

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

P. B. No. 2704, ERG ROAD

COCHIN 682 031



SEVENTH FIVE-YEAR PLAN

PROGRAMMES • PERSPECTIVES • ACHIEVEMENTS

FOR PRESENTATION TO
ICAR REVIEW COMMITTEE
NEW DELHI

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(Indian Council of Agricultural Research)
COCHIN

1. The Role of CMFRI in Marine Fisheries Development

The marine fishery resources of India are considered vast and the VII Plan lays greater emphasis than heretofore to increase marine fish production both for domestic consumption and for exports. The Exclusive Economic Zone declared by us extends to 200 nautical miles from the coastline of the mainland and a total sea area of over 2 million sq.km is within our exclusive rights of exploration, exploitation, conservation and management of resources.

The Central Marine Fisheries Research Institute has as its prime objective conduct of research on the marine fishery resources and environment and provide necessary information and management advice on the judicious exploitation of different fish stocks. The information is to be provided in processed and readily usable form to the Union and State Governments, fishing industry, and the artisanal fishermen. The Institute also has the responsibility for conducting research on development of mariculture, which requires a multidisciplinary approach, to develop suitable technologies for improving and obtaining additional production of fish, shellfish and seaweeds from the coastal waters, lagoons and other derelict saltwater areas.

Past researches of the Institute has estimated the exploitable potential of marine fishery resources in the EEZ as about 4.5 million tonnes. Of this, the current production is about 1.6 million tonnes per annum, leaving an unexploited gap of about 2.9 million tonnes. The overall perspective of the Institute's programmes on capture fisheries is two-fold, namely 1) to identify the inshore resources/stocks which need management on a long-term basis and those which are under-exploited and can sustain increased fishing effort, and to quantify these factors in terms of stock

size and effort needed thereon for increasing production; and 2) to locate the additional resources in the EEZ that are expected to contribute to fill large part of the gap of 2.9 million tonnes and to make assessment of their potential in terms of total resource and the component stocks, the information being vitally needed by the deep-sea fishing industry of the country.

On the mariculture front, the thrust areas are towards further testing of the technologies already developed for their economic viability with necessary cost-benefit studies and to enlarge the hatchery technologies for seed production of various candidate species suitable for different geographical areas and ecosystems. There is an interaction of the disciplines of biology, physiology, nutrition, pathology, genetics, economics, statistics and coastal farm engineering in these studies.

Besides research, education and extension education are two other areas in which the Institute has programmes within overall perspective of development of manpower for handling and management of future programmes of fisheries development in the country. These requirements are served at concerned levels through the post-graduate programme in mariculture, the KVK/TTC complex, ad-hoc training courses in specialised technologies/subjects and Summer Institutes.

The Institute disseminates research, development and management information in several forms as may be required by the end-users. Besides a scientific journal (Indian Journal of Fisheries) which publishes original research contributions on fisheries from India and abroad, the publications include Bulletins, Special Publications, Marine Fisheries Information Service, R & D Series and Manuals. It is ensured that the distribution/circulation of these publications reaches the right quarters in time so that the information is made use of in further research, development and educational programmes.

In order to share the experience and facilities with other agencies involved with marine research and development in the

country, the Institute has established linkages with them in terms of joint programmes and consultancy. These agencies include the sister fisheries organisations of ICAR, Ministry of Agriculture and its Institutes/Projects, Dept. of Ocean Development, Marine Products Export Development Authority (Min. of Commerce), Fisheries Departments in the States/UTs, ISRO/NRSA/SAC and others.

In this region of Asia, the CMFRI is a renowned fisheries research organisation and has the expertise in all areas of marine fisheries research which has been well recognized and utilized internationally. It participates in several regional/international programmes with the approval of ICAR.

2. Achievements from inception to end of VI Plan

The Institute was established in February 1947 by the Government of India and it came under the control of ICAR in October 1967. Besides its headquarters located at Cochin, the Institute has a Regional Centre at Mandapam Camp and 11 Research Centres (Veraval, Bombay, Karwar, Mangalore, Calicut, Vizhinjam, Tuticorin, Madras, Kakinada, Visakhapatnam and Minicoy) and 29 Field Centres along the coasts of India. The research programmes of the Institute are implemented by 9 Divisions: Fishery Resources Assessment Division, Pelagic Fisheries Division, Demersal Fisheries Division, Crustacean Fisheries Division, Molluscan Fisheries Division, Physiology-Nutrition & Pathology Division, Fishery Environment Management Division, Fishery Economics and Extension Division and Library and Documentation Division.

Research on capture fisheries

A National Marine Living Resources Data Centre has been established at the Institute for acquisition processing and dissemination of all fisheries data. A national frame survey of marine fisheries sector was completed to have a proper basis for fisheries development and fisherman welfare programmes. As regards exploited marine fishery resources, improvements such as single Centre Zones were brought about in the sampling design to give better coverage in certain fishing harbour and major landing centres.

Codes have been assigned for different groups of marine living resources towards computerisation of data. Several case studies have been completed on the impact of changing pattern of fishery and socio-economic implications to artisanal fishery.

The pelagic and demersal resources have been partly studied and biomass estimates for oil sardine, mackerel, anchovies and carangids have been made. Published information has been made available on the fishery and biology for tunas and related species and also the fishery resources of north-west coast. Catfish and threadfin breams have emerged as important demersal resources with considerable potential. The inshore squid and cuttlefish resources have been monitored. The prawn fishery of the country have been closely monitored and Maximum Sustainable Yields have been worked out for many centres and the need for proper management of the resources has been highlighted. Production of benthic - resources of chank, clams, mussels, oyster and pearl oyster have been monitored. Seaweed and mangrove resources have been surveyed.

