BOBP/MM/4

Strengthening Monitoring and Evaluation and Management Information Systems in the Department of Fisheries, Tamil Nadu

BOBP For Fisheries Management
BAY OF BENGAL PROGRAMME

Strengthening Monitoring and Evaluation and Management Information Systems in the Department of Fisheries, Tamil Nadu, India

BAY OF BENGAL PROGRAMME
Chennai, India
December, 2000

Preface

This document is the report of a study on the rationale, the recommended approach and the methodology of a proposed project to strengthen monitoring and evaluation and management information systems (MIS) in the Department of Fisheries, (DOF)Tamil Nadu. The study was supported by the Bay of Bengal Programme (BOBP).

The study was carried out by Om Consultants, Bangalore. They identified information gaps in the Department by studying policy notes, holding discussions with fisheries officials at various levels, and organising a workshop. A logical framework matrix for the DOF was evolved with the help of DOF officials, and objectively verifiable indicators identified for monitoring.

The report proposes an MIS cell to be set up in the headquarters of the DOF, decentralisation of information flow, more systematic interaction with central fishery institutions, and training and **HRD** measures.

The BOBP is a multi-agency regional fisheries programme that covers seven countries around the Bay of Bengal – Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka, Thailand. The Programme plays a catalytic and consultative role in developing coastal fisheries management in the Bay of Bengal, thereby helping improve the conditions of small-scale fisherfolk in the member-countries.

The BOBP is sponsored by the Governments of Denmark and Japan. The executing agency is the FAO (Food and Agriculture Organization of the United Nations).

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Foreword

The BOBP's Third Phase (1994-2000) devoted itself to fisheries management. In Tamil Nadu, India's southern state which has hosted the Programme from its inception in 1979, the BOBP carried out a special study in 1999 at the request of the Department of Fisheries (DOF).

The special study aimed at strengthening monitoring and evaluation and management information systems in the State. It was meant to support, systematize and streamline the activities of the DOF in its efforts towards sustainable development and management of fisheries.

Details of the methodology and implementation of the study are found in this booklet. It was carried out in a participatory manner. Discussions were held with the DOF both at managerial and field levels. A workshop in Chennai brought together not merely officials at both levels but also representatives from central fisheries organizations such as Central Marine Fisheries Research Institute and Central Institute of Brackishwater Aquaculture, so that their knowledge and insights could be tapped.

I would like to emphasize one of the useful contributions of the study – the Logical Framework Matrix evolved for activities of the DOF, and the selection of objectively verifiable indicators. Government organizations need the use of such modern management tools to further increase their efficiency and accountability, as also to institute policy corrections wherever necessary.

A significant outcome of the study is a proposal for an MIS cell in the DOF, and a committee to ensure systematic information networking with other fisheries organizations.

The co-operation received from officials at all levels during the conduct of the study was heartening, and reflected their keenness to streamline methods of data collection, analysis and decision-making, using modern management tools and techniques.

Chennai
29.12.2000

Yugraj Singh Yadava
Interim IGO Coordinator
Bay of Bengal Programme

LIST OF ABBREVIATIONS

AD	-	Assistant Director
ADF	-	Assistant Director Fisheries
BFDA	-	Brackishwater Fish Farmers Development Agency
BOBP	-	Bay of Bengal Programme
CEO	-	Chief Executive Officer
CFM	-	Coastal Fisheries Management
CIBA	-	Central Institute of Brackish Water Aquaculture
CIFA	-	Central Institute of Fresh Water Aquaculture
CIFNET	-	Central Institute of Fisheries Nautical & Engineering Training
CICFRI		Central Inland Capture Fisheries Research Institute
CM		Current Month
CMFRI		Central Marine Fisheries Research Institute
CPU		Catch Per Unit
CUM		Cumulative
DD		Deputy Director
DDF		Deputy Director Fisheries
DOF, TN		Department of Fisheries, Tamil Nadu
DOD	-	Department of Ocean Development
DSC	-	Digital Selective Calling
FAO	-	Food and Agriculture Organization of the United Nations
FSI	-	Fisheries Survey of India
GMDSS	-	Global Maritime Distress Signaling & Safety System
GOTN	-	Government of Tamil Nadu
HQ		Headquarters
HRD	-	Human Resource Development
HSD	-	High-Speed Diesel
ICAR	-	Indian Council of Agricultural Research
IFA	-	Indian Fisheries Act
3D	-	Joint Director
JDF	-	Joint Director of Fisheries
LFA	-	Log Frame Analysis
M & E	-	Monitoring & Evaluation
MDP	-	Management Development Programme
MIS	-	Management Information System
MPEDA	-	Marine Products Export Development Authority
MSY	-	Maximum Sustainable Yield
NBFGR	-	National Bureau of Fish Genetic Resources
NIO	-	National Institute of Oceanography
NRSA	-	National Remote Sensing Agency
RA	-	Research Assistant
SI	-	Sub-Inspector Fisheries
TAFCOFED	-	Tamil Nadu State Apex Fisheries Co-operative Federation Limited
TNMFR	-	Tamil Nadu Marine Fishing Regulation
TNCS	-	Tamil Nadu Cooperative Society
TNFDC	-	Tamil Nadu Fisheries Development Corporation
TNMFRA	-	Tamil Nadu Marine Fisheries Regulation Act
OPP	-	Objective Oriented Project Planning

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Executive Sununary

I. The Taniil Nadu Department of Fisheries is striving to strengthen the monitoring and evaluation (M&E) system and the Management Information Systems (MIS) within the Department with the help of BOBP, so that they enable the long-term goal of sustainable development and management of fisheries.

II. As part of this effort, Om Consultants. Bangalore, was assigned to conduct a study on M & E as well as on MIS within the Department. It was emphasised that the study team should include participants from a core group of the Department. so that the group could take the effort further. The study was to use the internationally accepted tool of Logical Framework Analysis (LFA) to formulate objective monitoring parameters for selected activities of the Department.

III. Om Consultants tried to identify the Department's information needs and gaps in three ways:

(i) Studying the organisation's mandate, as reflected by the Policy Note of the Government of Tamil Nadu

(ii) Holding discussions at various levels, both at the HQ and the field, including some of the stakeholders

(iii) Collectively identifying information needs and gaps through a Workshop, in which representatives from the DOF and various other organisations such as CMFRI and CIBA took part. Approaches to bridge these gaps were also identified.

IV. A review of current information flow patterns was attempted, and current gaps and impediments were identified. For example, in Resource Management, vital information on stock assessment needs to be obtained. Likewise, catch data analysis in Tamil Nadu has to be more purposive.

V. There is an imminent need to structure the DOF's interaction with institutions such as CMFRI and collate the data obtained from them. These institutions too are quite willing to collaborate.

VI. A Logical Frame work Matrix has been evolved for representative activities of the DOF in conjunction with various DOF schemes. Objectively verifiable indicators have been identified for monitoring. These indicators could serve as effective parameters for monitoring and evaluation.

VII. To effectively analyse information flow from the field and elsewhere, an MIS cell needs to be constituted at the DOF's headquarters. This should be staffed by a multi-disciplinary team of economists and systems analysts, a sociologist and a marine biologist. Data processing infrastructure with suitable computers and personnel have to be provided. This move is in line with the Government of Tamil Nadu's approach towards adoption of information technology in the State. Information Analysis has to be decentralised. More decisions should be taken at regional levels rather than at the headquarters. The proposed Information Delivery Model, if adopted, could be extremely useful for speedier decisions at the field level and more timely information for fisherfolk.

VIII. For the proposed Information Delivery System to be effective, concurrent HRD efforts have to be undertaken as already identified during the earlier BOBP-supported DOF study on skill gaps and training needs.

IX. Information is available from various sources. But the problem is one of introducing networking mechanisms. A committee comprising representatives from DOF, CMFRI, CIBA, etc. could be constituted to make information availabile at various levels and also to monitor creation of new formats based on the needs of the DOF.

X. Department officials, and younger officers in particular, are eager to adopt modern methods of data collection, analysis and decision making. This augurs well for the introduction of new and more efficient management systems in Tamil Nadu.

CONTENTS

Annexures

1.0 BACKGROUND

I.1 The Department of Fisheries has over the years evolved information systems and monitoring procedures appropriate for various DOF schemes in vogue from time to time. A new thrust is now being given to sustainable development and management of fisheries and adherence to the Code of Conduct for Responsible Fisheries. In tune with these moves, DoF has sought to strengthen its Monitoring & Evaluation and Management Information Systems. In this effort, the help of BOBP was sought to obtain competent external expertise. Om Consultants (India) Pvt. Ltd. were consequently invited to conduct a study. The ultimate aim is to utilise the study's findings to build a sound and workable M&E and MIS system, with a group of officers being trained concurrently to carry the effort forward.

1.2 As per the Terms of Reference (Annex-1), the study objectives were

- Identify, review and analyse existing monitoring & evaluation and management information practices
- Identify the DOF's Information Needs in the context of overall objectives
- Examine the scope for improving and strengthening existing M & E and MIS practices.
- Develop strategies, approaches and proposals to strengthen M & E and MIS

1.3 Preparatory meetings were held with BOBP and the Director of Fisheries, Tamil Nadu, on 17th March, '99. It was agreed that the Task Force already constituted by DOF would liaise with the consultants. The consultant team held discussions with the Task Force on 8th April at **DOF.** It was agreed that as a first step, a list of activities and current available information would be prepared and reviewed during the next meeting.

1.4 The consultants again met the Task Force on 19th April and reviewed the list of activities and the current information available in the Department in the form of periodicals. The team decided that existing periodicals would he collected and analysed for(i) content; (ii) periodicity: (iii) authenticity; (iv) source; (v) flow, before suggesting improvements.

1.5 The team subsequently met on 6th and 25th May '99 after which it was felt that field visits could be undertaken. Accordingly, field visits were undertaken by consultants along with DOF officers from 7th to 10th June '99 to Thanjavur & Thoothukudi and also to Kanchipuram on I lth June '99.

1.6 A workshop was arranged on 6th July '99 to discuss the DOF's information needs and the gaps that needed to he filled. DOF officials, and representatives from organisations such as CMFRI, CIBA, CIFNET, FSI were also present.

1.7 ALog Frame Workshop was held at BOBP on 7th and 8t5 July '99 with a smaller group of officers from DOF and the consultants, Aim: to evolve the M&E Framework based on Log Frame analysis for selected activities.

1.8 Subsequent consultations were held with DOF officers about the Log Frame, and their comments obtained. A dralt report was submitted in August '99. Comments were obtained on the draft report from the Government of Tamil Nadu, the DOF and BOBP officials. These have been incorporated in this final report.

1.9 We would like to thank the Department of Fisheries and some other stakeholders – Central Government agencies. ICAR and BOBP officials – for having spared their time for discussion and co-ordination and for attending the workshops.

2.0 IDENTIFICATION, REVIEW & DIAGNOSTIC ANALYSIS OF EXISTING MONITORING & EVALUATION SYSTEMS

2.1 The overall functions of fisheries can be broadly represented by a schematic model that shows fish, fish catches and fish consumers.

Fisheries Management

1	Fish	Resource
2	Fish catcher	Fisherfolk
3	Fish consumer	Market

2.3 The three main elements in the above model – the fish, fish catchers and fish consumers - interact among themselves. Sustainable fisheries hinges on this interaction.

2.4 Each of the three elements has functions that have to be carefully studied and managed. These are

Fish

- The main element. This resource is available from two main sources, marine and inland.
- A comprehensive study of the basic marine and inland resources – their biology, migration, seasonal characteristics and trends, growth characteristics, disease and related environmental parameters – is needed to understand the basic profile of fish. More effective resource management and sustainable fisheries depends on knowledge of these factors.

Fish Catchers

- Fisherfolk are responsible for fish reaching the shore *en route* to the consumer.
- Being a marginalised section of the population, fisherfolk require help and guidance for effectiveness and efficiency in their operations and activities.
- The areas of help required range from eco-friendly methods of catch to use of proper gear, mechanized facilities for fish capture, better post- harvest processing methods, etc.
- The results of any applied research project should be extended to fisherfolk in such a way that they are understood and used. To allay their apprehensions about scientific methods, effective training and extension programmes should be formulated and implemented.
- To motivate them and inspire their participation in implementing sustainable fisheries management, basic welfare activities such as housing and co-operatives should be assisted. Women's participation should be encouraged and facilitated.

Fish Consumers

The place where fish catchers and consumers meet is the market. Since fisherfolk are not market-savvy, they do not get reasonable prices for their catch. They ought to get a just reward for their efforts. One way of ensuring this is by forming marketing co-operatives, thereby eliminating exploitation by traders.

2.5 Thus, the functions of fisheries *vis-a-vis* the three main fisheries elements maybe summed up as follows

1	Fish	Resource	Resource Management Marine and Inland Resources
2	Fish catcher	Fisherfolk	Welfare measures - Housing & Insurance Cooperative Societies Training (long-term & short-term) Communication & interaction (extension)
3	Consumer	Market	Various marketing channels

2 6 The functions described above broadly cover fisheries management. Achievements of any overall fisheries policy will depend on the level of effectiveness achieved in each of the above functions. It is believed that the study on Monitoring and Evaluation should focus on these functions as a basis for the study.

2.7 The fisheries management functions referred to above can be linked to the Department's functions as follows:

SI.No	Fisheries Management Function	Departmental Function
I	Resource management	Resource management
2	Marine resource management	Marine fisheries
3	Inland resource management	Inland fisheries
4	Co-operatives	Co-operative society
5	Training (long-term & short- term)	Extension & Training
6	Communication & interaction (extension	Extension & Training
7	Welfare measures Housing Insurance	Fisherfolk welfare measures (housing & insurance)
8	HRD Support	Human Resources Development wing of the Department. It will execute all the fisheries functions mentioned above.
9	Research Support	Fisheries research covering resource management functions, both for marine and inland resources
10	Marketing Support	Infrastructure

The departmental functions referred to above were discussed and found conipatible with reference to the monitoring needs of the Department. The information requirements of the Department were also identified (Annex 5).

2.8 The Tamil Nadu Government's objectives in fisheries (obtained from the current year's Mission Statement of the Government) have been linked to fisheries functions in the table below

SI.No	Objectives stated in Policy Note of	Related Fisheries Function
1.	To maximise fish production through eco-friendly, sustainable technologies	Resource Management
2.	To integrate the industry with international markets and quality standards	Marine Fisheries
3.	To make adherence to quality, a way of life with fisherfolk	Extension & Training
4.	To increase foreign exchange earnings	Marine & Inland Fisheries
5.	To undertake socio-economic development of the fishing community with special emphasis on women (Socio-Economic measures)	Welfare
6.	To strengthen co-operative effort through establishment of viable fishermen co-operatives	Co-operatives

Analysis of existing reporting system

2.9 The existing reporting system was studied for all functions (Research, Resource Management, Marine, Inland, HRD, etc.) identified in earlier stages. Key activities for each of these functions were identified, and the information flow studied. An organogram of the DOF showing various organisational levels is given in Annex 4. The study of the reporting system focused mainly on (a) the basic data elements characteristic of the functions (b) the levels through which information flows and (c) the levels and frequency at which information is consolidated.

The details have been presented visually in Annex 5. which contains nine diagrams about the existing reporting system in various functions of the DOF. The diagrams bring out the variations in the reporting structure. They also show information flow and processing at various levels of the DOF.

The decision points and action points based on the information flow have also been identified. In most cases these points are located at the headquarters, even if this not essential for effective delivery of services to stakeholders A more decentralized decision-making system could he put in place for ensuring correct and speedy decisions.

A broad overview of the cun'ent situation in respect of nine main areas of Information usage for Fisheries Management is presented below:

2.9, | ***Information Management concerning Resource Management***

At present, information management (collection and distribution) in almost all areas of resource management – such as fish movements, stock assessment, fisherfolk feedback, gear usage and endangered species – is highly informal (person-oriented). The information may not be available to the right person at the right time. For an organization to perform well, a fundamental requirement is a formal and well-established system for making information available to decision-makers. This requirement cannot be compromised jeopardizing the organization itself. The only way to improve the cun'ent situation is to implement formal systems and procedures for both collection and distribution (of information) as early as possible. The system should encompass systematic interaction with other agencies specializing in various fisheries management functions.

2.9.2 ***Information management — marine fisheries***

Field *staff* in coastal areas should be the first to know what has been just captured from the sea. But current practice is that field staff get basic capture information (quantity, quality, species. gear used, trends and comparison with norms, etc) only at the end of the year. For all practical purposes, their work throughout the year is based on inferences and deductions drawn from past data. Moreover, a formal analysis of the capture data is possible only at the head office (HO).

What's essential is a formal system by which the HO periodically (probably once a quarter or even at shorter intervals) gives the field the results of the analysis and conveys its suggestions as well. To make this possible, the HO should have an information coordinator. He will check the veracity of the sample field data and help ensure that the data base is reliable.

2.9.3 ***information management — inland fisheries***

Inland fisheries covers a vast area that is quite difficult to track. At present, information concerning disease incidence and seed production is fairly well organized and available for decision- making. But information about catch and IFA 1897 enforcement is thin. Considering the size of the area, the Department ought to consider alternative ways, such as sampling, to obtain catch data.

2.9.4 ***Information management — co-operatives***

Information available at present focuses mainly on the numeric aspects, such as the number of societies, the number of members, houses constructed, etc. These are some indicators. But qualitative factors, not available now, are needed to indicate how well the societies function. Qualitative information calls for a different approach. It requires basic surveys/census of the fisherfolk population, conducted more frequently than now - on factors such as house occupation, feedback on co-operative societies etc. Considering the type, quantum and duration of the resources required for implementation, it is essential that the DOF takes a decision on either creating the expertise within the Department or getting the job done on contract by an external agency.

2.9.5 ***Information management — Extension and Training***

Research is useful only when it is applied to the field. Feedback from the field enables the research to focus on problem-solving. At present, the Department does not have a formal system to obtain feedback from the field. The system should cover situations before and after the research, and provide qualitative feedback about the staff and concerned participants.

