



भाकृ अनुप
ICAR

CIFRI

Newsletter



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National Seminar on Hilsa Fisheries and Conservation

Hilsa is a fish that has been part of the life and culture of the people of the Gangetic plains. Indiscriminate fishing and wanton destruction of juveniles and sub-adults in the marine and estuarine environment coupled with environment perturbation and habitat loss are causing decline of Hilsa fishery. To revive the fishery, a National Plan of Action for Hilsa has been initiated by the Ministry of Agriculture & Farmers Welfare, Govt. of India. At this juncture, Society of Fisheries Technologists (India), Kochi and Inland Fisheries Society of India, Kolkata organized a National seminar on Hilsa fisheries and conservation at ICAR-CIFRI, Barrackpore on 18 November, 2015.

Dr. S.K. Dutta, Deputy Director General (Crop Science), ICAR, New Delhi inaugurated the Seminar. In the inaugural session Dr. V.R. Suresh, Director (Acting), ICAR-CIFRI, Barrackpore and President, IFSI welcomed the gathering. Dr. Leela Edwin, Vice-President, SOFTI gave a brief account about the SOFTI Award and Dr. P. Pravin, Co-convenor, gave an introduction to the Seminar.

Dr. Dutta also presented the SOFTI Biennial Award to Dr. B. Meenakumari, former Deputy Director General (Fisheries), ICAR, New Delhi. Dr. Meenakumari, in her reply speech said she was honoured and humbled by receiving the coveted



SOFTI Award being presented to Dr. Meenakumari



हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

Agrisearch with a human touch

भाकृअनुप - केन्द्रीय मात्स्यिकी प्रौद्योगिकी संस्थान

सिफ्ट जंक्शन, मात्स्यपुरी पि. ओ., कोच्चि - 682 029

ICAR - Central Institute of Fisheries Technology

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Release of the Proceedings of the seminar

SOFTI Award. Dr. C.N. Ravishankar, President, SOFTI and Director, ICAR-CIFT, Kochi presided over the meeting. The



Dignitaries visiting the exhibition

Citation of the SOFTI Award was read by Dr. M.P. Remesan, Chief Editor, Fishery Technology. The meeting came to an end with formal vote of thanks by Dr. George Ninan, Joint Secretary, SOFTI.



Seminar in progress

There were invited lectures on Hilsa fisheries of India, National Plan of Action for Hilsa, Hilsa fishery of Hoogly estuarine system, Hilsa fishery on the west coast of India, Hilsa conservation: Initiatives of Hilsa Research Centre, Sultanpur, West Bengal, Conventional fishing techniques for Hilsa capture, Responsible fishing for Hilsa conservation, Conservation of Hilsa: Fisheries perspective and socio-economics of Hilsa fishery along Hoogly estuary etc.

In the Technical Session, 19 posters were presented and three awards were given for the Best Posters. In the Plenary Session, recommendations that emanated from the Seminar were read out by the Convener. After discussion by the house suggestions were incorporated.

Project Initiation Workshop on Indigenous Traditional Knowledge in Fisheries

The project initiation workshop on 'Indigenous Traditional Knowledge in Fisheries' was organized by ICAR-CIFT, Kochi in collaboration with Vijnana Bharati, New Delhi under the ESSO-INCOIS funded project 'Indigenous Traditional Knowledge (ITKs) in Marine Fisheries Sector of Kerala: Documentation and Analysis' on 30 October, 2015.

Dr. Suseela Mathew, Head, B & N Division and Director-in-

charge, ICAR-CIFT gave the introductory remarks which was followed by a brief on the Project by Dr. Nikita Gopal, Principal Investigator of the Project. Dr. C.R. Rajagopalan, Hon. Director, International Centre for Kerala Studies, University of Kerala; Dr. Aju K. Narayanan, Assistant Professor, U.C. College, Aluva; Dr. K.S. Purushan, Professor of Eminence (Retd.), KUFOS, Kochi; Dr. Leela Edwin, HOD I/c, Fishing Technology Division, ICAR-CIFT; Dr. Swathi Lekshmi, Principal Scientist, ICAR-CMFRI, Kochi;



Workshop in progress



Dr. Nikita Gopal, PI of the project welcoming the audience



Experts presenting at the Workshop on Indigenous Traditional Knowledge in Fisheries



Dr. Anjana Girish, Assistant Professor, Inter-University Centre for Intellectual Property Right Studies, CUSAT, Kochi and Dr. M.N. Raghavendra Sreevathsa, Scientist D, NCMRWF, Ministry of Earth Sciences made presentations on various topics like

mapping the traditional ecological knowledge, folk, folklore and folk identity, significance of ITK, village knowledge register of Thoothoor fishing community, protection of TK's and assimilating traditional knowledge using data mining.

National Workshop on Development of Fisheries vis-à-vis Blue Revolution and Value Addition

A National Workshop on 'Development of Fisheries vis-à-vis Blue Revolution and Value Addition in Himachal Pradesh' was jointly organized by ICAR-CIFT, Kochi and Department of Fisheries, Himachal Pradesh during 12-13 December, 2015 at Bilaspur, Himachal Pradesh.

The workshop was inaugurated by Shri Takur Singh Bharmouri, Hon'ble Minister of Forest and Fisheries, Govt. of Himachal Pradesh. The Guests of Honour of the inaugural programme were Shri Ram Lal Thakur, Hon'ble Chairman, State Level Planning Development and 20 point programme; Shri Bumber Thakur, Hon'ble Member of Legislative Assembly, Sadar, Bilaspur; and Dr. K.K. Katoch, Vice Chancellor, Chaudhary Sarwan Kumar Himachal Pradesh KVV, Palampur. Shri Gurcharan Singh, Director-cum-Warden of Fisheries, Himachal Pradesh welcomed the gathering.

The first technical session was on 'Recent environment challenges in sustaining and developing open water fisheries'.



Inaugural session in progress: (L to R): Dr. K.K. Katoch, Vice Chancellor, C.S.K. Himachal Pradesh KVV, Palampur; Shri Ram Lal Thakur, Hon'ble Chairman, State Level Planning Development and 20 point programme; Shri Takur Singh Bharmouri, Hon'ble Minister of Forest and Fisheries, Govt. of Himachal Pradesh; Shri Bumber Thakur, Hon'ble Member of Legislative Assembly, Sadar, Bilaspur; and Shri Gurcharan Singh, Director-cum-Warden of Fisheries, Himachal Pradesh

The speakers in the session were Dr. A.K. Singh, Director, ICAR-DCFR, Bhimtal and Dr. A.K. Das, Principal Scientist, ICAR-CIFRI. Second session was on 'Recent advances in packaging, preservation and value addition of fish'. The speakers were Dr. A.A. Zynudheen, Principal Scientist and HOD I/c, Fish Processing Division, ICAR-CIFT, Dr. B. Madhusudana Rao, Senior Scientist, ICAR-CIFT and Dr. Gopal Krishna, Vice Chancellor cum Director, ICAR-CIFE, Mumbai. The third session was on 'Research needs for developing fisheries in high altitude areas of the state'. The speakers were Dr. Kuldip Kumar, Former Director, Fisheries, Himachal Pradesh, Shri Gurcharan Singh, Director-cum-Warden of Fisheries, Himachal Pradesh and Dr. S.K. Srivastava, Senior Scientist, ICAR-DCFR. Fourth session was on 'Major standing issues and ways of circumsppection for fostering aquaculture in hill states'. The speakers were Shri Satpal Mehta, DDF, Himachal Pradesh Fisheries Department, Shri Md Husain, Jammu & Kashmir Fisheries Department and Dr. A.P. Sharma, G.B. Pant University of Agriculture and Technology. The sessions were followed by discussion and active interaction. Dr. Madan Mohan, Director of Fisheries, Punjab, Dr. J.C. Markendey, Dr. R.K. Langar, Emeritus Scientists, Dr S.C. Agrawal, Former Director of Fisheries, Punjab; Dr. N.N. Pandey Principal Scientist, ICAR-DCFR and Dr. Prem Kumar, Senior Scientist, ICAR-DCFR also participated in the Workshop and discussions.



Participants of the Workshop



Scientists, academicians, State Fisheries Department officials from Himachal Pradesh, Jammu Kashmir, fish farmers and fishermen from Himachal Pradesh participated in the Workshop. A display of value added products and By-products developed by ICAR-CIFT was also arranged for the benefit of the participants.

