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Newsletter of ICAR-Central Marine Fisheries Research Institute

INSIDE

Country's marine fish stocks healthy reveals study

The 'Marine Fish Stock Status of India 2022' report of ICAR-CMFRI indicated that a resounding 91.1% of the 135 fish stocks assessed in 2022 were healthy, marking a significant milestone in India's efforts to maintain the sustainability of its marine fisheries. The study highlighted the substantial reduction in unsustainable fishing practices, with just 4.4% of the stocks facing overfishing. Shri Parshottam Rupala, Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying officially released the 'Marine Fish Stock Status of India 2022' report on 31st August 2023 during the 'Sagar Parikrama phase VIII at Kanyakumari, Tamil Nadu. The first of its kind in the country the report gives a holistic picture of the status of the 135 marine finfish and shellfish stocks assessed in the Indian EEZ. The ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India issued an office memorandum concurring with the fisheries management advisories given in the report and strongly advised state governments to consider the same for improving the health of marine fish stocks in India. The report also caught media attention nationally and appreciation from international organisations like Asia-Pacific Fish Watch. It is hoped that the report will provide insights for making policies for sustainable marine fisheries sector and appropriate tweaking of the Marine Fishing Regulation Act(s) in various maritime states of India in the future ◆

Award for Indian pompano farming technology

The technology " Indian pompano farming in coastal cage culture system" with lead developer Dr. Sekar Megarajan and Associate Developers Dr. Ritesh Ranjan, Dr. Shubhadeep Ghosh, Dr. Biji Xavier, Dr. K. Madhu and Dr. A. Gopalakrishnan was awarded the Technology certificate during 95th ICAR foundation and Technology Day held during 16-18th July, 2023 in New Delhi ◆

Director Speaks

The recent study on 135 marine fish stocks conducted as the collective effort on fish stock assessment by several Working Groups in ICAR-CMFRI has some interesting points. It indicated that several fish stocks supporting the marine fisheries of India are healthy, but a few show signs of overfishing also. It emphasizes the need for responsible fishing practices alongwith effective fisheries management plans and their implementation. To benefit small scale fishers under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme, the task of generating awareness on Artificial Reefs and extending guidance and technical support to set up these in at least 3477 coastal villages in various maritime states is being done effectively and time-bound manner. Activities in alignment with the country's global commitments to healthy marine ecosystems and marine biodiversity conservation were done effectively during the quarter. May these activities gain further momentum and contribute to well-being of the marine fisheries sector.

With best wishes

A. Gopalakrishnan
Director, ICAR-CMFRI

Second phase of the Marine Mammal Project becomes operational

The second phase of the Marine Mammal Stock Assessment of India (MMSAI) project supported by the PMSSY scheme of the Ministry of Fisheries, Animal Husbandry and Dairying, started activities at ICAR-CMFRI in May 2023 and is fully operational now. As part of this project, they are monitoring the status of marine mammals to understand the changes in their distribution and abundance in the Indian coast (up to 12 NM). Extensive at-sea marine mammal surveys have already been undertaken for Kerala, Maharashtra, and Goa coast following the line transect methodology. After covering the entire coastline, the animal count will be pooled to arrive at zonal estimates and further to all-India estimates. Environmental and oceanographic data were also collected during the surveys to relate with marine mammal abundance. This project on marine mammal biodiversity and conservation research is expected to provide insightful information and pave the way for robust marine mammal conservation measures ◆

ICAR-CMFRI develops nutraceutical to boost immunity

In continuation of its major research works on developing natural remedies from marine organisms against various lifestyle diseases, a nutraceutical product from select seaweeds to boost the innate immunity related to post-COVID complications has been developed in ICAR-CMFRI. Named as Cadalmin™ Immunalgin extract (Cadalmin™ IMe), the product also has antiviral properties against the delta variant of SARS CoV-2 virus. According to Dr. Kajal Chakraborty, Head of the Marine Biotechnology, Fish Nutrition and Health Division of ICAR-CMFRI who led the research, the product is a 100% natural blend of highly nutritious bioactive ingredients extracted with eco-friendly 'green' technology". Cadalmin™ IMe elevates innate immune responses by the regulation of the secretion of pro-inflammatory cytokines and chemokines. The active ingredients in the product is packed in plant-based capsules. Large-scale extraction of the active principles from the raw material was optimized in a factory unit, which demonstrated the commercial feasibility of the nutraceutical product. The process for commercialisation of the product is in progress ◆

