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Newsletter of ICAR-Central Marine Fisheries Research Institute

INSIDE

Headlines

Award for Best Research Institute for ICAR-CMFRI


Indian Council of Agricultural Research

Certificate

SARDAR PATEL OUTSTANDING ICAR INSTITUTION AWARD–2019

(For Large Institute Category)

is presented to

ICAR-Central Marine Fisheries Research Institute

Kochi, Kerala

16 July, 2020
New Delhi

(T. Mohapatra)
Secretary (DARE) &
Director General (ICAR)

(Narendra Singh Tomar)
Agriculture & Farmers Welfare Minister, GoI
& President, ICAR Society

The Sardar Patel Outstanding ICAR institution Award 2019 (Large Institute category) was won by ICAR-CMFRI for its excellent contribution to marine fisheries development. The award was based on an evaluation of its various research activities and programmes during the period 2014 to 2019. On the occasion of the ICAR Foundation Day The award announced on the occasion of the ICAR Foundation Day ceremony held

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Success in captive spawning and seed production of John's snapper

The first report of successful broodstock development, induced breeding and seed production of John's snapper in captivity in India, which has raised enormous scope for aquaculture business opportunity through species diversification has emerged from ICAR-CMFRI. *Lutjanus johnii* belonging to the family Lutjanidae, has immense potential for mariculture owing to its fast growth rate, easy adaptability to culture conditions, quick acceptance of artificial feed, meat quality and high consumer preference. In an attempt to diversify mariculture, research on breeding and seed production of the species was initiated in 2018 at Visakhapatnam Regional Centre of ICAR-CMFRI, using adult fishes collected from the wild. Later, under a DBT funded project entitled "Developing a new candidate species for mariculture: Marine finfish John's Snapper, *Lutjanus johnii*" work was taken up on priority. Adult fishes of around 3 kg sizes maintained in the offshore cages installed off Visakhapatnam were selected and transported to the hatchery complex. After prophylactic treatment for two weeks

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Director Speaks

It is indeed a proud and joyful moment for the ICAR-CMFRI family to win the covetous Sardar Patel Outstanding ICAR Institution 2019. Sustained efforts at research activities and outreach programmes is evident because the institute has won the award for the second time and this tempo has to be kept up in the future also. Coming to recent achievements, the successful Marine Fish Broodbank model developed for Pompano by ICAR-CMFRI with NFDB support, can be a game-changer on the mariculture front. Along with natural resource management to maximize the potential yields from the seas, efforts at developing and diversifying the list of potential mariculture species is also progressing well in the institute. The latest news is of the first successful captive breeding of the highly valued snapper *Lutjanus johnii* in India. Best wishes to the ICAR-CMFRI family in their endeavours to bring glory to the institute and the country.

With best wishes

A. Gopalakrishnan
Director, ICAR-CMFRI

News Highlights

Invasive mussel *Mytella strigata* impacts bivalve farming in Kerala

A rapid survey carried out during July to September 2020 in the Ashtamudi, Vembanad, Chettuva estuaries of Kerala has recorded the impact of invasive mussel *Mytella strigata* on ponds, cages and bivalve farming sites. The alien species of mussel which has established recently in backwaters of Kerala, was found blocking nets in cage farms and affecting bivalve farms and clam beds. It is also showing a tendency to out-compete native mussels, oysters and clams in their natural beds ◆

Marine Fisheries Policy brief released

ICAR-CMFRI's Marine Fisheries Policy Series No. 18/2020, entitled *Streamlining the Supply Chain of Marine Fish in Kerala: COVID-19 and Beyond* was released by Smt. J. Mercykutty Amma, Hon. Minister of Fisheries, Harbour Engineering and Cashew Industry, Government of Kerala on 4 August, 2020 at Thiruvananthapuram. Dr. A. Gopalakrishnan, Director, ICAR-CMFRI joined the release function through a web-platform. Mr. M. G. Rajamanickam IAS, Director, Fisheries, Government of Kerala, Mr. K. M. Alias, Ministry of Fisheries, Government of Kerala, scientists from ICAR-CMFRI and ICAR-CIFT, Dr. C. Ramachandran, Dr. J. Jayasankar, Dr. A. Suresh and Dr. P. Shinoj were also present 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.
Editor: Dr. U. Ganga **Editorial Committee:** Dr. R. Ratheesh Kumar, Dr. Livi Wilson, Dr. N. S. jeena, Mrs. E. K. Uma, Mrs. V. Vandana
Assisted by: Mr. Arun Surendran, Mr. C. V. Jayakumar, Mr. P. R. Abhilash

India's first Silver pompano broodbank becomes operational

Pompano Broodbank facility at Vizhinjam

Supply of eggs and yolk-sac larvae of Silver pompano to the Kerala Fisheries Department's Pompano Hatchery at Azhikode, Thrissur district has started. This activity was taken up under the NFDB funded Pompano Broodbank Project by the Vizhinjam Regional Centre of ICAR-CMFRI. The broodbank has 102 pairs of brooders of Silver pompano *Trachinotus blochii*, which are maintained in three 30 ton and seven 10 ton indigenously designed Recirculating Aquaculture Systems (RAS). The facility is capable of producing up to 1 million eggs of Silver pompano per day. The project team has also trained staff from the fisheries department in marine fish broodstock husbandry techniques, and larval rearing before the supply of eggs to the hatchery started. The department hatchery in turn has started production and supply of pompano seed to farmers.

