BOBP/MM/5

Strengthening Monitoring and Evaluation and the Management Information System of the Ministry of Fisheries and Aquatic Resources Development, Sri Lanka

BOBP For Fisheries Management
BAY OF BENGAL PROGRAMME

STRENGTHENTNG MONITORING AND EVALUATION AND THE MANAGEMENT INFORMATION SYSTEM OF THE MINISTRY OF FISHERIES AND AQUATIC RESOURCES DEVELOPMENT, SRI LANKA

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BAY OF BENGAL PROGRAMME
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List of Abbreviations

AIP	-	Annual Implementation Programme
ADB	-	Asian Development Bank
BOBP	-	Bay of Bengal Programme
CCD	-	Coast Conservation Department
CEY-NOR	-	Cey-Nor Foundation Ltd.
CFHC	-	Ceylon Fisheries Harbours Corporation
COPE	-	Parliamentary Committee on Public Enterprises
CPUE	-	Catch per unit of effort
DFARD	-	Department of Fisheries and Aquatic Resources Development
DFEO	-	District Fisheries Extension Officer
ERD	-	Department of External Resources
FSDP	-	Fisheries Sector Development Project
FAO	-	Food & Agriculture Organisation
FI	-	Fisheries Inspector
GOSL	-	Government of Sri Lanka
HACCP	-	Hazard Analysis and Critical Control Point
MSY	-	Maximum Sustainable Yield
M&E	-	Monitoring and Evaluation
MIS	-	Management Information System
MCM	-	Ministerial Committee Meeting
MCS	-	Monitoring, Control and Surveillance
MFARD	-	Ministry of Fisheries and Aquatic Resources **Development**
NAQDA	-	National Aquatic Resource Development Authority
NARA	-	National Aquatic Resource Research and Development Agency
NIFT	-	National Institute of Fisheries Training
NPD	-	Department of National Planning
OCM	-	Officials Committee Meeting
O&M	-	Operation & Maintenance
PPMS	-	Project Performance Management System

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Preface

This document is the report of a project to strengthen the system for monitoring and evaluation and the management information services in the Ministry of Fisheries and Aquatic Resources Development (MFARD), Sri Lanka:

Supported by the Bay of Bengal Programme (BOBP), the project is part of the BOBP's effort during its Third Phase to improve and facilitate fisheries management in Sri Lanka by raising awareness, building the capacity of institutions in Sri Lanka and providing technical assistance.

The paper discusses the present system for monitoring and evaluation in MFARD and the Department of Fisheries and Aquatic Resources Development (DFARD), and the efforts, supported by BOBP to introduce a new system, using the internationally popular management tool, Logical Framework Analysis. The document lists several recommendations resulfing from the study.

The project was implemented through a consultancy assignment awarded to the Ministry of Plan Implementation and Parliamentary Affairs (MPI & PA). It was carried out by the Performance Evaluation Unit of the Ministry, with the assistance of a consultant provided by the FAO.

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

Monitoring & Evaluation (M & E) is often the weak spot in government organizations - in Sri Lanka and elsewhere in the Bay **of** Bengal region. They lack regular **and** systematic evaluations of project performance.

With the many changes in fisheries in Sri Lanka, and the emergence of problems such as the depleting resources, increasing environmental pollution and declining catches and incomes of fishermen, an effective M & E system is necessary in MFARD (Ministry of Fisheries and Aquatic Resources Development) and DFARD (Department of Fisheries and Aquatic Resources Development) **to** institute the right policies.

Such a system will be particularly helpful in promoting fisheries management – the BOBP's major objective during its Third Phase – because it will help the government track performance and assess the impact of policies and programmes.

The BOBP therefore supported a study to facilitate the establishment of a result-based management system in the MFARD and its agencies. Carried out by the Ministry of Plan hnplementation and Parliamentaiy Affairs, with the assistance of a FAO consultant, the team reviewed existing M & E mechanisms in MFARD and DFARD, studied documentation, made field trips and held discussions at various levels, with officials and fishermen. A "result-based" monitoring and evaluation methodology was evolved using Logical Framework Analysis as the basis. This seeks to replace the present "input-output" based M & E system with a performance-based M & E System.

The team conducted five Logframe workshops for over 100 senior, middle level and field officers of the MFARD, DFARD and its agencies. These workshops proved to be very successful in disseminating the concept and methodology. The team also assessed the information and training needs of MFARD and its agencies to strengthen M & E capability.

Introducing sound participatory M & E systems into a hierarchical set-up like government is a challenge, and MFARD and DFARD should be complimented on taking up the challenge. We are pleased to have played a modest role in the process. This document, by reporting on the effort and disseminating information about it, strengthens the effort and carries its message far and wide.

Yugraj ***Yadava***
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1.0 BACKGROUND

A. Introduction

1.01 The Bay of Bengal Programme (BOBP) is a regional FAO fisheries institution that has established itself in its member countries on both sides of the Bay: Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka, and Thailand.

During its first two phases (1979-1993) the BOBP strove to improve the conditions of fisherfolk by helping member-governments introduce new technologies and extension techniques among fisherfolk communities. Over the years, it came to be universally accepted that fisheries management is the only way to ensure the future productivity of the fisheries sector, protect the bio-diversity of marine species and improve the livelihood for millions of fisherfolk. During its third phase, therefore, the BOBP has attempted to introduce and implement fisheries management practices in member countries through an integrated coastal area management approach. Conservation of fisheries resources, environmental protection and community-Abased fisheries management including regulation of fishing efforts form the core aspects of this programme.

1.02 In Sri Lanka, the BOBP has focused during the third phase on facilitating improved management of the ornamental fish sector. In this endeavour the BOBP assisted the Ministry of Fisheries and Aquatic Resources Development (MFARD) and the Department of Fisheries and Aquatic Resources (DFARD) through awareness-building, strengthening the institutional capacity of concerned agencies and technical assistance.

Workshops and discussions with stakeholders revealed that strengthening the Monitoring and Evaluation (M&E) System would help the government to track perfonnance and determine the impacts of its policies, programmes and projects and thereby contribute towards improved fishery management. A key element in any fisheries management programme is the Management Information System (MIS) that supports the decision and policy making processes.

1.03 In consultation with the BOBP, the MFARD awarded the consultancy assignment on Strengthening the M&E System in the MFARD and DFARD to the Ministry of Plan Implementation and Parliamentary Affairs (MPI & PA) (Annexure 1). The consultancy was to be carried out by the Perfonnance Evaluation Unit (PEU) of the MPI & PA, with the assistance of an external consultant provided by the FAO.

B. Rationale

1.04 Past development plans of MFARD focused heavily on increasing fish production with little emphasis on resource management. Having realised the importance of resource management to ensure a sustainable fishery, the government has given high priority to fisheries management in its current Six-Year Plan (1999-2004). The Six-Year Fisheries Development Programme of the MFARD highlights the present status on planning and the need for an M&E mechanism thus:

"Some shortcomings of past Plans include an over-estimate of exploitable marine resources as well as a pre-occupation with increasing production, whilst neglecting resource management. Past Plans also suffered from poor and unreliable data and statistics, particularly the absence of a catch and effort monitoring system."

