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Newsletter of ICAR-Central Marine Fisheries Research Institute

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Innovations in seaweed farming by ICAR-CMFRI appreciated



In a significant move, Dr. P. K. Mishra, Principal Secretary to the Honourable Prime Minister, visited the seaweed farming sites along the Indo-Pak border marine waters of Kori and Padala in Gujarat's Kutch district on April 20, 2024. The cage farming ventures developed by ICAR- -CMFRI involve specially engineered HDPE rafts for cultivating the robust seaweed species *Kappaphycus alvarezii*, each with a remarkable expected lifespan of 20 years with a potential yield bearing capacity of 300 to 400 kilograms per raft. During the visit, Dr. P. K. Mishra was briefed on ICAR-CMFRI's latest innovations in the domain of mariculture, including the development of region-specific, customized indigenous HDPE seaweed raft designs, advanced cultivation techniques, enhanced production efficiency, and sustainable farming practices. He expressed his strong interest in conversations concerning the project's financial viability

and its socio-economic impact on the local communities.

The advanced raft-grid technology, priced at ₹16,000 per raft, features qualities such as adaptability, manoeuvrability and ease of use. The project's strategic importance, especially in sensitive border areas like Kutch, is set to revolutionize the seaweed industry and leverage the potential of cutting-edge technology. This pioneering initiative embodies the spirit of "Atmanirbhar Bharat" and empower seaweed farmers to achieve unprecedented prosperity through mariculture. The delegation

accompanying Dr. P. K. Mishra included Dr. Suresh Kumar Mojjada, ICAR-CMFRI's Nodal Officer of this project, the Director General of the BSF; Principal Secretary, Department of Tourism, Government of Gujarat; Chief Forest Conservator, Government of Gujarat; District Magistrate of Bhuj; Inspector General of Police, Government of Gujarat as well as officials from the Department of Fisheries, Government of Gujarat.

Reported by Suresh Kumar Mojjada, D. Divu, P. S. Swathi Lekshmi, P. Abdul Azeez and Jayesh Devaliya ♦

Mobile App–MARLIN@CMFRI launched

Fishery Resources Assessment, Economics & Extension Division (FRAEED) of ICAR-CMFRI organized an Orientation Workshop on the Mobile App–MARLIN@CMFRI (Comprehensive Media sharebase for MARine Fishery machine Learning Routines

of Indian EEZ) on 31st May 2024. It has been developed to empower users with a platform for uploading high-quality digital images of marine fish landings and there by create a comprehensive database for advanced AI-driven automated marine

fishery resources identification system under the project "Automated System for Marine Fishery Resources Landing Data Collection via Computer Vision and AI-Driven Deep Learning Algorithms for Species Identification and Quantification from Visual Images" ♦

ICAR-CMFRI has constantly endeavored to conduct people-centric research and serve the society through its various research and outreach programs. Sea cage farming activities were given back end support through focused development of technologies for artificial breeding and seed production of several commercially important food fishes. The brood banks established for marine finfishes and standardized hatchery technologies developed for various species are sure to fuel the growth of mariculture in the country. Seaweed culture and nutraceutical products developed from seaweeds, hold immense potential to and devising ways to tap these wonder herbs from the seas effectively is required. The journey so far has been good. Let us look forward to achieving further heights of success in the coming years also..

With best wishes

A. Gopalakrishnan

Director, ICAR-CMFRI



Advanced HDPE floating raft technology for seaweed farming: A success story from Gujarat



In its mission to promote sustainable seaweed farming along challenging geographic locations along the Kutch coast, Veraval Regional Station has recently reached a significant milestone. The initiative has seen remarkable success through the development of master trainers, one of whom has emerged as a beacon of change in the region. The featured master trainer, selected and trained by Veraval Regional Station, has not only mastered the technical skills required for sustainable seaweed cultivation but has also become an influential advocate for this eco-friendly practice within their community. The master trainer underwent a comprehensive training program that included practical sessions on advanced seaweed cultivation techniques, sustainable resource management, and community engagement strategies during February 2024. This has led the master trainer to successfully established a thriving seaweed farm with advanced customised HDPE seaweed raft farm and is now mentoring fellow fisherfolk in adopting this practice. In a pioneering initiative, as a farmer participatory research (FPR) effort led by Shri Abla Fakhirmohammed

Vagher from Junabundar, a seasonal fisher coastal hamlet along Kutch coast, has established new benchmarks in seaweed farming.

The grow out results have been nothing short of extraordinary. From the innovative rafts developed by Veraval Regional Station, the farmer harvested an unprecedented seaweed harvest from the rafts ranged 260-350 kg within 100 sq.ft area, demonstrating the efficacy and potential of HDPE rafts in seaweed cultivation. Each raft was integrated with 10 monoline / 10 net-tubes with an initial stocking of 3 kg each line. About 20 such rafts integrated (10 with monolines and 10 with net-tubes) were deployed. The culture duration ranged between 45-55 days with partial harvesting. On an average 305 kg/ raft was yielded to cumulative substantial harvest of 6.1 tonnes. This success story highlights the transformative power of targeted training and community involvement for significant positive changes in the socio-economic development of coastal regions.