The primary objective of this NFDB-CMFRI project was the dissemination of the seed production and culture technologies of Silver pompano by establishing a National Brood Bank at Vizhinam with a production capacity of 48 million yolk-sac larvae when completed. The yolk-sac larvae produced will be utilised by the state government and private hatcheries supported by NFDB and produce 10 million fingerlings for increasing the fish production. The project was sanctioned by NFDB in August 2017 with an outlay of 564 lakhs, and the construction of the facility was completed in December 2018. The production and supply of seed to NFDB cage farmers from brood bank started in July 2019 onwards which continued even during the COVID 19 pandemic and ensured uninterrupted supply of fish seed to the fish farmers. ◆

Fish seed being handed over to officials of the Fisheries Department of Kerala

Transportation of fish seed

Carbon sequestration potential of mangroves assessed

A study was conducted to estimate the biomass and carbon stocks in a natural mangrove of Muzhappilangad wetland in the Kannur district of Kerala. *Avicennia marina* the predominant mangrove species with an average tree density of 1,592.31 individuals ha^{-1}, overall mean above-ground biomass 260.69 t ha^{-1} and the overall mean root biomass 102.84 t ha^{-1} was recorded. The estimated mean C-stocks were 130.34, 51.42 and 28.68 t C ha^{-1} in the above-ground, root and sediment carbon pools respectively. The above-ground C-stock constituted 61.94% while the root and sediment C-stock comprised 24.43 and 13.63% respectively. The total carbon stock of Muzhappilangad wetland was 210.44 t C ha^{-1} which is equivalent to 772.32 t CO_2 ha^{-1}. The mangrove area of Muzhappilangad is 8.9 ha and therefore it can be assumed that this small wetland of Kerala has the potential to sequester and store 1,872.92 t C, equivalent to an estimated 6,873.61 t CO_2. Mangroves have immense capacity to sequester and store large quantities of carbon in their biomass and sediments and reportedly upto four times more carbon per unit area as compared to the terrestrial forests of the tropics. The mangrove cover in India is 4,975 sq. km. (Forest Survey of India, 2019) with the net increase in mangrove cover of 54 sq.km. as compared to the 2017 assessment. The mangrove cover of the country which is 3.32% of the total mangrove area of the world is expected to sequester and store a substantial quantity of carbon. The state of Kerala is endowed with 9 sq. km. of mangrove cover of which 6.24 sq.km. lies in the Kannur district of the state.

(Reported by K. Vinod, P. K. Asokan, P. U. Zacharia, C. P. Ansar, A. Anasukoya, V. A. Kunhikoya and M. K. Nikhiljith) ◆

New species of snake eel discovered

A new species of snake eel from Arabian sea named *Xyrias anjaalai* sp. nov., has been described (Zootaxa 4822 (4): 577–587, 2020). Discovered among the fish catches in a trawler operated off Kollam, Kerala, the species has been named 'anjaalai', the vernacular term in usage for eels. Its common name is Kollam snake eel for the geographical area from which the specimens were fished. Only four species (*Xyrias revulsus*, *X. multiserialis, X. guineensis* and *X. chioui*) are recorded globally till date. This new species of *Xyrias* is distinguished from its cogeners in having 147-149 vertebrae, a larger eye diameter, shorter snout and a different dentition pattern. The holotype and paratypes are deposited in the Marine Biodiversity Museum of ICAR-CMFRI, Kochi and partial nucleotide sequences of the COI gene were submitted to NCBI (GenBank: MT247881.1, MT247882.1, MT247883.1 and MT247884.1)

(Reported by: Miriam Paul Sreeram, Treasa Augustina, Sandhya Sukumaran, Anjaly Jose and K. M. Sreekumar) ◆

Aquasilviculture – mangrove based mariculture production system

An experimental study to produce fish in a tidal-fed mangrove-pond as a model aquasilviculture production system was initiated by Tuticorin Regional Station. The tidal seawater inflow is channelized through the model mangrove farm area of 120 m^2 through PVC pipes. Water depth is maintained at one metre by providing outlets pipes installed 30 cm above the inlet pipes to facilitate the excess flow of tidal water. The inlet and outlet pipes fitted with 5 mm velon screen prevent the escape of the stocked fishes and water quality parameters are being monitored. Hatchery-reared snubnose pompano, *Trachinotus blochii* fingerlings of average size of 12.0±1.50 g were stocked in the tide-fed pond with an area of 100 m^3. The fishes were fed twice daily with the floating pellet feed (45% crude protein and 10% crude lipid) during the first and second month at the rate of 10 and 8% of body weight respectively. The study is in progress.

