No. 180 January-March 2024 ISSN 0972-2386

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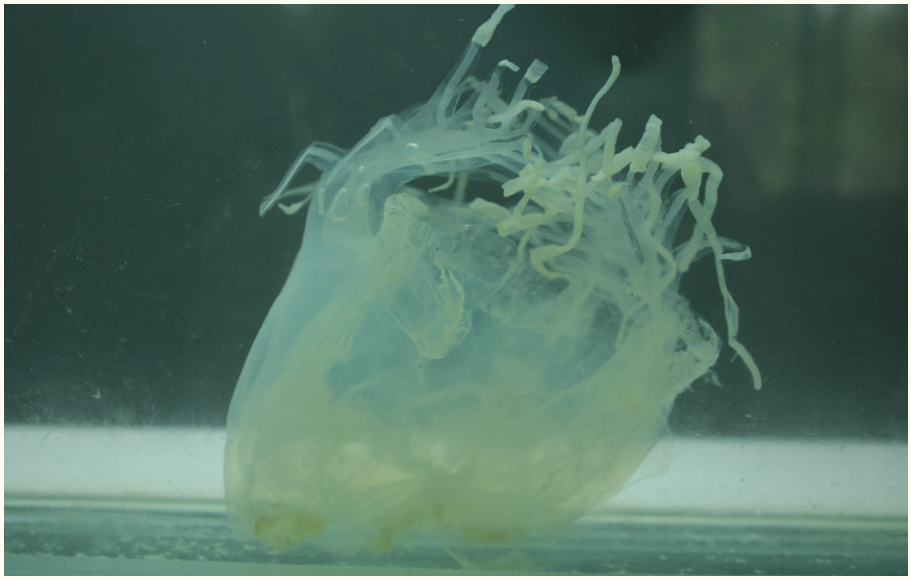
Newsletter of ICAR-Central Marine Fisheries Research Institute

INSIDE

National workshop on harnessing potential of marine fisheries held

The high-level national workshop on 'Harnessing the Potential of Fisheries in Marine States' was hosted by ICAR-CMFRI in Kochi, on 5th January 2024. The workshop was ogranised by the NITI Aayog, in association with ICAR-CMFRI and the Department of Fisheries, Government of Kerala to discuss relevant issues in the sector and evolve strategies for optimal utilisation of the highly prospective marine resources. It was inaugurated by Shri Suman Bery, Hon'ble Vice Chairman, NITI Aayog. Prof. Ramesh Chand, Hon'ble Member of NITI Aayog and Dr. J. K. Jena, Deputy Director General of Indian Council of Agricultural Research (ICAR) also addressed the gathering of scientists and other stakeholders ◆

A potentially deadly box jellyfish recorded from the Palk Bay



The occurrence of *Chironex indrasaksajiae*, a potentially deadly box jellyfish species, in Palk Bay has been discovered. This is the first time a species of *Chironex* has been discovered along the Indian coast, and up to now, no box jellyfish from the genus *Chironex* has been documented. As a result, fishermen need to be aware of sting management measures in an emergency and prevent severe envenomation. Further studies on the species distribution around Indian coastal waters is required to understand its distribution. This finding confirms the westward distribution range of this species from its previously reported area Gulf of Thailand. Among the three species of *Chironex*, this is the first species reported from Indian waters.

Reported by R. Saravanan, I. Syed Sadiq, S. Thirumalaiselvan and K. Vinod, Mandapam Regional Centre ◆

Director Speaks

It is with great pride that the success of ICAR-CMFRI in captive breeding and seed production of a highly valued marine food and ornamental fish, the Golden trevally is announced. This success is a first for India and will go a long way in species diversification of the mariculture sector in India with its acceptance as a potential candidate species for farming. The development of sixteen immortal marine fish cell lines holds enormous importance for its possible applications in fields of virology, toxicology and functional genomics among others in the fisheries science realm. As demanded by stakeholders, several actions on promotion of seaweed cultivation were initiated and have sufficient scope to enhance income of farmers. The numerous outreach programmes held over the period enabled transfer the knowledge generated from research activities to the larger communities of stakeholders. It is hoped that these activities will ensure a vibrant marine fisheries sector in the country.

With best wishes

A. Gopalakrishnan
Director, ICAR-CMFRI

Padma Shri Dr. S. Ayyappan, Former Secretary, DARE and DG, ICAR visited ICAR-CMFRI Headquarters.

Regional Official Language Award for ICAR-CMFRI

ICAR- Central Marine Fisheries Research Institute bagged the second position in the Regional Official Language Awards for the period 2022-23 among the Central Govt. Organizations in South-West Region. The award ceremony was held on 19th January, 2024 during the Regional Official Language Conference conducted by Department of Official Language, Ministry of Home Affairs, New Delhi at Hindustan Aeronautical Limited Management Academy, Bengaluru. Shri Hareesh Nair, Chief Administrative Officer (Sr.Grade) received the award on the occasion ◆