2.9.6 ***Information management — socio-economics***

The housing scheme is meant to provide fisherfolk with shelter, a very basic need. How effective is the scheme? The answer lies in how the houses are used rather than in how many have been allotted. At present, information on the scheme is about allotment details, not about how the nature of occupation. One recognizes that getting info about occupation isn't either easy or cheap. But since this qualitative information can redefine the very scheme, the DOF should consider alternative ways of obtaining feedback on the design of housing, the quality of construction, on demand vs availability etc..

2.9.7 ***information management — H R D***

Whatever manpower is available with the DOF, has to be developed to meet the Department's professional requirements. This is important because of the pace of scientific change in fisheries. To deploy the manpower effectively, the Department would need a great deal of information about the performance of staff, their training requirements, their place of posting and their skills. A formal system must be introduced for obtaining such information. At present, manpower information is about numbers, and about retirement who will retire when. This has to change and a better system should be introduced and institutionalised.

2.9.8 ***Information management — research***

At present, research in the Department addresses problems faced during the year rather than fundamental fisheries problems. Research should instead focus on technical issues faced by the Department. On many technical issues, DOF may have to interact with other agencies specializing in their respective fields. A formal procedure for such interaction would be useful.

Diagnostic Observations:

2.10 Information & Resource Management

Hardly any Information on fisheries management is generated from within the system. Most of the information is obtained from external sources such as CMFRI and NRSA, and is made available directly to the HO (JD Research). it is then compiled in the form of special reports and submitted to the Director for information. There is no system to disseminate this information to everyone concerned. Meetings with external agencies do not follow a regular schedule of interaction. They are ad hoc, determined by urgent need. Field staff concerned with fishery resources on a day-to-day basis have no access to scientific inputs on these subjects.

Some detailed comments:

2.10.1 ***Timely dissemination of information to fishermen about the availability and movement of fish.***
The Department receives information from time to time from the National Remote Sensing Agency (NRSA), about the movement of the fish and their location. This information can be highly useful to field staff for planning catch volumes and providing guidelines to fishermen.

At present the information is received from Hyderabad and passed on to the field via fax-equipped locations, The logistics of this method of dissemination leaves a lot to be desired: the info is not timely. and there is no assurance that it will reach the right people at the right time. There should be a standard procedure to ensure timely flow of information. Besides, there should be methods to review the dissemination process. This could be done by making this subject a part of the standard agenda at monthly review meetings.

In view of the importance of this information and its utility for improving the catch, it is suggested that an information center be set up at the HQ for receiving and disseminating field information. Such information centres will be linked to All- India Radio and Doordarshan for quick and timely dissemination.

2.10.2 ***Creating a database on fish movement habits and patterns from the information received from Hyderabad***

At present, information received from NRSA is passed on to the field through fax-equipped centres. An analysis of the data received is likely to yield valuable information about trends and patterns of fish movement and fish behaviour. Such an analysis is possible only if the information received is stored in a database and made available for analysis. The information centers proposed earlier would facilitate this activity.

2.10.3 ***Interaction with research institutions***

Stock Assessment is a scientific study and analysis of the availability of fishes in a given area of water resources. To make a realistic assessment of the stocks available and plan for their sustainable exploitation, regular programmes for stock assessment should be undertaken. Currently, research institutions like CMFRI engage in such studies. Regular interaction between the DOF and these institutions is essential.

2.10.4 ***Periodic feedback is needed from fishermen and the market about***

- Species available
- Abundance of existing species
- Health of existing species
- Efficiency of the fishing gear

through group discussions with stakeholders

Fisherfolk constitute the second-most important element in the entire system of fisheries management, second only to fish. They venture into the sea almost every day to tap its resources. Their first-hand experience and knowledge of the sea are invaluable. Both qualitative and quantitative data can be obtained through systematic interaction with fisherfolk. This data should be analysed and disseminated to everyone concerned.

2.10.5 ***Fishing gear***

Fishing gear has a major impact on sustainability. Different types of gear have different effects in different areas, It is important to ensure that the wrong type of gear is not used – it can wipe out the entire species. Information on the type and usage of gear is therefore necessary. At present, such information can be got through sample surveys carried out by field investigators. A system for storing this information for further dissemination and analysis is necessary.

2.10.6 ***Periodic interaction with agencies like CMFRI***

As explained earlier, systematic interaction with research institutions such as CMFRI is necessary so that DOF benefits, and is able to plan and regulate harvest of natural resources effectively and efficiently.

2.10,7 ***Reducing discard of by-catch (non-target species)***

Sample data provided by field investigators must be analysed to obtain estimates of bycatch discard. A system for doing this regularly should be established and taken up at monthly meetings for review and action. Obtaining field data regularly on by-catch is difficult since it isn't easy to get such data. Field staff must be appraised of the importance of this and urged to ensure detailed data collection. A sufficient number of sampling units ought to be selected for data collection about by-catch discard. Otherwise, statistical error might result. This may mean additional cost but redeployment of staff can keep the cost down.

2.10.8 ***Data collection on endangered species***

The composition of stock in a given area undergoes constant change because of over-exploitation and environmental factors like pollution. The fish catch composition reflects these factors. The size and quantity of catch, and the season, provides adequate warning signals about changes in fish population. Such signals must be recognized early to plan precautionary measures to avoid over-exploitation of the species. The DOF should consult institutions such as CMFRI that can identify and interpret these signals. Such consultations should be held every quarter, and the Director of DOF should be briefed about the outcome.

2.10.9 ***Assessments on environmental impact***

Competent studies on the subject, conducted by various central agencies and other institutions, should be taken note of for possible course corrections in fisheries management.

2.11 ***Marine fisheries***

Ar present. information aboutfield activities is collected byfield enumerators through a sampling process, on the basis ofsamplingplans designed by the DOE But detailed collation and analysis ofthe sample data from all the regions is done at the HQ by the AD (Statistics). A report based on this analysis is compiled and submitted to the Director through the JD (Marine) for information and advice. A few aspects relating to this exercise need to be considered:

i) The frequency ofcollation and analysis is one year This tilnespan is unsatisfactory, being larger than most of the cyclic changes that could occur in the environment.

ii) Field staff do not get any immediate feedback about catch data, which would enable them to rectify any damage.

iii) By the time the analysis is made available to the staff its relevance and utility are limited.

iv) The compiled information is not disseminated according to a planned and designed system.

v) The compiled reports do not conform to universally prescribedformats and standards.

Some detailed comments:

2.11.1 ***Absence oftimely information to thefield concerningfish production —— such as landings, gear andtackles.***

At present, information about landings is obtained by field investigators who visit field sites according to sampling plans laid out by the Department. The data is sent directly to the HQ monitonng unit where it is compiled to produce estimates. But the regions to which the sites belong, do not get to know these estimates till the end of the year, when annual statistics are published. It will help if the estimates of landings and catches are made known to the region as early as possible so that remedial action if needed can be taken in a timely manner. Knowledge about trends concerning volume, species, size, etc. could be of immense value to the region. They could, for example, reflect drastic changes occurring in the sea because of over-fishing of some species through the use of wrong gear or extra effort. Crisis-control is impossible if such vital information is provided only at the end of the year.

2.11.2 ***At present, the value offish landings is statistically estimated from samples. But methods to cross-check samples and estimates have yet to be evolved. Cross-checking would strengthen confidence in the estimates.***

Methods to estimate landings should include cross-checks – they would then gain in credibility. The Regional Assistant Directors of Fisheries should be authorised to cross-check data collected by the investigators. At least 10% of the data should be cross- checked.

2.11.3 ***Field operations and landings estimates should be critically examined from the standpoint of eco-friendly sustainabilily. Estimates should be checked against the MSYand CPU atthe overall level ofoperations, and against statisticalprojections at the regional level.***

The DOF should seek to conform to procedures and standards prescribed by international bodies. Its performance can then be assessed more accurately.

2.11.4 ***Analysis of catch to establish possible trends concerning.***

- Availability of species
- Health of species
- Quantum available / caught
- Gear-catch relationships

At present, the raw material needed for such analysis is obtained from the field in the form of sample data on catches and landings. Such data must be analysed and extrapolated so that some trends can be discerned.

2.11.5 ***Violations of the Tamil Nadu Marine Fisheries Regulation Act (TNMFRA) are not reported systematically to ensure action plans for better enforcement.***

2.12 **Inland Fisheries**

The system for collection and dissemination of information on culture operations is fairly well established. The reporting of disease information from the field to the JD (Region) and the DD (inland) HQ is effective, it .facilitates timely remedial action. But the current reporting structure does not highlight exceptions that require immediate attention from field staff The system for catch-related information has some difficulties because of the wide area to be covered, also because of socio-political factors. Field details focus on performance levels and on comparisons with targets (set at the beginning of the year). They contain little of the socio- economic information that is so essential for proper understanding.

The performance reports are consolidated for each Region by the DD (Inland) HQ and submitted to the JD (Inland) HQ along with comments. Consolidated information and analysis from the region is not sent to the JD (Region) as a matter of routine. The concerned executives get only reports concerned essential for them.

Some detailed comments:

2.12.1 ***Problems with obtaining catch data.***

Since the culture sites are numerous and scattered wide, it is quite difficult for the Department to get catch information. It would be helpful if an alternative sampling plan could be formulated.

2.12.2 ***Dissemination of information on disease incidence to other areas to enable preventive measures.***

The information is currently reported to the HQ from the field.

2.12.3 ***Seed production (fry fingerlings) data availability is fairly well organized in the Department.***

2.12.4 ***IFA 1897- regulation and enforcement. Non-availability of data and of feedback from the field.***
Since the regulation itself contributes to the sustainability of the operation, there should be greater emphasis on reporting violations.

2.13 **Co-operatives**

The system reveals that current field data focuses almost exclusively on compliance of the co-operative societies with statutory obligations. Reports concentrate on quantify (numbers), leaving out qualitative factors. Such reports can only he of limited use for planning and implementing co-operative schemes.

Some detailed comments:

2.13,1 ***Information on the activities of co-operatives (both fisheries and non-fisheries) is not available.***

At present, information is available only on the number of societies and the number of members. This information is insufficient, as it doesn't indicate how the societies are functioning. Information is needed on how often the societies meet, what they discuss and decide, how many members attend each meeting, Such qualitative factors reflect the health of various societies and their ability to further the objectives for which they were set up.

2.13.2 ***Annual census of the co-operatives not available***

For organising and managing a census of co-operatives, the following steps may be useful

1. The job may be done by an external agency contracted to collect and provide satisfactory statistical information.
2. Officers trained by DOF may design the statistical techniques and plans for the census. Physical implementation may be left to the external agency.
3. A cell within the DOF consisting of trained officers will design and develop statistical procedures to estimate fish landings and other details. Data on the basis of this design will be collected by enumerators, who may also be on the staff of the Department.

2.13.3 ***Information is needed about the fisherfolk population as a whole (not just about co-operatives and their members).***

The co-operative society is basically meant to help fisherfolk. Its effectiveness can be gauged only with reference to the entire fisherfolk population, not just the society's members. Information on the entire fisherfolk population should therefore be available.

2.13.4 ***Societies and housing***

The reporting system gives an idea of the number of fisherfolk provided with housing. What percentage of the beneficiaries did not own a house earlier? This information will be useful.

2.14 ***Extension and Training***

In general, field staff collect data and provide it to the AD in the region. It is consolidated across districts within the Region and forwarded to the JD (Region) for analysis and conclusions. Reports from the Regions go to the Director in addition, these reports are also sent to the HQ for inclusion in a database maintained by the Department.

The reports describe the activities undertaken, the number of activities in various subject areas, plus financial details. But the impact of these activities does not figure anywhere in the reports. They do not discuss how the activities generated specific benefits such as disease prevention or better yield. A major part of the report meets the requirements of budget monitoring. There is no qualitative information quite essential for effective decision-making – which is currently obtained through informal methods on a personal basis.

Activities under the training function are reported by the AD (Region) to the DD (Region). The information is consolidated here and forwarded to the Director. The report concentrates on quantitative information. Aspects such as need, adequacy, feedback and suggestions for improvements do not form a part of these reports.

Some detailed comments:

2.14.1 ***Information on technology transfer and feedback from the field.***

Technology can benefit any one only when it is transferred to the the field. Effective technology transfer calls for dedicated extension effort. Its success can be gauged only by field monitoring. The monitoring has to be institutionalised. A formal system must be established that provides information concerning various parameters before and after the technology is introduced. Besides, qualitative feedback must be obtained from field personnel. This would serve as a valuable input.

2.15 ***Socio-Economics***

Details on socio-economics collected from the field relate mainly to the construction of houses, other welfare schemes for fisherfolk, and costs. Information on the progress of house construction is submitted to the Executive Engineer every month to enable timely trouble-shooting action. But details about the acceptance of welfare measures by fisherfolk do not form a part of the reporting. Likewise, the launching of street lights, savings schemes and bank loan schemes is reported, but not the progress of the schemes, problems encountered, etc. In the absence of such feedback, the usefulness of the reports is limited.

Some detailed comments:

2.15.1 ***Information about who actually lives in houses built for flsherfolk is not readily available.***

The scheme is meant to provide fisherfolk with basic living accommodation. So it is essential to find out whether fisherfolk are living in the houses allotted to them. If they are not, there's something fundamentally wrong with the scheme. It's perhaps difficult to find out who actually lives in every house, fisherfolk or some one else. But a way should be found to get this information.

2.15.2 ***The system should provide information on what's available vis-a-vis what is necessary.***

How many houses do the fisherfolk need? How many are available now? This information is essential to phase out the housing scheme for fisherfolk. Census data would provide the information. It would need some intermediate processing.

2.15.3 ***While quantitative information about construction of houses is available, analysis of factors that impede the progress of construction is missing.***

The housing-for-fisherfolk scheme – there are many stages in the procedures to be followed. Making land available is an important factor with potential for delay. Subsequent stages of construction may also entail delays. It will be useful if the exact cause for delay is known, so that the Department can try to avoid it in subsequent projects. Therefore it is suggested that not merely construction delays but all causes for delay be reported by expanding the scope of the delay report.

2.15.3 ***Formal feedback needs to be obtained from fishermen about the houses alloted to them.***

In the current system, there is no attempt to obtain formal feedback from fisherfolk about the houses allotted to them. Such feedback could throw light on *their* concept of living accommodation – which could be different from the concept of everyone else. This feedback would reveal why some houses have remained unoccupied though they have been completed and allocated. It will also help ensure that in future houses designed for fisherfolk are acceptable to them.

2.16 **HRD**

Current HRD reports are about personnel service, not about planning for HRD or management. Theyfocus on subjects like super— annuation, pension. enquiry process, court cases, suspension. etc. There is no information about availability or deplovmenl of skiils or performance, about training to improve performance or about keeping the staff abreast will? developments in technology. Order.r and directives concerning personnel are issued directly to the field (Region) from the Directorate. The HRD division has no access to information for effective HRD planning. Further, the current system does not have the personnel database for the entire Department in one place. This also handicaps planning for HRD.

Some detailed comments:

2. 16.1 ***Current information relates predominantly to "establishment" and "retirement".***

At present, available HRD information is administrative in nature. The relevant files contain details of personnel administration (such as appointment, entry into service, promotion, increment, disciplinary action, leave). Such information is not appropriate for decision-making in HRD. It is possible. without deviating from the Department's style, to provide HRD details in a single place. The fact that all activities are recorded in official documents (orders, circulars, notifications, etc.) is an advantage for establishing a good working system for a HRD database.

2. l 6.2 ***Information on need-based training and skills is absent.***

The DOF carries out activities in technology and socio-economics that interface directly with the public. It is essential that the staff involved possess the skills needed. It may not be possible to recruit all the skilled staff in the beginning itself. Many of them will have to acquire skills on the job. Moreover, technology keeps changing with time. So do technical methodologies. Therefore constant updating of skills is essential. The HRD wing should have an up-to-date inventory of skills available in the DOF and a list of skills needed. This will help in the planning and implementation of activities. The DOF could make full use of the earlier BOBP-supported study on Skill Gaps and Training Needs',

2.16.3 ***Sufficient information is not available for deploying the rightperson on the right job***

While the skills required are available within the Department. there are many positions where the staff posted lack the right skills. This couldaffect the job performance. Information about such mismatch – where the staffer's skills do not match those required for the job – is necessary. so that the authorities concerned take remedial action.

2. 16.4 ***Information on performance at various levels is not available for assessment within the framework of government policy.***

Staff performance (efficient/mediocre/poor) is assessed by the immediate superior and maintained as a confidential report. The report is not recorded in the personnel database where it could be referred to by decision-makers looking for the right candidates to train. It is suggested that in addition to the confidential report, supervisors should fill a performance-reporting form designed to provide comprehensive information about the staffer's performance and potential. This form should be stored in the personnel database.

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2. 17 **Research**

At present. research details reported are most/v about the physical activities undertaken by ***various*** *research pro/cets. The major emphasis is on the financial* ***aspect qfproject execution. The reporting*** *system does not discuss* ***the*** *results of the projects,* ***the*** *dissemination* ***process planned*** *or feedback On applying the research findings (on an experimental scale).* ***There*** *is* ***no regular or systematic*** *interaction with oilier research institutions,*

Detailed comments:

2. 17. l *The* ***progress of research activities should be measured with reference to planned projects.***

2. 17.2 ***There should be a mechanism to review translation of research into action projects.***

2. 17.3 ***Baseline Data Management (collection, storing and updating)***

Most research activities depend on the database. A good database should therefore be established and maintained to support research. Data for the database could come from varied sources. Sometimes data may have to he collected periodically in addition to a major one-time exercise. Sufficient funds should be made available for enabling these data coflection activities.. Since the database is likely to be large. and retrieval of information is possible in many ways. the database should he computerised. Routine information collected by the Department should also form part of the database.