A detailed discussion was held on value addition prospects in Himachal Pradesh and setting up of a small scale value added production unit. The ICAR-CIFT scientists also visited the fish farm site and visited a proposed site for value added products unit of Shri Manjeeth, a progressive farmer at Chargarh, Deoli.



Shri Takur Singh Bharmouri inaugurating the Workshop



Shri Gurcharan Singh addressing the participants

Training Programmes

Kochi

1. Production of chitin and chitosan (30 September - 1 October & 15-16 October)
2. HACCP concepts (5-9 October)
3. Molecular detection of seafood-borne pathogens (5-17 October)
4. Scientific salting and drying of fishes (7 October)
5. ISO 22000-HACCP for seafood industry (7-19 October)
6. Advancements in fishing technology (12-17 October)
7. Monofilament longlining (26-30 October)
8. Laboratory quality management system and internal audit as per ISO: 17025: 2005 (18-21 November)

9. Biochemical quality evaluation of fish and fishery products (23-30 November)
10. Quality management (1-3 December)
11. Modern analytical techniques in biochemistry (1-11 December)
12. Development of value added fish products (8-9 December)

Veraval

1. Seafood quality assurance (2-7 November)



ISO 22000-HACCP for seafood industry



HACCP concepts



Participants and faculty of ISO training



Outreach Programmes

During the quarter the following outreach programmes were conducted by the Institute:

1. Training on Improvement in dolnet fishery in Maharashtra at Arnala, Maharashtra on 5 October, 2015.
2. Demonstration on Preparation of value added fish products at Fathima Matha National College, Kollam on 6 October, 2015.
3. Awareness programme on Registration of fishing vessels at Vypeen, Ernakulam on 9 October, 2015.
4. Training and demonstration on Square mesh for improvement in dolnet fishery at Arnala, Maharashtra during 28-31 October, 2015.
5. Responsible fishing techniques at Shillong, Meghalaya on 19 November, 2015.
6. Trainers workshop on Trends in harvest and post harvest fisheries at ICAR Research Complex, Barapanai, Assam on 20 November, 2015.
7. Awareness programme on Technologies developed at
8. Awareness cum demonstration on Merits and demerits of square mesh codends at SIFT, Kakinada during 15-16 December, 2015.
9. Awareness cum demonstration on Merits and demerits of square mesh codends at AP mechanized Boat Owners Association hall, Visakhapatnam during 18-19 December, 2015.
10. Training cum demonstration programme on Hygienic handling of fish and preparation of value added products at Salaya village, Mandavi taluk, Kutch district, Gujarat on 29 December, 2015.

ICAR-CIFT on value added fish products and harvesting of fish employing eco-friendly gear at Tajangi, Visakhapatnam on 15 December, 2015.

Participation in Exhibitions

During the quarter the Institute participated in the following exhibitions:

1. Krishi/Matsya Mela-2015 held at Univ. of Agril. and Hort. Sci., Shivamogga, Karnataka during 3-6 October, 2015. The ICAR-CIFT stall won the First Prize for best display.
2. 'Swasraya Bharat - 2015' held at Kozhikode during 15-21 October, 2015.
3. 'Dhyuthi 2015' - Vidya Bharathi State Level Science Exhibition, Kochi during 17-18 October, 2015.
4. Tuber Food Fest-2015 at ICAR-CTCRI, Thiruvananthapuram during 24-25 November, 2015.

5. Exhibition organized in connection with 5th International symposium on Cage aquaculture in Asia-2015, Kochi



Krishi/Matsya Mela-2015 at Shivamogga



Director, ICAR-CTCRI in ICAR-CIFT stall at Tuber Food Fest



Karshika Mela-2016 at Thodupuzha



during 25-28 November, 2015.

- 6. 'Annam-Food Festival- 2015, Kochi during 10-12 December, 2015.
- 7. 'Vajram 2015' - International science, technology and cultural exhibition organized by Mar Athanasius College,

Kothamangalam during 26 December, 2015 to 3 January, 2016.

- 8. Karshika Mela-2016 - Exhibition organized by Gandhiji Study Centre, Thodupuzha during 26 December, 2015 to 4 January, 2016.

Training and Demonstration of Square Mesh in Codend of Dolnets

A training programme on Fabrication of square mesh codend in Dolnets was jointly organized by NETFISH (MPEDA) and ICAR-CIFT during 28-31 October, 2015 at Arnala, Maharashtra. Techniques in the fabrication and rigging of square mesh codend was demonstrated to 10 fishermen from the Fishermen Cooperative Society of Arnala. The advantages of square mesh codend to reduce juvenile fishes were explained to the fishermen. Field trials of square mesh was carried out

on board Dolnetter on 31 October, 2015. The Chairman of the Society Shri Vijay also participated in the fishing cruise. Dr. P. Pravin, Principal Scientist, Shri P.N. Sudhakaran and Shri H.V. Pungera, Technical Officers from ICAR-CIFT, Dr. Joice V. Thomas, Chief Executive and Shri Santhosh Kadam, State Coordinator of NETFISH were involved in the conduct of the training programme.



Shri P.N. Sudhakaran and Shri H.V. Pungera demonstrating fabrication of square mesh codend



Dr. P. Pravin, Shri H.V. Pungera and Shri Vijay along with crew members on board Dolnetter for fishing demonstration using square mesh codend

Trainer's workshop on Trends in Harvest and Post Harvest Fisheries

ICAR-CIFT, Kochi, ICAR Research Complex for NEH Region, Umiam, Meghalaya and Department of Fisheries, Government of Meghalaya have jointly organized a one day Trainer's workshop on "Trends in harvest and post harvest fisheries" at ICAR RC for NEH Region, Umiam on 20 November, 2015.

In the inaugural function Dr. M.M. Prasad, Principal Scientist and Nodal Officer, NEH and TSP Programmes in the capacity of Organizing Secretary of the workshop delivered the welcome address. Dr. C.N. Ravishankar, Director, ICAR-CIFT, Kochi in his address opined that one of the major hindrances for total utilization of fish is the post harvest losses and wastes. He also said that ICAR-CIFT is actively involved in the development of harvest and post harvest fisheries for the last one and half decades in the NEH region and advanced



Dr. C.N. Ravishankar lighting the traditional lamp



Release of ICAR-CIFT Publications

technologies can be imparted based on need. Dr. S.V. Ngachan, Director, ICAR Complex for NEH Region in his Presidential address opined that Meghalaya is predominantly a fish consuming state with an annual production of fish from all sources as about 7,000 MT against an annual requirement of more than 30,000 MT. Therefore, to meet the local demand the state imports fresh as well as dry fish on a regular basis from different states especially from Andhra Pradesh. The Chief Guest of the programme, Smt. I.R. Sangma, Director, Department of Fisheries, Government of Meghalaya said that in Meghalaya, fishery was given a major focus by the present Government and the Workshop is a significant one for Fishery Officers in enhancing the scientific information in the right time.

The following two publications of ICAR-CIFT were also released on the occasion:

- Proceedings of the Workshop on "Trends in harvest and post harvest fisheries" containing detailed information on the lectures delivered by the expert resource persons.
- ICAR-CIFT Technology Advisory Series-16: 'Requirements for a mini fish processing unit (For small scale entrepreneurs, self-help groups and co-operatives)'.

The inaugural session concluded with vote of thanks by Dr. T.V. Sankar, Principal Scientist & HOD I/c, QAM, ICAR-



Dr. S.V. Ngachan addressing the Plenary Session

CIFT, Kochi. The following lectures were delivered by resource persons during technical session:

- Responsible fishing in inland waters - Dr. P. Pravin
- Future fishing technology activities of CIFT in NEH - Dr. M.P. Remesan
- An overview of traditional fishing practices and advanced technologies for North Eastern States of India - Dr. G. Rajeswari
- ICAR-CIFT activities for development of post harvest fisheries in Meghalaya - Dr. M.M. Prasad
- Fisheries resources of Meghalaya and aquaculture potential - Dr. S.K. Das
- Post harvest technologies in freshwater fisheries sector for small scale entrepreneurs - Dr. George Ninan
- Quality assurance with specific reference to chemical hazards and delivering healthy living through safe food from farm to fork - Dr. T.V. Sankar

The technical sessions were followed by a Plenary session chaired by Dr. S.V. Ngachan, Director, ICAR RC for NEHR, Umiam. Panel discussions were held in which the opinion and information sought by the participants was given due consideration. The Plenary Session came to an end after the distribution of the certificates to the participants by the Chairperson of the session.