Published by: Dr. A. Gopalakrishnan, Director, ICAR–Central Marine Fisheries Research Institute, Post Box No.1603, Ernakulam North P. O., Kochi-682 018, Kerala, India.
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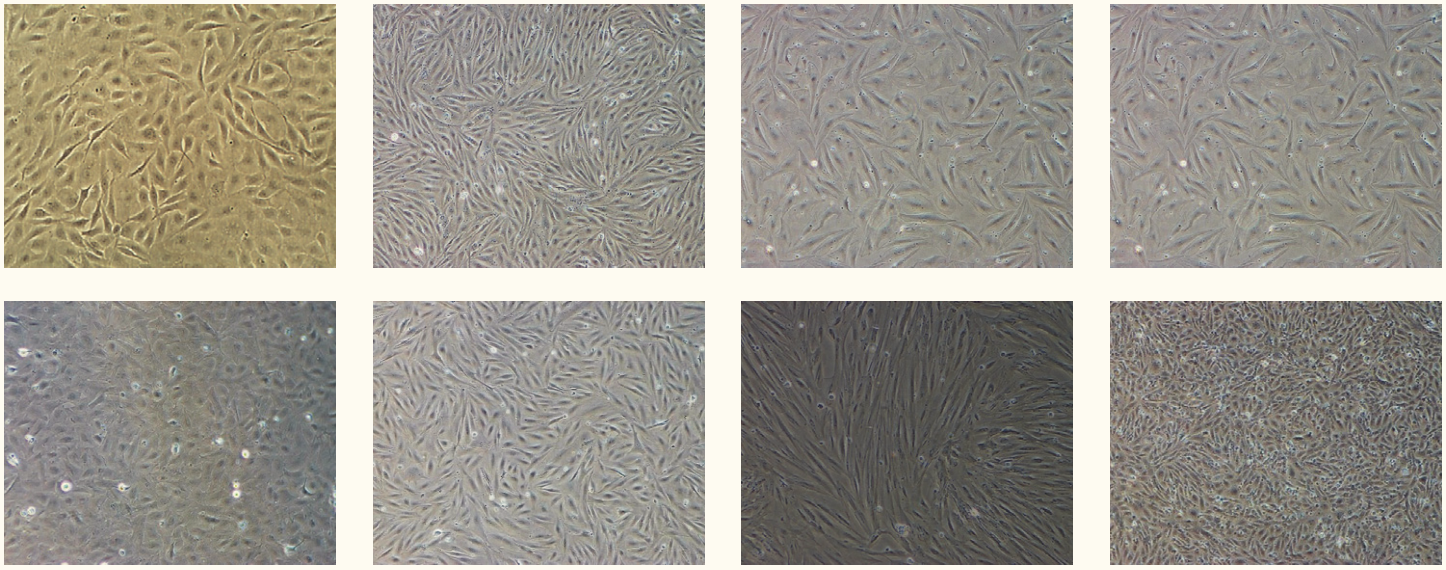
Assisted by: Mr. Arun Surendran, Mr. C. V. Jayakumar, Mr. P. R. Abhilash

Sixteen immortal marine fish cell lines developed for *in vitro* research applications



Fish cell lines offer a promising alternative to whole fish experimentation with extensive applications in the fields of virology, toxicology, cytogenetics, functional genomics, gene editing and transgenics. Establishment of healthy and sensitive fish cell lines is indispensable for isolation and propagation of infectious viruses from fish enabling development of precise diagnostics and prophylactics of viral pathogens. ICAR-Central Marine Fisheries Research Institute, Kochi has developed and characterized a total of 16 continuous cell lines from various species of marine fishes including marine ornamentals, following explant/ trypsinization methods. To date, these cell lines have undergone *in vitro* passages ranging from 94 to 466, as detailed in the table, and have been cryopreserved in liquid nitrogen at various passage levels. The cell lines are either fibroblast or epithelial in nature and have been fully characterized. They are adapted to grow in Leibovitz's L-15 medium with 2% foetal bovine serum (FBS) at ambient temperature of 28±5ºC. The species of origin of all cell lines have been confirmed by partial sequencing of mitochondrial cytochrome c oxidase subunit I (*CO1*) gene, with the sequences deposited in NCBI GenBank. The cell lines exhibit chromosomal aneuploidy as evidence of spontaneous transformation. Using the green fluorescent protein reporter vector pcDNA3EGFP, a high level of transgene expression has been observed for most of the cell lines. These cell lines are effectively utilised for screening marine fish viruses, conducting gene transfection studies and performing cytotoxicity studies on environmental contaminants as well as bacterial toxins. Out of the 16 cell lines, 12 have been deposited in the National Repository of Fish Cell Lines (NRFC), Lucknow, India with accession numbers as given in the table.

Details of marine fish cell lines developed at ICAR-CMFRI

S. No.	Cell line code	Species and tissue of origin	No. of passages crossed *in vitro*	NRFC (Lucknow) Accession No.	NCBI GenBank Accession No.
1.	EM3GEx	*Epinephelus malabaricus,* Gill explant	390	NRFC032	MK165214
2	EM4SpEx	*Epinephelus malabaricus,* Spleen explant	466	NRFC033	MK165217
3	EM2HTr	*Epinephelus malabaricus,* Trypsinised *Heart*	295	NRFC030	MK165216
4	EM2GEx	*Epinephelus malabaricus,* Gill explant	340	NRFC031	MK165215
5	DT1CPEx	*Dascyllus trimaculatus,* Caudal peduncle muscle explant	418	NRFC024	KP791798
6	DT1F4Ex	*Dascyllus trimaculatus,* Fin explant	322	NRFC025	KP791797
7	DT1CPTr	*Dascyllus trimaculatus,* Trypsinised Caudal peduncle muscle	436	NRFC026	KP791799
8	PC1CpTr	*Pomacentrus caeruleus* Trypsinised Caudal peduncle muscle	317	NRFC035	KY982626
9	PC1F1Ex	*Pomacentrus caeruleus,* Fin explant	320	NRFC036	KY982627
10	PC1L1Tr	*Pomacentrus caeruleus,* Trypsinised Liver	309	NRFC037	KY982628
11	RC4H1Tr	*Rachycentron canadum,* Trypsinised Heart	286	NRFC027	MH559419
12	EB2SpEx	*Epinephelus bleekeri,* Spleen explant	331	NRFC038	MK165218
13	CA1F3Ex	*Cromileptes altivelis,* Fin explant	155	Not deposited	OM131589
14	CA1F4Tr	*Cromileptes altivelis,* Trypsinised Fin	153	"	OM131590
15	PB1BrTr	*Premnas biaculeatus,* Trypsinised Brain	101	"	OR290980
16	AP7EF1	*Amphiprion percula,* Embryo	94	"	OM127852

Reported by Marine Biodiversity and Environment Management Division ◆

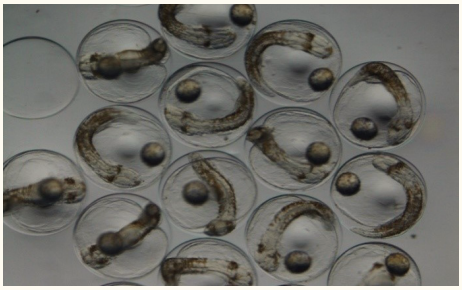
Breakthrough in captive breeding and seed production of Golden trevally