Published information has been brought out on endangered species such as sea turtles on their biology, conservation and management. National Marine Park surveys have been carried out. A nucleus set-up for use of Remote Sensing techniques in the collection of sea-truth data has been established and experiments have been carried out along the west coast on inter calibration, productivity estimation and relationship to the occurrence of fish shoals.

Research in mariculture

Rapid strides have been made in the inter-disciplinary work on mariculture. Significant success has been achieved in the breeding of marine penaeid prawns, domestication of the white prawn, larval rearing through live-food and compounded formula feed. In field culture of prawn using laboratory reared post-larvae for stocking high production rates have been obtained. Induced breeding of crustaceans through eye-stalk ablation has become a significant success.

Indigenous development of pearl culture technology had led to establishment commercial pearl culture project in India for the first time. Hatchery technology for production of pearl oyster has been developed to make pearl production programme independent of fluctuation in natural stocks. Open sea mussel farming techniques have given high production rates. Oyster farming technology has been established. Both oyster and mussels have been successfully bred in the laboratory. Multidisciplinary programmes on physiology, nutrition and pathology which were taken up during the VI Plan have registered good progress.

Extension education

Transfer of technology programmes were implemented through Ad-hoc training courses in selected technical subjects and Summer Institutes on selected aspects. The Institute also organised training programmes in collaboration with DANIDA. Under these programmes, scientific and technical personnel of maritime States, Agricultural Universities and teaching faculty of Universities were greatly benefited.

The Krishi Vigyan Kendra established at Narakkal has trained a number of fish farmers and farm women on practical aspects of mariculture and also related subjects on agriculture and animal husbandry. A Trainer's Training Centre has been established for imparting training to managerial personnel. Under the Lab-to-Land programme, technologies of prawn culture, oyster culture, mussel farming, seaweed culture and integrated farming were transferred directly to fishermen families and farming community.

Education

At the Centre of Advanced Studies in Mariculture established at the Institute in 1979 under the auspices of ICAR/FAO/UNDP (now designated as Post Graduate Education and Research Programme in Mariculture), a number of batches of M.Sc.(Mariculture) candidates have passed out and advanced research in basic and problem

oriented programmes are being carried out by different batches of Ph.D scholars.

3. Seventh Plan programmes and perspectives

Objectives

With the reorganisation of the fisheries Institutes under the ICAR including the formation of new Institutes and National Research Centres, the mandate given to CMFRI for VII Plan is as follows:

1. Conduct research for assessing and monitoring the exploited marine fishery resources leading to rational exploitation and conservation.
2. Assess the under-exploited and unexploited marine fisheries resources of the EEZ.
3. Understand the fluctuations in abundance of marine fisheries resources in relation to changes in the environment by conducting vessel based programmes.
4. Develop suitable mariculture technologies for finfish and shellfish in open sea to supplement marine fish production.
5. Conduct transfer of technology and post-graduate and specialised training programmes.

In order to fulfil these objectives, the Institute reoriented its research programmes, strengthened the on-going projects wherever necessary and identified new areas requiring a major thrust. All those projects which have achieved their objectives were terminated and scientific and technical personnel have been redeployed for maximum utilization.

Continuing programmes

Major research projects on marine fishery resources, environment and mariculture are of a continuing nature. Monitoring

the changes in resource characteristics in response to over changing environmental conditions and fishing pressure has to be a continuous function. But these have since been reoriented or reorganised as follows:

1. Survey of marine fishery resources (production) on an All India basis was hitherto a primary function of the Intitute. Since this responsibility is now taken up by the Govt. of India and maritime States, the programme has been restructured for collection of intensive data for stock assessment of all major and minor resources supporting the multi species fisheries of the country, on a region wise basis.
2. The research projects on fishery resource characteristics of various groups under pelagic, demersal, crustacean and molluscan fisheries are jointly prepared in collaboration with fishery resource assessment and environment management groups for a better understanding of the biological and fishery characteristics and seasonal fluctuations in the resources in relation to environmental factors.
3. For the Cadalmin series of boats, the minimum programme involves collection of environmental data from the inshore fishing grounds, experimental fishing and correlation of the data with the commercial fish catch in the region. This is aimed at providing advice on the maintenance of present level of production from inshore areas and steps needed to protect the coastal environment.
4. The Research Vessel R.V.Skipjack of CMFRI and FORV Sagar Sampada of Dept. of Ocean Development for studying the resources in relation to environmental changes beyond 50 m depth zone in the EEZ.
5. Programmes in mariculture of finfish, shellfish and seaweeds are drawn up in consultation with all the Divisions for having a multidisciplinary approach.

6. Some aspects of basic research will be mainly conducted by the Physiology, Nutrition and Pathology Division and also Fishery Economics & Extension Division.
7. All Division will participate in Education, Training and Extension programmes.

