearing density in such biofloc system for the species. The total water use (TWU) and consumptive water use (CWU) varied in the ranges of 13.51-20.79 m<sup>3</sup> and 1.355-1.563 m<sup>3</sup> for the production of each 1000 fingerlings, respectively. Such water use was much lower than the one reported earlier (36.9±0.7 m<sup>3</sup> TWU, 10.9±0.6 m<sup>3</sup> CWU) for pengba fingerling produced at 50/m<sup>3</sup> density in the normal tank without biofloc, which clearly demonstrated the efficiency of the biofloc system to increase the water productivity.

### **Growth performance of koi (*Anabas testudineus*) and singhi (*Heteropneustes fossilis*) reared at varied densities along with IMC during juvenile production**

Koi and singhi were reared each at three densities of 0.5, 1.0 and 1.5 fry m<sup>-3</sup> in 18 large concrete tanks (50 m<sup>3</sup>) along with three species of Indian major carps catla, rohu and mrigal each at 0.5 fry m<sup>-3</sup> for 4 months to produce juveniles. After 4 months of culture, the fry sizes were catla (10.3±0.7 cm, 15.2±0.4 g), rohu (8.8±0.6 cm, 8.1±1.1 g), mrigal (8.1±0.2 cm, 4.4±0.2 g), koi (3.6±0.3 cm, 1.1±0.1 g) and singhi (3.5±0.2 cm, 1.9±0.1g). A powdered mixture of groundnut oilcake and rice bran at 1:1 ratio was provided at 6, 4 and 3% of the estimated biomass during 1<sup>st</sup>-2<sup>nd</sup> months, 3<sup>rd</sup> and 4<sup>th</sup> months, respectively. Biomass was estimated considering the observed body weight (ABW) of the species from fortnight sampling and at an assumed 80% survival.

The respective survivals, growths (length and weight gains) and biomass yields in the three major carp species were almost similar across treatments, when reared with either koi or singhi, indicating their indifference to the increased density of either species. Singhi showed higher survival of 90-96% compared to koi (82-85%). Increased density from 0.5 to 1.5 m<sup>-3</sup> led to an only marginal reduction in harvested body weight of koi, but no marked effect observed in singhi. Similarly, no marked difference in final length observed in either species in response to varied densities. Absolute growth rates (AGR) ranged between 0.22-0.26 and 0.12-0.14 g day<sup>-1</sup> in koi and singhi, respectively, as compared to 0.42-0.51 g day<sup>-1</sup> in IMC. But, weight gain was more than three folds in koi (2383-2881%) than singhi (784-888%), revealing higher growth potential of the former. Net biomass yield increased significantly with increased koi density. But in singhi, it was higher only at 1.5 m<sup>-3</sup> density. Such higher yields in treatments with koi or singhi at 1.5 m<sup>-3</sup> density; and the growth indifference of IMC species to their varied densities while indicated the advantage of rearing them together, the marginal difference in survival in response to density variation in both cases suggested feasibility to increase their densities further in polyculture with IMC.

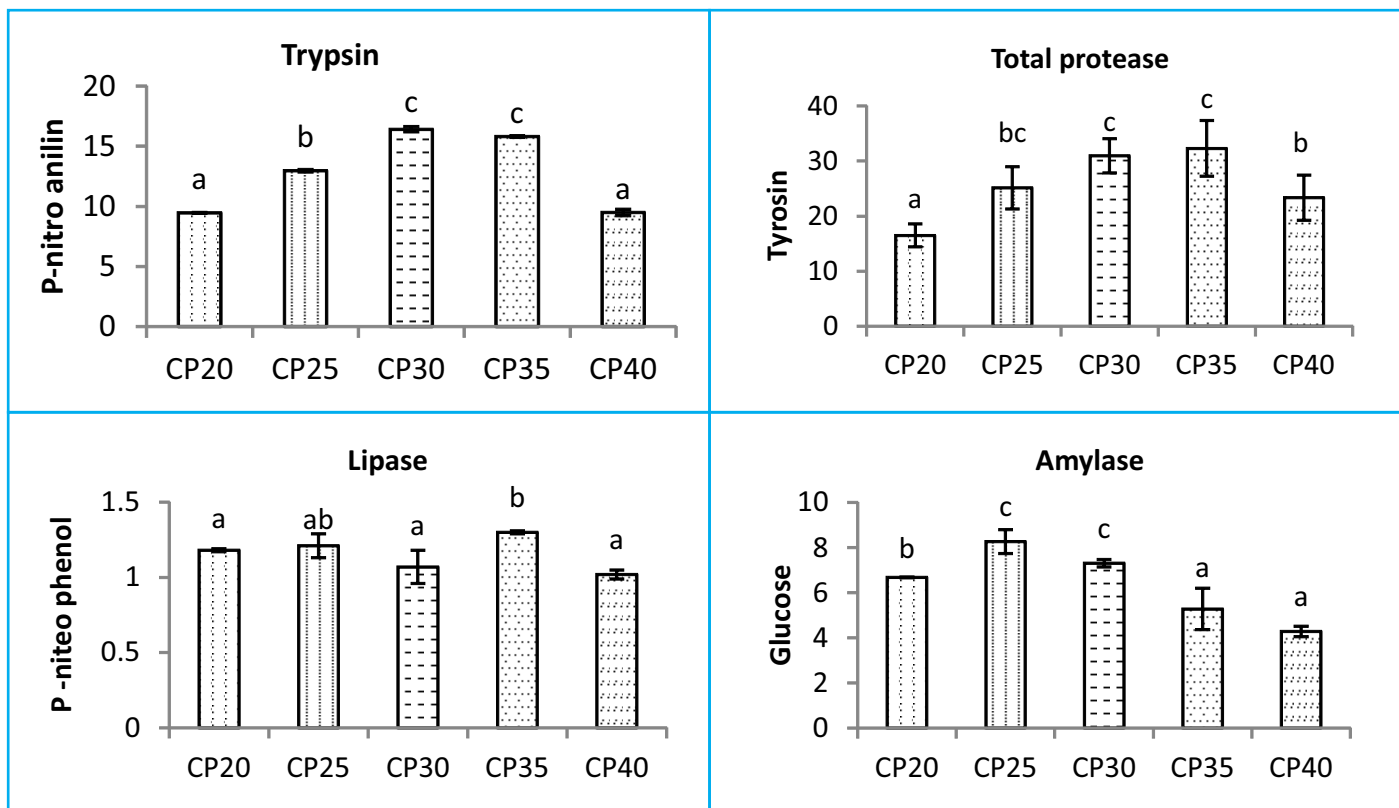
### **Improving broodstock management and quality seed production of *Ompok bimaculatus***

An experiment to study the effect of photoperiod

(24L:0D, 12L:12D, 15L:9D, 9L:15D, 0L:24D) and light intensity (500, 1000 and 1500 lux) on reproductive traits, breeding performance and quality seed production of *O. bimaculatus* was initiated in triplicate for 16 weeks. The temperature and DO were adjusted regularly. Other water quality parameters also estimated fortnightly. The temperature was measured at 24°C, pH 7.6, DO 6.4 ppm, total hardness 96 ppm and total alkalinity 116 ppm. The photoperiod and light intensity had a significant effect on body weight of the fish after 30 days of rearing (P<0.05). The highest weight gain percentage and average daily gain were observed in T2-C (12L:12D, 1500 Lux), followed by T2-B (12L:12 D, 1000 Lux) and T4-A (9L:15D, 500 Lux). The highest Gonado-Somatic Index (GSI) was observed in both female and male in T3-A (15 L:9 D, 500 Lux) and T4-C (9 L:15 D, 1500 Lux) at 30 days post experimentation. The photoperiod and light intensity had no significant effect on Hepato-Somatic Index and Stoma-Somatic Index. No significant difference was observed in Hepato-Somatic Index, Stomo-Somatic Index and Intesto-Somatic Index (P>0.05) between male and female fish. Serum, liver and gonad samples were collected at 0 d, and 4 weeks post rearing. Analysis of gonad histology, enzyme activity, biochemical and hormonal profile are in progress.

### **Evaluation of the protein requirement of *Hypselobarbus pulchellus***

To evaluate the protein requirement of *H. pulchellus* fingerlings (8.68±0.17 g; length 9.43±0.34 cm), five isocaloric diets with graded level crude protein (20 to 40% CP) were fed to the fish for 60 days. Growth parameters, feed digestibility and gut digestive enzyme activity were analysed during the study. Proximate composition of feed, faecal matter and the fish carcass were also analysed. The final weight, weight gain (%), specific growth rate (SGR) and food conversion ratio (FCR) was the best with 35% CP diet. Protein efficiency ratio (PER) decreased with an increase in dietary crude protein level. The carcass crude protein content was the highest with 35% CP diet. The digestibility coefficients for crude protein and fat were the highest with 35% CP and 40% CP diets, respectively. Higher activities of trypsin, total protease and lipase were detected in the intestine of fish fed with 35% CP diet (Fig. 1). The study indicated a protein requirement of around 35% for the juveniles of *H. pulchellus*.



**Fig. 1. Activity of digestive enzymes (mean±SD;  $\mu$  moles of product liberated  $h^{-1}$  mg tissue protein<sup>-1</sup> at 25 C) in the intestine of *H. pulchellus*. Different alphabets on bars in the same graph indicate statistical difference ( $p < 0.05$ ).**

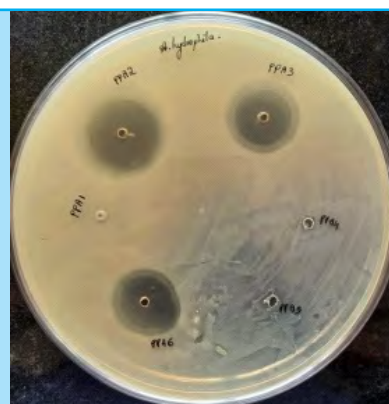
### Antibacterial activity of *Lactobacillus* isolated from peninsular carps

*Lactobacillus* group of bacteria isolated from the gut of *H. pulchellus* and *P. carnaticus* were screened for their antibacterial activity against *Aeromonas hydrophila* and *Flavobacterium columnare* on ABST

plates. The designated strains PCF1 and PCF5 have shown antibacterial activity against *F. columnare* (Fig. 2), whereas strains PPA2, PPA3 and PPA6 showed antibacterial activity against motile *A. hydrophila* (Fig. 3) by showing a clear zone of inhibition on agar plates.