Among the many high-valued marine tropical finfish that could be farmed in India, the Golden trevally or the Banded horse mackerel or Golden King fish, *Gnathanodon speciosus* (Forsskal,1775) of the family Carangidae (Jacks and pompanos), sub family Caranginae, is an ideal candidate species, due to its faster growth rates, good meat quality, and very good market demand for both consumption and ornamental purposes. Golden trevally is generally is a reef associated fish and lives in company of larger fishes like skates, sharks, groupers etc., especially the juveniles act as pilots for sharks. These fishes are basically bottom feeders but are globally known to be trophies by anglers and fish gaming enthusiasts. It is a silver-grey fish with yellowish colouration on belly, with scattered black patches and all fins coloured yellow and a black tail. The juveniles are more golden in colour with the black bands giving them a very attractive look and hence got a great demand for aquarium keeping. In India, the fish landing observations show that the golden trevally are landed predominantly at reef area fishing grounds in Tamil Nadu, Puducherry, Kerala, Karnataka and Gujarat. The total fish landings estimate for the last five years i.e. from 2019 to 2023 was 1106, 1626, 933, 327 and 375 t respectively mainly from Ramanathapuram, Nagapattinam, Chennai, Pudukottai, Trivandrum, Ernakulam, Tirunelveli, Tanjavur, Tuticorin, Udupi and Gir Somnath districts.

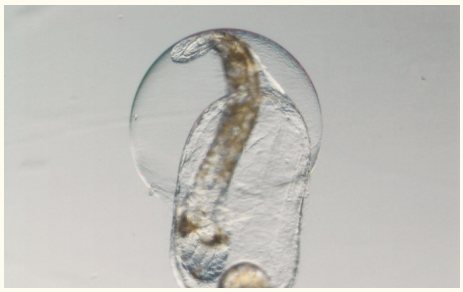
Successful broodstock development, captive breeding and larval rearing of Golden trevally was achieved for the first time in the country at Visakhapatnam Regional Centre of ICAR-CMFRI. Juveniles of 40 to 50 g in size collected from the wild during the year 2019-2020, were reared in research cage farm facility off Visakhapatnam coast. They were reared for 3-4 years till maturation at 3.5 to 4.5 kg in size. The sexes were determined by intra-ovarian biopsy and

Adult golden trevally

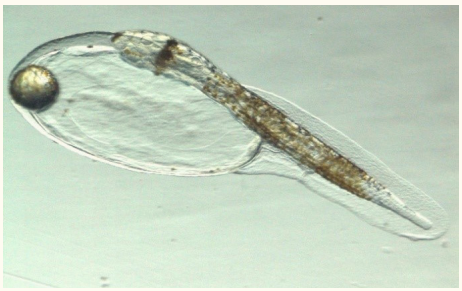
Broodstock in RAS tank



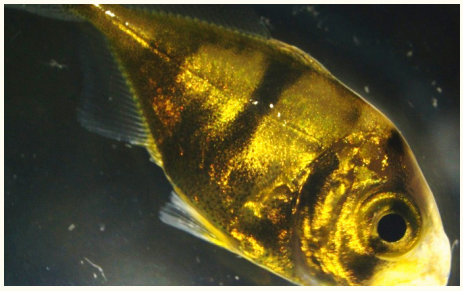
Fertilized eggs



Hatching in progress

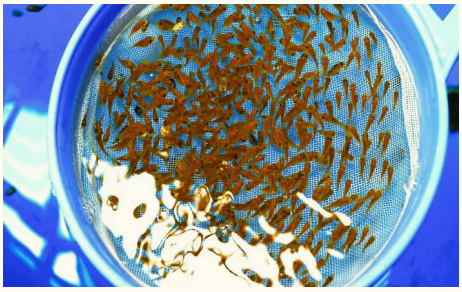


Newly hatched larvae



Metamorphosed larvae of golden trevally

Golden trevally fry (50 days old)



Early fry of golden trevally in rearing tank (DPH – 50)

males and females were segregated and stocked in separate cages. The mature brooders were shifted from the cage to a land-based Recirculating Aquaculture System (RAS) having a water-holding tank capacity of 40 m^3. Here the females and males were stocked at 1:2 ratio and fed with a maturation diet consisting of squid, clam meat and crab at 2:1:1 ratio. Conducive water quality parameters were maintained in RAS for ease of attaining maturity and inducing breeding. Consequently, gonadal development in both male and female brooders was achieved after 2 months of stocking in RAS. This was confirmed by the presence of intra-ovarian egg size of more than 400 µ in females and oozing milt in males followed by natural spawning between 7-9 pm on 9th February 2024. The floating eggs were collected from the RAS and confirmed its fertilization status. An estimated number of 1,08,000 fertilized eggs were collected and treated with 15 ppm iodophore solution for 10 minute to avoid contamination. The treated eggs were allowed for incubation, and the size of the fertilized eggs ranged between 820-870 µm. The eggs hatched out after 12-14 hours of incubation at a temperature range of 28-30°C with an estimated hatching rate of 83%. The size of newly hatched larvae measured 1.70-1.80 mm in total length. The mouth formed after 38-44 hours post-hatch. The larval rearing was carried out using a green water system with different live feeds such as *Nannochloropsis* sp., *Isochrysis* sp., copepod nauplii, rotifers, and *Artemia* nauplii. Initially, larvae were reared on rotifers and copepod nauplii followed by *Artemia* nauplii from 9th day onwards. Weaning of larvae with an inert diet started from 16th day onwards. Metamorphosis of the larvae started from 22-25th day onwards and was completed by 33rd day with a size ranging from 19 to 21 mm. After 51 days of rearing post-hatch, the early fry reached an average size of 2.98 cm and 0.46 g with a survival rate of 2.71%. This is the first report of successful captive broodstock development, breeding and seed production of Golden trevally, (*Gnathanodon speciosus*) in India. This success will go a long way in promoting mariculture development of the species in the country and add to the list of potential sea farming candidates.