2. 17.4 **Feedback should be got from the field after implementing the suggested solutions**

2.17.5 ***Interaction*** *with other* ***research institutions***

Premier fisheries research organizations such as CMFRI and CIBA carry out significant work in many areas. It would he in the DOF's interest to coordinate with them and access their findings instead of duplicating their work. To do this close coordination with them is necessary Such coordination must he formal and institutionalised, not a matter of personal vibes between individuals. Coordination meetings should follow standard procedures for interaction. The outcome of such meetings should be reported periodically to the Director of DOF. Quarterly meetings are suggested.

3.0 INFORMATION NEEDS & GAPS - A COLLECTIVE DIAGNOSIS

3. l A special workshop was organised on 6th July '99 to attempt a collective diagnosis of information needs and gaps in the lr)OF. Taking part were DOF officials, representatives from the Central Government and [CAR organizations, and consultants. Some approaches to bridge the information gaps were outlined,

3.2 Inaugurating the workshop, the Director of Fisheries said that the earlier BOBP-supported DOF study on Skill (laps and Training Needs in the l)OF had inspired appreciation. Tamil Nadu should lead the way once again with a purposeful Monitoring and Evaluation Study. The ultimate goal: sustainable development.

3.3. BOBP highlighted the fact that most often the needed information for Monitoring & Evaluation and MIS is available at some place or the other. The problem is one of accessing this information at the right time. He said that very often there is the temptation to take decisions first and later collect information to justify the decisions. This process must be reversed: decisions should he based on information.

3.4 The workshop was structured as follows:

3.4.1 Identification of the main areas of information needs

3.4.2 Discussion in small groups on information needs and gaps in the identified areas

3.4.3 Presentation by small groups to the plenary, and evolution of a consensus

3.5 The pages that follow contain workshop outputs in the areas of resource management, marine fisheries, inland fisheries, co-operatives, training, welfare measures, **HRD,** research.

3.6 The workshop's collective diagnosis fully confirmed earlier findings and identified possible approaches to bridge the information gaps. For example, the need to coordinate with central agencies to obtain information on environmental data and eco-system analysis, so that proper fisheries management approaches could be formulated, was well brought out. Participants expressed satisfaction with the workshop proceedings.

WORK SHOP ON M&E 6TH JULY 1999

INFORMATION NEEDS AND GAPS FOR MONITORING & EVALUATION

FOR THE DIRECTORATE OF FISHERIES. TAMIL NADU

Area		Information Needs	Gaps	Approaches to Bridge Gaps
	Potential			Information from (CMFRI) and co-ordinated analysis of data.
	Marine (Capture)	• Catch and Effort Data	• Coverage	
		• Biological Data	• Sampling	
		• Environmental Data	• More disaggregated data	
		• Stock Assessment		
			Sound analysis for decisions	• Census Data (State)
			• Risk Assessment	• FSI Data
			• Trend Assessment	• DOD / N1O (Environment)
			• Impact Assessment	• NRSA
Resource Management	- Mariculture	• Species and suitable areas for cultivation		Keep track of developments (Gulf of Mannar Marine National Park Project, etc.)
	- Marine Ranching	• Feasibility		
	Harvesting	• Catch	• Effort data	Focussed information and analysis
		• Effort	• Analysis of socio-economic data	
		• Basic socio-economic information		
	• Post-harvest	• Consumer trends		• Feedback from processors, traders and consumers
	• Infrastructure (Post-harvest and capture)	• Market channels		• Special surveys on consumer demands
		• Quality standards		
		• Landing Area		
		- Fresh water availability		
		• Availability of ice		
		• Transportation		

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INFORMATION NEEDS AND GAPS FOR MONITORING & EVALUATION

FOR THE DIRECTORATE OF FISHERIES, TAMIL NADU (Contd.)

Area	Potential	InformationNeeds	Gaps	ApproachestoBridgeGaps
inland	Capture	• Updating area availability of all water bodies • Assessment of carrying capacity • Riverinesystems (Lottie areas) • Reservoir systems • Catch Data and Effort Data • Biological Data • Environmental Data • Eco-system Analysis	• Cov erage • Sampling	• Deployment of manpower • Coordination with CICFRI
	- Culture	• Updating area availability of all water bodies • Assessment of carrying capacity • Reservoir systems • Catch and Effort Data • Biological Data • Environmental Data • Eco-system Analysis • Assessment of production potential • Species Diversification • All aspects of stock enhancement for each reservoir	• Lack of adequate manpower (technical) • Inadequate Seed Production	• Introduction of new technology including training of personnel • Coordination with CiBA, CIFA, CICFRI. NBFGR • Fisheries lease and license policies to be framed
	Harvesting	• Updating area availability of all water bodies • Assessment of carrying capacity • Riverine systems (Lotic area) • Catch Data and Effort Data • Biological Data • Environmental Data • Eco-system analysis	• Catch and effort data • Water bodies other than reservoirs	• Updating area availability of all water bodies • Assessment of carrying capacity • Riverine systems (lotic area) • Catch data and effort data • Biological data • Environmental data • Ecu-system analysis
	- Post-harvest - Infrastructure	As collected for marine fisheries at present		As collected for marine fisheries at present

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INFORMATION NEEDS AND GAPS FOR MONITORING & EVALUATION FOR THE DIRECTORATE OF FISHERIES, TAMIL NADU (Cofltd.)

Area		informationNeeds	Gaps	ApproachtoBridgeGaps
Co-operative Schemes	**Coverage**	• Need information about population engaged in inland fishing	• Marine and Inland : awareness ofprinciples of co-operation (privileges and responsibilities)	• Co-ordinate with NGOs and educational institutions
		• Details of viable societies to extend TAFCOFED scheme • Area not covered (Society) • Potential areas for more women societies to he identified	• Ignorance of co-operative Acts. rules and regulations	• General education to society members • Proper extension • Direct contact with FCS maintained
	Strengthening	• Needs of the area	• Communication gap between co-operatives and officials	• Feedback on government schemes (reach, usefulness benefit)
Extension & Training		• Financial assistance • Fish farming • Status of new developments	• Acceptance of new concepts • Information to fishing community on new developments and feedback ***on*** the same	• Directorate to review and give guidance
		• Mass media • Propaganda • Mass contact programme • Training programme for target groups	• Infrastructure availability • Inspection reports	

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INFORMATION NEEDS AND GAPS FOR MONITORING & EVALUATION FOR THE DIRECTORATE OF FISHERIES, TAMIL NADU (Contd.)

Area		Information Needs	Gaps hi mfonnation	Approach to bridge Gaps
Welfare Schemes [Selected]	**Insurance and Savings**	• Fisherfolk need more information on all government schemes		• Mass contact programme
	Housing	• Land - type of housing required	• Provision for periodical cost escalation in estimates	• Follow-up with the Governmen for sanction
		• Information required for housing yet to be covered		• Co-ordination with other Agencies / Departments
	Gear Production	• Requirement of gear for different seasons	• Mesh regulation • Closed season	• Education on effective implementation of TNMFR - Act
		• Diversification of fishing gear		
HRD	**Personnel** Details	• Bio-data of Department personnel	• Updating bio-data of Department personnel	• Administer proforma of bio-data annually through centralised HRD
	Career Progress	• Staff trained / yet to be trained in given area	• Vacancy among Executive and supervisory staff	• Designed cadre strength • To be reviewed by a Committee
		• Scheme-wise Manpower	• Designed cadre strength	
		• Refresher / In service training needs	• Training needs projections • Non-utilisation of staff expertise due to personal reasons	
		• Vacancies from superannuation	• Non-appropriate placement of staff with reference to skills	

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INFORMATION NEEDS AND GAPS FOR MONITORING & EVALUATION FOR THE DIRECTORATE OF FISHERIES, TAMIL NADU (Contd.)

Area		Informationneeds	Gaps	Approachtobridgegaps
	Resources for Marine and Inland Fishing	• Baseline data on all items indicated for resource management • Research methodology (updated)	• Inadequate information	• Cu-ordination with other relevant institutions
	Technology for Harvesting (Craft and Gear) & Processing			
Research	**Fresh** water	• Improved seed production and farming methods for various fish species		
	- Marine	• Identification of culturahie species and culture technology • Socio-econornie and legal problems	• Inadequate information	• Coordination with other relevant institutions
	- Brackish water	• Improved seed production • Waste water treatment • Disease and environment management		

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4.0 LOG FRAME FOR FISHERIES DEPARTMENT, GOVERNMENT OF TAMIL NADU

4.1 A logical framework analysis for the Department of Fisheries was attempted along with the officers of DOF at a workshop. Mr. M.S.S. Varadan served as the moderator. At the outset, he explained the log frame methodology and the formats used (Annex - 6). He illustrated the techniques of log-frame analysis with several applications from India.

4.2 The purpose of a log frame is to cogently link the activities of an organization to outputs that further both immediate objectives and long-term goals. Thus, in the DOF log frame, the activities of marine fish production should generate increased marine fish production as output through eco-friendly sustainable technologies. Such outputs eventually lead to the overall goal of sustainable fisheries and livelihood security for fisherfolk.

The log frame identifies indicators that tell us whether the outputs are successful. Take the case of increased marine fish production. The quantitative indicators are increased fish landings and higher catch per unit effort. But this is not enough. Qualitative indicators are also required. For example, the species composition of catches in different locations must be maintained. Fisherfolk must adopt eco-friendly gear. The adoption of the Tamil Nadu Marine Fisheries Regulation Act is yet another indicator of sustainable fisheries management. The log frame also lists the means of verification for these indicators. For example, the adoption of eco-friendly gear can be verified through an annual sample survey. The full log frame thus evolved appears on pages 21 to23.

4.3 The first column in the log frame is "Summary of Objectives/Activities". It was believed that the activities mentioned in this column should relate to government schemes. Otherwise the log frame might not serve any practical purpose. A special format was therefore evolved that listed DOF's activities under various operating schemes against proposed outputs identified in the log frame. A logical deduction was made, identifying new activities (other than those outlined in existing schemes) to achieve the desired outputs. Take for example the case of increased marine fish production. Participatory diversified off-shore fishing was considered necessary to tap hitherto untapped and under-tapped resources. This was identified as a gap.

4.4 Care was taken while evolving the log frame to rely as much as possible on existing data for the "Means of Verification". However, for qualitative indicators, certain sample surveys from time to time are necessary as indicated in the log frame. An example is the use of eco-friendly gear mentioned in 4.2.

LOG FRAME FOR FISHERIES DEPARTMENT, GOVERNMENT OF TAMIL NADU

Summary of Objectives / Activities		Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Ultimate Objective) e	Achieve sustainable fisheries and hvelihood security of fisherfolk	• Maximum sustainable yield MSY • Catch per unit effort shows increasing trend • Human Development Index	Fisher es statistics and reports & scientific publications	
Purpose (Immediate Objective)	Enable and facilitate improved Management of Fisheries and Socio Economic Des elupment of Fishing Community	• Successful tapping of untapped resources • Reduction of pressure in existing fish resources • Access to Education Health White goods (consumer goodsi • Level of Savings	Survey Reports • St Itistics on emplemcntation of Tamil Nadu Marine Fisheries Regulation Act (TNMFRA) • Available data (Directorate of Economies & Statistics + Sample Survey)	• Continued Gov ernment support and stakeholders Co-operation • Timely release of adequate funds by Government
Results / Outputs	1. Increased marine fish production through ceo-friendly sustainable technologies achieved	1. I Fish landing increased 1.2 Catch/unit effort increased 1 .3 Species composition of catches in locations maintained 1.4 Adoption of ceo-friendly gear by fisherfolk L5 Adoption of TNMFR Act	• Monthly fish landing statistics • Annual Sample Survey for ceo-friendly gears in use • Monthly Report on violations of TNMFRA	• Normal fishing season prevails • Co-operation of fisherfolk
	2 Increased inland fish production acheived through eco-friendly sustainable technologies	2.1 Increased fish landings in reserviors 2.2 Increased fish production in tanks 2.3 Adoption of indian Fisheries Act (IFA) 1897	• Monthly fish landing statistics • Monthly report on V nolations of IFA-1897	• Normal fishing season prevails

*Developed during the Work shop on July 7th & 8th 1999 at BOBP with Offiers of DOF and Om Consultants)

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LOG FRAME FOR FISHERIES DEPARTMENT, GOVERNMENT OF TAMILNADU (Contd.)

Summary of Objectives / Activitie		ObjectivelyVerifiable Indicators	Means Of Verification	Important Assumptions
(Contd.)	3. Enable adoption of post-harvest technologies to meet international quality standards and earn increased foreign exchange	3.1 Reduction in rejection of export products 3.2 Increased export	• MPEDA statistics	• International trade barriers do not affect exports
	4. Improve socio-economic status of fishing community, especially fisher-women, through welfare schemes	4.1 Increase in fish production 4.2 Increase in earnings (Income) 4.3 Increase in percentage of beneficiaries of schemes	• DOF monthly statistics adequate funds • Sample surveys (Annual) • DOF annual statistics	• Timely release of
	5. Fisherman co-operatives strengthened and expanded to be viable	5.1 Asset creation	• Annual Co-op. Audit Reports	• Continued Govt. support and cooperation of fisherfolk
		5.2 Successful involvement in ancillary fisheries activities	• Minutes of meetings and AGB + (Survey)	
		5.3 Increase in active member fishermen/women	• DOF Annual Statistics • Minutes / Attendance	
		5.4 Active participation in Society activities		
	6. Knowledge base created for Fisheries Planning and field-transferable technologies provided for referred problems	6.1 Research studies based on inputs from other institutes taken up	• Reports and publications	• Posting of motivated and qualified personnel for research positions and adequate funds provided
		6.2 Number of solutions for referred problems		
	7. Extension and Training strengthened to create awareness of suitable technology for viable adoption	7.1 Awareness level to adoption level	• Survey by standard extension method	• Funds for infrastructure

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LOG FRAME FOR FISHERIES DEPARTMENT. GOVERNMENT OF TAMIL NADU (Contd.)

Summary of **Objectives/Activities**		Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Results / Outputs **(Contd.)**	8. Adequate manpower with required specialisation in position and trained	8.1 Staff including specialists in position 8.2 Availability of required expertise	• Establishment data (with DOF)	• Government support
	9. Collection, analysis and interpretation of data on fisheries for dissemination and utilisation provided	• Brochures • Charts • Reports • Publications (of analysed data) • Ready Access	• Publications and surveys	• Government support

Activities

Since the Governmental operates primarily through schemes, existing activities under current schemes for each output have been tabulated (see pages 39 - 41) and the gaps identified (page 42).

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Activities covered by Department of Fisheries Programmes / Schemes (As per Policy Note of GOTN, 1999-2000)

	Outputs /Results	Ia. Motorisation of Traditional Crafts	1b. VHF	1c. Fish Finder & Navigation Guidance Systems	1d. FRP Cataramans	1e. Palk Bay Fishermen Problems	If, Relief to Detained Fishermen (Sri Lanka)	1g. Repatriation of Foreign Fishermen	1h. Marine Fishing Regulation Act (TNMFRA Patrol Boat	1i. Modernisation of Marine Aquarium at Chennai	1j. Sea Farming	1k. Community Based Pearl Culture Project	1l. Provision of Street Lights	1m. Formation of Link Roads
1.	Increased marine fish production through eco-friendly sustainable technologies achieved	.		.	.				.		.			
2.	Increased inland fish production achieved through eco-friendly sustainable technologies													
3.	Enable adoption of post-harvest technologies to meet International quality standards and earn increased foreign exchange													.
4.	Help uplifting socio-economic status of fishing community. especially fisher women through welfare schemes	.	.		.	.	.	.	.			.	.	.
5.	Fishermen cooperatives strengthened & expanded to be viable													
6.	Knowledge base created for fisheries planning & field-transferable technologies provided for referred problems													
7.	Extension and training strengthened to create awareness of suitable technology for viable adoption									.				
8.	Adequate manpower with required specialisation provided and trained													
9.	Fisheries data collected. analysed and interpreted for dissemination and utilisation													

columns continued in next page

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Activities covered by Department of Fisheries Programmes / Schemes (As per Policy Note of GOTN, 1999-2000)

Outputs /Results	1a Beadi Landing Crafts	1b Installation otartificial reth	1c Provisionof Sodium Vapour Lights	II (i)Fishing Harbours &Landing Facalities	II (ii)Rameswaram Fishing Harbour	II (iii)Cons-truction ofFish Landing Centres	III. (a)Fish Seed Production	III. (b)HillArea Devpt. Programme	III (c)Western Chats Devpt. Programme	IV. (i)Research	IV. (ii)Sea Ranching inPulicat Lake	IV. (iii)Training	IV. (iv)Extension
1.Increasedmarinefishproduction **through eco-friendly sustainable technologies achieved**	.	.			.	.						*	
increased inland fish production achieved through eco-friendly sustainable technologies							.	.	*				
Enable adoption of post-harvest technologies to meet International quality standards & earn **increased foreign exchange**				.	.	.	.						
Help uplift socio-economic status of fishing community especially fisherwomen through welfare schemes	.		.	.	.	.							
5. Fishermen cooperatives strengthened & **expanded to be viable**													
6. Knowledge base created for fisheries planning & technologies transferred to the field for referred problems									.	.	.		
7. Extension and Training strengthened to create awareness of suitable technology for viable adoption											.	.	,
8. Adequate manpower with required specialisation pros ided and trained													
9. Collection. Analysis and interpretation ofdata on fisheries for dissemination and utilisation													

Note 1p.Insurance ot Gear & Craft - Not covered columns

continued in next page

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Activities covered by Department of Fisheries Programmes / Schemes (As per Policy Note of GOTN, 1999-2000)

	Outputs /Results	V Brackish Water Fish Farmers Development Agencies	VI Agricultural iluman Resources Development Project	VII (i) Census	VII (ii) Grouper Fish Farming	VII (iii) Fishing Vessel for Diversified Fishing	VII (iv) Upgrade Fish Seed Farm	VII. (v) Sewage Fed Fish Culture	VII (vi) Ornamen tal Fish Production	VII (vii) Fresh Water Prawn Hatchery for Private Entrepreneurs	VIIL (1) (6) Welfare Schemes	IX, (a) Co. Operative Society (hi Auto-trailers forF%VCS	X TAFCOFED	Xl TNFDC
1.	Increased marinefish production through ceo-friendly sustainable technologies achieved				.	.							.	.
2.	Increased inland fish production achieved through eco-friendly sustainable technologies						.	.	.	.				.
3.	Enable adoption of post-harvest technologies to meet International quality standards & earn increased foreign exchange								.		(1) - (6)	..	. .	. .
4.	Help uplift socio-economic status of fishing community, especially fisherwomen, through welfare schemes													
5.	Fishermen cooperatives strengthened & expanded to be viable												.	
6.	Knowledge base created for fisheries planning & field transferable technologies provided for referred problems		.		.			.						
7.	Extension and Training strengthened to create Awareness of suitable Technology for viable adoption	.	.		.	.							.	
8.	Adequate manpower with required specialisation provided and trained													
9.	Collection, analysis and interpretation of data on fisheries for dissemination and utilisation provided			.										

