

वार्षिक प्रतिवेदन

annual report

1998-99



केन्द्रीय मत्स्य शिक्षा संस्थान

Central Institute of Fisheries Education

(Deemed University, ICAR)

Versova, Mumbai - 400 061

Obituary

CIFE Parivar mourns the sad demise of Dr. N. K. Thakur ...



Dr. N. K. Thakur : Born in Saharsa (now Madhepura) district of Bihar on 29.09.1941. Mother tongue : Maithili; Obtained his M.Sc.(Zoology) degree with Fish special paper as topper from Patna University (1963); M.Agri. degree with specialization in Fisheries from Hiroshima University under the Japanese Government Scholarship Scheme (1969-72) and Doctorate from Bihar University (1978). His doctoral research dealt with biology, breeding and life history process of the walking catfish *Clarias batrachus*. Served as Lecturer in Zoology at C.M.College, Darbhanga (1963-64). Joined as Research Assistant, Estuarine Division, CIFRI, Barrackpore, in 1964. Served in various capacities thereafter as Scientist-In-charge, Bihar Centre, All India Coordinated Research Project on Air-breathing Fish Culture (1972-81); as Head, KVK, Kausalyaganga, Bhubaneswar (1981-89); as Principal Scientist, CIFE, Mumbai (1989-96); and as Joint Director and Head, Aquaculture Division, CIFE, Mumbai till his sudden demise. Also worked as Professor-cum-Director of the Centre of Advanced Studies (CAS) Scheme at CIFE. Received training in Thailand on 'catfish culture' (1983) and 'manpower planning' at NAARM, Hyderabad (1996). A recipient of Rafi Ahmed Kidwai Memorial Prize (1976-77). Authored/compiled and edited nearly 200 research papers/bulletins/extension literature. Known as an acclaimed Hindi writer for reaching the fantasies of Biosciences amidst masses. Some of the recent fisheries mega-events, viz. National Seminars on 'Fisheries Education in India', 'Vision on Indian Fisheries of 21st Century', aquaculture exhibitions at Darbhanga and Madhubani, investigations on ground realities regarding the impact of shrimp farming on coastal ecology and most recently, successful field trials of an indigenous low-cost hormonal formulation - OVATIDE -for induced fish breeding, etc. have all been accomplished under his dynamic leadership. Having served the fisheries fraternity of the country in diverse disciplines for about three and a half decades, Dr. Thakur is regarded as 'master of most' in the line.

With Best Compliments

S.A.H. Abidi
Director

Central Institute of Fisheries Education
Versova, Mumbai (India)

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Preface



I am extremely pleased to present this Annual Report 1998 - 99 of CIFE which comprehensively reviews the achievements and progress of this Institute in the fields of fisheries education, research and extension.

The year was significant in more than one way. It was the year in which the IX Plan of the Institute was reformulated by taking into account the past achievements and future requirements of the Indian fisheries sector, particularly the human resource development. As we are now on the threshold of the new millennium, it is high time for us to make a retrospective analysis of our past performance and accordingly plan for the future to face the national challenges with a missionary zeal. Various futuristic considerations have gone into making our Ninth Plan as comprehensive as possible so that it sets the progress of the Institute on a sound footing to live up to the visions and expectations of our nation in the coming millennium.

The most memorable event of the year was the Fourth Convocation of this Institute which was held on 29 January 1999. This sacred event was graced by the presence of the Head of the ICAR *Parivar* Padmabhushan Dr. R. S. Paroda, Secretary, DARE & DG, ICAR, as the Chief Guest, who addressed the event.

As the country's only fisheries deemed university, the CIFE continued its efforts to provide the professional manpower by offering masters, doctoral and post-graduate certificate courses. The Institute set an exemplary trend in collaborative academic endeavours by starting two new Master of Fisheries Science (MFSc) programmes in Freshwater Aquaculture and Post-Harvest Technology at CIFA, Bhubaneswar and CIFT, Kochi, respectively, under the CIFE banner. The students admitted for these programmes spend one semester at CIFE, Mumbai, during which they are exposed to the basic aspects of fish and fisheries science. The students spend the subsequent semesters at the respective Institutes. It is a matter of

real pride for me and CIFE *parivar* that three of our students have got admission in reputed foreign universities to pursue their further studies. Similarly, the training programmes conducted under the Centre of Advanced Studies in Fisheries Science have received great appreciation from ICAR. A manpower force of about 300, produced during the year under the academic programmes and training courses of the institute, is ready to shoulder the various responsibilities to propel Indian fisheries sector into the 21st century. The Institute's research contributions during the year were equally commendable, particularly the development of a new hormonal formulation, OVATIDE, for induced fish breeding in collaboration with M/s Hemmo Pharma; successful culture of giant freshwater prawn, *Macrobrachium roesenbergii*, at our Lucknow centre; development of rapid immunodiagnosics for detection of *Aeromonas* and *Vibrio* and maturation studies on penaeid prawns in controlled environment in

Council meeting was convened towards the year end in which a total of 32 new research project proposals, prepared as per the latest project based budgeting format, were presented. The progress of extension programmes was also quite healthy and about 250 fishermen/fish farmers were benefited under the extension programmes such as training programmes, fishery advisory service, information services, etc. of the Institute. The Institute has been receiving many requests from the developing countries on Human Resource Development and R & D support for developing their fisheries. In order to cater to such demands, especially from our neighbouring Afro-Asian countries, plans are already afoot to design and conduct special training programmes.

Many a distinguished luminaries such as His Excellency Mr. Satya N. Nandan, Secretary

General, International Seabed Authority of the United Nations, Kingston, Jamaica; Dr. S. Varadarajan, President, Indian National Science Academy, New Delhi; Dr. M. Rahman, Vice-Chancellor, Aligarh Muslim University, Aligarh; Dr. Vidyut Joshi, Vice-Chancellor, Bhavanagar University, Bhavanagar and Dr. K. Pradhan, Vice-Chancellor, Rajasthan Agricultural University, Bikaner, besides several important delegations like the Iranian Delegation, the World Bank Team, the ICAR Review Team, etc. visited the Institute during the year.

The overall success of the Institute during the year could hardly have been possible without the guidance and support of Padmabhushan Dr. R. S. Paroda, Secretary, DARE & Director General, ICAR; Dr. S. L. Mehta, Deputy Director General (Education) and Dr. K. Gopakumar, Deputy Director General (Fisheries) of ICAR, and the

Education and Fisheries Divisions. I whole-heartedly thank all of them for the same and anticipate similar gestures in the coming years as well.

I take this opportunity to compliment and congratulate all the members of CIFE *Parivar* for their untiring efforts and active involvement without which the Institute could have hardly achieved all its present glory. I am sure with a unique family culture and total dedication, the CIFE *Parivar* is fully prepared to face the new challenges of the next millennium. Wishing all of you the very best, hope to see you in the next millennium.

S. A. H. Abidi
Director

27 June 1999
CIFE, Mumbai

2. Executive Summary

The Fourth Convocation of the Institute was held on 29 January 1999. Padmabhushan Dr. R. S. Paroda, Secretary, DARE & DG, ICAR, was the Chief Guest on this occasion and delivered the convocation address besides honouring the meritorious students with Certificates of Merit and CIFE Gold Medals/Dr. C. V. Kulkarni Merit Medals. In his convocation address, Dr. Paroda made a special mention of the enormous infrastructural development initiated at CIFE and complimented the Director and staff for the same. Degrees were conferred to a total of 149 successful candidates, 55 in presence and the rest in absentia.

The academic programmes offered and conducted by the Institute at its headquarters and centres, Central Marine Fisheries Research Institute (CMFRI), Kochi, Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar, and Central Institute of Fisheries Technology (CIFT), Kochi, progressed satisfactorily. The numbers of fresh enrolments and pass-out students during this academic year totaled to 120 and 90, respectively. The academic programmes were well supported by a series of guest/special lectures, field visits, study tours, seminars, etc.

Under the aegis of the Centre of Advanced Studies in Fisheries Science, four training programmes were conducted during the year in which a total of 60 candidates participated.

On the research front, the notable achievements of the year included development of a new hormonal

preparation, OVATIDE, for induced breeding of fish and maturation studies on penaeid prawns in cage environment. Work under the ongoing institutional and externally funded projects progressed satisfactorily. The meeting of the Staff Research Council was held on 26 March 1999 in which a total of 32 new research project proposals were presented. All these proposals were prepared in the project based budget format.

Entrepreneurship development through need-based training continued to be the main thrust of extension activities of the Institute. More than a hundred persons were trained on a host of topics mostly related to fisheries by conducting 17 training programmes of duration ranging from seven days to six months. A couple of training programmes on computer applications were conducted exclusively for the staff and students of the Institute. The Fishery Advisory Service rendered its assistance to 20 participants, besides helping about 100 fish farmers to get water and soil analysis done at the Institute's laboratory. The Institute participated in four out-station exhibitions, besides organising one in an attempt to create mass awareness among general public about the potentials of fisheries. Visits of over 1,000 school/college students of Maharashtra and other states were also coordinated. About 30 queries on fisheries and the academic programmes of the Institute were answered by mail besides distributing technical literature to over 100 enthusiasts.



The Institute continued to offer consultancy and the clientage during the year, included, M/s Hemmo Pharma Ltd., Mumbai, and the Department of Fisheries, Maharashtra. Site-specific technical assistance was also rendered to many fish farmers.

Summer School on Recent Developments in Biotechnology Applications in Fisheries and Aquaculture; National Colloquium on Predictive Modeling for Marine Fisheries; Workshop on Ovatide - a New Hormonal Formulation for Induced Fish Breeding and a Training-cum-Workshop on Hindi Computer Applications were the important professional gatherings organised by the Institute during the year.

Many a prestigious honour and award were bestowed, both institutionally and individually, on the *Parivar* of CIFE. The *Chal Rajabhasha Samman* was awarded by Ashirwad (a Mumbai based

reputed social organization) to CIFE in recognition of its efforts to promote the use of Hindi. The Education Division of ICAR awarded a Certificate of Appreciation to CIFE for organising CAS training programmes for Human Resource Development and bringing out excellent instructional material. Dr. M. P. S. Kohli, Professor & Head, Fishery Biology Division, won the III prize for his photo-entry in the Second Photographic Contest of the Asian Fisheries Society. Dr. Samadhan Jadhav, Scientist, was awarded the Uppal Memorial Gold Medal for his doctoral research. Shri P. P. Srivastava, Technical Officer, received the First Young Scientist Award of the National Academy of Sciences, India. Shri Deepak Khogre, Technical Officer, who is a promising painter, won international acclaim by exhibiting one of his paintings in the Art Power, the international art exhibition organised at Dubai.



The development of infrastructural facilities has been taken up with greater pace to provide face uplift to the old buildings and renovation of the laboratories, lecture halls, etc. While Aqua-feed Laboratory, Algal Culture Laboratory and Digital Imaging Laboratory were created afresh, other laboratories like Fish Pathology, Quality Control, Computer, etc. were renovated, besides the Auditorium and chambers of the faculty members.

A series of supporting activities like human resource development, staff and students sports and welfare, official language implementation, festivals and celebrations were also conducted during the year. The most significant event was the *Tika Samaroh*, a unique function in the country, to bid farewell to the outgoing students of the Institute.

Important institutional publications brought out during the year, comprised a book titled 'Vision on

Indian Fisheries of 21st Century', a compilation of bibliography on Fish Biotechnology in India, *Jalachari* - the annual Hindi magazine of the Institute, *Matsya Darpan* - the CIFE Newsletter, a brochure on CIFE's significant research contributions and a series of training/course manuals. News items on important events/activities of the Institute found a regular place in the prestigious publications of the ICAR, viz., *ICAR News* and *ICAR Reporter* and national dailies published from Mumbai, New Delhi, Lucknow, etc. in Hindi and English editions. The Institute witnessed the development of multimedia facilities for presenting all the activities in a capsulated version before various audiences. This also added an impetus in augmenting the existing teaching facilities.

The only void in the eventful bygone year was the sad demise of a renowned member of the CIFE *Parivar* Dr. N. K. Thakur, Joint Director of CIFE (1996 till death).



3. Introduction

Ever since its establishment in 1961, the Central Institute of Fisheries Education (CIFE), Mumbai, has played a pivotal role in post-graduate fisheries education and training. Research and extension endeavours were strengthened with the transfer of administrative control of CIFE from the Government of India to the Indian Council of Agricultural Research (ICAR) in 1979. In due recognition of its yeomen services to the development of Indian fisheries in general and human resource development for the purpose in particular, CIFE was deservedly conferred the coveted status of Deemed University in 1989. This decade-old deemed university has registered remarkable progress since then. Today, CIFE stands, tall as a premier *alma mater* in the global fisheries map.

The present campus of CIFE is located in a lush green campus of about 2.22 ha at a distance of about half a kilometer from the Versova beach at Mumbai. The main establishment of the Institute is housed in a three-storied building with all essential infrastructural facilities like class rooms, laboratories, library, aquarium, etc.

The Institute's headquarters at Mumbai has easy access from any corner of the Mumbai metropolis. The headquarters is located around 200 m away from the Seven Bungalows Bus Depot in Andheri (West), and is at a distance of about 38 km, 26 km, 20 km and 5 km from CST, Dadar, Kurla Terminus and Andheri railway stations and about 9 km and 15 km away from domestic and international airports, respectively.

Mandate

(The Mandate of the Institute encompasses the following specific objectives)

To conduct education and research programmes leading to post-graduate (M.F.Sc.) and doctoral (Ph.D.) degrees in specialised disciplines of fisheries science and technology.

To conduct capsule courses for catering to the refresher training needs of fisheries developmental and extension personnel.

To conduct basic research in frontier areas of fisheries science and technology through institutional and collaborative efforts.

To conduct need-based capsule/vocational training on various technologies related to fisheries and allied disciplines.

To provide institutional support for consultancy and participation in sponsored projects and programmes with other institutions and agencies for fisheries research in inland, coastal and marine (both within EEZ and beyond) sectors.



3.2 Organization and Management

CIFE has a Director and a Joint Director in its Research Management Positions together with a team of Principal Scientists, Senior Scientists and Scientists besides a fairly big force of technical, administrative and supporting staff (details given in table below). The present set up of the Institute in terms of divisions, sections, cells/units and subcentres, depicted in the form of organogram, is given in figure 1.

At the helm of affairs of overall Institutional Management, CIFE has a BOARD OF MANAGEMENT which also forms the highest decision making body at Institute level on all matters. The decisions and recommendations pertaining to academic, research and extension activities of the Institute are made by ACADEMIC, RESEARCH (RAC & SRC) and EXTENSION COUNCILS, respectively.