(Reported by: C. Kalidas, L. Ranjith, D. LingaPrabu, M. Kavitha. and I. Jagadis) ◆

Mass beaching of pneumatophores of Blue button jelly

Pneumatophores of *Porpita porpita* in large numbers were found strewn on the Panambur, Suratkal, and Sasihithlu beaches of Dakshina Kannada during the second week of September 2020. A sudden decrease in salinity and temperature of the coastal waters due to the heavy rains recorded during this period might have resulted in the death of blue button jelly, leaving the hydroid colony disintegrated and the pneumatophores to drift onto the beach. Bulk quantities of cellophane tube worm (*Spiochaetopterus* spp.) casings were also observed along the wrack lines in Panambur beach confirming the presence of cellophane tube worms along the Karnataka coast, which was earlier reported from the west coast of India only at Cochin and Trivandrum.

(Reported by Divya Viswambharan) ◆

Research Highlights

Captive spawning of blue-ring sea hare

Sea hares identified as *Stylocheilus striatus* collected from the intertidal area of Karapad Bay, Thoothukudi coast commonly known as blue-ring sea hare have spawned in captivity. A few of the collected live animals (6 to 10 cm length; weighing 5 to 15 g), started laying the ribbon-shaped egg strings of green to olive yellowish colour after a period of seven days holding. The egg strings consisted of embryos (egg capsules) embedded in a jelly-like layer, attached to the walls of the tank. The oviposition by *S. striatus* continues nearly 5–15 minutes. Their embryonic developmental and early life history stages were investigated. The length of egg strings ranged between 8 and 40 cm and number of embryos per square millimetre of egg mass is 30 to 80. *S. striatus* play an important role in benthic reef ecology particularly as a specialist grazer of the toxic cyanobacterium that prevents the settlement of coral larvae.

(Reported by: L. Ranjith, M. Kavitha, C. Kalidas, D. LingaPrabu, A. MathanBabu and I. Jagadis) ◆

Science Talks

A talk on "Strategies for improving the efficiency of marine fish value chains in India: COVID-19 and Beyond" was organized by Journal Club of ICAR-CMFRI on 24th July 2020. Dr. P. Shinoj delivered the lecture on Webex platform which was attended by several scientists and research scholars of the institute. An overview of Indian fisheries, impacts of COVID-19 pandemic on fish value chain and its valuation, fish marketing and value chain linkages, major deficiency associated with fish value chains and strategies to reform fish marketing system in the context of COVID-19 pandemic crisis scenario were presented and discussed.

Marine Biological Association of India organized webinar talks by Dr. Yvonne Sadovy Co-Chair of the IUCN (World Conservation Union Specialist Group on Groupers and Wrasses on 09th July 2020 and Dr. Luiz Rocha, Associate Curator and Follett Chair, Ichthyology with the Californian Academy of Sciences, San Francisco, USA on 23rd July 2020 for its members ◆

Outreach

Nutraceuticals developed from seaweed commercialized

Cadalmin™ Green Algal extract (Cadalmin™ GAe), Antidiabetic extract (Cadalmin™ ADe), and Antihypertensive extract (Cadalmin™ AHe), three patent-protected nutraceutical products developed from seaweeds by ICAR-Central Marine Fisheries Research Institute, as natural remedies for arthritis, type-2 diabetes and hypertensive disorders, were commercialized with Pioneer Pharmaceuticals Limited-a leading wellness and pharmaceutical company based at Kochi. Dr. A. Gopalakrishnan, Director, ICAR-CMFRI signed an exclusive license agreement with the company for their commercial production and marketing, on 9th September, 2020. Seaweeds are gaining immense attention in nutraceutical industries due to their protective function against various chronic diseases. The Indian nutraceuticals market has been growing at the compound annual growth rate of 20% for the past three years, particularly in the functional food segment indicating its acceptance by the Indian consumers and healthcare providers.