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Expected outputs from DOF schemes and gaps to be filled to achieve outputs

	Outputs/Results	Gaps to be filled present activities to acheive desired outputs
1	Increased marine fish production through eco-friendly sustainable technology achieved	Participatory diversified off-shore fishing (To tap untapped and under-tapped resources)
2.	Increased inland fish production achieved through eco-friendly sustainable technologies	- Optimise fish production from the large, medium and small reservoirs - Minimise industrial pollution in Cauvery system to increase riverine production
3	Enable adoption of post-harvest technologies to meet international quality standards and earn more foreign exchange	- Drying racks (for hygienic fish processing for fisherwomen) *eg.* Orissa
4.	Help uplift socio-economic status of fishing community, especially fisherwomen, through welfare schemes	Nil
5.	Fishermen co-operatives strengthened and expanded to be viable	Nil
6.	Knowledge base created for fisheries planning and technologies transferred to the field for referred problems	- Co-ordination Cell for linkages with other organisations to access scientific information - Research funding to be augmented
7.	Extension and training strengthened to create awareness of suitable technology for viable adoption	Create extension cell and strengthen infrastructure
8.	Adequate manpower with required specialisation in position and trained	- Manpower cell (as per report recommendations) - Placement of properly trained people
9.	Collection, analysis and interpretation of data on fisheries for dissemination and utilisation provided	- Social need assessment - Impact assessment - Data from inland fish production

5.0 PROPOSALS FOR IMPROVING & STRENGTHENING M&E

Information Model

5.1 Information flow in the DOF has expanded over time in an ad hoc manner. Reporting requirements have often been determined by contextual need, they have not been set out in advance as part of a planned policy. The approach to reporting has been the more, the better'.

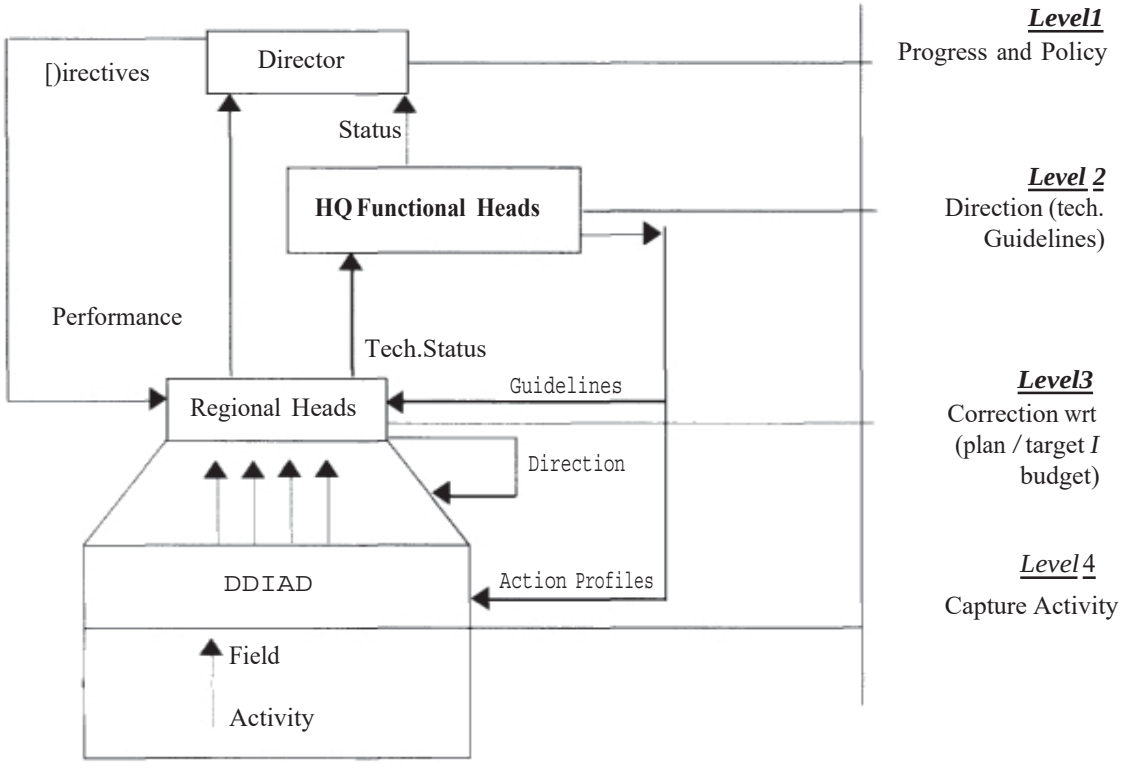
5.2 This type of situation has many drawbacks. The major one is lack of coordinated or comprehensive approach to reporting, resulting in duplication. The reporting practice is static, out of sync with organizational change. It is based on subjective opinion rather than on objective criteria.

5.3 The Department requires a formally designed inforniation system to manage a variety of functions that span technical, administrative, public interface, socio-economic and biological areas.

5.4 A new information model is proposed that attempts to comprehensively address the information requirements of the Department. The model conceives of four levels of information, Every level has characteristic information requirements and decisions.

Level I - Policy & Goals
Level 2 - Direction and Functional Guidelines
Level 3 - Monitoring (modification/adjustment of current activities in respect of Plan/Budget/Target/etc.)
Level 4 - Field Activities

Information Delivery Model



5.5 Each level is characterized by the nature of the information requirement and the type of decisions taken.

The performance of an activity is recorded at the field level. The monitoring level will receive information about execution of the activity and monitor it with reference to the planned target/budget/etc. and provide corrective guidance to the field. For such guidance to be effective, the flow of information both ways should he regular and frequent. The monitoring level seeks effective execution within the framework of a solution that has been functionally formulated,

5.6 Functional solutions are formulated at the next higher level (HQ - Functional Heads). To ensure that the HQ-Functional sections are aware of field conditions and performance, information in some of the technical areas should be made available from the monitoring level. It is advisable that information reaching the HQ - technical section comes from the monitoring level rather than the field. Reason: the monitoring level will he able to comprehensively specify the conditions and the corrective directions and the activity levels along with the results. Such comprehensive detail will help the HQ-Functional section to comprehend the situation and further improve analysis and solution, Moreover, this method of working will eliminate the need to cross-check information received from two sources to ensure that there are no discrepancies between the two.

5.7 After the technical study of information received from the monitoring level, the HQ-Technical section may formulate solutions and technical guidelines for the field. These may be communicated to the field with a copy to the monitoring level - which may need to provide guidelines periodically.

5.8 The monitoring level will also keep the highest level of the Department, the Director, informed about progress in a nutshell vis-á-vis plans, targets and budget, to enable an assessment of progress. From time to time management guidelines may be formulated at this level and communicated to the HQ-Technical section as well as to the monitoring level for implementation.

5,9 The Table below illustrates information flow in the model.

SI. No.	**Management Level**	**Information** Level
l	Director	Policy / Objectives - Progress
2	HQ-Technical section -JD/DD	Technical Direction / Guidelines
3	Region - JD/DD	Monitoring wri Plan / Budget / Target
4	Field AD / Inspectors	Activity-capture

5.10 **The structure of content flow** is **as follows:**

SL	Nature of content of the flow	From	TO	Direction of flow
1	**Activity Levels**	**Field**	**Monitoring (Region)**	**Up**
2	**Selected activity levels & summary of performance**	**Monitoring (Region)**	**Technical guidelines (HQ-Technical Section)**	
3	Selected performance **in a summary form compared with Plan/Budget/Target**	Monitoring **(Region)**	Progress - Policy & Objectives **(Director)**	Up
4	Technology performance reports	**Tech** Guideline **(HQ-Tech** section)	Progress - Policy & Objectives **(Director)**	Up
5	Directions for corrective action	Monitoring (Region)	Field	Down
6	Technical guidelines and directions	Technical guidelines **(HQ-Tech)**	Field	Down
7	Modified policy & objectives for achievement	Progress-Policy **& Objectives** (Director)	Monitoring **(Region)**	Down
8	Technical guidelines	Technical guidelines (HQ-Technical)	Monitoring (Region)	Down
9	Policy & Objectives	Director	HQ-Technical	Down

5.11 **The important characteristics of the proposed model** are as follows:

1.	All field information will go to the Region ONLY.
2.	The Region will consolidate activity details for presentation to higher authorities.
3.	An activity database will be established at the Region for fields under its control.
4.	Even technical information from the field will be forwarded to the HQ-Technical section by the Region after consolidation.
5.	Each level will normally get directives for action from the immediately preceding level of hierarchy. However, technical guidelines may go directly from the HQ-Technical section to the field with a copy to the Region for information. But the field will need guidelines for implementation from the Region.
6.	A comprehensive database about the Department's actions will be maintained at the HQ-Technical section,

5.12 The **model structure outlined above requires a strong capability at the Region for database activities. It** is **suggested that the database be completely computerized at the Region and at the lIQ-technical section. The computerized database will make information retrieval quite efficient. Computers and the operating manpower should be made available.**

5.13 **lithe information delivery model discussed above is implemented, decentralization of information-gathering, analysis and decision-making from the HQ to the Region would be quite reasonable to expect.**

5,14 The log frame has brought out the indicators that should **be** available for effective Monitoring and Evaluation. These have been arrived at after taking into consideration the comprehensive functional requirements of the Department.

5. 15 Are these indicators available in the existing system? The question has been examined. It is considered sufficient even if the basic elements required to construct the indicators are available. Steps can then be initiated to help make the indicators available.

5.16 Some of the indicators considered basic were not available. These relate to fish landings, comparison of monthly performance with previous periods, usage of gear and their effects, and co-operative activity indicators. In addition to this, it was observed that cadre inforniation indicators were not available in the area of HRD.

5.17 Reports to make such Information available have been designed in the following sections at the end of this chapter.

5.18 It will be rioted that details relating to the fish landings and gear should be made available from the proposed MIS cell with the help of the monitoring section in the HQ which will be responsible for statistical estimation from field samples. This is because sample data from the field is received directly in the monitoring section at the HQ and used for statistical processing. As suggested in earlier sections (observations), it is necessary that this information be periodically made available to the Regions through this format. While this may be difficult in the manual system. it should he possible with the computer. The information contained in this format will enable field staff to acquaint themselves with status and trends concerning fisheries well in advance.

5.19 The format proposed for co-operatives should he prepared at the Division *I* Region level and sent to the immediate higher level t'or study and comparison with other divisions within the Region before despatching the consolidated indicators to the next higher level. Ideally. this should be generated from the field (individual society) and progressively consolidated at the respective levels into the same format.

5.2() The proposed centralised URD system will provide the information needed to place the right personnel in the right jobs. The information will enable correct HRD decisions concerning placement, training and career guidance. The needed report can he prepared from the central database at the HQ's HRD section.

FORMATS FOR MONTHLY FISH LANDING STATISTICS
(TOTAL LANDINGS)

	Region	District	Marine		Inland		Total	
			CM	CUM	CM	CUM	CM	CUM
1	Region 1	District 1.						
		District 1.2						
		Total						
2	Region_2	District 2.1						
		District 2.2						
		Total						
	rotal							

Note : CM = Current Month
CUM = Cumulative for the year till the CM

Species-Wise Analysis

Species	Region	Current Year		Current Month		
		CUM	CM	In 1998	In 1997	In 1996
SI	RI					
	R2					
	R3					
	Total					
S2	RI					
	R2					
	R3					
	Total					

Analysis of Fishing Gear in Use

Regions	Types of gear	Quantity of the Gear	Gear Usage		
			CM	CUMUL.	CPU

Note CPU = Catch Per Unit

Annual Performance of Co-operatives

Description of the Criteria	Region 1	Region 2	Region 3
I. Number of fishermen's co-operatives			
2. 2a. No. of Members 2h. No. of Meetings 2c. Attendance			
3. No. of fisherwomen co-operatives			
4. 4a. No. of members 4b. No. of meetings 4c. Attendance			
5. Net Asset created - fishermen - CY - LY - fishermen - CY - LY			
6. Disbursement under programme - Houses No. Rs. - Boats No. Rs. - etc.			

Cadre Strength Analysis

Sl. No.	Position		Sanctioned	Filled up	Technically Qualified	Average years of experience
	Cadre	Cadre				

6.0 COMPUTERS FOR STRENGTHENING M&E

6.1 The success of the proposed lntormation Delivery Model depends on computing power being available both in the Regions and the HQ. This is because of the volume of data that has to be marshalled for consolidation and reporting (not to mention data needed for analysis and conclusions). The successful working of the model will require:

Computer Systems at

1. Regional Offices (JD / DDs office - iii some cases the field offices of DD / AD may also have to he provided with a computer)
2. HQ functional sections (with a separate system for the HRD function)
3. Director's office

6.1 Installing these computer systems entails decisions about

1. Type of computer hardware
2. Staff to operate the computers
3. Budget for maintenance
4. Budget for computer consumables
5. Application sottware development
6. Assigning responsibility for nianaging computer activities (operational and programming)
7. Data portability and connectivity

6.2.1 Considering how fast technology is changing, it is essential that the Department he provided with state-of- the art technology so that the system can he maintained at least during the warranty period (normally three years) for spares and other technical requirements. In fact the speed of obsolescence has been recognised by the Government of India. which has increased the depreciation rates for computers to 60%. This means that the computer systems are practically Written off in just three years.

6.2.2 **Staff will be required for three purposes. They are:**

1. For basic operations (data entry and output)
2. **For** writing programmes to coniputense processing.
3. For studying the Department's information processing requirements, and designing systems to meet these needs.

6.2.2.1 Computer operators can be made available either by training Department staff or by recruiting trained operators. It is possible to train selected DOF staff in a short period. The DOF's HRD section could formulate such a training programme periodically so that the loss of trained staff due to transfer, promotions or any other reason could be addressed.

6.2.2.2 The other two activities, Programming and Systems functions, should he the responsibility of the proposed MIS cell. In addition, the cell should also be responsible for overall computer operations within the Department to co-ordinate operations and provide the required expertise and help.

6.2.3 The departmental budget should take into account the requirements of the computers. The requirements relate mainly to

1. Annual maintenance of computers
2. Computer consumables

Not providing for these two may lead to the computer facility becoming unusable vety soon!

6.3 Beft)re the computer can be used, appropriate programs have to he written by programmers under the direction of the systems staff. These staff could form a part of the proposed MIS Cell. Till they are available, the programs may have to be prepared on contract by external agencies. The cost of this work has to be provided for in the budget under the head "software development charges".

6.4 The Department will also require standard office software for word processing, spreadsheets, etcSuch software is available in the market as branded products (both Indian and foreign origin). The required number of copies (licenses) may be bought and distributed. Enough funds should be allotted for the purpose. Since the copyright law is being applied intensively to software, the Department should make sure it buys the required number of licenses.

6.5 **HRD Function** - Use **of Computers**

6.5.1 As observed elsewhere in this report, access to information for decision-making needs significant improvement.

6.5.2 Use of computers, with a pragmatic system design, can help to improve information flow and access. The suggested system:

All personnel-related communications originating from the HQ (orders such as promotion. transfer, increment, leave etc... relating to the staff emanate from the HQ) should be issued through the computer system. (All orders will be printed through a computer application system - ***not through word processors***). The significant advantage of this system is that it enables printed copies (as many as possible) of the order, and automatic updating of personnel files without any additional input. The Department should seriously consider this model for the HRD function's information management system in view of its simplicity and effectiveness.

6.6 MIS **Cell** - resources

The proposed MIS Cell should have the following major resources

1. Adequate computing power (hardware and software)
2. Adequate manpower with proper field experience

6.7 As explained earlier, all computers in the Department would be under the guidance of the MIS Cell for maintenance and operation and for skill training. The required software would have to be procured with licenses for multiple location usage.

6.8 The MIS cell should recruit specialists in computers (systems, software, operations). It should also have a marine biologist, a sociologist and a specialist in census operations.

6.9 The suggestions made above are broad and indicative in nature. But defining all the parameters for computerization is beyond the scope of the present study. It will have to be addressed separately.

Annex - 1

Programme of Work

The Food and Agriculture Organization of the United Nations (FAQ), through its Bay of Bengal Programme (BOBP), and Om Consultants (India) Pvt. Ltd., (Recipient Organization) have entered into an Agreement of which this Annex forms an integral part, in respect of GCP/RAS/151/JPN "Coastal Fisheries Management in the Bay of Bengal".

TERMS OF AGREEMENT

L Background

A. Project Objectives and Activities

The BOBP-assisted Coastal Fisheries Management (CFM) Project aims to facilitate and enable improved management of coastal fisheries in Chennai and Kanniyakumari Districts of the State of Tamil Nadu, Tndia, in the context of conserving coastal fishery resources and ensuring the sustainability of coastal fisheries., through awareness building, strengthening the institutional capacity of concerned agencies and provision of technical assistance.