Strengthening of existing programmes

1. The research projects on stock assessment of major commercially important groups such as oil sardine, mackerel, white bait, Bombay duck, tunas, cat fishes, threadfin bream, prawns, squids and cuttlefishes have been considerably strengthened. While improving the source and quality of data collected for stock assessment, appropriate mathematical models are being developed for population studies.
2. The National Marine Living Resources Data Centre is being strengthened with computer facilities and the same would be utilized by all the Divisions for stock assessment and related studies.
3. Impact studies relating to changing pattern of fishing such as introduction of purse seines, outboard motors in country crafts etc. have been strengthened to understand the effect of such changes on the resources, their production and socio-economic conditions.
4. The scientific programmes of the DOD vessel FORV Sagar Sampada are now managed by the CMFRI. With this facility, oceanographic studies related to fishery resources is receiving special attention and critical data on primary productivity, zooplankton biomass, fish stock abundance through acoustic surveys and related oceanographic data on physical and chemical aspects are being collected. Special cruises are undertaken to Andaman-Nicobar and Lakshadweep islands to study the conventional and non-conventional resources in addition to the planned programmes of the vessel covering the EEZ off the mainland coasts.

5. The Remote Sensing programmes are being strengthened with essential equipment to have collaborative programmes with ISRO and NRSA and for utilization of the data of the Indian Remote Sensing satellite.
6. On the mariculture side, the programmes on finfish and shellfish culture are being strengthened to improve production and productivity, standardisation of farming techniques and working out economic feasibility of the technologies through pilot scale projects.
7. With the establishment of prawn hatchery laboratory at Narakkal, shellfish hatchery laboratory at Tuticorin and shellfish breeding laboratory at Muttukad the hatchery technology programmes for prawns, oyster, pearl oysters, mussels and clams have been considerably strengthened. Critical aspects of hatchery operations such as water quality, live-food and disease control are investigated in detail. The Marine Prawn Culture Laboratory at Narakkal is under transfer to the new Central Institute of Brackishwater Aquaculture of ICAR.
8. Multidisciplinary programmes in physiology, nutrition and pathology of finfishes and shellfishes have been strengthened for improving mariculture practices.
9. Conservation oriented researches on endangered marine mammals and sea turtles have been strengthened with deployment more scientific and technical personnel and improvements in technical programmes.

New Programmes initiated

These programmes have been taken up to give a thrust in new areas of research that would be necessary to achieve the new mandate given in the VII Plan.

1. For obtaining Maximum Sustainable Yields from commercially important stocks of marine fisheries appropriate mathematical models are being developed for better stock assessment of tropical multispecies fisheries with improvements in data collection and monitoring systems.

2. Resource assessment of bathypelagic and mesopelagic stocks in the open sea and deep sea areas have been taken up for assessing their potential for development.

3. Oceanic pelagic tuna resources and related species will be intensively studied for diversifying the effort of fishing industry. The tuna resources of the Lakshadweep including baitfish resources and their culture is receiving a major thrust.

4. Oceanic squid resources will be properly assessed to aid commercial venture in exploiting them.

5. Migratory species such as Hilsa are being studied through collaborative programmes with other institutes.

6. The Antarctic krill resources have been studied to some extent through participation in Antarctic Expedition. These will be further studied utilising the DOD vessel facilities.

7. Fishery oceanographic investigations directly related to fluctuation in abundance of resources, their migration and phases of life history of important species will be taken up.

8. Remote Sensing techniques will be utilized for correlating resources data collected from inshore areas as well as deep sea areas.

9. Sea ranching programmes on marine prawns, pearl oyster and gastropods have been taken up towards improving the natural stocks which show signs of depletion.

10. Finfish culture involving new candidate species such as sea bass and groupers will be initiated and steps be taken for establishing experimental finfish hatchery.

11. With the termination of FAO/UNDP/Project, CAS in Mariculture, the education and research programmes will be continued by the Institute as a Project on Post-graduate Education and Research in Mariculture.

12. Time bound research projects on priority subjects like conservation of the corals and coral reefs and the dugong, survey of baitfish resources of Lakshadweep, estimation of sea cucumber resources, development of formulated feeds for shrimp and marine

ornamental fish survey in Lakshadweep have been proposed to DOE, DST, MPEDA and NABARD.

4. Achievements during the first 2 years of the VII Plan

In keeping with the long term and short term objectives of the VII Plan the research programmes continued or initiated with the commencement of the plan in 1985-86 have given significant results in certain areas. These may be listed as follows.

1. Based on the data during the past years and stock assessment made on important resources such as oil sardine, mackerel, tunas, catfishes, threadfin bream, prawns, clams etc. the Institute has brought out a R & D series on management and conservation of marine fishery resources. This would provide necessary management advice and greatly benefit the maritime States and the Industry in their fishery development effort.

2. While managing the scientific programmes of the DOD vessel FORV Sagar Sampada with the Institute's own staff, the vessel has been adequately used for the scientific programmes of the Institute through regular participation of CMFRI scientific and technical staff. Thus, participating in 30 cruises so far the scientists have surveyed the pelagic, demersal, mesopelagic and oceanic resources of the EEZ including the Andaman Nicobar islands and Lakshadweep. These surveys were coupled with observations on physical, chemical and biological oceanography. Besides providing data on resources and oceanography, the vessel helped to train various categories of scientific, technical and other staff as well as research scholars in sea based programmes.

3. The Institute had brought out a series of publications giving out the status of the marine fishery resources in each maritime state, the production means and guidelines for augmenting production from under-exploited and unexploited areas. These documents form the data base and provide guidelines for management of marine fisheries resources of each state.

4. The Institute organised a seminar on Potential Marine Fishery Resources of India in April 1986 in which a wide cross section of people drawn from Government Departments, Institutes, development agencies and the industry participated. The Institute's own contribution included an assessment of the potential resources, the yield expected from different groups in different depth zones and areas. The useful recommendations made at the seminar have been taken up for implementation by different agencies.