Reported by D. Divu, Suresh Kumar Mojjada, P.S. Swathi Lekshmi, Abdul Azeez, Jayesh Devaliya, J. Dhanush, T.S. Ramshad, S. Aarsha, B. Prachi, and Mayur S. Tade ◆

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Dr. A. Gopalakrishnan bids adieu from ICAR-CMFRI



Dr. A. Gopalakrishnan, Director, ICAR-CMFRI is laying down office on July 31 on reaching superannuation, after 11 years of dedicated service as the Director of the institute. Known for making the institute more people-centric, his tenure is marked by numerous projects that significantly benefited the public and shaped ICAR-CMFRI's research to serve societal needs. One of his notable contributions was the expansion of cage fish farming and over 5,000 enterprises across the country have adopted this technology, providing livelihoods to thousands of families. Dr. Gopalakrishnan also made a revolutionary move by assisting transgender individuals to become entrepreneurs in the fisheries sector, integrating them into the mainstream and improving their living standards through various research projects. Special training for women to attract them to the fisheries sector and annual awards to encourage excellence were among his initiatives. He recognized Rekha Karthikeyan from Chettuva, Thrissur, the only woman in India engaged in deep-sea fishing, helping her overcome challenges and obtain a fishing license.

Under his guidance, the SCSP and TSP schemes of the central government, were effectively implemented and over a

thousand families from these communities became small-scale entrepreneurs in the fisheries sector. He created avenues for fishermen to communicate their issues and seek solutions at any time through regular stakeholder meetings conducted. Another significant achievement was developing artificial breeding and seed production technology for 11 commercially important marine fish species and identifying suitable sites for cage fish farming and seaweed cultivation along the Indian coastline. Drafting of the Mariculture Policy to streamline these practices was a milestone during his tenure. The establishment of the National Brood Bank opened new opportunities for seed production technology, inviting numerous startup entrepreneurs into the hatchery sector. Additionally, ICAR-CMFRI, under his visionary leadership, developed 14 nutraceutical products from seaweeds to combat lifestyle diseases like diabetes, arthritis, cholesterol, hypertension, thyroid issues, and fatty liver, thus increasing public awareness and popularity of ICAR-CMFRI. It also contributed to numerous policy formulations, playing a crucial role in central and state government policies. A notable study by ICAR-CMFRI last year demonstrated that the marine

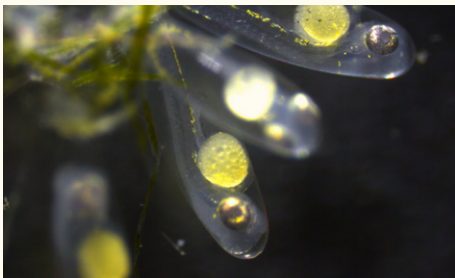
fish stocks in Indian waters were not over-exploited, significantly influencing India's stance against fisheries subsidies' removal in WTO negotiations. Research on marine mammals like the whales and sea turtles garnered his attention. Systematic publication of annual fish landing data from Indian coasts and public awareness campaigns began under Dr. Gopalakrishnan's directorship. Over INR 150 crores were secured for research projects from various agencies, apart from regular government funding. The Citizen Science Research Project, involving students and the public, gained public acclaim. The 'Fish Cemetery' art installation, part of the coastal plastic waste awareness campaign, organized during the Kochi Biennale, was widely appreciated.

Under his leadership, ICAR-CMFRI received over 100 national and international awards, including the prestigious Sardar Vallabhbhai Patel Award in 2019 for the best ICAR research institute. The institute was also ranked high in the ICAR rankings during his tenure. Significant international training programs aiding the fisheries sector's development in Afro-Asian countries were also organised. Upon the request of the Government of Omani, ICAR-CMFRI provided technical assistance for their shark conservation and management programs. During his 11-year tenure, Dr. Gopalakrishnan signed 79 MoUs for research collaboration and executed 45 consultancy projects. He also organized the Fisheries Ministers' Conference of South India aiming for uniform implementation of marine fisheries regulations nationwide, in ICAR-CMFRI. Dr. A.Gopalakrishnan retires as Director with the satisfaction of leading the institute to the pinnacle of achievements ♦

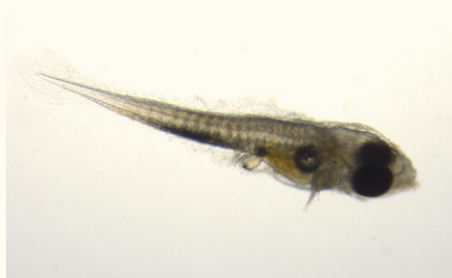
Captive seed production of Ornate goby



Broodstock of *Istiogobius ornatus*



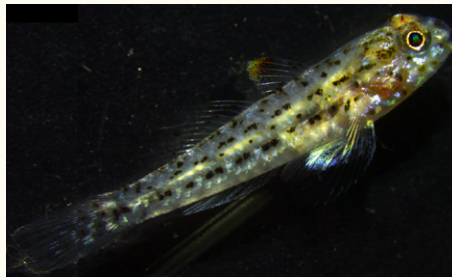
Fertilised eggs



Newly hatched larvae



3 dph larvae



50 dph larvae

The Ornate goby *Istiogobius ornatus* (Ruppel, 1830) is a popular marine ornamental fish with added benefit of being sand cleaners in home aquariums. Previous report of captive breeding of the species is from Taiwan, and this is the

first report from India. Four broodfishes collected from coastal waters of Tamil Nadu were transported to the hatchery in oxygen packed polyethylene bags. After 20 days of quarantine period, they were transferred to 250 L rectangular