The CFM Project is executed nationally by the Department of Fisheries of the State of Tamil Nadu with assistance from BOBP. The Project has identified stakeholders of coastal fisheries in the districts, conducted stakeholder analyses. analyzed perceptions and communication systems of the stakeholders and undertaken a series of consultations with the stakeholders to better understand the problems and solution options from the points of view of the various stakeholders, Having decided, in consultation with the stakeholders. to initiate selected management actions, such as exploratory fishing trials to diversify coastal fisheries and move them offshore to tap under and un-tapped resources, establishment of artificial reefs, and seasonal zoning of fisheries, and keeping in mind the increasing role of management of fisheries in its mandate, the Department of Fisheries is interested in building up its institutional capacity to promote and enable coastal fisheries management. The Department of Fisheries is interested in strengthening its Monitoring & Evaluation and Management Information Systems to enable and facilitate improved and efficient management of coastal fisheries.

B. The Recipient Organization

For this purpose Om Consultants (India) Pvt. Ltd., a leading consultancy company based in Bangalore, India, with considerable experience in working with organizational and human resource development aspects of government and development agencies, has been designated to undertake a participatory study of the Monitoring & Evaluation and Management Information Systems of the Department of Fisheries of the State of Tamil Nadu, to enable and facilitate improved and efficient participatory coastal fisheries management. The study will evolve strategies and approaches to strengthening the monitoring and evaluation and management information systems of the Department of Fisheries and include brief project proposals to achieve the same.

The Managing Director of Om Consultants (India) Pvt. Ltd. will, in close cooperation with the staff of the Bay of Bengal Programme of the FAO and with the staff of the DOF, coordinate activities to be carried out by leading professional management experts and technical fisheries experts to produce a detailed report of the findings and recommendations of the study for the CFM Project.

II. Terms of Reference

A. Description of Activities / Services

Om Consultants (India) Pvt. Ltd., in the context of this Project activity will be responsible for

(1) Identification, review and diagnostic analysis of existing monitoring and evaluation and management information practices in use in the Department of Fisheries and such other organizations concerned with fisheries development and management. This diagnostic study using secondary data, individual and group discussions and workshops will determine how information users are currently supplied with information, the sources of data and information, data and information collection methods, data and information processing methods and reporting practices.

(2) Identification of the information needs of the Department of Fisheries and other concerned agencies. in the context of their Mission Statements and overall and immediate objectives. Given the large number of activities undertaken by the concerned agencies, the study will categorize the activities into types and undertake in-depth studies of at least one activity of each type identified to indicate an approach for that generic activity. The outcome will be to identify for the selected activities what information is required by which staff to monitor and evaluate the progress and performance of the activities and to assess the impacts of the concerned policies, programmes and activities. This exercise will involve a series of workshops at different levels to facilitate logframe analyses.

(3) Examination of the scope of improving and strengthening existing monitoring & evaluation and management information systems in order to provide the identified information needs of the concerned organizations. This exercise will involve discussions and brainstorming sessions with the staff of the concerned organizations and stakeholders.

(4) Development of strategies, approaches and brief proposals for strengthening the monitoring & evaluation and management information systems of the Department of Fisheries and other concerned agencies, keeping in mind practicality, feasibility and the art of the possible.

(5) Reporting on all of the above in the form of a draft report.

(6) Presentation of the draft report at a state-level workshop, revising the report in light of the feedback received, and submission of the final report.

B. Output

The final product to be delivered by Om Consultants (India) Pvt, Ltd., to the Bay of Bengal Programme of the FAQ will he a detailed report of the entire study, including reports of field appraisals and workshops conducted as a part of the study.

C. inputs to be provided by FAO

The state level workshop to discuss the findings and recommendations of the study and to seek feedback to finalise the report will be organized by BOBP and will not form part of this contract.

D. Duration and Timing

The study will be completed over a period of three months, from the date of agreement, and completed no later than 31 May 1999.

E. Detailed Budget as per** attached **Annex 2

F. Monitoring / Certifying Officer

The BOBP Programme Coordinator will monitor implementation of the Agreement and will certify to the disbursing officer (FAQ Representative in India & Bhutan) that the terms of the agreement are being satisfactorily met when payments are due to the Recipient Organization.

Annex - 2

List of Participants

Workshop to Discuss Information Needs and Gaps, Chennai, Juty 6, 1999

I.	S Seshachalam	Superintending Engineer Fishing Harbour Project Complex Department of Fisheries Chennai
2.	A D Isaac Rajendran	**BOBP, Chennai**
3.	K D Sundaram	Assistant Director of Fisheries Department of Fisheries, Chennai
4.	M Mathivanan	Principal Fisheries Staff Training Institute Chennai 600 028
5.	I Felix	Deputy Director of Fisheries Extension, Department of Fisheries
6.	A Anrose	Senior Fisheries Scientist Fishery Survey of India, Chennai
7.	C Sathyamoorthy	Joint Director Fisheries Department of Fisheries, Chennai
8.	GRMRao	Director, CIBA Chennai
9.	C Ravindran	Deputy Director of Fisheries (Marine), Department of Fisheries Chennai
10.	P Picharian	Joint Director of Fisheries (Inland) Department of Fisheries Chennai
11.	DrLingaraja	Joint Director of Fisheries Department of Fisheries Chennai
12.	A Saravana Perurnal	Accounts Officer Department of Fisheries Chennai
13.	M Manoharan	PA (Admin), Director of Fisheries Chennai
14.	PReenaSelvi	Assistant Director of Fisheries (Statistics) Department of Fisheries

15.	NChandra	Assistant Director of Fisheries Fisheries Training Centre, Tuticorin
16.	Dr E Vivekanandan	Senior Scientist CMFRI, Chennai
17.	R Sheikh Jalauddin	Assistant Director of Fisheries Shrimp Culture, Vanianchavadi
18.	RMohanam	Deputy Director CIFNET, Chennai
19.	K K Ponnappan	Chief Instructor CIFNET, Chennai
20.	T Vasundhara	Assistant Director of Fisheries. (MC) Department of Fisheries, Chennai
21.	DrRPaulRaj	Officer in Charge **CMFRI, Chennai**
22.	R Srinivasan	Department of Fisheries Chenai
23.	R Thillaigovindan	Joint Director of Fisheries Department of Fisheries, Chennai
24.	P Mohanasundaram	Deputy Director of Fisheries (Inland) Department of Fisheries, Chennai

Annex - 3

LISTING OF ACTIVITIES BY THE DOF TASK FORCE

1.0 The task force had prepared a list of groups of activities in the DOF and also of periodicals within the Department relevant to each group. Document No. R2/73501/97 was the reference document for discussions.

2.0 The reference document profiled current periodicals on the basis of groups of subject areas and the frequency of the periodicals.

3.0 **The** main groups of activities are

- Direction and Administration
- Research
- Education and Training
- Inland Fisheries
- Fisheries cooperatives
- Socio-economic measures
- Information and Statistics
- It was indicated to the Department officers that in keeping with the stated policy of the Tamil Nadu Government on fisheries, due importance should be accorded to the subject activity "Coastal Fisheries Resources and Management". The Department officers agreed.

The periodicals have been classified by frequency of publication as

- Annual
- Half-yearly
- Quarterly
- Monthly
- Fortnightly

4.() Each group of activities was taken up for discussion to analyse details of information required and available. The main information requirements in each group were identified as follows.

4.1 **Direction and Administration – Information required**

- Manpower (by category)
- Personnel sanctioned, trained, available.
- Personnel landmarks (training, promotion, increments, disciplinary action, superannuation, etc..)
- Maintenance of a central database of personnel information
- Use of computers for creating and maintaining a central database of all the personnel records.

4.2 **Fisheries** Technology – **Information required**

- Preparation and preservation aspects of the catch
- Transfer of research findings to the field and implementation of the findings
- Evaluation of methods adopted in the field for preparation and preservation of catch to assess their efficiency and effectiveness.

4.3 **Education** Training – Information required

- Purpose of training, its relevance to the current status
- Feedback from participants and analysis of the feedback
- Placement of trainees
- Impact assessment of the training programmes
- Extension training (transfer of technology)

4.4 **Inland Fisheries – Information required**

- Aims of the Department
- Indicators of performance

4.5 Fisheries Co-operatives – Information required

Indicators for the administration of co-operatives

- Critical areas and indicators

4.6 Socio-economic factors – Information required

- Area of activity
- Housing
  - Construction progress

    Occupancy
  - Currency of occupancy

4.7 **Information &** Statistics – **Information requirements**

- The present methodology of obtaining statistical information relating to fish catches
- The need for organising a census of fisherfolk and of related information such as fishing crafts, ancillary activities, processing and marketing
- Dissemination of information and extension

4.8 Marine **/ Inland** Fisheries **Resources** Assessment **& Management – Information required**

- Identification of needed data and their availability
- Organising access to data available with central and other institutes
- Assessment of resources and exploitation level
- Need for resource management interventions and participatory discussions with concerned stakeholders
- Evolution and implementation of interventions
- Periodical monitoring and evaluation of management measures

5.0 **The team decided that as a first step, existing periodicals in the areas mentioned above would be collected and analysed for**

- Content
- Periodicity
- Authenticity and accuracy
- Source
- Presentation

before suggesting improved indicators and content.

6.0 It was decided that the team would meet on 06/05/1999 to study the analysis of the periodicals and evolve better methods to meet information requirements.

LIST OF REPORTS BY SUBJECT AVAILABLE IN THE DOF
Enclosure to Annex - 5 (Para 2.0)

Reports** on **Resource management

St. No.	Reports	Frequency
.	Fish Movements	Monthly
2.	Annual Publications / Status Reports on Resources and Projections	Monthly

Reports on Marine Fisheries

St. No.	Reports	Frequency
I.	F ield Investigatiors: sample data capture forms	Monthly

Reports on inland Fisheries

SI. No.	Reports	
	Culture-related Reports	
1.	Fish Seed Production - Major Carps	Monthly
2.	Private Farmers - Fish Seed Production	Monthly
3.	Pituitary Glands - Balance Position Report	Monthly
4,	Nurseries to be Stocked: Report	Monthly
5.	Seeds Received from Other Stations: report	Monthly
6.	Number of Fingerlings Raised	Monthly
7.	Number of Fingerlings Taken from Other Places	Monthly
8.	Number of Seeds Ready for Supply	Fortnightly
9.	Progress Report - Collection of Fingerlings from Natural Resources (Districtwise)	Monthly
10.	Nursery Functioning - Production of Carp Fry (at the Nursery Level within Each District)	Monthly
11.	Nursery Functioning - Financial Progress (at the Nursery Level within Each District)	Monthly
12.	Rearing of Hatchlings - Progress Report (at the District Level within the Region)	Monthly
13.	Fish Seed Stocking in Reservoirs (at the Reservoir Level within the District)	Monthly

SL No.	Reports	Frequency
	Reports related to Fisheries Exploitation	
1.	Species-wise - Production Report	Monthly
2.	Numbers of Seeds Disposed of or Sold	Monthly
3.	Other Places - Species-wise Report	Monthly
4.	Fish Seeds Sales Details	Monthly
5.	Amount Received from Sale of Early Fry	Monthly
6.	Progress Report of Reservoir Fisheries (Stocked and unstocked at the level of Reservoirs Within each District)	Monthly
7.	Progress Report of FFDA (Area Stocked at District Level within Region)	Monthly
8.	Progress Report of FFDA (Stocking at District Level within Region)	Monthly
9.	Progress Report of FFDA (Exploitation at the Level of District within Region)	Monthly
10.	Demand Collection - Balance Statement (at the District Level within Region)	Monthly

Reports on Co-operatives

Sl. No.	Reports	Frequency
	Monthly Collections (Repayment) Progress Report	Monthly
2.	Action to be Taken Regarding Liquidation of a Society (M/AW)	Monthly
3.	Section 82 - Inspection of Co-op. Societies	Monthly
4.	Inspection of Societies by AD - Report	Monthly
5.	Section 81 - Enquiry by Sub-Registrar	Monthly
6.	Section 87 of TNCS Act - Recovery of Loss by Malpractices	Monthly
7.	Section 90 & 143 of TNCS Act - Arbitration and Execution regarding Disputes	Monthly
8.	Section 137 - TNCS Act - Liquidation of Co-operatives	Monthly
9.	Fishermen Co-operative Occupying Own Building	Monthly
10.	Social Welfare Natural Calamities - Government Aid Granted	Quarterly
11.	State Finance - NCDC Schemes - Financial Assistance to Fishermen	Quarterly
12.	Co-operative Loans - Demand - Collection - Balance	Quarterly
13.	Fishermen Co-operative Societies in the Jurisdiction of JDF (Region) - (No. of Societies and no. of Members) (Marine Fishermen Co-operatives / Inland Fishermen Co-operatives / Fisherwomen)	Monthly
14,	Particulars of Co-operative Societies	Annually
15.	Particulars of Savings / Beneficiaries	Annually
16.	Monthly Report on Inland Fisheries	Monthly

Note ***AW*** - ***as and*** *when;* ***M*** - ***Monthly***

Reports on Extension

SI No	Reports	Frequency
	Technical & Socio-Economic	
	Incidence of EU. Syndrome in Water Bodies	Monthly
2.	Technical Guidance to Farmers	Monthly
3.	Demonstration Farms of Dept., Culturing Farm Report	Monthly
4.	No. of applications from BFDA to Directorate	Bi-Monthly
5.	BFDA - Monthly Report	Monthly
6.	Development Farms - Reports on Budget Estimates	Monthly
7.	Subsidy to farmers	Monthly
8.	Shellfish and Finfish - R.A. Report (on disease control)	Quarterly
9.	T.N.Govt. - Publication - Tarnilarasu	Monthly
10.	Extension Activity - AIR Programmes / TV Programmes	Monthly
11.	Statistics on Fisheries Activity	Monthly
12.	Quarterly Report	Quarterly
13.	Annual Report	Annual

Reports on Training

Si No	Reports	Frequency
	Training	
1.	AD's Dairy	Fortnightly
2.	No. of Persons Trained in the Training Centre	Annual
3.	Receipts Statement	Monthly
4.	Loans and Advances	Monthly
5.	Repair Expenses for Each Boat	Monthly

Reports on Socio-Economic Measures

SI No.	Reports	Frequency
	Housing	
1.	Format on House Repair	Monthly
2.	Post-1996 Sringaravelar Free Housing Scheme - Districtwise data	Annual
	Others	
1.	Road Construction Scheme	Monthly
2.	Fishernien Village Street Lighting Scheme - District-wise data	Annual
3.	Sodium Vapour Street Lights - Allotment of Lights in Numbers	Monthly
4.	National Fishermen Savings Scheme	Monthly
5.	Government Bank Loans - Amounts Sanctioned	Monthly
6.	Diesel Subsidy Scheme	Monthly
7.	Housing Schemes Progress Report	Weekly

Reports on HRD

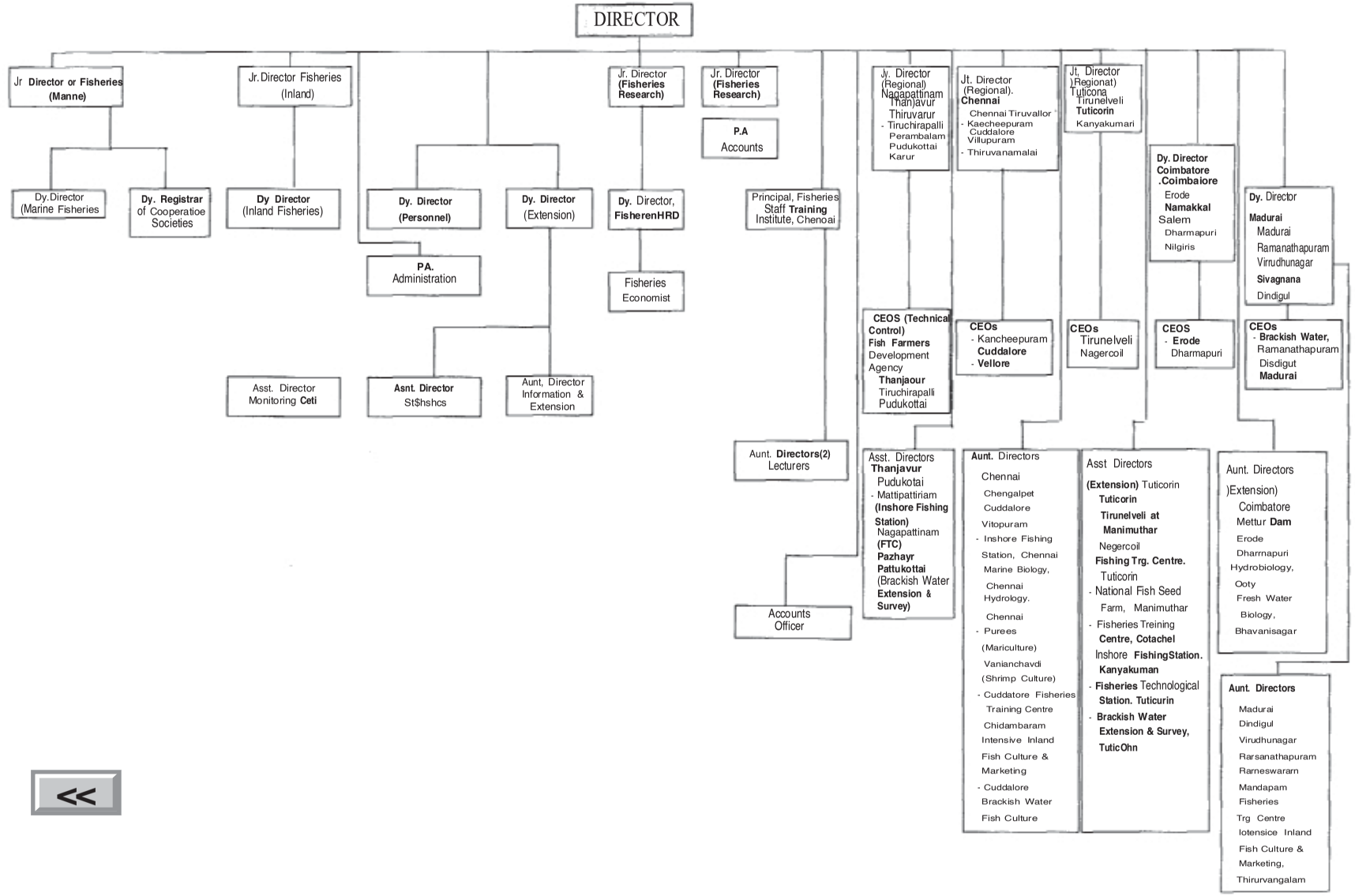
Si No.	Reports	Frequency
	Manpower - Related Reports	
1.	Proposals for Pensioners	Monthly
2.	Loans and Advances to Government Servants	Monthly
3.	Retired Government Servants - Pension Benefits	Monthly
4.	Temporary Appointments	Quarterly
5.	Government Servants under Suspension	Monthly
6.	Staff' l)etails - Numbers and Salaries	Monthly
7.	Below I Year Retirement Pensions - Disciplinary Action	Monthly
8.	Pending Court Cases	Half-yearly
9.	Gazetted Govt. Schemes – 'A' and 'B' List	Annual
tO.	Family Security Schemes (eve of death)	Monthly
11.	T.N.Ministerial Service— Report on Vacancy	Monthly
12,	Compassionate Grounds Appointment	Annual
13.	Family Pension	Quarterly
14.	Suspension of Government Employees - pending beyond I year	Monthly
15.	Employment Exchange - Temporary Employment	Annual
16.	Estimate of Retired Government Servants	Monthly
17.	Absentee Statement of Subordinates	Monthly
I 8.	Delay in Settlement of Pensioners' Benefits	Quarterly
19,	Handicapped Persons in Government Departments	Annual
20.	Retirement of Government Servant – next 24 months	Monthly
	Expenditure - related Reports	
1.	Pensioners, benefits – Disposals	Monthly
2.	Department Rece.ipts	Monthly
3.	Expenditure Statement	Monthly
4.	Budget – Revised Estimates	Annual
5.	Final Surrender of Funds – Unspent	Annual
6.	Small Savings Collection	Monthly
7.	Retirement Benefits Settled	Monthly