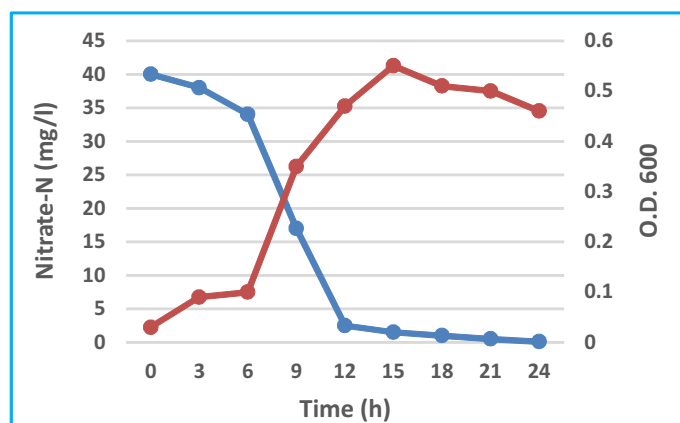
**Fig. 2. Zone of inhibition against *F. columnare***



**Fig. 3. Zone of inhibition against *A. hydrophila***

## Aerobic nitrate and nitrite removal capacity of *Pseudomonas aeruginosa* WS-L9

Denitrification ability of isolate *Pseudomonas aeruginosa* WS-L9 was evaluated in denitrification media (DM-1) where sodium nitrate ( $\text{NaNO}_3$ ) was used as nitrogen source and glucose was used as carbon source. A decrease in  $\text{NO}_3\text{-N}$  was observed within 15 h of incubation of the isolate in DM-1 media. Approximately 100% of the  $\text{NO}_3\text{-N}$  was removed in 18 h. The cell density of the isolate was maximum (0.55) at 15 h. The growth of isolate *Pseudomonas aeruginosa* WS-L9 in DM-1 media and  $\text{NO}_3\text{-N}$  reduction ability of this isolate under an aerobic condition was shown in the Fig. 4.



**Fig. 4. The growth and  $\text{NO}_3\text{-N}$  reduction ability of *Pseudomonas aeruginosa* WS-L9 under an aerobic condition**

## Rearing of *Puntius* fish species and marigold flower in FRP made NFT Aquaponic system

Under the mandate of AICRP on Plastic Engineering in Agriculture Structures & Environment

Management (PEASEM) Centre at ICAR-CIFA, Bhubaneswar, the Nutrient Film Technique (NFT) aquaponics system has been designed and developed. Each unit consists of a  $3 \text{ m}^3$  FRP fish culture tank (T) ( $\phi 2.15 \times 0.9 \text{ m}$ ),  $0.1 \text{ m}^3$  PP (Poly-Propylene) Biofilter (B),  $2.2 \text{ m}^3$  FRP Hydroponics tank ( $4 \times 0.9 \times 0.35 \text{ m}$ ) (H) and a  $0.2 \text{ m}^3$  HDPE (High Density Poly-Ethylene) Sump (S). Three units were operational for the experiment. The light weight and very durable FRP material makes this type of aquaponics system transportable, easily repairable and economic. The flow within the developed system is 75% gravity driven making it very efficient in terms energy consumption.

Rearing of puntius (*Puntius gonionotus*) and marigold (*Tagetes patula*) experiment continued in the developed system during 5 November, 2020 - 21 January, 2021 (75 days) at ICAR-CIFA farm, Bhubaneswar. The puntius fry (3-5 g initial weight) were stocked at 200 numbers per fish culture tank ( $3 \text{ m}^3$ ) and number of marigold saplings planted was 42, 63 and 84 in hydroponics tanks H1, H2 and H3, respectively. At the end of the experiment, fish biomass gain was 160-430% (20-56g final weight) from initial with a survivability rate of  $92.33 \pm 2.31\%$ . The marigold flowers were harvested three times during the experimental period with total harvest of 6237 numbers (@11 flowers/plant). The inventory cost of one unit is INR 60,000/- and estimated service life is 10 years. The operational cost involves fish and plant culture, electricity and manpower for 75 days of operation. The productivity analysis in terms of economics has shown a profit of INR 226.1/ $\text{m}^2$  of land/annum.

## Economics of Aquaponic System

Inventory cost (INR)/unit:	
1. Culture tank (1 no)	30,000
2. Hydroponics tank (1 no)	18,000
3. Biofilter and filtrate material	3,000
4. Sump and water level sensor	3,000
5. Pipes and fittings	2,000
6. Water pump (1 no)	2,000
7. Aerator (1 no)	2,000
<b>Total</b>	<b>60,000</b>

<b>Operating cost (INR) with puntius + marigold for 75 days:</b>	
1. Plants (189 nos)	378/- (@ 2/- per sapling)
2. Fish (600 nos)	1200/- (@ 2/- per puntius advanced fry)
3. Electricity	150/- (@ 175.6 Wh per day)
4. Feed (22.5 kg)	900/- (@ 5% body weight)
5. Manpower for 75 days (one hour a day)	3750/- (@ Rs 50/= per hour)
<b>1. The interest on a fixed cost for 75 days</b>	
	1850/- (@ 5% annual rate of interest)
<b>2. Depreciation value of the assets in 75 days</b>	
	1850/-
<b>Gross Income:</b>	
From flowers (6237 nos. from three harvests)	6,237/- (@ 1/- per flower)
From advanced fingerling (570 nos.)	5,700/- (@ 10/- per fingerling)
<b>Benefits:</b>	
Gross profit = Gross income - (Operating + other costs)	11,937 – 10,078 = 1859/-

Total operational area = 40 m<sup>2</sup> and culture duration 75 days. Hence, the return from land is INR 226.10 per annum per m<sup>2</sup> land)



## IMPORTANT EVENTS

**Visit of the Hon'ble Union Minister of State Sri Pratap Chandra Sarangi and release of publications of ICAR-CIFA technologies for the Aqua-farmers of Odisha**

Sri Pratap Chandra Sarangi, Hon'ble Union Minister

of State, Fisheries, Animal Husbandry & Dairying (FAHD) and Micro, Small & Medium Enterprises (MSME), Govt. of India visited the Institute on 9 January, 2021 and reviewed the various research activities. On this occasion, the Hon'ble Minister

addressed the staff of ICAR-CIFA and released a set of 16 Odia leaflets on popular aquaculture technologies developed by the Institute. The leaflets are meant for creating awareness among the farmers about scientific aquaculture practices. In addition, three e-booklets and one book entitled “Actionable Strategies for Increasing the Freshwater Aquaculture Production in India” were also released by the Hon’ble Minister. The interaction meet was live telecasted across all KVKs and District Fisheries Offices of Odisha. Other important dignitaries, like Sri Sagar Mehra, Joint Secretary (Inland Fisheries), Dept. of Fisheries,

FAHD, Govt. of India; Dr. J. Balaji, IAS, Joint Secretary (Marine Fisheries), Dept. of Fisheries, FAHD, Govt. of India; Dr. C. Suvarna, IFS, Chief Executive, NFDB; Dr. Pawan Kumar Agrawal, Vice-chancellor, OUAT, Bhubaneswar and Sri R. Raghu Prasad, IFS, Commissioner-cum-Secretary of Fisheries and Animal Resources Development Department, Govt. of Odisha also participated. The dignitaries had visited the farm facilities of the institute. During this occasion, the RAS facility in Murrel Culture Unit was also inaugurated.



### 72<sup>nd</sup> Republic Day observed at ICAR-CIFA

ICAR-CIFA observed 72<sup>nd</sup> Republic Day at its campus on 26 January, 2021. The tricolour national flag was unfolded by Dr. S. K. Swain, Director, ICAR-CIFA. This event was attended by around 200 employees and their children. Dr. Swain addressed the august gathering and urged them to cooperate wholeheartedly for the overall development of the Institute. After flag hoisting, the security personnel conducted the parade. Institute Annual Awards 2019

which were supposed to be distributed on 1 April, 2020 could not be done due to COVID 19 pandemic situation, were presented on this day. Smt. Sushilamma Memorial and Girish Chandra Choudhury Memorial Scholarships for school children, T. Rama Prabhu Memorial and B. R. Mohanty Memorial Award for research scholars of 2019 were also distributed on this occasion. Staffs including Swachhata warriors, security personnel, contractual and casual workers were also felicitated



on this day for their meritorious services towards the Institute. Award giving ceremony was coordinated by Mr. I. B. Kumar, SAO and Dr. (Mrs.) U. L. Mohanty, ACTO. Mr. D. Sahoo, Security Officer coordinated the whole event.



**ICAR-CIFA Celebrated World Radio Day-2021**

ICAR-CIFA in collaboration with Radio Club of Odisha and Krishi Vigyan Kendra, Khordha

celebrated the National Event of World Radio Day-2021 on 13 February, 2021 at VG Jhingran Auditorium, ICAR-CIFA, Kausalyaganga.



## Virtual Workshop on “Improved variety of carps and freshwater prawn for enhancing farmers’ income”

ICAR-CIFA in collaboration with M/s. Rittwik Fisheries, Murshidabad, West Bengal (a multiplier unit for Jayanti rohu) conducted one virtual awareness workshop under the ICAR-WorldFish collaborative project on 15 February, 2021 to sensitize the fish farmers, hatchery owners and other stakeholders on the importance of quality fish seed and adoption of improved fish varieties to enhance the farmer’s income. Sixty farmers from Berhampur, Murshidabad participated in the virtual workshop. Dr. S. K. Swain, Director, ICAR-CIFA, Bhubaneswar in his address stressed the need for such workshops to create awareness on the benefits of genetically improved fish varieties to enhance production and farmers income and encouraged the fish farmers to adopt scientific aquaculture practices. Dr. B. R. Pillai, Head, APED and PI of the project gave a brief overview of the workshop and emphasized the need for the adoption of genetically improved carps and scampi for getting higher production and income. She requested farmers to come forward to sign MoU for the Scampi multiplier unit in Murshidabad, West Bengal. Dr. J. K. Sundaray, Principal Scientist and Head, FGBD mentioned about the fish seed quality problems in

West Bengal and how to solve the problem with the help of ICAR-CIFA.