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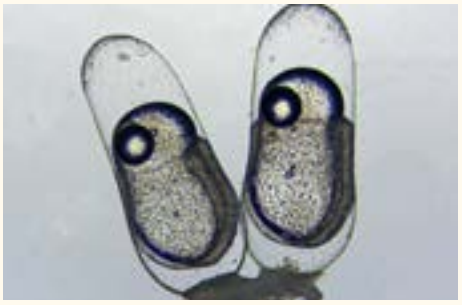
Successful captive breeding and mass seed production of Sapphire damsel

Pomacentrus pavo adult pair



Eggs

5th day larva

Hatchling

25th day larva

P. pavo juveniles

The captivating Sapphire damsel (*Pomacentrus pavo*) known for its vibrant colours and engaging behaviour, has earned a special place in the hearts of aquarium keepers. Native to the Indo-Pacific region, the sapphire damsel showcases a striking blend of iridescent blue and green hues that evoke the brilliant colours of a sapphire gemstone. Its name, "pavo," derives from the Latin word for "peacock," which aptly describes its regal appearance. Mass production of seed was achieved using the Recirculatory Aquaculture System (RAS) developed for shellfish and finfish seed production and by fine-tuning the larval feeding strategy. The system has three 3- ton tanks for larval rearing and, 4 cylindroconical tanks for juvenile production, a central filtration unit.

Seven fish were procured from a marine aquarium fish vendor located in Kanyakumari. These fish underwent a meticulous acclimatisation process and were accommodated within a carefully managed two-ton tank equipped with a well-established biological filtration system that ensured optimal water quality. The feeding regimen consisted of three daily meals comprising commercial pellet feeds, fresh squid, and mussel meat. After four months in captivity, the fish exhibited spawning behaviour. In sapphire damsel males are larger, with an average size of 100 mm length and 11.19 g in weight. Compared to males, females are smaller, with a size range of 90 mm in length and 9.0 g weight. Fish spawned continuously, and the egg was laid in the early morning. Eggs were cylindrical in shape and measured 1183.6 in length. Eggs were hatched after 60 hours of egg laying. Newly hatched larvae measured 2784 µ length, and the yolk sac length was 368.7 µ. The mouth opened on 2nd dph, and feeding of larvae began to feed on the same day. Green water medium was used for larval rearing, and the larvae were fed mixed copepods, rotifer, and artemia until metamorphosis. By 40 dph, larvae metamorphosed into juveniles with adult colouration.

Reported by M. K. Anil, P. Gomathi and V. Anand ◆

Larval rearing technology of *Siganus vermiculatus* for mass scale seed production

Among the rabbitfishes, vermiculated spinefoot *S. vermiculatus* is one of the fastest-growing species which can grow up to 2.3 kg each. It has very good aquaculture potential due to its fast growth rate and tolerance to adverse environmental conditions. It is considered as a promising species for coastal and open sea farming due to its herbivorous feeding habit and ability to feed low on the aquatic food chain, adaptable to polyculture with finfish and shellfish species and ICAR-CMFRI prioritized this species for mariculture. The Karwar Regional Station was successful in breeding of vermiculated spine foot, *S. vermiculatus* in captive condition in the year 2019 and presently the larval rearing protocol for mass scale seed production is ready. *Siganus vermiculatus* larvae requires strict biotic and abiotic conditions for optimum growth, development and survival rate. In the present work, *S. vermiculatus* male and female (Total Length 25 cm) were induced to spawn and fertilized eggs were stocked in 1 ton capacity FRP tanks with yellow background colour, placed in semi-outdoor facility with solar illumination. Larval density of *S. vermiculatus* were maintained at 25 numbers per litre in each tank. Metamorphosis started 28 dph (days post hatch) onwards and was completed by 38 dph. On 40 dph larvae attained fry size (TL 21.26 ± 0.44 mm & 221.4 ± 5.94 mg) with survival rate 14.09 ± 0.21 %. The overall results indicate that mass scale seed production of *S. vermiculatus* in semi-outdoor facility with solar illumination, and copepod, *Parvocalanus crassirostris* nauplii and enriched rotifer, *Brachionus rotundiformis* (S-type) provided as first feed for the larvae on mouth opening, enhanced the survival rate. Nursery rearing of *S. vermiculatus* was carried out in 1 ton capacity FRP tanks by providing artificial pellet feed (0.5 – 0.8 mm) with 45 % crude protein in 2 rations for a period of 35 days to produce stock able size *S. vermiculatus* fingerlings measuring 4 cm and weighing around 3 g each.