Reported by: Kajal Chakraborty, Marine Biotechnology Division ◆

Orange spotted grouper harvested from pond culture system

The first culture demonstration of Orange spotted grouper culture in coastal pond was carried out by Visakhapatnam Regional Centre at Bhavedevarapalli, Nagayalanka Mandal, Krishna District of Andhra Pradesh with financial support from National Fisheries Development Board (NFDB), Government of India. Hatchery produced advanced fry stages (2 inch size & 3 g weight) were stocked in hapas @ 300 nos./ m^3 for nursery rearing in pond. These were maintained with aeration and fed 4 times a day, initially with floating commercial pelleted feed (45% crude protein and 10% crude fat) at 8-10% of bodyweight which was slowly reduced to 5% after reaching 25-30 g. After three months in nursery, the fry of approximately 50g were stocked in a pond with live tilapia. During this nursery phase the average survival rate was 78.5%. In grow out culture the fish was fed with artificial feed (45% crude protein and 10% crude fat) in addition to the live tilapia in pond. Growth was monitored every fortnight for 12 months. The fishes reached 0.6 to 1.8 kg with differential growth variation upto 40% and were harvested in July, 2020. The harvest of 1250 kg of orange spotted grouper was sold to a buyer from Kochi, Kerala @ ₹315 per kg. Mr. Mopidevi Venkataramana Rao, Minister of Animal husbandry, Fisheries & marketing, Govt. of Andhra Pradesh, Mr. Simhadri Ramesh Babu, MLA, Avanigadda (Krishna Dist), Mr. G. Rathinraj, Executive Director (Tech.), representatives from NFDB, ICAR-CMFRI and MPEDA were present at the Harvest function organised to give wide publicity among farmers and public.

(Reported by: Sekar Megarajan, Ritesh Ranjan, Biji Xavier and Shubhadeep Ghosh) ◆

Coastal saline ponds put to use for fish farming

Tribal fishers of *Nilamadhab Swayam Sahayak Gosthi* of Jugadiha, Balasore, Odisha stocked coastal saline ponds for polyculture of mullets with marine shrimps and portunid crabs in the last week of September, 2020. The work was carried out under the Central Government's Tribal Sub-Plan (TSP) programme operated in ICAR-CMFRI. The TSP team of Puri Field Centre guided the farmers in standard pond preparation procedures and procurement of quality seeds.

(Reported by: Rajesh Kumar Pradhan, Subal Kumar Roul and Biswajit Dash) ◆

Outreach

Shark Awareness Day celebrated online

In connection with Shark awareness Day on 14th July 2020 the Mandapam Regional Centre arranged a virtual gathering of 62 participants with active support and participation by all stakeholders including fishermen, boat owners, traders, exporters, public, officials from State Fisheries Department, Wildlife Institute of India, Forest Department, FM radio brodcasters and scientists for sharing their knowledge and experiences on the topic. Dr. R. Saravanan, delivered a talk on the sharks aired through the community radio service *Kadalosai FM*, Pamban. A quiz programme was also organised and winners were awarded '*Save the shark*' imprinted T-shirts. The zero cost programme lasted three days from 13 to 15 July, 2020.

(Reported by: L. Remya, R. Vinothkumar, M. Rajkumar, S. Thirumaliselvan, K. Shanmuganathan, U. Rajendran, A. Ebinezer and R. Jayakumar, Mandapam Regional Centre) ◆

Patent for Cadalmin™ Antidiabetic extract

Patent for an invention entitled 'A process to prepare antidiabetic concentrates from seaweeds and a product thereof (Patent Number 346531)' has been granted to ICAR-CMFRI. This will be valid for a term of 20 years from 19 October 2015, in accordance with the provisions of the Patents Act, 1970. Cadalmin™ Ade, an anti-diabetic nutraceutical contains 100% natural marine bioactive ingredients extracted from selected seaweeds. Its bioactive ingredients competitively inhibit dipeptidyl peptidase-IV and tyrosine phosphatase 1B and interfere with the release of simple sugars from the gut, which reduces postprandial hyperglycemia thereby hindering the occurrence of type-2 diabetes. 350 mg active ingredients in the product are packed in plant-based capsules (cellulose-based hypermelose) and the technology was taken up by Pioneer Pharmaceuticals Limited, Kochi, Kerala, India for commercial production and marketing in September 2020 ◆

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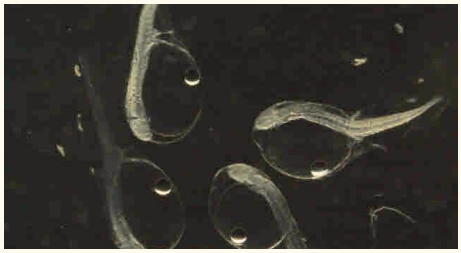
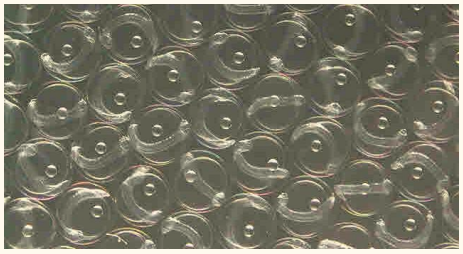
these were transferred to 125 t capacity indigenously developed Re-circulating Aquaculture System (RAS). The fishes were acclimatized and fed with squid, twice a day till satiation. Gonadal profile of the fishes was assessed routinely using live ovarian biopsy. When the ova size of females was found optimum, females and oozing males were injected with inducing hormone for spawning. These responded 42 hours post-induction, and the fertilized eggs obtained were collected using flow-through cum recirculation of tank water. These were appropriately treated and stocked in two tonne capacity FRP tanks for incubation and larval rearing. Larvae hatched out after 14 hours at 28-30°C ambient temperature. Mouth opened 54 hours post-hatching. The larval rearing was carried out using green water system with different live feeds such as *Nannochloropsis* sp., *Isochrysis* sp., copepod nauplii, rotifers and Artemia nauplii. Larvae were weaned on artificial feed from 20 Day post-hatch (DPH). Larvae started metamorphosis from 22 DPH, which was completed by 30 DPH, and by this time the larvae were fully weaned on artificial feed. After 42 days of rearing post-hatch, a survival rate of 3.67% was achieved and the fry reached an average size of 3.8 cm and 0.62 g. ◆