FRP tanks provided with good aeration, a biofilter and broodstock shelter (mud pot). The broodstock ranged from 60-110 mm in size. Feeding was done to satiation with commercial feed (0.3-0.5 mm), finely chopped fish and squid meat. After 7 months of stocking, spawning was observed during early morning. Males were relatively larger in size and guarded the broodstock shelter. Eggs were laid in a single layer on the substrate that was guarded by the male. Hatching was observed after 72 hours. Larval rearing was done using a combination of phytoplankton, *Isochrysis galbana* and *Nanochloropsis oculata*, zooplankton, copepod nauplii and adult stages, *Artemia* nauplii and larval feed (300-400 µm). Larval metamorphosis was completed by 60 days post-hatch (dph).

Reported by Krishna Sukumaran, Ambarish P. Gop, Archana Satheesh, F. Muhammed Anzeer, K.S. Aneesh, S. Nisha, B. Santhosh and K. Madhu ♦

Rapid Assessment Survey of Marine Biodiversity

To celebrate International Biodiversity Day and understand the marine life teeming along Kerala's coast, ICAR-CMFRI conducted a comprehensive single day 'Rapid Marine Biodiversity Assessment Survey' on May 22, 2024. The intensive survey, themed "Be Part of the Plan," involved 55 expert researchers meticulously documenting the diversity

of marine species across 26 major fishery harbours, spanning from Kasaragod in the north to Vizhinjam in the south. The survey, a first of its kind in scale and scope, covering all the major landing centers in a single day simultaneously, focused on the peak landing hours from 5.00 am to 12.00 pm, capturing a detailed snapshot of the marine life brought

in by various fishing gears, including trawlers, gillnetters, and ring seiners. The results were astounding, revealing a remarkable total of 468 species, underscoring the rich biodiversity of Kerala's marine ecosystem.

Reported by: Marine biodiversity, Environment & Management Division ♦

Design and establishment of high-density bivalve rearing system

The design and establishment of a high-density bivalve larval-rearing system mark a significant advancement in hatchery technology, applicable to mussels, oysters, pearl oysters, and clams. Traditional rectangular tanks have been replaced with a more efficient and innovative system involving cylindroconical tanks. This new design optimises space and resource use and enhances bivalve larvae's growth and survival rates. The heart of the new high-density bivalve rearing system is the cylindroconical tank with a 500-litre capacity. Unlike conventional rectangular tanks, cylindroconical tanks provide several advantages. The conical shape ensures that water circulation is more uniform,

preventing dead zones where larvae might otherwise settle and be deprived of feed and oxygen. This design enhances food distribution and maintains consistent water quality throughout the tank. Inside each tank, a cylindrical net screen is designed to separate larvae from the culture water without causing damage to the delicate organisms. This screening device is available in various mesh sizes. The mesh size is carefully selected at each stage of the larvae to ensure that even the smallest larvae remain contained while allowing for the efficient exchange of water and algal feed. This continuous flow is crucial for maintaining a stable and healthy rearing environment. This modular approach allows for the rearing of large numbers of larvae within a relatively compact footprint. The system is designed with provisions for the continuous supply of seawater and algal culture, essential components for sustaining high-density larval populations. The continuous supply of seawater ensures that waste products are consistently removed, preventing the

build-up of harmful substances that could jeopardize larval health. Additionally, the continuous algal supply provides a steady source of feed, crucial for the growth and development of oyster larvae.

One of the most notable features of this system is its capacity for high-density rearing. Bivalve larvae can be stocked at rates ranging from 15 to 100 larvae per milliliter, compared to 1 to 10 larvae per milliliter in conventional systems. The efficient water circulation and nutrient distribution provided by the cylindroconical tanks make this high stocking density possible. The ability to rear larvae at such high densities is a significant improvement over traditional system. The system's modular nature makes it easy to scale up or down based on production needs, making it suitable for both small-scale and large-scale aquaculture operations and making this system a promising solution for sustainable bivalve seed production.



Screening device

Reported by M.K Anil, P. Gomathi, O. Shalini and P.M. Krishnapriya ◆



High-Density Bivalve Rearing System

Jellyspray for jellyfish stings

"Jellyspray" has been developed for the management of scyphozoan and cubozoan jellyfish stings occasionally encountered by fishers during their fishing activities., hosted a three-day annual beach festival. During the Ariyaman Beach Festival held from 15th to 17th June, 2024 in Mandapam, ICAR-CMFRI-trained Sagar Mitras working under the Pradhan Mantri Matsya Sampada Yojana, evaluated "JellySpray" first aid for about 90 individuals stung by *Lobonemoides* sp. and further evaluation of this formulation is underway.

