

# CMFRI bulletin 44

Part Three

FEBRUARY 1991



## NATIONAL SYMPOSIUM ON RESEARCH AND DEVELOPMENT IN MARINE FISHERIES

**MANDAPAM CAMP**

16-18 September 1987

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Papers Presented  
Sessions V, VI & VII

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CENTRAL MARINE FISHERIES RESEARCH INSTITUTE  
(Indian Council of Agricultural Research)  
P. B. No. 2704, E. R. G. Road, Cochin-682 031, India

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## HUMAN RESOURCES DEVELOPMENT IN FISHERIES

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### ABSTRACT

Human resources development is an important part of fisheries development. Keeping this in view, the Government of India established the Central Institute of Fisheries Education (CIFE) at Bombay in 1961. The Institute during its eventful 25 years of service has provided the requisite trained manpower at different levels for fisheries development, industry, research, education, training and extension. In addition to regular courses, a large number of short term training programmes on selected topics have also been conducted at national and international levels to meet specific demands. The Institute is today recognised as the centre of excellence in higher education in fisheries.

### INTRODUCTION

India ranks seventh among the leading fish producing countries of the world with the present total fish production of 2.8 million tons. The Government of India has fixed a target of 4 million tons of fish production by the end of VIIth Five Year Plan. International conference on Fisheries Development 2000 A.D., held at New Delhi

in 1985 has envisaged a target of 6 million tons with 3 million tons expected to come from marine fisheries. Trained manpower at different levels is of paramount importance to achieve this target. These manpower requirements can only be met through suitably structured multi-disciplinary educational programmes. The paper briefly discusses the present facilities available for Fish-

eries Education, Training and Extension at CIFE alongwith the suggestions to re-orient it to meet the national needs.

#### HISTORICAL REVIEW

Fisheries education and training in India commenced with the starting of two All-India fisheries training courses of one year duration, one each for inland and marine fisheries. The former course was started at the Central Inland Fisheries Research Institute, Barrackpore in 1948 and the latter at the Central Marine Fisheries Research Institute, Madras (later Mandapam) in 1950. The centre for marine fisheries training was closed later due to lack of trainees. Almost during the same period, State Governments of Andhra Pradesh, Kerala and Tamil Nadu started diploma level course in their respective polytechnics. Except the one in Tamil Nadu, the courses in other states were discontinued later.

Introduction of mechanised fishing fleet during the fifties, led to the establishment of chain of fisherman training centres in different maritime states starting with Satpati (Maharashtra) training centre in 1954. These centres impart training to fishermen on various aspects of operation, maintainance of small mechanised fishing boats, modern fishing methods, navigation and seamanship.

Consequent to the introduction of various fisheries developmental programmes during the first and second five year plans, the need for trained manpower was strongly felt. The Government of India, constituted a Committee on Fisheries Education in 1959 to suggest suitable measures to meet the manpower requirement. The Committee in its report pointed out that none of the existing Universities and colleges of the country could provide the required specialised education and training in fisheries, and recommended establishment of a post-graduate training centre to impart training to district level officers deputed by various State Governments. This led to the establishment of central Institute of Fisheries Education (CIFE), at Bombay in 1961. The Committee also recommended creation of another centre to meet the trained manpower for ocean-going fishing vessels and the fishing industry. The Central Institute of Fisheries Operatives (CIFO) now called Central Institute of Fisheries Nautical and Engineering Training (CIFNET) was established in 1963, at Cochin for this purpose.

Two centres for imparting training to inland fisheries operatives were established in 1967 one each at Agra (Uttar Pradesh) and Hyderabad (Andhra Pradesh) under the administrative control of CIFE, Bombay. During the same year, the Inland Fisheries Training Centre at Barrackpore established in 1948 also came into the fold of CIFE, Bombay. The operative training centre at Hyderabad was later converted into Central Fisheries Extension training centre in 1973. The CIFE came under the administrative control of ICAR in 1979. During 1986, the Operative Training Centre at Agra and Fisheries Extension Training Centre at Hyderabad were shifted to Chinhat (Uttar Pradesh) and Kakinada (Andhra Pradesh) respectively.