Larval rearing cycle from egg to fry stage of Joh's snapper

SCSP programme expands its footprint

Progress in fish farming cages in Kottaikkadu Panchayat, Kancheepuram district of Tamil Nadu operated under the Scheduled Caste Sub-Plan (SCSP) programme, were assessed by team of scientists from Madras Regional Station on 26 August 2020. Dr R. Narayanakumar, Nodal officer, SCSP, Dr Joe K Kizhakudan and Dr Abdul K Nazar visited the *Annai Teresa Meenvalappor Suya udavai Kuzhu* (ATMSUK) group who are operating two fish cage units, since March 2020. Two more teams *Nalloor Nandanaar Meenvalappor Aangall Suyaudavi Kuzhu* (NNMASK) and *Vivekanandan Meenurpathialargall Aangall Suyaudavi Kuzhu* (VMASK) belonging to the Adi Dravidar community also expressed interest in joining the programme and were briefed about the scheme's purpose and procedures to be followed for the same ◆

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on 16 July 2020 in New Delhi, consisted of a cash prize of ₹10 Lakhs, a Silver Plaque, Certificate and Citation as recognition to the institute.

The institute's efforts on preparing a range of policy guidelines, including the works on Minimum Legal Size (MLS), National Policy on Mariculture and ecosystem-based management towards the sustainable utilization of marine fisheries resources, development of nutraceutical products from marine organisms for various lifestyle diseases and pioneering mariculture activities for open sea cage fish farming, integrated multi-trophic aquaculture (IMTA) and seed production technologies for marine food fish and ornamental fishes aimed at enhancing the income of fishermen were well appreciated. Several externally funded research projects such as National Brood bank for Cobia and Silver pompano and Centre of Excellence and Innovation funded by the DBT are progressing in the institute which scored the highest ranking among more than 110 research institutes under ICAR in the country. This is the second time ICAR-CMFRI is bagging the prestigious award. ◆

Women benefit through marine ornamental fish seed rearing

Marine Ornamental fish seed rearing units were commissioned under Scheduled Caste Sub-Plan (SCSP) programme of the Government of India of the on 3rd June, 2020 at Puthukudi village, Thondi, in Ramanathapuram district of Tamil Nadu. Each unit was provided 600 numbers of ½ inch size clownfish seeds for rearing by the Mandapam Regional Centre. After two months, sale of the ornamental fish reared to marketable sizes enabled each group to earn ₹30, 000 per month which was highly appreciated by the women beneficiaries of the programme.

(Reported by R. Jayakumar, B. Johnson, G. Tamilmani, M. Sakthivel, P. Rameshkumar, K. K. Anikuttan , M. Sankar & A. K. Abdul Nazar) ◆

Outreach

Preventive interventions during COVID19 Pandemic

The institute is conducting several fishers' empowerment activities through the Scheduled Caste Sub-Plan (SCSP) programme of the Government of India. In view of the COVID 19 pandemic, masks and sanitisers were distributed among the programme beneficiaries in Thondi Pudhukudi and Kankollan Pattinam (Pudhupattinam) by the Mandapam Regional Centre.

Mariculture technologies for diversified livelihood

Awareness creation on mariculture technologies under the SCSP programmme was conducted for fishermen groups in Pudhupattinam village on 6th August, 2020. Dr. R. Jayakumar, Scientist-in-Charge, Mandapam Regional Centre and Dr. B. Johnson explained the benefits of cage farming, marine ornamental seed rearing unit and seaweed farming and course of action for successful implementation of the project. Representatives from State Fisheries Department, Kankollan Pattinam (Pudhupattinam) Village Administration and 25 members of Fishermen Cooperative Society participated in the meeting and interacted with the officials ◆

Dinoflagellate bloom off Mangaluru coast

A bloom of the dinoflagellate *Noctiluca scintillans* was observed from Someshwar to Sasihitlu along the Mangaluru coast from 8th to 16th September 2020. The bloom had maximum density of 2,40,250 numbers /m^3 along Sasihitlu with the density being higher offshore. The phytoplankton blooms in the Arabian Sea are strongly influenced by the seasonal wind shifts. Other phytoplankton species recorded from the water samples were *Coscinodiscus sp*., *Rhizosolenia sp*., *Dinophysis sp*., *Chaetoceros sp*, *Ceratium macroceros*, *Ceratium fusus*, *Biddulphia sp*., *Planktoniella sol, Oscillatoria sp*., *Ceratium furca*. The zooplankton groups included decapod larvae, nauplii, copepods, cladocerans, prawn larvae, polychaete larvae, Cypris larvae and mole crab. ◆