Training Imparted to Foreign National

Under the Research Training Fellowship for Developing Country Scientists (RTF-DCS), Ms Adepoju Mary Adeyinka, Research Officer, Food Technology Department, Federal Institute of Industrial Research, Oshodi, Lagos, Nigeria had undergone a training on "Evaluation of nutritional and biochemical changes during thermal processing (Retort pouching) of Milkfish *Chanos chanos*" in Biochemistry and Nutrition Division at ICAR-CIFT, Kochi during 5 May to 19 November, 2015.



Ms Mary undergoing training. Also seen are Dr. G. Usha Rani, Senior Tech. Officer and Dr. R. Anandan, ICAR National Fellow & Principal Scientist



Skill Development Programme at Kutch, Gujarat

A training cum demonstration programme on "Hygienic handling of fish and preparation of value added products" was organized by Veraval Research Centre of ICAR-CIFT in association with MART at Salaya Village, Mandavi Taulk, Kutch district on 29 December, 2015. The beneficiaries of the training were Waghers fisherwomen community from Mandvi Salaya Maschya Udyog Seva Sahakari Mandali. A lecture was delivered on "Hygienic handling of fish" and demonstration was given on "Preparation of value added fishery products" including fish balls, fish cutlets and fish rolls to 30 participants. Smt. V. Renuka, Scientist, Smt. V. Susmitha, Technical Assistant and Smt. Pushpaben P. Chudasama, Skilled Support Staff from Veraval Research Centre of ICAR-CIFT were involved in conducting the training programme.



Value added products prepared



Training in progress

Workshop on Official Language Act and its Implementation

As a part of implementation and promotion of Official Language in Veraval Research Centre of ICAR-CIFT, a one day workshop on 'Official Language Act and its Implementation' was conducted on 18 November, 2015. The Workshop was inaugurated by Dr. G.K. Sivaraman, Scientist Incharge of the Centre. He spoke on the importance of Hindi and how it is linked with our Indian culture and concept of "Unity in diversity". Smt. S. Remya, Scientist, welcomed the gathering and Dr. K.K. Prajith, Scientist offered felicitations. The Workshop was very interactive and Kum. Nimmy S. Kumar, Tech. Asst. created awareness about the importance of Official Language in the official work. The Workshop mainly discussed

about the Official Language Act - 1963 regarding the bilingualisation of Section 3(3) documents and also focused on the Official Language Rules regarding the target percentage of bilingual correspondence, which should be maintained in the Institutes among Region A, B and C so as to fulfill the assurances given to the Parliamentary Committee. It also discussed about the Incentive Schemes for the staff members of the institute. The Workshop concluded with an inspirational decision by the staff to give their best for the progressive official language implementation. Certificates were given away to the participants as a token of appreciation by Dr. G.K. Sivaraman, SIC of the Centre.

Publications

Research Papers

1. Anandan, R., Senthil Kumar, S.H., Sumi, E.S., Suseela Mathew and Ganesan, B. (2015) – Protective effect of L-glutamine on lysosomal integrity in isoproterenol-induced myocardial infraction in rats, *Acta Biologica Szegediensis* **59(2)**: 205-209.
2. Aneesh Kumar, K.V., Pravin, P., Khanolkar, P.S., Baiju, M.V. and Meenakumari, B. (2015) – Performance
3. Jeyakumari, A., Janarthanan, G., Chouksey, M.K. and Venkateshwarlu, G. (2015) – Effect of fish oil encapsulates incorporation on the physico-chemical and sensory properties of cookies, *J. Food Sci. Technol.*, DOI 10.1007/s13197-015-1981-2.
4. Jeyakumari, A., Zynudheen, A.A., Murthy, L.N. and

assessment of tuna longline fishing in Lakshadweep sea, India, *Fish. Technol.*, **52(4)**: 223-227.



- Visnuvinayagam, S. (2015) – Bioactive compounds from seafood processing waste as potential nutraceuticals and functional food ingredients, *Beverages & Food World*, **42(9)**: 33-34.
5. Madhu, V.R., Leena Raphael and Meenakumari, B. (2015) - Influence of codend mesh size on bycatch composition of two trawls operated off Veraval, Gujarat, India, *Fish. Technol.*, **52(4)**: 228-236.
 6. Minu, P., Shaju, S.S., Souda, V.P., Usha, B., Muhamed Ashraf, P. and Meenakumari, B. (2015) - Hyperspectral variability of phytoplankton blooms in coastal waters off Kochi, south eastern Arabian Sea, *Fish. Technol.*, **52(4)**: 218-222.
 7. Murthy, L.N., Mohan, C.O. and Badonia, R. (2015) - Trace and heavy metal accumulation in squilla (*Oratosquilla nepa*), *Fish. Technol.*, **52(4)**: 142-145.
 8. Shahir A. Dar, Saly N. Thomas, Chakraborty, S.K., Sreekanth, G.B. and Balkhi, M.H. (2015) – Economic loss assessment on juvenile fish catch due to forced non-selectivity in selective fishing gear, gillnet along Mumbai coast, India, *J. Applied & Natural Sci.*, **7(2)**: 916-921.
 9. Shahir A. Dar, Saly N. Thomas and Nasir Husain (2015) – Economics of performance of three different gillnet fishing units operating along Mumbai coast, *Economic Affairs*, **60(3)**: 451-456.
 10. Shaju, S.S., Minu, P., Srikanth, A.S., Muhamed Ashraf, P., Vijayan, A.K. and Meenakumari, B. (2015) – Decomposition study of *in vivo* phytoplankton absorption spectra aimed at identifying the pigments and the phytoplankton group complex case 2 coastal waters of the Arabian sea, *Oceanol. & Hydrobiol. Studies*, **44(3)**: 282-293.
 11. Vishnu, K.V., Ajeesh Kumar, K.K., Asha, K.K., Remya-kumari, K.R., Ganesan, B., Anandan, R., Chatterjee, N.S. and Suseela Mathew (2015) - Protective effects of *Echinorhinus brucus* liver oil against induced inflammation and ulceration in rats, *Fish. Technol.*, **52(4)**: 252-257.
 12. Yathavamoorthi, R., Nithin, C.T., Ananthanarayanan, T.R., Suseela Mathew, Bindu, J., Anandan R. and Srinivasa Gopal, T.K. (2015) - Supercritical carbon dioxide extraction of PUFA rich oil from freeze dried tuna red meat, *Fish. Technol.*, **52(4)**: 237-241.

Popular Articles

1. Shabir A. Dhar and Saly N. Thomas (2015) – Proportion of target and non-target species selected mesh size of gillnets along Mumbai coast of Maharashtra, *The Bioscan*, **10(2)**: 593-597.
2. Shabir A. Dhar, Saly N. Thomas and Balkhi, M.H. (2015) – Ecological consequences of fishing in marine ecosystem: A review, *Aqua Intl*, **23(6)**: 55-57.

Books

1. Technological changes in ring seine fisheries of Kerala and management implications - Leela Edwin and P.H. Dhiju Das, 2015, 104 p.
2. Trends in harvest and post harvest fisheries: Proceedings of the Workshop held at ICAR RC for NEH Region, Umamim on 20 November, 2015. (Eds.) C.N. Ravishankar, M.M. Prasad, B. Madhusudana Rao and G. Rajeswari.
3. ICAR-CIFT Technology Advisory Series-16: Requirements for a mini fish processing unit (For small scale entrepreneurs, self-help groups and co-operatives) - B. Madhusudana Rao, George Ninan, A.A. Zynudheen, C.O. Mohan, M.M. Prasad, K. Ashok Kumar and C.N. Ravishankar, 2015.

