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Workshop on Climate Resilient Agriculture

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9th Indian Fisheries Forum

see back cover



हर कदम, हर डगर

Agrisearch with a Buman touch

किसानों का हमसफर

भारतीय कृषि अनुसंधान परिषद

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE P.B. No. 1603, Ernakulam North P.O., Cochin - 682 018



कडलमीन

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Published by

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About CMFRI

The Central Marine Fisheries Research Institute, Cochin, is a premier research Institute under the Indian Council of Agricultural Research, devoted to research and training in marine fisheries and mariculture.

CMFRI has three Regional Centres viz., Mandapam Camp, Visakhapatnam and Veraval and seven Research Centres distributed along the Indian coastline, catering to the marine fishery policy needs of all maritime states of the country.



Director speaks

Dear Colleagues,

We are glad to enter the New Year 2011 to work with a good opportunity provided by Ministry of Earth Sciences (MoES) by sanctioning a portion of the National Initiative on Climate Resilient Agriculture



(NICRA) with a project of Rs.12 crores. We have initiated two programmes under this initiative. This is equally a great challenge since the current sanction is only for 15 months (for First phase) from February 2011 to March 2012 and further continuance in XII plan depends on our present performance. We hope to accomplish the First phase of this prestigious assignment with all your cooperation and concerted effort.

The eprints@cmfri has given more visibility to our Institute globally by uploading of more than 8000 of our publications during the last six months. We must utilize this opportunity to publish more number of papers and upload them to make our presence felt globally in this field. We are also in the process of making Indian Journal of Fisheries open access and introducing online submission.

The curtain raiser for the 9th Indian Fisheries Forum has begun. It is a great opportunity for us to host the triennial event, which attracts a large gathering of fisheries professionals, researchers, academicians, policymakers, students and scholars both at national and to some extent international level. We must work as a team and I solicit the cooperation from all to make this event a grand success

With best wishes,

Dr. G. Syda Rao Director

Front Cover: Catch of Indian Mackerel by Purse seiner at Ratnagiri, Maharashtra



Catch of Rampani in Sindhudurg district

Unprecedented landings of Indian Mackerel in Maharashtra

Unprecedented landings of Indian Mackerel, *Rastrelliger kanagurta* was observed in Maharashtra during October to December 2010. Estimated catch of mackerel was 21,761 t that contributed 18.2% to the total marine fish landings of the state, placing the resource on second position after prawns in the order of abundance. Purse seine being the most efficient fishing gear for catching pelagic fish, landed bulk of the mackerel catch (65%), followed by gill net (27%), trawl net (5.6%) and *Rampani*

(3%). The abundance of fish along the coast of Maharashtra was so high that there was complete revival of *Rampani*

(Shore seine) fishery in Sindhudurg district after a gap of many years.

In Sindhudurg district there are about 70 Rampani groups all which were engaged in fishing from October to December. In most of the Rampani net operations, 2-6 t of mackerel was landed with highest of 30 t in single operation at 'Wairi' landing centre during December 2010. Even in Mumbai, the abundance of mackerel was so high that many trawlers switched over to purse seining. As a result about 460 purse seiners were in full operation during October to December 2010. Due to heavy landings, the price per kg plummeted from ₹ 50/kg to ₹10/kg during October to December 2010. In Sindhudurg district, a basket of mackerel (approximately 20 kg) fetched ₹100-150.

(Reported by: Bashir A. A. Shiledar, Punam A Khandagale & Anulekshmi Chellappan, Mumbai RC of CMFRI)

Landings of Indian Mackerel Rastrelliger kanagurta in Maharashtra*					
Year	Trawl Net	Gill Net	Purse Seine	Rampani	TOTAL
2005	1644	1592	1593	12	4874
2006	1757	3133	43	7	6434
2007	1274	4049	3584	440	9497
2008	1212	3543	1989	143	7152
2009	1105	766	8361	20	11045
2010	1224	5835	14087	615	21761

*Catch in Tonnes

New distributional range of the soft coral *Cladiella australis* in the Palk Bay Sea.



Live colony

During one of the field trips undertaken by Scuba diving in the nearshore waters off Thankachimadam near Villundy in the Palk Bay Sea for the qualitative evidence of the inhabitant species of soft corals, a species resembling *Sinularia* was brought for culturing in the hatchery. Subsequent studies through microphotographs and the access of suitable literature proved it to be yet another species under the genus *Cladiella*. The species *Cladiella*

australis (Mactadyen, 1936) is a new distributional record of soft coral from the reef area of 3-5 m depth though it is reported earlier from the island ecosystem of Little Andamans.

Cladiella australis (Mactadyen, 1936)

Common name: Colt coral small, blushing coral, blanching soft coral.

The colony in live condition is beautifully coloured chocolate brown and



Cladiella australis (Macadyen, 1936)

is encrusted with broad and low stalk. When disturbed the live coral will reduce its biomass and instantaneously change into lavender-violet with the rapid retraction of polyps. The colony looks pinkish white with polyps as dark dots just after alcohol preservation.

Published informations show that extracts from *Cladiella australis* are capable of inhibiting human oral carcinoma cells.

(Marine Biodiversity Division)

Workshop on Climate Resilient Agriculture: CMFRI Iaunches Marine Fisheries Action Plan

CAR has initiated a new project "National Initiative on Climate Resilient Agriculture (NICRA)" in February 2011. Seven core institutes and fourteen other institutes of ICAR in additon to KVKs are partners in this new initiative. CMFRI has been recognised as one of the core institutes. The project launch workshop was held in New Delhi on February 1 & 2, 2011. The Hon'ble Minister for Agriculture, Shri Sharad Pawar launched the project on February 2, 2011. Dr S. Ayyappan, Secretary, DARE & Director General, ICAR inaugurated the workshop on February I, 2011. The Workshop was chaired by Dr A.K. Singh, Deputy Director General, Natural Resource Management, ICAR. Dr G. Syda Rao, Director, CMFRI, Dr E. Vivekanandan, Principal Investigator and Dr G. Gopakumar, Co-Pl and Coordinator of CMFRI component of the project participated in the project launch workshop. Dr Vivekanandan made presentation on the proposed activities of CMFRI in the project.

Following this, a launch workshop was held at CMFRI, Cochin on February 4 & 5, 2011. Dr E.G. Silas, Former Director, CMFRI and Former Vice-



Chancellor, Kerala Agricultural University launched the project on NICRA- Marine Fisheries. Dr E.V. Radhakrishnan, Head, Crustacean Fisheries Division presided over the function. Dr Silas appreciated the efforts of CMFRI in initiating the project. He gave valuable suggestions on the scientific activities that could be pursued under the project. Dr Radhakrishnan highlighted the importance of the project and the need to study the impact of climate change on marine fisheries in order to suggest adaption options. Dr E. Vivekanandan briefed about the project and the activites that are proposed to be undertaken under the project. The twoday workshop was attended by 40 scientists located at 9 Centres of CMFRI. The project activities, methodology and logistics of implementing the project were discussed with the Co-Pls of the project.