1.05 During recent decades, international development policies have undergone a process of rapid evaluation. Recent global initiatives have established a Code of Conduct for Responsible Fisheries. The Code sets out guidelines and international standards of behaviour for responsible practices which will ensure effective conservation, management and development of living fisheries and aquatic resources. The Code stipulates guidelines for management, post-harvest practices and trade. Sri Lanka is keen to adopt and implement the Code with suitable country-based strategies.

1.06 Policies in the fisheries sector including the introduction of the new Fisheries and Aquatic Resources Act No.11 of 1996 and new regulations framed under it have undergone changes. But the survival of fishery as an industry is threatened by depletion of resources, habitat destruction, declining bio-diversity, and

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environmental pollution. As a result food security is threatened. Some peripheral rural fishing communities face poverty and declining incomes. To help confront these problems, the Government of Sri Lanka (GOSL) has sought the assistance of the BOBP to assist in developing an effective result -based M&E system.

C. Objectives

1.07 This study aims at facilitating the establishment of a result-based management system in the MFARD and its agencies. The assignment would basically focus on the following.

(i) assessing the strengths and weaknesses of the existing M&E system

(ii) developing and introducing a suitable methodology for a result-based M&E system

(iii) conducting a series of exercises on a pilot basis to establish the performance management system through a participatory process with the officials of the MFARD and its agencies and

(iv) creating awareness among key personnel and orienting them to the concept and application of a performance management system.

D. Scope of Work

1.08 The scope of the M&E Study covers the following aspects.

a. conducting a diagnostic study on existing M&E practices in the MFARD and DFAR; reviewing data sources, data collection methods and reporting procedures

b. identifying the information needs of the MFARD and DFAR information requirements for monitoring the progress and outputs of institutions; and the effects of fisheries policies and programmes;

c. examining the scope for improving existing M&E systems and practices including improved data collection and dissemination systems; and

d. developing strategies and approaches for strengthening M&E and management information systems through consultative workshops.

E. Study Methodology & Approach

1.09 The team reviewed existing M&E systems and practices including the management information systems (MIS) of the MFARD and DFARD. It reviewed documents, formats and manuals and held discussions with key personnel concerned with fisheries development management. The team also visited selected sites to examine the degree of beneficiary involvement — the fishing community's participation in the project cycle management from identification of projects toplanning, implementation, monitoring and evaluation. Through a consultative process, the team developed a "result-based" monitoring and evaluation methodology using Logical Framework Analysis (LFA) as the basis. The team conducted five Logframe workshops for over 100 senior, middle level and field officers of the MFARD, DFARD and its agencies such as National Aquatic Resources Research and Development Agency (NARA), Ceylon Fishery Harbour Corporation (CFHC), Ceylon Fisheries Corporation (CFC), National Aquaculture Development Authority (NAQDA) and National Institute for Fisheries Training (NIFT). The team also carried out a series of exercises on a pilot- testing basis to examine the feasibility of extending the same process to all on-going and future development projects and programmes. As most of the staff who attended these workshops did not have any previous exposure to the Logframe approach, these workshops proved to be very successful in disseminating the concept and methodology.

1.10 The team also conducted a diagnostic study on existing M&E systems and practices by reviewing documents, reporting formats, manuals and circulars and holding discussions with key officials in fisheries development and management. The study proposes several strategies, methodologies, approaches, techniques and M&E mechanisms to extend the present "input-output" based M&E system towards a "result-oriented" performance-based M & E System. The team also carried out an assessment of information requirements

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and training needs to strengthen the M&E capability of the MFARD and its agencies. The Work Plan of the Study Team is attached under Annexure 2.

F. Sources of Information

1.11 The study team used discussions with key officials, members of the fishing community, representatives from fishermen's co-operatives and community- based and women's organisations. The team also used other secondary sources such as studies and reviews. Supplementary information and primary data/ information were also obtained through discussions and interviews with senior officials of institutions such as NARA, CFHC, NIFT, the Planning Division of the MFARD, DFARD, and NAQDA. The team conducted beneficiary surveys and focus group discussions with District Fisheries Extension Officers (DFEO)and harbour managers who work closely with the fishing community. The team also had discussions with the fishing community to understand the community involvement at various stages of the project cycle. The team made the best use of the Logframe Workshops to obtain views and information about the M&E system.

2.0 RESOURCE MANAGEMENT FROM FISHERIES SECTOR PERSPECTIVE

2.01 The fisheries sector in Sri Lanka plays a vital role in terms of employment generation, protein supply to the nation and export earnings. The bulk of the fish supply, around 88%, comes from marine resources; aquaculture contributes the remaining 12%. The contribution of the fisheries sector to the national Gross Domestic Production (GDP) is estimated to be 3%. Around 65% of the animal protein intake of the population comes from fish. The present per capita consumption of fish is estimated to be around 16 kg per annum. Though this is generally regarded as low, it is higher than the figures for India and Bangladesh.

2.02 The National Fisheries Development Programme 1999-2004 states that about 150 000 people are directly engaged in fishery including aquaculture, with another 100 000 employed in related areas such as trading, processing, boat building, etc. In all it is estimated that 700 000 to 900 000 depend on the industry for their livelihood.

2.03 The total fish production has gradually increased from 183 990 metric tonnes (MT) in 1990 to 260 100 MT in 1998. The following table provides fish production figures by sub-sector from 1991 to 1998.

Table **I. Annual fish production, 1991 to 1998 (in metric tons)**

	Coastal	Offshore & Deep Sea	Total Marine	Aquaculture	Total
1991	159150	15080	174230	23830	198060
1992	163170	22000	185170	21000	206170
1993	169900	33000	202900	18000	220900
1994	174500	37500	212000	12000	224000
1995	157500	60000	217500	18250	235750
1996	490000	57000	206000	22250	228250
1997	152750	62000	214750	27250	242000
1998	166700	63500	230200	29900	260100

Table II. The number of operating fishing crafts (1990-1998)

	Non-Mechanized Traditional	Out-Board Engine		En-board Engines		Total Fishing Craft
		Traditional	Fibreglass	Day	Multi-day	
1990 *	14580	973	9758	–	2364	27675
1991 *	15192	1022	9952	–	2442	28608
1992 *	13381	1012	8709	–	2964	26066
1993	11280	1009	7754	1272	1204	22619
1994	12462	1016	8843	1272	1543	25136
1995	14649	1060	8564	1357	1639	27269
1996	13873	149	8334	1543	1710	26609
1997	14225	1771	8300	131	1764	27411
1998	15659	1845	6919	2494	1353	28261

* Day boat figures represent both day boats and multi-day boats

2.04 In the past, the government's thrust was to increase fish production by issuing more and more boats under various incentive schemes. Result: a rapid expansion of the fishing fleet – especially the coastal near shore vessels – and too many fishermen competing for fast-declining resources. The increasing imbalance between catch and effort has been observed and reported through several studies. Despite the resource depletion and drop in fish productivity, the demand for fish has been increasing with the population.