Reported by Tanveer Hussain, P.P. Suresh Babu, Prathibha Rohit, V. Mahesh, P. Anju Lekshmi, Mahendra Pal and M. Sonali ◆

Seed production of Wide-barred shrimp goby *Amblyeleotris latifasciata* in captivity

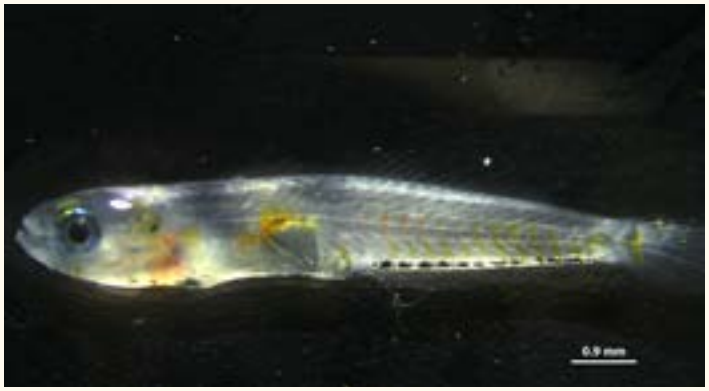
The Wide-barred shrimp goby *Amblyeleotris latifasciata* Polunin & Lubbock, 1979 belongs to the largest genus of shrimp gobies. *A. latifasciata* is distributed in the Indo-Pacific region. The species is popular in marine aquariums owing to the colourful speckled fins and vertical bars adorning its elongate body. It has a close symbiotic association with pistol shrimp. Most of the scientific studies of shrimp gobies have focussed on this symbiotic association; there is no previous report on captive seed production of *Amblyeleotris latifasciata* or other gobies from the same genus. The species has been successfully bred at Vizhinjam Regional Centre of ICAR-CMFRI. Four numbers of broodfish were collected from coastal waters of Tamil Nadu and transported to the hatchery in oxygen packed polyethylene bags. After 14 days of quarantine period, the fish were transferred to 250 L rectangular FRP tanks. The broodstock size ranged from 90-105 mm. The well aerated tanks were provided with a biofilter and 5-6 broodstock shelters (PVC pipes: length 250 mm, diameter- 25 mm). Feeding was done to satiation with commercial feed (0.3-0.5 mm) and finely cut fresh squid meat. After 90 days of stocking, spawning was observed during early morning. Over 24,000 eggs were laid in a single clutch within the PVC pipe substrate that was fiercely guarded by the parent fish. Hatching was observed after 70 hours. Larval rearing was done using a combination of phytoplankton, *Isochrysis galbana* and *Nanochloropsis occulata*, zooplankton, copepod nauplii and adult stages, *Artemia* nauplii and larval feed (300-400 µm). Larval metamorphosis was recorded by 70-80 dph.

Broodstock of *Amblyeleotris latifasciata*

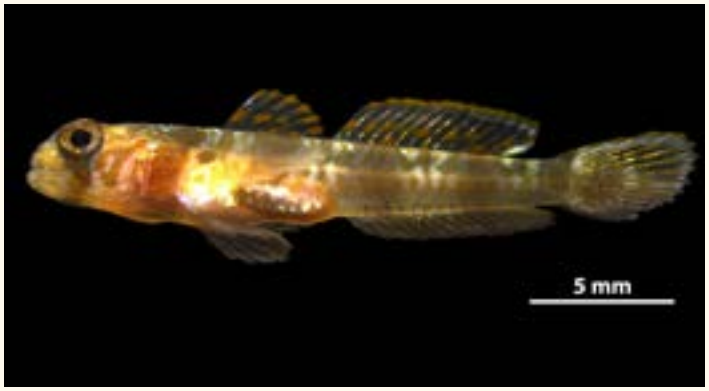
Reported by Krishna Sukumaran, Ambarish P. Gop, Archana Satheesh, F. Muhammed Anzeer K. S. Aneesh and B. Santhosh, Vizhinjam Regional Centre ◆

Fertilised eggs

Newly hatched larva



35 dph larvae



75 dph juvenile

Micro-level Environment Management Plan for aquaculture and allied sector mapping in the Vembanad Lake ecosystem

Ecosystem analysis research so far undertaken in the Indian context, aimed at national or Macro-level Environment Management Plan (EMP) options for coastal ecosystems. The present investigation under an inhouse project (*FEM/HBT/27*) focused on deriving micro-level environment management plans and solutions through a participatory approach to help in the sustainable development of the selected ecological units. Based on the ecosystem grading using Ecosystem Health Index (EHI), ward wise responsible activities were suggested for implementation in the Mulavukad Gramma Panchayath. The aquaculture and allied aspects already present there were acknowledged in this document along with the suggested responsible activities for an eco-friendly living. Spatial plan of proposed responsible livelihood options is made into an interactive map and can be readily accessed from the ICAR-CMFRI website (https://www.cmfri.org.in/inf/EMP_Map3/EMP_Map3.html#13/10.0065/76.2553) by the interested stakeholders.