Reported by Ritesh Ranjan, Sekar Megarajan, Biji Xavier, Jayasree Loka and Joe K. Kizhakudan, Visakhapatnam Regional Centre ◆

Training program on microbes in fisheries & aquaculture

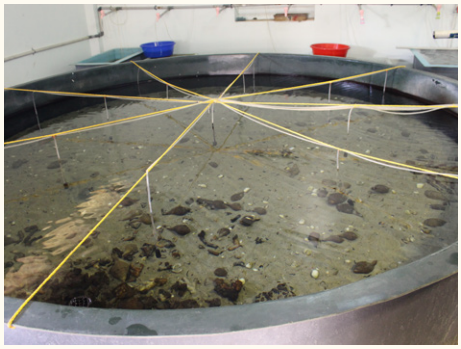
Hands on training on "Microbial Interventions in health management of marine finfish and shellfish aquaculture" was organized under All India Network Project on Mariculture (AINP-M) at Visakhapatnam Regional Centre of ICAR-CMFRI, Visakhapatnam from 11th to 15th March 2024. The 25 trainees from different fields of the Fisheries and Aquaculture sector from different coastal states were given hands on experience on aspects of fish health monitoring, techniques for isolation and identification of parasites and diseases of cultivable fishes, development of marine probiotic consortia and biosecurity protocols for health management in hatchery and culture systems ◆

A new entrant to the molluscan fishery of Odisha

The Indian volute, *Melo melo* is a large marine edible gastropod found in Indian waters also known as bailer shell for its huge size and light weighted shell. Recently this species was recorded in the by-catch of shrimp trawls operated off south to Puri and Ganjam district and landed in Paradip Fisheries Habrbour, Jagatsinghpur. During the September, 2023 to March, 2024 period nearly 40-50 kg of these gastropods, with weight range from 300 gm to 1.8 kg and shell length 100 to 230 mm, were landed irregularly with monthly average landing of 200 to 300 kg. This edible sea snail has consumer acceptance among the local telugu community people.

Reported by Rajesh Kumar Pradhan, Gyanaranjan Dash, Swatipriyanka Sen Dash, Prakash C. Das, Menaka Das, Madhumita Das, Biswajit Dash and Joe K. Kizhakudan, Puri Field Centre ◆

Successful captive breeding of the sacred chank



Breeding tank

Mating

The Mandapam Regional Centre of ICAR-CMFRI attempted captive breeding of sacred chank *Turbinella pyrum* (Linnaeus, 1767). The sub-adults of sacred chank were collected from the Mandapam fish landing centre and reared in 5-tonne circular HDPE tanks with a simple biofilter setup. The tanks were filled with 30 cm of fine and coarse sand. The chanks were fed with live clams (*Donax* sp.). The chanks started mating during the month of November. The development of egg cases takes 60–70 days after mating. The spawning of egg cases occurred during January. The spawning continues for 3 hours to 2 days. After 35 days, the egg cases hatched out. The size (TL) of the newly hatched juvenile ranged from 8.23–9.71 mm. Nursery rearing is in progress.

Spawning

Newly released egg case

Juvenile rearing

15 dph Juvenile

Reported by M. Rajkumar and K. Shanmuganathan, Mandapam Regional Centre ◆

Rare landings of Sea chubs and Rainbow runners

On 12th March, 2024, a rare landing of sea chubs (300 kg) and Rainbow runners (1 ton) was recorded at Atharabanki landing centre in Odisha. The species were identified as *Kyphosus cinerascens* and *Elegatis bipinnulata* landed by ring seines operated 25 km north-east off Paradeep at a depth of 15 to 20 m. The size range of *Kyphosus cinerascens* landed was 16-28 cm (TL) and 250-1000 g (BW). The *Kyphosus* juveniles are pelagic and found associated with floating, pelagic seaweed material. They mainly feed on seaweed and associated invertebrates. In the same way Rainbow runners are also found often around floating logs or other debris. They feed on invertebrates, mainly on larger crustaceans of the zooplankton, and small fishes. The size range of rainbow runner was 22-41 cm (TL) and 300-900 g (BW). The fishes were auctioned at landing centre at a price ₹140/- for sea chubs and ₹90/- for Rainbow runners. According to the local fishermen this was the first time landing of such fishes in huge quantity. The fishes were sent to Kolkata and Chennai.

Reported by Swatipriyanka Sen Dash, Prakas Chandra Das, Madumita Das, Biswajit Dash and Joe K. Kizhakudan, Puri Field Centre ◆

Strategic seaweed mission project initiatives yield good returns

The Department of Fisheries, Govt.of India funded highest priority Strategic Seaweed Mission Project along the Indo-Pak border of the Kutch Coast was implemented by the Veraval Regional Centre of ICAR-CMFRI. This project is closely monitored by the Hon. PMO and the Ministry of Home Affairs and 62 site-specific, advance and customized seaweed HDPE raft grid systems deployed across five different locations in Kutch: Kori Creek, Padala Creek, Juna Bandar, Luni, and Jarapara. A total of 1,860 kg of seaweed seedlings stocked using 620 mono-line and net-tube integrations for 45–60-day culture cycle found average growth of the seaweed to be 7-9 times at various locations, yielding an average production of 250 kg per seaweed raft., Around 9,149 kg of seaweed was harvested along the Kutch Coast during the January to March period under this project.