Reported by R. Saravanan, L. Ranjith, S. Thirumalaiselvan and K. Vinod, Mandapam Regional Centre ◆

Mass production of pearl oysters using micro-nursery system

Success has been achieved in the mass production of pearl oyster spat using the micro-nursery system. In a single run, the state-of-the-art facility produced 1.2 million seeds, each measuring 2-4 mm, from just 10 down-wellers or silos with a 30 cm diameter. These spats can be utilized for both farming and sea ranching purposes. The micro-nursery system, combining downwelling and upwelling subsystems, provides a controlled environment that significantly enhances the survival and growth rates of bivalve larvae at high density. This innovative method is crucial in reviving the pearl oyster populations, particularly in regions like the Gulf of Mannar, Tuticorin, and the Gulf of Kutch, where natural beds have depleted over time. The success of this mass production effort not only marks a significant milestone but also promises a steady and reliable supply of quality pearl oyster seed for future aquaculture endeavours, paving the way



Pearl oyster spat production in micro-nursery system

for a sustainable pearl oyster industry and revival of pearl oyster beds in India.

Reported by M.K. Anil, P. Gomathi, O. Shalini and P.M. Krishnapriya ♦

Workshop proposes to explore potential of untapped mesopelagic fishes

A workshop on sustainable harvest and utilisation of mesopelagic fishes was organised by the Mangalore Regional Centre of ICAR- CMFRI on 24th May 2024. The workshop emphasised the need for exploring the immense potential of the under-utilised mesopelagic resources

within the Indian Exclusive Economic Zone (EEZ). Majority of these fishes are not used for direct human consumption owing to their high lipid or wax ester content. The experts spoke at the workshop are of the view that a pilot study should be carried to estimate

accurate potential yield estimate of these fishes and to understand subsequent factors including the economic viability for the sustainable utilisation of these resources.

Ms. Neetu Kumari Prasad, Joint Secretary to the Department of Fisheries, Govt. of India, Dr. B. Meenakumari, former Chairperson of the National Biodiversity Authority, Dr.A. Gopalakrishnan Director, ICAR-CMFRI addressed the participants. Dr. B. Meenakumari, Dr. Pravin P. and Dr. Prathibha Rohit were the panellists during the technical discussions. Dr. Shobha Joe Kizhakudan, Head, Finfish Fisheries Division, Dr. Sujitha Thomas and Dr. Rajesh K. M. from ICAR-CMFRI, Shri Dinesh Kallar, Director of Fisheries, Government of Karnataka, Dr. M. P. Ramesan, Head, Fishing Gear Technology Division, ICAR-CIFT and Dr. Manju Sebastine interacted with the participants ♦



Severe bleaching of corals observed in Netrani Reef

Netrani Reef is renowned for its rich marine biodiversity and serves as a vital habitat for various marine species. Coral bleaching, a phenomenon where corals lose their vibrant colours and turn white due to stress factors such as elevated sea temperatures, is a major concern for reef ecosystems. This event can lead to coral mortality and has broader implications for the health of marine ecosystems. Underwater surveys during the second week of May 2024, have highlighted a concerning environmental issue at Netrani Reef, a marginal coral reef surrounding Netrani Island, located 19 kilometers off the Bhatkal Coast in Karnataka. The survey, conducted



in depths upto 10 meters, has revealed severe coral bleaching affecting key coral species in this region. The bleaching has predominantly impacted *Porites* sp. and *Pocilloporides*, two critical coral species

known for their ecological importance and contribution to reef structure.

Reported by Divya Viswambharan, Mangalore Regional Centre ♦

International Yoga Day celebrated

The 10th International Day of Yoga with the theme “Yoga for Self and Society” was celebrated with great enthusiasm on 21 June 2024 at ICAR– CMFRI, Kochi, in collaboration with Govt of Kerala – Ayush Homoeopathy Department, Ernakulam

District. Session on yoga for prevention of lifestyle diseases was organised for the staff by the ICAR-CMFRI-Recreation Club. Dr. Basima Muassam, Convenor, Ayushman Bhava (Lifestyle diseases project), Govt. District Homoeo Hospital,

Ernakulam and other officials conducted the programme for the benefit of the staff of ICAR-CMFRI. Veraval Regional Station observed the day with professional Yoga instructor, Shri Abhay Thaker Ji introducing the yoga techniques. Similar programmes were held in other centres of the institute also ♦



Pompano and Green Mussels farming with NFDB support

Indian pompano, Silver pompano and Green mussel farming was taken up in Kundapura, Paduthonse, Tharapathi and Koderi under the NFDB-sponsored IMTA project during 2023-24. Fishes and mussels farming initiated in the month of December were harvested in the months of June 2024 after the five-month rearing period. The average growth observed during this period was 410-480 g for Silver pompano and 375-400 g for Indian Pompano. The harvested fish is sold locally, fetching prices ranging from ₹450-480 per kg. In addition, 1200 ropes of mussels weighing 3-4 kg from each rope were harvested and sold at the rate of ₹145-150/kg ◆