Reports on Research

Sl. No.	Reports	Frequency
I.	Monthly Progress Reports	Monthly
2.	AD's Report	Monthly
3.	AD's Report on Disease	Monthly
4.	AD's Work Progress Report / Diary	Fortnightly
5.	Research Reports (Technical and Financial)	Annual

Annex -4

ORGANOGRAM OF THE DIRECTORATE OF FISHERIES, TAMIL NADU



Annex - 5

FLOW OF INFORMATION BETWEEN DWFERENT LEVELS IN THE DEPARTMENT OF FISHERIES

Annex - 5.1

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR RESOURCE MANAGEMENT IN THE DOF

Director		
HQ	JD (Research)	Report AN / DN
	DD	
	AD	
JD (Region)		
DD		2
AD		A
Field		
External Institutions		AW

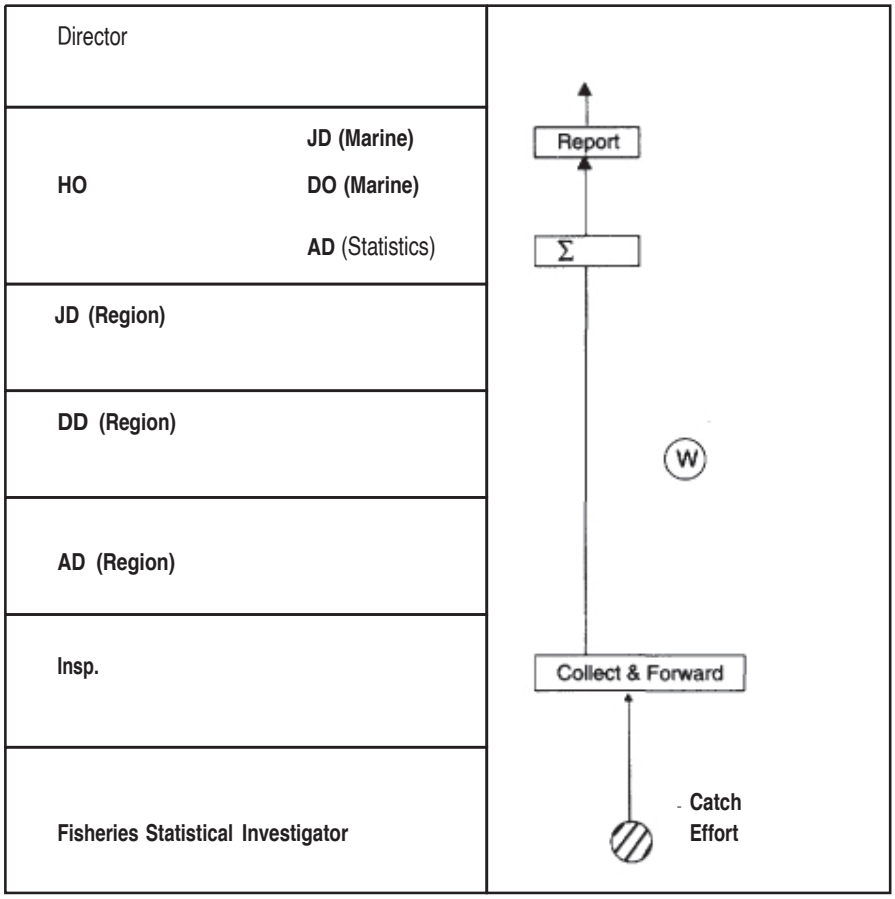
Note:

1. Fish Movements
2. Annual Publications / Status Reports on Resources and Projections

AW = As and When
A = Annual
AN = Action
DN = Decision

Annex - 5.2

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR MARINE FISHERIES IN THE DOF

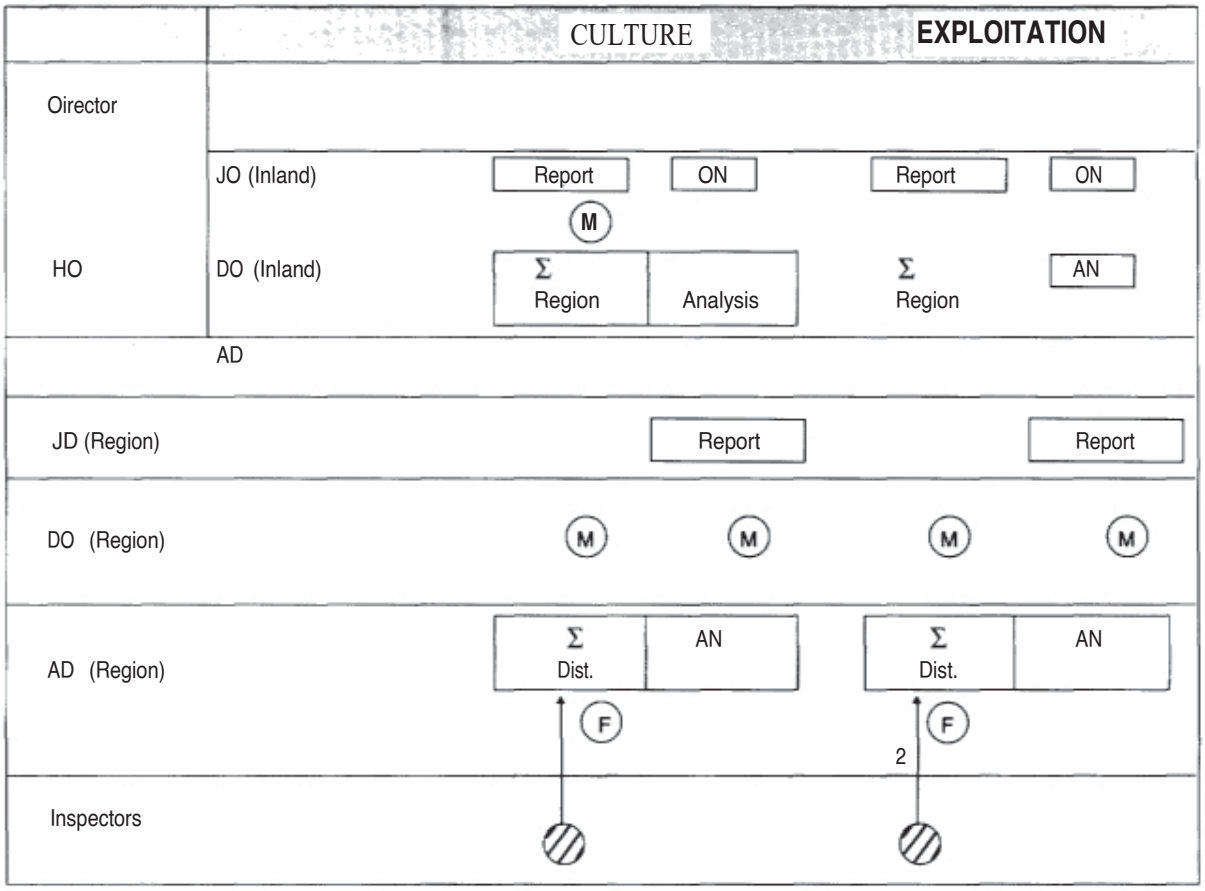


Notes:

1. **Sample Data Capture Forms of Field Investigators.**
   W=Weekly
   = Consolidation
   No Actions / Decisions. Only dissemination

Annex - *5.3*

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR INLAND FISHERIES IN THE DOF



Notes:

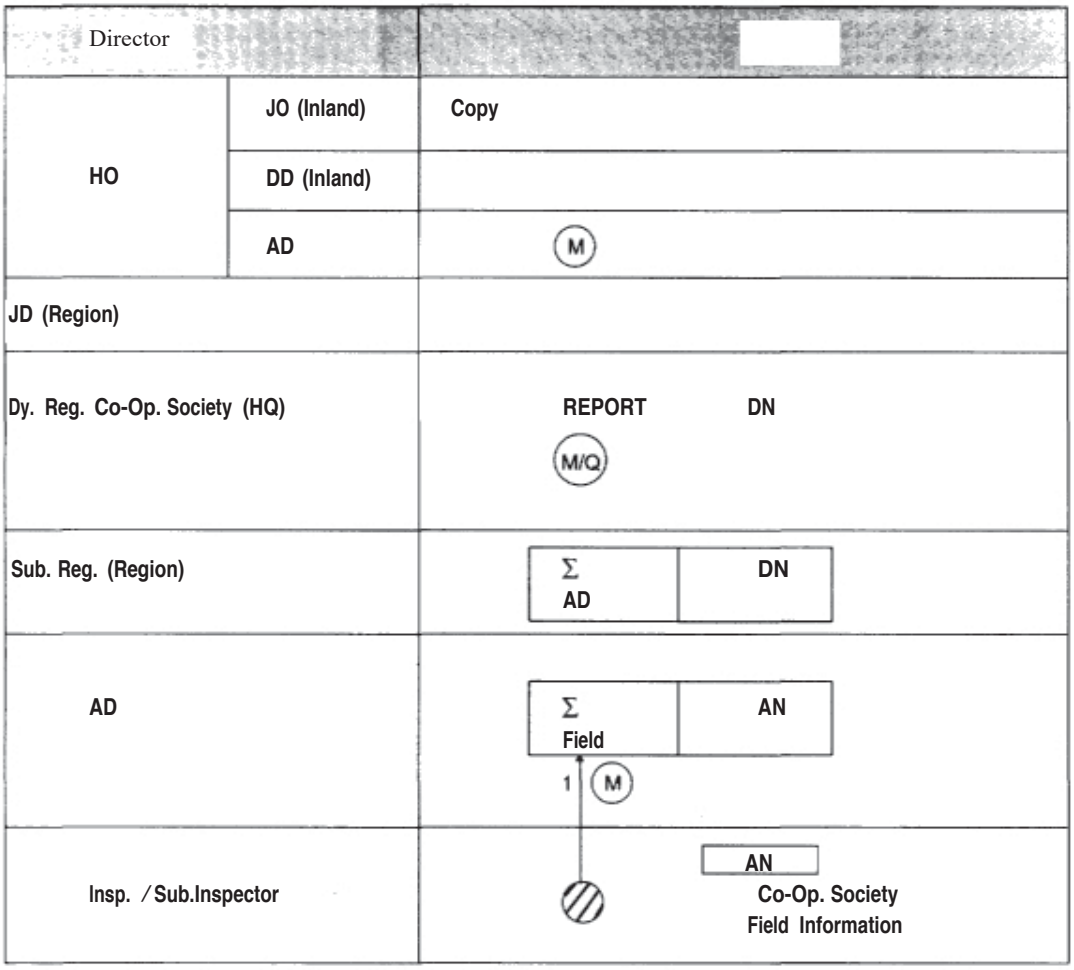
1. **Culture - related periodicals**
   - Fish Seed Production - Major Carps
   - Private Farmers- Fish Seed Production
   - Pituatary Glands - Balance Position Report
   - Nursery to be Stocked Report
   - Seeds Received from Other Stations Report
   - Number of Fingerlings Raised
   - Number of Fingerlings Taken from Other Places
   - Number of Seed Ready for Supply (Fortnightly)

2. Explotation - related periodicals
   - Species-wise - Production Report
   - Number of Seed Disposed of or Sold: Report
   - Other Places - Specieswise Report
   - Fish Seeds Sales Details
   - Amount Received from Sale of Early Fry

M = Monthly
F = Fortnightly
E = Consolidation
AN = Action
ON = Decision

Annex - 5.4

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR CO-OPERATIVES IN THE DOF



Notes:

1. - Monthly Collections(repayment) Progress Report
   - Action to be Taken regarding Liquidation of Society (M/AW)
   - Section 82 - Inspection of Co-op. Societies
   - Inspection of Societies by AD. - Report
   - Section 81 - Enquiry by Sub-Registrar
   - Section 87 of TNCC Act - Recovery of malpractices
   - Section 137 - TNCC Act - Liquidation of Co-operatives
   - Fishermen Co-operative occupying our building

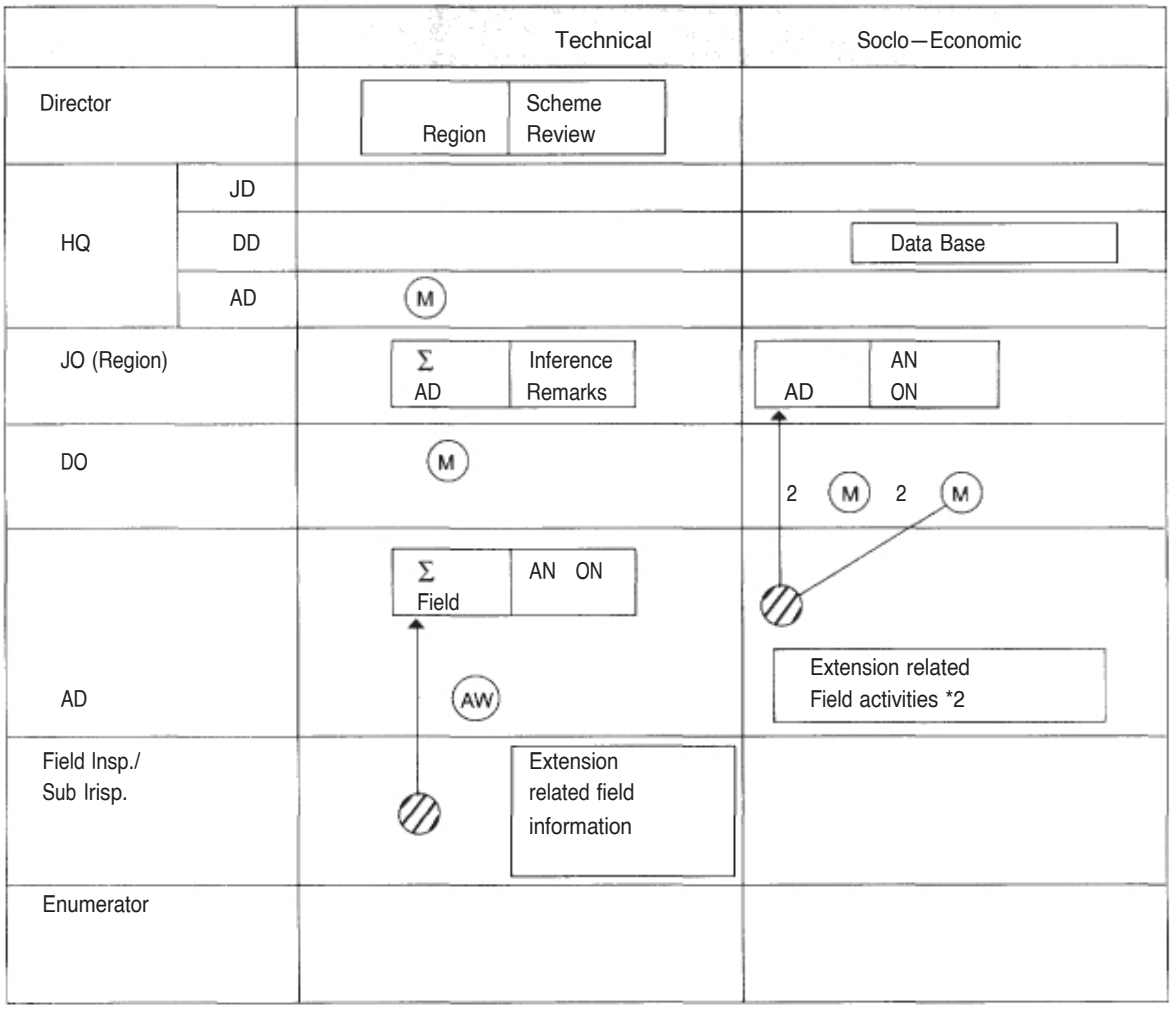
M = Monthly
Q Quarterly
E = Consolidation
AN = Action
DN Decision