## 34<sup>th</sup> Annual Research Advisory Committee meeting

The Institute conducted 34<sup>th</sup> Annual Research Advisory Committee (RAC) meeting virtually during 22-23 February, 2021 in which Dr B. P. Mohanty, ADG (I.Fy), ICAR, New Delhi was present. At the outset, Dr. J.K.Sundaray, Member Secretary, RAC welcomed Dr. K.K.Vaas (Chairman) and all the Members of the RAC. He presented the RAC Recommendations of the last year vis-à-vis the Action Taken Report. Dr. S.K.Swain, Director, ICAR-CIFA presented the research highlights and the various developmental activities undertaken by the Institute over last one year. Chairman and all the Members appreciated the work done by ICAR-CIFA in spite of the Covid-19 pandemic. Then all the Heads of the Divisions of ICAR-CIFA presented the significant achievements of the research programmes of their respective division along with other training and demonstration activities undertaken over the period of during 2020-21. The Chairman and Members of the RAC critically reviewed each research programme of the Institute and offered the necessary advices to strengthen these so as to obtain the maximum out puts.



## Celebration of National Science Day

National Science day was celebrated at ICAR-CIFA, Kausalyaganga, Bhubaneswar. The theme for National Science Day 2021 was "Future of STI: Impacts on Education, Skills, and Work". More than one hundred participants including students of R. D. Womens' University, Bhubaneswar; Mahatma Gandhi Memorial College, Pubasasan; Scientists of ICMR-RMRC, Bhubaneswar and Scientists, Technical Officers, Administrative Staff and Research Scholars of ICAR-CIFA attended the event. Visit of students to Central Instrumentation Laboratory and ICAR-CIFA Aquarium was organized to enrich their knowledge on various aspects of fishery science. They were also shown some important field facilities of the Institute to gain more practical knowledge on

fisheries. On this auspicious day, Dr. S.K.Swain, Director, ICAR-CIFA spoke about the different avenues and opportunities available for students in fisheries sector, both in India and abroad. He advised the students to opt for career opportunities in fisheries science. While inaugurating the event, Dr. Manoranjan Ranjit, Scientist-G, RMRC, Bhubaneswar, Chief Guest of the Occasion suggested using Science in each sphere of life what the COVID crisis has taught us. Earlier Dr. Chandrakant Mishra, Principal Scientist & Coordinator of the programme welcomed the guests, students and gave a brief outline of the significance of this day. The programme was coordinated by Dr. Pushpa Chaoudhury, Scientist and Shri Sisir Kumar Mohanty, Senior Technical Officer, ICAR-CIFA. Sri Durga Prasad Rath, Technical Officer, ICAR-CIFA proposed the vote of thanks.



## International Women's Day 2021 organized at ICAR-CIFA

ICAR-CIFA organized International women's day on 8 March, 2021 with the theme of "Women in Leadership: Generation Equality". On the eve of International Women's day, a lecture series was organized on 6 March, 2021. Dr. Sanghamitra Pati, Director, ICMR-Regional Medical Research Centre (ICMR-RMRC) was the Chief Guest and delivered a lecture on "COVID crisis management in Odisha" highlighting the symptoms, risk factors, principles of diagnosis, types of COVID 19 tests and molecular platforms for its diagnosis. Dr. Swapnita Hota, Assistant Professor, Dept. of Obstetrics & Gynecology, Hi-Tech Hospital & Medical College, Bhubaneswar, delivered a presentation on "Gynecological issues and its management". Different competitions like essay writing, debate and drawing on the theme of "The International Women's

Day-2021" were also held on this occasion. Dr. P. Das, Director (I/C), ICAR-CIFA welcomed the dignitaries and mentioned that the Institute had operated many sponsored projects with women as beneficiaries. Mrs. Vidya Das, Joint Director, "AGRAGRAMEE" a leading NGO working towards the empowerment of underprivileged women was the guest of honour and she narrated her experiences about the difficulties faced by the unorganized women in different states. She also shared her working experiences on economic development of women in Odisha. Ms. Mamata Samantaray, Chairperson, State Progressive Women's Forum graced the function as Chief Guest. She spoke about the significance of International Women's Day and the challenges being faced by women in today's society. During the occasion, Dr (Mrs) Kanta Das Mahapatra, Principal Scientist and Chairperson of Internal Women Complaint Committee (ICC), ICAR-CIFA, highlighted the challenges of working women in India. Dr. Bindu R. Pillai, Head, APED told that

COVID-19 was very well managed by women across the world. In the Aquaculture sector women entrepreneurs are doing well. To mark the occasion, scientist-farm women interactions meet emphasizing on Women Leadership in Agriculture: Entrepreneurship, Equity and Empowerment (3E's) was held, which was moderated by Dr. N. K. Barik and Dr. P. Tiwari, Scientists of ICAR-CIFA. The women entrepreneurs from the agriculture and aquaculture

field were felicitated and the winners of the competitions were given away prizes. The Women SHGs exhibited their products for sale on this occasion. The women SHG groups and Entrepreneurs were also felicitated on this occasion. The programme was coordinated by Mrs. Snatashree Mohanty, Scientist and ended with a vote of thanks proposed by Dr. Utkal Laxmi Mohanty, ACTO, ICAR- CIFA.



### Celebration of World Water Day

World water day was celebrated at ICAR-CIFA on 22 March, 2021. The event was carried out by organizing a workshop on “Valuing of water for Life”. To commemorate the occasion, a quiz competition was also organized for the college students. More than 100 participants including farmers, scientists, extension officials and students from the nearby institutions and villages attended the programme. While inaugurating the workshop, the Chief Guest, Shri Hemant Kumar Panda, Director of Soil Conservation and Watershed Development, Govt of Odisha, emphasized the global water crisis and focused on implementation of

conservation measures including rainwater harvesting, an integrated farming system to multiply the farmers yield and income. In the workshop, Dr. S.K. Swain, Director, ICAR-CIFA, Bhubaneswar briefed about the current water scarcity. He also stressed on need-based technologies for the conservation of water and reduction water wastage. He also informed that ICAR-CIFA is involved in water budgeting research work on consumptive water requirements. Other dignitaries such as Dr. S.C. Rath, former Principal Scientist, ICAR-CIFA, Bhubaneswar and Shri S.K.Mohanty, Lecturer, MGM Higher Secondary School of Education and Technology, Kausalyaganga, Bhubaneswar told the

effect of scarce and excessive accumulation of water on daily life. The programme was coordinated by Dr. C.K. Misra, Principal Scientist, Dr Pushpa Chaudhari, Scientist and Shri Sisir Kumar Mohanty, Senior

Technical Officer, and concluded with a vote of thanks by Shri Durga Prasad Rath, Senior Technical Officer, of ICAR-CIFA, Bhubaneswar.



## EXTENSION ACTIVITIES / TECHNOLOGY TRANSFER

### Scientists - Farmers Interaction Meet at Nabagram village, Paschim Burdwan District, West Bengal

A Scientists-Farmers interaction meet was organized by ICAR-CIFA at Nabagram, West Burdwan, an SC dominated remote village on 15 January, 2021. Dr. S.K. Swain, Director, ICAR-CIFA, Dr. P.P. Chakrabarti, Principal Scientist, ICAR-CIFA, Dr. Archan Das, Principal Scientist, ICAR - CIFRI participated in the programme. Dr. Kundu, Assistant Director of Fisheries, DOF, Govt of W.B, West Burdwan has expressed his happiness for such

initiative. More than 50 farmers/entrepreneurs were present in the interaction meet. Improved Jayanti rohu, GI Catla spawn and pabda fry were supplied by ICAR-CIFA to Mr. Tanmoy Banerjee for conducting a rearing demonstration for 6 months (end of August, 2020 to February, 2021) in 2-acre water bodies. Farmers expressed their keen interest to adopt ICAR-CIFA technologies to raise their income and demanded a pabda hatchery, pearl culture demonstration in near future along with GI Catla and Jayanti rohu culture. A press meet was also arranged.



### Scientists-Farmer interaction meet and awareness programme at Bhadrak, Odisha

A Scientists-Farmer interaction meets and awareness programme at KVK, Bhadrak on 19 January, 2021 and at Balasore on 21 January, 2021 were conducted by Fish Health Management Division, ICAR-CIFA. The scientists have put their sincere effort during the prevailing COVID-19 pandemic also to ensure the wellbeing of fish farmers by organizing the programme strictly adhering to social distancing norms and other COVID protocols. The main

objective of the programme was to make them understand the different types of diseases prevailing in the freshwater aquaculture, their control and treatment measures at the farm level. In addition, major difficulties faced by the farmers were also discussed emphasizing the crucial role of water quality on fish health and how to maintain the optimum water quality in fish culture pond. A comprehensive discussion was done about the common fish diseases and their remedies. A total of fifty fish farmers from each district has participated in the scientists-farmer interaction meet and awareness programme.



### Brainstorming Meet at Subarnapur, Gop, Puri, Odisha

A Brainstorming Meet on Aquaculture Field School

and Farmers-Scientists Interface was organized at AFS Subarnapur, Gop, Puri, Odisha on 5 February, 2021.



**Farmers-Scientist Interaction Meet and Awareness Programme on Fish Disease Management in Freshwater Aquaculture at Bhavadevarapalli, Krishna District, A.P.**

A Farmers-Scientist Interaction Meet and Awareness Programme on Fish Disease Management in Freshwater Aquaculture was organized by ICAR-CIFA in collaboration with Dept. of Fisheries, Govt. of Andhra Pradesh and Sri MVKR Fisheries Polytechnic College, SVVY, Bhavadevarapalli, Krishna District, A.P. at Bhavadevarapalli, Krishna District, A.P. on 6 February, 2021. Sixty-four (64) progressive fish farmers of the region participated in the programme.



**Farmers Meet and Awareness Programme on Responsible Use of Drugs and Chemicals in Aquaculture for Sustainable Development at Kaikaluru, Krishna District, A.P.**

Farmers Meet and Awareness Programme on Responsible Use of Drugs and Chemicals in Aquaculture for Sustainable Development was organized on 9 February, 2021 at Kaikaluru, Krishna District, A.P. by ICAR-CIFA in collaboration with Dept. of Fisheries, Govt. of Andhra Pradesh. A total of 72 numbers of progressive fish farmers of the region participated in the programme.