The project, in the first phase of 14 months from February 2011 to March 2012, has a total outlay of Rs 11.87 crores. Dr E. Vivekanandan, Scientist-in-Charge, Madras Research Centre of CMFRI will be the Principal Investigator of the project. Dr G. Gopakumar, Head, Mariculture Division and Dr V. Kripa, Head, Fishery Environment Management Division will be the Co-PIs and Project Co-ordinators.

Objectives

- To enhance the resilience of Indian marine fisheries and mariculture to climatic variabilities and climate change through development and application of suitable management measures and technologies;
- To demonstrate season and site specific technologies on mariculture for adapting to current climate risks; and
- iii. To enhance the capacity of fisheries scientists and other stakeholders in climate resilient marine fisheries and mariculture research and its application.

The project will have three components: capture fisheries, mariculture and technology demonstration.



Workshop in progress

Workshop on data collection related to spawning behaviour of marine fish species to change in temperature



The three day workshop conducted for the field staff of Fishery Resources Assessment Division (FRAD) from all the 11 research locations as well as 15 field centres of CMFRI was inaugurated by Dr. G. Syda Rao, Director, CMFRI on 24-3-2011 at Headquarters.

Dr. Syda Rao in his inaugural address mentioned that FRAD staff, especially field staff, who are in direct contact with the fishermen, must be convinced about the importance of the collection of fishery data and they in turn must be capable of making the fishermen to understand the purpose and benefits of the data collection exercise.

The inaugural session was followed by three sessions of technical discussions with the field staff from the four regions of mainland coast. Thorough review of the present status of the landing centres vis-à-vis the number of crafts and the landing intensity was carried out during these sessions. Further information on significant changes in the type of gear used and landing pattern were also discussed.

Cage farming of cobia at Mandapam



Sample of cobia from grow out cage

age farming of cobia (*Rachycentron canadum*) was experimented for the first time in India at Mandapam Regional Centre of CMFRI from the hatchery produced fingerlings. The fingerlings were stocked after nursery rearing in grow out cages in May 2010. The length range of fingerlings stocked was from 22- 26cm and weight range

from 35-70 gms. The fish were fed with trash fish *ad libitum* once in a day. In the end of January 2011 (after 8 months of stocking in grow out cages) the length range of the fish was 60-70 cm and weight range 2.8 to 3.5 kg. Grow out is being continued. The results show that cobia is a lucrative species for cage farming in India.

Training on survey data entry in the "Fishery Data Repository" software was conducted to update the know-how on better and faster data storage and dissemination amongst the field staff. The road map for the online data handling proposed for the next Plan was thoroughly discussed in that session.

Training on Eprints@CMFRI, an open access research outputs repository of CMFRI, was given at the CMFRI Library by the Officer-In-Charge, Library and Documentation. The searching, reviewing and obtaining reprints from the repository were explained to the trainees. They were advised to communicate this online facility available on the web to all those who are needy of information from various walks of life including state department officers.

The three day workshop ended with an interactive session with the officials at headquarters wherein various future options on expansion of survey coverage and inclusion of estimation figures from other agencies etc. were discussed at length.

Impact of social welfare schemes for fisherfolk of Ramanathapuram

igcap econdary data on social welfare **J** schemes in Ramanathapuram, Tamil Nadu from the year 2005-10 were analyzed. Maximum number of marine fisherfolk was benefited through National Fishermen Savings-Cum-Relief Scheme (24,759), Tamil Nadu Marine Fisherwomen Savings-Cum-Relief Scheme (22,890) and Relief Assistance to the Fisher Families during the Period of Ban on Fishing (24,409). Annual per capita benefit for the above three schemes were ₹1418, ₹1457 and ₹ 500 respectively. Schemes like Reimbursement of Central Excise Duty on HSD oil for mechanized fishing boats (₹ 10949) and Supply of Sales Tax Exempted Diesel to Motorized / Mechanized Fishing Crafts (₹ 40650) had higher annual per capita benefit to the marine fisherfolk.

> (Reported by Johnson B., Mandapam Regional Centre)

Successful breeding and seed production of blackfinned anemonefish at Vizhinjam RC

Banemone fish-*Amphiprion nigripes* is a native species of Western Indian Ocean and has good demand for fish hobbyists throughout the world. The demand is mostly met from the wild collections which are threatening the wild stock and habitat. Brood stock of *Amphiprion nigripes* was successfully developed at Vizhinjam RC of CMFRI. The fecundity ranged from 400 to 600 per egg clutch.



Amphiprion nigripes

Survival of the larvae ranged between 60 to 80 % during the first 30 days. Production has started in commercial quantities at Vizhinjam Centre. Broodstock of seven species of clown fishes are being maintained in hatchery. *(Reported by B. Santhosh and M.K. Anil, Vizhinjam RC)*

Hatchery produced spat of green mussel in open sea cages

atchery produced spat of green mussel *Perna viridis* was grown in the open sea in Netlon cages From 15 December 2010 to 15 February 2011. Good growth and significant production was recorded in a period of 61 days. Nearly 5 kg of spat were stocked in 12 cages: the average weight of the spat was 1.42 g. After a period of two months 20 Kg mussels were harvested, recording 4 times increase in total weight. Due to high infestation of barnacles on the cages, the experiment was terminated. However, the mussels were restocked in bigger netlon cages for further growth and production.

Hatchery produced spat of green mussel *Perna viridis* (3rd cycle) were stocked in netlon cages and suspended from a rack in Bhimili estuary to test the suitability of Bhimili estuary for mussel farming and to see the growth of spat in the Bhimili estuary. The spat measured an average length of 1.5 mm and 0.5 g.

A huge bunch of egg capsules of *Sepia* sp. (tentatively identified as *Sepia aculeata*) comprising nearly 1000 capsules obtained from VFH were maintained in the hatchery on 24-11-2010. Within a span of 10 days, hatching occurred and a



Hatchery produced spat grown in sea

total of 720 hatchings were obtained. The hatching was over 72 %. The hatchlings were fed *Artemia* nauplii during the first week of rearing, thereafter minced *Acetes* sp were given as feed to the hatchlings. The hatchlings were reared up to 25 days after which there was total mortality due to high temperature and fluctuations in salinity.

(Visakhapatnam Regional Centre)

Live specimen of the Sea apple Pseudocolochirus sp. landed at Chennai



The sea apple *Pseudocolochirus sp.* obtained at Chennai

A live specimen of the colourful sea apple *Pseudocolochirus* sp. was obtained from bottom-set gill net landings at Beasant Nagar, Chennai. The animal was found to have been entangled in a monofilament bottomset gill net of 1.5-2" mesh size, operated at 10 fathoms depth off the coast of Beasant Nagar.