Stocks of Marine mammals to be assessed

A new research project dealing with management of marine mammal and sea turtle species in Indian EEZ, was launched in ICAR-CMFRI on 12th August 2020. Funded by the Marine Products Export Development Authority (MPEDA) for a period of three years, it has an overall budget of ₹5.66 crores. The project will assess stocks of marine mammals and sea turtles as well as address their by-catch issues and bridge relevant information gaps for India, in the context of global seafood trade. The USA is a major seafood market for India and under the Marine Mammal Protection Act (MMPA), National Oceanic and Atmospheric Administration (NOAA), USA, has laid down stringent conditions to protect marine mammals in commercial fisheries that will have to be followed by seafood exporting countries. A five-year exemption period starting January 1, 2017, has been also been allowed for concerned countries to put necessary, science based action plans for marine mammal conservation. Dr J. K. Jena, Deputy Director General, ICAR inaugurated the webinar held in connection with the launch of the project. Mr. K. S. Srinivas, IAS, Chairman, MPEDA, Dr. A. Gopalakrishnan, Director, ICAR-CMFRI, Dr. Kate Stafford, University of Washington and Dr Mridula Srinivasan, NOAA USA, also spoke on the occasion ◆

Disruptions in marketing channels affect fishers

Information was received on 11th September, 2020 of many dead tunas littered on the RK Beach, a popular tourist destination of Visakhapatnam. On-site observation indicted around 2500 numbers of little tunny, *Euthynnus affinis* of length range of 33 to 51 cm in semi-spoiled condition on the beach. Increased landings of this species in ring seines amid the disruption of transport channels and limited availability of ice due to prevailing COVID-19 pandemic was identified as cause. With limited availability of ice and little increase in demand due to continuous landings, fishers were forced to discard these poorly stored fishes when spoilage started. Prevailing water currents caused discarded fishes to be washed ashore and local district authorities had to arrange its clean up from the beach.

(Reported by: H. M. Manas, Loveson L Edward, Indira Divipala and Shubhadeep Ghosh) ◆

Manure from household biowastes with KVK Biobin

KVK Biobin, a biowaste disposal solution and manure generation for island households was launched by Shri Om Prakash Mishra Secretary, Women and Child Development, Lakshadweep in a function held in connection with the *Poshan Maah* celebrations on 17th September, 2020. An adapted version of the Kerala Agricultural University (KAU) Smart biobin, it will pave way for productive use of the biowastes as manure while safeguarding the islands ecosystem. These bins will be distributed to all households in the islands through Panchayath or Government Departments of the U.T. of Lakshadweep. KVK Biobin is expected to address the increasing problem of pollution adversely affecting the ecosystem and its people, caused by careless disposal of biowastes from households, restaurants and fish curing yards in the landfills and seashores ◆

Indo-Pacific finless porpoise carcasses washed ashore

Carcass of an Indo-Pacific finless porpoise *Neophocaena phocaenoides* (Cuvier, 1829) was found on Gundalaba sea beach (19° 55′ 56.0928′′ N, 86° 17′ 22.758′′ E), Astaranga (Puri), Odisha on 11 September 2020. The specimen was 4.6 feet long and ~50 kg total weight. Another carcass of the same species was also found at Kankadapal beach (21° 33′ 08.5284′′ N, 87° 20′ 04.056′′ E), Balasore, Odisha on 22 September 2020. The specimen was 6 feet long and ~60 kg total weight. The actual cause of death of both is unknown. The International Union for Conservation of Nature and Natural Resources (IUCN) has assessed this species as Vulnerable (VU) in the Red List of Threatened Species 2017. Reporting of Marine mammals based on observations during field trips is valuable countrywise information of the iconic group

(Reported by: Subal Kumar Roul & Rajesh Kumar Pradhan) ◆

Organoleptic evaluation for standardization of fish pickle making

Value added fishery products enterprises promoted in Lakshadweep

Developing and marketing of value added fish products is a long felt need of the people in the Lakshadweep islands. Thriving microenterprises of women self-help groups (SHGs) are in place in most of the islands and to further sharpen their entrepreneurial capacity KVK-Lakshadweep under Scheduled Tribe Plan (STP) programme conducted awareness drives. Capacity building of women SHGs for value added fishery products was held on 4th September 2020. Twenty of the 30 active SHGs in Kavaratti known as *Dweep Shree* have already joined the initiative after the first consultation meeting held on 20th August, 2020. Standardization of traditional fish and coconut based value added products of the islands, packaging and branding besides facilitation in marketing through the dedicated outlets in the mainland including the KVK network are planned.