5. The Institute is bringing out a working paper for evolving a national strategy for exploitation and utilization of the potential resources of the EEZ.

6. The work done earlier and in the past two years on edible oyster and pearl oyster had been reviewed, the data analysed and consolidated in two separate bulletins. The bulletins provide complete information on the resources and farming of these molluscs.

7. A national symposium on shellfish resources and farming was held in January 1987 at Tuticorin where the achievements of the Institute in the area were discussed and future research priorities were identified.

8. Based on the research contributions made by the scientists posted at the Minicoy Research Centre and the observations made earlier on the resources of Lakshadweep, a comprehensive publication was brought out on the marine fisheries research conducted in the Lakshadweep so far. This was presented at the Futurology Workshops on Lakshadweep to aid development of fisheries in the islands.

9. The Institute has conducted recently a survey of the fishery potential of Lakshadweep to cover the islands hitherto not surveyed, for identifying the promising resources such as tunas, tuna live bait, ornamental fishes, sea cucumber, molluscs and seaweeds. The survey was coupled with observations on the degradation of ecosystems such as coral reefs. Preliminary results of the survey have already been communicated to all concerned

departments. The detailed results of this survey would greatly help in the R & D inputs needed for an accelerated programme of development in the Lakshadweep especially in the fishery sector.

10. A comprehensive survey of the Kerala coast was undertaken from August 1986 to March 1987 to assess the potential of natural seaweed resources and the possibilities for their culture. During this survey 148 stations were covered from Poovar in the south to Cannanore in the north. In all 27 species of seaweeds were recorded along this coast, of which 14 were observed to be common. The coastal area from Cannanore to Kadalundi (northern zone) was found to be more productive in terms of standing crop as well as species diversity. Based on biomass estimates, possible areas for commercial exploitation have been identified.

11. Based on the observations made so far on the multi-species prawn fisheries in the inshore areas and the stock assessment made on commercially important species, the Institute has submitted to the Government of India, a working paper spelling out the strategies for rational exploitation and management of the prawn resources in the country. The rapidly developing prawn fishery along the east coast with the introduction of big trawlers in the region has been critically studied to evaluate the impact of introduction of such trawlers on the local fishery, the optimum number of trawlers to be used and the controls needed for rational exploitation.

12. In addition to the hatchery techniques already established for controlled breeding and larval rearing of many commercially important species of prawns, during 1986, success was achieved for the first time in the country in the breeding and rearing of two more species of prawns viz. Penaeus latisulcatus and P. canaliculatus. These two species have a good potential for taking up prawn culture in coastal lagoons having high salinity.

13. In addition to the national programme of tagging prawns and fishes to study their migration and growth, drift-bottle experiments were undertaken to understand the coastal drifts

that aid the migration of these groups. A systematic programme of release of drift bottles from different centres along the east and west coast have resulted in recoveries which indicate a general southward drift of coastal current during the summer months, February to March. The recovery of drift bottles from the Sri Lanka coast and Somali coast is worth mentioning.

14. The Institute has been rendering expert consultancy in matters such as setting up of prawn hatcheries by the maritime states and MPEDA; exploitation of beche-de-mer and other resources.

5. Collaborative R & D programmes

CMFRI has maintained and developed linkages with several national and international R & D organisations and departments as also Universities for collaborative work in marine fisheries research. Apart from the Institutes and departments under the Government of India, ICAR, Maritime States, MPEDA, NABARD, the Institute has/had collaborative programmes involving international bodies such as UNDP, FAO, ICLARM and SEAFDEC. The Institute is also exploring the possibilities of taking up projects under bilateral assistance in identified areas.

6. Infrastructure facilities

Laboratory/Office

The Institute has permanent buildings only at Cochin, Mandapam, Calicut and Minicoy (Statement in Annexure-I). The centres where we have acquired land but do not have permanent buildings are Karwar, Veraval, Visakhapatnam and Tuticorin. At Tuticorin we have built only a hatchery facility. At other centres including Madras, Bombay, Mangalore and Vizhinjam we do not have any land. The laboratories and office are located in rented residential/commercial buildings at Karwar, Veraval, Madras, Kakinada, Visakhapatnam, Tuticorin, Bombay, Mangalore and Vizhinjam, that is in 9 out of 13 establishments. At Cochin

since the sanction was restricted to 5 floors out of the planned and proposed 9 floors, some additional accommodation had to be hired.

The VII Plan sanction has been restricted with regard to works, due to paucity of funds, and building programme could be initiated only at Veraval and Visakhapatnam and construction of compound wall for the Headquarters building at Cochin.

As a long range programme, land has to be acquired at centres where we do not at present have any (Madras, Bombay, Mangalore and Vizhinjam). A proposal to acquire additional land in front of the present campus of the headquarters at Cochin is being pursued with Govt. of Kerala for free transfer. This is considered essential to have a water front to establish certain working facilities for vessel programmes.

Since the Institute is engaged in monitoring and assessing the exploited resources, we need working facilities at the fisheries harbours. Land in fisheries harbours of Tuticorin, Madras Visakhapatnam and Malpe/Mangalore will be required to establish these facilities.