Reported by D. Divu, Suresh Kumar Mojjada, P.S. Swathi Lekshmi, Abdul Azeez, Jayesh D. Devaliya., T.S. Ramshad, Mayur S. Tade, Arsha Subramanian, Prachi S. Bagde and Dhanush Janarthanan ◆

MoU with Neat Meatt Biotech

The ICAR-Central Marine Fisheries Research Institute (CMFRI) has embarked on an initiative to develop lab-grown fish, a first in India to address growing seafood demand and reduce pressures on wild stocks. Cultivated, or lab grown, fish is produced by isolating specific cells from the fish and growing them in a laboratory setting using animal component-free media. The final product hopes to replicate the original flavour, texture and nutritional qualities of a traditionally raised fish. In the initial phase, the institute is focusing on developing cell-based high value marine fishes, such as king fish, pomfret and seer. In line with this, ICAR-CMFRI has entered into a collaborative research agreement with Neat Meatt Biotech, a startup working towards developing cultivated meat, to launch this initiative in a public-private partnership mode. ICAR-CMFRI director Dr. A. Gopalakrishnan, and co-founder and CEO of the Neat Meatt Biotech, Dr. Sandeep Sharma, signed a memorandum of understanding (MoU) regarding the newly formed partnership ◆

Outreach

National conference held for awareness promotion on seaweed cultivation

To enhance awareness on various aspects of seaweed cultivation among stakeholders across India, the First National Conference on Promotion of Seaweed Cultivation was held on 27th January 2024, at Koteshwar (Kori Creek), Kutch, Gujarat. The conference chaired by the Union Minister of Fisheries, Animal Husbandry & Dairying, Shri Parshottam Rupala, aimed to generate employment through seaweed farming, diversify marine production, enhance fish farmer income, reduce reliance on traditional fishing, and diversify coastal communities' livelihoods. Shri Vinod Chavda (Member of Parliament, Kutch), Shri P.M. Jadeja (MLA, Abdesa), Dr. Abhilaksh Likhi (Secretary, Department of Fisheries), Smt. Neetu Kumari Prasad (Joint Secretary, DoF), Shri Sagar Mehra (Joint Secretary, DoF), Dr. J.K. Jena (Deputy Director General, ICAR), Shri Abhishek Pathak (IG, BSF), Dr. L.N. Murthy (CE, NFDB), Shri Nitin Sangwan (Director, Fisheries, Government of Gujarat), and other dignitaries, also visited the site-specific, advanced seaweed cultivation system developed by ICAR-CMFRI, featuring a customized HDPE raft grid system with mono-line and net-tube integration ◆

Training on handling jellyfish stings extended to stakeholders

The training on the "Jellyfish sting management protocol" for the Sagar Mitras of Ramanathapuram coastal district was held during 12th to 16th February 2024, at the Mandapam Regional Centre. The training attended by 159 Sagar Mitras from the areas of Mandapam, Rameswaram, and Ramanathapuram south and north covered details on the diversity of different jellyfish species and how to manage their stings based on the threat posed by their venom. The "JellySafe" first aid kit was demonstrated, and trainers were taught how to assemble a tool kit themselves.

Reported by Mandapam Regional Centre ◆

Town Official Language Implementation Committee

Town Official Language Implementation Committee, Kochi conducted Joint Official Language Celebrations, 2023-24 during the period 19th to 21st December, 2023. Staff members of ICAR-CMFRI actively participated in this programme and won prizes ◆

Outreach

Training and on-field demonstration on Integrated Multi-trophic Aquaculture

The Calicut Regional Station of ICAR-CMFRI successfully organized a training and on-field demonstration on Integrated Multi-trophic Aquaculture from February 5th to 10th, 2024 as part of the Scheduled Caste Sub-Plan Programme (SCSP) for the beneficiaries from Kozhikode district. Mr. Sudheer Krishnan, Joint Director of Fisheries at the Kerala State Fisheries Department in Kozhikode, inaugurated the training program. Twenty beneficiaries from Chemmenchery and Iringal of Kozhikode district participated in the training.

Reported by Calicut Regional Station

HRD on marine biodiversity

A HRD Training programme on "Know Your Marine Biodiversity & Environment (MarBiE)" was conducted for 29 post-graduate students and researchers from Tamil Nadu, Karnataka, Kerala, Maharashtra, Andhra Pradesh and Madhya Pradesh from 5th to 9th February 2024 at ICAR-CMFRI, Kochi. In-person and online lectures,hands-on practical sessions and field visits were organized to create awareness on marine biodiversity among the students.

Reported by Miriam Paul Sreeram, Course Co-ordinator, Marine Biodiversiy, Environment Management Division

Training and on-field demonstration under TSP

The Calicut Regional station of ICAR-CMFRI successfully organized a six-day "Training and On-field demonstration on pond construction and farming practices" as part of the Tribal Sub-Plan Programme (TSP) for the beneficiaries of the Kozhikode district from February 12th to February 17th, 2024. Twenty beneficiaries from Narikkuni, Kozhikode district participated in the training, which included on-field demonstrations on earthern pond construction, lining, preparation of pond, stocking of fish seeds, feeding and overall pond management practices by a team of scientists from ICAR-CMFRI along with invited talks by Dr. Pradeep B., SMS Fisheries, ICAR-KVK Peruvannamuzhi and Mrs. Athira, FEO, O/O Deputy Director of Fisheries, State Fisheries Department, Kozhikode, Kerala.

Reported by Calicut Regional Station

Awareness programme on marine conservation

The Mangalore Regional Centre of ICAR-CMFRI in collaboration with NITTE University Centre for Science, Education and Research and College of Fisheries, Mangalore, organised a public awareness program on marine conservation "Ocean Health: Our actions and our future" on 26th January 2024 at Fiza by Nexus Mall, Pandeshwar, Mangalore. The programme was inaugurated by Hon'ble Vice Chancellor Prof. Dr. M. S. Moodithaya. The Registrar of NITTE University Prof. Dr. Harsha Halahalli and the Dean, College of Fisheries, Mangalore Dr. H. N. Anjaneyappa participated as Chief guests. The awareness programme on marine conservation was featured by skits and flashmob by students and staff ◆

Seaweed farming empowers fishers in Kutch

Under the highest priority Strategic Seaweed Mission Project along the Indo-Pak border of the Kutch Coast, the Veraval Regional Centre of ICAR-CMFRI organized several hands-on training cum awareness programs. These sessions were conducted through innovative approaches and group meetings in various villages including Juna Bandar, Luni, Jarapara, Nana-Layza, Tragdi, Modhava and nearby villages of Kori Creek such as Tahera, Guhar, Pipar, and Narayana Sarovar from January to March 2024. Over 215 coastal fishers from the Kutch region participated and benefitted from the 15 programs organised on seaweed farming.