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Moreover, all over the world people are now moving away from meat and towards fish. Fish being the most popular and commonly used animal protein in the diet of the people of Sri Lanka, the MFARD has a major role to the in the food security as well as nutrition. However, the civil unrest in the North and East Provinces has led **to** a substantial decline in fish supplies. All these factors have increased the demand for fish. But this demand should not be met by damaging the resource base.

As per the Six-Year Development Programme of the MFARD, the Maximum Annual Sustainable Yield (MSY) for coastal resources has been estimated to be 250,000 MT, made up of 170,000 MT of pelagics and 80,000 MT of demersals. It appears that the annual estimated catch in the coastal area is in excess of the Maximum Sustainable Yield (MSY). Presently, fishing in the North and the East is restricted because of the prevailing civil unrest. Moreover, the absence of reliable statistics on fish catches in general and North and East Provinces in particular, creates doubts about statistics.

Despite these doubts, based on proxy indicators, there is a strong general belief among officials of DFARD that coastal resources are reaching levels of over-exploitation whereas off-shore and deep-sea resources are under-exploited. The total bio-mass is estimated around 400,000 MT. The potential exploitable limit of deep-sea resources is estimated around 90,000 MT. In 1997, the reported fish production from deep sea is around 57,000 MT, which is below the MSY

2.05 These statistics indicate that the coastal resources have been apparently over-exploited whereas the off-shore/deep-sea resources can be exploited further, subject to the validity of data. These statistics have indicated the need for a shift in focus from production **to** resource management.

2.06 With the change in the govenunent's thrust towards resource management, 'a well-designed information base for monitoring and management has become necessary. The main areas of the policy thrust, as per the current Six-Year Development Programme, are the following.

- Development of a national programme for exploitation of fisheries and aquatic resources on a sustainable basis.
- Improvement of fishing operations through the introduction of modern vessels and equipment and provision of infrastructure such as harbours, anchorages, shore-based services, feeder roads, etc.
- Training **to** upgrade the skills of fishermen, vessel operators and managers.
- Introduction of appropriate technology to modernize the indusiry and **to** improve the role of the sector in the national economy.
- Development of aquaculture and inland fisheries as a means of increasing domestic production, employment and nutrition.
- Prevention of unauthorised exploitation of resources in Sri Lanka's Exclusive Economic Zone (EEZ)
- Diversification of exports with emphasis on value addition.
- Fiscal and other incentives for offshore and deep sea fishing and aquaculture.
- Implementation of appropriate schemes to provide welfare facilities to fishing communities and protect them from natural and other environmental hazards.

2.07 A review of data from past resource surveys indicates excessive fishing pressure leading **to** over-exploitation of resources in near-shore areas. Due to unrestricted expansion of the fishing fleet and open access to resources, coupled with unregulated fishing methods and practices over a period of time, heavy over-exploitation of resources beyond the MSY is feared. The worst-case scenario is that some important biological species have been eliminated. To save resources from further damage, the GOSL has shifted its focus from production orientation towards resource management.

In this direction, the GOSL has enacted the new Fisheries and Aquatic Resources Act No. 2 of 1996, which lays emphasis on regulation of fisheries operations through a system of licensing. Under this Act,

regulations have been gazetted to ban certain fishing operations which are considered harmful or destructive. A system of licensing has been introduced to regulate such fishing operations. Moreover, the GOSL has also taken steps to promote the offshore/ deep-sea fishery and has revived inland fisheries and aquaculture by reintroducing state patronage. With the shift of emphasis from coastal towards deep-sea fishing, fish production from deep-sea waters is reported to have gone up from 4,300 MT in 1987 to 621,000 M T in 1997, accounting for about 25% of the total fish landings. However, one has to bear in mind that currently most multi-day boats operate in international waters beyond our EEZ, and some even as far as the Arabian Sea and the Red Sea.

2.08 The recent "Off-Shore Large Pelagic Fish Resources Survey" conducted under the ADB- assisted Fisheries Sector Development Project (FSDP) has established that there are good prospects for tuna long-line fishery in deep-sea areas. However, the team's discussions with the fishing community and others involved in operating multi-day boats indicate that the concept of tuna long-line technology as pilot-tested under the ADB-funded FSDP must be further tested in order to market the concept successfully. With the termination of the survey programme and withdrawal of assistance from the project, it has been reported that the privately owned boats engaged on this pilot study have moved out of this method because of low returns and high operational cost. The team is of the view that the above survey was in the nature of a pilot study; given the absence of sufficient data and information to prove the cost- effectiveness of this method, and the lack of proper demonstration, awareness-building and community participation, the technology has not been accepted.

2.09 To ensure the long-term sustainability of fishery resources and supply of the country's animal protein needs, as well as overcome the pressing problems encountered by the fishing community, it is necessary to develop an effective management and monitoring system with community participation. These objectives can be achieved through intense awareness and capacity-building programmes which convince people at the grass-roots level about the benefits of management controls. The community should be educated and persuaded about the importance of integrated fisheries management programmes. The awareness must be converted into strong public opinion, which will result in behavioural changes among buyers. For example, if housewives continue buying undersized, immature fish or rare species, producers will continue to indiscriminately catch them. Hence, awareness programmes should cover not only the fishing community but also cover intermediaries and the final clientele, the consumer. To ensure their committed participation, all of them must be made parties to the concept of community-based management. This will bring about a sense of commitment, ownership and pride in the idea and active participation in resource management.

2.10 Presently, the community regards all matters related to fisheries management as the responsibility of the government and the Department of Fisheries. The community doesn't seem to believe that it has any responsibility on this score. Its concern seems to be to catch as much fish as possible, using any possible method. Rules and regulations exist, but enforcement is another matter. The implementation machinery, consisting of officials from the Department of Fisheries and field officers, has not been fully effective to build adequate grassroots-level support. The community rarely supports rules and regulations, which it regards as an attempt to govern and regulate its means of livelihood.

2.11 The community members interviewed felt that their participation in fisheries management was not sought and that there is hardly any exchange of ideas or opinons. They believed that if they are integrated into the system in a meaningful manner and with responsibility, they will whole-heartedly support and participate in management effort. It is only through proper and well-coordinated management practices that one could ensure the future productivity as well as the bio-diversity of the marine environment, thus securing the livelihood of thousands of fishermen and others in the industry.

2.12 Unless the fishing communities, being important stakeholders, are incorporated into the system in a meaningful manner and with responsibility and authority, it is unlikely that any fisheries management system will be effective.