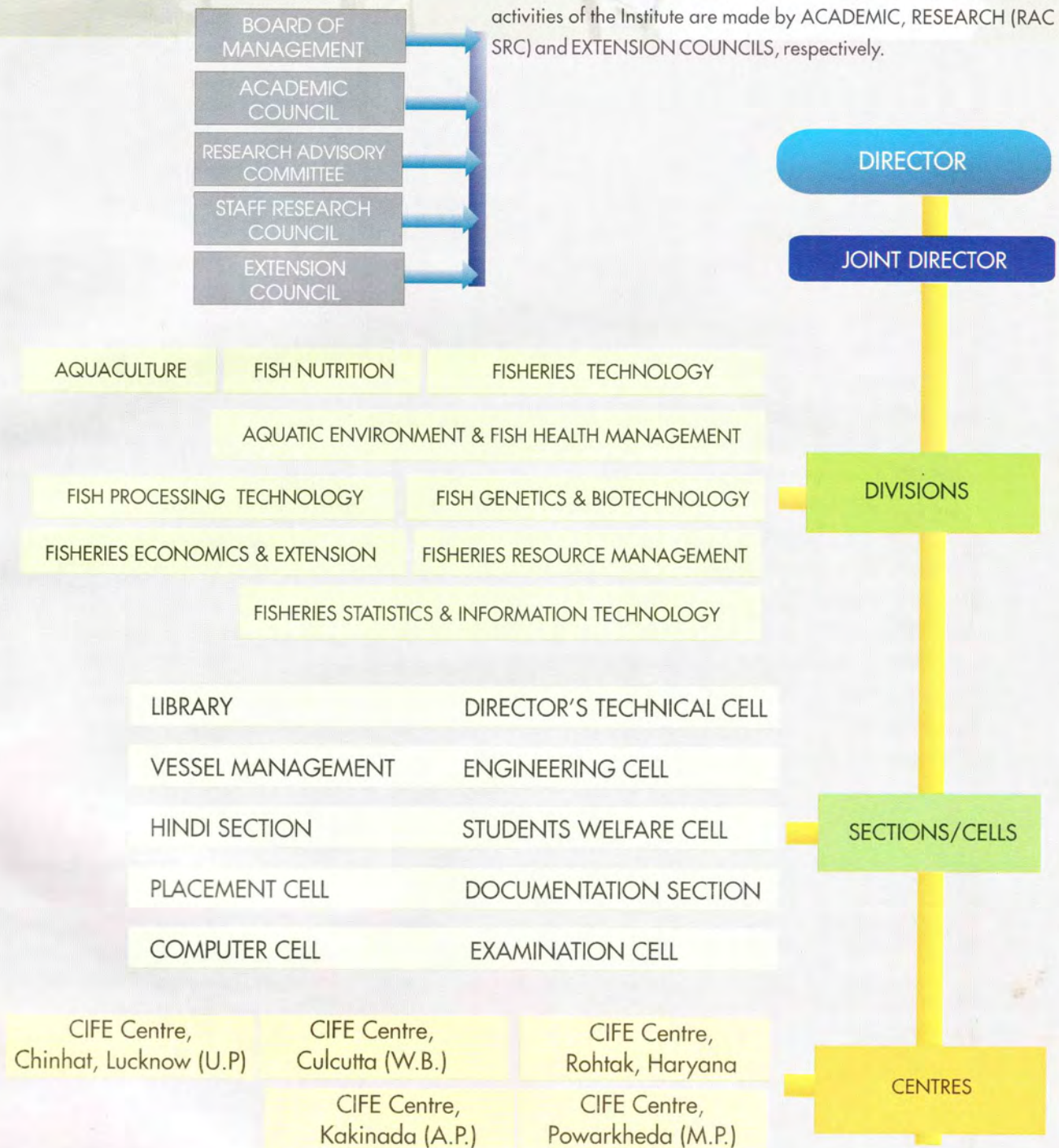


Fig.1 Organisational chart of CIFE

The staff position as on 31 March 1999 is as follows :

CATEGORIES	SANCTIONED	FILLED	VACANT
RESEARCH MANAGEMENT POSITIONS			
Director	01	01	--
Joint Director	01	--	01
SCIENTIFIC			
Principal Scientists	10	08	02
Senior Scientists	20	14	06
Scientists	60	27	33
TECHNICAL			
ADMINISTRATIVE	76	70	06
SUPPORTING			
	116	114	02
TOTAL	425	358	67

FINANCE

Sanctioned	Heads	Expenditure
415.00	Plan	413.62
609.00	Non-plan	574.95
45.00	National Agriculture Technology Project	43.30
11.08	A.P. Cess Fund	10.93
9.33	Centre of Advanced Study in Fisheries Science	7.52
77.89	Plan Scheme of Strengthening of Deemed University	66.61
1.75	Summer School	0.20

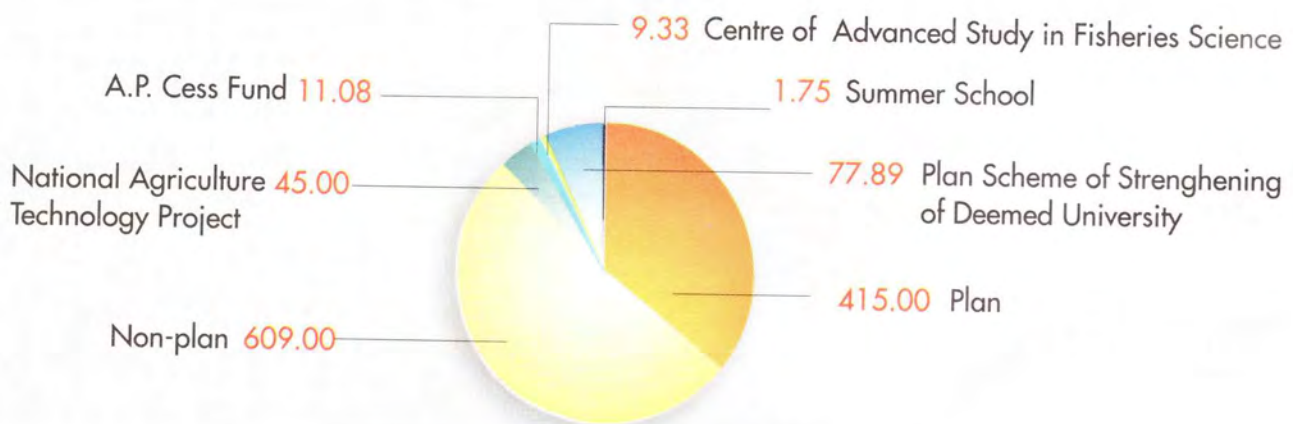


Fig: Sanctioned budget (Rs. In lakhs)

4. Research achievements

- * Significant Achievements
- * Progress of On-going Research Projects

4.1 Significant Achievements

4.1.1 Successful culture of giant freshwater prawn in Uttar Pradesh

A successful attempt on the culture of the giant freshwater prawn *Macrobrachium rosenbergii* (de Man), also known as Asian long-legged prawn or blue lobster, was made at the Lucknow Centre of CIFE. For this purpose, a pond of an area of about 0.07 ha was prepared and 15-day old post-larvae were stocked in the third week of July 1998. To assess the growth and survival rates, the crop was completely harvested after about four months. Results were excellent with an average weight of 20 - 25g. Some of the male prawns attained the weight of about 50g. Total survival of 60% was achieved. In northern India, especially in the eastern parts of Uttar Pradesh, this is a major breakthrough, as such a successful attempt was recorded for the first time. This attempt has thrown open the possibilities of successful culture of giant freshwater prawn in the eastern parts of U.P. during summer season.

4.1.2 Development of a new hormonal formulation, OVATIDE, for fish breeding

CIFE, Mumbai, in collaboration with a Mumbai-based pharmaceutical company, M/s Hemmo Pharma, has developed an indigenous and highly potent hormonal formulation, OVATIDE, for fish breeding work. It is a highly active, ready to use, injectable solution containing a synthetic peptide analogous to the Gonadotropin Releasing Hormone (GnRH) and a dopamine antagonist.

Trials on induced breeding of fish using OVATIDE were successfully conducted at many places in Andhra Pradesh, Madhya Pradesh, Gujarat, Manipur, Maharashtra, Uttar Pradesh and Rajasthan for two consecutive years (1997 & 1998). The successfully-bred fishes using OVATIDE included

catla, rohu, mrigal, kalbasu, pengba, walking catfish, mahseer and rohu-kalbasu hybrid.

The advantages of using OVATIDE for fish breeding are: (i) it produces increased number of eggs through complete spawning with high fertilization and hatching percentages, (ii) it is easily injectable due to low viscosity, (iii) it is administered in a single dose without causing any adverse effect on brood fish after injection, (iv) male and female fish can be injected simultaneously, (v) it is effective even under climatic adversities, (vi) it is storable at room temperature (20° to 30°C), (vii) it produces healthy fish seed with good growth potential and (viii) it is cost effective. Recommended doses of OVATIDE in respect of various fish species are shown below:

Species	Recommended dose of OVATIDE	
	Female (ml kg ⁻¹)	Male (ml kg ⁻¹)
Catla	0.40-0.50	0.20-0.30
Rohu	0.20-0.40	0.10-0.20
Mrigal	0.20-0.40	0.10-0.20
Silver carp	0.40-0.50	0.20-0.25
Grass carp	0.40-0.50	0.20-0.25
Kalbasu	0.20-0.30	0.10-0.20

4.1.3 Penaeid shrimp maturation in cage environment (AP Cess Funded Project)



Realising the necessity for healthy quality seed for a prospective shrimp farming programme, efforts were directed to obtain gonadal maturation of pond-grown penaeid shrimp in cages designed to achieve and maintain pond-grown broodstock towards a captive



maturation protocol in cage environment off Vedi village, Safale. Successful maturation was achieved at this experimental site. Pond-grown *Penaeus monodon* of 80 - 120g size were induced for maturation through eye stalk ablation technique and regulation of feeding regime. The water chemistry of the creek water where maturation cages were installed was conducive to trigger maturation (salinity 28±2‰, temperature 30° C, pH 7.8-8.2, DO 5.6 - 7.6 mg l⁻¹). Nutrient range analysed was as follows: nitrate 0.21- 0.32 mg l⁻¹, nitrite 0.001 to 0.005 mg l⁻¹, ammonia 0.002 mg l⁻¹ and phosphate 0.06 - 0.07 mg l⁻¹. Forty-seven per cent of the shrimp were recorded to attain sexual maturity after nine days of eye stalk ablation; 40% of the specimens so matured did respond to either partial or complete spawning.

4.2 Progress of On-going Research Projects

4.2.1 Externally Funded Projects

4.2.1.1 Standardization of techniques of multiple carp spawning and seed production on commercial basis in semi-arid eco-region of Haryana (A.P. Cess Fund)

This project is being carried out at the Rohtak Centre of CIFE. The summary of progress registered during the reported period is as follows:

Broodstock of Indian major carps and exotic carps was maintained using the artificial diets comprising fishmeal and soybean. The breeding experiments were carried out during June to September 1998 to observe the early and delayed spawning and to test the suitability of water for breeding.

A polyhouse (of dimension 50 m X 15 m X 3 m) constructed over a 500m² riveted pond, using a film of high density polyethylene sheets fixed over galvanized iron tube trusses with the essential accessories like exhaust fans, artificial lights, etc. was utilised for stocking the broodstock of Indian major carps and exotic carps at the standard recommended stocking density of 1,600 kg ha⁻¹. The stocks were maintained with a high protein diet to promote advanced maturity and to overcome the low water temperature regime prevailing in natural conditions.



During the four-month rearing period, significant improvement in gonadal maturity was observed among grass carp, silver carp and rohu as compared to the stocks in the natural pond.

Another experiment on the rearing of early fingerlings of rohu to advanced fingerlings was also conducted simultaneously in the polyhouse in which considerable improvement in the growth rate was recorded.

4.2.1.2 Standardization of techniques for commercial seed production of freshwater giant prawn using inland saline water (A.P. Cess Fund)

The work under this project was started at the Rohtak Centre of CIFE. About 8,000 post-larvae of *Macrobrachium rosenbergii* brought from CIFA, Bhubaneshwar, were stocked in the nursery ponds after acclimatization and 80% survival was observed. The following experiments were conducted:

Rearing of post-larvae to juvenile stage : The post-larvae were stocked in two riveted

ponds of 200 m² area. During the two-months' rearing period, the stock was fed with artificial diet in the form of pellets prepared and supplied by the Nutrition Laboratory of CIFE, Mumbai. The progression of the average growth recorded in the two nursery ponds is furnished in Figure 2. The quality of the rearing medium was analyzed periodically. It was observed that water quality in terms of total alkalinity, hardness (due to calcium and magnesium) and chlorides was found to be above optimum and thus was not conducive for rearing.

Rearing of juveniles to adults: It was observed in the previous years that prawns are highly vulnerable to low temperatures leading to mortality. Therefore, in the present experiments, about 85 juveniles harvested from the nursery ponds were stocked in a specially designed polyhouse pond to counteract the low temperatures. The prawns were reared in this pond for three and a half months with regular supply of artificial feed at the recommended rates. It was observed that during the culture period, the prawns not only grew well, but also survived the entire winter with a survival rate of 60%. The growth recorded in the polyhouse pond was 13 to 15 cm in length and an average weight of 26.9 g. The water quality of the polyhouse pond was monitored regularly. The minimum water temperature recorded in the polyhouse was 14.5° C which was about 7° C higher than that in the normal

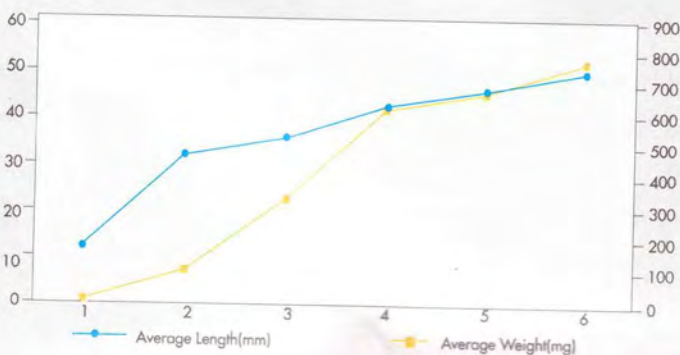


Fig.2 Average growth in nursery ponds

4.2.1.3 Assessment of the stock of shellfish and finfish resources of the northwest sector of Indian EEZ (Department of Ocean Development)

eData on size composition of commercial landings of *Saurida tumbil*, *Lepturacanthus savala* and *Eupleurogammus muticus* were collected from Versova/Ferry Wharf/Vasai landing centres in Mumbai and Thane districts. During the period, 62 visits were made and 773; 2,399 and 1,320 specimens of *S.tumbil*, *L. savala* and *E. muticus*, respectively, were observed.. Analysis of data is in progress.

4.2.1.4 Assessment of the stock of the deep-sea fishes in the northwest sector of Indian EEZ (Department of Ocean Development)

Data on size composition of *Epinephelus diacanthus*, *Priacanthus hamrur*, *Nemypterus mesoprion* and *N. japonicus* were recorded during 17 visits to Versova/Sasoon Dock/New Ferry Wharf landing centres,

Mumbai. In all, 1,021; 453; 443 and 732 specimens were observed, respectively, for the above species. Analysis of data is in progress.

4.2.1.5 Ichthyocrinotoxicity of Indian marine fishes and their commercial extraction (Department of Science and Technology)

The project was completed in March 1999. Besides preparation of a check-list of all crinotoxic fishes from Indian waters, the study identified four catfishes, viz., *Arius coelatus*, *A. dussumieri*, *A. maculatus* and *Osteogeneiosus militaris* whose mucus has shown wound healing properties. The active protein components have been isolated.

4.2.1.6 Development of immunodiagnostic kits for bacterial diseases of fishes (Department of Biotechnology)

The project has succeeded in developing latex agglutination and ELISA kits for diagnosis of *Aeromonas* and *Vibrio* infections in fishes and latex agglutination kit for diagnosis

of white spot viral disease in shrimp.

4.2.2 Institutional Projects

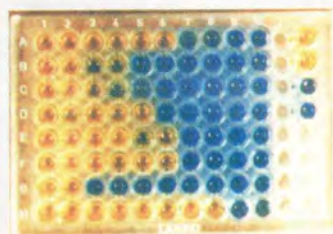
4.2.2.1 Freshwater and marine pearl culture using unconventional beads

Culture trials of implanted freshwater mussels, *Lamillidens marginalis* were carried out at Tata Fish Farm, Lonavala, in Maharashtra. A total of 2,399 mussels were implanted; 80% survival and 15% rejection were recorded. Random sampling was carried out. Many beads were found attached with the inside wall of the mussels and 50% of attached beads were found covered with nacre. Four golden colour and many small ash colour pearls were harvested along with rice pearls. The work is in progress.

4.2.2.2 Studies on dietary requirement of essential fatty acids (W6 and W3) in Indian major carp, *Labeo rohita*, and their effect on growth and survival

Sub Project : Utilization of lipid at different protein-energy ratios in the diet of *Labeo rohita* fingerlings

An experiment was conducted to study the utilization of lipid at different protein to energy ratios in the diet of *L. rohita* fingerlings. Three purified experimental diets were prepared using casein (fat-free), gelatin, dextrin white,



cellulose and mineral-vitamin mixture excluding the lipid. Saturated fat (5%) and linoleic acid (1%) were taken as lipid source based on its best performance in the previous experiment. Different proportions of other ingredients except the lipid source were mixed to prepare a High Protein High Energy, (HPHE - 45% CP; 3,650 kcal DE kg⁻¹, Medium Protein Medium Energy (MPME - 35% CP, 3,270 kcal DE kg⁻¹) and Low Protein Low Energy (LPLE - 27% CP; 3,018 kcal DE kg⁻¹) diets. The experiment was conducted for 90 days. The performance of the fingerlings was assessed in terms of weight gain (%), FCR, body composition and survival. The weight gain of HPHE and MPME were almost the same at 33.2 and 33.3%, respectively. LPLE group registered the lowest weight gain (27.0%).