Harvest Mela of mussel in Kodungallur under SCSP



Aimed for uplifting the living standards of the Scheduled Caste members, the institute extended scientific, technical and financial support in mussel farming for ten Scheduled Caste families in Kodungallur Municipality, Thrissur. The initiative was a part of ICAR-CMFRI's project for popularising the less expensive farming method among the Scheduled Caste members across the coastal states under the Scheduled Caste Sub Plan (SCSP) Project of the

Indian Council of Agricultural Research (ICAR), Govt. of India. Two mussel farms for the Scheduled Caste beneficiaries were installed as a part of this project. Smt. Geetha T.K., the Chairperson of Kodungallur Municipality inaugurated the Harvest Mela of Oyster and mussel on 17th May 2024 in the presence of Dr. K. Madhu, SCSP Chairman, ICAR-CMFRI.

Reported by R. Vidya, A. P. Dineshbabu, P.S. Alloycious, and K.M. Jestin Joy ◆

Ornament making from fish otoliths gains interest

A self-help group has started commercial production and marketing of ornaments

made from fish otoliths. On 8th June 2024, Dr.A. Gopalakrishnan, Director of ICAR-

CMFRI appreciated the group members in a meeting at Vizhinjam Regional Centre ◆



Awareness creation drive on marine biodiversity through MARBIE

The Marine Biodiversity and Environment Management Division (MBEMD) of ICAR-CMFRI conducted a five-day workshop titled “Know Your Marine Biodiversity & Environment (MARBIE 2)- Taxonomy of Selected Marine Organisms “ from May 13th to 17th 2024, in Kochi, India. The workshop highlighted the importance of marine taxonomy in identifying and classifying marine life. This skill is vital for managing and conserving marine biodiversity. Accurate identification allows for effective research, conservation projects, and

public awareness campaigns about the importance of marine ecosystems. Twenty two participants including professors, PhD and postgraduate students attended

the training combined theoretical and practical sessions, with a dedicated field visit and museum tours to complement the classroom learning ♦



Master trainers formed for the expansion of seaweed farming in Gujarat

Under the highest priority strategic project on seaweed farming funded by Dept. of Fisheries, Govt. of India, the Veraval Regional Station of ICAR-Central Marine Fisheries Research Institute (ICAR-CMFRI) conducted a national-level exposure and hands-on training program on advanced seaweed farming for stakeholders from

Kutch, Gujarat from February 5 to 15, 2024. The initiative was crucial for sharing the domain knowledge, building capacity, and transferring technology on seaweed farming to the selected stakeholders. Stakeholders from Kutch travelled to Tamil Nadu, a prominent seaweed hub, for experiencing the advanced training. Expert interactions along with field visits to Gulf of Mannar, Munaikadu, Vedalai, Nochiyurani, Soliyakudi, and the Pamban Bridge and visits to commercial seaweed farming areas in and around these locations were conducted. In Tuticorin, they explored the farming activities along Mullaikadu, Tsunami Nagar, Hare Island, Vellapati, and Sippikulam. Further, the stakeholders interacted with women seaweed farmers as part of the master trainer program at Soliyakudi, which is

famous for women seaweed enterprises. The wooden stakes setup in the sea facilitated easy mono-line tying, providing valuable insights and technologies to achieve maximum yield. During these visits, the stakeholders got exposed to Integrated Multi-Trophic Aquaculture (IMTA) clusters where sustainable seaweed integration with marine finfish farming in sea cages is done. They also examined various seaweed species, including *Ulva*, *Gracilaria*, and *Kappaphycus* strains, and familiarised with general seaweed processing techniques and wild collection methods. They were also trained in seaweed identification through field trips under the supervision of experts from ICAR-CMFRI. Master Trainers Interaction and Valedictory was held at the Veraval Regional Station of ICAR-CMFRI on 15th April 2024. The event was attended by various field experts, officials from Indian Coast Guard Station, ICAR-CIFT, MPEDA, EIA, College of Fisheries, Department of Fisheries, Govt. of Gujarat and Department of Fisheries, Govt. of India. A virtual interaction was undertaken by Smt. Neetu Kumari Prasad, IAS, Joint Secretary (MF), Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India, who reviewed the national exposure tour and interacted with the master trainers from Kutch ♦



Women farmers reap bumper harvest of Green mussels

Women farmers in Moothakunnam and Kottappuram have reaped a bumper harvest of green mussels with technical guidance from ICAR-CMFRI. The Kudumbashree units got a total yield of 2.5 tonnes from both the farms. Depurated mussel meat from the farms was sold through the Agriculture Technology Information Centre (ATIC) of ICAR-CMFRI to the public at ₹250 per kilogram.