ICAR-CIFT Observes "Jai Kisan-Jai Vigyan" Week

Kochi

ICAR-CIFT, Kochi observed the "Jai Kisan - Jai Vigyan" week during 23-29 December, 2015 to commemorate the birth anniversary of Shri Atal Bihari Vajpayee and Late Shri Chaudhary Charansingh, former Prime Ministers of India, keeping in view of their immense contribution for promoting use of science for the welfare of farmers. The week-long celebration began with the visit of 50 students from Dr. G.C. Negi College of Veterinary & Animal Sciences, Palampur, Himachal Pradesh to

ICAR-CIFT, Kochi on 23 December, 2015. The students were taken around and showed the facilities of the Institute and scientists interacted with them on the ongoing research activities. On 29 December, 2015 another group of post graduate students of Dept. of Zoology, Lucknow University, Lucknow, Uttar Pradesh along with their faculty members and technical staff visited the Institute. Dr. Nikita Gopal, HoD I/c, EIS Division gave a brief of the various Divisions of the Institute and a talk on 'Food Safety and Quality Management'



was delivered by Dr. T.V. Sankar, HOD I/c, QAM Division. A special counter was set up and ICAR-CIFT publications were distributed to the visiting students and other visitors. The Institute also participated in two exhibitions during the period.



Dr. T.V. Sankar delivering the lecture



Students picking up publications

Veraval

As part of the celebrations the scientists of the Veraval Research Centre of ICAR-CIFT visited a Co-operative Society named "Samudra Sharamik Suraksha Sangh" located at Kodinar. The Society is working for the welfare of fisherfolk of Kodinar, Veraval, Nababandar, Okha and other adjacent fishing villages. The Society is having nearly 500 members including active fishermen and women of different communities. During the visit the scientists discussed the problems of fisherfolk of Kodinar-Veraval region. Dr. K.K. Prajith, Scientist explained to the farmers about the use of selective gears to target high value fish and also explained the use of square mesh codend for exclusion of juveniles. Smt. V. Renuka, Scientist and Dr. G.K. Sivaraman, Scientist Incharge explained to the farmers regarding hygienic handling and proper icing techniques. Smt. S. Remya and Smt. V. Renuka, Scientists emphasized about the importance of value addition to the produce for increasing the profit.

The Centre also conducted a programme at Muldwaraka where scientists discussed the importance of science in fisheries and the use of technology to make fishing more precise and profit-oriented. Another programme was also conducted for students to create awareness on technological interventions and innovations in the field of fisheries science. The programme was attended by students of class IXth from Aditya Birla Public School, Veraval.



Students at the Veraval Research Centre

Mumbai

At the Mumbai Research Centre of ICAR-CIFT, awareness classes on hygienic fish handling, value addition of fish and dry fish preparation using solar drier were given to fisherwomen from Vashi, Navi Mumbai on 28 December, 2015. An 'Open House' was also conducted at the Centre on 30 December, 2015. Technologies developed by ICAR-CIFT in value addition and information about fish preservation were explained and exhibited. Sixty students from IES School, Vashi actively participated and interacted with the scientists.



Interaction with fisherwomen



Interaction with students



Swachh Bharat Abhiyan



Swachh Bharat Abhiyan in progress

As part of Swachh Bharat Mission and as per the directive of Ministry of Rural Development, Government of India, Kannamaly village in Ernakulam district was adopted by ICAR-CIFT, Kochi. On World Fisheries Day on 21st November, 2015 a cleanliness drive was initiated at Ward No. 10 of Kannamaly. The Chellanam Panchayat President Smt. Mercy Joshy, Kannamaly Block Member Smt. Pushpy Ponnann, Ward Member Shri Dineshan along with the local people participated in the programme. A 500 m stretch along the

coastal village was cleaned and plastic waste was cleared from the premises. Scientists, Technical Staff, Administrative Staff and Skilled Support Staff of the Institute participated in the Programme. Dr. V. Geethalakshmi, Principal Scientist & Nodal Officer of Swachh Bharat Abhiyan coordinated the programme.



Inauguration of the programme

Large Pelagic High Sea Drift Gillnets With Alternate Materials Developed

ICAR-CIFT, Kochi developed a design for an optimized drift gillnet for targeting large pelagic species based on the analysis of the commercially operated gillnet designs, with respect to their operational and economic efficiency. The designs are developed under the Project "Green Fishing Systems For Tropical Seas" funded by ICAR-NASF. The designs of commercially operated gears were collected from the baseline survey conducted along the Indian coastline. The newly developed design use new generation materials, Sapphire (7x3) and STAR (No.8) manufactured from specialized polymers with distinctive combination of highest

knot breaking strength and excellent abrasion resistance. These materials are durable and strong with ideal twine geometry. The mesh sizes of nets are 150 and 135 mm and 110 mesh depth. Indicator lamps are used at both ends of the net to avoid ships or other larger vessels passing over the net. For fabrication and operation of the net, an MoU is signed with the fishermen groups who are regularly conducting high sea gillnetting in deep seas. Normally the fishing operations last 25-35 days. The operational area is 350-1500 m depth. The initial fishing trials caught a group of large pelagic species such as Tuna, Seerfish, Marlins and other mixed group of fishes.



Fabrication of drift gillnet at ICAR-CIFT



A typical high sea gillnetter



Celebrations

Vigilance Awareness Week

The Institute celebrated Vigilance Awareness Week during 26-31 October, 2015. The main focus of observing Vigilance Awareness Week was "Preventive vigilance as a tool of good governance". At Head Quarters the Director and staff assembled together and took 'Vigilance Awareness Pledge' on 26 October, 2015. On 27 October Shri J. Vinayan,

IRTS, Chief Vigilance Officer, FACT, Udyogamandal gave a talk on "Action plan for preventive vigilance".

Rashtriya Ekta Diwas

The Institute celebrated Rashtriya Ekta Diwas (National Unity Day) on 31 October, 2015. At Head Quarters, the Director and staff assembled together and took National Unity Day Pledge.

Constitution Day

The Institute celebrated Constitution Day on 26 November, 2015. At Head Quarters the Director and staff assembled together and took Constitution Day Pledge.

Visitors

Dr. Gopal Krishna, Director, ICAR-CIFE, Mumbai, Dr. A.K. Singh, Director, ICAR-DCFR, Barrackpore and Dr. Alice Ferrer,

Vice President, Asian Fisheries Society, Malaysia visited ICAR-CIFT, Kochi on 26 November, 2015.



Visit of the dignitaries to various laboratories

Awards and Recognitions

Smt. P. Jeyanthi, Scientist, ICAR-CIFT, Kochi has been awarded 'Best Poster Award' for the poster presentation in the 5th International symposium on Cage aquaculture in Asia

(CAA5) held during 25-28 November, 2015 at Kochi. The paper was on 'Comparative assessment of conventional and cage culture fish farming in Ernakulam district, Kerala, India' authored by P. Jeyanthi, V. Chandrasekar and Nikita Gopal.



Smt. Jeyanthi receiving the award from Dr. J.K. Jena, Chairman, Asian Fisheries Society Indian Branch and Dr. A. Gopalakrishnan, Director, ICAR-CMFRI, Kochi

Smt. T.K. Anupama, Scientist, ICAR-CIFT, Kochi has been awarded 'Dr. K. Ravindran Memorial Award' for the best paper presentation in the Session on Fisheries of the 25th Swadishi Science Congress held during 16-18 December, 2015 at Sree Sankaracharya University of Sanskrit, Kalady. The paper was on 'Diversity of culturable hetrotrophic bacterial flora in surimi waste water in different stages of treatment' authored by T.K. Anupama, L. Manjusha and B.B. Nayak.

Shri K.K. Ajeeshkumar, Senior Research Fellow, ICAR-CIFT, Kochi has been awarded 'Best Paper Award' for the presentation in the International symposium on Biodiversity,

agriculture, environment and forestry held during 11-12 December, 2015 at Ooty. The paper was on 'Proteoglycans extracted from shark cartilage (*Echinorhinus brucus*) inhibits

proliferation of MCF-7 human breast cancer cells by inducing apoptosis' by K.K. Ajeeshkumar, K.V. Vishnu, K.K. Asha, K.R. Remyakumari, R. Navaneethan and Suseela Mathew.

Scientific Talk

Ms Adeyinka Mary Adepoju, Research Officer, Food Technology Department, Federal Institute of Industrial Research, Oshodi, Nigeria gave a lecture on "Evaluation of

nutritional and biochemical changes during thermal processing (Retort pouched) of Milkfish" at ICAR-CIFT, Kochi on 16 November, 2015.