It is also urgent that laboratory-cum-office buildings are constructed where we have already acquired land (Karwar, Kakinada, Tuticorin). With so much of pressure on land in each of these places, keeping the sites vacant in these towns for long time would create problems and generate claims for alternate uses by other agencies. Additional accommodation by expansion/extension of present buildings is found necessary at Cochin headquarters, Calicut and Minicoy. The Council is keen that the landed property should be protected against encroachment by constructing compound wall. While construction of compound wall at Cochin has been provided for in the VII Plan, approval and sanction would be required for similar works at Karwar, Veraval, Kakinada and Tuticorin.

Since the lack of this physical facility for the laboratory-

cum-office building at so many centres is large, a long-range plan has to be developed for providing these facilities during the current Plan period and the next Plan in a phased manner and necessary additional funds now and sanctions in the next Plan would be required.

Residential quarters

Except at the Mandapam Regional Centre and Calicut Research Centre, the Institute does not have residential quarters at other Centres (Statement in Annexure-II). Very small provision has been made in the current Plan for a few quarters at Cochin and Minicoy. Some quarters have just been completed at Calicut. By and large the scientists, technical, ministerial, auxiliary and supporting staff of the Institute have not been provided quarters and are staying in rented houses paying exorbitant rents. We have land for residential quarters at Cochin, Calicut, Veraval, Tuticorin, Kakinada, Visakhapatnam and Minicoy, besides Mandapam. The Institute does not have land for the purpose at Karwar, Madras, Bombay, Mangalore and Vizhinjam.

It is necessary to meet the requirements of staff quarters at Centres where we have land (Cochin, Calicut, Veraval, Tuticorin, Kakinada, Visakhapatnam and Minicoy) at the prescribed level of satisfaction and acquire land for such purposes at other centres (Karwar, Madras, Bombay, Mangalore and Vizhinjam). Similarly compound wall construction has to be taken up at Cochin, Calicut, Veraval, Tuticorin, Kakinada, Visakhapatnam and Minicoy.

As proposed in the case of laboratory-cum-office building, the works relating to residential quarters will have to be taken up in a phased manner during current and subsequent Plan periods.

Mariculture farm

The Institute has major R & D programmes in mariculture in the Research Divisions, as also the Post-graduate Programme in Mariculture leading to Master's and Doctoral Degrees. The major farm facilities of the Institute include 500 acres of lagoon at

Mandapam, 90 acres of salt water area in Muttukadu near Madras and the leased 15 acres of ponds at Tuticorin. While it is not proposed to increase the facility in terms of area, it is necessary to facilitate construction of appropriate ponds with working water system for experimental work of the scientists as well as students. For paucity of funds the plans for the farms at Mandapam and Muttukadu could not be put through so far.

Equipments

The EFC sanction for equipments in the current Plan is Rs.33 lakhs. The provision is inadequate. A review of the actual requirements made recently has clearly brought out the need for procuring additional equipments and accessories for some of the existing equipments. The additional requirement would cost about Rs.22 lakhs over and above the present provision. The Plan programmes of the Institute will be heavily handicapped if additional funds for the equipments are not provided.

7. Personnel

At the end of VI Plan the total strength of staff of this Institute was 1180 ie. Scientific 239, Technical 457, Administrative 176, Auxiliary 16 and Supporting 292 (Statement in Annexure-III). In the Seventh Plan 5 Administrative, 16 Auxiliary and 13 Supporting posts are sanctioned. One post was abolished from the Administrative strength available at the end of VIth Plan and out of 5 Adm. posts sanctioned in VII Plan, 3 posts are sanctioned in lieu of existing posts. Hence in effect only one additional Administrative post has been made available. This Institute has one Regional Centre, 11 Research Centres and 28 Field Centres besides Hqrs. Annual expenditure of this Institute is about Rs.400 lakhs (including Plan and Non-Plan). The sanctioned strength of Administrative staff is inadequate to cope up with the workload. Hence Council has been requested to reconsider the matter and sanction the following minimum number of posts.

Asst.Accounts Officer	2000-3500	1
Asst.Administrative Officer	-do-	2
Supdt.	1640-2900	5
Assistants	1400-2300	3
Senior Clerks	1200-2040	2

The above proposal has also been strongly recommended by the Management Committee of this Institute.

Further the posts sanctioned for the Research Vessels and boats available in this Institute is inadequate as per the MMD norms. From the Statement (Annexure-IV) enclosed herewith it can be observed that the following additional posts are required to fulfil the standard pattern of boat crew.

Bosuns	4
Engine Driver	4
Deckhand	8
Cook	2

It was further proposed to have one Joint Director at Hqrs. Cochin to assist the Director in the management of Scientific, technical and administrative matters and to look after the duties of Director in his absence on tour/leave etc. One Joint Director post is also required for the Mandapam Regional Centre of this Institute, which is the second largest establishment of this Institute after Headquarters.

8. Funds

A financial statement showing the actual expenditure under Non-Plan and Plan during VI Plan period ie. 1980-85, VII Plan outlay and expenditure during the first two years of VII Plan period and the revised outlay (mid-term appraisal) proposed in VII Plan is enclosed for reference(Annexures-V and VI). It can be seen from the statement that the expenditure (both Non-Plan and Plan) during the first two years of VII Plan period was about Rs.400 lakhs per annum. The total expenditure during 1980-85

was 722.50 lakhs under Plan whereas the approved outlay for VII Plan (ie. 1985-90) is only Rs.443.25. Due to limited funds many of the essential items such as land, building, compound walls, equipments etc. could not be included. Lack of the above mentioned infrastructural facilities the progress of the research programmes are affected adversely. In order to meet the minimum requirements, a revised outlay of Rs.664.37 lakhs is proposed at the time midterm appraisal of implementation of VII Plan.