Proximate composition of body tissues of LPLE group showed lower values compared to HPHE and MPME. No mortality was recorded during the experimental period. These results reveal that saturated fat at 5% level along with 1% linoleic acid is best utilised to promote growth at 35% CP and 3,270 kcal DE kg⁻¹.

4.2.2.3 Biotoxins from marine invertebrates and fishes

A total of five jelly fishes, two sciaenid fishes, one octopus, four marine catfishes, eight Indian major carps and two freshwater catfishes were shortlisted for various types of biotoxicity. The toxins were extracted, partially purified and their mode of activity established. Their potential biomedical and other beneficial uses have been indicated.

4.2.2.4 Development and refinement of technology package for tissue culture; indoor and outdoor culture of selected food value seaweeds and their product development for health and nutrition

For developing field demonstration and research facilities, three sites were identified in and around the Mumbai metropolis. Permission is being sought from the concerned agencies towards this end.

To determine the availability of seaweeds near Mumbai, sample surveys were done at monthly intervals. The samples so collected were subjected to stock culture and indoor culture. Using the *Enteromorpha* and *Ulva*, collected in bulk quantities during sampling, different recipes were prepared and public opinion was sought by serving the same to the VIPs on occasions like the convocation. These recipes were highly appreciated.



5. Education



CONVOCATION

5.1 Fourth Convocation

The Fourth Convocation of the Central Institute of Fisheries Education (Deemed University), Mumbai, was held on 29 January 1999 at the Institute's premises. Padma Bhushan Dr. Rajendra Singh Paroda, Secretary, Department of Agricultural Research & Education, Ministry of Agriculture, Government of India, and Director General, Indian Council of Agricultural Research, New Delhi, was the Chief Guest on this occasion. Dr. S.L. Mehta, Deputy Director General (Education), and Dr. K. Gopakumar, Deputy Director General (Fisheries), ICAR, New Delhi, also graced this function.

In his convocation address, Dr. Paroda lauded the efforts of the fisheries scientists and complimented them for the remarkable progress

the Indian fisheries sector has registered over the years. This, Dr. Paroda said, has made "Blue Revolution" a reality and enabled our nation to move towards household nutritional security. Revisiting the history of fisheries education and that of CIFE, Mumbai, he enumerated the important role played by the Institute in generating the right kind of human resource enabling the overall fisheries development in India. Complimenting all the degree, diploma and medal recipients of the fourth convocation, he appealed to them, the faculty and other students to strive for the utilization of our untapped fisheries resources and to attain high standards in post-harvest technology, so that India becomes a synonym of superior quality in the international scenario. Dr. Paroda had all the appreciation for the Director and the CIFE *Parivar* for the enormous efforts that are afoot at the Institute



in terms of infrastructure modernization, laboratory renovation, student welfare measures, placement services, etc. to impart quality education in fisheries with a greater degree of professionalism.

Dr. S.A.H. Abidi, Director, CIFE, Mumbai, delivered the welcome address besides presenting the progress report of the Institute. Dr. S. L. Mehta and Dr. K. Gopakumar also offered their remarks on the occasion. Late Dr. N.K. Thakur, Joint Director, CIFE, Mumbai, proposed the vote of thanks.

Dr. Paroda presented the CIFE DEEMED UNIVERSITY GOLD MEDALS and Dr. C.V. KULKARNI MERIT MEDALS with CERTIFICATES OF MERIT to eight and six candidates, respectively, in recognition of their outstanding academic performance. Degrees were conferred upon a total of 149 successful candidates, 55 in presence and the rest in absentia.

On this auspicious occasion, the Institute and the Indian Fisheries Association, Mumbai, started a novel gesture of recognizing and honouring the great personalities serving the cause of fisheries development in India. The first-ever *MATSYASHREE* honour was conferred on Shri Hiraji Chikhale, the Founder President of the Versova Fishermen Cooperative Society which has thrice won the prestigious Productivity Gold Medal of the National Development Council.

A series of publications, namely, "Vision on Indian Fisheries of 21st Century", "Fish Genetics In India - A Bibliography", "Academic Calendar of the Post-graduate School of CIFE" and "CIFE's Significant Research Achievements" were released on this occasion. A specially put up fisheries exhibition was the other highlight of this eventful function.



5.2 Academic Programmes

The details of enrolments and results declared pertaining to the various academic programmes offered by the Institute are as follows :

Name of the programme	Offered at	Enrolment	Results Declared
<i>M.F.Sc. (Fisheries Resource Management)</i>	<i>CIFE</i>	16	20
<i>M.F.Sc. (Inland Aquaculture)</i>	<i>CIFE</i>	16	19
<i>M.F.Sc. (Mariculture)</i>	<i>CMFRI</i>	10	11
<i>M.F.Sc. (Frashwater Aquaculture)</i>	<i>CIFA</i>	05	-
<i>M.F.Sc. (Post-harvest Technology)</i>	<i>CIFT</i>	05	--
<i>Ph.D. (Fisheries Resource Management)</i>	<i>CIFE</i>	11	01
<i>Ph.D. (Inland Aquaculture)</i>	<i>CIFE</i>	10	--
<i>Ph.D. (Mariculture)</i>	<i>CMFRI</i>	10	02
<i>Diploma in Fisheries Science (D.F.Sc.)</i>	<i>CIFE</i>	--	24
<i>P.G. Certificate in Inland Fisheries Development & Administration</i>	<i>CIFE Centre Calcutta</i>	37	13
Total		120	90

CIFE - Central Institute of Fisheries Education, Mumbai; CIFA - Central Institute of Freshwater Aquaculture, Bhubaneshwar; CMFRI - Central Marine Fisheries Research Institute, Kochi

Curricular schedules of all the above programmes progressed satisfactorily as per the time frame. These programmes were well supported by a series of student seminars, guest lectures, study tours, field visits. etc.

5.3 Guest Lectures

S. No.	Name & Address of the Guest Speaker	Topic of Lecture (Date)
1.	Dr. C.R. Bhatia, Ex-Secretary, Dept. of Biotechnology, Govt. of India, New Delhi	Recent developments in biotechnology : social, environmental, ethical and social issues (14-07-98)
2.	Dr. R. Murhelkar, Head, Molecular Biology Division, Cancer Research Institute, Mumbai	Production of transgenic and knockout animals (17-07-98)
3.	Dr. B. J. Rao, Scientific Officer, Tata Institute of Fundamental Research, Mumbai	Molecular genetics (18-07-98)
4.	Dr. R. Mittal, Scientific Officer, Tata Institute of Fundamental Research , Mumbai	Some new techniques in cell culture, viz. Baculovirus mediated protein expression using Sf9 insect cells (18-07-98)
5.	Dr. George John, Director, Dept. of Biotechnology, Govt. of India, New Delhi	Biotechnology informatics (18-07-98)
6.	Dr. A.N. Bhisey, Director, Cancer Research Institute, Mumbai	Molecular biology in the diagnosis and treatment of disease (20-07-98)
7.	Shri. Anil Agarwal, Sr. Scientist (Fy.) ICAR, New Delhi	Organisational and operational Infrastructure for fisheries research, development and education in India (20-07-98)
8.	Shri S.N. Ogale, Officer in-charge, Mahseer Breeding Farm, Lonavala	Mahseer breeding and culture (20-07-98)
9.	Dr. I. Karunasagar, Prof. & Head (Immunology), Fisheries College, Mangalore	Fish immunology, disease diagnostics and vaccine production (21-07-98)
10.	Dr. R.R. Bhonde, Sr. Scientist, National Centre for Cell Science, Pune	Fish cell and tissue culture (22-07-98)
11.	Dr. Lalji Singh, Director, Centre for Cellular & Molecular Biology, Hyderabad	DNA fingerprinting and its applications (22-07-98)

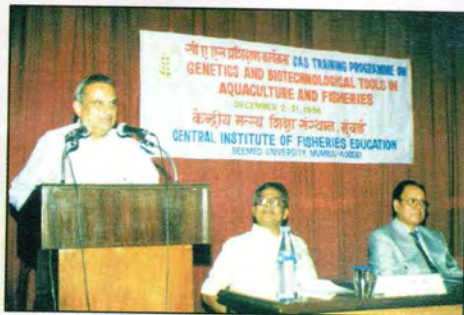
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|-----|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12. | Dr. R. Bhatnagar,
Professor,
Molecular Biology Dept.,
Jawaharlal Nehru University,
New Delhi | Molecular cloning, expression and
characterization of protective antigen
of <i>Bacillus anthracis</i>
(25-07-98) |
| 13. | Dr. S.A. Ali,
Sr. Scientist,
Central Institute of Brackishwater Aquaculture,
Chennai | Nutritional manipulation for development
of broodstock of finfish and shellfish (27-07-98) |
| 14. | Dr. Ghatnekar,
Executive Director,
Bhabha Atomic Research Centre, Mumbai | Fermentation technology and its applications
(28-07-98) |
| 15. | Dr. S.B. Warriar,
Sr. Scientific Officer,
Bhabha Atomic Research Centre, Mumbai. | Utilisation of fish processing
wastes/discards (29-07-98) |
| 16. | Dr. V. Venugopal,
Sr. Scientific Officer,
Bhabha Atomic Research Centre, Mumbai. | Radiation treatment to enhance
the quality and safety of fishery products
(29-07-98) |
| 17. | Dr. B.N. Desai,
Ex-Director,
National Institute of Oceanography,
Goa | Biocorrosion (30-07-98) |
| 18. | Prof. A.A. Karande,
Retd. Deputy Director
Defence Research & Development Organization,
Mumbai | Marine biofouling control technologies
(30-07-98) |
| 19. | Dr. A. Parulekar,
Ex. Head Biology Division,
National Institute of Oceanography,
Goa | Biodiversity and biotechnology
vis-à-vis intellectual property rights,
implications in the development,
utilization and conservation of
marine biota (01-08-98) |
| 20. | Dr. V.C. George,
Rtd. Principal Scientist,
Central Institute of Fisheries Technology,
Cochin | Traditional fishing techniques
of India (27-08-98) |
| 21. | Ms. Anna Godhe,
Gotesborg University,
Sweden | Harmful algae : life strategies, ecology
and impact and a marine expedition
to Antarctica 1997-98 (25-09-98) |
| 22. | Dr. J.C. Katiyal,
Director,
National Academy of Agricultural Research Management,
Hyderabad | Project based budgeting (30-09-98) |
| 23. | H.E. Mr. Satya N. Nandan,
Secretary General,
International Seabed Authority of the United Nations,
Kingston, Jamaica | Evolution in fisheries jurisdiction and management
(17-11-98) |
| 24. | Dr. N. Keshava,
Central Food Technology Research Institute,
Mysore | Biopreservation, application and
microbiological aspects related
to fish processing (30-11-98) |

25. Dr. V.V. Singh,
Scientist,
CMFRI Regional Centre,
Mumbai
- Remote sensing and its application
to the potential fishing zones in Indian waters
(15-01-99)
26. Dr. Dharam P. Agarwal,
Institute of Human Genetics,
Hamburg, Germany
- The role of genetic factors in health
effects of alcohol intake (20-03-99)
27. Dr. M.C. Gupta,
Scientist,
Space Application Centre,
Ahmedabad
- Selection of sites for brackishwater
aquaculture using remote sensing & GIS
and its impact on environment (25-03-98)

5.4 CAS Training Programmes

Under the Centre of Advanced Study Scheme in Fisheries Science, four training programmes were organised during the year, the details of which are as follows:

S. No.	Title of the programme	Date	Number of participants
1.	Genetics and biotechnology tools in aquaculture and fisheries	02 to 31 Dec. 1998	16
2.	Disease diagnosis in aquaculture with special reference to immunodiagnostics	03 to 17 Feb. 1999	13
3.	Advanced techniques in fish immunology	03 to 17 Mar. 1999	13
4.	Essentials of environmental impact assessment studies related to aquaculture projects	17 to 31 Mar. 1999	18



5.5 Invited lectures delivered by CIFE faculty

S. No.	Name & Designation of faculty	Title of the lecture	Delivered at	Date
1.	Dr. S.A.H. Abidi Director	For life on earth, save our sea	Department of Environment, Govt. of U.P., Lucknow	05-06-98
2.	Dr. S.D. Singh Principal Scientist	DNA dependent probes in diagnosis of preclinical cases of bacterial diseases	Department of Biochemistry, Institute of Science, Mumbai	28-01-99
3.	Dr. M.B. Iftekhar Senior Scientist	Marine fish farming in India	L.B. Shastri Nautical Engg. College on Advanced Maritime studies & Research, Mumbai	03-10-98
4.	Mr. A.K. Reddy Tech.Officer (T-7)	Freshwater prawn seed production	Krishi Vignan Kendra of Mahatma Phule Agricultural University, Dhule	17-4-98
	"do"	Carp seed production	"do"	17-4-98
	"do"	Composite fish culture	"do"	18-4-98
	"do"	Mono and polyculture of carps	"do"	18-4-98
	"do"	Essentials of EIA studies in the context of aquaculture projects	MPEDA Regional Centre, Valsad	21-9-98
	"do"	Formulation of viable projects for freshwater prawn farming with special reference to linkages required	NABARD Regional Office, Pune	05-10-98
	"do"	Aqua-hatcheries	Institute of Science, University of Bombay	10-2-99
	"do"	Aqua-hatcheries for shrimps, prawns and carps.	MPEDA, Silvasa	15-2-99

6. Extension achievements

- * Short-term Training Programmes
- * Fishery Advisory Service (FAS)
- * Fisheries Awareness Programme
- * Replies to queries and issue of the Institute's publications
- * Exhibitions



Extension activities at CIFE Centres

6.1 Short-term Training Programmes:

Thirteen short-term training programmes (7 days to 6 months duration) were conducted for in-service personnel and private entrepreneurs. About 100 participants were trained in various aspects of fisheries and aquaculture.

Sr.No.	Name of the Course	Duration
1.	Hatchery and grow-out aspects of freshwater fishes	1 Mar. to 31 Aug. 98
2.	Essentials of environmental impact assessment (EIA) studies related to aquaculture projects	26 May to 4 June 98
3.	Disease diagnosis in aquaculture	8-15 June 98
4.	Sun Solaris Unix training programme	23-26 June 98
5.	Management of freshwater fish seed farms	4-18 Aug. 98
6.	Natural collection of fish/prawn seed	24-29 Aug. 98
7.	Hatchery and grow-out aspects of freshwater fishes	1 Sep. to 28 Feb. 99
8.	Management of giant freshwater prawn hatchery	17-30 Sep. 98
9.	Aqua-feed formulation and pelletization for aquaculture	21-30 Sep. 98
11.	Hatchery management of freshwater prawn	16 Sep. to 15 Oct. 98
12.	Culture of live-food organisms for aqua-hatcheries	26-30 Oct. 98
13.	Monitoring of water quality parameters in aquaculture	9-14 Nov. 98
14.	Quality management in seafood industry	4-9 Jan. 99
15.	Breeding and keeping of ornamental fishes	18-23 Jan. 99
16.	Brackishwater aquaculture	6 Aug. to 4 Sep. 98
17.	Computer applications in fisheries	31 Aug. to 6 Sep. 98
18.	Computer basics and applications	15-23 Oct. 98

Place where conducted

<input type="checkbox"/>	CIFE Headquarters, Mumbai (M.S.)	<input type="checkbox"/>	CIFE Centre, Kakinada (A.P.)
<input type="checkbox"/>	CIFE Centre, Powerkheda (M.P.)	<input type="checkbox"/>	CIFE Centre, Lucknow (U.P.)
<input type="checkbox"/>	CIFE Centre, Calcutta (W.B.)		