**Field Day on Aquaculture at Aquaculture Field School (AFS), Sarakana, Baliana, Odisha**

A Field Day on Aquaculture was organised at AFS, Sarakana, Baliana, Khordha, Odisha owned by Padmashri Sri Bata Krushna Sahu on 24 February, 2021. On this occasion, a farmers-scientists interface was also conducted in which the Director and a team



of scientists from ICAR-CIFA and Dr B. P. Mohanty, ADG (I.Fy), ICAR, New Delhi had participated. Dr. Mohanty congratulated and felicitated Shri Sahu for the rare accomplishment and for his long-standing association with ICAR-CIFA. Shri Raghunath Nayak, Retd. FEO, Baliana block and Shri A. K. Bastia, DFO, Khordha were also present in the programme.



**Farmer-Scientist Interaction meet on “Freshwater Aquaculture Practices” at Talapada Village, Cuttack, Odisha**

A one day Farmers-Scientist Interaction meet on “Freshwater Aquaculture Practices” was organized on 22 March, 2021 at Talapada Village, Cuttack, Odisha under the CRP on Vaccines and Diagnostics project. The objective of the program was to sensitize the fish farmers about the better management practices and the advantages of using genetically improved varieties of carps for higher aquaculture production and income. About 60 participants, including two SHG groups from nearby areas attended the program. Dr J. Mohanty, Principal Scientist and PI of CRP on Vaccines and Diagnostics Project welcomed the farmers and guests and gave a brief overview of the interaction meet. Dr. K. D. Mahapatra, Pr. Scientist,

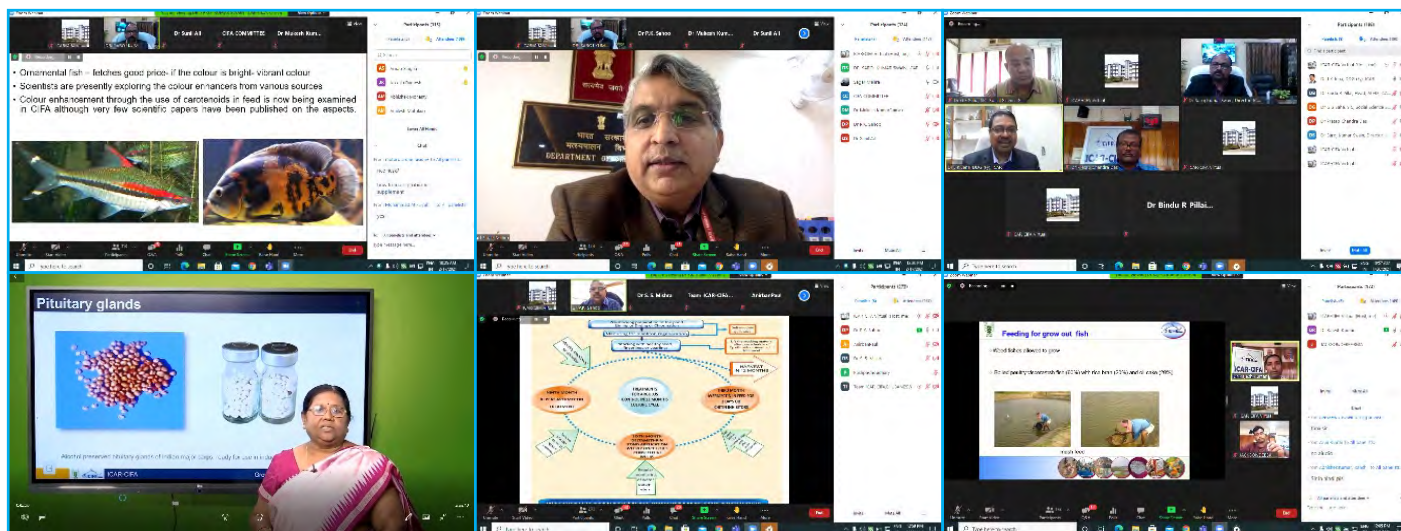
ICAR-CIFA highlighted the genetically improved rohu and catla developed by the institute. She urged the farmers to take the benefit of these improved varieties. In the technical session, Dr. K. C. Das, Principal Scientist, ICAR-CIFA gave an overview of the importance of feed and feeding methods for better aquaculture Practices, Dr.S.K. Sahoo Principal Scientist, ICAR-CIFA brief about the catfish farming for increasing farmer’s income. Dr. P.K. Sahoo, Principal Scientist, ICAR-CIFA educated about common diseases of freshwater fish and their control for healthy fish production. Various inputs, viz., floating feed, dragnet and hundies for fish seed transportation were distributed to beneficiaries. The farmer-scientist interaction was coordinated by Mr. Mohan R. Badhe and Mr. Anirban Paul, Scientists of ICAR-CIFA.





## Training Programmes (Virtual/Online)

S. N.	Title of Training Programme	Duration	No. of participants
1.	Carp Seed Rearing	20 January, 2021	453
2.	Breeding and seed production of <i>Hypselobarbus pulchellus</i>	22 January, 2021	112
3.	Freshwater Pearl Culture	25 January, 2021	570
4.	How to manage disease problems in Aquaculture	27 January, 2021	384
5.	Productivity Enhancement in Freshwater Aquaculture	28 January, 2021	119
6.	Feeds and Feeding in Aquaculture	30 January, 2021	356
7.	Breeding and seed production of <i>Puntius carnaticus</i>	2 February, 2021	73
8.	Breeding & Culture of Pabda	2 February, 2021	213
9.	Breeding & Culture of Major Carps (in Kannada language)	3 February, 2021	29
10.	Wastewater Aquaculture	4 February, 2021	156
11.	Ornamental Fish Culture and Breeding	15-17 February, 2021	140
12.	Murrel Farming	18 February, 2021	250
13.	Breeding & culture of Pangas (RRC, Vijayawada)	18 February, 2021	102
14.	Anabas Farming	19 February, 2021	141
15.	Freshwater Prawn Farming	20 February, 2021	266
16.	High value Catfish Farming- An emerging profitable venture in Northern India	24 February, 2021	178
17.	Magur Farming	25 February, 2021	191
18.	BMPs for Quality Seed Production	26 February, 2021	247
19.	Soil & Water Quality Management	27 February, 2021	298
20.	Breeding and seed production of <i>Puntius kolus</i> and <i>Tor khudree</i> (English)	2 March, 2021	65
21.	Carp Breeding & Hatchery Management	5 March, 2021	193
	<b>Total</b>		<b>4536</b>



### The Institute's Participation in Exhibition:

S. N.	Title of Exhibition	Venue	Date/Duration
1.	Smart Aqua Expo India 2021	New Delhi Virtual Mode	6-12 February, 2021
2.	Kisan Mela 2021	Dr Rajendra Prasad Central Agricultural University, Pusa Samastipur, Bihar	7-9 February, 2021
3.	Agri Vision 2021	Institute of Life Sciences (ILS), Bhubaneswar, Odisha	14-16 March, 2021

### Training Programmes Conducted Under HRD Fund of the Institute

Training programme for capacity building and refresher programme for the benefit of staff members working in the Administrative and Finance Units at Hqrs.	ICAR-CIFA HQ	8-12 February, 2021	Attended all the ministerial staff up to the level of AAO & AF&AO at ICAR-CIFA Hqrs.
Capacity building training programme for 1/30 <sup>th</sup> Casual Labour	ICAR-CIFA HQ	22-26 March, 2021	Attended 135 Casual Labour at Hqrs and RRC, Rahara through online.

### Training Programme for the Students

S. N.	Title of Training Programme	Duration	No. of participants			Organized by
			Male	Female	Total	
1.	Microbiological, parasitological and molecular techniques in fish health management for ICAR-CIFE student	05 January, 2021 to 03 February, 2021	1	-	1	Dr P. K. Sahoo, FHMD

## Technical Guidance (individual)

Months	Samples tested and technical guidance given				Tech. queries
	Water	Soil	Fish disease	Feed	
January-2021	26	5	4	-	26
February-2021	28	8	3	-	38
March-2021	32	16	3	-	50
<b>Total:</b>	<b>86</b>	<b>29</b>	<b>10</b>	<b>0</b>	<b>114</b>

## OTHER EXTENSION ACTIVITIES

### Fish Health Camp

S. N.	Title of Exhibition	Venue	Duration	No. of Participants
1.	Fish disease diagnosis and management in freshwater aquaculture	Banpur, Khordha District, Odisha	8-9 March, 2021	60
2.	Fish disease diagnosis and management in freshwater aquaculture	Dellang block, Puri District, Odisha	10-12 March, 2021	60

### Awareness programme (through online)

S. N.	Title of Exhibition	Venue/ Organizer	Duration	No. of Participants
1.	Freshwater Pearl Culture	ICAR-CIFA HQ	25 January, 2021	570
2.	How to manage disease problems in aquaculture	ICAR-CIFA HQ	27 January, 2021	384
3.	Productivity enhancement in freshwater aquaculture	RRC, Rahara	29 January, 2021	119
4.	Feeds and feeding in aquaculture	ICAR-CIFA HQ	30 January, 2021	356
5.	Breeding and seed production of <i>Puntius carnaticus</i>	ICAR-CIFA HQ	2 February, 2021	73
6.	Breeding and culture of Pabda	RRC, Rahara	2 February, 2021	213
7.	Breeding and culture of Indian Major Carps (in Kannada language)		3 February, 2021	29
8.	Wastewater aquaculture	RRC, Rahara	4 February, 2021	156
9.	Murrel farming	ICAR-CIFA HQ	18 February, 2021	250
10.	Breeding and culture of Pangas	RRC, Vijayawada	18 February, 2021	102
11.	Anabas farming	ICAR-CIFA HQ	19 February, 2021	141
12.	Freshwater prawn farming	ICAR-CIFA HQ	20 February, 2021	266
			<b>Total</b>	<b>2659</b>

## First Ornamental Aquaculture Field School at Jaipaguri, West Bengal

ICAR-CIFA has inaugurated the first “Ornamental Fish Farmer Field School” at the fish farm of Sri Bhagirath Roy of Prabhupara Village, Sadar Block, Jaipaguri, West Bengal on 7 February, 2021 through RRC, Rahara. This is a unique farmer field school for the farmer to farmer learning and dissemination of ornamental fish culture techniques. The field school was virtually inaugurated by Sri Sagar Mehera, Joint Secretary, Ministry of Fisheries, and Government of India. He appreciated the efforts made by ICAR-CIFA in helping the farmers of remote North Bengal for adopting a scientific aqua farming system. The programme was held in presence of Dr.S. K.Swain, Director of ICAR-CIFA along with a group of Scientists Dr.S.S.Giri, Dr.B.N.Paul, Dr.S.Adhikari,

Dr.R.N.Mandal and Dr.H.K.De. The Director of ICAR-CIFA while addressing the gathering urged the farmers and farm women to take up ornamental fish farming and assured them technical support from ICAR-CIFA. He also mentioned that the AFS piloted by the institute in Odisha, West Bengal and Chhattisgarh have been extremely popular. As a token, a packet of ornamental fish seed (sword tail, redcap, molly, goldfish etc.) was distributed to 50 Scheduled Caste farmers. A one-day training programme on ornamental fish farming was organised for the farmers, stakeholders and state Government officials, maintaining COVID-19 guidelines. The training was attended by 120 farmers and farm women. The programme was coordinated by Dr. B.N. Paul, Principal Scientists from RRC, Rahara.