Reported by D. Divu, Suresh Kumar Mojjada, P.S. Swathi Lekshmi, Abdul Azeez, Jayesh D. Devaliya., Mayur S. Tade, Arsha Subramanian, Prachi S. Bagde, T.S. Ramshad, Dhanush Janarthanan and Dipthi Singh ◆

World Hindi Day

Every year 10th January is being celebrated as World Hindi Day to commemorate the anniversary of the first World Hindi Conference held in Nagpur on 10th January, 1975 to promote Hindi language worldwide. In connection with this Hindi Workshop on "Spoken Hindi" was organized for the staff members of the Institute on 10th January 2024. Dr. Santhosh Alex, Chief Technical Officer, Central Institute of Fisheries Technology, Kochi conducted the class. As a part of Monthly Hindi Programme, Hindi competition on Hindi Precise Writing was conducted on 20th February, 2024 ◆

Hands-on training programme on seaweed farming

A two-day Hands-on training programme and demonstration on seaweed farming was organised from 13th to 14th March 2024 in Tharapathi, Koderi, Kundapura and Paduthonse Villages, Karnataka Under the NFDB Project ◆

Outreach

Region specific alternative livelihood options for marginal farmers in Odisha

Puri Field Centre of ICAR-CMFRI organized two Hands on training program on "Polyculture of *Mugil cephalus* with prawns in high saline coastal ponds" from 5th to 7th February 2024 and "High saline grow-out culture of Crabs in HDPE boxes" from 8th to 10th February under the Tribal Sub-plan Program (TSP) for the Tribal marginal fishers of Rankotha Village, Bhograi Block, Balasore district of Odisha. Women representative from 20 families belongs bhumija tribe were participated.

Under the Scheduled caste sub-plan (SCSP) programme, two Hands on training program on "Polyculture of *Mugil cephalus* with prawns in high saline coastal ponds" from 12th to 14th February 2024 at Alupatna, Satapada, Puri and on "High saline grow-out culture of Crabs in indoor vertical HDPE boxes" from 27th to 29th February 2024 at Kanamana, Astaranga, Puri were organised. Beneficiaries from 50 marginal fisherman families belongs Kaibarta caste were participated. The programs were inaugurated in the presence of Panchayat leaders, ward representatives, Scientists and staffs of Puri Field Centre followed by series of lectures and practical demonstration on site selection, best management practices, seed selection & stocking, feeding & health management.

Reported by Rajesh Kumar Pradhan, Swatipriyanka Sen Dash, Gyanaranjan Dash, Madhumita Das, Biswajit Dash and Joe K. Kizhakudan, Puri Field Centre ◆

Viksit Bharat Sankalp Yatra coordinated

Through the various Krishi Vigyan Kendras situated in Tamil Nadu, the Indian Council of Agricultural Research coordinated the Viksit Bharat Sankalp Yatra (VBSY) in Tamil Nadu. The objective of the yatra was to highlight the various schemes of the Central Government and raise awareness through outreach activities in villages, small towns, and cities and enrol possible beneficiaries in all such schemes. The Mandapam Regional Centre of ICAR-CMFRI actively participated in the programs conducted in 68 Gram Panchayats of the Mandapam, Raja Singa Mangalam, Paramakudi, and Nainarkovil Blocks of Ramanathapuram Districts from 15th December 2023 to 25th January 2024. In this programme, officials from the Departments of Fisheries, Agriculture, Horticulture and Animal Husbandry elucidated the public on various central government schemes such as the Sukanya Samriddhi Yojana, the Ayushman Card, the Soil Health Card, the Kisan Credit Card, the Prime Minister's LPG scheme, the utilisation of drone technology in agriculture and various farmers' insurance schemes. General health camps and awareness programmes (tuberculosis and sickle cell anaemia) were organised by the health department. Dr. Rajkumar Ranjan Singh, the Union Minister of State for External Affairs and Education, Dr. Vageesh Tiwari, IRAS, Director, MeitY, and local administrative officials of Ramanathapuram participated in the VBSY programme at Kavanoor and A.R. Mangalam. Shri M. Rajkumar and Shri S. Thirumalaiselvan, scientists working in Mandapam Regional Centre of ICAR-CMFRI, served as the Day Nodal Officers for organising VBSY programmes in the allotted GPs of Ramanathapuram district ◆

Outreach

Awareness-cum-training programme on mariculture technologies organised

Fifteen beneficiaries from Thangachimadam village, Ramanathapuram district participated in the awareness-cum-training programme on "Mariculture Technologies for Diversified Livelihood" organised at the Mandapam Regional Centre on 21st February 2024 under the Scheduled Caste Sub-Plan (SCSP) programme. Hands-on-training on sea cage farming and Field visit to sea cage farms at Mandapam were arranged.

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

Training program on Marine Finfish Farming Practices

Hands on training on Advances in Marine Finfish Farming Practices was organized under All India Network Project on Mariculture (AINP-M) at Visakhapatnam Regional Centre of ICAR-CMFRI from 5th to 9th February 2024. The training programme was attended by 25 different participants from four different coastal states including Andhra Pradesh, Tamil Nadu, Odisha and West Bengal.

Reported by Visakhapatnam Regional Centre ◆

Stakeholder meetings conducted for the Artificial Reef programme

Under the National Fisheries Development Board–Pradhan Mantri Matsya Sampada Yojana(PMMSY) funded Artificial Reef Program enabled by Dept. of Fisheries, Govt. of India aiming at livelihood enhancement of artisanal and traditional marine fishermen of the country, stakeholder meetings at Ernakulam, Kerala covering 21 coastal villages and 70 fishermen on 6th January 2024; Engandiyur, Thrissur covering 70 fishermen on 7th January 2024; Kalavoor, Alleppey covering 100 fishermen on Kollam district on 11th January 2024 covering 100 fishermen and again at Kannamaali-Chellanam covering 30 fishermen were organised. A demonstration of Artificial Reef deployment was also conducted at Kollengode fishing village for fishermen, panchayath leaders and fisheries department officials. Stakeholder meetings and artificial reef sitings in two sites on 2nd to 3rd March 2024 in Udupi and Karwar districts of Karnataka and fabrication inspection and sitings at sea in Tirunelveli and Thuthukudi districts of Tamil Nadu during 3rd to 5th March were carried out.