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE, COCHIN

Lab-cum-Office

Station	Land	Building	Compound wall/ Fencing
<u>Cochin</u>			
Hqrs.	3.5 acres	8865 sq.m.	Approved in VII Plan
KVK/TTC	8.92 acres	3000 sq.m.	Compound wall available
MPHL	1.8757 hect.	2000 sq.ft.	Not available
Mandapam	91.02 acres (including Res. Qrs.)	Available	Fencing available
Calicut	3.24 acres (including Res. Qrs.)	379 sq.m.	Compound wall available
Karwar	3.10 acres	2068 sq.ft.	-do-
Veraval	On lease alongwith CIFT	Approved in VII Plan	Not available
Madras	Not available	Not available	-do-
Kakinada	12.96 acres for Const.of Lab-cum-Office Bldg.and Res.Qrs.)	Not available	-do-
Visakhapatnam	1.2 acres	Approved in VII Plan	Compound wall available.
Tuticorin	7.33 acres for Const. of L/Bldg. and Res. Qrs.	-	Not available
Minicoy	0.50.0 hac.	Available	Fencing available
Bombay	Not available	-	Not available
Mangalore	-do-	-	-do-
Vizhinjam	-do-	-	-do-

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE, COCHIN

Residential Quarters

Station	Land	Building	Compound wall/ Fencing
Cochin	5.02 acres	Approved in VII Plan	Not available
Mandapam	91.02 acres (Res.Qrs. and Lab.Bldg.)	Available	Fencing available
Calicut	Available	-do-	Not available
Karwar	Not available	Not available	-do-
Veraval	1,14,720 sq.ft.	-do-	-do-
Tiricorin	7.33 acres for Const.of Res.Qrs. and Lab.Bldg.	-do-	-do-
Madras	Not available	-do-	-do-
Kakinada	12.96 acres for Const.of Res.Qrs. and Lab. Bldg.	-do-	-do-
Visakhapatnam	3.47 acres	Approved in VII Plan	-do-
Minicoy	0.07.9 hect.	Not available	-do-
Bombay	Not available	-do-	-do-
Mangalore	-do-	-do-	-do-
Vizhinjam	-do-	-do-	-do-

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE, COCHIN

Staff position as on date including KVK/TTC and PGPM(as on 30.6.'87)

Category of post	Posts sanctioned as on 1.4.1985	Posts sanctioned during 7th Plan	Total of (2) & (3)	Posts filled	Posts vacant
1	2	3	4	5	6
Scientific	239	-	239	206	33
Technical	457	-	457	330	127
Administrative	176*	2	177*	156	21
Auxiliary	16	16	32	5	27
Supporting	292	13	305	261	44
Total	1180	31	1210	958	252

* One post has been abolished by the Council.

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Sanction strength of R.V.Skipjack, Cadalmin and Smaller BoatsI For the following vessels the staff sanctioned are as per MMD norms1. R.V.Skipjack

Skipper (T-7)	-	1
Chief Engineer (T-6)	-	1
Mate (T-6)	-	1
Bosun (T-4)	-	1
Engine Driver (T.II.3)	-	1
Deckhand (Senior) (T-2)	-	5
Oilman-cum-Deckhand (T-2)	-	2
Oilman (T-2)	-	1
Cook (Boat) (T-2) Sr.	-	1
Cook (Boat) (T-1) Jr.	-	1