Reported by Shelton Padua, D. Prema, Lavanya Ratheesh, B. Jenny, G. Shylaja, Reena V. Joseph, M. P. Shyamala, P. Vysakhan, Seban John and Akhil Babu ◆

Report on Marine Biodiversity Conservation in India presented

The report on India's efforts in conserving marine ecosystems and biodiversity was presented at the Sustainable Ocean Initiative (SOI) Workshop held in Seoul from September 5-8, 2023. The meeting discussed means of implementing the Kunming-Montreal Global Biodiversity Framework under the United Nations Convention on Biological Diversity (CBD). The report was presented by Dr. Shubhadeep Ghosh, ADG, ICAR and Dr. Grinson George, Head, Marine Biodiversity and Environment Management Division, ICAR-CMFRI. Highlights included coral reef resilience research programs implemented in the Gulf of Mannar, Gulf of Kutch, and Lakshadweep, mapping the spatial distribution of aquatic invasive species in the Northern Indian Ocean region, and developing an AI-enabled image recognition model for classifying underwater coral reefs to improve coral reef restoration programs. ICAR-CMFRI is also developing a framework to estimate the importance of ecologically sensitive areas (ESAs) to reduce threats to marine biodiversity.

Reported by: Head, Marine Biodiversity and Environment Management Division ◆

Carbon stock assessment across estuarine habitats of Karnataka

Under the NICRA project a comprehensive assessment of carbon stocks in natural and restored mangrove habitats within the Netravathi-Mangalore and Panchagangavali-Kundapura estuaries each with their contrasting habitation characteristics were carried out. In the Netravathi estuary, the study sites were situated amidst urbanized structures, such as boat building docks while in Panchagangavali estuary study sites selected were pristine mangrove patches, providing an opportunity to explore carbon storage capacities in both of these distinct environments. The assessment covered a total of 0.4 and 1.2 hectares respectively in the Netravathi and Panchagangavali estuary respectively. The study involved a comparative data analysis of total biomass within both estuarine study areas as well as data on benthic organisms and fish species associated with the mangrove ecosystems ◆

Unusual heavy catch of sandlance observed at Pamban Therkuvadi

Sandlance or sand eels are small slender fishes of the family Ammodytidae, with *Bleekeria* and *Ammodytes* being the two common genera. Around six valid species are reported under the genus *Bleekeria*. Heavy catch of sandlance were observed at the Pamban Therkuvadi Fish Landing Centre on 23rd July 2023. The sandlance were landed along with low-value by-catch and transported to Coimbatore for oil extraction. Mechanized single day trawlers operating off Mandapam in the Gulf of Mannar area landed nearly 4 tonnes of sandlance. The average size was 13.2 to 16.7 cm total length with all fishes gonads in the fully mature stage. Further studies are in progress.

Reported by L. Remya, K. V. Akhilesh, M. Rajkumar and M.Manojkumar, Mandapam Regional Centre ◆

Interactive map of marine mammal strandings developed

An online spatial database on marine mammal stranding along the Indian coast has been prepared and rendered as an online interactive web map. The database covers the strandings reported as early as in 1800 to 2023 and 1217 strandings happened during the period. The map gives locations of the strandings as dots. The locations of mass strandings are (>= 40 animals) marked with red pulsing icons. Upon clicking each stranding location, the map will open a pop-up window with the information viz. common name, scientific name, latitude, longitude, state/UT, year of stranding, state of the animal at stranding and number of animals stranded. The standard operating procedure to be followed in case of marine mammal stranding and the scientific information of the species are also provided as hyperlinks in the pop-up window. The web map comes handy with information required for field-level conservationists and policymakers alike and is accessible from the ICAR-CMFRI website (https://www.cmfri.org.in/inf/Web_Map_Without_Clustering4/Web_Map_Without_Clustering4/MarineMammal_Without_Clustering4.html#6/16.182/81.235).

Reported by Shelton Padua, R. Ratheesh Kumar, Grinson George, S. Monalisha and V. Durga ◆

MoU with Maharashtra State Fisheries Department for joint Marine Fisheries data collection