Reported by R. Vidya, A. P. Dineshababu, P.S. Alloycious and K.M. Jestin Joy



Seaweed farming capacity building for coastal communities in Kutch

A comprehensive plan of action and strategy was deployed to engage coastal fisher communities of Kutch in seaweed farming under highest priority strategic mission project funded by Department of Fisheries, Government of India. Towards this goal, an Exposure, Awareness cum Hands-on Training Program was organized from June 1- 14, 2024 and June 24 -28, 2024 along the Indo-Pak Border Coastal villages of the Kutch coast. The awareness campaign involved custom designed “door-to-door” and “step-to-step” programs covering 22 coastal villages including Lakhapat, Shinapar, Chher Nani, Chher Moti, Kanoj, Narayana Sarovar, Koteshwar, Tahera, Rodasar Lakki, Pipar, Gunao-Sanghi, Naliya, Nana Layza, Mandavi,

Salaya, Modhawa, Tragdi, Gundyali and Mundra. During the awareness campaign, more than 650 km of coastal area was covered and over 92 coastal fishermen families benefited. This initiative was a significant sensitization step towards sustainable seaweed farming, community engagement, and the expansion of seaweed cultivation along the Kutch coast which is presently treated as one of the strategic priorities of the nation monitored by the Honorable PMO. This approach can serve as a model for similar initiatives in other coastal regions too.

Reported by: D. Divu., Suresh Kumar Mojjada, P.S. Swathi Lekshmi, P. Abdul Azeez, Jayesh Devaliya, T. S. Ramshad



World Environment Day 2024

The World Environment Day 2024 was observed with great enthusiasm on 5th June 2024, in the various centres of the institute. At the Veraval Regional Station the celebrations were planned keeping in mind the theme for World Environment Day 2024 namely “Land restoration, desertification and drought resilience” by planting saplings of drought resilient flowering plants at the newly acquired office premises at Inaj, Veraval. At Madras Regional Station a special lecture on the topic “A better environment for a better tomorrow” was presented by Mrs. Indra Raghukumar, Retired Physics Teacher, Vanavani Matriculation Higher Secondary School, IIT Madras, Chennai. An awareness cum sensitization programme was also conducted to fisher folks within the limits of Chennai Corporation about the dangerous effects of plastics, littering and other harmful anthropogenic activities on the marine environment

Official Language Implementation

As a part of Monthly Hindi Programme, Hindi Anthakshari competition was conducted for the staff members on 18th April, 2024. Shri Kiran Ayyar, Junior Translation Officer, Customs Office, Kochi conducted the programme.

An Official Language Inspection was conducted by Dr. Anirban Kumar Bishwas, Deputy Director (Implementation), Regional Implementation Office (South), Bengaluru at Mangalore Regional Centre of ICAR-CMFRI on 19th June, 2024 ♦



Official language orientation programme



As per the decisions taken during the Official Language Implementation Committee meeting held on 3rd May 2024 at the Institution, an Official Language Orientation Programme was organised for the Officers and Staff of ICAR-CMFRI on 26th June 2024. Dr. Madhusheel Ayillyatt, Manager and In-Charge (Rajbhasha),

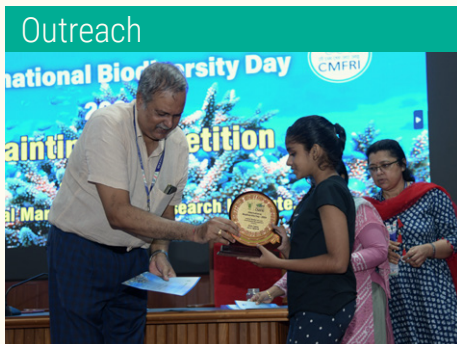
Reserve Bank of India, Kochi conducted class for the staff members. The first session was conducted for the staff members, on the topic 'Official Language Policy and the e-tools used in Hindi'. While 20 staff members were participated in the first session of the programme the second session organized for the Officers

was attended by the Comptroller of ICAR-CMFRI and newly appointed six Heads of Division in ICAR-CMFRI. Information related to the role of Senior Officers in successful implementation of Official Language Policy and the e-tools used in Hindi were provided ♦

Quarterly Hindi Workshop conducted

All the staff of the Madras Regional Station of ICAR-CMFRI, Chennai attended Quarterly Hindi workshop on 28th June 2024 in connection with the Official Language Implementation Committee (OLIC). Dr. Srinivasa Raghavan, Senior Scientist and OLIC In-Charge handled the session about with Hindi grammatical and colloquial forms of words and sentences in the daily communication. The session ended with an action plan for future workshops ♦





International Biodiversity Day celebrated

International Biodiversity Day was celebrated at ICAR-CMFRI, Kochi with a painting competition conducted on 21st May 2024 for school children of various age categories on the themes “The Sea and Me”, “Wonder of marine biodiversity”

and “Save Oceans-Save Planet”. Talks on deep-sea and coral reef diversity and coastal and marine birds was delivered by Treasa Augustina A.X., Alvin Anto (Research Scholars) and Aju K. Raju (STA) for the 59 participants and their guardians ◆



Institute visit and training program for familiarizing with the activities of the institute and acquiring knowledge in the field of Fisheries for 56th batch Executive staff of Department of Fisheries, Kerala was organised at ICAR–CMFRI Cochin during 5th -7th June, 2024

Training programme for Fisheries Science students

A training programme was organised for the B.F.Sc. students from the Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi, Kerala from 3rd April 2024 to 23rd April 2024 at the Mandapam-Regional Centre of ICAR-CMFRI. The training was organised under the RFWE (Rural Fisheries Work Experience) programme in the curriculum of BF.Sc.