6.2 Fishery Advisory Service (FAS)

This scheme was started during the year 1992 and the meetings of the FAS are being conducted on the first Monday of every month in which the operational problems/technical queries of the participating fishermen/fish farmers/entrepreneurs are being answered by the experts of the Institute. During the reported period, 20 participants were benefited under the meetings of FAS. Water and soil samples of 100 potential farmers were analyzed by the Institute.

6.3 Fisheries Awareness Programme

During the period, a total number of 1,024 students from Maharashtra and other states visited the Institute on their study tour. The composition of the groups is as follows:

Primary/secondary school students	- 330
Under-graduate students	- 459
Post-graduate students	- 51
B.F.Sc. students	- 97
Trainees of CIFE centres	- 52
Others	- 35

These visitors were apprised of the on-going activities of the Institute and were taken around various Divisions/Laboratories. Film shows were also arranged for them. As and when requested, visits to the other fisheries organisations in Mumbai, viz., Fisheries Co-operative Societies, Versova Fish Landing Centre, Taraporewala



Aquarium, Shivaji Fish Market, Sassoon Dock Landing Centre, etc. were also arranged

6.4 Replies to queries and issue of the Institute's publications

A large number of queries were received from private entrepreneurs, students and farmers regarding scope of fish culture, admission to various courses of the Institute, etc. About 30 such queries were answered by post and publications of the Institute were mailed on request to about 100 persons.

6.5 Exhibitions

The Institute participated in the following exhibitions:

Exhibition organized on the occasion of the Conference of Vice-Chancellors/Directors of the State Agricultural Universities/Deemed Universities of ICAR held at Pusa Campus, New Delhi, on 16 & 17 September 1998.

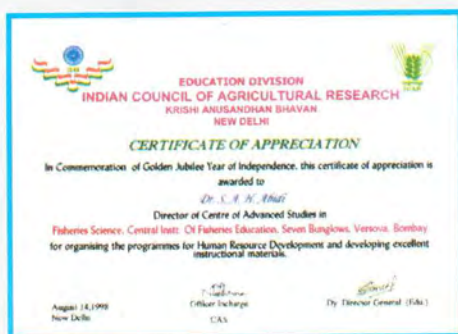
Agro Advantage Maharashtra & Agro Food Technology 98 at Goregaon, Mumbai, from 06 to 09 November 1998.

International Fair on Education and Career Guidance (the GURUKUL), at Andheri Sports Complex, Mumbai, from 26 to 29 January 1999.

Fisheries Exhibition arranged on the occasion of the IV Convocation of CIFE, Mumbai, on 29 January 1999.



7. Honours and Awards



7.1 Award for CAS programmes

In Commemoration of the Golden Jubilee Year of India's Independence, the Education Division of ICAR awarded a certificate of appreciation to CIFE, Mumbai, for organising the CAS training programmes for Human Resource Development and developing excellent instructional material. The appreciation certificate was received by Dr. S.A.H. Abidi, Director, CIFE, Mumbai.

7.2 CIFE gets Ashirwad Award for promotion of working in Official Language

Ashirwad, a reputed and well known organisation of Mumbai, declared CIFE as the Best Institute among all the Central Government Offices located at Mumbai, for its contribution in the field of Hindi. The Chal Rajbhasha Shield and Ashirwad Rajbhasha Samman with a memento were received by Dr. N.K. Thakur, Joint Director, on behalf of Dr. S.A.H. Abidi, Director, on 10 September 1998 on the occasion of Hindi Diwas Samaroh organised by Ashirwad.

Shri R. P. Uniyal, Assistant Director (O.L.), was also awarded the first prize for his notable contribution in the field of implementation of Hindi and Hindi publications. He was honoured by the Great Gazal Samrat Shri Anup Jalota on the occasion of Rajbhasha Adhikari Sammelan organised by Ashirwad on 10 September 1998.



7.3 Shri P. P. Srivastava gets the First Young Scientist Award

Shri Prem Prakash Srivastava, Technical Officer, CIFE, Mumbai, received the First Young Scientist Award "The National Academy of Sciences, India SWARN JAYATI PURASKAR" for the best scientific research paper entitled "Effect of Carpet Indus Effluent on Branchial Na^+ Transport in Common Carp, *Cyprinus carpio*" (a part of Ph.D. thesis work). The award was presented to Mr. Srivastava by Dr. (Ms.) Ma Sharma, Secretary, Department of Biotechnology, New Delhi, at the Central Di Research Institute, Lucknow, on 25 October 1998. The award comprises a Certificate of Honour and a Cash Prize of Rs. 5,000/-.

7.4 Dr. M.P.S. Kohli gets International Photo-competition Award

Dr. M.P.S. Kohli, Principal Scientist and Head, Fishery Biology Division, has brought laurels to the CIFE and ICAR by winning the III Place (Cash Prize of US \$200) in the Second Photographic Contest of the Asian Fisheries Society and PADEC at Bangkok on 13 November 1998. Dr. Kohli's award winning photo-entry was captioned "Chinese Type Dipnet mostly operated by Women in Flood-plains is speciality of North-Eastern India". The theme of the photo contest was "Women in Asian Fisheries".



7.5 Shri Deepak Khogre honoured with International Distinction

The 'International Art Exhibition - Art Power' organized by Gargash Enterprises in association with Dally Talwar, Design Art at Mercedes-Benz Showroom, Dubai, has honoured Shri Deepak Khogre, Artist and Technical Officer, CIFE, Mumbai, for his contribution in the show. This art work (painting) found a special place along with the great artists like, Shri M.F. Hussain, Shri A.R. Salion, Shri F. N. Souza, Ms. Anjolie Ela Menon and Ms. L. A. Daher. With this achievement, Shri Khogre has brought laurels to the CIFE and ICAR *Parivars*.



(Left to right)
Mr. Janardan M. Koli
Mr. Vijay Kuvshkar
Mr. Mahesh Waghela
Mr. Surajbali Jaiswar

7.6 CIFE wins Sports Prizes

The sports team of CIFE, Mumbai, participated in the ICAR Sports Zonal Tournament organised at NBSS & LUP, Nagpur from 23-26 October 1998 and won the following prizes :

Men's Events

First Prize in 4 X 100 m Relay

Team Members: :

Mr. Surajbali Jaiswar
Mr. Mahesh Waghela
Mr. Janardan M. Koli
Mr. Vijay Kuvshkar



Ms. Revati Dhongde Ms. Nalini Poojari

Women's Events

First Prize in High Jump

Second Prize in 200 m. Running Race

Third Prize in 100 m. Running Race

Third Prize in Javelin Throw

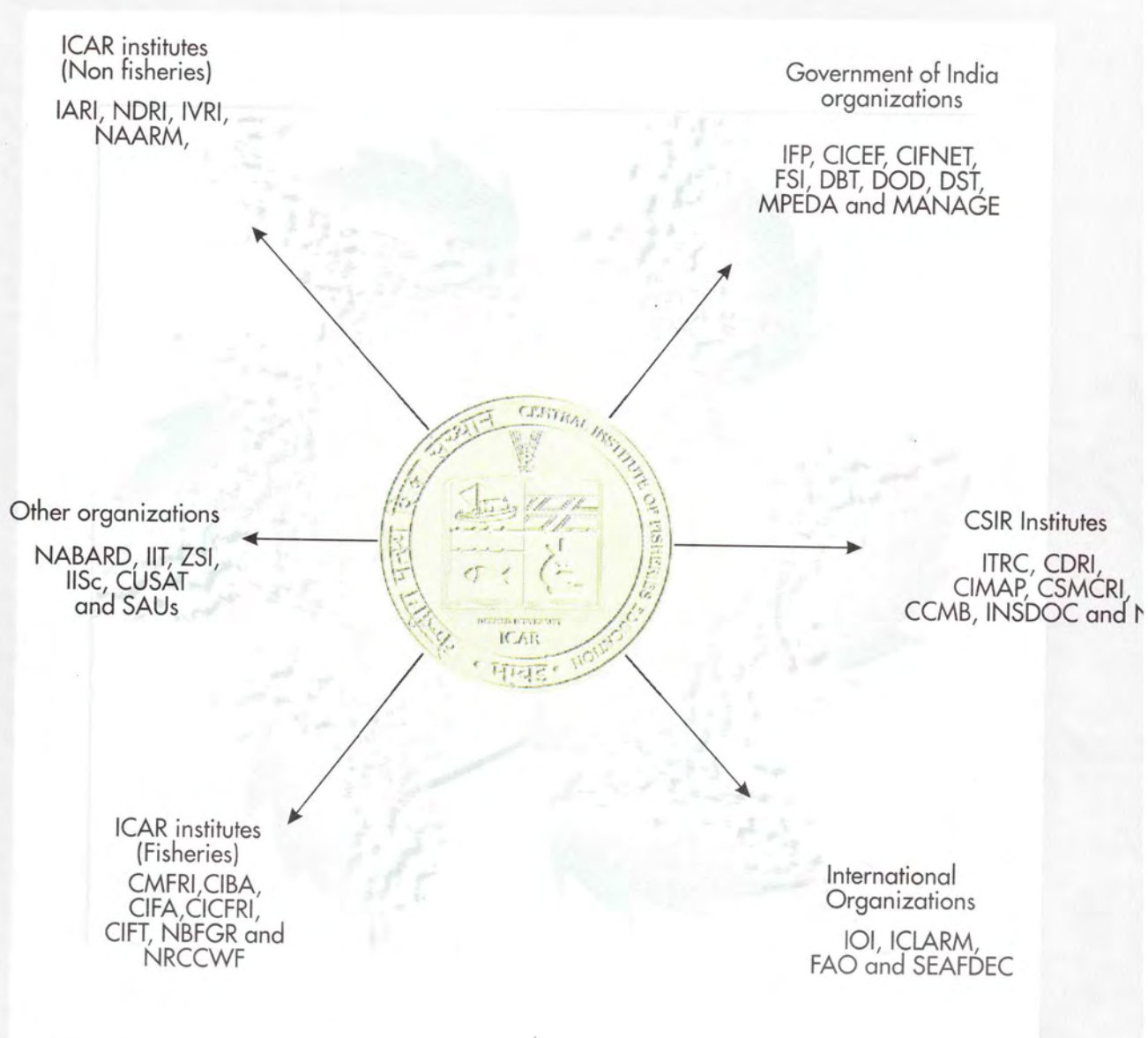
: Ms. Nalini Poojari
: Ms. Nalini Poojari
: Ms. Nalini Poojari
: Ms. Revati Dhongde

7.7 Dr. Samadhan Jadhav gets D. R. Uppal Memorial Award for 1998

Dr. Samadhan Jadhav, Scientist of this Institute, was conferred the Dr. D. R. Uppal Memorial Award for Excellence in doctoral research. Hon'ble Union Minister of State for Agriculture, Shri Sompal, presented this award to Dr. Jadhav on the occasion of the Fifth Convocation of the Indian Veterinary Research Institute (Deemed University), Izatnagar, held on 20 December 1998. The Award carries a Citation and a Gold Medal. Dr. Jadhav worked on Molecular Characterization of Avian Adenovirus Strains causing Infectious Hepatitis Hydropericarditis in Chickens for his doctoral research, which was funded by the Senior Research Fellowship of the Council of Scientific & Industrial Research. This study identified the viral pathogen in the Indian territory as AAV Serotype-4, and paved way for the development of vaccine and rapid immunodiagnosics for the formidable disease, which is reported to cause up to 90% mortality of chickens in the age group of 3-5 weeks.

8. Linkages and collaboration in India and abroad including externally funded projects

8.1 Linkages



8.2 Externally-funded projects

S. No.	Title of the project	Funding agency
1	Identification of new candidate species for mariculture & standardization of techniques	Department of Ocean Development
2.	Creation of model spawner facility for prawn (<i>Penaeus</i> spp.) hatcheries and assessment of spawner abundance and recruitment in <i>Penaeus</i> spp. stocks in Maharashtra and Andhra Pradesh	AP Cess Fund of ICAR
3.	Assessment of the shellfish and finfish resources of the north-west sector of the Indian Exclusive Economic Zone (EEZ)	Department of Ocean Development
4.	Development of immunodiagnostic kits for bacterial diseases of fishes	Department of Biotechnology
5.	Temporal and spatial variations in the occurrence and abundance of planktonic larvae of cultivable invertebrates off the north-west coast of India and their experimental mariculture	Department of Ocean Development
6.	Technology transfer of seed production/culture of brackishwater finfishes and prawns in inland saline environment in Maharashtra and Andhra Pradesh	Department of Biotechnology
7.	Assessment of environmental parameters and marine living resources (primary/secondary) in the Indian Exclusive Economic Zone and role of myctophid fauna in the mesopelagic habitat	Department of Ocean Development
8.	Stock assessment, biology and resource mapping of deep sea shrimps and lobsters, cephalopods and fishes in the Indian Exclusive Economic Zone	Department of Ocean Development
9.	Harvest technology and catch composition of deep-sea fishery of Indian Exclusive Economic Zone	Department of Ocean Development
10.	Studies on deep scattering layer	Department of Ocean Development
11.	Breeding and rearing of selected species of commercially important ornamental fishes	M/s. Aquazona Exports
12.	Standardization of techniques for commercial seed production of freshwater giant prawn using inland saline water	AP Cess Fund of ICAR
13.	Standardization of techniques of multiple carp spawning and seed production on commercial basis in semi-arid eco-region of Haryana	AP Cess Fund of ICAR

9. Publications



9.1 Books

Abidi, S. A. H., N. K. Thakur, R. S. Biradar and Latha Shenoy (Eds.) (1999) Vision on Indian Fisheries of 21st Century - Proceedings of the National Seminar on Vision on Indian Fisheries of 21st Century. 7-8 February 1998. CIFE, Mumbai.

Diwan, A.D. (1998) Bioenergetics (Molecular Basis of Energy Transformation in Biosystems). IAAB Publishers, Hyderabad.

Diwan, A.D. (1998) Methodology for Water Analysis. (Physico-chemical, Biological and Microbiological). IAAB Publishers, Hyderabad.

Lakra, W. S. (Ed.) (1999) Fish Genetics in India - a Bibliography. CIFE, Mumbai.

9.2 Chapters in Books

Lakra, W. S. (1998) Advances in fish genetics and biotechnology. In : S. H. Ahmed (Ed.) Advances in Fisheries. Vol. II Hindustan Publishing Corporation, New Delhi, pp: 34-45.

Lakra, W. S. (1998) Genetics of cultured shrimps and prawns - current status of knowledge. In : A. G. Ponnaiah, P. Das and S. R. Verma (Eds.). Fish Genetics and Biodiversity Conservation. Natcon Publishers, Lucknow, pp: 359-365.

9.3 Brochures

Thakur, N.K., Kiran Dube, K.V. Rajendran and B. S. Sontakki (1999) CIFE's Significant Research Achievements. Special Brochure brought out on the Occasion of Fourth Convocation of CIFE, Mumbai.



9.4 Training Manuals

Genetics and Biotechnology Tools in Aquaculture and Fisheries. Training Manual of CAS in Fisheries Science. 1998. CIFE, Mumbai.

Disease Diagnosis in Aquaculture with Special Reference to Immunodiagnostics. Training Manual of CAS in Fisheries Science. 1999. CIFE, Mumbai.

Advanced Techniques in Fish Immunology. Training Manual of CAS in Fisheries Science. 1999. CIFE, Mumbai.

Essentials of Environmental Impact Assessment Studies related to Aquaculture and Fisheries. Training Manual of CAS in Fisheries Science. 1999. CIFE, Mumbai.

Recent Developments in Genetics and Biotechnology Applications to Aquaculture and Fisheries. Summer School Training Manual. 1998. CIFE, Mumbai.

9.5 Research Papers in National and International Journals

Biradar, R. S. and H. P. Singh (1998) Predictive estimation of finite population variance. *Calcutta Statistical Association Bulletin*, 48 (191-192): 229-235.