(Madras Research Centre)

First record of the crocodile shark in deep sea trawl landings at Chennai

single specimen of the crocodile shark *Pseudocarcharias kamoharai* (Matsubara, 1936) was collected from the deep sea trawl landings at Chennai Fisheries Harbour on 10.02.2011. The species is the only representative of the family Pseudocarchariidae and is the smallest known living mackerel shark (Order: Lamniformes). Known to be circumtropical in distribution, with its range extending from Eastern Atlantic Ocean to the Pacific Ocean, its occurrence in the Indian Ocean has been reported from the Mozambique Channel, southwest of southern Madagascar while its distribution in the Bay of Bengal has been reported as doubtful. However, it has been reported to occur as by-catch in Japanese yellowfin tuna longline fishery and Australian swordfish fishery, both in the Indian Ocean. There is no known fishery for the species and it does not find much commercial significance on account of its rare abundance in well-exploited fishing grounds, small-size and low guality of meat. The large liver is known to be rich in squalene and is of potential value.

The species is characterized by a long body, small fins, huge eyes without a nictitating membrane, long gill slits, angular mouth with protrusible jaws housing long-cusped prominent teeth, weak keels and precaudal pits on the



Pseudocarcharias kamoharai landed by a deep sea trawler



A dissected view of the shark showing the large liver inside the body cavity

caudal peduncle and an asymmetrical caudal fin with a long ventral lobe.

The specimen obtained was an adult male, of 91 cm total length and 2.2 kg weight. The liver, measuring 42 cm in length, weighed 0.5 kg.

Catch records of *P. kamoharai* are confined to less than 50 specimens deposited in museums. No data is available on the population status of this

species and its abundance has been reported only in the Mozambique Channel in the Western Indian Ocean in the 1960s (Compagno 2001). A probable decline due to bycatch mortality and low reproductive rate has led the International Union for Conservation of Nature (IUCN) to assess this species as near threatened.

> (Reported by Shobha Joe Kizhakudan, Chennai RC)

Occurrence of starry handfish, Halieutaea stellata in Malabar region



The starry handfish, *Halieutaea stellata* (Val, 1797), belonging to the family Ogcocephalidae is found on the

continental shelves of the Indo-Pacific oceans at depths of between 50 and 400 m. This fish was not reported from Malabar earlier. region However, of late due to the diversified fishing practices, few numbers of this fish were caught in

demersal trawling operations off-Calicut on 19.1.2011. The specimens measuring 121 - 142 mm in length and weighing 20 - 22 g were caught at a depth of 150m. The distinguishing character of this fish is that the body is flattened with broad flat head and disc shaped body with slender tapering tail, mouth small with feeble teeth. No true fin spines. Illicium with trefoil extremity. An armour of bony spiny plates protects the upper surface of the body and is broken by the eyes, close together near the front, and the small gill openings, at the rear of the head disc. The mouth and pelvic fins are on the underside of the disc. It is having a uniform dark pink colour.

(Reported by P. P. Manojkumar, Calicut RC)

Heavy landings of the silky shark and the bloched fantail ray at Cochin

uring October 2010 - March 2011 there was heavy landings of the silky shark Carcharhinus falciformis ranging in TL from 90 - 298 cm. in mechanized Hook & Line catches at Cochin Fisheries Harbour (CFH). During January 2011 about 70% of the total shark landing at CFH was contributed by this species. The species is fished mainly for its meat, oil and fins as in the case of other sharks.

Silky sharks are vulnerable to ovefishing because of its long gestation period, low number of offsprings and slow growth rate and is listed as "near threatened" in the IUCN Red List of Threatened species.

Heavy landing of the bloched fantail ray Taeniura meyeni was



Taeniura meyeni landed at Cochin Fisheries Harbour

Carcharhinus falciformis landed at Cochin Fisheries Harbour

also

during

mottled

Pacific

associated with coral reefs and sandy habitats and generally found inshore up to a depth of 440 m. It is an ovoviviparous species having average annual litter size of up to 7 and is listed as "Vulnerable" in the IUCN Red List of Threatened species.

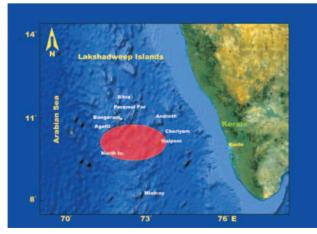
> (Reported by : K. S. Sobhana. P. T. Mani and P. K. Seetha. Demersal Fisheries Divisiion)

Spawning ground of Oceanic squids in Arabian sea located

____xploratory jigging surveys undertaken along the Eastern Arabian Sea by the squid jigger MV Titanic (modified commercial trawler) identified spawning grounds of the purple back oceanic squid Sthenoteuthis oualaniensis. The study conducted as part of the NAIP Utilization for Oceanic Squids Strategy (Cephalopoda) in Arabian Sea: A Value Chain Approach collected juveniles of oceanic squids in Lakshadweep waters between 10°00 N 71°59 E and 10°14 N 73º44 E (between Agatti and Kalpeni

Islands) during October 2010. Dense aggregations ($\sim 130,000$ numbers/km²) of oceanic squid juveniles with dorsal mantle lengths ranging from 3 to 30 mm size were observed in the surface layers during night (from 7PM to 12 AM and 3AM to 5 AM). The squids were attracted to the powerful lights (1.5 KW x 18 halogen lights) on board MV Titanic and station depths ranged from 700 to 1500 m. In December 2010, these oceanic squids had moved in a northwesterly direction and had grown to nearly 80 mm DML indicating extremely fast growth. This preliminary observation indicates that the area around the Lakshadweep Islands is a major spawning ground for oceanic squids probably because of higher productivity as compared to the central Arabian Sea basin which is the normal foraging area for adults.

> (Molluscan Fisheries Division)



Location of spawning ground (marked in red) of Sthenoteuthis oualaniensis in Arabian Sea



Juveniles of oceanic squids Sthenoteuthis oualaniensis caught in Lakshadweep waters

Occurrence of Diamond squid at Veraval

A mong squid catches, frequent bycatch of Diamond squid was observed during this year along Gujarat coast. The diamond shaped squid, *Thysanoteuthis rhombus* is a nonabundant epipelagic inhabitant of warm tropical waters of the Indian Ocean. It has a bright red coloured body with fins occupying the entire length of the mantle, being broader in the middle and tapering at both anterior and posterior ends, which give its name as rhomboid or diamond squid. Even if it is in lesser

numbers, this species is showing frequent occurrence in the trawl catches along with *Loligo duvaucelli.* This species started appearing regularly as an incidental catch

from last year (2010) onwards. Usually processing plants discard this squid because of its ammonia flavour of flesh. Still few were sold in market for



domestic consumption namely in Diu market.

(Reported by R Thangavelu, Sreenath K R, Mohammed Koya K, and Shiju P, Veraval RC)

Breeding season of green mussel, Perna viridis at Mocha,Veraval

Spat falling of Green Mussel, *Perna viridis*, was observed during the month of February. Size of mussel spats ranged from 1.1 to 2.0 cms. This shows a winter breeding season for the green mussels of Mocha. In southern India, monsoon and summer seasons were the reported seasons of mussel breeding in the wild. Spats were found attached to the rocks in the intertidal area of Mocha.