## RKVY-AFS Project

### Establishment of Soil-water Testing Facilities at Aquaculture Field Schools (AFS) under RKVY-AFS Project

#### Soil and water testing facilities at Banapur AFS

- Soil and water testing facilities has been established at AFS, Bhatapada, Banapur (Khordha) under RKVY-AFS project on 27 March, 2021. A hands-on Training was given to

the personnel at AFS to operate various equipment and analytical procedures as well as providing recommendations to the beneficiaries. A demonstration and training programme was also organized to create awareness among the farmers about different aspects of soil and water testing for freshwater aquaculture wherein about 50 stakeholders participated.



### Soil and water testing facilities at Duba AFS

Under the RKVY-AFS project, another soil and water testing facilities has been created and operationalized at AFS-Duba, Jagannathprasad (Ganjam) on 30 March, 2021. The technical staff at AFS were trained

adequately to handle different operations of mini-laboratory to cater the needs of beneficiaries. A demonstration and training program was also conducted for beneficiaries wherein about 40 farmers participated.



## TRIBAL SUB-PLAN (TSP/STC)

➤ A training programme on “Seed Production and Modern Aquaculture Practices” has been organized by ICAR-CIFA at the Odisha Special Armed Police 7<sup>th</sup> Battalion campus for Tribal Police personnel. This training programme was organized under the STC programme of the

ICAR-CIFA on 20 February, 2021. In total 202 people participated in the programme. Dr. Sudhansu Sekhar Sarangi, Commissioner of Police, Bhubaneswar was the Chief Guest on this occasion.



➤ A team of scientists visited Koraput during 15-19 March, 2021. Ponds of 10 farmers were netted for partial harvesting and sampling. A training programme on 'Brood Fish Care and Hatchery

Management' was conducted in which 50 farmers attended the training. FRP hatchery sites (4) were visited and necessary arrangements were made to undertake breeding during July-August 2021.



## NEH Activities

### **ICAR-CIFA launched a livelihood development programme for promoting Scientific Fish Farming in tribal areas of Tripura**

With the motive of livelihood development through scientific fish culture, ICAR-CIFA along with Sewa International, a Non-profit organization collaboratively launched a livelihood development program for the poor fish farmers in the tribal dominated areas of Tripura. The main aim of this livelihood program is to promote the fish-based integrated farming system. Fish seeds comprising of IMC fingerlings (rohu, catla and mrigal), floating pelleted feed, lime, MOC, SSP were distributed to the beneficiaries under this livelihood program. A total of 50 fish farmers (30 farmers from Kanchanpur and 20 from Teliamura) belonging to ST and SC community is covered and will be benefitted by the project. The training program was conducted in two places, on 14

February, 2021 at Satnala, Kanchanpur and on 15 February, 2021 at Manik Bazar, Teliamura. During the training program, ICAR-CIFA team sensitized and demonstrated the farmers about the scientific-based fish farming technique and livelihood generation through integrated fish farming. The ICAR-CIFA team was led by Dr. Partha Pratim Chakrabarti, Principal Scientist & Chairman, ICAR-CIFA NEH activities and Mr. Jackson Debbarma, Scientist. Mr. Ankit Malik, Head, Skill Development and Mr. Vipan Kumar Mongia, Project Coordinator, Tripura from Sewa International were present during the training programs and highlighted the importance of livelihood development through integrated fish farming. Dr. Atul Debbarma, MLA, Krishnapur constituency graced the event held at Manik bazar, Teliamura on 15<sup>th</sup> February, 2021 and emphasized the importance of blue revolution and fish farming towards food security and livelihood generation.

ICAR-CIFA team also visited the farmers fish pond and briefed about the scientific fish culture techniques including integrated fish farming system, pond management, feeding regime and health management.

### **Arunachal Pradesh:**

#### **On-site Hands-on Training on Freshwater Pearl Farming at Sonajuli, Arunachal Pradesh**

Under Aquaculture Development Program at Arunachal Pradesh, a hand on training on Freshwater Pearl Farming was conducted at Sonajuli, Arunachal

Pradesh during 3-4 March, 2021. Total 17 participants comprised of Masters and Ph.D students of Rajiv Gandhi University, Itanagar, local farmers and few farmers from Assam participated in the training programme. They have experienced practical training on how to produce designer nucleus, implantation of mussel, pond management, etc. A training manual was also distributed to the participants. At the end of the program, the certificates were provided to all participants. This program was first of its kind in the North-Eastern states.



#### **Establishment of Aquaculture Technology Park and Aquaculture Field School at Papumpare Ecoagro, Sonajuli**

Hon'ble Minister for Fisheries, Agriculture, Horticulture and Veterinary, Arunachal Pradesh Shri Tage Taki inaugurated the Aquaculture Technology Park in Papum Pare, Agro Eco, Sonajuli on 7<sup>th</sup> March 2020. The technology park is an unique initiative of ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar, Odisha, which is aimed to bring in all the viable aquaculture technologies of the institute in a single location for better technology demonstration and knowledge dissemination. This is first of its kind in India. ICAR-CIFA reach out to the farmers for demonstrating the proven technologies, so that they can produce more fish, increase their income and improve their livelihood. As a part of the NEH development programme, CIFA has initiated the Aquaculture Technology Park in the farm of Shri Tana Nekam Tara, a progressive farmer, Papum Pare Agro Eco from Sonajuli. The integrated farm complex has agriculture, horticulture and livestock crops. At present the farm has facilities to breed more than 13 fish species. It has hatcheries, seed rearing facilities, growout ponds in an integrated style. To scale up the initiative and to create an impact with the society, CIFA has initiated an Aquaculture Technology Park. The park will have an Aquaculture Field School also

to impart skill training to the farmers. Additionally, the park will have a mini-feed mill, ornamental fisheries unit, soil testing unit etc. Hon'ble Minister for Fisheries Shri Tage Taki inaugurated the park in a grand ceremony in the farm complex. In his speech, he lauded ICAR-CIFA for their outstanding contribution for carrying a development work in a remote place from the mainland. He congratulated the progressive farmer Shri Tana ji for his innovative efforts in the aquaculture and motivated him to bring in more farmers into fish culture enterprise. Hon'ble Minister, Home, Shri Bamang Felix, stated that the Aquaculture Technology Park is an innovative concept which needs to be replicated in other places of the state. Shri Tana Hali Tara, Hon'ble MLA and advisor to Minister of Fishery & Veterinary, Govt. of Arunachal Pradesh also congratulated the initiatives. Prof. Saket Kushwaha, Hon'ble Vice-Chancellor, Rajiv Gandhi University applauded the noble efforts of CIFA for reaching out to the farmers. In his Special Address through virtual mode, Shri Pratap Chandra Sarangi Hon'ble MOS, Fisheries, Animal Husbandry & Dairying and MSME appreciated the efforts of ICAR-CIFA for developing the Aquaculture technology park by extending knowledge and support to the people of Arunachal Pradesh. He congratulated the progressive farmer for pioneering the aquaculture development in the state. He told that the Aquaculture Technology Park will be

playing a key role in fostering the technology dissemination mechanism in the state, in turn it will improve the productivity of the existing fisheries resources and paves the way for climate resilient, sustainable livelihood options for the tribal people and add more proteinaceous diet item to their food basket. He stated that the Government under the leadership of Hon'ble Prime Minister Narendra Modi ji is committed for making the country ATMANIRBHAR. Dr Saroj K. Swain, Director, ICAR-CIFA, Bhubaneswar narrated the achievements and development activities of the institute for the empowerment of the aquafarmers of the country. With regard the Aquaculture Technology Park, he stated

that the park is unique and first of its kind in India and this park will serve as a Knowledge Hub and CIFA scientists will be in constant touch with the farmers for providing time to time advisory services. He also told that CIFA is committed towards the development of the aquaculture in the states as well as in the entire north-eastern states. Dr P.P.Chakrabarti Principal Scientist and Chairman for the NEH programme, CIFA briefed about the early days of the technical interventions in the farm and its evolution to an Aquaculture Technology Park. More than 500 farmers from adjacent districts joined for the programme. They have been given with live demonstration of different aquaculture activities.



**Sikkim:**

Dr S. K. Swain, Director and Dr. P. P. Chakrabarti visited several places with Officers, DOF, Sikkim for monitoring the progress of demonstration activities in raceways. An interaction meets with 45 nos farmers were organized at Rongli South Regu, East Sikkim.

Director, Department of Fisheries Sikkim and other fishery officials from the State Government side were present. A meeting was organized with the Director, NRC, Orchid and Director, CIFA for the possibility of initiating SIFS and ornamental fish base orchid culture in farmers places.





## Nagaland

Department of Fisheries & Aquatic Resources (F&AR) in collaboration with ICAR-CIFA under the project “Mission stunted fingerlings and species diversification for development of fisheries at Ura &

Diezephe village, Dimapur district” distributed amur carp and singhi seeds to farmers on 2 March, 2021 in the presence of Dr S.K. Swain, Director, ICAR-CIFA; Dr P.P. Chakrabarti, Nodal Officer, NEH, ICAR-CIFA and Mr Khriezhato Nakhro, Sub-Divisional Fishery Officer, Dimapur.