ICAR-CMFRI signed Memorandum of Understanding (MoU) with the Maharashtra's State Fisheries Department, for implementation of joint data collection system for the marine fish production from Narpad landing centre, to Mochimad landing centre covering seven coastal districts namely Palghar,Thane, Mumbai city, Mumbai Suburban, Raigad, Ratnagiri, and Sindudurg. For the successful implementation of program, five days training programs from 21st to 25th August 2023, were held for the officials and staff of the State Fisheries Survey. The MOU sets down the mutually agreed broad framework for collaborating on research including fish taxonomy and identification, ICAR-CMFRI sampling methods, use of electronic tablets to gather the data from landing centres under the Fish Catch Survey and Analysis (FCSA) program and analyses of the catch data. Institute-trained survey personnel employed by Maharashtra's State Fisheries Department will gather catch data using the statistically supported multi-stage, stratified random sampling methodology developed by ICAR-CMFRI. After the training program, the Joint Commissioner (Marine) and Deputy Commissioner (Fisheries Statistical) of the Fisheries Department of Maharashtra expressed hope that this program would enable creation of a trustworthy one state, one database on the marine fish catches and fishing activities. The data collection was formally initiated on 3rd October 2022 ◆

Seaweed farming for sustainable development and women empowerment

A workshop on "Sensitization and awareness creation on seaweed farming for sustainable development and women empowerment -A gender blind approach" was organised at Jambur village, Talala in Gujarat on 4th July 2023. The programme was organised with an objective of creating large scale awareness on Seaweed Farming among the "Sidi" tribal women and to motivate them to undertake seaweed farming based on successful models in India's most promising seaweed belt namely, Ramanathapuram district of Tamil Nadu. The inauguration of the programme was done by Honorable Padmashree awardee 2023, Smt. Hirabaiben Lobi, who has carved a niche for herself in the field of social work and for promoting the livelihood standards of the Sidi tribals. Dr. D.Divu made a technical presentation on the scope and potential for seaweed farming along the coast of Gujarat and also explained about the Pradhan Mantri Matsya Sampada Yojana (PMMSY) support in context of seaweed farming.

Dr. Swathi Lekshmi P. S. delivered a presentation on "Gender in seaweed farming, a success story from Ramanathpuram District of Tamil Nadu" and explained the ways in which seaweed farming could be taken up on a family farming model in line with Tamil Nadu. Dr. A. Gopalakrishnan, Director, ICAR-CMFRI, joined the session through video conference and felicitated Padmashree Smt. Hirabaiben Lobi for having graced the occasion with her enlightening presence and addressing the audience with her insights and experience in women empowerment by addressing livelihood issues and opportunities. Dr. Shikha Rahangdale, talked on topic "Women empowerment in seaweed farming for Gujarat coast". Two technical books "Open Sea Cage Farming" in Hindi and "Cage Mariculture" in Gujarati were released on the occasion. The technical session was dealt by Dr. Suresh Kumar Mojjada, Senior Technical Officer who imparted hands-on training on the methods of seaweed farming and the ways in which women could be gainfully employed in the venture. He further demonstrated the methods of HDPE raft preparation, net-tube, and monoline preparations and seaweed stocking ◆

Training programmes and demonstrations on IMTA

Farmers from Kundapura, Thannirbavi, Koderi, Paduthonse and Paduvari, Tharapathi villages of Dakshina Kannada and Udupi were selected by Mangalore Regional Centre of ICAR-CMFRI under NFDB funded Project from take up Integrated Multitrophic Aquaculture (IMTA) during 2023-2024. Hands-on training on various aspects of the cage culture, mussel farming and seaweed farming was imparted to the beneficiaries through participatory mode on 26th July, 19th August, 21st August, 5th August and 21st September 2023 ◆

Sea ranching of green tiger shrimp

A total of 4.5 million green tiger shrimp seeds (PL 20) were released into Palk Bay at Villondi in a sea ranching initiative by Mandapam Regional Centre of ICAR-Central Marine Fisheries Research Institute (CMFRI) on 27th July, 2023. Another 4.8 million green tiger shrimp seeds (PL 20-25) were sea ranched at Munaikadu (Palk Bay) on 08th August, 2023. This was part of the project entitled "Sea ranching of green tiger shrimp (*Penaeus semisulcatus*) Post Larvae (PL) in Palk Bay and Gulf of Mannar, Tamil Nadu" funded by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India under the Central Sector Scheme component of the PMMSY. The events were presided by Dr. K. Vinod, Head of the Mandapam Regional Centre of ICAR-CMFRI.

A total of 68.54 million green tiger shrimp seeds were sea ranched in Palk Bay and Gulf of Mannar since the initiation of the project in February, 2022 in the programmes co-ordinated by Dr. B. Johnson, Senior Scientist of the Centre.