> (Reported by Mohammed Koya K, Sreenath K R, Anbarassu M and Pradeep S, Veraval RC)



Mussel spats attached on the rock

Heavy landings of juvenile threadfin bream at Munambam and Cochin

Large quantities of the threadfin bream *Nemipterus mesoprion* were landed by trawlers at Cochin and Munambam Fisheries Harbours during January – Februray 2011. The characteristic feature of the landings was the dominance of juveniles in the size range of 60 – 110 mm TL, contributing 70 - 90% of the landings of the species in terms of estimated numbers. A total of about 80 tons of *N. mesoprion* were landed at Munambam Fisheries Harbour on a single day on 18 February 2011. The entire catch which is sold at ₹ 20/- to 40/- per kg is iced, loaded in trucks and taken to Mangalore for utilization as rawmaterial for surimi production.

> (Reported by K.S. Sobhana, P.K. Seetha and P.T. Manii Demersal Fisheries Division

Winter School on "Vistas in Marine Biotechnology"



Shri N. Vasudevan lighting the ceremonial lamp

All days winter school on "Vistas in Marine Biotechnology" was organized by the Marine Biotechnology Division of CMFRI during 5-26th October, 2010. The course was aimed to provide exposure to the college/ university/institute teachers, researchers and R&D personnel in biology, fisheries and agricultural sciences on the research and advancements & techniques in

marine biotechnology as well as to provide an opportunity for discussion and exchange of ideas. The Winter School was inaugurated by Shri N. Vasudevan, Registrar, Indian Institute of Space Science and Technology, Thiruvananthapuram by lighting the ceremonial lamp in the conference hall of CMFRI.

The programme came to an end on the 26th of October. Dr. B. Sandhya IPS,

Inspector General of Police, Ernakulam Range was the Chief Guest for the Valedictory function. Dr. E. V. Radhakrishnan, Principal Scientist, Head, CFD presided over the function. The gathering was welcomed by Dr. K.K. Vijayan and Dr. P. Vijayagopal presented the report. The participants also expressed their views and experiences of the programme. Dr. P.C. Thomas proposed vote of thanks.

(Marine Biotechnology Division)



Dr. B. Sandhya, IPS distributing the certificates

NAIP Workshop on tuna processing and value addition at Lakshadweep Dr. G. Syda Rao in his fisheries of Lakshadweep sea. He

presidential address said that Central

Marine Fisheries

Research Institute is

giving high priority for

fisheries development

in the Islands. Dr. R.

K. Goyal, National

Co-ordinator, NAIP

gave a brief report

about the NAIP value



Dr. G. Syda Rao issuing certificate to the participant

Workshop on Tuna processing and value addition under the NAIP project 'A value chain on oceanic tuna fisheries in Lakshadweep sea' was jointly organized by CMFRI, CIFT and Department of Fisheries, Lakshadweep at Kavaratti, UT of Lakshadweep on 4th March 2011. The inauguration of the workshop was presided over by Dr. G. Syda Rao, Director and Consortium Leader of the NAIP project. Dr. N. Vasanthakumar, IAS, Collector-cum-Development Commissioner and Secretary, Fisheries, UT of Lakshadweep inaugurated the workshop. Dr. E. V. Radhakrishnan, Consortium Principal Investigator in his welcome address emphasized that establishment of cold chain in the Islands and opening up of market channel have to be given the highest priority to fully utilize the potential of high value yellowfin tuna which is currently underexploited by the Islanders.

chain programmes and said that tuna fisheries in Lakshadweep sea is a high priority area under production to consumption system of NAIP. Dr. T. K. Srinivasa Gopal, Director, CIFT and CCPI of the project briefed about the objectives of the workshop. Dr. Sayed Ismail Koya, Director, Department of Fisheries, Lakshadweep explained the business opportunities emanating from the project and the financial support schemes under which the self-help groups could be benefitted. He said that Islands of Lakshadweep are a few kilometers apart and such programmes should be implemented in each Island to benefit the fishermen. Smt. Kunhibi, Vice Chairperson of Village Dweep Panchayat also attended the inaugural function.

Dr. N. Vasanthakumar, IAS, Secretary, Fisheries appreciated the efforts made by ICAR in improving the fisheries of Lakshadweep sea. He informed that the Administration has ordered a 'Mother vessel' and two tuna longliners to harness the full potential of the high value tuna in Lakshadweep waters and said that NAIP should arrange training of Lakshadweep fishermen in handling and preserving the tuna for the sashimi market in Japan and Europe. He said that negotiation with exporters from the mainland is progressing so that the Island fishermen could transport the tuna to mainland to fetch better price. He was impressed by the products especially the byproducts prepared from tuna waste. He said that the feasibility of establishing a mini feed mill for production of 'silo feed' and pet feeds should be assessed so that the tuna waste could be converted into value added products and the waste problem in the Island could be managed. Dr. J. Bindu, Workshop Co-ordinator proposed the vote of thanks.

The demonstration of production of value added products was conducted in the afternoon in which 45 representatives of the Women self-help groups participated. They informed that Fisheries Department has sanctioned financial subsidies to the self- help groups for starting production of value added products. The participation certificates were issued to the participants at the end of the workshop.

Workshop on fish stock assessment



Workshop in progress

A Workshop on "Analytical methods in fish stock assessment with special emphasis on tuna and tuna like resources" was organized for the Scientists, technical staff and research scholars of CMFRI and FSI from 7-11 March 2011 at CMFRI, Cochin. The workshop was organized under the NAIP Sub-Project entitled 'A Value Chain on Oceanic Tuna Fisheries in Lakshadweep Sea'. The workshop was inaugurated by Dr. G. Syda Rao, Director, CMFRI and the function was presided over by Dr. E.V. Radhakrishnan, Head, Crustacean Fisheries Division and CPI of the project. Dr. T.V. Sathianandan, HoD, FRAD spoke about the workshop programme. Twenty two participants attended the workshop. The course module was covered by Dr. Sunil Kumar Mohammed, HoD, MFD, Dr. P.U. Zachariah, HoD, DFD, Dr. T.V. Sathianandan, HoD, FRAD and Dr. J. Jayasankar, Dr. Somy Kuriakose and Dr. K.G. Mini, Senior Scientists from FRAD of CMFRI. The theory and practical classes covered were: introduction to analytical tools in stock assessment, spread sheets, ANOVA, SAS, estimation of growth parameters and Von Betralanffy growth function, estimation of mortalities, cohort analysis, biological reference points, models on yield per recruit, ecopath models, ELEFAN and MULTIFAN.