## SCSP

## Odisha

**Farmers Scientist Interface meet was organised at Sodhua village, Balipatna block, Khordha district under SCSCP programme**

Farmers Scientist interface meet under SCSCP programme was jointly organised by ICAR-CIFA and Darbar Sahitya Sansad on 12 March, 2021 at Sodua village, Balipatna block, Khordha district, Odisha. More than 120 persons including seventy women participated in the event. The purpose of this interface was to create awareness about scientific farming practices among the farmers. It also provided a platform for the scientists to gather feedback about the technologies that have already gone to the field. Farmers were urged to form the Farmer Producers Company (FPC). It will help them in the

collectivization of produce and getting higher producer’s share in consumer’ rupees said Dr. G. S. Saha, SIC, Social Science, ICAR-CIFA. Dr. Saha also advised for organic farming.

Earlier Mr. Kedareswar Choudhury, Secretary, Darbar Sahitya Sansad welcomed all the guests and participants. Shri Batakrushna Sahu, Padmashri presided over the meeting. He spoke on his fish farming journey and encouraged other farmers for adoption of scientific fish culture. Dr. S. Mohanty, Principal Scientist & Chairman, SCSP, briefed about the objectives of the SCSCP programme. He advised the nearby farmers of the ICAR-CIFA and the SHGs to take advantage this project. Dr. Manas Kumar Sinha, Senior Executive, NFDB informed the participant about the various schemes of the Government of India

for fish farming. He also stressed for using scientific technology for fish farming. Dr Ashis Saha, Principal Scientist, ICAR-CIFA also spoke on this occasion.

Five women farmers from five villages were felicitated for their significant achievements in various ventures and they shared their experiences. In

the second phase of the programme, production-related queries of the farmers were answered on spot by the experts in the local language. Dr. C. K. Mishra, Principal Scientist proposed a vote of thanks. Sri Durga Prasad Rath, Technical Officer coordinated the programme.



## West Bengal

### Training programme' on 'Scientific poultry and goat rearing' at SSKVK, Sonarpur, West Bengal

ICAR-Central Institute of Freshwater Aquaculture, Regional Research Station, Rahara and Sashya Shyamala Krishi Vigyan Kendra, Sonarpur, have organised a training programme' on 'Scientific Poultry and Goat Rearing' at SSKVK on 07 January, 2021 under 'Scheduled Caste Sub Plan' Scheme of Government of India. Dr. N. C. Sahu, Head, SSKVK delivered the welcome address. Dr. B. N. Paul, Principal Scientist and Nodal Officer, SCSP Scheme, W.B. described the programme and highlighted the role of mixed farming for better income generation of the farmers. The beneficiaries for the distribution of poultry and goat were identified during the training programme. Dr. Sarbaswarup Ghosh, Subject Matter Specialist, Animal Science, SSKVK has explained about the overall management of scientific poultry and goat rearing and assured to provide support to the villagers post distribution of the inputs. Dr. R. N. Mandal, Principal Scientist of RRS-Rahara, ICAR-CIFA has given a brief lecture on scientific

aquaculture practices. Dr. F. Hoque, Scientist of RRS-Rahara, ICAR-CIFA gave advisories for management of disease and health-related problems during winter months. In the said training, a total of 150 farmers attended the programme for Saheberabad I & II and Baburabad village, under Sonarpur Block, South 24 Parganas, W.B. following the Covid 19 norms. There was also a Scientists and Farmers interface during the training programme.



## Aquaculture Farmer Field School and Livestock Farmer Field School inaugurated at Village Saheberabad-I and II, Sonarpur, West Bengal

ICAR-CIFA, RRC, Rahara and Sasya Shyamala Krishi Vigyan Kendra, Sonarpur with their commitment towards the farming community have added another milestone in its road map by inaugurating two Aquaculture Farmer Field School (AFFS) and Livestock Farmer Field School (LFFS) in Sonarpur Block, South 24 Parganas, West Bengal on 13 January, 2021. The leadership of Dr. B.N.Paul, Co-ordinator of SCSP Scheme and Dr. N.C. Sahu, Head, Sasya Shyamala Krishi Vigyan Kendra have led to piloting of AFFS and LFFS for empowering over 5000 farmers in 20 nearby villages in adopting aquaculture and animal husbandry technologies. Farmer Field School is a school without walls for improving the decision-making capacity of the farmers and facilitate cross-learning opportunities. The two schools were inaugurated by Swami Sarvalokananda, Secretary, Ramakrishna Mission Ashram, Narendrapur. The programme began with the address by the honourable Joint Secretary to Government of India Shri Sagar Mehera followed by Revered Swami Shivapurananda, Vice-chairman, SSKVK, Ramakrishna Mission Vivekananda Educational and Research Institute. Dr. S.K. Swain, Director, ICAR-CIFA while addressing the gathering urged for the cooperation of farmers to get connected with ICAR-CIFA and SSKVK for their fisheries and other farming activities. He said that AFFS piloted by the institute in

Odisha and Chhattisgarh have become extremely popular. The two field schools inaugurated today will contribute greatly to extension and advisory services delivery. He felicitated Smt. Suniti Mondal and Shri Akshay Mondal, the operator farmers for adopting scientific practices and being the role model for the farming community. Dr. S.K.Roy, Director, ICAR-ATARI, Zone V, Kolkata appreciated the efforts made by ICAR-CIFA and SSKVK for helping the farmers for adopting a scientific integrated farming system. Dr. S.S.Giri, Head, Fish Nutrition and Physiology Division (FNPD) and Head, KVK, ICAR-CIFA focused on the role of aquaculture for strengthening rural livelihood. Among others who spoke were Swami Shivapurnananda, Vice-President, SSKVK, RKMVERI and Swami Bhavantananda from Ramakrishna Mission, Belur Math and Dr. B.N. Paul, Dr. S. Adhikary, Dr. H.K. De, Principal Scientists of ICAR-CIFA. Dr. Swagat Ghosh, Subject Matter Specialist (Fisheries) and Dr. Sarbaswarup Ghosh, Subject Matter Specialist (Vet. and Animal Sc.), Sasya Shyamala KVK were also present. Dr.R.N.Mandal, Dr. Farhana Hoque, Dr.P.P. Chakarabarti, Mr. A. Hussan of ICAR-CIFA also participated in the Farmer-Scientists interactions. Also, inputs like fish, chicks, goat, feed, lime, feed pelletizers and farm implements for aquaculture and poultry farming were distributed among farmers. A Farmer-Scientists interface meeting was also organised to gauge the interest and the visibility of the institute in bringing farmers, stakeholders, state Government and KVK into one platform.





**Farmers’ Meet and Input Support For Aquaculture, Horticultural Plants and High-Value Fruit Crops at Durganagar Village of Block Dinhata II, West Bengal**

ICAR-CIFA Regional Research Station Rahara and Cooch Behar, KVK of Uttar Banga Krishi Viswavidyalay (UBKV), have organised a ‘Farmers’ Meet and distribution of IMC seed, Horticultural plants and High-value fruit crops’ on 21 January, 2021 at village Durganagar of Dinhata block II, West Bengal under the ‘Scheduled Castes Sub Plan’ Scheme of Govt. of India. Dr. Bikas Roy, Head, Cooch Behar KVK delivered a welcome address to the Farmers. Dr. Saroj Kumar Swain, Director, ICAR-CIFA addressed the farmers on virtual mode and urged for the cooperation of farmers to get connected with CIFA and Cooch Behar KVK for their fisheries and other farming activities and launched the SCSP

programme of ICAR-CIFA in North Bengal. Dr. B. N. Paul, Nodal Officer, SCSP Scheme, described about the programme to be undertaken in collaboration with Cooch Behar KVK. He also highlighted the role of mixed farming in the income generation of the farmers. Dr. S. Saha, Subject Matter Specialist (Agronomy), Cooch Behar KVK has explained the importance of the cultivation of high-value fruit crops. In the said Farmers’ meet a total of 70 farmers attended the programme from Durganagar village of Dinhata II block, W.B. There was also a Scientist and Farmers interaction meet on different aspects of fish farming and cultivation of horticultural crops during the meeting. The plant samplings viz., lemon, dragon fruit, arecanut, year-round drum stick and ash guard were distributed to the farmers during the meeting. The Indian major carp seeds were also distributed and released in the farmer’s pond.



## “Farmers’ Meet and Input Support for Animal Husbandry” at Gopalpur village of block Cooch Behar II, West Bengal

ICAR-CIFA Regional Research Station Rahara and Cooch Behar, KVK of UBKV have organized a ‘Farmers’ Meet and distribution of Chicks and Ducks’ on 22 January, 2021. Dr. S. Saha, Subject Matter Specialist (Agronomy) delivered a welcome address at the Farmers’ meet. Dr. B. N. Paul, Nodal Officer, SCSP Scheme, W.B. described about the programme undertaken under in three KVKs of UBKV at different locations viz., Cooch Behar ( Cooch Behar district), Chopra (North Dinajpur district) and Majihan (South Dinajpur district). He also highlighted the role of mixed farming in income generation of the farmers combining crop, fish and animal components. Dr. Rahul Deb Mukherjee, Subject Matter Specialist (Animal Science), KVK, Cooch Behar has explained about the overall management of scientific poultry and duck rearing and assured to provide support to the villagers' post distribution of the birds. In the said Farmers’ meet a total of 40 farmers attended the

programme from Gopalpur village of Cooch Behar II block. There was also a Scientist and Farmers interface during the meeting. Then Rhode Island Red breed of poultry birds and Khaki Cambell ducklings were distributed to the 40 farmers along with preventive medicine. There was also a field visit to the zero tillage maize cultivated field of Mr. Sanjit Roy to whom maize seed was provided by ICAR-CIFA under the SCSP scheme.



## Input support for poultry farming at SSKVK, Sonarpur, West Bengal

ICAR-CIFA, Regional Research Station, Rahara and SSKVK, Sonarpur, have organised a programme on ‘Distribution of Poultry Chick and Demonstration of Poultry Farming’ at SSKVK on 27 January, 2021 under ‘Scheduled Castes Sub Plan’ Scheme of Government of India. Dr. N. C. Sahu, Head, SSKVK delivered a welcome address in the said programme. Dr. B.N. Paul, Nodal Officer, SCSP Scheme, described the programme and highlighted the role of poultry farming in the income generation of the

farmers. The farmers were given input support for poultry farming where Kaveri variety of poultry chicks along with drinker, feeder, poultry feed, medicine kit and lighting arrangements were distributed to 40 beneficiaries of Saheberabad-I & II and Baburabad village, Sonarpur block following the COVID 19 norms. Dr. Sarbaswarup Ghosh, Subject Matter Specialist, Animal Science, SSKVK has explained the overall management of scientific poultry farming and given a demonstration on the use of the feeder, drinkers, arrangement of lights in poultry house and application of medicines.