Reported by Joe K. Kizhakudan, Principal Scientist ◆

Training program on breeding and seed production of cultivable marine finfishes

The Hands-on-training on "Breeding and seed production of cultivable marine finfishes" was organized under All India Network Project on Mariculture (AINP-M) at Visakhapatnam Regional Centre of ICAR-CMFRI, Visakhapatnam from 18th to 22nd March 2024. The 25 participants from Andhra Pradesh, Gujarat, Maharashtra, Kerala, Tamil Nadu, Uttar Pradesh and West Bengal were exposed to various aspects such as water supply and treatment systems in marine hatchery, marine finfish broodstock management, phytoplankton and zooplankton production and management in marine finfish hatchery, handling and identifying characters of marine finfish eggs and larvae, marine finfish larval rearing, nursery rearing of marine finfish in different culture system, and application of probiotics in larval health management. The practical aspects such as handling of brooders, cannulation, ova size estimation, estimation of fertilization and hatching rate, phytoplankton culture and estimation, rotifer, copepod culture, Artemia hatching, day to day activities of larval rearing etc were taught. The program was inaugurated by Dr. V.V.R. Suresh, Head, Mariculture Division and Dr. Boby Ignatius, Coordinator, AINP on Mariculture, ICAR-CMFRI. The training programme was co-ordinated by a team of scientists at the Visakhapatnam Regional Centre ◆

In-house programmes

77th Foundation Day of ICAR-CMFRI celebrated

An Open-House was held at the Headquarters and all Regional Centres and Regional Stations of the institute on 3rd February 2024. It saw enthusiastic participation from school and college students as well as interested public.

Awareness was created of the marine research activities being carried out by the Research Centres. Museum exhibits, live fish as well as rare fish specimens were exhibited for school children and the public ◆

Womens' Cell

International Women's Day was celebrated at ICAR-CMFRI Headquarters and outstations on the theme "Invest in Women: Accelerate Progress". Various associated competitions such as essay writing, elocution, painting and singing competitions were conducted for the ICAR-CMFRI scientists, staff and scholars and their wards. At headquarters, Ms. Chithra Arun, playback artist was the chief guest and two women fisheries entrepreneurs Ms. Ivy Jose and Ms. Rethikumari K. G. were felicitated. Their successful achievements and mentorship by ICAR-CMFRI was widely reported in the media. At the Madras Regional Station Smt. K. Priya, Branch Manager, SBI, MRC Nagar, Chennai, was the chief guestand briefed about the role banks in supporting the entrepreneurs to the staff gathered. Ms. Tabassum, a social worker who set up a Snehadeepa foundation to provide a safe home and education to HIV-infected Children in Mangalore was honoured as part of the Women's Day celebration at Mangalore Regional Centre.

An Awareness programme on "Ecosafe-Embracing Menstrual Cups for A Greener Tomorrow" was organized by the Women Cell, ICAR-CMFRI, Kochi through an online webinar on 1st March 2024 for women employees of ICAR-CMFRI HQ and subcentres, ICAR-CIFRI, Kochi and PAGR of ICAR-NBFGR, Kochi. The programme with Ms. Niya Joseph, SRF and Ms. Sreepriya, YP-II, as resource persons was well received ◆

Recognitions

Best presentation awards were won by the scientists of the institute in the 13th Indian Fisheries and Aquaculture Forum held at Kolkata during February 23–25, 2024. Dr. R. Saravanan won three best presentation awards and Shri. M. Rajkumar received the best presentation award on the theme of Open water fisheries resource management ◆

Dr. L. Remya won the Best poster presentation award in the International Fisheries Congress & Expo 2024 jointly organised by the Kerala University of Fisheries and Ocean Studies (KUFOS) & College of Fisheries Panangad Alumni Association (COFPAA) during 12th to 14th January, 2024 ◆

Dr. B. Johnson was nominated as Member in the Joint Committee constituted for promotion and implementation of commercial seaweed cultivation in Andaman & Nicobar Islands ◆

Dr. Swatipriyanka Sen Dash received best oral presentation award on the theme Open water Fisheries resource management for the paper "Decrypting the stock status of Tigertooth croaker (*Otolithes ruber*) from Odisha, the north-east coast of India" ◆

Exhibitions

Madras Regional Station of ICAR-CMFRI organized ICAR-CMFRI stall in the exhibition conducted in connection with 28th Meeting of the Regional Committee Zone VIII on 16th February 2024 at NIOT, Chennai ◆

Mangalore Regional Centre put up an exhibition stall in the "Mathsya Sampada Jagrutha Abhiyana" organised by the College of Fisheries, Mangalore on 20th February 2024 where more than 400 farmers, students and the public participated ◆

Puri Field Centre participated in exhibition of *Matsya-Pranee Samavesh Odisha* (MPSO)–2024 organized by Fisheries and ARD Department, Govt of Odisha at Janata Maidan, Bhubaneswar during 16-18 February, 2024 ◆

Visitors

Shobha Karandlaje, Union Minister of State for Agriculture and Farmers' Welfare visited Amini and Agatti Islands, Lakshadweep on 5th to 6th March, 2024, to review the agriculture activities in the region. The UT Administration of Lakshadweep in collaboration with the Krishi Vigyan Kendra- Lakshadweep of ICAR- CMFRI facilitated the interaction of farmers, members of self-help groups, and young entrepreneurs supported by the Department of Agriculture and the KVK with the minister. Soil Health Cards and vegetable seedlings were distributed to the local farmers who deeply appreciated the institutional efforts in promoting vegetable cultivation in the islands ◆

Shri. Sanjay Garg, Secretary ICAR visited the Visakhapatnam Regional Centre on 17th February 2024. He was apprised of the research activities of the centre and felicitated by Head, Dr. Joe K. Kizhakudan ◆