Personnel News

Participation in Seminars/Symposia/Workshops etc.

- **Dr. C.N. Ravishankar**, Director – World packaging congress, Indian Institute of Packaging, Mumbai (10 October). Dr. Ravishankar also delivered an invited talk on "Packaging of fish and fish products" in the Congress.
- **Dr. C.N. Ravishankar**, Director – Workshop on Agriculture Technology Foresight Centre, ICAR, New Delhi (30 December)
- **Dr. C.N. Ravishankar**, Director, **Dr. Leela Edwin**, Principal Scientist and HOD I/c, FT, **Dr. Nikita Gopal**, Principal Scientist and HOD I/c, EIS, **Dr. G. Rajeswari**, Principal Scientist and SIC, Visakhapatnam, **Dr. P. Pravin**, **Dr. M.P. Remesan**, **Dr. K. Ashok Kumar**, Principal Scientists and **Dr. George Ninan**, Senior Scientist – National seminar on 'Hilsa fisheries and conservation', ICAR-CIFRI, Barrackpore (18 November). The paper entitled, "Performance of fishery BRD in stakenet for conservation of hilsa juveniles" by G. Rajeswari, R. Raghu Prakash and U. Sreedhar presented in the seminar was awarded Second Prize in Poster presentation.
- **Dr. C.N. Ravishankar**, Director, **Dr. J. Bindu**, Principal Scientist, **Dr. C.O. Mohan** and **Shri S. Sreejith**, Scientists – National conference on Biopolymers and green composites, CBPST, Kochi (9-10 October). While Dr. Ravishankar inaugurated the Conference, the Scientists presented the following research papers:
 1. Development and characterization of bio-nano composite films for shrimp packaging by P.E. Fatima, T.O. Varghese, S. Vimaladevi, S.K. Panda and J. Bindu
 2. Development and characterization of PLA/Nanoclay film for fish packaging by P.E. Amina, T.O. Varghese, S.K. Panda and J. Bindu
 3. Enhancement of antioxidant properties of active

chitosan film with rosemary essential oil for food applications by C.O. Mohan, J. Bindu, C.N. Ravishankar and T.K. Srinivasa Gopal



Dr. Ravishankar inaugurating the Conference

- **Dr. Suseela Mathew**, Principal Scientist and HOD, B&N and **Smt. Arathy Ashok**, Scientist – Stakeholder consultation meeting on Scaling up of fisher friendly mobile application, Kochi (16 December)
- **Dr. Leela Edwin**, Principal Scientist and HOD I/c, FT – Review meeting of Vigilance Officers, ICAR-SBI, Coimbatore (16 November)
- **Dr. Leela Edwin**, Principal Scientist and HOD I/c, FT, **Dr. Nikita Gopal**, Principal Scientist and HOD I/c, EIS, **Smt. Arathy Ashok**, **Smt. P. Jeyanthi**, **Dr. Pankaj Kishore**, **Shri S. Chinnadurai** and **Smt. E.R. Priya**, Scientists – Workshop on Indigenous traditional knowledge in marine fisheries of Kerala: Documentation and analysis, ICAR-CIFT, Kochi (30 October). Dr. Leela Edwin also presented a research paper entitled, "Village knowledge register of Thoothoor fishing community" in the Workshop.
- **Dr. Nikita Gopal**, Principal Scientist and HOD I/c, EIS – Sensitization workshop on Mera Gaon – Mera Gaurav,



Directorate of Extension, UAS, Bangaluru (3 October)

- **Dr. Nikita Gopal**, Principal Scientist and HOD I/c, EIS – Public hearing on Impact of development on livelihoods in fisheries and women in particular, Thiruvananthapuram (16 December)
- **Dr. Nikita Gopal**, Principal Scientist and HOD I/c, EIS, **Smt. P. Jeyanthi**, **Smt. Arathy Ashok**, Scientists, **Kum. Diana Benjamin**, Research Associate, **Kum. K.M. Mridula**, **Shri Jiswin Joseph**, **Kum. K.R. Remya** and **Kum. M.V. Neelima**, Project Assistants - National seminar on 'Food health and agro-biodiversity: Changing paradigm' (ANNAM-2015), Kochi (10-14 December). The following papers were also presented by them in the Seminar:
 1. Determinants of consumer preference of fish in Kerala by P. Jeyanthi and Nikita Gopal
 2. Ethnic foods and food based traditional knowledge of fishing community in Kerala by Arathy Ashok, S. Sreejith, Diana Benjamin, J. Bindu and Nikita Gopal
- **Dr. T.V. Sankar**, Principal Scientist and HOD I/c, QAM – Meeting of the Sub-committee for finalization of guidelines for evaluation/testing of material/products at ICAR institutes, ICAR, New Delhi (19 October)
- **Dr. T.V. Sankar**, Principal Scientist and HOD I/c, QAM – Discussion on The protocol for testing field trials for pesticide impact in rice cum fish culture, Faridabad (19 October)
- **Dr. T.V. Sankar**, Principal Scientist and HOD I/c, QAM, **Dr. G. Rajeswari**, Principal Scientist and SIC, Visakhapatnam, **Dr. M.M. Prasad**, **Dr. P. Pravin**, **Dr. M.P. Remesan**, Principal Scientists and **Dr. George Ninan**, Senior Scientist – Trainers workshop on Trends in harvest and post harvest fisheries, Umiam, Shillong (20 November)
- **Dr. G. Rajeswari**, Principal Scientist and SIC, Visakhapatnam and **Dr. M.M. Prasad**, Principal Scientist – Workshop on Women leadership held in connection with 'International Rural Women's Day', Visakhapatnam (15 October). They also delivered the following lectures in the Workshop:
 1. Responsible fishing practices for the rural fisherwomen – Dr. G. Rajeswari
 2. Role of rural women in development of fisheries in Andhra Pradesh – Dr. M.M. Prasad
- **Dr. G. Rajeswari**, Principal Scientist and SIC,

Visakhapatnam and **Dr. M.M. Prasad**, Principal Scientist – Workshop on Value addition, Vadrappalli (27 November)

- **Dr. G. Rajeswari**, Principal Scientist and SIC, Visakhapatnam and **Kum. Jesmi Debbarma**, Scientist – National seminar on Contours of women leadership in India, Andhra University, Visakhapatnam (4-5 December). Dr. Rajeswari also delivered a lecture on 'Role of women in fisheries' in the Seminar.
- **Dr. L.N. Murthy**, Senior Scientist and SIC, Mumbai – 10th Biennial Flagship Conference, 'Agricorp-2015', BCCI, Mumbai (2-4 November). Dr. Murthy also delivered an invited lecture on "Innovative technologies in fisheries and marketing opportunities" in the Conference.
- **Dr. G.K. Sivaraman**, Senior Scientist and SIC, Veraval – Krishi Mela cum Technology Week and Pre Rabi Samelan, KVK, Kodinar (23 October)
- **Dr. G.K. Sivaraman**, Senior Scientist and SIC, Veraval, **Dr. Saly N. Thomas**, Principal Scientist and **Smt. P. Jeyanthi**, Scientist – International symposium on Cage culture in Asia, Kochi (25-28 November). They also presented the following research papers in the Symposium:
 1. Microbial quality of water around open sea cage farm sites in Arabian coast of India by G.K. Sivaraman, Mohammed Koya, D. Divu, A.K. Jha, S. Remya, V. Renuka and S.K. Mojjada
 2. Comparative assessment of conventional and cage culture fish farming in Ernakulam district, Kerala by P. Jeyanthi, V. Chandrasekar and Nikita Gopal
- **Dr. G.K. Sivaraman**, Senior Scientist and SIC, Veraval, **Dr. A.K. Jha**, **Smt. S. Remya** and **Smt. V. Renuka**, Scientists – National seminar on Emerging trends in food quality and safety, AAU, Anand (15-16 October). The following papers were also presented by them in the Seminar:
 1. Prevalence of multidrug resistance and extended spectrum beta lactamase (ESBL) producing *Escherichia coli* in seafood by G.K. Sivaraman, K.V. Lalitha, V. Renuka, A.K. Jha, S. Remya, S. Visnuvinayagam and C.N. Ravishankar
 2. Shelf life enhancement of chilled stored barracuda (*Sphhyraena jello*) fish steaks using O₂ scavenger by S. Remya, C.O. Mohan, V. Renuka, A.K. Jha, G.K. Sivaraman and C.N. Ravishankar
 3. Nutraceutical potential and antioxidant property



of *Spirulina platensis* by A.K. Jha, L.N. Murthy, G.K. Sivaraman, S. Remya and V. Renuka