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3.0 ORGANIZATIONAL ARRANGEMENTS OF THE MFARD AND ASSOCIATED AGENCIES

3.01 The MFARD primarily plays a policy-making role; DFARD is the key implementation and enforcement arm. In addition, a number of other departments and agencies assist MFARD in discharging its responsibilities. The organizational chart explains the institutional linkages (Annexure 3).

A. Ministry of Fisheries and Aquatic Resources Development

3.02 The Mission of MFARD is "Promotion and facilitation of sustainable utilization of fisheries and aquatic resources for the benefit of the people."

The objectives of the Ministry are:

- increasing the nutritional status and food security of the people through increased fish supply
- managing aquatic resources in a sustainable manner
- minimizing post-harvest losses
- increasing employment opportunities in fisheries and related industries
- uplifting the socio-economic status of the fishing community
- increasing foreign exchange earnings through export of fish and fishery products and
- managing and conserving the coastal environment through regulation and control of development activities within the coastal zone

3.03 The key activities of the Ministry include preparing the national fisheries policy, developing investment plans, facilitating the development of aquaculture, co-ordinating export promotion activities, managing producer subsidy and welfare services to the fishing community, training stakeholders in the sector, organising surveillance of the EEZ of Sri Lanka and air/ sea rescue operations.

B. Department of Fisheries and Aquatic Resource Development

3.04 The DFARD is the largest among the various departments of MFARD. It is responsible for the administration, development, management, quality control, regulation and monitoring of the fisheries sector. The department provides technical and technological services and welfare support to the community. It patronises and supports a well-established co-operative system with over 800 fisheries cooperatives spread all over the island. Subsidies to the fishing community are handled by this department through field offices. There are 15 DFEO divisions, each of which is headed by a District Fisheries Extension Officer (DFEO). The Department is responsible for the registration of fishing crafts, issue of licenses and permits, monitoring of fishing practices, settlement of fishing disputes, etc. The DFARD is also responsible for enforcement of varous regulations including those under the Fisheries and Aquatic Resources Act of 1996, together with subsequent amendments to the act.

3.05 Attached to the each DFEO office is a District Fisheries Inspector **(DFI)** with a number of Fisheries Inspectors (FI), whose main responsibility is to coordinate activities at the community level. Registration and licensing of fishing boats as well as data collection and information dissemination are done through these field staff. Presently they hardly undertake any systematic extension work.

3.06 DFARD is organized into five divisions: finance, administration, management, industry and quality assurance. The finance division is headed by an accountant, all other divisions are headed by Deputy Directors.

3.07 The management division is responsible for all support services and direction to the fishing industry. Organisation of the fishing community into co-operatives, raising awareness, promoting education, 'capacity-building and upgrading of the fishermen's co-operatives into fisheries banks – these are some of the responsibilities of the co-operative development wing of this division.

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3.08 The Fish Quality Assurance / Control Division was set up recently. It is responsible for the quality of exported products. Inspection and certification ofprocessing establishments and enforcement of Hazard Analysis and Critical Control Point (HACCP) practices as a means of quality assurance are some of the responsibilities of this division. Issue ofexport licenses for fish and fishery products is another responsibility.

C. Department of Coast Conservation (CCD)

3.09 CCD is the agency mandated to exercise overall responsibility for activities within the coastal zone of Sri Lanka. Its main functions are: (i) Survey ofthe coastal zone and preparation of a Coastal Zone Management Plan (ii) Regulation and control of development activities within the coastal zone (iii) Conservation ofthe sea coastto mitigate sea erosion; and management and protection of the Coastal Zone.

D. Ceylon Fishery Harbours Corporation (CFHC)

3.10 The functions of **CHFC** are: (i) establishment, construction and maintenance of fishery harbours and anchorages, and provision/operation of shore facilities. (ii) Management of fishery harbours and anchorages (iii) Repair and maintenance facilities for fishing crafts (iv) Establishment maintenance and management of cold rooms, ice plants, etc. (v) Coastal engineering studies for the development of fishery harbours, anchorages and other shore-based facilities in proposed landing sites(vi) Imposition of port charges on fishing crafts for the use of harbour services.

E. Ceylon Fisheries Corporation (CFC)

3.11 CFC is mainly concerned with the marketing of fish. It has its own cold rooms/frozen fish storages and a fleet of delivery vehicles.

F. National Institute of Fisheries Training (NIFT)

3.12 This was startedas the Sri Lanka Fisheries Training Centre (SLFTC) for the purpose oftraining fishermen. It offers courses in navigation, seamanship, etc. NIFT is to be upgraded to the status of an Institute of Fisheries and Nautical Engineering.

G. National Aquatic Resource, Research and Development Agency (NARA)

3.13 This is the research wing of MFARD. It organises a variety ofresearch activities on fisheries, and living and non-living aquatic resources in general. The research also covers the socio-economics ofthe fishing industry, post- harvest fisheries, conservation of aquatic resources in inland waters, coastal wetlands and offshore areas, and advisory and consultancy services in technical, technological and scientific areas. NARA has seven main divisions: (i) Oceanography Division; (ii) National Hydrographic Office (iii) Environmental Studies Division (iv) Marine Biological Resources Division; (v) Inland Fisheries Resource and Aquatic Division (vi) Fishing Technology Division (vii) Institute of Post-Harvest Technology.

H. National Aquatic Resource Development Authority (NAQDA)

3.14 The Aquaculture Division ofthe MFARD has now been upgraded to the level ofan autonomous authority. Stocking of major and minor reservoirs, medium and small perennial tanks, promotion of-community based fish seed production, including breeding and fish farming, are some of the important functions of this authority.

I. Cey-Nor Foundation Ltd. (Cey-Nor)

3.15 This is a public company under MFARD. Main functions include the construction of fishing boats, manufacture offishing nets and sale ofice.

J. M&E Arrangements at MFARD

3.16 The Secretary, MFARD, is the Chief Executive Officer (CEO) responsible for the overall management of the Ministry. The monitoring and evaluation of development activities and other work programmes are

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under the purview of the Planning and Monitoring Division of the MFARD. This Division is headed by a Director with two Deputy Directors, three Assistant Directors and thirteen other staff. It also monitors the activities of agencies that come under the purview of the MFARD.

3.17 The Secretaiy, MFARD, chairs the monthly progress review meetings with the heads of the departments and agencies under the purview of the Ministry. These meetings are coordinated by the Planning and Monitoring Division. Presently, physical and financial progress reports consolidated by the Planning and Monitoring Division are used as a basis for M&E discussions. The financial and physical progress reporting system at present seems to suffer from several deficiencies. For example, physical progress is based on subjective judgement rather than on an objective approach. Hence the reliability, accuracy and thoroughness of information behind the physical progress reporting is questionable. The MFARD uses the format provided by the MPI & PA to report on the quarterly financial and physical progress. The team noted that the present M&E system fails to monitor recurrent expenditure. Moreover, under the existing system, neither the beneficiary responses nor the impacts of development interventions are monitored or assessed on a regular basis.