Training on open sea cage culture at Karwar

Sponsored FDB training programme on "Open sea cage culture of marine finfish and shellfish" was held at Karwar RC of CMFRI from 7 to 16 March 2011. 30 participants including officials of the Fisheries Department, prospective farmers and entrepreneurs attended the training programme. Inaugural function of the training was held on 7th March 2011, Shri, B.N. Krishnaiah. Deputy Commissioner of Uttara Kannada was the chief guest. Shri.P.M.Tandel, Member, Aquaculture Authority of India presided over the function. In the 10 day training programme more importance was given to the practical aspects of open sea cage culture. On the last day of the programme the valedictory function was held, Dr.Kusuma Neelakantan, Professor,

Marine farm at Karwar

The marine farm at Karwar was upgraded by addition of two metal cages, one HDPE cage of 16 m diameter and two HDPE cages of 6 m



Shri B.N.Krishnaiah, Deputy Collector inaugurating the training programme

Department of Marine Biology, Karnataka University presided and Shri. P.M.Tandel was the Chief Guest. The chief guest gave away the certificates to participants. The participants requested CMFRI to start

diameters. Around 75000 sea bass are being cultured in the farm in addition to cobia, snapper, mussel and seaweeds. demonstration units at different places so that the fishermen of various states will benefit from CMFRI's effort in the development of open sea farming. The programme was successfully completed on 16th March.

Workshop on endangered and protected marine animals at Karwar

A one day work shop on Endangered and Protected marine animals was held at Karwar RC of CMFRI in collaboration with the Department of Fisheries, Department of Marine Biology, Police department and Forest department. Shri. Raman Gupta, SP, Uttara Kannada presided over the function. Dr.E.Vivekanandan (Principal Scientist, CMFRI) and Dr.Rajagopalan (Retd Principal Scientist, CMFRI) conducted classes to fishermen about the endangered marine species.

Training on Spherical Nucleus implantation in marine pearl oyster at Tuticorin

Training Programme on Spherical Nucleus implantation in marine pearl oyster for the identified fisherwomen (II batch - Five nos) from Sipikulam Village, was conducted at the training cum implantation centre, Sipikulam, Tuticorin between 25.01.2011-05.02.2011 under the project on 'Demonstration and Transfer of Technology of Marine pearl oyster' funded by CMLRE, Kochi. The training programme was inaugurated by Dr. M. S. Madan, Scientist in Charge, TRC of CMFRI. Smt. Prabhavathi,



Training in progress

Assistant Director, Department of Fisheries, Tamil Nadu was the Chief Guest. The Chief Guest detailed the various programme of the Fisheries Department to the trainees. Dr. I.

Workshop on emerging business opportunities in Oyster Cuisine

Organized by CMFRI and CGH Earth Group on 23-02-2011 at Casino Hotel, Willingdon Island, Kochi



Dr.K.S.Mohamed & Dr.T.S. Velayudhan explain the oyster preparations to Dr. E.G.Silas

Dr.E.G.Silas during the presidential address praised CMFRI in developing various technologies on Molluscs from 1970 onwards. Of which oyster culture is giving importance to oyster farmers and star hotels other than export potential. The following members felicitated on the occasion. Mr. T.N.Venugopalan, Executive Director,

Palm Exim PVT LTD, Kochi, Mr.Erin Louis on Oyster Business at CGH Earth, and Mr. Jose Varkey, Corporate Chef, on nutritional and social benefits of oysters. Three women SHG's from Moothakunnam were also taken part in this programme. Dr. K.S. Mohamed, Head, MFD welcomed the gathering. Jagadis, Senior Scientist and Principal Investigator, CMLRE Project at Tuticorin welcomed the Guest and trainees and explained the scope of the training programme.

Training on green mussel farming at Calicut RC

Ten day training on green mussel farming was organized at Calicut research centre of CMFRI from 10 to 19 January 2011. Eighteen trainees attended representing the states of Gujarat, Maharashtra, Tamil Nadu and Kerala. The training manual was released by Shri. P. Sahadevan, Joint Ditrector of Fisheries, Govt of Kerala, who inaugurated the training programme.

Lectures on biology, seed collection and seeding methods, algal toxins and depuration techniques, parasites and diseases, post harvest technology, larval rearing and live feed culture, Microbiological standards and SHG in mussel farming, mussel farming in Karnataka, GMe from mussels, mussel watch and pollution programme were conducted. Practical training was imparted to the participants on construction of raft at Kadalundi and rack at Atholi. The seeding technique was also demonstrated to the participants.

Revenue Generated

During the period January-March, 2011 an amount of ₹ 59,626 /- was generated through sales and services from ATIC.

Workshop on Prawn Taxonomy

An in-house workshop on "Prawn Taxonomy: recent advances and revision of nomenclature" was organized by Crustacean Fisheries Division of CMFRI, Cochin, under the HRD Cell of the institute, during 14 to 19th February, 2011. The workshop was inaugurated by the renowned Indian prawn taxonomist Dr. M. Kathirvel and Dr. G. Syda Rao, Director, CMFRI, presided over the function. The workshop was attended by twenty nine participants (14 scientists and 15 technical personnel), who are directly involved in the prawn fisheries projects at various centres of CMFRI. The main objective of the programme was to discuss the recent changes in prawn taxonomy and to clear confusions/doubts among the workers with regard to the taxonomical nomenclature and identification of closely related species of various genera. Apart from scientists of the division, a team of experts (Dr. M. Kathirvel, former Principal Scientist, CIBA, Dr. K. V. Jayachandran, Professor, Fisheries



Dr. G. Syda Rao at the inaugural function with Dr. E. V. Radhakrishnan, Dr. M. Kathirvel and Dr. K.V. Jayachandran

College, Panangad, Dr. N. Neelakanta Pillai, former Principal Scientist, CMFRI and Dr. G. Nandakumar, former Principal Scientist, CMFRI) were also associated with the workshop throughout the programme. During theory and practical sessions, commercial prawns were studied family wise and participants were fortunate to study and compare the taxonomical characters of majority of Indian species brought from different locations of the coast. All the collected species from different centres were preserved for further studies and future reference. Based on the discussions and considering the importance of taxonomical studies, it was decided to publish a field guide for commercial prawns of India with identification keys and colour photos. This workshop was first of its kind in CMFRI and testimonies of the participants confirm its usefulness and application.

Refresher course on Oyster culture for Sathar Island Oyster farmers

A refresher training course on oyster farming was conducted on 27th November , 2010 for Self Help Groups in Kottuvallikad and Sathar Island in Ernakulam district under the NAIP on High Value Shellfish Mariculture. The programme was inaugurated by the Panchayat President Mr. K.R. Mohanan and many Ward members also took part. Scientists of Molluscan Fisheries Division took classes on different aspects of oyster farming including production of single oysters for meeting the demand for live oysters from high-end restaurants.



Inauguration of the oyster farming refresher course

Official Language Implementation

OLIC Meeting

In order to review the progress made in the Official Language implementation activity the quarterly meeting of Official Language Implementation Committee of the Institute was held on 30.12 2010.

Official Language inspection

Dr. G. Syda Rao, Director, CMFRI inspected the Official Language implementation activities of Visakhapatnam Regional Centre of CMFRI, Visakhapatnam on 10.02.2011.

Programme participation

Smt. E. Sasikala, Technical Officer (Hindi), Smt. C.A.Leela, UDC, Shri Sunil Raj K.S., UDC and Shri S. Sreekumar, LDC attended Unicode training programme conducted by Cochin Town Official Language Implementation Committee at Income Tax Office, Cochin on 2 & 3 February, 2011.