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- Das, M. and W. S. Lakra (1998) Somatic and meiotic chromosomes of the freshwater prawn, *Macrobrachium roenbergii* (de Man) used in aquaculture. *Indian Journal of Fisheries*, 45 (3) : 339-343.
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- Lakra, W. S. and P. Das. (1998) Genetic engineering in aquaculture. *Indian Journal of Animal Sciences*, 68(8) : 873-879.
- Nayak, B.B., I. Karunasagar and I. Karunasagar (1998). The Survival of different vibrios in association with laboratory culture of red tide causing organisms. *World Journal of Microbiology & Biotechnology* (in press).
- Ponnaiah, A. G., W. S. Lakra and S. N. Ogale (1999) Effects of cryoprotectant and fertilization protocol on viability of mahseer *Tor khudree* cryopreserved spermatozoa. *Journal of Aquaculture in Tropics*, 14 (2) : 153-158.
- Rajendran, K.V., K.K. Vijayan and S.V. Alavandi, C.P. Rangswami, S. Srinivasagam and D. Rajababu (1998) White spot disease outbreak in confined rain-fed ponds of Chilka lake: A case study. *Journal of Aquaculture*, 6 : 43-47.
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- Singh, R., H. P. Singh and R. S. Biradar (1998) A family of almost unbiased ratio estimates in double sampling. *Parisankhyan Samiksha*, 5 : 33-42.
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- 9.6 Research/Theme/Status Papers published in Proceedings of Seminars/Symposia, etc.
- Abidi, S. A. H., N. K. Thakur and B. S. Sontakki (1998) Training inputs in fisheries. In: Proceedings of Experience Sharing Workshop on Fisheries Sector Development in Gujarat State. IIM, Ahmedabad.
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9.8 Popular Articles

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10. List of approved on-going projects

Institutional Projects

Studies on aquatic biotoxins, venoms and antineoplastic substances from fishes.

Preservation of fish and fishery products.

Freshwater and marine pearl culture using unconventional beads.

Genetic studies on freshwater prawns.

Identification of distinct geographical populations of *Labeo rohita* through biochemical genetics.

Studies on dietary requirement of essential fatty acids (W6 & W3) in Indian major carp, *Labeo rohita* and their effect on growth and survival.

Prophylactic and therapeutic use of ozone in prawn hatcheries and its role in water quality management.



11. Consultancy, patents & commercialisation of technology

11.1 Consultancy/contractual services offered

S.No.	Topic of consultancy	Offered to
1.	Field trials on spawning of Indian major carps	M/s. Hemmo Pharma, Mumbai
2.	Complete topographical & analytical survey for the establishment of a freshwater prawn hatchery	Dept. of Fisheries, Govt. of Maharashtra
3.	Development of a site plan for the establishment of soil &	Dept. of Fisheries, Govt. of

11.2 Technical assistance

S.No.	Area of technical assistance	Offered to	Offered by
1.	Fish pond development	Mr. Agarwal, Banapur	CIFE Centre, Powerkheda
2.	Fish pond development	Mr. Samuel, Seoni Malwa	---"---
3.	Fish culture	Mr. Pravin, Rehsalpur	---"---
4.	Fish fry stocking	Mr. R.P. Dubey, Banapur	---"---
5.	Fish farming	Sanjay Gandhi Institute for Training of Youth, Pachmari	---"---

12. Participation of Faculty in Conferences, Meetings, Workshops, seminars, Symposia, Training Programmes in India and Abroad

12.1 Participation of faculty in Conferences, meetings, Workshops, Seminars, Symposia, etc. in India

S. No	Details of Participation	Name & Designation
1.	National Consultation Meet. NABARD, Mumbai (08 May 1998)	Dr. S.A.H. Abidi Director & Dr. N.K. Thakur Joint Director
2.	Meeting of the Commission for Conservation of Antarctic Marine Living Resources (CCAMLR). DOD, Kochi (10 & 11 August 1998)	Dr. S.A.H. Abidi Director
3.	HRD Meeting of the CSIR. New Delhi (18 & 19 August 1998)	Dr. S.A.H. Abidi Director
4.	Meeting of the Task Force on Animal Sciences & Aquaculture. DBT, New Delhi (19 & 20 August 1998)	Dr. S.A.H. Abidi Director
5.	NATP Workshop. IARI, New Delhi (05 & 06 October 1998)	Dr. S.A.H. Abidi Director
6.	ICAR Directors' Meeting. NBPGR, New Delhi (07 & 08 October 1998)	Dr. S.A.H. Abidi Director & Dr. N.K. Thakur Joint Director
7.	Seminar of the Society of Biosciences. Jamia Hamdard University, New Delhi (20 & 21 November 1998)	Dr. S.A.H. Abidi Director
8.	Meetings of the ICAR Governing Body & Standing Finance Committee. ICAR, New Delhi (23 & 24 November 1998)	Dr. S.A.H. Abidi Director
9.	Meeting with the U.P. Govt. about the Transfer of Lland of the Lucknow Centre of CIFE. Lucknow (25 to 27 November 1998)	Dr. S.A.H. Abidi Director
10.	Meeting on the Utility & Functioning of the Regional Centres of ICAR Institutes. ICAR, New Delhi (10 February 1999)	Dr. S.A.H. Abidi Director
11.	Meeting of the Tata Energy Research Institute. Goa (22 February 1999)	Dr. S.A.H. Abidi Director
12.	The 12th Indian Sea Food Trade Fair. New Delhi (26 February 1999)	Dr. S.A.H. Abidi Director
13.	Expert Committee Meeting for the Selection of Senior Research Fellow & Research Associate. CSIR, New Delhi (09 March 1999)	Dr. S.A.H. Abidi Director
14.	Workshop on Sustainability and Reorientation of the Land Grant System of Education. IARI, New Delhi (10 March 1999)	Dr. S.A.H. Abidi Director & Dr. R. S. Biradar Principal Scientist
15.	National Conference on Agriculture for Kharif Campaign. Vigyan Bhavan, New Delhi (22 to 23 March 1999)	Dr. S.A.H. Abidi Director
16.	Meeting of the Directors of CAS. IARI, New Delhi (27 & 28 March 1999)	Dr. S.A.H. Abidi Director & Dr. C.S. Purushothaman Principal Scientist

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| 17. | The Standing Finance Committee Meeting of the ICAR. New Delhi (30 March 1999) | Dr. S.A.H. Abidi
Director |
| 18. | Meeting of the Governing Body of ICAR Society. NDRI, Karnal (31 March 1999) | Dr. S.A.H. Abidi
Director |
| 19. | Workshop on Issues related to Strengthening of Agricultural Education System in India based on Experiences from Land Grant Colleges of USA and Lessons Learnt. IARI, New Delhi (27 & 28 April 1998) | Dr. N.K. Thakur
Joint Director |
| 20. | 1st Meeting of the Composite Panel on Agricultural Education & Home Science. ICAR, New Delhi (29 April 1998) | Dr. N.K. Thakur
Joint Director |
| 21. | Joint Meeting of the Deans of SAUs & DUs. NBPGR, New Delhi (30 April 1998) | Dr. N.K. Thakur
Joint Director |
| 22. | National Workshop on Aquaculture in Hindi CIFA, Bhubaneshwar (21 July 1998) | Dr. N.K. Thakur
Joint Director &
Dr. M.P.S. Kohlli
Principal Scientist |
| 23. | Workshop on Postgraduate Programmes in Agri-Enterprise & Management at IIMA. Mumbai (21 August 1998) | Dr. N.K. Thakur
Joint Director |
| 24. | Experience Sharing Workshop on Fisheries Sector Development in the State of Gujarat. IIM, Ahmedabad (11 & 12 September 1998) | Dr. N.K. Thakur
Joint Director &
Dr. A.D. Diwan
Principal Scientist |
| 25. | The All India Conference on Library Management Systems. Khandala (30 & 31 October 1998) | Dr. N.K. Thakur
Joint Director,
Dr. R.S. Biradar
Principal Scientist &
Mr. K.P. Khalsa
Asst. Librarian |
| 26. | Inaugural Function of the E Ward Science Exhibition (as Chief Guest). Mumbai (25 November 1998) | Dr. N.K. Thakur
Joint Director |
| 27. | National Seminar on Intellectual Property Rights Issues in Biotechnology & Life Sciences. Mumbai (15 January 1999) | Dr. N.K. Thakur
Joint Director,
& other faculty Members |
| 28. | National Workshop on Sustainable Aquaculture Ludhiana (20 & 21 January 1999) | Dr. M.P.S. Kohlli
Principal Scientist |
| 29. | Deans Workshop on How to Manage Agricultural Education Better. NAARM, Hyderabad (07 & 08 May 1998) | Dr. A.D. Diwan
Principal Scientist |
| 30. | M.P. Fisheries Federation Conference. Jabalpur. (August 1998) | Dr. A.D. Diwan
Principal Scientist,
Mr. S.S.H. Rizvi
Mr. V.K. Tiwari
Scientists (SS) &
Mr. R.P. Uniyal
Asst. Director (OL) |
| 31. | International Symposium on Large Marine Eco-systems : Exploitation and Exploration for Sustainable Development and Conservation of Fish Stock. Kochi (25 to 28 November 1998) | Dr. A.D. Diwan
Principal Scientist |

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| 32. | National Workshop on Recent Advances in Hormonal Physiology of Fish and Shellfish Reproduction. CIFA, Bhubaneswar (16 to 18 April 1998) | Dr. R.C. Das
Principal Scientist |
| 33. | National Seminar on Biological Bases of Behaviour. CAS in Psychology, Utkal University, Bhubaneswar (11 to 13 January 1999) | Dr. R.C. Das
Principal Scientist |
| 34. | Fourth Agricultural Science Congress. Jaipur (22 to 25 February 1999) | Dr. R.S. Biradar
Principal Scientist |
| 35. | Task Force Meeting of Stock Assessment, Biology and Resource Mapping. FSI, Kochi (08 March 1999) | Dr. R.S. Biradar
Principal Scientist |
| 36. | Joint Meeting of Stock Assessment and Harvest Technology Task Forces. CIFT, Kochi (08 March 1999) | Dr. R.S. Biradar
Principal Scientist |
| 37. | International Workshop on Socio-economic Monitoring for Coral Reefs. Kadamat Island, Lakshadweep (17 to 30 September 1998) | Dr. R. Sathiadhas
Principal Scientist |
| 38. | Seminar on Alternative Methods for Water & Wastewater Analysis. Mumbai (27 November 1998) | Dr. C.S. Purushothaman
Principal Scientist,
Dr. (Ms.) Kiran Dube
Senior Scientist,
Dr. Chandra Prakash &
Mr. R.K. Langer
Technical Officers |
| 39. | Meeting on the Project entitled Multispecies Marine Fish Stock Enhancement along the Southern Coast of India. CMFRI, Kochi (01 December 1998) | Dr. C.S. Purushothaman
Principal Scientist |
| 40. | Colloquium organized in Connection with the Inauguration of the Ocean Science & Technology Cell at the CAS in Marine Biology (Annamalai University), Parangipettai (04 & 05 January 1999) | Dr. C.S. Purushothaman
Principal Scientist |
| 41. | 68th Annual Meeting of National Academy of Sciences India. CDRI, Lucknow (23 to 25 October 1998) | Dr. S.D. Singh
Principal Scientist |
| 42. | Workshop on Hitech Export Oriented Unit in Agriculture and Agro-Processing. Pune (21 December 1998) | Dr. S.D. Singh
Principal Scientist,
Dr. S. Basu
Senior Scientist &
Dr. B.B. Nayak
Scientist |
| 43. | Golden Jubilee Conference on Frontiers of Biochemistry. Institute of Science, Mumbai (27 to 30 January 1999) | Dr. S.D. Singh
Principal Scientist |
| 44. | Symposium on Radiation Processing of Foods Current Status and Future Prospects. BARC, Mumbai (22 March 1999) | Dr. S.D. Singh
Principal Scientist &
Dr. S. Basu
Senior Scientist |

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| 45. | Working Group Meeting of Fish Processing Technology Vocational Course. PSSCIVE, Bhopal (07 to 11 December 1998) | Dr. S. Basu
Senior Scientist |
| 46. | Workshop on Environment-friendly Inland Fisheries & Aquaculture for 21st Century in West Bengal. Calcutta (10 March 1999) | Dr. U.K. Maheshwari
Senior Scientist |
| 47. | Seminar on Technologies for Next Millennium in Liquid Chromatography. CCS, HAU, Hisar (09 March 1999) | Dr. G. Venugopal
Senior Scientist |
| 48. | National Symposium on Eco-physiology & Conservation of Aquatic Resources. Institute of Science, Mumbai (08 to 11 January 1999) | Dr. M.B. Iftekhar
Senior Scientist |
| 49. | 63rd Annual Convention of the Indian Society of Soil Science & National Seminar on Developments in Soil Science 1998. CCS HAU, Hisar (16-19 November 1998) | Dr. A.K. Patra
Senior Scientist |
| 50. | Farmers' Meet. Safale, Thana (11 January 1999) | Dr. K.V. Rajendran
Senior Scientist
Dr. Pani Prasad
Scientist &
Mr. A. K.Reddy
Tech. Officer (T-7) |
| 51. | National Workshop on Sustainable Aquaculture PAU, Ludhiana (21 & 22 January 1999) | Mr. N.K. Chadha
Scientist (SS) &
Mr. M.A. Khan
Technical Officer |
| 52. | Workshop on Aquaculture Engineering. Bhopal (28 December 1998) | Mr. S.S.H. Rizvi &
Dr. V.K. Tiwari
Scientists (SS) |
| 53. | Seminar on Trends in Application of Nuclear & Biotechnological Techniques in Agriculture. KKV, Dapoli (15 to 17 April 1998) | Dr. K. Pani Prasad
Scientist |
| 54. | National Environment Awareness Campaign. (as a Judge). Mumbai (11 July 1998) | Dr. K. Pani Prasad
Scientist |
| 55. | 39th Annual Conference of Association of Microbiologists of India. Mangalore (05 & 06 May 1998) | Dr. B.B. Nayak
Scientist |
| 66. | Workshop on Freshwater Prawn Farming. NABARD Regional Office, Pune (05 October 1998) | Mr. A. K.Reddy
Tech. Officer (T-7) |
| 67. | Farmers meet on Eco-friendly and sustainable shrimp/prawn farming. MPEDA Regional Centre, Valsad at Bilimora(Gujrat) (21 September 1999) | Mr. A. K.Reddy
Tech. Officer (T-7) |
| 68. | Seminar on Aquaculture prawn Farming. Union Territory of Dadranagar & Haveli and MPEDA Regional Centre (Valsad) at Silvassa(15-02-1999) | Mr. A. K.Reddy
Tech. Officer (T-7) |

12.2 Human Resource Development

12.2.1 Participation of Faculty in Training Programmes in India

S. No.	Name & Designation	Details of Participation in Training Programmes
1.	Dr. S.S.Jahageerdar Scientist	CAS Training Programme on Applications of Genetic Techniques in Farm Animals. NDRI, Karnal (17 March to 04 April 1998)
2.	Dr.(Ms.) A. Chaudhari Scientist	Training Programme on DNA Fingerprinting CCMB, Hyderabad (12 to 17 April 1998)
3.	Dr. S.N. Ojha Senior Scientist	Global Training in Pedagogy. IARI, New Delhi (22 & 23 June 1998)
4.	Ms. Madhavi Pikle & Ms. Rajani Pagare Technicians	Sun Solaris Unix Training Programme. CIFE, Mumbai (22 to 26 June 1998)
5.	Dr. M.B. Patel Scientist	Short Course on Methods for Diagnosis & Treatment of Fish Diseases. CICFRI, Barrackpore (15 to 24 July 1998)
6.	Mr. S.K. Pathak Finance & Accounts Officer	Training Course on Improving the Administrative Efficiency in Agricultural Research, Teaching and Extension organizations of ICAR. NAARM, Hyderabad (29 July to 04 August 1998)
7.	Dr. S.S. Jahageerdar Scientist	CAS Training Programme on Advances in Statistical Genetics & Biostatistics. IASRI, New Delhi (31 July to 14 August 1998)
8.	Mr. D.L. Sawant Technical Officer	Training Programme on Videography. NAARM, Hyderabad (29 August to 13 September 1998)
9.	Dr. M. Ali Technical Officer	Training Programme on Mass/Commercial Production of Microalgae. IARI, New Delhi (14 to 19 September 1998)
10.	Ms. Asha T. Landge Technical Officer	Advanced Course on Training of Trainers. NAARM, Hyderabad (15 to 26 September 1998)
11.	Mr. A.K. Reddy Technical Officer	Short Term Training Programme on Aquaculture & Fisheries Engineering. IIT, Kharagpur (23 to 26 November 1998)
12.	Mr. M. H. Chandrakant Engineer	Training Programme on Port and Harbour Engineering. Ocean Centre, IIT, Chennai (05 to 12 December 1998)
13.	Ms. Rajani Pagare Technician	Short Term Training Programme on Basic & Prospective Applications of ARIS Hardware and Linux Operating System. GAU, Anand (07 to 12 December 1998)
14.	Mr. P. Shrinivasa Rao Technician	CAS Training on Advanced Techniques in Fish Immunology. CIFE, Mumbai (03 to 17 March 1999)
15.	Mr. V.N. Acharyulu Technician	CAS Training on Essentials of EIA Studies related to Aquaculture Projects. CIFE, Mumbai (17 to 31 March 1999)
16.	Dr. Sanjay Jadhav Scientist	CAS Training on Advanced Techniques in Tissue Culture. NDRI, Karnal (23 March to 09 April 1999)