K. M&E arrangements at DFARD

3.18 The main activities of the Department of Fisheries include services to the fishing community, coordination of fisheries co-operative societies, formulation and implementation of regulations for the benefit of the industry, registration of fishing crafts, issuance of permits, implementation of the fisheries pension and social security schemes and training programmes for fisheries officers.

3.19 The monitoring and progress review activities of the DFARD come under the purview of the Deputy Director, Fisheries Management, who is assisted by an Assistant Director with District Fisheries Extension Officers at the field level. At the monitoring and progress review meetings, more emphasis is laid on addressing administrative matters than on systematic monitoring and evaluation. As a result, programme benefits and results and the sustainability of interventions are not tracked. Further, little effort is made to collect information on beneficiary responses and on the impacts of the Department's activities.

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4.0 MONITORING AND EVALUATION SYSTEM

A. Existing M & E System

4.01 The Government of Sri Lanka is increasingly being pressured to use the available resources more efficiently and wisely in view of the declining resource base. Concerns have also been raised by civil society with regard to the returns and impacts on public investments. In this context, public sector reforms are being implemented to make all government agencies more efficient and accountable. Till now, the practice has been to fund the programmes of government agencies on the basis of projected outputs, with little emphasis on outcomes. There has been no proper mechanism to systematically gauge outcomes. This situation applies to MFARD as well. The M&E system in the MFARD and its agencies should therefore be re-oriented towards a result-oriented performance management.

4.02 The MFARD has proposed to develop a comprehensive management information system (MIS) that will stress data collection on the performance of each project or activity, and generation of management information on a regular basis so that the officers concerned with implementation can effectively monitor progress or performance. To move toward such a system, the MFARD has established a Planning and Monitoring Division. Under the UNDP- funded project, assistance has been provided to strengthen the statistical unit of the Planning & Monitoring Division. Field-level information needed to establish a data base has also been collected wider this programme.

4.03 At present, for the purpose of monitoring, the MFARD prepares an Annual Implementation Programme (AIP) covering various agencies, projects and departments under its purview. The AIP provides a detailed breakdown of the activities and the financial and physical targets and time frames (month and quarter). Physical and financial achievements are recorded on a monthly basis to ascertain performance against targets set in the AIP. This process enables the management to identify shortfalls and setbacks in implementation, and the reasons, so that corrective measures can be undertaken.

4.04 The Monitoring and Progress Review in all Ministries including MFARD takes place at national, institutional, project and district levels. At the district level, the District Fisheries Extension Officer (DFEO) is responsible for monitoring the progress of activities under his purview. The DFEO holds progress review meetings with his field staff. At the district level, the District Secretary too reviews the progress of various sectors including fisheries at the District Coordination Committee meeting which is held every quarter.

4.05 At the institutional level, review meetings are held every month and chaired by the heads of the departments/ institutions concerned. The Director, DFARD, conducts monthly review meeting with DFEOs and other concerned officials.

However, there are no distinct M&E units at the institutional level. At the MFARD, the Planning and Monitoring Division is responsible for the overall M&E functions. At the Ministry level, quarterly progress review meetings are held under the chairmanship of the Hon. Minister. The Secretary of MFARD oversees and reviews performance on a regular basis. These forums are responsible for monitoring and guiding progress. Decisions and corrective measures are taken at these forums on the basis of the progress reviews.

4.06 There is a two-tiered progress review mechanism at the national level: the Officials Committee Meeting (OCM) and the Ministerial Committee (MCM) which is coordinated and facilitated by the MPI & PA. The OCM is held on a quarterly basis; it is chaired by the Secretary, MPI, and comprises the Secretary and senior officials of the relevant Ministry, representatives of the Department of National Planning (NPD), the Department of External Resources (ERD), the Ministry of Finance and the Presidential Secretariat. The MCM is the highest level trouble-shooting forum within the government and is chaired by Her Excellency the President. It comprises the Ministers, Deputy Ministers, Secretaries and Senior Ministry and the MPI & PA together with the Presidential Secretariat, Ministry of Finance, ERD and NPD. Progress is reviewed on a quarterly basis, policy- level issues are discussed and directives given to facilitate the smooth implementation of programmes.

4.07 At all levels, the Progress Review Mechanism lays emphasis on financial and physical progress rather than on benefits, effects and impacts. A properly designed M&E system should focus not only on input-

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output monitoring, but also on outcomes such as benefits, effects and impacts. Current thinking on the management of development emphasises a result-based M &E system with active community participation. The MFARD is consequently taking steps to re-orient its present M & E system

4.08 Under existing arrangements, field-level data is collected by Fisheries inspectors (Fis) attached to the respective DFEO offices. At present, there are 15 DEFO divisions island-wide. As per available information, one Fisheries Inspector has to cover up to a maximum of five fish landing sites in his area. Data relating to a few selected major varieties of fish and fishing crafts are collected by an Fl. NARA too collects sample biological data relating to a few selected species at a few landing centres. Besides, under the ADB-funded FSDP, NARA obtains catch-related data from some 200 multi-day boats for which Log Books have been issued.

4.09 Having reviewed the existing M &E System of the MFARD and its agencies, the team noted the following shortcomings and deficiencies which need to be attended to.

(a) Some of the important decisions on resource management are based on resource survey statistics which were undertaken a couple of decades ago. These surveys were not followed up with reliable statistical data collection; hence the MSY of exploitable resources may not be a reflection of the current situation. Concerns have been raised by the beneficiaries about the validity of statistics on bio-mass, as policy decisions based on these data seriously affect their livelihood. Fdr example, the maximum annual sustainable yield from the coastal waters has been estimated **at 250,000 MT** – made up of 170,000 MT of pelagic species and 80,000 MT of demersals. During the team's field visits and the discussion with the beneficiaries as well as MFARD officials, concerns were raised about the reliability of this data. It is pointed out that no coastal resource surveys have been undertaken after the Fridtjof Nansen surveys of 1978 and 1979.

(b) Various donor-assisted projects have tried to establish an MIS to cater to the needs of fisheries management. The Log Book system introduced **to** collect catch and effort data from multi-day boats under the ADB-funded FSDP, is a case in point. Although this programme could generate valuable information, its sustainabiity cannot be assured beyond the project period.

(c) From discussions held by the team in the field as well as with officials, it appears that the existing information-gathering system does not support the generation of reliable and authentic data for proper management decisions. The fishing community, the owners of multi-day boats, as well as the harbour manager interviewed, reported that the data collectors :- the FIs as well as representatives from NARA – are very often not seen at the fish landing centres or harbours when activities are at their peak. The FIs contend that they do visit the field occasionally, and that the information they provide are based on their assessment and knowledge. The FIs also said they are overburdened with other work, most of which is assigned on an ad-hoc basis; hence, they are unable **to** devote their full attention to their regular work. About Log Books, some of the multi-day boat owners as well as the harbour manager interviewed said that compliance is low; the information provided in the logbook is not reliable and accurate as the information requested is too detailed and sometimes not relevant or important. (We observed that there is no sound mechanism to conduct validation and verification checks on the data that is collected at the field level.)