(Reported by: K. Mohammed Koya, KVK Lakshadweep) ◆

Hindi Fortnight Celebration 2020

Hindi Fortnight celebration started on September 14th, 2020 at Headquarters and various regional centres and stations of the institute. Various competitions to test skills in use of Hindi language and a Workshop on Unicode to popularize adoption of Hindi for routine use were conducted online and staff members participated enthusiastically. Digital displays prominently placed in Headquarters that encouraged the use of Hindi in office works among the staff.

At Mandapam Regional Centre Comdt. S. Raja Nagendran, Commanding Officer, Indian Coast Guard Station, Mandapam inaugurated the celebrations and addressed the staff. Awards and certificates for the winners of the competitions organised on the occasion and a special cash award for Hindi Implementation and file noting work was given. At the Madras Regional Station Hindi competitions were held and prizes were distributed to the winners in a valedictory function held on 26.9.2020 ◆

Lion's mane Jellyfish from Malvan coast, Maharashtra

Cyanea rosea, commonly known as 'snottie or hairy Jellyfish' was found in the shore seine (*Rampan*) operated in the coastal waters at the depth of 5-8m in Dandi village, Malvan along with swarms of another jellyfish *Lychnorhiza malayensis* and other fishes. The distribution of *C. rosea* is reportedly confined to Australia and New Zealand coasts in the Pacific Ocean. The current specimen indicates the extended distribution of *C. rosea* and increases the diversity of *Cyanea* in Indian waters to four species viz., *C.nozakii, C. capillata, C. lamarckii* and *C. rosea.*

(Reported by: S. Ramkumar , Raju Saravanan, L. Ranjith , D. M. Vaibhav and A. K. Punam) ◆

Clean India Campaign

Several cleanliness drives have been periodically executed by the institute in its Headquarters and regional centres /stations under the *Swachh Bharat Abhiyaan* programme. In 2018, the institute won the second prize among ICAR institutes for best implemention of activities under this programme. During the current period, the KVK Lakshadweep participated in the *Swachhatha hi Seva* cleaning campaign conducted at Kavratti island by the Department of Environment and Forest, U.T. of Lakshadweep administration from 17th September to 2nd October 2020. *Swachh Bharat* activity was also held at Tuticorin Regional Station during August and September 2020, including a tree plantation drive.

Personnel

Awards & recognition

Mr. Rajesh Kumar Pradhan, was awarded Ph.D. degree on 4th July, 2020 for his thesis titled "Study of Single-day and Multi-day trawl fisheries of Gujarat Coast" from ICAR-Central Institute of Fisheries Education, Mumbai.

Mr. Vivekanand Bharti, was awarded the Ph.D. degree on 3rd August 2020 for his thesis titled "Impact of climate change on small pelagic fishery resources off south-west coast of India" by ICAR-Central Institute of Fisheries Education, Mumbai.

Dr. R. Narayanakumar, was nominated as Member of the Pondicherry Union Territory Level Approval and Monitoring Committee (UTLAMC) for the *Pradhan Manthri Matsya Sampada Yojana* (PMMSY) .

Programme participation

Dr. A. Gopalakrishnan, Director

Attended meeting with Dr. Suvarna, IAS, Chief Executive Officer, NFDB and Dr. Ratnaraj, Executive Director (Technical), NFDB on 08.07.2020 and 22.07.2020.

Attended National Fish Farmers Day celebrations organized by ICAR-CIFRI on 10.07.2020 with Chief Guest, Shri Pratap Chandra Sarangi, Hon'ble Minister of State, Ministry of Fisheries, Animal Husbandry and Dairying, Dr. Trilochan Mohapatra, Secretary, DARE & Director General , ICAR, Dr. Joykrushna Jena, Deputy Director General (Fisheries) and Dr. B. K. Das, Director, ICAR-CIFRI present.

Attended Annual Review Meeting of ATARI –Zone XI Regional working committee on 14.07.2020

Attended 92nd ICAR Foundation Day by video conferencing on 16.07.2020

Attended 70th Governing Council meeting of Kerala University of Fisheries and Ocean Studies (KUFOS) on 22.07.2020

Video conferencing with Dr. J. K. Jena, Deputy Director General (Fisheries), ICAR on 27.07.2020, 14.08.2020 and 26.09.2020

Attended Career Advancement Scheme (CAS) Assessment Committee Meeting held under the Chairmanship of Dr. K. K. Singh, Member, ASRB on 27-28 July 2020 for considering CAS of ICAR-CMFRI Officials

Attended Official Language Implementation meeting by video conferencing on 30.07.2020

Attended video-conference meeting with Department of Fisheries, Govt. of India on 24.08.2020 and 04.09.2020.

Attended National Fisheries Policy Meeting on 26.08.2020 and 29.09.2020 via video conferencing.

Attended *Pradhan Manthri Matsya Sampada Yojana* Meeting held on-line on 24.09.2020

Dr. Prathibha Rohit, attended 14th Meeting of the Working Group for monitoring and review of implementation of IOTC Resolutions 11 September 2020.