Prize received

Smt. Bindu Sanjeev, Stenographer Gr.III bagged consolation prize for Hindi News reading competition conducted during the Joint Hindi celebration of Cochin TOLIC. Smt. Bindu received the prize from Shri K.L. Mohana Varma, Eminent Malayalam writer in the function organized on 24.02.2011 in the auditorium of Income Tax Office, Cochin.

Hindi workshop

Hindi workshop on Hindi software Unicode was conducted for the Officers and staff at Headquarters, Cochin on 18^{th} and 19^{th} March, 2011.

Multi disciplinary scientific team visits Kumbalanghi village

Multi disciplinary team compris ing of Dr. C. Ramachandran, Programme Coordinator of KVK, Dr. Asokakumaran Unnithan and Dr. Bobby Ignatius both scientists of CMFRI, along with the Subject Matter Specialist's of KVK, Shri. Shoji Joy Edison, Shri. F. Pushparaj Anjelo, Dr. Smita Sivadassan

and Dr. Shanas, Visited Kumbhalanghi village as a part of *Kerapadham* a scheme initiated by the Govt. of India.



Scientists visiting Kumbalanghi village

Food security training programme in tribal village



Training programme at Tribal village

Dr. C. Ramachandran, Programme Coordinator, Smt. P. Sreelatha, SMS Homescience and Shri. F. Pushparaj Anjelo, SMS Agricultural Extension visited the tribal village of Vellaramkuthu and conducted a training programme on value addition of fruits for the tribal women. Mrs Mary, Vice President, Kuttampuzha Panchayath inaugurated the programme at the Community Hall, Vellaramkuthu

Weeklong AICRP training programme on water productivity

Seven days Training programme on 'Scaling up of water productivity in agriculture for livelihood' sponsored by ARS, Chalakudy (KAU) funded by AICRP for the practicing farmers of this district was conducted at the seminar hall of CMFRI, from 01-02-2011 to 08-02-2011 by the Krishi Vigyan Kendra. A total of 60 farmers from different parts of

the district participated. The programme was inaugurated by Dr. G. Syda Rao, Director, CMFRI. Dr Suma Paulose , Prof and Head, RARS, Chalakkudy gave the key note address.



Dr. G Syda Rao, Director, CMFRI inaugurating AICRP Training programme. Also seen Dr Suma Paulose and Dr C Ramachandran

Meeting reviews KVK activities at Thevara Farm



Dr G Syda Rao releasing the new brochure of the KVK

A meeting was called by the Direc tor to review the activities being done at KVK demonstration farm at CMFRI residential complex , Thevara. The meeting held on 18/2/2011 was attended by Dr G Syda Rao, Director CMFRI, Dr C Ramachandran, PC (ic), Sri Vivek Purwar, Chief AO, Sri AV Joseph, SFAO, AAOs, SMSs of KVK and residents. The Director released the new brochure of the KVK in the meeting.

Front Line Demonstration

arvesting of new high yielding vari ety of Cassava Sreevijaya, was done on 05-03-2011 at Kothamangalam, as a part of FLD of Krishi Vigyan Kendra. Shri. V.K. Meena, SMS, Agronomy and Miss. Dipthi, Programme Assistant were present.

Indian Journal of Fisheries goes online

We are pleased to announce fisheries published by CMFRI will be made available online shortly. Submission of manuscript will also be changed to an online process.

CMFRI, Kochi

- Participated in 'Colloquium on R& D Industry Interface for Biotechnology Development, Kerala held at IMA Hall, Kochi on 12th January, 2011.
- Participated in 'Asian-Pacific Aquaculture-2011' held at Le Meridian Hotel, Kochi during the period from 17th to 20th January, 2011.
- Participated in 'Rural Technology Mela' held at National Institute of Rural Development at Hyderabad during the period from 2nd to 5th February, 2011. Dr.Vipinkumar.V.P, Senior Scientist received the 'best stall award' secured by CMFRI for the overall performance & presentation of technologies in the 'Rural Technology Mela' held at National Institute of Rural Development (NIRD) from Mrs. & Dr. M. V. Rao IAS, Deputy Director General, NIRD.



Dr.Vipinkumar.V.P, receiving the 'Best Stall Award' from Mrs. & Dr. M.V. Rao IAS, Deputy Director General, NIRD

Madras Research Centre





The Madras Research Centre participated and organised CMFRI stalls at the Science Festival conducted

by Periyar Science City, Anna University, Chennai (29-2 February, 2011) and at the AQUA-AQUARIA

2011 organised by MPEDA at Chennai Trade Centre from 6-8 February 2011.

Mangalore Research Centre



The Mangalore Research Centre of CMFRI, Mangalore organized the Exhibition Stall of CMFRI at the "Matsya Mela-2011" from 18-02-2011 to 21-02-2011, at Palace Grounds Bangalore, conducted by the Department of Fisheries, Government of Karnataka and National Fisheries Development Board, Hyderabad, and won the Second Prize for the Best Stall Display.

Mumbai Research Centre

Mumbai RC of CMFRI participated in MAHAFISH Festival "Matsyagandha' organized by Maharshtra State Fisheries Department & Maharashtra Fisheries Development Corporation from 26.12.2010 to 28.12.2010 at Bandra Kurla Complex, Mumbai. In the stall Institute's research activities were highlighted. The stall was visited by Hon'ble Union Agriculture Minister and Chief Minister of Maharashtra.

Vizhinjam Research Centre

- Participated in the Aqua show 2010-11 from 7th to 16th January 2011 organised by MATSYAFED at Kanakakunnu Palace and won the trophy for the best stall.
- Participated in the in the First Indian Biodiversity Congress, IBC 2010, from 28-30 December 2010 at Thiruvananthapuram, Kerala and Institute's activities were displayed which formed the main attraction of the fest.
- Participated in the national exhibition (Fish Fest) organised by the State Fisheries Department for 5days from 24th February 2011 to 28th February 2011 at Putharikkandam, East Fort, Thiruvananthapuram. In addition to the displays projecting the activities



Shri Surendran Pillai, Hon'ble Minister for Port and Youth welfare visiting CMFRI Stall in the Aqua show

of the Institute, there were display of 5 tanks with live fishes which formed the main attraction of the show.

• Participated in the Forest Fest organised by the Kerala Forest Department from 6-10th February 2011 at Kanakakunnu, Thiruvananthapuram. Tanks and other displays explaining Institute's activities were displayed which formed the main attraction of the fest



Dr. M. K. Anil receiving award for the Best Stall from Smt. P.K. Shrimathi, Hon'ble Minister for Health and Family Welfare, Govt. of Kerala



Shri Binoy Viswam, Hon'ble Minister for Forest and Housing, Govt. of Kerala and Shri T. M. Manoharan IFS, visiting CMFRI Stall

Landings of Loligo edulis Hoyle, 1885 at Sassoon dock, Mumbai



Catch of L. edulis by trawlers at Sassoon Dock

With increased mechanization and expansion of fishing grounds, trawl nets have become the principle gear used for exploiting cephalopods. At Sassoon docks (new jetty), which is a major fish landing center in Mumbai, very high landings of *Loligo edulis* were observed on 18-2-11. The fishing ground was south of Mumbai in the depth range of 40-50 m. About 2 t was landed by a single trawler. Apart from *L. edulis* the catch also included *L. duvauceli*. The Dorsal mantle length of *L. edulis* ranged

between 90 mm to 229 mm. The species fetched a price of ₹ 80/Kg at the landing centre.