On community involvement – it is necessary to educate the community sufficiently, make it aware of the need for authentic information, and create a sense of ownership towards participation in resource management **to** ensure success.

(d) At present, the community is hardly involved in data collection and information dissemination. The process is top-down rather than bottom-up. In fisheries management based on community participation, there is two-way infonnation flow – from the community to the authorities and vice versa. Such a two-way process will enable the active participation of the community in all processes – policy formulation, monitoring and implementation through a collaborative and consensus-based approach. MFARD would then be able **to** establish a closer rapport with the stakeholders and deal with the socio- economic and environmental needs of the sub-sector in a balanced way.

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An example: though the government feels that coastal resources are over- exploited, most coastal fishermen do not believe that this is so This maybe primarily due to lack of community involvement in conducting surveys and disseminating the findings. The practice has been that the MFARD and its agencies have been working without much community participation. Its top-down approach has not been very conducive for the community's participation in fisheries management.

(e) Under the existing M&E system, data collection and transmission are done manually. This takes up a lot of time. This information is processed at the statistical unit of the MFARD with the assistance of stand-alone computers. There is no linkage between different agencies/departments to the central computer system through an on-line networking arrangement. The couple of computers at the district level are not linked to the central computer either. Result: decision-makers in most cases do not get the required information at the right time _ when very important decisions have to be made. Effective fishery management is possible only if information flow is systematic, smooth and quick.

(f) Some of the forms presently in use are too lengthy and complicated in terms of the information requested. In particular, according to the harbour managers and some of the multiday boat owners interviewed, the boat operators are unable to understand some of the information called for. The application for licensing is complicated and lengthy. It is necessary to examine the relevance and usefulness of the information collected and re-design the form. In our opinion, there is a need to look at the problems of data collection, compilation, analysis and information dissemination in depth and take necessary steps to upgrade the system as a whole, to enable effective and systematic implementation.

(g) Lack of reliable updated information on the number and type of crafts and gear seemed to be a serious draw back to effective implementation of fisheries management. At present, the records and registers in the Fisheries Industry Division of DFARD show acumulative total of over 84,000 boats registered with DFARD, while the the statistical data for 1998 shows only 28,261 boats. As the process of licensing and renewal is operationally not very effective, there is no reliable information on the number of operating boats. The Fisheries Act of 1996 made registration and licensing of fishing crafts mandatory, but compliance is low. This aspect should be looked at seriously, and the information generated should be fed into the proposed central computerized data management system.

The registration and licensing of fishing crafts and the renewal of fishing licenses can then be monitored through the computerized information system. Such a system will facilitate enforcement as well.

(h) A Unit for Monitoring, Control and Surveillance (MCS) exists, but it seems to lack a sound data base on unauthorized and illegal fishing and other environmentally unfriendly practices. A computerized data management system is a pre-requisite to ensure the success of MCS which forms the core for the implementation of fisheries management. Monitoring will include the collection of reliable and authentic data and management of the collected information. Control will bring about proper licensing of the fishing crafts, resignation of the fishing activities and related legal aspects.

Surveillance will focus on collecting information to regulate fishing activities including unauthorized and illegal fishing, and monitoring of environmentally unfriendly practices and loss of bio-diversity.

(i) Data is lacking to promote any newly introduced of improved technology or fishing practice. The fishing gear used by the fishermen fall mainly into two categories — drift gillnets and longlines. The gillnet fishery is universally discouraged today due to its environmentally unfriendly nature; there is now a thrust towards the longline fishery. Under the ADB-funded FSDP, a resource survey was done for offshore large pelagics (1995-97), engaging three multi-day boats and using drift gilinets and tunalonglines. There is no supporting database to prove the superiority of the newly introduced technology and convince fishermen about it. Even the little data available has not been sufficiently disseminated. As a result the newly introduced technology has not been effectively transferred to the conmunity.

(j) The team's discussion with harbour managers revealed that at present they are in the process of introducing the user charge system for providing facilities and services to harbour users. But it is

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necessary to make harbours cost/profit centres and establish profit performance criteria with budgeted targets to enable the harbours to operate as profit centres. It appears that harbour managers are not aware about whether the units under their purview provide sufficient returns at any given time, as the accounts are maintained at the head office and the managers lack timely access to these accounts. Moreover, harbour managers at present do not collect any data relating to landings, sales, type and weight of fish, quality, production and issue of ice. There is no proper system in place to monitor the movements of fishing vessels in and out of the harbour.

(k) At present there is no proper mechanism to monitor the quality of fish and fishery products, so important for exports. Fishery harbours will have to be designed with proper fish unloading, handling and marketing areas and with necessary infrastructure facilities in conformity with health and hygiene standards as laid down in the EU regulations and the recently activated Fish Products (Exports) regulations. As per the requirements of Hazard Analysis Critical Control Point (HACCP), proper hygienic standards and handling methods should be applied from the point of capture, handling and storage on board until the point of process and export. These aspects should be closely monitored and recorded.

As per EU regulations, the Director of Fisheries is the authority responsible for the quality assurance of export products. A unit has been established under him to oversee the quality aspects of all export products. It will therefore be necessary to design a proper system of monitoring and control over such aspects to enable proper certification of export products. All requirements stipulated in EU regulations should be met, and all the facilities enjoined should be provided in fishing boats at all harbours, anchorages and major fish landing centres. These should be operated and maintained properly in the best sanitary conditions. It has been reported that most of the auction centres established under various projects and programmes are not being fully utilised by the fishermen. It is therefore necessary to monitor whether the facilities provided to improve fish quality are being fully utilised. It is not enough **to** introduce new methods and practices; a monitoring system on the adaptation or usage of these methods **to** assess their relevance and benefits is essential as well.

(l) As regards the biological and other resource information generated by NARA and DFARD, the following weaknesses were noted.

(i) Only a few officials in DFARD are available for field visits. Even they are burdened with "other" duties which leave them with hardly any time for visits to fish landing sites when activities are at their peak.

(ii) Because of the constraint mentioned above, only a few select sites are visited – and that too at random.

(iii) Only a few selected species of fish are studied for the purpose of assessing the biomass. This limited sampling may not be sufficiently representative **to** arrive at any reliable projections.

(iv) The fishing community is hardly involved in this exercise. It seems to be unaware about why some officials come to the beach on and off and take measurements of fish. Community awareness is absent, so is its participation in data collection, whether the exercise is conducted by FIs or by NARA.