12.2.2 Participation of faculty in training programmes abroad



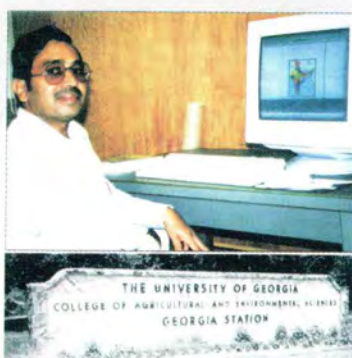
Dr. K. Pani Prasad
Scientist

Advanced Techniques in Disease Diagnosis
Dept. Of Microbiology,
University of Hawaii, USA
11 July to 10 October 1998



Dr. Kiran Dube
Senior Scientist

Water Quality & Aquaculture
Management
Dept. of Fisheries & Allied
Aquaculture,
Auburn University,
Alabama, USA
22 March to 22 June 1998



Dr. R.S. Biradar
Principal Scientist

Geographical Information System
University of Georgia, USA
17 May to 16 August 1998



Mr. R.D. Tandel
Technical Officer

Responsible Fishing Technology
Training Department
South-East Asian Fisheries
Development Center
Bangkok, Thailand
18 August - 16 December 1998



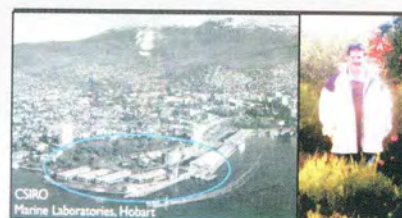
Mr.K. Venkateshvaran
Scientist (SS)

Marine Biotoxinology
Univesidad Nacionala Autonoma de
Mexico (UNAM)
Juriquilla, Mexico
13 February to 13 May 1999



Dr. K.K. Jain
Senior Scientist

Fish Feed Formulation
Auburn University,
Alabama, USA
06 June to 11 September 1998



Dr. W.S. Lakra
Principal Scientist

Molecular Genetics
CSRIO, Marine Research,
Hobart,
Tasmania, Australia
17 February to 16 May 1999

13. Workshops, Seminars, Summer Institutes, Meetings, etc. organized

13.1 National Colloquium on Predictive Modeling for Marine Fisheries

A colloquium on "Predictive Modeling for Marine Fisheries" was organised at CIFE, Mumbai, during 5-6 May 1998 in collaboration with the Fisheries Survey of India and the Department of Ocean Development. The colloquium reviewed the present status of predictive modeling in marine fisheries and proposed possible approach to fishery forecasting and identified the future needs. The colloquium also made certain recommendations for research on predictive modeling in marine fisheries in India. The colloquium was attended by eminent fisheries luminaries namely, Dr. E.G. Silas, Retired Vice-Chancellor, Kerala Agricultural University, Trissur; Dr. R.N. Singh, Scientist in-charge, Centre for Mathematical Modeling and Computer Simulation, Bangalore; Dr. V. N. Sanjeevan, Senior Scientific Officer, Department of Ocean Development, Kochi base; Prof. R. Sambasiva Rao, School of Chemistry, Andhra University, Visakhapatnam; Dr. Prajneshu, Head, Indian Agricultural Statistical Research Institute, New Delhi; Dr. M. Srinath, Senior Scientist, Central Marine Fisheries Research Institute, Cochin; Dr. D.Sudarshan, Professor, Andhra University, Visakhapatnam; Dr. N.R. Menon, Director, Cochin University of Science and Technology, Kochi, and several others. Dr. S.A.H. Abidi, Director, and Dr. R .S. Biradar, Principal Scientist, CIFE, Mumbai, were the Conveners for this colloquium.



13.2 Workshop on Ovatide - A New Hormonal Formulation for Induced Fish Breeding

A one-day workshop was held on 22 July 1998 at Bhimavaram in Andhra Pradesh to discuss the results of the trials taken with the new hormonal preparation "OVATIDE" for induced fish breeding by local carp hatchery operators as also elsewhere in the country. The workshop was jointly organised by CIFE, Mumbai and M/s. Hemmo Pharma, Mumbai. Dr. N. K. Thakur, Joint Director and Mr. A. K. Reddy, Technical Officer, CIFE, Mumbai took lead in organizing this workshop.



13.3 Workshop on Hindi Computer Training

A workshop on Hindi Computer Training was organised from 15 - 20 Jun 1998 for the benefit of staff members. A total of 25 staff members attended the programme, out of which one participant was from the Mumbai Regional Centre of CMFRI. The participants were trained in using Winky Hindi Software, MS DOS, Windows, Excel and Power Point. On the concluding day, Dr.S.A.H. Abidi, Director, distributed the certificates to the participants.



13.4 Summer School on Recent Developments in Biotechnology Applications to Aquaculture and Fisheries

A summer school on Recent Developments in Biotechnology Tools in Aquaculture and Fisheries was organized by the Institute from 14 July to 03 August 1998 as a part of the Golden Jubilee Celebrations of India's Independence. This programme was sponsored by the Education Division of the ICAR and it aimed at updating the knowledge of academicians and R & D personnel in the area of biotechnology with special reference to its applications in fisheries and aquaculture.

The inaugural function of this was held on 14 July 1998 in which Dr. C.R. Bhatia, Ex-Secretary, Department of Biotechnology, Government of India, was the Chief Guest. Dr. Bhatia in his keynote address, highlighted the recent developments in biotechnology, and the associated social, environmental, ethical and legal issues.

The curriculum of this summer school was packed with a series of lectures and practicals on the topics such as reproductive biotechnology, chromosome and sex manipulation, transgenesis, cryopreservation, biotechnological techniques in disease diagnosis, environmental biotechnology, biotechnological applications for wastewater aquaculture, DNA fingerprinting, cell and tissue culture, marine toxins and bioactive compounds, post-harvest technology, etc. besides demonstrations and field visits. The faculty for the course consisted of internal faculty of the Institute as well as guest faculty drawn from reputed organizations/laboratories like Bhabha Atomic Research Centre, Mumbai; Tata Institute of Fundamental Research, Mumbai; Cancer Research Institute, Mumbai; Biotechnology Resource Centre, Mumbai; Defense Research and Development Organization, Mumbai; National Centre for Cell Science, Pune; Centre for Cellular and Molecular Biology, Hyderabad; National Institute of Oceanography, Goa; Department of Biotechnology, New Delhi; and Jawaharlal Nehru University, New Delhi.

A total of 27 candidates representing state agricultural universities, ICAR institutes, conventional universities and other national laboratories participated in this summer school.

The programme concluded with a formal valedictory function held on 03 August 1998 which was graced by Dr. P. N. Mukherjee, Director, Tata Institute of Social Sciences, Mumbai, and Dr. (Ms.) Rupa B. Shah, Principal, Mithibai College of Arts & Chauhan Institute of Science, Mumbai, as the Chief Guest and Guest of Honour, respectively.



13.5 Meetings organised

S.No.	Details of Meeting	Date
1.	Board of Examiners Meeting	24 & 25 April 1998
2.	Meeting for finalization of syllabi and other modalities for offering the proposed new M. F. Sc. Courses on Freshwater Aquaculture and Post Harvest Technology	15 May 1998
3.	32 nd Meeting of Official Language Committee	15 May 1998
4.	Board of Examiners Meeting	25 27 June 1998
5.	Meeting with the World Bank Team	19 August 1998
6.	Board of Examiners Meeting	25 August 1998
7.	33 rd Meeting of Official Language Committee	04 September 1998
8.	Meeting of the ICAR Review Team to assess IX Plan requirements for CIFE, Mumbai under One-time Catch-up Grant of Education Division of ICAR	03 October 1998
9.	Meeting with CPWD officials regarding proposed construction of new ladies hostel and international trainees hostel	17 October 1998
10.	Board of Examiners Meeting	05 & 06 November 1998
11.	Academic Council Meeting	07 November 1998
12.	Board of Examiners Meeting	02 - 04 January 1999
13.	Special Meeting of Academic Council	29 January 1999
14.	34 th Meeting of Official Language Committee	24 February 1999
15.	Staff Research Council Meeting	05 March 1999



14. Distinguished visitors



Dr. S. Varadarajan,
President,
Indian National Science Academy,
New Delhi
04 April 1998

I am delighted to have had an opportunity to visit the Institute and meet the Director and Faculty and learn of the new developments. Further with freshwater, marine and saline water systems are a huge resource yet to be fully understood in all aspects of reproduction, growth nutrition, genetics and to be fully utilised for food special powerful agents and as ornaments. My congratulations to Dr. Abidi for his new initiatives and vision for the Institute to constitute to natural development and wealth and his colleagues & staff for their enthusiastic involvement. My very best wishes for all success for the unique endeavour.



Dr. M. Rahman,
Vice-Chancellor,
Aligarh Muslim University,
Aligarh
02 June 1998

It was a real delight to see this Central Institute of Fisheries and Education engaged in research and extension. Under the dynamic leadership of Dr. Abidi and his band of illustrious scholars are covering new grounds and I have felt better informed after talking to them.

Dr. Vidyut Joshi,
Vice-Chancellor,
Bhavnagar University,
Bhavnagar
03 July 1998

Enjoyed being in CIFE. As non-fish eating and a non-specialist, was enthused by the environment and especially the dynamism of the Vice-Chancellor. Especially when thrust is shifting to marine resources, this institute has a pivotal role.

Dr. K. Pradhan,
Vice-Chancellor,
Rajasthan Agricultural University,
Bikaner
09 July 1998

Whenever I visit, I find a change in the progress of the Institute, always for the better. This is because of the interest and involvement of the present Director Dr. Abidi. I compliment him for this and look forward to see more & more in all aspects of the Institute's development during his tenure as the Director.



Dr. Ebrahim Hajizadeh,
Science & Education Section,
Embassy of Iran,
New Delhi.
09 July 1998

It was my pleasure to visit this very excellent centre, especially with the high knowledge and management of Dr. Abidi and the quality of his faculty members. I should again thank for their warm welcome.

Dr. M. Siddighi,
Director General of Scholarship
Department of Culture &
Higher Education,
Islamic Republic of Iran.
10 July 1998

I should express my sincere thanks and best regards to the centre's director for providing a suitable visit from the centre. I am sure that with high potential of the centre, we can have a good relation in the future in all fields of research cooperation. Again, please accept my congratulations to the scientific and other staff members for their high experience and hard work.



Mr. Handy M. Eisa,
AHRDP,
World Bank,
New York, USA
18 August 1998

The team visited the CIFE and were impressed by the staff quality and their readiness to advance fisheries technologies. Keep up the good work.

Mr. A. Venkataraman,
Consultant to World Bank,
New Delhi.
18 August 1998

Excellent work, my compliments.

Dr. D.S. Padda,
World Bank Consultant,
715 Walker Road,
Greent Falls, VA,
U.S.A.
18 August 1998

This is my second visit to this Institute. Every time I have enjoyed. This is a great institution doing excellent work. Best Wishes to CIFE Director and faculty Congratulations and best of luck.



Dr. S.N. Dwivedi,
Director General,
M.P. Council of Science & Technology,
Bhopal
26 September 1998

The Institute is being transformed into a world class research & education centre with contemporary facilities. This will enable the institute to serve the nation to become a centre of excellence and help the country to improve production, meet nutritional needs and to generate export. I wish Dr. Abidi all good wishes in achieving this challenging task so that this becomes a guideline for future generations.

Dr. J.C. Katyal,
Director,
NAARM,
Hyderabad
30 September 1998

The Institute is taking up new shape from something 'outdated monument' to modern laboratory and office. Director, Dr. Abidi, is a pleasant and performing leader. Best of wishes for future.

Dr. C.R. Bhatia,
Ex-Secretary,
Department of Biotechnology,
17, Rohini, Sector 9-A,
Vashi, Navi Mumbai
14 July 1998

It was a great pleasure to visit CIFE again and see the changes that have taken place and are underway. My best wishes to all the staff and students.

Dr. S.L. Mehta,
DDG (Education),
ICAR,
New Delhi.
10 October 1998.



It is always a delightful experience to visit CIFE. I am impressed with the pace of development in CIFE. Publications coming out have a stamp of quality. Under Dr. Abidi leadership I have seen institute grow from strength to strength. It is providing leadership in Fisheries Education in the country. I wish Director, CIFE and staff a grand success. I am confident that under the dynamic leadership of Dr. Abidi Institute will be one of the best in the world.

Dr. A.M. Michael,
Rtd. Director, IARI &
Rtd. Vice-Chancellor,
Kerala Agricultural University
10 October 1998

It was pleasure visiting the CIFE after a gap of over four years and see the excellent developments that have taken place during the period. The Institute has been coming out with major developments encompassing all areas of its mandate, manpower development in fisheries science and technology. I could see the foundation for a major breakthrough in the near future.

Dr. D.V. Bal,
Founder Director of
CIFE, Mumbai
20 October 1998

My dream and vision was to have a fisheries Institution or University in Mumbai, and it has wonderfully come true, I am proud of its performance under the leadership of Vice-Chancellor, Dr. Abidi.



H. E. Mr. Satya N. Nandan,
Secretary General,
International Seabed Authority,
Kingston,
Jamaica
November 1998

I am very impressed by the excellent scientific work that is being done at the CIFE University. In particular, the work being done in applied science and research is a contribution to fisheries management and development, including aquaculture is outstanding and a pleasant surprise to me. Your extension work will benefit the fisherman and foster responsible fishing practices for which all should be very grateful. I wish you continued success and a longer leadership of the Institute.

I was very happy to have had this opportunity to visit CIFE and personally witness the enormous transformation this time and unique academic institution is in the process of going through under the leadership of Dr. S. A. H. Abidi. I wish him and his distinguished colleagues every success in their magnificent endeavours.

Dr. P. Rama Rao, FNA
Ex-Chairman,
Atomic Energy Regulatory Board,
Government of India,
Mumbai.
02 December 1998

Dr. N.L. Mourya,
ADG (Accreditation),
ICAR, KAS,
Pusa, New Delhi
25 March 1999

Visited CIFE along with Dr. D.S. Padda. The Institute has very good lab facilities with enthusiastic scientists and a very good dynamic leader in Dr. Abidi. We went around various labs and saw very useful and advanced work being done in different areas of fisheries.

15. Other activities

- 15.1 Infrastructural Development
- 15.2 Library Services
- 15.3 Documentation Services
- 15.4 Official Language Implementation
- 15.5 Students Welfare Activities
- 15.6 Staff Welfare Activities

15.1 Infrastructural development

15.1.1 New university campus :

At the 6.6 ha site meant for the development of the new university campus of CIFE, boundary wall has been constructed on two sides and the roads have been laid out. The site is now ready for the actual construction works.