Reported by G. Tamilmani, B. Johnson, M. Sakthivel, P. Rameshkumar, K. K. Anikuttan and R. Bavithra, Mandapam Regional Centre ◆

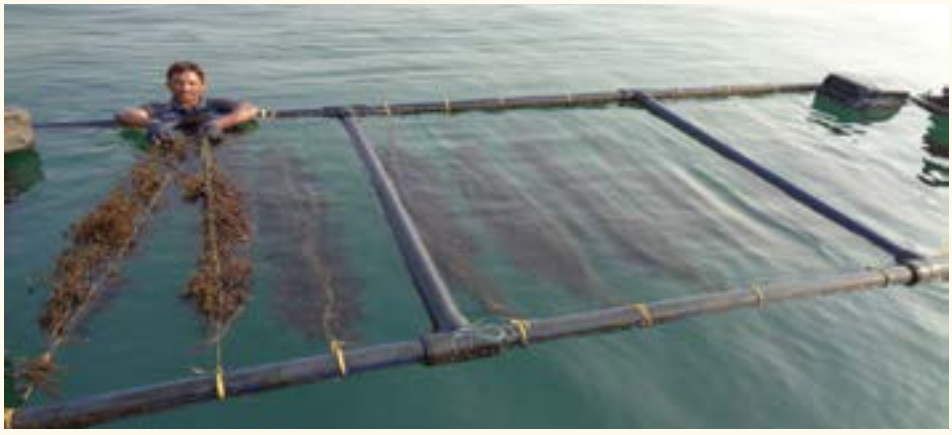
Supply of marine finfish seeds for coastal pond farming in Andhra Pradesh

Indian pompano fish seeds of advanced fry stages (5.0 to 8.0 g) produced at a marine finfish hatchery, ICAR-CMFRI, Visakhapatnam were supplied for coastal pond farming. During the quarter, 29,000 advanced fry of Indian pompano were supplied to progressive farmers in the Krishna District of Andhra Pradesh.

Reported by Dr. Ritesh Ranjan, Dr. Sekar Megarajan, Dr. Biji Xavier, Dr. Jeyasree Loka, Dr Joe K. Kizhakudan and Mr. B. Chinnibabu, Visakhapatnam Regional Centre ◆

Outreach

Demonstration of raft-based tube net seaweed farming method



High-Density Polyethylene (HDPE) raft-based tube-net method supported by multipoint mooring system for culture of seaweed in exposed coastal water, has been validated by Visakhapatnam Regional Centre of ICAR –CMFRI off Visakhapatnam coast along the north-western Bay of Bengal. With an aim to disseminate the technology in Andhra Pradesh coast, a memorandum of understanding (MoU) was signed between Department of Fisheries, Government of Andhra Pradesh and LAYA, NGO, Visakhapatnam for pilot scale demonstration. Pilot sale culture demonstration of *Kappaphycus alvarezii* culture was initiated in Sompeta, Srikakulam District, Andhra Pradesh by Fisheries Department and in Ramakrishna Beach, Visakhapatnam District by LAYA NGO. Seaweed culture feasibility was demonstrated to the fishermen with the seaweed growth of 4 to 4.5 fold and the net production ranging from 175-190 kg per raft in 45 days culture period.

Reported by Sekar Megarajan, Ritesh Ranjan, Biji Xavier, Jayasree Loka and R. D. Suresh, Visakhapatnam Regional Centre ◆

Training programmes and demonstrations organised under SCSP

Five Scheduled caste families were selected by Mangalore Regional Centre of ICAR-CMFRI, from Thallur, Kundapura village, Udupi district, Karnataka to take up Finfish cage farming under Scheduled Caste Sub-plan Project during 2023-2024. Hands-on training on various aspects of the cage culture, such as site selection, cage fabrication, seed stocking, feeding and maintenance of cages through participatory mode on 26th July 2023 ◆

Conservation and Awareness generation for iconic manta rays

'International Manta Day' and associated activities to create awareness among the public regarding mantas, its role in the ecosystem, threats they face and conservation requirements by Mandapam Regional Centre was observed during 17 to 20 September 2023. Awareness programmes in primary schools at Maraikayarpattinam, Singarathoppu and Mandapam Camp and for the benefit of fishers, traders, vendors at venues of Pamban Lighthouse, Pamban Therkuvadi and Kunthukal Fish Landing Centres were arranged on 18th September, 2023.

Reported by K. Vinod, L. Remya, M. Midhun, R. Rajkumar and M. Manojkumar, Mandapam Regional Centre ◆

Training in cage farming extended under SCSP scheme

To enhance livelihoods by knowledge on various aspects of cage fish farming among Scheduled Caste farmers, a training programme was organised at ICAR-CMFRI, Kochi on 14th August 2023. The selected farmers from Ernakulam, Trichur and Alappuzha districts who attended the training programme were provided with GI cages and HDPE Cage nets under Scheduled Caste Sub-Plan at their respective sites to enable them to initiate cage farming. The farmers are given scientific and technical guidance periodically from ICAR-CMFRI during the entire culture period.