### Input support for aquaculture and demonstration of farm-made feed preparation' at SSKVK, Sonarpur

ICAR-CIFA, Regional Research Station, Rahara and SSKVK, Sonarpur, have organised a programme on 'Distribution of Hand Pelletizer and Demonstration of Farm Made Feed preparation' at SSKVK on 28 January, 2021. Dr. N. C. Sahu, Head, SSKVK delivered a welcome address to the farmers and mentioned about the importance of farm made feed for sustainable aquaculture production. Dr. B.N. Paul, Nodal Officer, SCSP Scheme, ICAR-CIFA gave a

lecture on farm made feed and demonstrated the preparation of farm-made feed. He also discussed about the formulation of farm made feed with locally available feed ingredients. The inputs like hand pelletizers, gamsa and training kits were distributed to 150 beneficiaries of Saheberabad-I & II and Baburabad village, Sonarpur block following the Covid 19 norms. There was also a Farmer and Scientists interaction meet during the training programme. The farmers were very happy to get training on formulation and preparation of farm made feed.



### ICAR-CIFA signs MOU with Uttar Banga Krishi Viswavidyalaya, Cooch Behar

ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar signed a Memorandum of Understanding (MOU) with Uttar Banga Krishi Viswavidyalaya, Coochbehar for undertaking research and extension activities in Agricultural sciences. The MOU is signed by Dr S.K. Swain, Director, ICAR-CIFA and Dr PK Paul, Director, Extension Education, UBKV in presence of Dr SK Chakrabarty, Vice-Chancellor, UBKV. Dr Pradyot

Paul, Registrar, UBKV ; Dr B. N. Paul, Nodal Officer, Schedule Caste Sub Plan (SCSP) Scheme, Dr. S. S. Giri, Head, KVK, Khordha, Odisha, Dr Bikash Roy, Senior Scientist and Head, KVK, Coochbehar and Dr S Adhikary, Dr H K De, Dr R N Mandal, Principal Scientists of ICAR-CIFA were also present. ICAR-CIFA is implementing activities in collaboration with the university for the livelihood development of more than 650 fish farmer families belonging to the schedule caste community. Scientific technologies of crops, horticulture, fisheries, animal husbandry are

being promoted for their socio-economic development. The activities are being carried out in three districts- Uttar Dinajpur, Dakshin Dinajpur and Coochbehar.



### **Aquaculture Field School and Livestock Farmer Field School Inaugurated at Chat Elajan and Elajaner Kuthi, Cooch Behar-I Block, Coochbehar**

ICAR-CIFA, Bhubaneswar, Regional Research Station, Rahara and Cooch Behar Krishi Vigyan Kendra, UBKV Pundibari, Cooch Behar, West Bengal has inaugurated Aquaculture Farmer Field School and Livestock Farmer Field School at Chat Elajan and Elajaner Kuthi, Cooch Behar-I Block, Cooch Behar, West Bengal. The leadership of Dr.B.N.Paul, Coordinator of SCSP Scheme and Dr. Bikas Roy, Head, Cooch Behar Krishi Vigyan Kendra have led to

the piloting of AFFS and LFFS for empowering over 5000 farmers in 25 nearby villages in adopting aquaculture and animal husbandry technologies. Mr. Sanjay Kirtania and Purneswar Barman were the operator farmers for AFFS and LFFS respectively. Dr.S.K. Swain, Director of ICAR-CIFA while addressing the gathering urged the farmers and farm women to take up fish farming and assured them technical support from ICAR-CIFA. He highlighted the efforts made by ICAR-CIFA in helping the farmers of remote North Bengal for adopting a scientific aquafarming system. Dr. B.N. Paul, Principal Scientists of ICAR-CIFA played an instrumental role in establishing the Aquaculture Field School and coordinated the program. Dr. S.S. Giri, Dr. S.Adhikari, Dr. R. N. Mandal and Dr. H.K.De, Scientists of ICAR-CIFA also participated in the programme. Dr. P. K. Pal, Director Extension Education, UBKV, Cooch Behar also assured the help from KVK. Around 100 farmers and farm women attended the programme maintaining COVID guidelines. Demonstration on use of paddy transplanter machine was undertaken for 5 ha area covering 30 farmers in 3 blocks viz., Cooch Behar I & II and Dinhata II in the villages Durganagar, Kisamat Dasgram and Gopalpur during 22 February, 2021 to 20 March, 2021. As a part of animal husbandry input support, 350 Rhode Island Red poultry chicks were distributed to 35 farmers of Dinhata II block.



## ICAR-CIFA Launches Aquaculture Farmer Field Schools at Fatepur, Karandighi of Uttar Dinajpur, West Bengal

ICAR-CIFA, Bhubaneswar, Regional Research Station (ICAR-CIFA), Rahara, in association with Krishi Vigyan Kendra, Chopra (UBKV) launched Aquaculture Farmer Field School on 10 February, 2021 at Fatepur, Karandighi Block, Uttar Dinajpur of West Bengal. A team of ICAR-CIFA Scientists Dr.B.N.Paul, Dr.S.S.Giri, Dr.H.K.De, Dr.S.Adhikari, Dr.R.N.Mandal, and Dr.S.K.Swain established the farmer field school for the farmer to farmer learning and dissemination of aquaculture technologies. The initiatives of Dr. B. N. Paul, Nodal officer of SCSP Scheme and Dr. Surojit Sarkar, Head, Krishi Vigyan



## Aquaculture Farmer Field School is launched at Dumutha Faridpur of Dakshin Dinajpur, West Bengal

ICAR-CIFA, Bhubaneswar, Regional Research Station (ICAR-CIFA), Rahara in association with Dakshin Dinajpur Krishi Vigyan Kendra, Majhian (UBKV) launched Aquaculture Farmer Field School on 11 February, 2021 at Dumutha, Gangarampur Block, Dakshin Dinajpur of West Bengal. Dr.S.K.Swain, Director, ICAR-CIFA along with a team Scientists Dr.B.N.Paul, Dr.S.S.Giri, Dr.H.K.De, Dr.S.Adhikari and Dr.R.N.Mandal of ICAR-CIFA established the farmer field school for the farmer to farmer learning and dissemination of aquaculture technologies. The initiatives of Dr. B. N. Paul, Nodal officer of SCSP Scheme and Shri Sibananda Singha, Head, Krishi Vigyan Kendra, Majhian, Patiram have led to the establishment of the Field School for empowering over 2500 farmers in 20 nearby villages in adopting scientific aquaculture practices. Shri Sibananda Singha in his welcome address highlighted the roles played by the KVK and ICAR-CIFA for livelihood development in Dakshin Dinajpur district.

Kendra, Chopra have led to the establishment of the Field Schools for empowering over 2000 farmers in 20 nearby villages in adopting scientific aquaculture practices. Dr. Surojit Sarkar in his welcome address highlighted the roles played by the KVK and ICAR-CIFA for livelihood development in Uttar Dinajpur district. Shri Safiqul Alam is the Operator Farmer of the Aquaculture Farmer Field School. While inaugurating the field school virtually Dr.S.K. Swain, Director of ICAR-CIFA appreciated the initiatives and assured the farmers and farm women the technical support from ICAR-CIFA. Dr.R. N. Mandal of ICAR-CIFA and Subject Matter Specialists of KVK, Chopra participated in the programme. Around 110 farmers attended the programme maintaining COVID guidelines.



Shri Biplab Chandra Roy is the Operator Farmer of the AFFS. While inaugurating the field school virtually Dr.S.K. Swain, Director of ICAR-CIFA appreciated the initiatives and assured the farmers and farm women the technical support from ICAR-CIFA. Dr B.N. Paul, Nodal Officer, SCSP Scheme of ICAR-CIFA in his address mentioned that this Field School will go a long way in bridging the gap between research and extension. Dr.R.N.Mandal Scientist of ICAR-CIFA, Dr.J.Karforma, Associate Dean of College of Agriculture, Dr.Saikat Mukherjee, Deputy Director of Extension Education of UBKV and Subject Matter Specialists of Majhian Dakshin Dinajpur KVK also participated in the programme. Mr. Amrita Das, a progressive hatchery owner of Hare Krishna fish Farm also attended the meeting. Indian major carp fingerlings, singhi fry and horticultural plants were distributed to the selected farmers under SCSP Scheme. Around 120 farmers and farm women attended the programme maintaining COVID-19 guidelines. Input support for animal husbandry was provided through the distribution of 50 Banaraja breed of poultry birds to 50 beneficiaries of Chopra and Islampur block on 5 March, 2021.





### Input support for aquaculture and animal husbandry to the farmers of Sonarpur Block of West Bengal

ICAR-CIFA, Regional Research Station (ICAR-CIFA), Rahara and SSKVK, Sonarpur are working together for the poor farmers of Sonarpur Block. For pond preparation, lime is one of the important components. So, 75 quintals of lime were distributed as input support to 150 Scheduled Caste (SC) farmers of Saheberabad I & II and Baburabad village on 3 February, 2021. Dr. R.N.Mandal, Dr. Farhana Hoque, Mr Ajmal Hussan and Dr. Swagat Ghosh of SSKVK were present during lime distribution. The aquafeed contributes 60 % of the total input cost for aquaculture production. So feed was also given as input support to the farmers. A total of 150 quintals of floating fish feed was distributed to 150 farmers and the distribution was done in the presence of Dr. N.Sahu, Dr. S Ghosh of SSKVK and Mr Jayanta Ghosh, Technical Officer, CIFA, Rahara at SSKVK, Sonarpur on 15 February, 2021. The Indian major carp fingerlings were given as aquaculture input support to 150 farmers where a total of 12 quintals of fish was distributed on 18 February, 2021 at village Saheberabad I & II and Baburabad in presence of Dr. Swagat Ghosh of SSKVK, Mr. Jayanta Ghosh, Technical Officer and Mr. Asit Pal, SSS of

ICAR-CIFA, Rahara. As input support for aquaculture, 150 Aluminum handis were given to 150 Scheduled Caste (SC) farmers of Saheberabad I & II and Baburabad village on 04 March, 2021 and during the distribution Dr.N.C.Sahu, Head and Dr. Swagat Ghosh, SMS (Fisheries), SSKVK were present. As an animal husbandry input support, 95 Black Bengal goats were distributed to 95 farmers of Saheberabad I & II and Baburabad village under SCSP Scheme during 05 March 2021 to 10 March 2021, Dr. Sarbaswarup Ghosh SMS (Animal Science) and Dr.N.C.Sahu, Head, SSKVK were present during distribution. Dr. B.N.Paul, Nodal Officer SCSP Scheme, West Bengal mentioned that the above aquaculture input support will boost the income of the farmers of the Sonarpur block.