15.1.2 New/Renovated laboratories/units :

Aquafeed Laboratory : This laboratory was inaugurated by Dr. S. L. Mehta, DDG (Edn.), ICAR, on 15 May 1998 in the presence of Dr. K. Gopakumar, DDG (Fisheries); Dr. S. A. H. Abidi, Director and Dr. N. K. Thakur, Joint Director, CIFE and Dr. S. Ayyappan and Dr. K. Ravindran, Directors of CIFA and CIFT, respectively. This laboratory is well equipped with the sophisticated equipment like Twin Screw Extruder, Fibretech System, UV-VIS Spectrophotometer and Soxtech System alongwith facilities for enzymatic and microbiological studies on fish nutrition, digestive physiology, feed development, etc.

Algal Culture Laboratory : This newly built laboratory was inaugurated by Dr. S. L. Mehta, DDG (Edn.), ICAR, on 03 October 1998 in the presence of the members of the ICAR Review Team, Dr. K. K. Iya, Ex-Director, NDRI, Karnal; Dr. A. M. Michael, Ex-Vice Chancellor, Kerala Agricultural University & Ex-Director, IARI besides Dr. M. Devaraj, Director, CMFRI. This laboratory is replete with all the facilities necessary for the culture of freshwater algae, sea weed culture, algal tissue culture, etc.

Quality Control Laboratory : This renovated laboratory was inaugurated by Padmabhushan Dr. R. S. Paroda, Secretary, DARE & DG, ICAR, New Delhi, on 29 January 1999. It is well equipped with sophisticated instrument and facilities for monitoring of the quality of processed fish.

Digital Imaging Centre : This newly created facility was inaugurated by Padmabhushan Dr. R. S. Paroda, Secretary, DARE & DG, ICAR, New Delhi, on 29 January 1999. It is created with the objective of providing requisite facilities for developing multimedia presentations, designing of the computerised art work for Institute's publications, CD-authoring, etc.





15.1.3 Renovation works:

Important renovation works undertaken during the year included the Auditorium, Joint Director's Chamber, Faculty Members Chambers, Lecture Hall and Staff Quarters at the headquarters besides routine repair and renovations of farm/ponds and laboratories at centres.

15.2 Library Services:

The CIFE library with its moderate infrastructure continued to provide information services to the students and faculty members. The activities of collection, processing and dissemination of scientific and technical information on fisheries and allied subjects were actively pursued. During the reported period, a total of about 1,000 new entries were added to the library collection. On the computerised info-retrieval system, about 15,000 references were downloaded and another 1,125 pages were printed out. Around 550 outsiders consulted the CIFE library during the year.

15.3 Documentation services:

The Documentation Section rendered active support services, especially towards external reporting of the Institute's progress. The different reports/documents like monthly reports, quarterly reports, status reports/action taken reports on the recommendations of the ICAR Regional Committees, the IX Plan EFC Document, Report for the ICAR Review Team, News Items for the ICAR Reporter/News were compiled and edited by the section. Besides bringing out the print version of the Institute's Annual Report (1997-89), the section made a successful effort to bring out a trial CD version of the same. The section also lent assistance in coordinating the printing of other occasional publications of the Institute.

15.4 Official Language Implementation:

The bygone year witnessed noteworthy progress in the implementation of official language in all the activities of the Institute. In recognition of the significant strides made in the use of Hindi, CIFE was deservingly chosen for the award of the Chal Rajbhasha Shield and Ashirwad Rajbhasha Samman by a Mumbai-based social organization, ASHIRWAD. The year also marked the extension of the Hindi Day Celebration to Hindi Pakhwada (fortnight), which was observed from 14 to 26 September 1998. Renowned Music Director and Gazal Singer, Shri Shekhar Sen and Dr. S. N. Dwivedi, Ex-Director of CIFE, were the Chief Guests on the inaugural and closing ceremonies of Hindi Pakhwada, respectively Student seminar, debate and essay competitions, cultural programmes, etc. organised with active involvement of staff and students of the Institute, were the major highlights of the Hindi Pakhwada. A Hindi Computer Workshop and a Hindi Stenography Training were organised for the staff to promote use of Hindi in all the official works. Like the previous years, several useful and attractive Hindi publications were brought out during this year as well.





15.5 Students Welfare Activities:

In an effort to promote overall personality development of students, a series of literary, sports and cultural activities were conducted round the year. The Swagat and Tika Samarohs, unique to CIFE, were arranged on 28 August and 04 September 1998, respectively to welcome the freshers and bid farewell to the outgoing students. The Teacher's Day was observed on 05 September 1998 in the form of a special function in which the students and faculty members offered rich tributes to the Icon of the Teaching Community, Late Dr. Sarvapalli Radhakrishnan, besides expressing their views on the role of teacher in nation building. The students specially put up a poster exhibition on this occasion.

15.6 Staff Welfare Activities



The Annual Day function of CIFE Mahila Club was held on 12 December 1998. Hon'ble Member of Parliament and Noted Cine Personality, Shri Raj Babbar, was the Chief Guest on this occasion while Shri Sunil Kalia, Area Manager, Centaur Group of Hotels, Mumbai, was the Guest of Honour. Shri Raj Babbar in his speech lauded the multifarious activities of CIFE Mahila Club besides releasing Matsya Nayani, the first-ever magazine of this club. Shri Babbar also honoured the winners of various competitions held round the year under the aegis of the Mahila and Children's Clubs of CIFE. A colourful cultural programme organised by the Mahila Club was the highlight of this function.

16. Personalia



Central Institute of Fisheries Education
(Deemed University, ICAR)

Seven Bungalows, Versova,
Mumbai 400 061

Maharashtra

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Fax: 022-636 1573 & 022-634 8223

e-Mail: cife@400.nicgw.nic.in & fishinst@bom3.vsnl.net.in

16.1 List of staff* (as on 31 March
1999)

CIFE Headquarters, Mumbai

Director
Dr. S.A.H. Abidi

Principal Scientists (Professors)

Dr. M.P. Singh Kohli
Dr. A.D. Diwan
Dr. R.C. Das
Dr. R.S. Biradar
Dr. R. Sathiadhas
Dr. C.S. Purushothaman
Dr. S.D. Singh
Dr. W.S. Lakra

Senior Scientists/Scientists-SS

(Associate Professors)

Dr. Subrata Basu
Dr. (Ms.) Ratna Tewari
Dr. K.K. Jain
Dr. S.K. Chakravarty
Dr. (Ms.) Kiran Dube
Dr. M.B. Iftekhhar
Dr. (Ms.) Latha Shenoy
Dr. S.N. Ojha
Dr. K.V. Rajendran
Dr. A.K. Pal
Mr. K. Venkateshvaran
Mr. S. Raizada
Mr. Atul Kumar Jain
Dr. Gopal Krishna Saxena (on study
leave)
Dr. Bharat S. Sontakki

Scientists (Assistant Professors)

Dr. (Ms.) Aparna Chaudhari
Mr. P.K. Pandey (on study leave)
Dr. N.P. Sahu
Dr. K. Pani Prasad
Mr. S.K. Patil
Dr. S. Jahageerdar
Dr. B.B. Nayak

Dr. M.B. Patel
Dr. Sanjay Jadhav
Dr. Samadhan Jadhav

Technical Officers
T - 8
Mr. S.K. Pal
Mr. Nandlal Singh

T - 7
Mr. A.K. Reddy

T - 6
Mr. S. Natarajan
Mr. R.K. Langer
Dr. Chandra Prakash
Mr. A.K. Padmanabhan
Mr. A.R. Warange

T - 5
Mr. Ashok Kumar Jaiswar
Mr. R.S. Rana
Mr. Alkesh Dwivedi
Mr. Prem Prakash Srivastava
Mr. A.D. Ragabhagat
Mr. R.D. Tandel
Mr. S.K. Pandey
Ms. Ujwala Gadre
Mr. S.G.S. Zaidi
Mr. G.K. Rao
Mr. M.H. Chandrakant
Mr. D.L. Sawant
Ms. Rama Sharma
Mr. Deepak Khogre
Mr. Dasari Bhoomaiah

Mr. K.P. Khalsa
Mr. M.K. Chouksey
Mr. Satish Kamat

Technicians

T - 4
Mr. J.P. Patil
Mr. R.H. Rajguru
Ms. Aravindra Mehta

Ms. Krishnan Thilgavati
Mr. Palaniswamy
Ms. Nalini Poojari
Mr. K.P. Shetty
Mr. P.K. Das
Mr. A.B. Birade
Ms. Madhavi Pikle

T - II - 3
Ms. Rajani Pagare
Mr. S.M. Shinde
Ms. S.P. Nalawade
Mr. A. Sadanand
Mr. Chandrakant Kareer
Mr. P.B. Sonawane
Mr. J.M. Koli
Ms. S.S. Gajbhiye
Mr. B.G. Mandhare
Ms. Revati Dhongde
Ms. Rekha Nair
Ms. S.M. Bagwe

T - I - 3
Mr. R.G. Kudale
Mr. Bhagat Singh Rawat

T - 2
Mr. N.K. Aglave
Ms. B.S. Ghagre
Mr. Avinash Sable
Mr. S.V. Patil
Mr. B.J. Rathod
Mr. S.L. Koli
Mr. B.T. Phande
Mr. Baburam Jaiswar
Mr. R.S. Pardhi (Rane)

T - 1
Mr. Sanjeev Bandkar
Mr. S.R. Vinarkar
Mr. A. Kokane
Mr. Arun P. Puri (Gosavi)
Mr. A. D. Deshmukh
Mr. Sikander Sheikh
Mr. Dhanpat Singh

Administration & Finance

Senior Administrative Officer
Mr. Ravi Kumar

Finance & Accounts Officer
Mr. S.K. Pathak

Administrative Officer
Mr. M.K. Pachauri

Assistant Director (Official
Language)
Mr. R.P. Uniyal

Assistant Administrative Officers
Ms. Kamala B. Menon
Mr. K. Mahmood
Mr. P. B. Tandav
Mr. R. L. Mohite
Mr. Sunil Kumar

Senior Personal Assistant (Director's
Secretariat)
Ms. M. Abraham

Senior Stenographer (Director's
Secretariat)
Ms. T. Kuruvilla

Stenographer (Director's Secretariat)
Mr. G.S. Fernandes

Assistants
Mr. S.S. Kocharekar
Mr. T.D. Kumar
Ms. S.S. Parab
Ms. Valsa Pavitrar
Mr. Y.P. Belgaonkar
Mr. B.L. Kokkula

Senior Clerks
Ms. S.R. Wadhavkar
Ms. S.V. Kadam
Ms. N.Y. Raorane
Ms. Sushma Singh
Ms. A.V. Shukla
Ms. D.S. Naik
Mr. J.D. Chandramore
Ms. F. Fernandes
Ms. Deepika Behl
Ms. Chandrarekha S. Khundol
Mr. R.R. Shah
Mr. D.S. Ingle
Mr. R.R. Kadam
Mr. R.G. Gamare

Junior Stenographer
Ms. S. R. Arutla
Mr. P.R. Ninawe

Junior Clerks
Ms. Swati Koli
Mr. Vijay Kuveskar
Ms. Sujata Pawar
Ms. Anagha Joshi
Mr. Devendra Raorane
Ms. Yashoda S. Dhataavkar
Mr. A.G. Kolambkar
Mr. Bharat Kumar Chauhan
Ms. Sanyuja S. Parab
Mr. Pradeep Angane
Ms. Chaitali Raut
Ms. Pragati Pawaskar
Ms. Anu Grover
Ms. Vijaya Laxmi
Mr. K.K. Jagtap
Mr. S.H. Bhosle

Supporting Staff

Grade IV
Mr. Shantaram D. Jadhav
Mr. S.L. Garate
Mr. Haridas Sukhan
Mr. A.N. Mahadik

Grade III
Mr. B.K. Raut
Mr. K.D. Solanki
Mr. P.B. Jadhav
Mr. Indersingh
Mr. S.M. Supat
Ms. Nalini A. Sawant
Ms. V.D. Misale
Mr. Madhu Wasnik

Grade II
Mr. I.R. Solanki
Mr. R.G. Desai
Mr. S.V. Gawade
Mr. Vinod P. Tiwari
Mr. Surajbali R. Jaiswar
Mr. B.S. Tamankar
Mr. Ashok R. More
Mr. Shivaji Shelke

Mr. D.B. Gaikwad
Mr. V.K. Bhawe
Ms. Vandana Tambe

Mr. M.B. Waghela

Ms. K.R. Ahire

Grade I

Mr. T.G. Gaikwad
Mr. J.K. Makwana
Mr. Ankush R. Dore
Mr. Bandu R. Chavan
Mr. M.P. Kotian
Mr. G. Kamble
Mr. Ashok R. Shingade
Mr. Jagdish Namdev Dhanu
Mr. Nandu L. Ghane
Mr. Vasant N. Ondkar
Mrs. Shantabai Kamble
Mr. S.P. Malvankar
Mrs. R. H. Chavan

Vessel Staff

Engineer F.T.V. (T-8)
Mr. Josey Jacob

Mate (T-5)
Mr. K. Satyanarayana

Engine Driver (T-5)
Mr. S.K. Chodankar

Additional Engine Driver (T-4)
Mr. S.L. Kotian

Engine Driver (T-2)
Mr. K.A. Manchekar

Bosun (Uncertified)
Mr. N.M. Zhenekar

Dekhand (T-1)
Mr. K.A. Shirogaonkar
Mr. K.V. Rajendran
Mr. J.N. Kolamkar
Mr. S.L. Mungekar
Mr. A.P. Dhawde
Mr. V.B. Khandalgaonkar

Cook
Mr. Kamaraju

Supporting Staff
Mr. B.N. Sukur (Gr. IV)
Mr. U.A. Mullaji (Gr. IV)
Mr. M.B. Bhokse (Gr. IV)
Mr. Ayubkhan Bijali (Gr. IV)
Mr. G.G. Zendeckar (Gr. II)
Mr. Vishnu Patil (Gr. II)
Mr. Sitaram Padyal (Gr. II)
Mr. Arvind Lavande (Gr. I)



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Scientists
 Mr. B.N. Tiwari
 Mr. S. Kannappan (on study leave)
 Ms. Shobha Sondhia
 Dr. Parimal Sardar

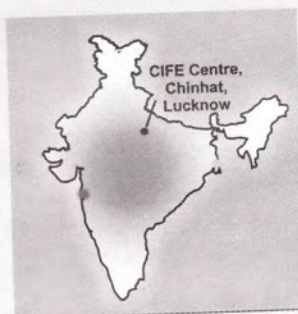
Technical Officers (T - 5)
 Mr. C. Thankappan
 Mr. Rakesh Kumar
 Mr. P.S. Pandey

Technicians
 Mr. R.K. Biswas (T-4)
 Mr. A.K. Mondal (T-4)
 Mr. R.K. Mondal, Serang (T-2)
 Mr. P.K. Patra (T-2)
 Mr. S.K. Das, Engine Driver (T-2)
 Mr. T.K. Ghosh, Driver (T-1)

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 Ms. Kaberi Biswas, Jr. Stenographer

Mrs. G. Prameela, Sr. Clerk
 Mr. P.K. De, Jr. Clerk
 Mr. C.N. Sahani, Jr. Clerk

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 Mr. G.C. Saha, Jr. Deckhand, Gr.(IV)
 Mr. B. Dhar, Masalchi, Gr. (IV)
 Mr. B.L. Mahato, Cook, Gr.(III)
 Mr. B.D. Mondal, Gr. (III)
 Mr. T.C. Balmiki, Gr. (III)
 Mr. Manju Paul, Gr. (III)
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 Dr. C.S. Chaturvedi, T-5
 Dr. (Ms.) Zeba Jaffar, T-5
 Mr. S.P. Singh, T-5
 Mr. A.K. Yadav, T-5

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 Mr. S.K. Upadhyay, T-II-3
 Mr. Mohmood Gayas, T-2
 Mr. Baboolal, T-2

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 Mr. Jogendra Singh, Assistant
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 Mr. P.C. Verma, Jr. Clerk

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 Mr. K. Dush Raj, Gr. (II)

Mr. Ram Bharose, Gr. (I)
 Mr. Suneet Kumar, Gr. (I)
 Mr. Ram Lakhani, Gr. (I)
 Mr. Anwar, Gr. (I)
 Mr. Sajivan Lal, Gr. (I)
 Mr. J.N. Tiwari, Gr. (I)
 Mr. Mahesh Chand, Gr. (I)
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 Mr. Vinod Kumar, (Cook)Gr. (I)