Reported by K.K. Anikuttan, L. Remya, R. Bavithra, and K. Vinod, Mandapam Regional Centre ◆



Training Programme on Fisheries Management Practices and Techniques



A five-day training course on Fisheries Management Practices and Techniques was conducted by the ICAR-Central Marine Fisheries Research Institute in collaboration with ICAR-CIFT and MPEDA for the newly appointed Assistant Commissioners of Fisheries, Government of Maharashtra, from 27th to 31st May, 2024. The program covered a wide range of relevant topics and 16 participants attended the training programme.

Reported by K. G. Mini, T. M. Najmudeen, N. Rajesh and Chandrasekar Selvam ◆

In May 2024, the ICAR-Central Marine Fisheries Research Institute (ICAR-CMFRI) in Kochi, India, hosted a workshop aimed at capacity building for elasmobranch taxonomy, fisheries management, and conservation. The workshop, which saw participation from shark and ray researchers from India and Oman, emphasized the need for sustainable shark fisheries in the northern Indian Ocean. Four researchers from the Marine Science and Fisheries Center and the Aquaculture Centre under the Directorate General of Fisheries Research, Sultanate of Oman and Scientists from ICAR-CMFRI, India attended the program and shared scientific knowledge on marine fisheries practices in the region. The workshop featured a series of insightful sessions on elasmobranch research, conservation strategies, and taxonomy, along with a hands-on session in ICAR-CMFRI's genetics

India-Oman Interactive Workshop on elasmobranchs

lab on species identification using DNA barcoding. Participants from Oman received technical support in identifying their ray samples. This was followed by validating the checklist of rays of Oman with the assistance of scientists specializing in elasmobranch research in India. The workshop participants visited the Cochin Fisheries Harbour (CFH) to observe the commercial landings of elasmobranchs. The workshop concluded with a valedictory ceremony, where participants shared feedback and expressed their commitment to ongoing collaboration. Dr. Khalfan Al Rashdi from Oman highlighted potential research partnerships, including species delineation, stock assessment, ornamental fish breeding techniques, artificial reef development, abalone fishery and culture,

breeding technology for blue-swimming crabs, and technical support for the development of live-feed culture systems, open sea cages, and Integrated Multi-Trophic Aquaculture (IMTA). Dr. A. Gopalakrishnan, Director of ICAR-CMFRI, assured continued support for these collaborative efforts, reinforcing the strong ties between India and Oman in marine research and conservation. Dr. Shoba Joe Kizhakudan, Head, Finfish Fisheries Division was deputed to Oman during September 2023 on invitation from the Directorate of Fisheries Research, Government of Oman, to review the shark and ray research projects run by the Oman Fisheries and Marine Science Centre and to train the project staff in shark and ray identification, preparation of NDFs and to finalize their NPOA-Sharks ♦



World Ocean Day

World Ocean Day 2024 was observed with a beach cleanup drive at Puthuvypu, Kochi by the Marine Biodiversity and Environment Management Division. Veraval Regional

Station organized a drawing competition 2024 on the theme "Catalysing Action for Our Ocean & Climate" for the students of Bhidia Government School, Veraval. To raise awareness about the impact of plastics on marine ecosystems. At the Vizhinjam Regional Centre Dr. A. Gopalakrishnan,

Director, ICAR-CMFRI, presided over the meeting and highlighted the adverse effects of microplastics on marine life. Dr. B. Santhosh, Head of the Centre, discussed the centre's initiatives to reduce plastic pollution. The event was attended by fishermen, stakeholders, staff, and students ♦



Visitors



Joint Secretary (Inland Fisheries) Shri Sagar Mehera along with Dr. Subash Chandra, Director (Fisheries) and Dr. Gunamaya Patra visited the Mandapam Regional Centre of ICAR-CMFRI on 29th & 30th June, 2024.

Recognitions



Smt. Bindu Sanjeev, won the third place in Official Language Seminar conducted by the Directorate of Cashew Nut and Cocoa Development, Kochi on 25th June, 2024 at Kera Bhavan, Kochi



Dr. Sandhya Sukumaran was awarded the Study UK Alumni Award in the category Science and Sustainability by the British Council. She completed a transformative training on CRISPR-Cas9 gene editing in fishes at King's College London, supported by a £2500 grant during June 10-28, 2024.