(Reported by: Sujit Sundaram, Mumbai research centre of CMFRI, Mumbai.)

Vana Bhojanam



A vana Bhojanam was organized by the staff Recreation club of Visakhapatnam RC of CMFRI on 28th November, 2010 at GVMC park Visakhapatnam. All the staff members with their families and the retired staff members of VRC attended the picnic.

Dr. Jeyabaskaran participates in the 5th Indian Expedition to Southern Ocean

r. R. levabaskaran, Senior Scientist, Fishery Environment and Management Division, CMFRI, Kochi participated as Deputy Chief Scientist in the '5th Indian Expedition to Southern Ocean' organized by the NCAOR, Goa on deputation. The expedition was for a period of 45 days from 22nd January to 10th March 2011, onboard ORV Sagar *Nidhi*, up to the latitude of 60°00'S, along the meridian of 57°30'E enroute from Mauritius-Southern Ocean-Mauritius. About 16 participants from various Indian organizations and 2 Brazilian scientists participated in the expedition. During the cruise period he briefly studied the oceanographic parameters related to the



distribution, relative abundance and migratory patterns of marine mammals, especially Minke whale *Balaenoptera bonaerensis*, Killer whale *Orcinus orca* and Seabirds along the different oceanic realm. The potential fishing ground of Antarctic flying squid *Todarodes filippovae* was identified along the cruise track.

Sports

The CMFRI sports contingent comprising 30 staff under the leadership of Dr.Shyam.S.Salim ,Senior Scientist and Manager participated in the ICAR South Zonal tournament held at IIHR Benguluru during 7-11 February 2011 and emerged as the overall third position with a tally of 41 points. Mr.P.Rajendran , CMFRI RC Chennai bagged the Individual Athletic champion. The list of winners in various competitions are given below.

A. Athletics

Individual Athletic champion:

Mr.P.Rajendran , CMFRI RC Chennai (First Place in 100 m,200 m and Long Jump)

400 m – Second Place – Mr. Shoji Joy Edison, KVK Narakkal

Congratulations to Mr P Rajendran



P. Rajendran receiving the Individual Athletic champions trophy

Shotput - Second Place – Mr Purandara Shetty , CMFRI RC Mangalore

Relay 4X 100 m - Second Place -Mr.P.Rajendran , Mr Shoji Joy Edison,



The CMFRI Sports Team with trophy

B. Team Events

(i) Winners: Basket Ball

Dr. Shyam Salim, Mr.Purushothama.G.B, Mr.Shoji Joy Edison , Mr. V. K. Meena Mr. Joseph Mathew , Mr. K. G. Jayaprasad, Mr. V. Rajendran, Mr. Sunil. P. V

(ii) Runners: Shuttle Badminton

Mr. C. Jayakanthan, Dr. Shyam Salim, Mr. Joseph Mathew, Mr. Suresh kumar Mojjada , Mr. C. K. Sajeev

(iii) Semifinalist : Table Tennis

Mr Tomy Prince , Dr.Shyam Salim, Mr.Shoji Joy Edison, Mr K.N. Pushkaran, Mr.C.Jayakanthan

Dr. G. Syda Rao, Director

- Visited Tuticorin Research Centre of CMFRI on 21.12.2010
- Visited Mandapam Regional Centre of CMFRI on 23.12.2010
- Attended the 219th Governing Body Meeting of ICAR 04.01.2011.
- Visited the potential cage culture sites around Machilipatnam on 04.02.2011
- Visited Visakhapatnam Regional Centre of CMFRI on 8.2.2011
- Visited the cage culture site at Narasapur on 11.02.2011.
- Participated in the Interface of ICAR Directors with the Vice Chancellors of Agricultural Universities on 23.02.2011
- Visited Kavaratti and presided over the Workshop on Tuna processing and value addition inaugurated by Dr. N. Vasanthakumar, IAS, Secretary, Fisheries on 04.03.2011
- Attended to the RAC Interaction meeting with the Secretary, DARE & DG, ICAR on 17.03.2011

Dr. (Mrs.) V. Kripa

 Attended the "Proposal writing workshop at FSI – collaborative project on Tuna Fishery Forecasts System (TUFFS) at Mumbai from 21.12.2010 to 23.12.2010

Dr. E. Vivekanandan, Principal Scientist & Scientist-in-charge

- Participated and delivered a talk in the National Workshop "Natural resource management and human development paradigms in climate change perspective" organized by Environment Management Agency Kerala at Trivandrum during December 14-16, 2010.
- Attended the Task Force for conservation of Dugongs at Paryavaran Bhawan, New Delhi on 7th January 2011
- Attended the meeting organized by Joint Secretary, DAHDF at Krishi Bhavan, New Delhi in connection with the preparation of document for the COFI Session on 12th January 2011.

 Participated in the project on National Initiative for Climate Resilient Agriculture (NICRA)launching workshop organized by ICAR at New Delhi

Dr. V.D. Deshmukh, attended ICAR Regional Committee VII (Madhya Pradesh, Maharashtra, Chattisgadh and Goa) at CIAE Bhopal during 2-4 December, 2010.

Dr. G. Maheswarudu, Principal Scientist and **Mrs. Muktha M**, Scientist participated in "All India workshop on Packaging Fresh and Processed Fish and Seafood organized by the Indian Institute of Packaging , Hyderabad on 22nd January 2011.

Dr. Dineshbabu A.P., Senior Scientist, and **Dr. Prathibha Rohit**, Senior Scientist, attended the training programme on Data analysis using SAS at the Department of Agrl.Statistics, UAS, GKVK, Bangalore from 17-1-2011 to 22-1-2011.

Dr. Joe K. Kizhakudan, Senior Scientist, attended the meeting of Development of Sustainable Hatchery Production Technologies for Palinurid Marine Lobsters under the Australia-India Strategic Research Fund (AISRF) at the Department of Science & Technology, New Delhi on 19th February, 2011

Dr. P.S.Swathi lekshmi, Scientist, SS, attended the five day training programme on Creative Writing in Agriculture from 28-02-2011 to 5-03-2011 at the Indian Institute of Mass Communication, New Delhi.

Dr. V. V. Singh, Principal Scientist

- Participated in the CMU and CIC Review meetings of NAIP (Component-3) sub-project 'Strategies to enhance adaptive capacity to climate change in vulnerable regions' at IARI, New Delhi from 24.02.2011 to 25.02.2011.
- Participated in the Annual Review Meeting of NAIP (Component-3) sub-project 'Strategies to enhance adaptive capacity to climate change in vulnerable regions' at Lucknow from 28.02.2011 to 02.03.2011.