Dr. Prathibha Rohit and **Dr. A. P. Dineshbabu** attended the Sixteenth Meeting of CGPB Committee-VI on "Marine geology & exploration and coastal geoscience", Geological Survey of India, held online on 11 September 2020.

Dr. Prathibha Rohit, Dr. Shubhadeep Ghosh and **Dr. M. Muktha** participated in an online discussion on Fisheries Subsidy with officials of the Dept. of Fisheries, Govt. of India on 10.09.2020

Dr. Prathibha Rohit and **Dr. Rajesh K. M.** participated in the state level fisheries Stakeholder meeting on management of marine fisheries sector in Karnataka called by the honourable Minister of Muzrai, Fisheries, Ports and Inland Transport Shri. Kota Srinivas Poojari on 3.7.2020 in Mangaluru.

Dr. R. Jayakumar participated in the National consultation on Broodstock, seed, feed for enhancing production & productivity in aquaculture and promotion of fish exports organized by Dept. of Fisheries, Govt. of India on 4th September 2020.

Dr. R. Jayakumar and **Dr. B. Johnson**, attended the Review meeting of All India Network Project (AINP) on Ornamental fish breeding and culture under the Chairmanship of DDG (Fisheries) on 14th August 2020.

Participated the National Consultation on promotion of Seaweed cultivation, processing export and marketing through VCID organized by Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India on 24th August, 2020 and online virtual meeting organized by the Additional Secretary, MOEFCC, New Delhi on 1st September 2020 to discuss issues on topic "Seaweed cultivation in India".

Participated in the video conference convened by Joint secretary (Fisheries), Ministry of Fisheries, Govt. of India seeking opinion on the unit cost for various schemes planned under *Pradhan Mantri Matsya Sampada Yojana* (PMMSY) held on 15th June, 2020.

Dr. C. Kalidas, Dr. L. Ranjith, Dr. E. M. Chhandaprajnadarsini and **Mr. D. Lingaprabu**, attended the online meeting organized under NICRA Project by CRIDA, Hyderabad to finalize the technical program for phase (2021-2026) dealing with theme of Simulation modelling in Fisheries, which was held on 20th August, 2020 and 3rd September 2020.

Dr. Divu D and **Dr. Suresh Kumar Mojjada** participated in virtual training on mariculture technologies conducted during 21-25, September 2020 at Shanghai and organized by Department of International Cooperation, Ministry of Agriculture and Rural Affairs, China and Network of Aquaculture Centres in Asia-Pacific (NACA).

Dr. Shelton Padua attended an online training on 'Design Thinking in Research Project Formulation and Implementation" conducted by NAARM, Hyderabad during 25 – 29 August 2020.

Dr. E. M. Chhandaprajnadarsini, attended online training programme 'Analysis of Experimental data using R' organised by ICAR-NAARM during 5-11 August 2020.

Retirements

Shri Suresh Krishnarao Kamble
Technical Officer
31.07.2020

Shri David Babu
Technical Assistant
31.07.2020

Shri K. Solaman
Senior Technical Assistant
31.08.2020

Shri K. P. Said Koya
Scientist
30.09.2020

Shri Ladani Amruthlal Arjunbhai
Technical Officer
30.09.2020

Smt. S. Prasannakumari
Technician
30.09.2020

Promotions

Name & Designation	Promoted as	w.e.f
Shri Bhadrakumar S., AAO, ICAR-NBPGR Regional Station, Thrissur	Administrative Officer	24.07.2020
Dr. V. A. Leslie, Senior Technical Officer	Assistant Chief Technical Officer	01.10.2018
Dr. Jenni B., Senior Technical Officer	Assistant Chief Technical Officer	06.08.2018
Smt. S. Gomathy, Senior Technical Officer	Assistant Chief Technical Officer	23.09.2018
Shri K. K. Suresh, Senior Technical Officer	Assistant Chief Technical Officer	01.02.2019
Shri Sijo Paul, Senior Technical Officer	Assistant Chief Technical Officer	03.08.2018
Dr. Jose Kingsly, Senior Technical Officer	Assistant Chief Technical Officer	06.01.2019
Smt. P. K. Seetha, Senior Technical Officer	Assistant Chief Technical Officer	01.07.2019
Smt. K. P. Salini, Senior Technical Officer	Assistant Chief Technical Officer	01.01.2019

Compassionate Appointment

Name	Designation	w.e.f
Shri Vasamsetti Ravikanth	Skilled Support Staff	15.06.2020

Transfer

Name & Designation	From	To	w.e.f.
Dr. P. P. Manojkumar, Principal Scientist	Tuticorin Regional Station	Calicut Regional Station	27.06.2020

Inter-Institutional Transfer

Name & Designation	From	To	w.e.f.
Shri P. P. Anilkumar, Finance & Accounts Officer	ICAR-CIARI, Port Blair	ICAR-CMFRI, Kochi	03.08.2020

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.

E-mail: director.cmfri@icar.gov.in | **www.cmfri.org.in**