 15

2. Cadalmin I, II, III, IV, V & VI

1. Bosun (T.II.3)	-	1 for each vessel
2. Engine Driver (T-1)	-	1 -do-
3. Deckhand	-	4 -do-
4. Cook	-	1 -do-

3. Smaller BoatsMandapam Camp, Tuticorin, Mangalore & Karwar

1. Serang (T-1)	-	1 for each boat
2. Oilman (S.S.Grade)	-	1 for each boat
3. Lascar (S.S.Grade)	-	1 for each boat

II For the following vessels the staff sanctioned are inadequate as per norms

1. Cadalmin IX (KVK)

1. Bosun (T.II.3)	-	1
2. Engine Driver (T-1)	-	1
3. Deckhand	-	1 (less by 3)
4. Cook (Boat)	-	1

4

2. Sanctioned during Seventh Plan

Cadalmin VII & VIII

Auxiliary

1. Deckhand	-	4 for each vessel
2. Cook	-	1 for each vessel

III Additional required

Cadalmin VII & VIII

1. Bosun	-	1 each
2. Engine Driver	-	1 each

New 2 vessels sanctioned in VII Plan

Bosun	-	1 each
Engine Driver	-	1 each
Deckhand	-	4 each
Cook	-	1 each

CENTRAL MARINE FISHERIES RESEARCH INSTITUTE, COCHIN

Financial Statement showing progress of Plan and Non-Plan Expenditure

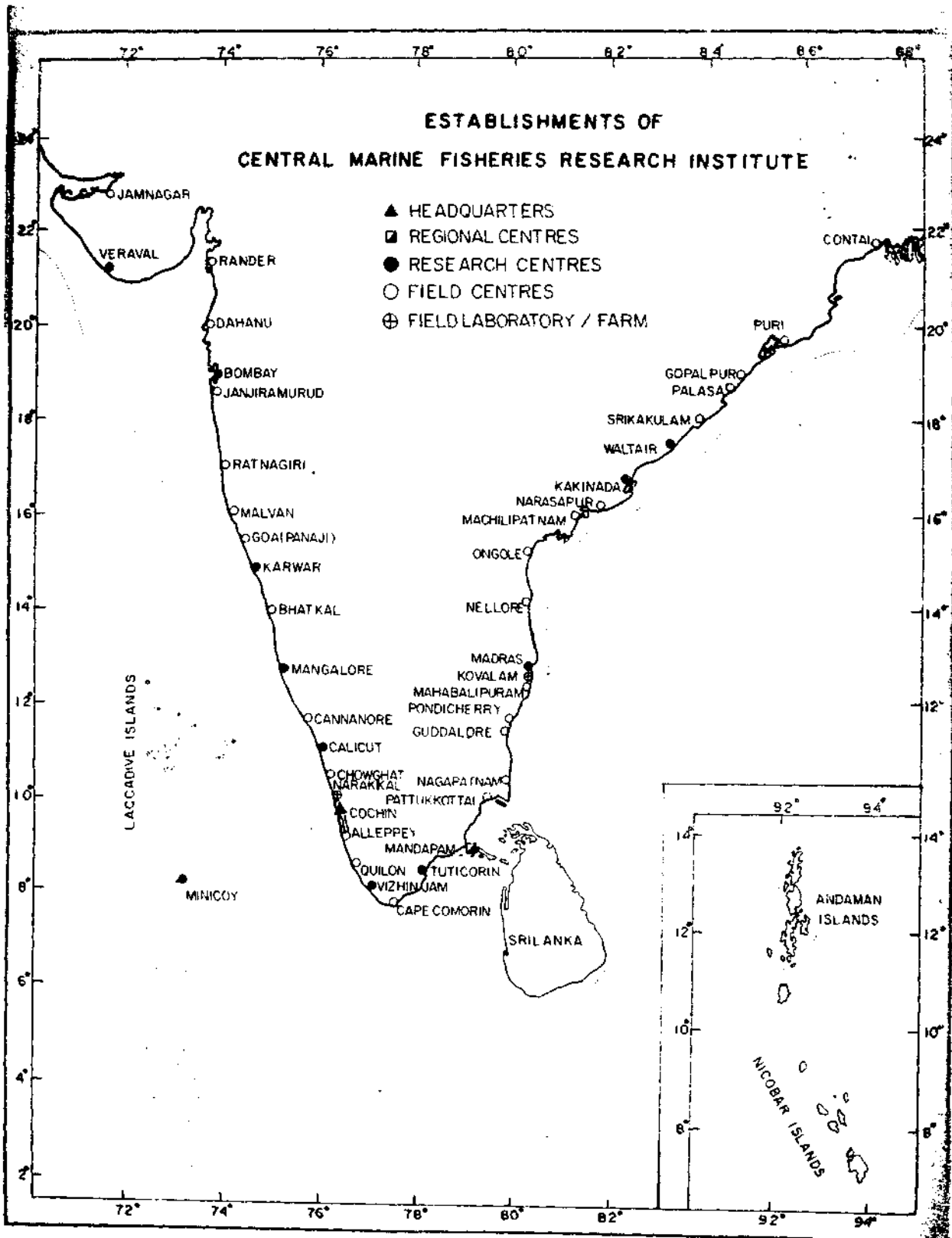
(Rupees in Lakhs)

Major Heads of Exp.	NON-PLAN		P L A N			
	Actual Exp. for VI Plan Period (1980-1985)	Actual Exp. for 1st 2 years in the VII Plan period (1985-86, 1986-87)	Actual Exp. for VI Plan Period (1980-85)	Approved out lay in VII Plan (1985-90)	Actual for 1st 2 years of VII Plan Period (1985-86, 1986-87)	Proposed in the Midterm appraisal
1	2	3	4	5	6	7
<u>A. Recurring</u>						
1. Pay & Allowances	573.49	384.44	16.02	74.98	7.29	100.00
2. Travelling Allowance	14.45	18.00	30.68	20.00	8.14	25.00
3. Contingencies	87.52	145.17	302.48	50.00	40.52	70.00
<u>B. Non-Recurring Cont.</u>						
1. Equipment	2.51	Nil	47.47	33.00	6.81	55.00
2. Vehicle	Nil	Nil		3.50	-	3.50
3. Works	Nil	Nil	264.78	204.52	133.77	304.98
4. Lands	Nil	Nil		47.25	74.26	85.89
5. Others	2.63	21.83	61.07	10.00	4.65	20.00
	680.60	569.44	722.50	443.25	275.44	664.37