4. Effect of edible coating on the microbial quality of barracuda fish steaks by V. Renuka, J. Bindu, A.K. Jha, G.K. Sivaraman C.N. Ravishankar
- **Dr. G.K. Sivaraman**, Senior Scientist and SIC, Veraval and **Dr. K.K. Prajith**, Scientist – Interactive Co-Learning Workshop, ICAR-CMFRI Regional Station, Veraval (3-5 November)
 - **Dr. Saly N. Thomas**, Principal Scientist – Workshop on Indian Ocean tuna – Issues: The Indian perspective, Kochi (18 November). Dr. Saly also made a presentation on “Tuna fishing methods and technological interventions for improving tuna management” in the Workshop.
 - **Dr. Saly N. Thomas**, Principal Scientist – Technical meeting with EU team on IUU fishing, Kochi (20 November). Dr. Saly also made a presentation on “CIFT’s initiatives to conserve resources and to prevent IUU fishing” in the Meeting.
 - **Dr. Saly N. Thomas**, Principal Scientist – MDP on Leadership development, ICAR-NAARM, Hyderabad (30 November – 11 December)
 - **Dr. M.P. Remesan**, Principal Scientist, **Shri M.V. Baiju**, Senior Scientist, **Shri S. Chinnadurai** and **Shri P.N. Jha**, Scientists – Seminar on New trends in ecosystem and water column analysis, Kochi (10 December)
 - **Dr. Femeena Hassan**, Principal Scientist – Seminar on Food safety, Thiruvananthapuram (16 October). Dr. Femeena also delivered a talk on “Food safety issues with reference to fish and fishery products” in the Seminar.
 - **Dr. J. Bindu**, Principal Scientist – Training programme on Recent trends in packaging technology, IIP, Bangaluru (19-20 November)
 - **Dr. S. Ashaletha**, Principal Scientist – Seminar on Importance of indigenous technical knowledge in India for conservation and management of fisheries, KUFOS, Kochi (20 November). Dr. Ashaletha chaired the Session.
 - **Dr. R. Raghu Prakash** and **Dr. U. Sreedhr**, Principal Scientists – National research meet – Mainstreaming coastal and marine biodiversity conservation into production sectors in EGREE region, Visakhapatnam (5-7 November). Dr. Sreedhar also presented a paper on “Distribution of deep sea trawl resources from the Exclusive Economic Zone (EEZ) of India” in the Meet.
 - **Dr. P. Muhamed Ashraf**, Principal Scientist, **Smt. V.P. Souda**, SRF and **Shri Vishnu M. Venugopal**, Tech. Asst. – International seminar on Dynamics of Indian ocean: Perspective and retrospective, Goa (30 November – 4 December). Smt. Souda also presented a paper on “Annual variability of absorption characteristics of phytoplankton, coloured dissolved organic matter, detritus along the Southeastern Arabian sea” by V.P. Souda, P. Minu, S.S. Shaju, Aneesh A. Lotliker, P. Muhamed Ashraf and B. Meenakumari in the Seminar.
 - **Dr. George Ninan**, Senior Scientist – Interaction meet cum workshop on National Agricultural Innovation Fund, ICAR, New Delhi (22-24 December)
 - **Dr. B. Madhusudana Rao**, Senior Scientist – World Fisheries Day-2015 celebrations, Vizianagaram (21 November)
 - **Dr. K.K. Asha**, Senior Scientist – 7th Annual meeting of the Proteomics Society of India, Vellore (3-6 December). Dr. Asha also presented a research paper entitled, “Effect of fish oil supplementation on Acyl Co A cholesterol Acyl Transferase expression in liver of experimental rats” by K.K. Asha, K.K. Ajeeshkumar, Raja Swaminathan, B.P. Mohanty, N.S. Chatterjee, R. Anandan and Suseela Mathew in the Meeting.
 - **Dr. S.K. Panda**, Senior Scientist – 8th Meeting of Scientific panel for Fish and Fisheries Products, FSSAI, New Delhi (7 December)
 - **Dr. V.R. Madhu**, Senior Scientist – Workshop on Developing road map for agriculture in West Coast plains and Ghats agro climatic zone, CCARI, Goa (16 October). Dr. Madhu also presented a paper on “Responsible fishing technologies developed by CIFT” in the Workshop.
 - **Dr. V.R. Madhu**, Senior Scientist, **Shri R.K. Renjith** and **Shri P.N. Jha**, Scientists – Pre-MSA Fisheries Introductory Training for Ashtamudi Clam Fishery, Kochi (7 December)
 - **Dr. N.S. Chatterjee**, Scientist - 3rd Annual Conference of the Indian Section of AOAC International, Pune (19-20 November). Dr. Chatterjee also presented the following the research papers in the Conference:
 1. Trace analysis of organochlorines, polyaromatic hydrocarbons, dioxin like polychlorinated biphenyls and polybrominated diphenyl ether flame retardants in seaweed by ethyl acetate extraction and gas chromatography-tandem mass spectrometry by N.S. Chatterjee, Sandip Hingmire, Sagar Utture, Kaushik Banerjee, Narayan Kamble, K.



Ashok Kumar and Suseela Mathew

2. Evaluation of water soluble vitamins, trace elements and fatty acid methyl ester (FAME) profile as markers to differentiate wild from farmed Cobia fish by Rakhi Kumari, N.S. Chatterjee, S.K. Panda, K. Ashok Kumar, R. Anandan and Suseela Mathew
- **Smt. U. Parvathy, Dr. A. Jeyakumari, Smt. K. Sarika and Dr. K. Elavarasan**, Scientists – First international conference on Advances in food science and technology, Kottayam (20-22 November). They also presented the following research papers in the Conference:
 1. Preparation and characterization of fish protein hydrolysate from yellowfin tuna (*Thunnus albacares*) waste by U. Parvathy, A.A. Zynudheen, S.K. Panda, A. Jeyakumari and R. Anandan
 2. Effect of oregano essential oil on the stability of fish oil microencapsulates by A. Jeyakumari, A.A. Zynudheen, P.K. Binsi, U. Parvathy and C.N. Ravishankar
 3. *In vitro* gastrointestinal digestion of freshwater carp (*Cirrhinus mrigala*) meat: Effect of cooking on bioactive properties of hydrolysate by K. Elavarasan, B.A. Shamsundar, A.A. Zynudheen and C.N. Ravishankar.
 4. Development and evaluation of omega-3 enriched fish based granola bar by K. Sarika, K. Jayathilak, E.R. Priya, Lekshmi R.G. Kumar and C.N. Ravishankar
 - **Dr. P. Binsi, Smt. S.J. Laly and Smt. T.K. Anupama**, Scientists – 25th Swadeshi Science Congress, Sree Sankaracharya Univ. of Sanskrit, Kalady (15-18 December). They also presented the following research papers in the Congress:
 1. Development of functionally modified products from fish roe: Novel perspectives by P.K. Binsi and A.A. Zynudheen
 2. Effect of conditions of storage on biochemical and microbial quality of commercially dried shrimp (*Metapenaeus dobsonii*) by S.J. Laly, S. Renish, T.K. Anupama and T.V. Sankar
 3. Diversity of culturable heterotrophic bacterial flora in surimi waste water in different stages of treatment by T.K. Anupama, L. Manjusha and B.B. Nayak
 - **Smt. S.J. Laly and Smt. E.R. Priya**, Scientists – Workshop on Pesticides analysis in spices, Kochi (15 October)
 - **Smt. E.R. Priya**, Scientist – Training on HACCP concepts, ICAR-CIFT, Kochi (5-9 October)
 - **Dr. Pankaj Kishore**, Scientist – Seminar on Bringing the nanoworld together, Chennai (3-4 November)
 - **Shri C.S. Tejpal**, Scientist – Training programme on Nutrigenomic approaches in fish nutritional research, ICAR-CIFE, Mumbai (8-18 December)
 - **Shri Anuj Kumar, Shri P.N. Jha, Shri S. Chinnadurai, Shri K.R. Renjith and Smt. E.R. Priya**, Scientists – Training on Laboratory quality management systems as per ISO: 17025: 2005, ICAR-CIFT, Kochi (18-21 November)
 - **Shri K.R. Renjith**, Scientist - Capacity Building Workshop on CITES Appendix II Listing of Sharks and Manta Ray Species, Kochi (15-16 December)
 - **Smt. Thriveni G. Adiga**, Asst. Chief Tech. Officer – Training programme on Advanced analysis of microbial pathogens detection, BAARC, Mumbai (23 November – 11 December)
 - **Dr. Santhosh Alex and Dr. P. Shankar**, Senior Tech. Officers – Official language scientific seminar, NPOL, Kochi (30 October). The following papers were also presented by them in the Seminar:
 1. Clean India by Santhosh Alex
 2. Clean India Campaign: Certain people and particular stories by P. Shankar
 - **Dr. Santhosh Alex and Dr. P. Shankar**, Senior Tech. Officers - International Seminar in Hindi on 'Hindi Bhasha: Swathw, Vinimay Aur Pratirodh', CUSAT, Kochi (5-16 December)
 - **Dr. Santhosh Alex and Dr. P. Shankar**, Senior Tech. Officers – Official language conference on Implementation of Official Language in scientific institutions: Applications and encouragement, ICAR, New Delhi (7 November)
 - **Dr. P.R. Sreerekha, RA and Smt. S. Vimaladevi**, SRF – National seminar on Biofuel – A search for new fire, SIBBR&D, Kochi (17-18 December)
 - **Shri K.K. Ajeeshkumar and Shri K.V. Vishnu**, SRFs - International symposium on Biodiversity, agriculture, environment and forestry, Ooty (11-12 December). They also presented the following papers in the Symposium:
 1. Proteoglycans extracted from shark cartilage (*Echinorhinus brucus*) inhibits proliferation of MCF-