(m) The present M&E system in the MFARD focuses mainly on input-output monitoring, with very little emphasis on benefits, effects and impacts. Most government agencies prepare financial and physical progress reports on the disbursement of allotted funds, to satisfy the requirements of the Ministry of Finance and Ministry of Plan Implementation. Financial monitoring may indicate the payments made but not necessarily the work done. Under inflationary conditions financial progress reports fail to give the correct picture of the work done. Moreover, delayed payments can also understate the progress. On the other hand, advance payments can overstate progress unless properly identified. Hence financial progress reporting is not sufficient to monitor the progress of a project or an activity.

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(n) The "physical progress reporting system" of MFARD is inadequate too. It provides arbitrary percentage figures based on subjective assessments by the project management. There are no set milestones or criteria to assess physical progress. Such progress reports are not reliable indicators of project progress or performance. Targets and criteria should be established in consultation with the technical staff of the relevant authority to ensure that the physical progress reports are meaningful and objective.

(o) Under the present M & E system, there is no mechanism to monitor benefits while the project is being implemented. Take as an example the Fisheries Sector Development Project. There was no continuous or systematic monitoring concerning benefits and beneficiaries. In respect of harbours too, it is necessary to keep track of the number of boats, the increase in the number of trips, the incremental fish catch, increase of income, etc. to justify the project intervention.

The existing M & E system fails to establish a culture of result_oriented accountability. During the interim evaluation of the micro-credit component of the FSDP, the Project Management seemed more concerned with disbursement of micro-credit than its effectiveness in terms of coastal fishermen withdrawing from fishing activities. Even today, the project does not have information about the number of fisherman who have quit coastal fishing. In sum, the existing M & E system is not geared to stimulate results. This drawback is not unique to FSDP or even to fisheries. It has been noticed by MPI while evaluating projects in a number of sectors.

(p) There is no mechanism to obtain feedback from beneficiaries while a project is being implemented. As a result, a project cannot be modified in time, if such modification is necessary, to ensure that the target group benefits. While conducting the interim evaluation of the FSDP, the evaluation team noticed that in some fishery harbours the depth of the basin in front of the newly constructed quay walls was insufficient; as a result, large boats were unable to reach the quay wall and get the required service. It is necessary to involve the beneficiaries from the stage of project identification to completion and beyond.

(q) The MFARD and its agencies do not have project-specific performance indicators to monitor the performance/progress of various projects and programmes. As a result, there is no early warning signal about potential problems or deviations **to** facilitate timely corrective action. However, the higher- level officers of the MFARD and its agencies have realised the need to develop an indicator-based M&E system to track progress. When the team was conducting a Logframe Workshop for senior officials of the MFARD, the Secretary of MFARD talked about the importance of evolving a Logframe matrix with performance indicators for the Six-Year Plan. This clearly indicates the concern and commitment of policy-makers at the highest level **to** move towards a result-based performance management system.

To succeed in this, it is important that we reach out **to** all the stakeholders including those at the grassroots level, seek their ideas and perceptions about the problems, and about the management measures they see as possible solutions. Stakeholder participation will result in a collaborative and consensus- oriented management plan. Implementation of a Participatory and Integrated (PIP) policy plan will be in the hands of the concerned government agencies, the heads of department in the Department of Fisheries and the DFEO at field level. The PIP process encourages a change in emphasis towards greater coordination and integration, and brings stakeholders into the policy process in a more meaningful way.

(r) The absence of sustainability monitoring is another weakness in the existing M & E system. Once a project establishes certain facilities, operation and maintenance (O&M) should be continuously monitored to ensure results through- out the economic life of the investments. For example, the Gabian type quaywalls introduced in harbours were considered cheap. But it is necessary to find out whether such structures are sustainable and durable. The community halls and other facilities which are to be maintained by fisheries co-operative societies are not properly monitored. Another example relates to several assets and facilities (such as fuel stations and ice plants) in harbours and aquaculture centres that were leased out to the private sector. The private sector was expected to sustain these

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facilities. But an evaluation team observed that the aquaculture centres leased out to the private sector were diverted to ornamental *fishing.* On the other hand the ice plants and fuel stations of fishery harbours were converted to some other profit-oriented activities. All this highlights the absence of sustainability momtonng of facilities established.

(s) A proper monitoring system to assess and track the performance of various agencies is lacking. For example, the Ceylon Fisheries Harbours Corporation should monitor the performance of all harbours as income-generating centres. For this purpose, yardsticks such as a budgeted income and expenditure statement or a profit and loss account should be utilised. It is necessary to identify and work out profits and losses on an activity basis, so that managements will be able to quantify the operational surplus or deficit for each separate activity; such as ice plants, fuel station, water supply, workshops, etc. Institutional performance should be closely monitored as part of an M&E system so that the management gets the required information to assess performance.

4.10 There is hardly any self-driven evaluation in the existing system. The only evaluation studies are those insisted on by donors. Generally, the importance of evaluation is not recognised by senior managers, most of whom are administrators with very little background in planning. Although a few post-evaluation studies in the past held out lessons for future projects, a post-evaluation exercise is generally viewed as a post-mortem and is not given the right recognition or attention. Moreover, in the absence of systethatic collection of data and baseline information, it is rather difficult to conduct a realistic post-evaluation.

The team observed that the absence of self-driven post-evaluation is due partly to non-allocation of funds for such studies and partly to the reluctance of senior managers to conduct such independent studies, which are mostly viewed as fault- finding exercises. Hence, the team suggests that a project should have a built-in component for post-evaluation studies. No cost- benefit study was done in the past to assess investment impact. To cite an example, massive investment was sought from Japan for the Kirinda Fishery Harbour. However, the benefits derived do not seem to match the investment. Inadequate planning and absence of detailed feasibility studies have led to poor identification and design, resulting ultimately in heavy investments.

4.11 The system as is practised now does not permit generation of any authentic or reliable information. According to fishermen and boat-owners interviewed by the team, neither DFARD's fisheries inspectors and data collectors nor NARA staff nor the managers of fishery harbours visit the scene of activity regularly when fish is being unloaded or sold at fishing landing centers. In the absence of proper sampling methods, the accuracy of such data could be questionable.

4.12 Further, the data received from the field is not subjected to any validation or verification checks. The data processing division or unit should receive this information every month; but in practice there is invariably a delay. This in turn leads to a delay in the evaluation and release of statistical infonnation. The end result is that management information is not available on a continuous or ongoing basis to assist timely management decisions.