D.R.Narayanakumar, Dr. C. Ramachandran and Dr. Shyam. S. Salim, Senior Scientists attended the short term training programme on Data analysis using SAS at, Sreekaryam organized jointly by University of Agricultural Sciences, Bengaluru and Central Tuber Crops Research Institute CTCRI, Trivandrum under the NAIP project during 3-9 March 2011.

Dr.Vipinkumar.V.P, Senior Scientist attended the Workshop on Rural Technologies for Sustainable Livelihood on 4th February, 2011 at National Institute of Rural Development (NIRD) at Hyderabad.

V. Edwin Joseph, Officer-in-charge, Library and Documentation participated in the Seminar on Open Access of Scientific Information on 16-3-11 and 17-3-11 organised by UNESCO at New Delhi.

Dr. Krupesha Sharma at University of Sterling, UK



With Principal Supervisor Kim Thompson

RC of CMFRI underwent a three

months training on Microbial molecular taxonomy (Fisheries) at the Institute of Aquaculture, University of Stirling, UK from 19-8-2010 to 18-11-2010 under the supervision of Dr.Kim Thompson, Aquatic Vaccine Unit, Institute of Aquaculture. This training was approved under the HRD programme of NAIP under component - 1 of NAIP.

We salute the seniors on their retirement

Dr. Manmadhan Nair retires

Dr. K.R.Manmadan Nair joined ICAR service in September 1976 at Central Rice Research Institute, Cuttack, Orissa, Later he was transfered to CMFRI and posted in Puri Centre Orissa from October 1980. He served in headquarters and Manadapam RC in various



capacities. He was posted to Calicut RC in May 2006 and was serving as SIC of the centre from 2009 till his retirement on 31-1-2011.

Dr. Mohanraj retires

Dr. G. Mohanraj joined CMFRI, Cochin as Scientist S-1, in the first batch of ARS scientists during 1976. After a brief stinct at Cochin, he was posted at Mandapam camp. Dr. Mohanraj was promoted as Principal Scientist from July 1998 and he served as



Scientist-in-charge of Veraval RC. Later he was the SIC of Madras RC till his retirement on 31.12.2011. He has published more than 60 research papers in peer-reviewed journals.



Shri P.R. Leopold T-9 Technical Officer (Skipper) Hqrs. Kochi Rtd on31.01.2011



Shri K. Muthiah T-5, Technical Officer Mandapam RC Rtd on 31.01.2011



Shri K. Sadanandan Assistant Calicut RC Rtd on 31.01.2011



Shri K. G. Tawade Skilled Support Staff Mumbai RC Rtd on 31.12.2010



Shri G. Mithralal Skilled Support Staff Hqrs. Kochi Rtd on 31.01.2011

ASSUMPTION OF CHARGE

- 1. Dr. E. Vivekanandan, Principal Scientist assumed the charges of Scientist-in-charge, Madras RC of CMFRI w.e.f. 01.01.2011.
- 2. Dr. P. Kaladharan, Principal Scientist assumed the charges of Scientist-in-charge, Calicut RC of CMFRI, w.e.f. 01.02.2011.
- 3. Shri N.Venugopal, T-7-8 (Technical Officer) assumed the charges of Officer-in-charge, Vehicles, Vessels and Public relation & Welfare Officer, w.e.f 01.02.2011.
- 4. Dr. K.K. Vijayan, Pricipal Scientist assumed the charges of Head, Marine Biotechnology Division (MBTD) w.e.f. 09.02.2011.
- 5. Shri Vivek Purwar, Under Secretary, ICAR, New Delhi assumed charge as Chief Administrative Officer, w.e.f. 16.02.2011
- 6. Shri Anil Kumar assumed charge of the post of Administrative Officer on 29.01.2011 and also assumed additional charge of Head of Office and Chief Administrative Officer on 03.03.2011

TRANSFERS						
Name	Designation	From	То			
 Shri V. Venkatesan, Shri P. Muthukrishnan Shri P. Jaiganesh Shri K. Murugan, Shri R. Pydi Raju 	Scientist T-5, TO Skin Diver T-3, Technical Assistant Skilled Support Staff Skilled Support Staff	Mandapam RC Visakhapatnam RC Madras RC Tuticorin RC Visakhapatnam RC	Hqrs. Kochi w.e.f. 15.03.2011 Mandapam RC w.e.f. 13.12.2010 Cuddalore FC w.e.f. 01.01.2011 Hqrs, Kochi w.e.f 10.01.2011 Hqrs, Kochi w.e.f. 25.01.2011			
INTER-INSTITUTIONAL TRANSFER						
Name	Designation	From	То			
I. Smt. D Geetha	Assistant Administrative Officer	Hqrs. Kochi	Administrative Office CIFT, Kochi , w.e.f. 1	,		
2. Shri Vivek Purwar	Chief Administrative Officer,	CMFRI, Kochi	Dy. Registrar, Dr. B.R. Ambedkar New Delhi, w.e.f. (
RE-DESIGNATION						
Names	Re-designated From	То	Center	w.e.f		
I. Dr. M. Sivadas 2. Dr.(Mrs.)P.T Sarada	Scientist (SG) Scientist (SG)	Sr. Scientist Sr. Scientist	Tuticorin RC Tuticorin RC	05.03.2008 25.02.2009		

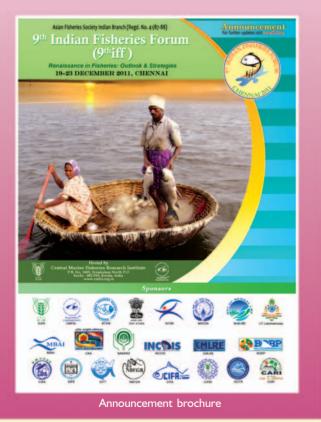
MEETINGS

RAC meeting of CMFRI held during 28 Feb-01st March, 2011 at CMFRI, Hqrs., Kochi.



Releasing of 9th iff Announcement brochure by Dr. P. V. Dehadrai, Former DDG (Fy), ICAR in the presence of Dr. S. Ayyappan, Hon'ble Secretary, DARE and Director General, ICAR and Dr. (Mrs.) B. Meenakumari, DDG (Fy), ICAR on 17th March 2011 at New Delhi.

9th Indian Fisheries Forum



Important dates to remember

Submission of Abstracts	:	01 April-30 June 201 I
Communication for Acceptance of Abstracts	:	31 July 2011
Last date for submission of Application for Awards	:	31 July 2011
Last date for submission of Full Paper	:	31 October 2011
9th Indian Fisheries Forum	:	19-23 December 201

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cadalmin CMFRI Newsletter

Cadalmin, the CMFRI Newsletter is a quarterly publication of the Central Marine Fisheries Research institute, Cochin. The publication gives an insight into the major events of the quarter, besides highlighting the salient findings in the research front and dissemination of technological know-how to the farming community. ^{र ह}ाड_{HERIES} R^{ESE} कडलमीन TM cadalmin