Some of the Universities of Agricultural Sciences established fisheries colleges to impart graduate/post-graduate courses in fisheries during late sixties and seventies. Few traditional universities and Indian Institutes of technology also introduced specialised course in fisheries and allied aspects.

#### PRESENT FACILITIES AND ACHIEVEMENTS - CIFE, BOMBAY.

The CIFE with its Head Quarters at Bombay has 3 training centres one each at Barrackpore (West Bengal), Kakinada (Andhra Pradesh) and Chinhet (Uttar Pradesh). It has 2 fresh water fish farms one each at Balabhadrapuram (Andhra Pradesh) and Powarkheda (Madhya Pradesh) and a brackish water fish farm at Kakinada (Andhra Pradesh), which form main field facilities for imparting practical training on fresh and brackishwater aquaculture. For imparting ship board training, the Institute has acquired sophisticated training cum research vessel '*M.V. Saraswati*'. The major objectives of the Institute are -

- (a) To conduct under-graduate, post-graduate and doctoral degree programmes in fisheries science.
- (b) To conduct research in basic disciplines viz., genetics, nutrition, ichthyopathology, reproduction, physiology etc.
- (c) To conduct short-term and long-term training courses in different specialised disciplines of fisheries science.
- (d) To demonstrate on a limited scale the proven technologies developed by the I.C.A.R. fisheries institutes.

### 1. Regular courses

At its headquarter's Bombay the Institute offers a multidisciplinary two year post-graduate diploma course in fishery science, with an intake capacity of 40 candidates per year. The course is comprehensive one, covering all essential aspects of fishery science and prepares the candidates to be development officers to work efficiently both in the inland and marine fisheries. They have also been found to fit well in research, teaching and industrial sectors. A very high component of field work and practical training is the main feature of this course. The students have 1 month of ship board training, 2 months of field work in farms and 2 1/2 months of educational tour to various places of fisheries importance. They prepare a comprehensive field report and also work for dissertation on a specific topic in fisheries. These dissertations now form a store house of knowledge on various aspects of fisheries science.

The Institute also conducts a 2 years M.Sc. course in Fisheries Management with affiliation to the University of Bombay. Many Universities have recognised the Institute as a study centre for Masters and Doctoral degrees by research in Applied Zoology and Bio-chemistry.

The Institute runs a one year post-graduate certificate course in Inland Fisheries Development and Administration at its Barrackpore Centre. The course is primarily designed to train in-service candidates of the state fisheries departments and organisations with intake capacity of 40. The course content includes fishery biology, resources, their conservation, inland aquaculture, fishery engineering, technology, fisheries economics and management.

At its extension training centre in Kakinada, the Institute offers 10 months post-graduate certificate course on fisheries extension methods and techniques for the benefit of in-service personnel deputed by the state fisheries departments and organisations. The intake capacity of the course is 25. The course content includes fish breeding, fish culture, extension techniques and transfer of technology.

The training centre of the Institute at Chinhaet conducts 9 months post-matric course in inland fisheries operatives to the in-service personnel deputed by the various state fisheries departments and organisations. The annual admission capacity of the course is 40. The course content includes aspects of inland fisheries of India, fish

seed production and culture techniques, riverine and reservoir fisheries.

The Institute at its headquarters and centres has so far trained 2746 candidates under different courses, including 77 candidates sponsored from neighbouring countries of Africa and Asia. During its 25 years of service the Institute has provided trained manpower at different levels required for planning and development of fisheries. The Institute can be proud in that, many of its trainees continue to occupy pivotal position in fisheries organisations, in India and neighbouring countries like Nigeria, Fiji, Sri Lanka, Indonesia and Sudan.

### 2. Short-term courses

The CIFE, Bombay conducts 2 regular short term courses every year, one on the management of 'Fresh Water Fish Farms' and the other on management of 'Brackish Water Fish Farms' at its fresh water and brackishwater fish farms in Balabhadrapuram and Kakinada respectively for the benefit of fish farmers, entrepreneurs and educated unemployed youths.

In these programmes the major emphasis is laid on practical training starting from handling of the brooder till the fry is reared for sale. As a result of these short term programmes, large number of fish seed farms have come up in the private sector. Besides these two regular short term programmes, the Institute has been running courses of short duration varying from 5 days to 6 months on different aspects of fisheries at its headquarters, sub-centres and field centres for different target groups. So far 1022 persons have been trained in these short term programmes.