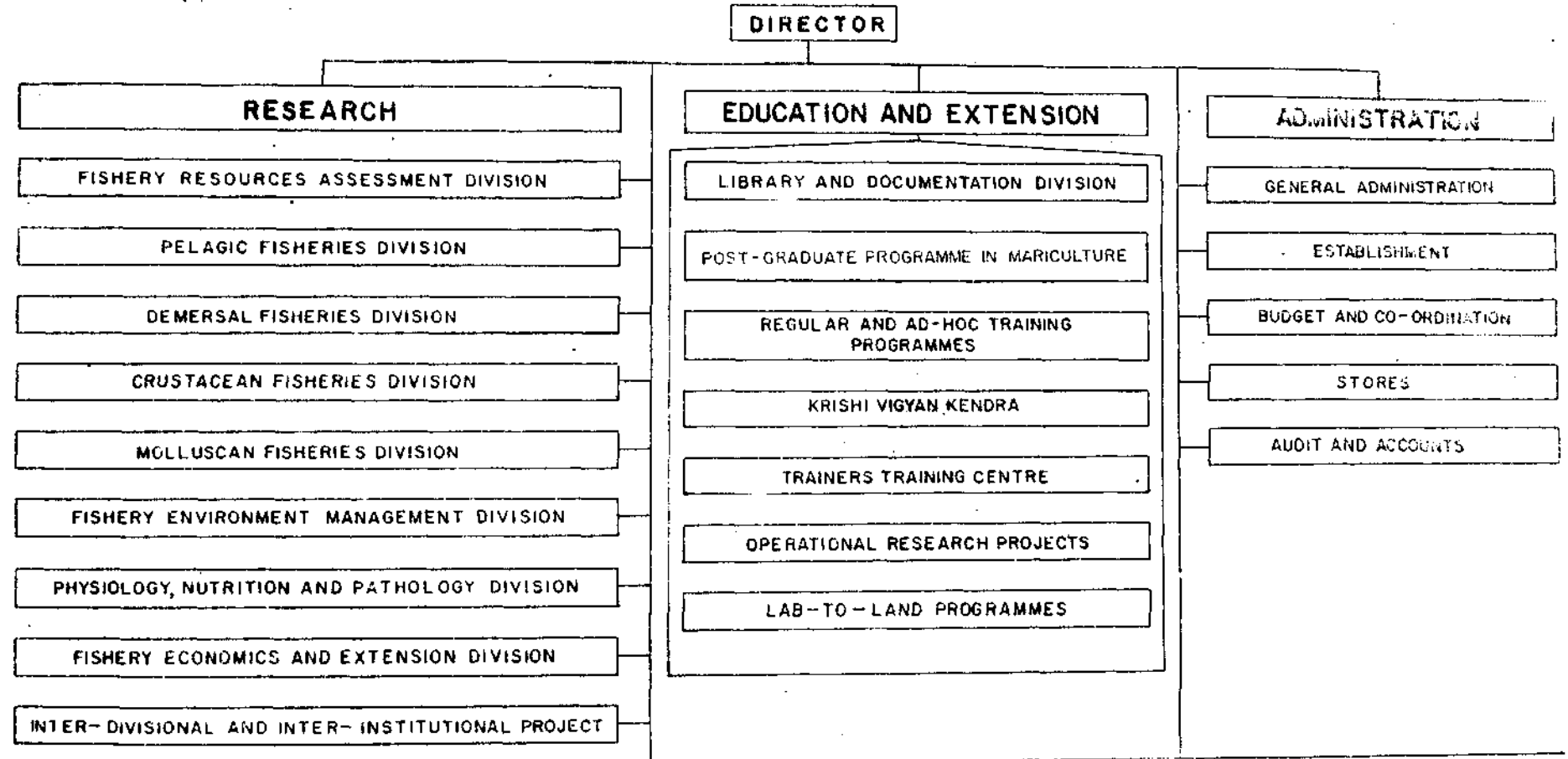
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Financial Progress of VII Plan

Major Heads of Expenditure	Plan out- lay appro- ved for current plan (a)	Expenditure incurred		Anticipated Exp- enditure for remaining three years			Total require- ment for the Plan period (d)	Sav- ings	Addi- tional demand	Justtification for Additional demand if any
		1985-86	86-87	1987-88	88-89	89-90				
1	2	3	4	5	6	7	8	9	10	11
I. Salary	74.98	-	7.29	20.00	25.00	47.71	100.00	Nil	25.02	Addl.amount for staff of PGPM Scheme,Engg. Cell & proposed Addl. Adm. staff.
II. T.A.	20.00	2.12	6.02	5.00	5.00	6.87	25.00	Nil	5.00	Due to revision of TA/DA rates and joining of Addl.staff.
III. Recurring Contingencies	50.00	25.51	15.01	10.00	10.00	9.49	70.00	Nil	20.00	Due to increase in cost of materials and labour.
IV. <u>Non-Recurring Contingencies</u>										
1. Equipments	33.00	5.42	1.39	20.00	20.00	8.19	55.00	Nil	22.00	Due to taking up new projects. To acquire shore based facilities and for Resi.Qrs.
2. Land	47.25	47.25	27.01	11.63	-	-	85.89	Nil	38.64	
3. Building	204.52	113.87	19.90	57.63	70.04	43.55	304.98	Nil	100.46	To meet the Addl.requ- irements for accomod- ation for Lab.& Res.Qrs
4. Vehicles	3.50	-	-	1.00	2.50	-	3.50	Nil	Nil	Nil
5. Others	10.00	1.25	3.40	5.00	5.00	5.28	20.00	Nil	10.00	To meet additional requirements of staff.
Total	443.25	195.42	80.02	130.26	137.54	121.09	664.37	Nil	221.12	



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HEADQUARTER AND SUBSTATIONS

COCHIN(HQ)	MANDAPAM	MADRAS	BOMBAY	WALTAIR	KAKINADA	TUTICORIN	VIZHINJAM	CALICUT	MANGALORE	KARWAR	VERAVAL	MINICOY
3	2	6	4	5	2	1	-	1	1	1	2	-
Field centres	Field centres	Field centres	Field centres	Field centres	Field centres	Field centre	Field centres	Field centre	Field centre	Field centre	Field centres	Field centres

**CENTRAL MARINE FISHERIES RESEARCH INSTITUTE, COCHIN
(ICAR)**

LINKAGES WITH OTHER ORGANISATIONS IN THE ON-GOING RESEARCH PROGRAMMES