As a technical support, monitoring of water quality of beneficiaries pond was undertaken by ICAR-CIFA, RRS, Rahara and SSKVK, Sonarpur. The water quality was tested for 150 beneficiaries' ponds and the results are as follows: Dissolved oxygen (ppm) ranged from 2.56 -6.75, pH 6.80-9.11 and NH<sub>3</sub> (ppm) 0.10 - 4.0. The results were within the normal range of pond culture. Further works of distribution of various inputs are in progress.



## Farmers' Meet at Majihan Dakshin Dinajpur KVK, West Bengal and different input support to the farmers

ICAR-CIFA, Regional Research Station (ICAR-CIFA), Rahara in collaboration with Dakshin Dinajpur Krishi Vigyan Kendra, Uttar Banga Krishi Viswavidyalaya conducted a Farmers' Meet under Scheduled Caste Sub-Plan Scheme on 04 March, 2021. A total of 110 farmers and Govt. officials including scientists and professors from University and KVK and line departments attended the programme. Shri Goutam Sengupta, Project Director, ATMA, Government of W.B., Dakshin Dinajpur, Shri Tirthankar Biswas, DDM, NABARD, Dakshin Dinajpur, Dr. Jyotirmoy Karforma, Associate Dean, College of Agriculture, UBKV and Dr. Saikat

Mookherjee, Dy. Director of Extension Education, UBKV and Scientists of DD KVK were present in the farmers' meet. Input support for aquaculture viz., 13,000 IMC fingerling were given to 26 farmers, 9,500 catfish fingerlings were given to 10 farmers, floating fish feed of 36.67 quintals and lime of 835 kg was given to 45 fish farmers. Khaki Cambell ducklings of 1220 were given to 61 farmers. Horticultural plants such as guava, dragon fruit, lemon, bar and pomgranate of 450 numbers were given to 45 farmers. The inputs were distributed to the farmers during 4-12 March, 2021 under SCSP Scheme in 5 blocks viz., Balurghat, Kumarganj, Tapan, Gngarampur, Kushmundi and covering 15 villages of district Dakshin Dinajpur of West Bengal. There was also a session on farmers-expert interaction meet.



## Aquaculture Field Day and exposure visit of Farmers of Sonarpur at Rahara, West Bengal

Aquaculture Field Day and exposure visit was organized at ICAR-CIFA Regional Research Station, Rahara on 26 February, 2021 under the Scheduled Caste Sub Plan (SCSP) Scheme in collaboration with SSKVK, Sonarpur. The Aquaculture Field Day was organized for the farmers of villages Saheberabad I & II, and Baburabad of Sonarpur Block, South 24 Parganas, West Bengal, where 150 farmers and Farm women attended the programme maintaining COVID-19 guidelines. Dr. S. Adhikari, SIC of ICAR-CIFA welcomed the participants and assured every help for aquaculture production in the Soanrpur Block. Different field activates and netting was demonstrated to the farmers. The farmers observed live Hilsa in the pond of RRS (ICAR-CIFA), Rahara. Dr.D.N.Chattopadhyay, Principal Scientist shared his experience of domestication of Hilsa in pond aquaculture with the farmers. There was also

Scientists' and Farmers' interaction during the field day. Dr. R.N.Mandal, Dr. Farhana Hoque of ICAR-CIFA and Dr. N.C.Sahu Head and Dr. Swagat Ghosh of SSKNK, Sonarpur were also present during the Aquaculture Field Day. Dr. B.N.Paul, Nodal Officer of SCSP Scheme, West Bengal Coordinated the programme.



## Andhra Pradesh

### Input support for fish farming was supplied to the beneficiaries at Kuchipudi village, Guntur District, Andhra Pradesh

A team of Scientists from the Regional Research Centre, ICAR-CIFA, Vijayawada along with the officials, visited Kuchipudi village, Guntur District of Andhra Pradesh during 09-12 March, 2021 and provided inputs to the beneficiaries to encourage fish

farming. In this regard, critical farm inputs like feed, fishing nets, seed transportation tanks and plastic crates for fish storage were supplied to the 80 beneficiaries in the village. Sampling was conducted at the beneficiary pond and observed the seed quality and average growth of rohu and catla. The team also interacted with the farmers and given suggestions to improve the water quality and better management practices to be followed to increase the fish production in freshwater aquaculture.



### Training programme on Integrated Approach in Freshwater Fish Farming at Kuchipudi, Guntur district, Andhra Pradesh

RRC of ICAR-CIFA, Vijayawada, conducted three days “Training-cum-Demonstration Programme on Integrated Approach in Freshwater Fish Farming” at Kuchipudi, Guntur District, Andhra Pradesh during 25-27 March, 2021. During the programme, the various important topics covered are: importance of aquaculture and nutritional aspects of fish, nursery seed rearing management in aquaculture and harvesting and post-harvest methods in aquaculture, various technologies in freshwater fish farming, Best Management Practices in freshwater aquaculture &

integrated approaches in freshwater aquaculture, types of integrated fish farming, diseases and health management issues in aquaculture and government schemes. Dr. P. V. Rangacharyulu, Principal Scientist, Dr Ramesh Rathod, Senior Scientist, Dr Ajit Chaudhari, Scientist of RRC-CIFA, Vijayawada and Kum. J. Mahija and Dr. V. Ratnaprakash, State Fisheries Officer were served as resource person. The practical sessions on water and soil quality parameter estimation were also conducted. Inputs viz., horticultural plants (mango, guava and papaya), poultry chicks with their feed and related accessories and weighing balances were distributed to the participants.



## Public outreach

- ICAR-CIFA in collaboration with Water Resource Department (WRD), Government of Odisha organized a fish seed ranching programme in Jhumka Dam, Khordha, Odisha on 8 January, 2021. The purpose of the programme was to



replenish the depleting fish species in the natural open water bodies and increase the availability of fish to the people. For the ranching programme 22,000 fingerlings of *Labeo fimbriatus* (Khursia) and *Labeo calbasu* (Kalabainsi), raised from improved brood fish by ICAR-CIFA in its fish farm were released.

- The ABI, ICAR-CIFA has conducted Training-cum-Exposure visit of Fishery Department officials (2), Govt. of Assam and 10 representatives of Fishery Farmers Producer Company, Assam under Assam Agri-Business and Rural Transformation Project (APART), Assam during 12-14 February, 2021.

## Miscellaneous activities

A team of scientists visited the fish farm of Mr. Nirapada Konai, Village: Rajendrapur, P.O.: Madanpur, District North-24-Parganas, West Bengal on 23 January, 2021. The farmer reported mass mortality of fish specially *Labeo rohita*, *Catla catla* and *Labeo bata* stocked in a 1.5 ha pond utilized for composite fish culture. Haemorrhages were found throughout the body. Exophthalmia was reported in *Labeo rohita*, *Catla catla* and *Labeo bata*. White abscesses in the internal organs and pale discolouration were observed on dissection. Bacteriological observations from the gill and kidney revealed the presence of *Aeromonas veronii*. Biochemical characterization of the bacteria was done. Water of the fish farm appeared to be turbid that might suffer from depletion of DO (dissolved oxygen) which caused fish to be gasping and leading to enhanced mortality. The farmer has applied a number of probiotics, antibiotics, sanitizers, cleaners and other chemicals prior to the visit. Hence, in this context, only 20 kg of single superphosphate was

advised to apply for an increase in plankton production to facilitate water use efficiency in the condition of an increasing amount of phytoplankton which, in turn, would serve two purposes: water productivity to improve quality water in a fish pond in one way and act as live foods to fish in another. The fish mortality was stopped following the instructions of the scientist team.

## Distinguished Visitors

- Dr J.K. Jena, DDG (FS), ICAR, New Delhi visited ICAR-CIFA and interact with all scientists during 6-8 February, 2021.
- Dr. Sanghamitra Pati, Director, ICAR-RMRC, Bhubaneswar and Dr. Swapnita Hota, Asst. Professor (O&G), Hi-Tech Medical College and Hospital delivered talks on “COVID Crisis Management in Odisha” and “Gynecological Issues and its Management”, respectively on 6 March, 2021 on the eve of International Women’s Day, 2021
- Dr J.K. Jena, DDG (FS), ICAR, New Delhi visited ICAR-CIFA and interacted with the scientists on 15 March, 2021.
- Dr. C. Suvarna, Chief Executive, NFDB, Hyderabad visited the Institute on 25 March, 2021.

## AWARDS

- Dr.B.C.Mohapatra, Principal Scientist received Best Scientist Award from “EET CRS Research Wing for Excellence in Professional Education & Industry” in the “9th Academic Brilliance Awards – 21” Ceremony of Educationexpo.tv held at Hyderabad on 7 March, 2021.
- Dr.B.C.Mohapatra, Principal Scientist received Best Scientist Indian Achievers’ Award 2020-21 in Recognition of Outstanding Professional Achievement & Contribution in Nation Building from Indian Achievers’ Forum, New Delhi.

## APPOINTMENT

- Dr. P.V. Rangacharyulu, Principal Scientist appointed as SIC of RRC Vijayawada w.e.f. 18.01.2021

## TRANSFER

- Mrs Sweta Pradhan, Scientist transferred from ICAR-CIFA to ICAR-CIFE, Regional Station, Kolkata w.e.f. 31.01.2021 (AN)
- Dr. P. N. Ananth Sr. Scientist & Head KVK, Khorda (ICAR-CIFA) transferred from ICAR-CIFA to KVK, ICAR-CMFRI, Lakshadweep on 05.01.2021(AN)



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