Quarterly

- Social Welfare Natural Calamities - Govt. aid granted
- State Finance - NCDC Schemes - Financial Assistance to Fishermen
- Co-operative Loans - Demand - Collection - Balance

Annex - 5.5

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR EXTENSION IN THE DOF



Notes:

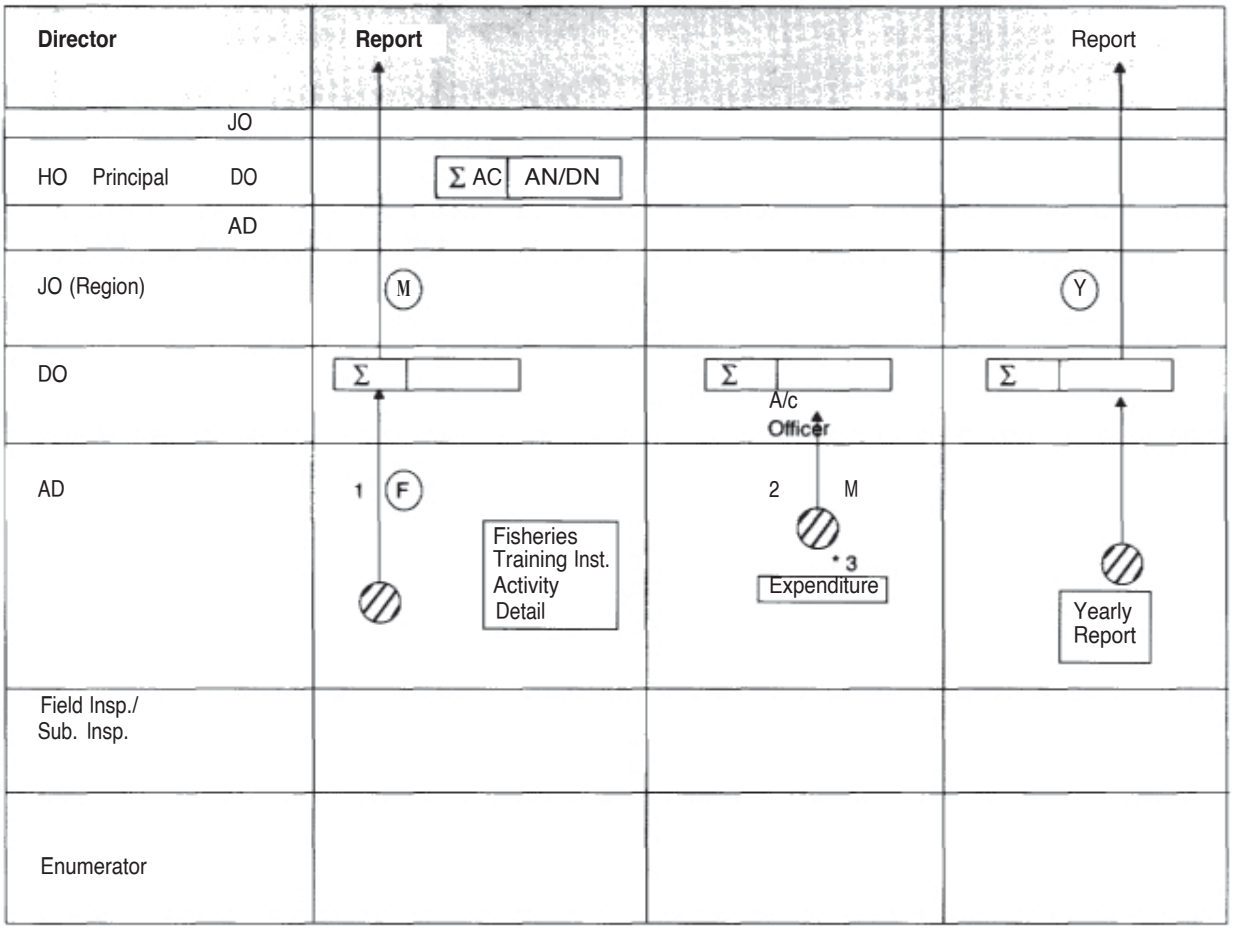
AW = As and When
AN = Action;
DN = Decision
M = Monthly
= Consolidation

1. - Incidence of Epizootic Ulcerative Syndrome in Water Bodies
   - Technical Guidance to Farmers
   - Demonstration Farms of Dept., Culturing farm report.
   - No. of Applications from BFDAto Directorate (Bi-monthly)
   - BFDA - Monthly report
   - Development Farms - Reports on Budget Estimates
   - Subsidy to farmers - Monthly & Annual
   - Shellfish and Finfish - R.A. report - Quarterly on disease control.

2. - T.N.Govt. - Publication -Tamilarasu
   - Extension Activity AIR Programmes / TV Programmes
   - Statistics on Fisheries Activity Quarterly Report
   - Annual Report

Annex - *5.6*

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR TRAINING IN THE DOF

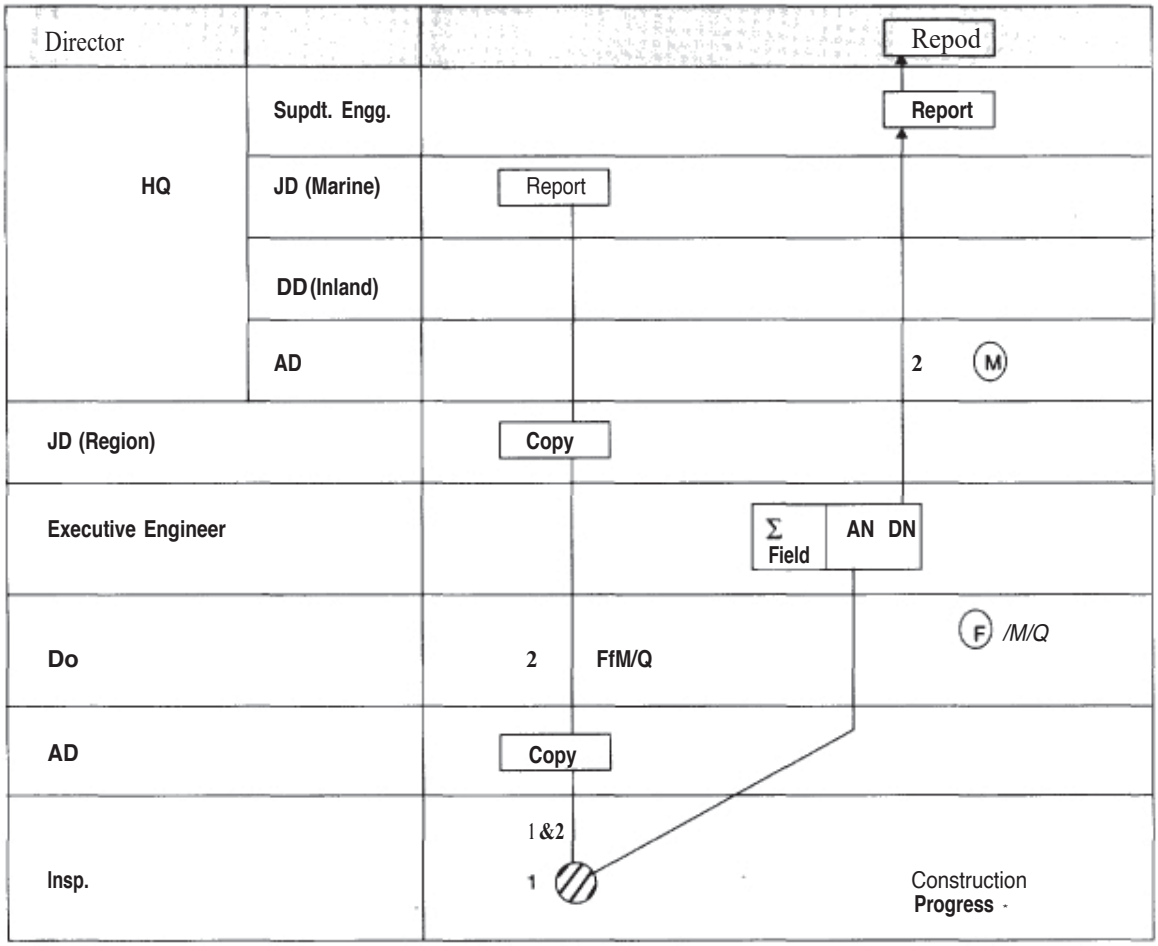


Notes:

1. ADs fortnightly diary
   No. of persons trained in the Training Centre (Annual)
2. Receipts Statement
   Loans and Advances
   Repairs expenses for each boat
   AW = As and When
   Y/A = Yearly / Annual
   M = Monthly
   = Consolidation
   AN = Action
   ON = Decision

Annex - 5.7

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR SOCIO-ECONOMIC MEASURES (HOUSING) IN THE DOF



Note:

1. **Housing**
   - **Format on House Repair- M**
     Post- 1996 Sringaravelar Free Housing Scheme - District-wise data- M

2. **Other Schemes**

Road Construction Scheme - M

- Fishermen Village Street Lighting Scheme - District-wise data - M
- Sodium Vapour Street Lights - Allotment of Lights in Numbers

National Fishermen Savings Scheme

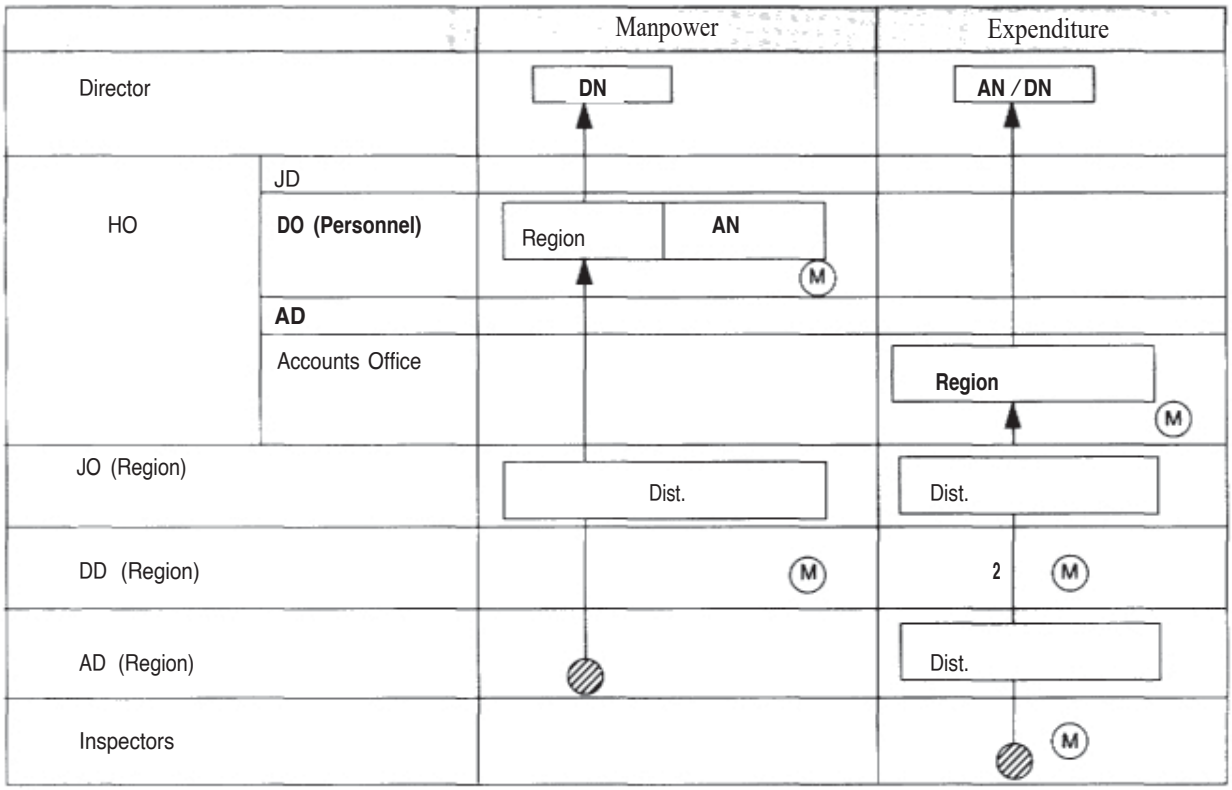
- Government Bank Loans - Amounts Sanctioned
- Diesel Subsidy Scheme

Housing Schemes - Weekly Progress Report

AN = Action
DN = Decision
A =Annual
M = Monthly
Q = Quarterly
= Consolidation

Annex - 5.8

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR HRD IN THE DOF



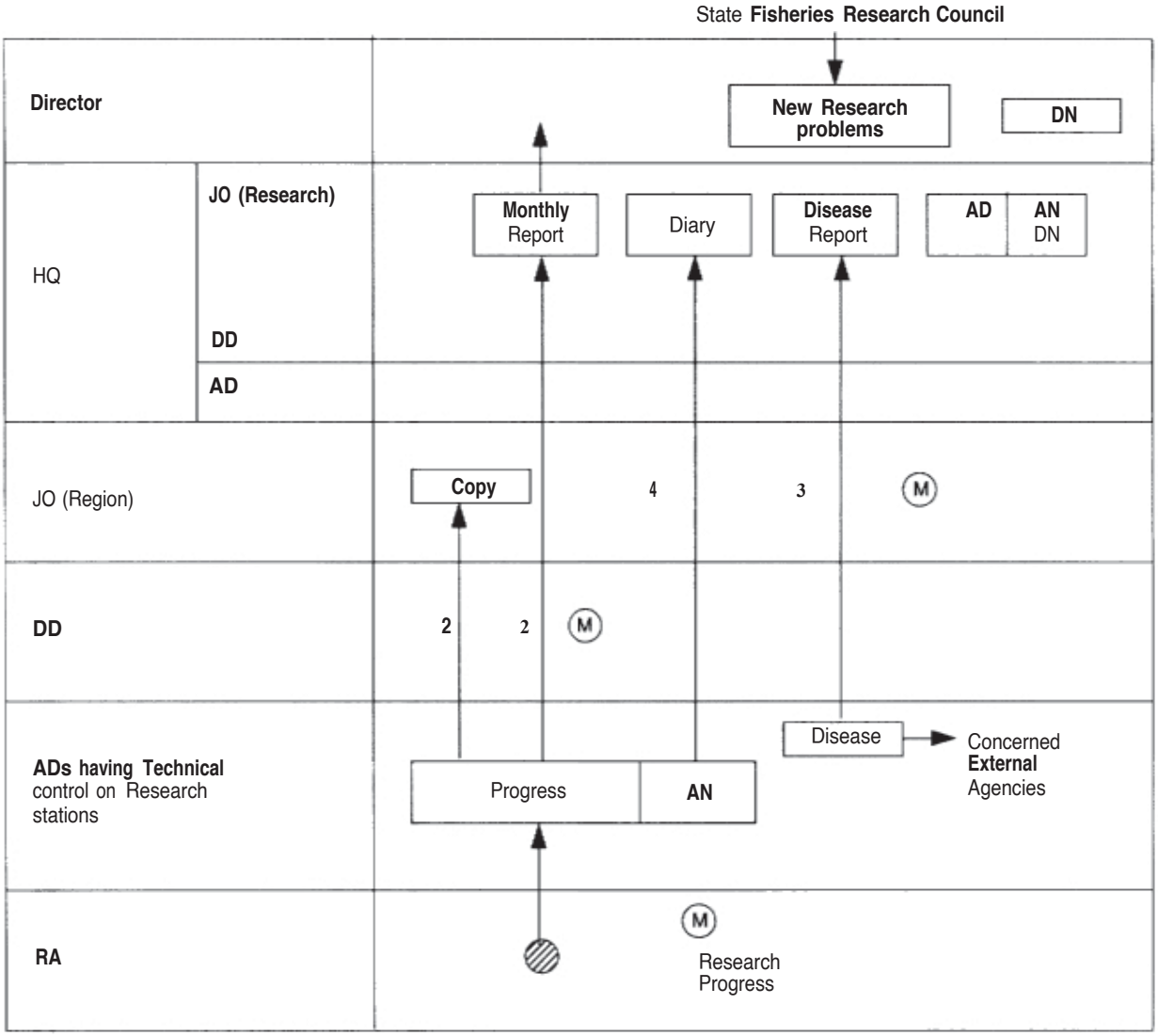
Notes:

1. Manpower - **related Periodicals**
   - Proposals for Pensioners
   - Loans and Advances to Govt. Servants
   - Retired Govt. Servants - Pension Benefits
   - Temporary Appointments - Quarterly
   - Govt. Servants under Suspension
   - Staff details- Numbers and Salaries
   - Below 1 year Retirement Pensions - Disciplinary Action
   - Pending Court Cases- Half-yearly
   - Gazetted Govt. Servants - A and'B List - Annual
   - Family Security Schemes - (eve of death)
   - TN.Ministerial Service Report of Vacancy
   - Compassionate Grounds Appointment - Annual
   - Family Pension - Quarterly
   - Suspension of Government Employees - Pending Beyond 1 year
   - Employment Exchange - Temporary Employment - Annual
   - Estimate of Retired Government Servants
   - Absentee Statement of Subordinates - Monthly
   - Delay in Settlement of Pensioners Benefits (Quarterly)
   - Handicapped Persons in Govt. Departments - Annual
   - Retirement of Govt. Servant - next 24 months - Monthly
2. Expenditure - related periodicals
   - Pensioners, Benefits - Disposals
   - Department Receipts - M
   - Expenditure Statement
   - Budget - Revised Estimates - Annual
   - Final Surrender of Funds Unspent - Annual
   - Small Savings Collection - M
   - Retirement Benefit Settled

M = Monthly
= Consolidation
AN = Action
DN = Decision

Annex - 5.9

PRESENT INFORMATION FLOW & REPORTING SYSTEM FOR RESEARCH IN THE DOF



Notes:

1. Monthly Progress Reports
2. ADs Monthly Report
3. ADs Monthly Report on Disease
4. ADs Fortnightly Work Progress Report / Diary

Annual Research Reports (Technical and Financial)

M = Monthly
= Consolidation
AN = Action
DN = Decision

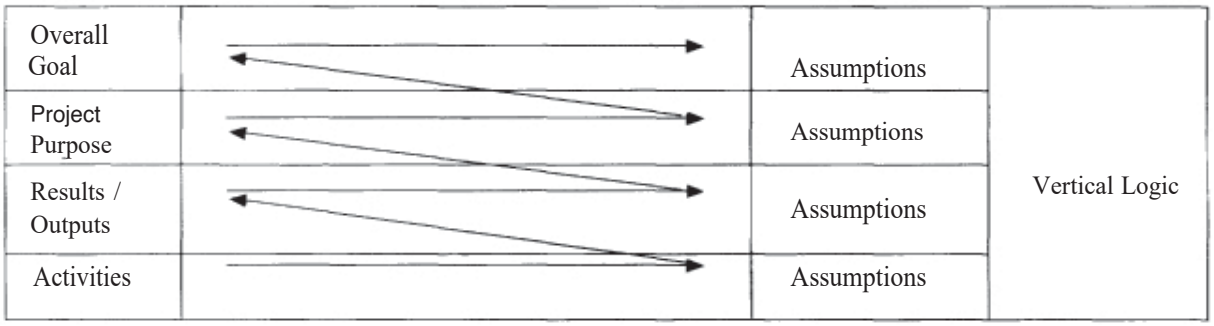
Annex - 6

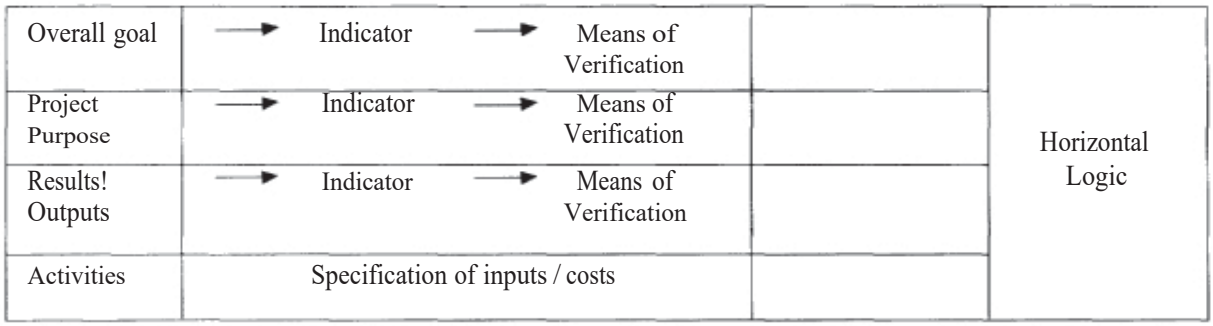
LOG FRAME MATRIX INTRODUCTION

The Log Frame provides a one-page summary

WHY	a project is carried out
WHAT	the project is expected to achieve
HOW	the project is going to achieve these results
WHICH	external factors are crucial for the success of the project
HOW	we can assess the success of the project
WHERE	we will find the data required to assess the success of the project
WHAT	the project will cost

Log Frame : Vertical and Horizontal Logic





Log Frame Format

Summary of Objectves *I* activities	Objectively Verifiable Indicators	Means (Sources of	Assumptions
Overall Goal			
Project Purpose			
Results / Outputs			
Activities	Specification of inputs and costs for each activity		

Objectively Verifiable Indicators (OVIs)

Objectively verifiable indicators define the performance standard to be reached in order to achieve the objective

They specify what evidence will tell you if an overall goal, project purpose or result / output is reached in terms of

- quantity — how much?
- quality — how well?
- time — by when?
- location / area — where?

- They focus on **important** characteristics of an objective to be achieved
- They provide a basis for monitoring and **evaluation.**

Means of Verification (MOV)

Tell us:

Where we get the evidence that the objectives have been met

- Where we can find the data necessary to verify the indicator

Some important questions:

Are the MOVs available from normal sources?
(Statistics, observation, records)
How reliable are the sources?
Is special data-gathering required?
If so, what will if cost ?
Has a new source to be created?
If we cannot find an MOV, the indicator has to be changed!

Assumptions

Definition:

Conditions that must exist if the project is to succeed, but which are not under the direct control of the project

How to word the assumptions:

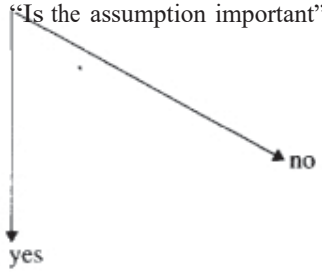
Assumptions can be derived from the objective tree

* Assumptions will be worded as a positive condition (c.f. objectives)

Assumptions will be weighted according to importance and probability

ASSESSMENT OF ASSUMPTIONS

P Question "Is the assumption important" ?



Don't include this one

2nd Question : "How likely will it occur?"

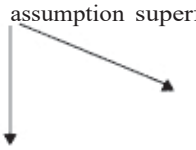
almost certain don't include this one either

Put this assumption into your Project Planning Matrix. Project management must
- monitor it and
- if possible influence it

quite likely

not likely

3rd Question : "Can the project strategy be re-designed to make this assumption superfluous"?



killer assumption!
warn decision makers!
Stop!

yes
Redesign project!
plan activities to influence assumptions
or make them superfluous

Annex - 7

SCHEMES AND ACTIVITIES OF DOF

L Marine Fisheries

(a) **Motorisation of Traditional Crafts: Installation** of inboard and outboard engines/motors on vallams and catamarans, 50% of cost of engine is given as subsidy. Department has to identify fishermen through co-operatives for the scheme. Rs.6000/- per head is given as subsidy for purchase of fishing nets.

(b) **GMDSS Compatible VHF Sets with DSC** : State Government is giving 25% subsidy for purchase of 1500 VHF communication sets from 1.2.99 for mechanised fishing boats. Scheme yet to commence.

Ic) **Integrated Fish Finder and Navigation Guidance Systems LFFNGS:**

50 rnechanised fishing boats will get echo sounders for offshore fishing.

(d) **FRP Catamarans** : For purchase of 100 FRP catamarans Government has sanctioned a 50% subsidy. 56 fishermen have availed of this facility till date.

(e) **Palk Bay** Fishermen Compensation **for** losses **from attack** by

Sri Lankan Navy and LTTE : The Tamil Nadu Government releases Rs.1 .00 lakh as immediate relief to family of deceased fishermen.

(f) **Relief for fishermen detained by Sri Lankan Government** : Tamil Nadu Government gives Rs.50/ day to the families of detained fishermen.

(g) **Repatriation of Foreign Fishennen** : Speedy repatriation of foreign fishermen caught in Indian waters.

(h) **TNMFR ACT** : Five patrol boats commissioned with bases in five different ports for patrolling in territorial waters.

(i) **Marine Aquarium at Chennai** : Government sanctioned Rs.10 lakh for modernisation of Marine Aquarium.

(j) **Sea Farming:** Integrated fisheries strategy will be implemented with eco-friendly sea farming.

(k) **Community-based Pearl Culture Project** : Community-based pearl oyster culture is to be taken up as a means for socio-economic improvement of the fishermen in collaboration with CMFRI.

(l) **Provision of Street Lights** : Providing 2,578 Street lights in 200 fishermen villages (at a unit cost of Rs.4,200) at a total cost of Rs.108.57 lakh is under Government's consideration.

(m) Formation of Link Roads: Formation of link roads -528 km. long in 390 villages at an estimated cosi of Rs.2984 crore is under consideration of the Government.

(n) Beach Landing **Craft** : The Government sanctioned a sum of Rs,22 lakh including the Central share of Rs. 11 lakh towards 25% subsidy for purchase of 100 numbers of plywood beachianding crafts. This scheme will be taken up in Thoothukudi region shortly.

(o) Installation of Artificial Reefs : The Government sanctioned a sum of Rs.8 lakh fi:r setting up two artificial reefs, one at Coromandel coast and another at Gulf of Mannar with 100% assistance from the Government of India.

(p) **Insurance for Traditional Crafts and Gear** : **The** Department is for a policy in which insurance coverage will be extended to weaker sections among the fishermen community for insuring their crafts, engine and gears.

(q) **Provision of Sodium Vapour Lights** : During 1998-99 the Government sanctioned a sum of Rs.13.20 lakh for provision of 120 sodium vapour lights in five landing centres in each of 12 coastal districts.

II. Infrastructure Development

i) **Fishing Harbours and Landing Facilities:** Mechanised boats conduct fishing operations from 362 fish landing centres all along the coastline of the state. These crafts require safe anchorage facilities during adverse weather conditions to land their catches, loading of fuel, etc. Besides, facilities are also required on the shore for preservation of the catch till they are dispatched to the consuming centres. In future, the infrastructure will have to be maintained and operated in a self sustainable manner.

ii) **Rameswaram** Fishing **Harbour** : Proposal for the construction of a fishing harbour at Rameswaram is under the consideration of the Government of India.

iii) **Construction of Fish Landing Centres** : **Proposals have been formulated for the development of ten** fish landing centres as per the latest international standards in TamilNadu at an estimated cost of Rs.1 5 crore.

III. Inland Seed Production

(a) **Fish Seed Production** : **The production of major** carp fish seed is the foremost requisite for the development of Inland Fish production and with this in view, the Department of Fisheries *I* Tamil Nadu Fisheries Development Corporation Ltd., and Fish Farmers Development Agencies, are operating fish seed farms to produce about 500 Iakh fingerlings. The Department is encouraging the private sector also, to produce quality fish seed with subsidy assistance of *Rs.25,000/-*.

(b) **Hill Area Development Programme** : **Government has** sanctioned a sum of Rs.20.15 lakh for the improvement of trout hatchery at Avalanchi and improvement of fish hatchery at Wellington lake in Uthagamandalam District for 1998-99.

(c) **Western Ghats Development Programme** : **Under the Western Ghats Development Programme, the** Government has sanctioned a sum of Rs.33 lakh for the establishment of Mahseer hatchery, administrative and lab building at Sholayar in Coimbatore District for 1998-99.

Under Western Ghats Development Programme, the establishment of Chinese hatchery and provision of water supply arrangements in the National Fish Seed Farm at Manimuthar at a total cost of Rs.35 lakh is under consideration of the Government.

IV. Research, Training and Extension

(i) **Research** : **There are six Research Stations, each headed** by an Assistant Director of Fisheries. There are 36 Research Assistants working on 16 projects approved by the State Fisheries Research Council in June '98.

(ii) **Sea Ranching in** Pulicat **Lake: During 1998-99, the Government sanctioned a sum of Rs. 14.11 lakh** to rear shrimp seed in pen and to stock them in the Pulicat lake. So far, nine lakh seed have been stocked.

(iii) **Training** : **There are six Fisheries Training Centres** offering training to fishermen boys in modern fishing methods.

(iv) **Extension** : **Under the extension programme, seminars and exhibitions are conducted at State and** district levels. Information on various scientific developments and benefits extended by the Government and other Agencies are also made available to fishermen through handouts, reprints and organised extension programmes.

V. Brackishwater Fish Farmers Development Agencies (BFDA)

There are 5 BFDAs functioning in Tamil Nadu. The Department has received 800 applications for allotment of water spread / land area from shrimp aquaculture farmers. They are being processed.

VI. Agricultural Human Resources Development Project

The main thrust will be on training of trainers in select fields of fisheries science through (I) Network of Aquaculture Centres in Asia-Pacific (NACA) (2) South East Asia Fisheries Development Centre (SEAFDEC) and (3) Asian Institute of Technology at Bangkok.

VII. New Schemes for 1999-2000

(i) Census **of Fisherfolk** : The data-base for the preparation of the Perspective Plan needs to be updated urgently. To conduct the fisherfolk census with the Department manpower, a sum of Rs.5 lakh is proposed during 1999-2000

(ii) **Demonstration of Marines Finfish Farming (Grouper)** : Grouper *(Epinephelus spp)* are large marine food fishes, well suited both biologically and commercially for fanning. They are excellent food fishes with a fast-growing demand in the international market. Hence, a pilot project on the demonstration of marine fin fish farming will be implemented in one of the brackishwater ponds at Punnakkayal and Thoothukdui. A **sum of Rs. 1.90** lakh is proposed for implementation of this scheme.

(iii) **Acquisition of one Fishing Vessel** : **The intensified** marine fishing activity along the inshore regions has deprived traditional marine fishermen of legitimate rights for fishing along the shores. The Department of Fisheries has proposed to acquire one 43-1/2' fishing vessel fully equipped with fishing gear, navigational gadgets at an estimated cost of Rs.25 lakh **for Kanniyakumari Survey Station to** survey off-shore waters.

(iv) Upgradation **of** Facilities to the Existing Fish Seed Farms : It is proposed to repair the existing seed farms at an estimated cost of Rs. 10 lakh. The upgradation of the seed farms at Poongar in Bhavanisagar and Chittar Dam II would be taken up during 1999-2000.

(v) **Pilot Project for Sewage-Fed** Fisheries: It is proposed to introduce a coordinated pilot commercial project with an outlay of Rs. 5 lakh in Madurai Municipal Corporation limits for sewage fed fisheries.

(vi) **Establishment of Ornamental Fish Production Centres at** Thirwnoorthy and **Aliyar** : **Ornamental** fish production is gaining momentum in India. It is proposed that the State Government will provide a sum of Rs. 10 lakh towards share capital assistance to TNFDC and the operational expenditure will be met by the Corporation for the establishment of ornamental fish production centres.

(vii) **Assistance to Private Entrepreneurs for Establishment of Freshwater Prawn Hatcheries** : **The** scheme is to encourage private fresh water prawn hatcheries to produce quality prawn seeds to meet the requirement of the freshwater prawn farmers and to increase the fresh water prawn production.

VIII. Fishermen Welfare

(1) **Ma.Singaravelar** Memorial Fishermen Free **Housing Scheme** : **Under Ma. Singaravelar Memorial** Fishermen Free Housing Scheme, 12,000 houses have been sanctioned so far by the Government. **The scheme will be continued during** 1999-2000 for construction of another 4000 houses to the fishermen

(2) **Group Insurance Scheme** : **The State Government will** continue to implement the Group Insurance Scheme for fishermen. Under this scheme, the State Government pays a sum of Rs. 12 towards the annual insurance premium per fishermen to the National Federation of Fishermen Cooperative Ltd., **(NFFC) New Delhi** every year.

(3) **Fishermen Accident Insurance Scheme** : **This scheme is being implemented from 1995 onwards by the TAFCOFED. A sum of Rs.24/- towards annual premium for fishermen and a sum of Rs.20/-** toward annual premium for fisherwomen is to be remitted by the Boat Owners to the New India Assurance Company, Tirunelveli on behalf of fishermen *I* fisherwomen in the mechanised fishing boats, vallams and catamarans.

(4) **Savings-cum-Relief Scheme:** In order to provide subsistence to the marine fishermen during the off season months, the savings-cum-relief scheme was introduced. A sum of Rs.45 per month is collected from active marine fishermen who are members of the FCS for a period of 8 months in a year. The State and the Central Government match a total sum of Rs.360/- thus collected with equal contribution.

(5) Reimbursement of Central Excise Duty on **HSD** Oil : Centrally Sponsored Scheme for reimbursement of Central Excise Duty on Diesel to the mechanised fishing boats on 80% Central assistance and 20% State assistance,

(6) Kerosene / Diesel Subsidy for Fishermen using Traditional Crafts: Government sanctioned for the fist time during 1998-99 a sum of Rs.3 crore towards kerosene / diesel subsidy for fishermen using about 20.000 traditional crafts fitted with inboard engines / outboard motors at the rate of Rs.0.50 per litre and an annual ceiling of Rs.1500 per craft / fisherman.

IX. (a) Co-operative Societies : These societies constitute an important agency for the upliftment of fishermen community in the State. The State proposes to increase the membership of societies.

b) Supply **of Auto** trailers to Fisherwomen **Co-operative** Societies : During 1997-98 the Government had sanctioned a sum of Rs. 31.80 lakh for the supply of 25 auto trailers to 25 Fisherwomen co-operative Societies to transport the fish from landing centres to the market immediately. All the 25 auto trailers have been distributed free of cost to 25 Fisherwomen Cooperative Societies.

X. Tamil Nadu State Apex Fisheries Cooperative Federation Limited (TAFCOFED)

The institution was set up with the objective of promoting fishery development through co-operatives and also for implementation of the Integrated Marine Fisheries Development Project in maritime villages of Tamil Nadu with financial assistance from National Cooperative Development Corporation. Till now, 500 primary Fishermen Co-operative Societies and 6 District Federations and 2 District Co-operative Unions have been affiliated to the Federation.

XL integrated Marine Fisheries Development Project (IMFDP)

This project is assisted by the National Co-operative Development Corporation and implemented by TAFC'OFED. It has an outlay of Rs.15.88 crore and it is to be implemented over a period of five years from 1993-94 in the coastal districts of Kancheepuram, Thiruvallur, Nagapattinam, Ramanathapuram, Thoothukudi and Kanniyakumari covering 80 fishing villages. So far, the Government of Tamil Nadu have released a sum of Rs. 15.77 crore for the implementation of the project.

XII. Tamit Nadu Fisheries Development Corporation Limited

The Tamil Nadu Fisheries Development Corporation Limited was established in 1974 as a State owned undertaking. lt is engaged in the following activities

- Operation of deep sea fishing trawlers
- Management of reservoirs
- Production of quality fish seeds
- Management of Ice Plants, Cold Storages and Processing Plants
- Sale of HSD to fishermen
- Marketing of quality fish
- Fish Net Manufacturing
  Management of Shrimp Hatchery and model shrimp farm
  Dry fish godown
- Management of Pearl Culture Project and
- Pearl oyster hatchery

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