7 human breast cancer cells by inducing apoptosis by K.K. Ajeeshkumar, K.V. Vishnu, K.K. Asha, K.R. Remyakumari, R. Navaneethan and Suseela Mathew

2. Development of sardine oil loaded vanillic acid grafted chitosan micro particles for improved oxidative stability by K.V. Vishnu, N.S. Chatterjee, K.K. Ajeeshkumar, M.G. Jinu and Suseela Mathew

Personalia

Appointments

1. Shri K. Sathish Kumar, Scientist, ICAR-CIFT, Kochi
2. Shri K.S. Sreekumaran, Finance & Accounts Officer, ICAR-CIFT, Kochi
3. Smt. Christina Joseph, Admn. Officer, ICAR-CIFT, Kochi

Promotions

1. Smt. T. Silaja, Senior Tech. Officer, ICAR-CIFT, Kochi as Asst. Chief Tech. Officer
2. Dr. Ancy Sebastian, Tech. Officer, ICAR-CIFT, Kochi as Senior Tech. Officer
3. Shri K.U. Sheikh, Tech. Officer, Veraval RC of ICAR-CIFT as Senior Tech. Officer
4. Shri T.P. Haridasan, Senior Tech. Asst., ICAR-CIFT, Kochi as Tech. Officer
5. Smt. P.K. Geetha, Senior Tech. Asst., ICAR-CIFT, Kochi as Tech. Officer
6. Shri N. Sunil, Tech. Asst., ICAR-CIFT, Kochi as Senior Tech. Asst.
7. Shri L.N. Badi, Asst., Visakhapatnam RC of ICAR-CIFT as Asst. Administrative Officer

Transfers

1. Dr. P. Pravin, Principal Scientist, ICAR-CIFT, Kochi to ICAR, New Delhi as Assistant Director General (Marine

Fisheries)

2. Shri G.M. Siddaiah, Scientist, ICAR-CIFT, Kochi to ICAR-CIFA, Bhubaneswar
3. Shri G. Kamei, Scientist, ICAR-CIFT, Kochi to ICAR-CIFT Research Centre, Veraval
4. Smt. N. Karthika, Tech. Asst, ICAR-CIFT, Kochi to ICAR-IISR, Kozhikode
5. Shri P. Rajeev, UDC, ICAR-CIFT, Kochi to ICAR-IISR, Kozhikode
6. Shri M.S. Bhatkar, Asst. Administrative Officer, Mumbai RC of ICAR-CIFT to ICAR-NIASM, Baramati as Administrative Officer
7. Shri J. Oram, Skilled Support Staff, Burla RC of ICAR-CIFT to Visakhapatnam RC of ICAR-CIFT

Retirements

1. Dr. G. Usha Rani, Sr. Tech. Officer, ICAR-CIFT, Kochi
2. Shri V.A. Sudhakaran, Tech. Officer, ICAR-CIFT, Kochi
3. Shri K.P. Vijayan, Tech. Officer, ICAR-CIFT, Kochi
4. Shri P.N. Sudhakaran, Tech. Officer, ICAR-CIFT, Kochi
5. Shri Kirtan Kisan, Tech. Officer, ICAR-CIFT, Kochi
6. Smt. A.R. Kamalam, Asst., ICAR-CIFT, Kochi
7. Shri Sathish Chandra B. Purohit, Asst., Veraval RC of ICAR-CIFT

List of priced publications available from ICAR-CIFT, Cochin

1. Improved trawls developed at CIFT (₹ 50/-)
2. Microbiological and molecular methods of detection of *Listeria monocytogenes* in seafood (₹ 60/-)
3. Bounties of the sea (Hindi) (₹ 75/-)
4. Enzyme linked immuno sorbant (ELISA) for Chloramphenicol residue in shrimp (₹ 50/-)
5. PCR technique for detection of white spot syndrome virus (₹ 50/-)
6. Synthetic fish netting yarns (₹ 25/-)
7. TED for turtle-safe trawl fisheries (₹ 30/-)
8. TED for turtle-safe trawl fisheries (Tamil) (₹ 50/-)
9. TED for turtle-safe trawl fisheries (Telugu) (₹ 50/-)
10. Fish canning - Principles and practices (₹ 125/-)
11. Laboratory techniques for microbiological examination of seafood (₹ 90/-)
12. Rubber wood for marine applications (₹ 40/-)
13. Value added products from low priced fish (Malayalam) (₹ 50/-)
14. The seafood canning industry in India (₹ 35/-)
15. Gillnets in marine fisheries of India (₹ 100/-)
16. Biochemical methods for determining stress and disease status in Crustaceans (₹ 90/-)
17. Electronic instrumentation technology developed by CIFT (₹ 60/-)



18. Immunological and metabolic alterations during infection and stress in Crustacea (₹ 60/-)
19. Responsible fishing contribution of CIFT (₹ 70/-)
20. Fish dishes for healthy living (₹ 75/-)
21. Seafood packaging (₹ 65/-)
22. Sensors and measurement systems for environmental, marine, fisheries and agricultural applications (₹ 180/-)
23. Stakenets of Kerala (₹ 40/-)
24. Fishtoons (Hindi) (₹ 80/-)
25. Seafood quality assurance (₹ 120/-)
26. Community fish smoking kilns (₹ 40/-)
27. HACCP concepts in seafood industry (₹ 100/-)
28. Food safety guidelines for common foods (₹ 50/-)
29. Fishing traps of Assam (₹ 300/-)
30. Handbook of fishing technology (₹ 500/-)
31. Handbook of fishing technology (Hindi) (₹ 500/-)
32. Inland fishing gears and methods of Northern Kerala (₹ 150/-)
33. Modern analytical techniques (₹ 100/-)
34. Semi pelagic trawl system - An eco-friendly alternative to bottom trawling for small scale mechanized sector (₹ 50/-)
35. Semi pelagic trawl system - An eco-friendly alternative to bottom trawling for small scale mechanized sector (Hindi) (₹ 50/-)
36. Fishing methods of Chilka Lagoon (₹ 150/-)
37. Nutrient profiling and nutritional labeling of seafood (₹ 150/-)
38. Bycatch reduction devices for responsible shrimp trawling (₹ 150/-)
39. Bycatch reduction devices for responsible shrimp trawling (Hindi) (₹ 100/-)
40. Trawl designs developed at CIFT for small, medium and large trawlers (₹ 300/-)
41. Biochemical analysis of seafood (₹ 200/-)
42. Biochemical composition of fish and shellfish (₹ 5/-)
43. Gillnets (₹ 5/-)
44. Technology of coating fish products (₹ 5/-)
45. Frozen squid and cuttlefish (₹ 5/-)
46. Wood preservation for marine application (₹ 5/-)
47. Nutritional significance of fish proteins (₹ 5/-)
48. Fish collagens (₹ 5/-)
49. Commercially viable fishery based technologies recently developed by CIFT (₹ 5/-)
50. Processing Bombay Duck (₹ 25/-)
51. Trawling methods and designs of Saurashtra coast (₹ 20/-)
52. Long Lines for sharks (₹ 25/-)
53. Cured fishery products (₹ 10/-)
54. Processing and utilization of *Acetes indicus* (Jawla prawn) (₹ 30/-)
55. Mussel meat products (₹ 25/-)
56. Whale shark (*Rhincodon typus*) (₹ 40/-)
57. Availability and uses of Ambergis (₹ 5/-)
58. Important fishery resources of Madhya Pradesh (₹ 8/-)