Dr. Suresh Kumar Mojjada, Asst. Chief Technical Officer and Shri. H.M.Bhint (Rtd.), Senior Technical Assistant, of Veraval Regional Station were conferred with the first Nandakumar Rao Memorial Award-2023 for outstanding technical staff under category-I and category II respectively, of ICAR-CMFRI on 17th April 2024



In-house programmes



28th Research Advisory Committee meeting was conducted at ICAR-CMFRI headquarters from 11th to 12th April 2024

Personnel

Promotions

(from Senior Scientist (Pay Level – 13A) to Principal Scientist (Pay Level – 14)

Name & Designation	w.e.f
Dr. P.N. Ananth	14.05.2018
Dr. P. Shinoj	12.06.2022
Dr. G. Tamilmani	07.01.2023
Dr. M. Sakthivel	08.01.2023
Dr. Krishna Sukumaran	07.01.2023
Dr. P.P. Suresh Babu	07.01.2023
Dr. Ritesh Ranjan	09.03.2023

Intra-Institutional Transfer

Name & Designation	From	To	w.e.f.
Shri T. Vineeth, Lower Division Clerk	Karwar Regional Station	Mangalore Regional Centre	05.04.2024 (FN)
Shri Rishikesh Aandi, Assistant Administrative Officer	Mangalore Regional Centre	Calicut Regional Station	17.04.2024 (FN)
Shri K. Krishnan, Multi-Tasking Staff	Tuticorin Regional Station	Mandapam Regional Centre	17.04.2024 (FN)

Inter-Institutional Transfer

Name & Designation	From	To	w.e.f.
Shri P. Rajeev, Upper Division Clerk	Calicut Regional Station, ICAR- CMFRI	ICAR-CIFT, Kochi	17.04.2024 (FN)
Smt. G. Hemlata, Assistant Finance Account Officer	ICAR-CMFRI Headquarters, Kochi	ICAR-CTRI Rajahmundry	30.04.2024 (FN)
Shri M.M. Vanvi, Assistant	Veraval Regional Station, ICAR-CMFRI	ICAR-IIPR Bikaner	24.05.2024 (FN)

Appointment

Name	Name of the Post	Place of Duty	Date of Joining
Shri Milan Jana	Technician	Contai Field Centre	06.05.2024 (FN)
Shri Kalpataru Maji	Technician	Digha Regional Station	13.05.2024 (FN)
Shri Pankaj Kumar	Technician	Cuddalore Field Centre	20.05.2024 (FN)
Shri Dinesh Kumar Yadav	Technician	Jamnagar Field Centre	27.05.2024 (AN)
Shri Sunil Banoth	Technician	Mangalore Regional Centre	27.05.2024 (FN)
Shri Siddhartha Hazra	Technician	Narsapur Field Centre	27.05.2024 (FN)
Shri Sabyasachi Ghosh	Technician	Mangalore Regional Centre	27.05.2024 (FN)
Shri Jay Prakash Ray	Technician	Alibag Field Centre	29.05.2024 (FN)
Shri Soumen Bar	Technician	Kanyakumari Field Centre	29.05.2024 (FN)
Shri Ranjan Kumar	Technician	Srikakulam Field Centre	30.06.2024 (FN)
Shri Deepak Kumar	Technician	Mandapam Regional Centre	03.06.2024 (FN)
Shri Sagar Vittal Shinde	Subject Matter Specialist (Aquaculture) Senior Technical Officer (T-6)	Krishi Vigyan Kendra, Lakshadweep	24.06.2024 (FN)
Dr. Ansul	Subject Matter Specialist (Vegetable Science) Senior Technical Officer (T-6)	Krishi Vigyan Kendra, Lakshadweep	25.06.2024 (FN)
Shri P. Thirumoorthy	Subject Matter Specialist (Home Science) Senior Technical Officer (T-6)	Krishi Vigyan Kendra, Narakkal	26.06.2024 (FN)
Shri Robin Bilam	Subject Matter Specialist (Soil Sciences) Senior Technical Officer (T-6)	Krishi Vigyan Kendra, Narakkal	26.06.2024 (AN)
Shri Avinash Kumar Lal	Technician	Puri Field Centre	27.06.2024 (FN)

Retirements on Superannuation



Shri M. Asokan,
Technical Officer
30.04.2024



Shri P.V. Gopalan,
Multi-Tasking Staff
30.04.2024



Smt. K.P. Salini,
Assistant Chief Technical Officer
31.05.2024



Smt. J. Sudhadevi,
Senior Technician
31.05.2024



Shri V.H. Venu,
Senior Technician
31.05.2024



Shri S. Srinivasulu,
Lower Division Clerk
31.05.2024



Smt. A. Usha Rani,
Technician
31.05.2024



Shri M.D. Suresh,
Multi-Tasking Staff
31.05.2024



Smt. P.K. Sujatha,
Multi-Tasking Staff
31.05.2024



Shri V. Sitaramacharyulu,
Senior Technician
30.06.2024



Shri S.M. Sikkender Batcha
Senior Technician
30.06.2024



Dr. P. Laxmilatha,
Principal Scientist
30.06.2024

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. Vijayakarthekeyan, Technical Assistant	Senior Technical Assistant	ICAR- CMFRI, Kochi.	16.02.2024

Compassionate appointment

Name & Designation	Place of Duty	Date of Joining
Shri Ganesh Suryakant Tandel Multi-Tasking Staff	Digha Regional Station	03.04.2024 (FN)



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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