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 Mr. R.K. Upadhyay, (T-5)

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 Mr. Gurbachan Singh, (T-4)
 Mr. Anup Singh, (T-1)

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 Ms. Asha Dhurve, Assistant

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 Mr. Lallu Prasad, Gr.(II)
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 Mr. Mangli Prasad, Gr. (I)
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 Mr. Santosh Kumar Sharma
 Mr. P. Rami Reddy

Technicians
 Mr. Sreenivasa Rao, T-4
 Mr. V.N. Acharyulu, T-4

Mr. C.K. Sajeev, T-4
 Mr. K. Murali Mohan, T-4
 Mr. J. Krishna Prasad, T-II-3
 Mr. K. Radhakrishna Reddy, T-II-3
 Mr. B. Krishna Rao, T-II-3
 Mr. Ravishankar Patnaik, T-II-3

Mr. V. Abbai, T-II-3
 Mr. V. Das, T-2
 Mr. Shankar Lal, T-2
 Mr. K. Rangiah, T-2
 Mr. T.P. Krishna Rao, T-2
 Mr. S.S. Murthy, T-2
 Mr. Y.S. Murthy, T-2
 Mr. J. Satyanarayana, T-I-3
 Mr. B. Satyanarayana, T-1
 Mr. M. Satyanarayana, T-1
 Mr. P. Eshwar Rao, T-1

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 Mr. T. Padmavathy, Assistant
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 Mrs. M. Rama Mani, Jr. Clerk

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 Mr. Sukhbeer, Gr. (III)
 Mr. M. Harichandra Reddy, Gr. (III)
 Mr. M. Krishna, Gr. (III)
 Mr. Sivaram Kale, Gr. (III)

Mr. M. Gandhi Prasad, Gr. (I)
 Mr. M. Ch. Appa Rao, Gr. (I)
 Mr. K. Malliah, Gr. (II)
 Mr. K. Satyanarayana, Gr. (I)
 Mr. Shaikh Nana Saheb, Gr. (I)
 Mr. K. Niranjana, Gr. (II)
 Mr. N. Venkata Ramana, Gr. (I)
 Mr. K. Prasad, Gr. (I)
 Mr. V. Shivaji, Gr. (I)
 Mr. O. Veeraraju, Gr. (I)
 Mr. K. Dharma Raju, Gr. (I)
 Mr. P. Brahmaananda Rao
 Mr. T. Satyanarayana, Gr. (I)
 Mr. P. Venkata K. Reddy, Gr. (I)
 Mr. P. Dora Reddy, Gr. (I)
 Mr. Shaikh Valisha, Gr. (I)
 Mr. A. Lakshman Reddy,
 Mr. S. Subba Reddy, Gr. (I)
 Mr. Y. Batchilingam, Gr. (I)
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Mr. N. K. Chaddha

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Administrative Staff
Mr. V.K. Sinha, Jr. Clerk
(on deputation)

Supporting Staff
Mr. Gyani Ram, Gr. (I)
Mr. Gyan Chand, Gr. (I)
Mr. V.K. Tiwari, Gr. (I)

16.2 Major Personnel Changes

16.2.1 New Appointments

S. No.	Name	Appointed as	Date of Joining
1.	Dr. R.S. Biradar	Principal Scientist	12-05-1998
2.	Dr. R. Sathiadhas	Principal Scientist	12-06-1998
3.	Dr. C.S. Purushothaman	Principal Scientist	03-08-1998
4.	Dr. S.D. Singh	Principal Scientist	31-08-1998
5.	Dr. W.S. Lakra	Principal Scientist	18-01-1999
6.	Dr. (Ms.) Archana Sinha	Senior Scientist	29-06-1998
7.	Dr. K.V. Rajendran	Senior Scientist	03-08-1998
8.	Dr. A.K. Pal	Senior Scientist	01-01-1999
9.	Dr. Samadhan Jadhav	Scientist	28-05-1998

16.2.2

Promotions/Assessments

S.No.	Name	Designation	Date	Place of Posting
1.	Dr. G. Venugopal	Senior Scientist	01-01-96	CIFE Centre, Rohtak
2.	Dr. M.B. Iftekhhar	Senior Scientist	06-03-97	CIFE, Mumbai
3.	Dr.(Mrs.) Latha Shenoy	Senior Scientist	06-01-98	CIFE, Mumbai
4.	Mr. A.K. Sharma	Scientist (SS)	01-07-91	CIFE Centre, Lucknow
5.	Dr Bharat S. Sontakki	Scientist (SS)	11-06-96	CIFE, Mumbai

16.2.3 Transfers

S. No.	Name & Designation	Transferred	
		From	To
1.	Dr. J.P. George, Senior Scientist	CIFE, Mumbai	CMFRI, Kochi
2.	Dr. S.K. Chakravarty, Sr. Scientist	CMFRI, Kochi	CIFE, Mumbai
3.	Dr. Randhir Singh, Scientist	CIFE, Mumbai	CSSRI, Karnal
4.	Dr. U.S. Pati, Scientist	CIFE, Mumbai	IVRI, Izatnagar

16.2.4 Retirements

S. No.	Name & Designation	Retired on
1.	Dr. Kuldip Singh, Principal Scientist & OIC, CIFE Centre, Calcutta	31-07-1998
2.	Ms. Sushma Rajee, Assistant	31-01-1999

संक्षिप्त प्रतिवेदन

केन्द्रीय मत्स्य शिक्षा संस्थान देश का पहला एवं एक मात्र समतुल्य विश्वविद्यालय है। इसकी स्थापना 6 जून 1961 मुंबई में भारत सरकार के संस्थान के रूप में मात्स्यिकी के क्षेत्र में कार्यरत लोगों को प्रशिक्षित करने के लिए किया गया था। यह संस्थान 1 अप्रैल 1974 को भा.कृ.अनु.प. के प्रशासनिक नियंत्रण में आया। इसे 29 मार्च 1989 को समतुल्य विश्वविद्यालय का स्तर प्राप्त हुआ। गत वर्ष में संस्थान की महत्वपूर्ण उपलब्धियों व विविध कार्यक्रमों का संक्षिप्त विवरण इस प्रकार है।

संस्थान का चौथा दीक्षान्त समारोह 29 जनवरी 1999 को मनाया गया। इस अवसर पर पद्मभूषण डा. आर. एस. परोदा, सचिव, डेयर, महानिदेशक भा.कृ.अनु.प. मुख्य अतिथि रहे। अपने दीक्षान्त समारोह में छात्रों को संबोधित करने के साथ-साथ छात्रों को उपाधि तथा केन्द्रीय मत्स्य शिक्षा संस्थान स्वर्ण पदक व डा. सी. वी. कुलकर्णी पदक आदि से सम्मानित किया गया। इस अवसर पर कुल 149 सफल प्रशिक्षणार्थियों को डिग्री प्रदान की गई जिसमें 55 ने स्वयं यह डिग्री प्राप्त की।

केन्द्रीय समुद्रीय मत्स्य अनुसंधान संस्थान कोचीन, केन्द्रीय मीठा पानी जलसंवर्धन संस्थान, भुवनेश्वर तथा केन्द्रीय मत्स्य प्रौद्योगिकी संस्थान, कोचीन ने भी अच्छी प्रगति की है। इस शैक्षणिक वर्ष में छात्रों की कुल संख्या 210 क्रमशः है। शैक्षणिक कार्यक्रम में अतिथि / विशेष व्याख्यान, अध्ययन दौरा, सेमिनार आदि चलाया गया।

इस साल सेंटर आफ अडवांस स्टडिस इन फिशरीस साइन्स के अंतर्गत 4 कार्यक्रम आयोजित किए गए जिसमें कुल 60 प्रशिक्षणार्थियों ने भाग लिया।

इस साल अनुसंधान के क्षेत्र में एक महत्वपूर्ण उपलब्धि हासिल की गई। ओवाटाइड एक नया हारमोन तैयार किया गया। मत्स्य प्रजनन उत्पादन में इसका प्रयोग किया जा रहा है। केज वातावरण में पीनीयड डींगी की परिपक्वता पर अध्ययन आदि किया गया। संस्थान में चल रहे कार्य व बाहरीय वित्तीय परियोजनाओं की प्रगति अच्छी हो रही है। वैज्ञानिक अनुसंधान परिषद की बैठक 26 मार्च 1999 को हुई जिसमें 32 नए अनुसंधान परियोजनाओं का प्रस्ताव प्रस्तुत किया है।

ये सभी प्रस्ताव परियोजना आधारित बजट फॉरमेट में है। परियोजनाओं पर आधारित बजट पर एक व्याख्यान जो डा. जे.सी. कटियाल द्वारा 30 सितम्बर 99 को दिया गया था। वैज्ञानिकों को अपने अनुसंधान परियोजना प्रस्ताव बनाने में यह बहुत सहायक सिद्ध हुआ।

संस्थान के विस्तार कार्यक्रमों में जरूरतमंद लोगों को प्रशिक्षण देना आदि मुख्य उद्देश्य है। 100 से भी ज्यादा लोगों को मत्स्य से संबंधित विषयों पर अब तक 17 प्रशिक्षण कार्यक्रम हुए। ये प्रशिक्षण 7 दिनों से 6 महिनों तक संचालित किए जाते हैं।

कर्मचारियों व छात्रों के लिए कम्प्यूटर अनुप्रयोग पर अब तक कई कार्यक्रम चलाए गए। मत्स्य सलाहकार सेवा ने अपने संस्थान के 20 सहायकों को 100 मुआरों की मदद के साथ साथ प्रयोगशाला से पानी व मिट्टी की जांच करने में सहायता की। संस्थान ने 4 विभिन्न प्रदर्शनियों में भाग लिया। जिसमें से एक आम जनता में मत्स्य से संबंधित जानकारियों से अवगत कराने के लिए किया गया।

इस दौरान महाराष्ट्र से लगभग 1000 स्कूल/कालेज व अन्य राज्यों से छात्र आए। 30 मुआरों के प्रश्नों व संस्थान के शैक्षणिक कार्यक्रम का उत्तर डाक द्वारा दिया गया। इसके अलावा 100 से भी ज्यादा लोगों को तकनीकी साहित्य वितरित किए गए।

संस्थान ने परामर्श देना जारी रखा है तथा इसमें इस साल के ग्राहकों में हिमो फॉरमा लिमिटेड, मुंबई तथा मत्स्य विभाग, महाराष्ट्र शामिल है।

जलकृषि व मत्स्य अनुप्रयोग में जैव तकनीकी विकास पर हाल ही में एक ग्रीष्म कालीन स्कूल आयोजित किया गया। समुद्री मात्स्यिकी पर एक राष्ट्रीय संगोष्ठी, ओवाटा इड - एक नया हारमोन तैयार किया गया जो मत्स्य प्रजनन में प्रयोग किया गया। हिन्दी कम्प्यूटर अनुप्रयोग पर प्रशिक्षण सह कार्यशाला का आयोजन इस साल की बड़ी उपलब्धि रही।

केन्द्रीय मत्स्य शिक्षा संस्थान परिवार ने कई प्रतिष्ठित सम्मान व अवार्ड संस्थागत व व्यक्तिगत रूप से प्राप्त किए। मुंबई स्थित आशीर्वाद संस्थान से चल राजभाषा शील्ड तथा आशीर्वाद राजभाषा से केन्द्रीय मत्स्य शिक्षा संस्थान, के निदेशक डा.एस.ए.एच.आबिदी को हिन्दी में अधिक कार्य करने के लिए सम्मानित किया गया। इसके साथ ही श्री राजेश्वर प्रसाद उनियाल, सहायक निदेशक (राजभाषा) को भी प्रथम आशीर्वाद अवार्ड प्रदान किया गया। भा.कृ.अनु.प. के शिक्षा विभाग ने केन्द्रीय मत्स्य शिक्षा संस्थान को सी.ए.एस. प्रशिक्षण कार्यक्रमों का मानव संसाधन विकास के लिए आयोजित करने पर प्रशंसा प्रमाण पत्र प्रदान किया।

केन्द्रीय मत्स्य शिक्षा संस्थान के निदेशक डा. एस.ए.एच. आबिदी को तीन साल के लिए भारतीय वैज्ञानिक तथा प्रौद्योगिकी पत्रिका (सी.एस.आय.आर.) हिन्दी के संपादकीय बोर्ड के लिए नामित किया गया। डा.एम.पी.सिंह कोहली, प्रोफेसर तथा मत्स्य जैव विभाग के विभागाध्यक्ष ने एशियन मत्स्य सोसायटी में अपने फोटो प्रदर्शनी में तृतीय पुरस्कार प्राप्त किया। डा. समाधान जाधव वैज्ञानिक को उनके डाक्टोरियल अनुसंधान के लिए उपल मेमोरियल स्वर्ण पदक से सम्मानित किया गया। नैशनल अकादमी आफ सायन्स ने भारत ने श्री पी. पी. श्रीवास्तव, तकनीकी अधिकारी को पहला युवा वैज्ञानिक अवार्ड से सम्मानित किया गया। श्री दीपक खोगरे, तकनीकी अधिकारी एक अच्छे चित्रकार है, ने अपना एक पेंटिंग आर्ट पावर में प्रदर्शित किया जो अन्तरराष्ट्रीय आर्ट, दुबई में आयोजित किया गया।

विभिन्न प्रकार के विकास कार्यक्रमों में पुराने भवन, प्रयोगशालाओं, व्याख्यान कक्ष आदि की मरम्मत पर भी जोर दिया गया। एक्वाफिंड प्रयोगशाला, एलगी संवर्धन प्रयोगशाला, सांख्यिकी प्रयोगशाला आदि का निर्माण नए रूप में किया गया। सभागृह व प्रोफेसर कक्ष के अलावा अन्य प्रयोगशाला जैसे मत्स्य रोग प्रयोगशाला क्वालिटी कंट्रोल, कम्प्यूटर कक्ष आदि का पुनर्निर्माण किया गया।

इस साल कई कार्यक्रम आयोजित किए गए तथा मानव संसाधन विकास, कर्मचारी व छात्रों के खेल-कूद, राजभाषा कार्यान्वयन तथा उत्सव व समारोह आदि मनाए गए। इस साल कई महत्वपूर्ण प्रकाशन प्रकाशित हुए जिसमें 21 वीं शताब्दी की भारतीय मात्स्यिकी, भारत में मत्स्य जैव तकनीकी पर एक ग्रंथसूची, जलचरी संस्थान की हिन्दी वार्षिक पत्रिका मत्स्य दर्पण संस्थान का न्यूज लैटर, आदि। इसी के साथ केन्द्रीय मत्स्य शिक्षा संस्थान ने कई महत्वपूर्ण अनुसंधान कार्यक्रमों पर पुस्तिकाएं तथा कई प्रशिक्षण/कोर्स मैनुअल्स आदि भी प्रकाशित किए।

संस्थान के महत्वपूर्ण घटनाओं/कार्यक्रमों ने भारतीय कृषि अनुसंधान परिषद के प्रकाशन में नियमित रूप से एक महत्वपूर्ण स्थान प्राप्त किया। जैसे भारतीय कृषि अनुसंधान परिषद का समाचार तथा भारतीय कृषि अनुसंधान परिषद का प्रतिवेदन आदि। पहली बार संस्थान के इतिहास में संचार माध्यम, संस्थान में होने वाले कार्यक्रमों व भविष्य में आयोजित की जानेवाली परियोजनाओं व विकास की जानकारियां दी जा रही है तथा इसका प्रयोग महत्वपूर्ण व्यक्तियों के लिए किया जा रहा है।

केन्द्रीय मत्स्य शिक्षा संस्थान परिवार के दो सुप्रसिद्ध सदस्य डा.डी.वी.बाल, संस्थान भूतपूर्व निदेशक तथा डा.एन.के.ठाकूर, संयुक्त निदेशक का आकस्मिक निधन इस साल की दुखद घटना है।

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Show piece of budding talent....

Prize winning paintings of children of CIFE staff members 1. Master Tabeesh Zaidi, 2. Kumari Gargi Pal, 3. Kumari Sweta Khogre and 4. Kumari Sushmita Basu



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