Reported by Rema Madhu, K. Madhu, and K.S. Abhilash, Mariculture Division, ICAR -CMFRI ◆

Exhibition

The Mumbai Regional Station of ICAR-CMFRI participated and put-up exhibition stall in the event 'Neel Kranti Ke Saath Arth Kranti': 3rd Anniversary of PMMSY launch celebration on 15th September, 2023 at Brilliant Convention Centre, Indore, Madhya Pradesh. ◆

Outreach

Artificial Reefs awareness programs conducted

A series of awareness programs for marine fishermen of Kerala and Maharashtra under the NFDB-PMMSY Artificial Reef Program enabled by Dept. of Fisheries, Govt. of India for livelihood enhancement of artisanal and traditional marine fishermen of the country was set rolling by Dr. Joe K. Kizhakudan, nodal officer from ICAR-CMFRI. He also assisted the local department of fisheries in identifying potential sites for deployment of artificial reefs. Interactions with 300 fishermen across 42 villages in Kerala during 1-4 August 2023 and 1200 fishermen across 155 villages in Maharashtra during 5-13 August 2023 were held in addition to providing awareness and training to the fishermen ◆.

Visitors

Joint Secretary, Department of Fisheries at Managalore Regional Centre

Ms. Neetu Kumari Prasad, the Joint Secretary, Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying visited Mangalore Regional Centre of ICAR-CMFRI on 17th September 2023 and interacted with the scientists of the centre ◆

Visitors

Union Minister of Fisheries, Animal Husbandry and Dairying visits Regional Centres of ICAR-CMFRI

As a part of 'Sagar Parikrama- Phase-VIII', Shri Parshottom Rupala, Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying, Govt. of India, Dr. L. Murugan, Hon'ble Union Minister of State, Ministry of Fisheries, Animal Husbandry and Dairying and Ministry of Information & Broadcasting, Govt. of India, Smt. Neetu Kumari Prasad, IAS, Joint Secretary (Marine Fisheries), Govt. of India, Shri. Jubin Mohapatra, IAS, Assistant Secretary, Smt. Meera, IAS, Assistant Secretary, Dr. L. Narasimha Murthy, Chief Executive I/c & Senior Executive Director, NFDB, Dr. Sanjay Pandey, Deputy Commissioner of Fisheries along with the other dignitaries visited the Mandapam Regional Centre of ICAR-CMFRI on 02nd September, 2023. An exhibition was arranged to showcase the activities of Mandapam Regional Centre. Later the hon'ble Union minister interacted with the seaweed farming fisher women group and addressed their queries and participated in the planting of endemic mangrove *Pemphis acidula* carried out on this occasion. The event was coordinated by the Fisheries & Fishermen Welfare Department, Ramanathapuram in association with the Mandapam Regional Centre of ICAR-CMFRI.

On 30th August 2023, Union Minister Shri. Parshottam Rupala accompanied by Dr. L. Murugan, Hon'ble Minister of State for Fisheries, Animal Husbandry and Dairying and Shri V. Muraleedharan, Hon'ble Minister of State for External Affairs and Parliamentary Affairs visited the Vizhinjam Regional Centre of ICAR-CMFRI. Addressing the gathering, Shri. Parshottam Rupala emphasised that offshore cage farming using bigger cages should be the immediate focus of the country and ICAR-CMFRI should spearhead research and development efforts in creating these advanced cages and expand seed production technologies for finfishes to all the coastal states utilising the public-private-partnership (PPP) mode. He also underscored the untapped potential of Pearl oyster production and urged ICAR-CMFRI to take a proactive role in scaling up its production. accompanied Shri Parshottam Rupala. Shri. Abhilaksh Likhi, IAS, Secretary, to the Department of Fisheries, Govt. of India also visited the Vizhinjam Regional Centre of ICAR-CMFRI on 31st August 2023. He said that the Central Government is keen on developing bivalve farming, including mussels, edible oysters, pearl oysters and clams in the country under its PMMSY scheme. He appreciated the efforts of ICAR-CMFRI and its Vizhinjam centre, which has been at the forefront of providing training to the fish farmers of Kerala in ornamental fish culture and cage culture. ◆

Visitors

Delegation from Michigan State University, USA visits ICAR-CMFRI

As part of a student exposure-cum-training programme jointly organised by the ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi and the Michigan State University in the United States, a delegation of students and faculty from the MSU's James Madison College visited the ICAR-CMFRI and Kerala during the period of 11-26 July 2023. This was the third such programme hosted by the ICAR-CMFRI on the basis of an MoU between the two institutes. Dr. Shyam Salim, Principal Scientist, ICAR-CMFRI co-ordinated the programme ◆

Awards & recognition

Dr. Divu D., received Silver Medal for the successful and meritorious completion of the Post Graduate Diploma in Agriculture Extension Management programme offered by National Institute of Agricultural Extension Management, Department of Agriculture and Farmers Welfare, Govt. of India, during the 7th Convocation of MANAGE PGDAEM-MOOCs held on 12th August 2023 at Hyderabad.