Dr. B. K. Das, Director, ICAR-CIFRI, Barrackpore visited the Visakhapatnam Regional Centre on 11th March 2024. He was apprised of the research activities of the centre and felicitated by Head, Dr. Joe K. Kizhakudan ◆

Personnel

Promotions of Technical staff

Name and Designation	Promoted as	Date of effect of merit promotion
Shri S.V. Subba Rao, Senior Technical Assistant	Technical Officer	31.03.2021
Shri S. Selvanidhi, Senior Technical Assistant	Technical Officer	01.01.2022
Shri Kodi Sreenivasa Rao, Senior Technical Assistant	Technical Officer	21.11.2021
Shri V. Ashok Maharshi, Senior Technical Assistant	Technical Office	15.10.2021
Shri Vaibhav Dinkar Mhatre, Senior Technical Assistant	Technical Officer	17.10.2021
Shri H.M. Bhint, Technical Assistant (Retd.)	Senior Technical Assistant (Retd.)	17.11.2020
Shri P. Karamathulla Sahib, Senior Technician	Technical Assistant	05.12.2021
Shri R. Manjeesh, Technical Assistant	Senior Technical Assistant	05.02.2022
Shri M. Asokan, Senior Technical Assistant	Technical Officer	26.07.2021
Shri P. Harshakumar, Senior Technical Assistant	Technical Officer	29.06.2021
Shri Shashikanth R. Yadav, Senior Technical Assistant	Technical Officer	29.06.2021
Shri K. Ramasamy, Technical Assistant	Senior Technical Assistant	29.07.2021
Shri M. Palanichamy, Senior Technician	Technical Assistant	01.03.2022
Shri R.P. Venkatesh, Senior Technician	Technical Assistant	18.05.2022
Shri P.R Abhilash, Technical Assistant	Senior Technical Assistant	05.04.2022

Promotion of Scientists

Name and Designation	Promoted as	w.e.f
Senior Scientist (Pay Level - 12) Dr. K.R. Sreenath Dr. Gyanaranjan Dash Dr. R. Saravanan Dr. L. Loveson Edward	Senior Scientist (Pay Level – 13A)	15.12.2022
Scientist (Pay Level - 11) Dr. R. Vidya Dr. H.M. Manas Dr. Vinaya Kumar Vase Dr. K.V. Akhilesh Dr. K.K. Anikuttan Dr. N.S. Jeena	Senior Scientist (Pay Level - 12)	01.01.2023
Dr. C. Kalidas, Senior Scientist	Principal Scientist	18.03.2024
Dr. K. Mohammed Koya, Scientist (Pay Level – 12)	Senior Scientist (Pay Level – 13A) (re-designated as Senior Scientist w.e.f. 12.01.2021)	15.12.2022

Retirements on Superannuation

Smt. G. Ambika
Assistant Administrative Officer
31.01.2024

Shri A. Yesudhas
Assistant
29.02.2024

Shri M. J. Joseph
Multi-tasking Staff
31.03.2024

Obituary

Shri Lingappa,
Technical Officer
Mangalore Regional Centre

Inter–Institutional Transfer

Name & Designation	From	To	w.e.f
Shri P. Rajeev, Upper Division Clerk	ICAR – CIFT, Kochi.	Calicut Regional Station of ICAR-CMFRI	17.01.2024
Shri K.P. Ebrahim, Lower Division Clerk	ICAR-CPCRI, Kasargod.	ICAR – CMFRI, Kochi	01.02.2024 (FN)
Shri S. Sarath Chandran, Lower Division Clerk	ICFRE, Coimbatore	ICAR – CMFRI, Kochi	02.02.2024 (FN)
Shri Yogesh Sonara Zinabhai, Technician	Jamnagar Field Centre of ICAR-CMFRI	ICAR- DMAPR, Gujarat	05.03.2024

Intra–Institutional Transfer

Name & Designation	From	To	w.e.f.
Smt. N.V. Dipti, Technical Officer	ICAR-CMFRI Kochi	Vizhinjam Regional Centre	25.01.2024
Smt. M.B. Sini, Technician	Vizhinjam Regional Centre	ICAR-CMFRI, Kochi	25.01.2024
Shri M. Ganesan, Senior Technician	Mandapam Regional Centre	ICAR-CMFRI, Kochi	25.01.2024
Smt. C.A. Leela, Assistant Administrative Officer	Calicut Regional Station	ICAR-CMFRI, Kochi.	01.02.2024
Shri Solanki Vipulkumar Mulajibhai, Senior Technician	Veraval Regional Station	Jamnagar Field Centre	15.03.2024

Promotion & Transfer

Name & Designation	Promoted As	Place of duty	w.e.f
Smt. G. Radhika Krishnan, Assistant	Assistant Administrative Officer	Tuticorin Regional Station	01.02.2024
Shri M. Vijayakarthikeyan, Technical Assistant	Senior Technical Assistant	ICAR-CMFRI, Kochi.	16.02.2024

Probation clearance of technical staff

Name of the Employee & Designation	Date of initial appointment	Date of completion of probation period	Date of clearance of probation period
Smt. A. Usha Rani, Technician	21.08.2020	20.08.2022	21.08.2022
Smt. P.K. Usha, Technician	21.08.2020	20.08.2022	21.08.2022
Shri D. Linga Raju, Technician	21.08.2020	20.08.2022	21.08.2022
Shri Oggu Chinna, Technician	21.08.2020	20.08.2022	21.08.2022
Shri K. Narayanan, Technician	24.08.2020	23.08.2022	24.08.2022
Smt. R. Eswari, Technician	19.11.2020 (AN)	19.11.2022	20.11.2022
Shri P.A. Rajesh, Technician	21.11.2020	20.11.2022	21.11.2022
Shri C.S Santhanakumar, Technician	21.11.2020 (AN)	21.11.2022	22.11.2022
Shri P.T. Jithesh, Technician	17.06.2021 (AN)	17.06.2023	18.06.2023
Smt. M. Vijisha, Technician	18.06.2021	17.06.2023	18.06.2023
Smt. Keerthi Krishna, Technician	18.06.2021	17.06.2023	18.06.2023

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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