For copies write to: The Director, ICAR-Central Institute of Fisheries Technology, CIFT Junction, Matsyapuri P.O., Cochin - 682 029

Initiatives for Business Incubation in Fisheries at ICAR-CIFT

The concept of business incubation is gaining momentum all over the world as a successful business model, particularly in developing countries like India. In this era of globalization, where scientific knowledge and research findings have proved to be the key elements of economic development of a country, the role of Business Incubators assumes an important position in the new business paradigm. The Business Incubators acts as catalysts for economic growth by combining the features of technology commercialization, entrepreneurship and business facilitation.

Business incubators can make use of the increasing demand of high level of entrepreneurship development and integrate its activities into the fabric of the community for

achieving economic development. The heart of a true business incubation programme is the ongoing, personalized, and comprehensive services that are provided to its clients. By following best practices, an incubator can merge innovation and entrepreneurship, support and guide entrepreneurs to market their business concepts, work effectively to reduce the failures and attain ability of free standing in the global market.

From the experience gained from the interaction with budding entrepreneurs, three primary reasons have been identified, which creates difficulty to the small and medium start-up businesses to remain competent. They are lack of access to capital, lack of managerial skills, and the lack of knowledge about how to estimate their markets, gauge



growth and potential business basics. Incubators are proved tools that can specifically address these three issues. High risk start-ups are instrumental in creating jobs, and business incubators play a role in making and leveraging the investments these entrepreneurs make.

Fisheries sector with its important role played in the socio-economic development of the country has become a powerful income and employment generator, and stimulates the growth of a number of subsidiary small, medium and large scale industries. In order to translate the research results arising from the field of fisheries and other agricultural sectors, ICAR have set up an innovation based Business Incubation Centre (BIC) at the ICAR-Central Institute of Fisheries Technology (ICAR-CIFT), Kochi. BIC is managed by Zonal Technology Management-Business Planning and Development (ZTM-BPD) Unit and aims at establishment of food business enterprises through IPR enabled ICAR technologies.

BIC supports operations on business projects as a measure of enhancing the foundation for new technology based industries and establishing a knowledge-based economy. It focuses on finding new ways of doing business in fisheries and allied agricultural fields by finding doors to unexplored markets. The Centre helps the prospective entrepreneurs, by providing pro-active and value-added business support in terms of technical consultancy, infrastructure facility, experts' guidance and training to develop technology based business ideas and establish sustainable enterprises. It acts as a platform for the speedy commercialization of the ICAR technologies, through an interfacing and networking mechanism between research institutions, industries and financial institutions. The Incubator at ICAR-CIFT differs from traditional Business Incubators as it is tailored specifically for technology based industries and is operational at an area with a high concentration of fish production. This industry-specific incubator also allows new firms to tap into local knowledge and business networks that are already in place. BIC offers their services to industries not only in Kochi, but also all over India through virtual incubation. Beyond promoting business growth, the Centre is also trying to bring its benefits to all the fishing communities in India.

This unique Business Incubator is now known as a "One Stop Shop", where entrepreneurs can receive pro-active, value-added support in terms of technical consultancy, and access to critical tools such as entrepreneur-ready

technologies, vast infrastructure and other resources that may otherwise be unaffordable, inaccessible or unknown. With the aim of transforming the incubator into a symbol of entrepreneurship and innovation, the ZTM-BPD Unit has created an environment for accessing timely scientific and technical assistance and support required for establishment of technology based business ventures. The activities of the ZTM-BPD Unit focuses on finding creative and innovative ways for linking public sector resources and private sector initiatives within and across regional and national boundaries for promoting economic growth. The Centre uses the right expertise in relevant fields to identify and analyze the constraints and barriers hindering the growth of a business, and devise appropriate strategies. It explores the various structures and strategies to help small enterprises to grow and ensure a promising future in the global market. It fosters corporate and community collaborative efforts, while nurturing positive government-research-business relationships.

Process of Incubation

The Business Incubation Centre targets entrepreneurs, from fledgling start-ups in need of basic small scale processing capacity to sophisticated businesses in need of R&D back up, office infrastructure and pilot / test market processing facility for the development of new products. It possesses good infrastructure facilities suitable for providing direct incubation of nine entrepreneurs in a corporate environment within the premises of ICAR-CIFT, at a time. The purpose of direct incubation is to support emerging companies through their infancy. BIC apart from being a multi-tenant facility with on-site management that delivers an array of entrepreneurial services to clients operating with the facility, it also serves clients that are not located in the facility through virtual incubation or incubation without walls.

The Centre regularly conducts industry interface and technology promotional programmes for sensitization of entrepreneurs and to identify interested potential candidates for physical and virtual incubation. The clients at BIC gets the privilege of meeting Scientists, Business Manager and Business Associates directly, to discuss and finalise the strategies to be adopted to take the business forward. It is also the peer-to-peer relationships that develop within the incubator, that ensures the delivery of basic services such as how to actually incorporate a business; what are the legal issues; how to take intellectual property protection; how to do basic accounting and cash flow; how to do business



presentations etc. Those kinds of skills are transmitted as part of the incubation process.

The residency period for direct incubatees is normally for two years, extendable by another year in special cases, depending on the progress of incubation. As the business venture becomes mature enough, the concessions and the facilities provided to the incubatee companies will be gradually withdrawn. Each incubatee of the Unit will have to pay to the Institute a charge for utilization of space, at a rate concessional to the benchmark rate which is the prevailing market rent realizable. Incubatee mentoring will continue in virtual mode after graduation, on need basis.

Services and facilities offered by ICAR-CIFT Business Incubator

The Centre through its business support services provides links to supporting industries; upgrade technical / managerial skills; provide scientific / technical know-how; assist in market analysis, brand creation and initial test marketing; protect IP assets; and find potential investors and strategic partners.

Incubation facilities under one roof are:

- Furnished office suites within the premises of ICAR-CIFT, with shared facilities like secretarial assistance, computing, copying, conferencing, video conferencing, broadband internet and communication services
- Pilot level production lines
- Culinary facility
- Access to modern laboratory facilities for product testing and quality control
- Access to well-equipped physical and digital libraries

Pilot Level Production Lines

A state-of-the-art generic semi-commercial production facility is made available to incubating entrepreneurs for developing value added products from fish. BIC provides access to these facilities along with support of manpower, and assists the entrepreneurs in production and testing of new product formulations. For the tenants, the pilot plant is an ideal testing arena to determine the commercial viability of new products. The plant also serves as a process lab, a place to see how processing equipment impacts food products under varying conditions. There are production lines for pre-processing, cooking, retort pouch processing, canning, sausage production, extruded products, chitin and chitosan, smoking, curing and drying, breading and battering and product packaging. By providing access to these resources, the Centre greatly reduces one of the major barriers to the commercialization of institute technologies by smaller firms - the high capital cost of intermediate or large scale process equipment.

Business Services

The business oriented services offered by BIC include assistance in complying with business regulations and licensing procedures, financing, information services, marketing, and tailor-made services designed for the various tenant enterprises. Incubator clients can also gain special advantage in terms of tax savings through special regulations for Business Incubators. BIC also offers a wide variety of services, with the help of strong associations throughout the Business Incubation Network.

(Inputs by Dr. George Ninan and Dr. C.N. Ravishankar)