Dr. Abdul Azeez P. received Dr. Hiralal Chaudhuri Gold Medal in Young Scientist Conclave-2023 at National Conference on "Transforming Rural Poverty to Prosperity through Sustainable Fisheries (TRPSF-2023)" held at Bihar Animal Science University, Bihar during 19-21 July, 2023.

Dr. Rajan Kumar received Best Oral Presentation award for the paper "Management implication of changing environment on marine fisheries resources with discontinuous distribution" at National Conference on "Transforming Rural Poverty to Prosperity through Sustainable Fisheries (TRPSF-2023)" held at Bihar Animal Science University, Bihar during 19-21 July, 2023.

Best Poster Presentation award at Mega Awareness Campaign on Ocean Information and Advisory Services organised by INCOIS in collaboration with ICAR-CIFT at Veraval on 13th July, 2023 was received by **Ms. Shikha Rahangdale** for her paper "Response to changing climate: Shift in spawning season of marine organism" and **Dr. Abdul Azeez P.** for the paper "Spatial structure and distribution of by-catch from mid-waters in the north-eastern Arabian Sea: A step towards the marine spatial planning". ◆

Personnel

New Heads of Divisions and Regional Centres of ICAR-CMFRI

Dr. A. P. Dineshbabu
Head, Shellfish Fisheries Division
06-07-2023 (AN)

Dr. Kajal Chakraborty
Head, Marine Biotechnology, Fish Nutrition & Health Division
10-07-2023 (FN)

Dr. J. Jayasankar
Head, Fisheries Resource Assessment, Economics & Extension Division
10-07-2023 (FN)

Dr. Shoba Joe Kizhakudan
Head, Finfish Fisheries Division
01-08-2023 (FN)

Dr. Sujitha Thomas
Head, Mangalore Regional Centre
06-07-2023 (AN)

Dr. Joe K. Kizhakudan
Head, Visakhapatnam Regional Centre
12-07-2023 (AN)

Dr. B. Santhosh
Head, Vizhinjam Regional Centre
14-07-2023 (AN)

Dr. K. Vinod
Head, Mandapam Regional Centre
20-07-2023 (FN)

Compassionate appointment

Name	Post	Place of posting	Date of Joining
Shri C. Harivenkateshwaran	Multi-Tasking Staff	Mandapam Regional Centre	05.07.2023 (FN)

Promotions

Name & Designation	Promoted as	w.e.f
Smt. M. Valarmathi, Lower Division Clerk	Upper Division Clerk	05.07.2023 (AN)
Shri Pandya Jatinkumar Jethalal, Lower Division Clerk	Upper Division Clerk	05.07.2023 (AN)
Smt. C. K. Sandhya, Lower Division Clerk	Upper Division Clerk	26.07.2023 (AN)
Smt. Manjusha G. Menon, Assistant	Assistant Administrative Officer	01.09.2023 (FN)

Promotion transfers

Name & Designation	Promoted Designation	From	To	Date of joining
Shri R. Saravanan, Lower Division Clerk	Upper Division Clerk	Mandapam Regional Centre	Calicut Regional Station	10.07.2023 (FN)
Shri M. Saravanan, Lower Division Clerk	Upper Division Clerk	Mandapam Regional Centre	ICAR-CMFRI, Kochi	10.07.2023 (FN)

Transfers

Name & Designation	From	To	w.e.f.
Smt. K. M. Priya, Senior Technical Assistant (Hindi Translator)	Mandapam Regional Centre	ICAR-CMFRI, Kochi	07.09.2023
Shri Biju George, Lower Division Clerk	ICAR-CMFRI, Kochi	Krishi Vigyan Kendra, Njarakkal Campus	18.09.2023

Retirements on Superannuation

Smt. E.K. Uma
Chief Technical Officer (Hindi Translator)
31.07.2023

Shri Narayan G. Vaidya
Asst. Chief Technical Officer
31.07.2023

Smt. Gouri Hareendran
Assistant
31.07.2023

Smt. Molly Lazar
Assistant Administrative Officer
31.08.2023

ICAR-CMFRI

The Central Marine Fisheries Research Institute is a premier research institute under the Indian Council of Agricultural Research and focusses on research and training in marine fisheries and mariculture.
Cadalmin is the quarterly newsletter of ICAR-CMFRI. This publication gives an insight into the major events of the institute, besides highlighting the salient research findings for the benefit of various stakeholders in the marine fisheries sector.

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