The Institute played a key role in bringing vocationalisation in fisheries. In collaboration with the NCERT, New Delhi, the Institute conducted a short term programme in 'Fisheries for vocational teachers' for the first time in the country. It was followed up by preparing instructional manual/syllabus in fisheries at 10 + 2 level to be adopted at the national level. To upgrade the knowledge and practical skills of fisheries teachers in the management of fish seed farms, a practical short term training was conducted at the Institute's Fresh Water Fish Farm, Balabhadrapuram. The Institute has also been actively involved in the development of vocational courses in fisheries at the state level for the Government of Maharashtra.

Recognising the Institute's role in human resources development in fisheries, the Interna-

tional organisations like FAO/UNDP, Commonwealth secretariat have been sponsoring training programmes at the Institute for the participants from various developing countries in different aspects of fisheries development. The duration of the training varied from a few days to 3 months.

### 3. Research accomplishments

The research carried out at the Institute has led to the development of many systems for development and utilisation of fisheries resources. These include:

- (a) Development of carp and prawn hatchery systems, including live and formulated feed for fish and prawn larvae.
- (b) Fish stock assessment in north-west Indian EEZ.
- (c) Development of fish products based on low value fish.
- (d) Fish seed production in semi-arid areas and culture of marine prawns and fish in Inland saline soils of Haryana.

### 4. Transfer of technology

Demonstrations of proven technologies developed by the Institute have led to extension and transfer of the same for the benefit of users. A few are mentioned below:

- (a) Installation of a number of CIFE D-81 hatcheries in many states of India with significantly good results.
- (b) The technology guidance and extension support of the Institute, have led to the adoption of fish-based mixed farming by a large number of farmers in coastal districts of Andhra Pradesh totalling over 160.

### RE-ORIENTATION OF THE EXISTING PROGRAMMES

The Indian Council of Agricultural Research proposed to develop CIFE into a deemed to be University, and re-organise the existing programmes. The presently conducted two year diploma course in fisheries science at the headquarters will be converted into a Masters degree course. In addition, the Institute will also start an under graduate course leading to the degree of Bachelor of Fisheries Science.

The existing one year certificate course in inland fisheries administration and development at Barrackpore would be upgraded into a two year M.Sc. in inland fisheries and aquaculture. The centre will also run a course leading to Bachelor

of Fisheries Science with special emphasis on inland fisheries.

The certificate course on fisheries extension techniques and methods at Kakinada will be strengthened by including aspects of marine fisheries extension and integrated rural development.

The existing nine months operatives training course at Chinhaet will be phased out gradually and replaced by short term programmes of 4 to 5 months duration in certain specialised areas for the benefit of state deputies.

Doctoral programmes will also be initiated at the headquarters in different disciplines. The post-graduate programmes will be conducted in close collaboration with other ICAR Institutes by making use of their infra-structural facilities and expertise.

### CENTRAL FISHERIES UNIVERSITY

The CIFE, Bombay is the pioneer fisheries educational institute in the country. It has been imparting post-graduate education in fisheries since its inception and has developed elaborate and diversified infrastructure facilities required for effective instruction in all aspects of fisheries.

Since 1969, some of the Agricultural Universities have also started imparting undergraduate/post-graduate courses in fisheries in their colleges of fisheries. At present there are six fisheries colleges in the country and some more are in the offing. Some of the traditional universities and Indian Institutes of Technology also offer courses in fisheries and allied sciences.

Fisheries is multi-disciplinary applied science. For imparting effective instruction in fisheries, sophisticated equipments, laboratory facilities, ocean going vessels etc., are needed besides experts in diverse disciplines. Institutions without essential infra-structure facilities and resources are bound to turn out graduates/post-graduates with different levels of educational attainments. To avoid such a situation, it is suggested that Central Fisheries University should be set up to maintain uniform standards in respect of course content, duration etc., throughout the country for similar courses run by different organisations. The University could also be entrusted with the responsibility of ensuring adequacy and skill of teaching staff and adequacy of infrastructure facilities. Creation of such a University will go a long way in ensuring standard and quality of fisheries education in the country.