4.13 The information collected by the data processing unit of MFARD relates to only a few selected areas. According to the chief statistical officer, areas on which he receives field information are

(a) Fish production by species from **DFEO. (**Only a few select major varieties are covered. One Fl covers up to a maximum of five fish landing sites in an area)

(b) Distribution of fishing crafts by DFEO Division (Data collected on major or selected types of boats, and not all)

(c) Average wholesale retail fish prices at the St. John's fish market and at leading fish landing centres outside Colombo

(d) Number of lorries arriving at St. John's Market, Colombo, with fish

(e) Import and export data from the concerned agencies or departments (through Customs records)

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4.14 Apart from the above, the statistical officer also collects or receives information from the other divisions of MFARD and DFARD on areas such as co-operative development, welfare, etc. He also shares information with NARA. Besides these, special studies and surveys are undertaken as and when required. Even though the statistical unit is computerized, and some of the DFEO offices too are provided with computers, no proper use is made of computers at the district level in regard to data storage and transmission.

B. Moving Beyond the Traditional M&E System

4.15 Policy-makers and high-level officers have recognised the need to move beyond the traditional financial and physical Progress Reporting System, and towards a comprehensive MIS that would support decision making. MFARD ought to define and specify clear monitorable indicators such as:

A. Fish production and quality indicators
Yields from marine fisheries and aquaculture
Farm gate price of fish and income of fishermen
Type of boats and their numbers
Number of reported fishing practices
Quantity and value of import of fish products
Export of fisheries products
Coverage of extension services

B. Fishing population
Active fishermen
Number of active fisheries co-operative societies
Number of members contributing to pension schemes/life insurance

C. Socio - economic status
Employment
Living conditions
Socio - economic status of fishing community
Loans and subsidies disbursed to the fishing community
Per capita fish consumption

4.16 Benefits, effects and impacts are important elements of result-based monitoring. For example, as regards government funds spent on training, information should be available about how many are from the fisheries industry. Information such as incremental fish production, number of boats introduced, number of personnel trained in fishing, number of co-operatives rehabilitated, quantity of fish exported and the prices of exports, catch rate per vessel, catch per unit effort, fishing method, size of boats, import of fish, their prices and source, etc should be made available. Further, from a resource management perspective, it is also necessary to collect updated information on destruction of mangroves, coral mining, quality of coastal waters, etc to ensure responsible resource management.

4.17 On aquaculture, it is necessary to monitor inland fish production and brackish water fish production. Indicators concerning specifications of water bodies, water levels at various seasons, and salinity and water quality need to be specified to ensure better management.

4.18 As regards brackishwater fish production, information on the number and size of shrimp farms, their average stocking density, survival rate, harvest, farm gate price, local and export prices, number of approved and unapproved farms, etc. should be made available.

4.19 An updated information system is a prerequisite for management of the fishing industry. It was reported that under the present system there is no standard for classification of tanks or reservoirs The introduction of small fingerlings into large reservoirs/or tanks may mean high mortality and poor harvests. Information on tank classification and profile is necessary for maximum returns from investments on fingerlings input.

4.20 The monitoring system of the department needs to be re-organised and re- oriented to serve the new objects ye. of fisheries resource management The Department is entrusted with the responsibility of

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implementing the new Fisheries Act. Hence, it is necessary to monitor catch rates under various fishing practices and ensure compliance of the Act and monitor action accordingly. The statistical unit of the department should also be strengthened and re-oriented to satisfy the department's new management focus. Resource management- based indicators such as catch per unit of effort (CPUE) should be compiled. Further, it is necessary to obtain information on the resource profiles of water bodies to ensure better monitoring and management.

C. Result-Based M&E System for Development Projects and Programmes

4.21 The team recommends that the **MFARD** should establish and institutionalize a result-based Project Performance Management System (PPMS) to overcome the weaknesses mentioned above in its M & E system. PPMS is an expanded monitoring and evaluation system covering all stages of a project, with a view to ensure results. This is widely recognized as a result- oriented management tool by donors as well as recipient countries. This system is the outcome of experiences during the implementation of development projects the world over. The team suggests that the MFARD should introduce this system, which uses the logical framework approach as a basis for an M&E system, with immediate effect (Annexure - 4).

4.22 Under the PPMS, clear monitorable performance indicators are set as bench marks. They cover all stages of the project/ programme at the design stage of the project itself. During each phase of the project, success will be determined by comparing the actual performance against the set benchmark indicators. Project implementers will lay more emphasis on results than on financial disbursements or physical accomplishments. PPMS will introduce objective oriented thinking among project managers, and they will be vigilant throughout the project cycle.

4.23 Indicators should be selected carefully and should be specific, time- bound and verifiable. There should be a careful review by the project preparation team including the technical and planning staff, in identifying key milestones for assessing success at each stage.

4.24 To operationalise this system, a project-planning matrix or logical framework should be developed at the design stage of the project and suitably amended as and when necessary. The matrix should be structured as follows.

Project Planning Matrix

Hierarchy of Objectives	Objectively Verifiable Indicators (OVI)	Means of verification (MOV)	Key Assumptions
Overall Goal			
Purpose			
Output			
Input			

4.25 Monitoring should also cover the basic assumptions essential for the success of the project but outside the control of the project management. For example, the team noted that the success of the FSDP was influenced by the assumption of a phase-out of the Government subsidy on coastal fisheries within a short period. Although this was an important covenant in the loan agreement, there was no built -in system to monitor the compliance of this covenant continuously. Hence the team feels that the project should monitor even the assumptions, though they are outside the control of the project management.

4.26 The team is of the view that indicators at the input stage should cover aspects such as disbursements, procurements, establishment of the project office, imprest account, recruitment of staff, contractors and consultants, etc. At the output level, indicators should identify tangible physical achievements.

4.27 At the level of purpose, the indicators specified should relate to immediate objectives. At the goal level, indicators spelled out should be able to gauge impact. The actual performances should be measured against the benchmark performance indicators identified in the project planning matrix. Success should be determined at every stage of the project, from inception to completion and beyond.

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4.28 In brief, the PPMS has three major elements.

a. Setting up of monitorable performance targets – through clear, measurable indicators for all stages of the project cycle – at the project preparation stage.

b. The performance monitoring and analysis process, under which the project management monitors progress against set targets, identifies deviations or discrepancies or shortfalls in project performance against targets, analyses the causes for such shortfalls and identifies corrective measures to ensure effective project implementation.

c. The third element of the PPMS is the continuing adaptation of the project design, based on recommendations that emerge from the monitoring and analysis process In other words this element ensures that the decision-makers use information to adjust the project parameter and implementation process, keeping in mind the project's final intended impacts.

4.29 With the institutionalization of the PPMS, the team feels that a culture for performance management would be established. It is suggested that as regards project performance monitoring, the following format be utilised.

Format 2

Project Performance Report

Executing Agencies	Loan Amount		CF	FA	Total
Approval Signing	Financing Source		Foreign	Local	Total
Effectivity Closing	Bank Co-financier Borrower				
Performance Targets (Should be monitorable)					
I. Longer Term Objectives / Impacts		Estimated Date of Achievement	Current Status		
II . End of Project Objectives / Effects		Estimated Date of Achievement	Current Status		
III. Project Outputs (components / sub-Components		Estimated Date of Achievement	Current Status		
IV. Project Input		Estimated Date of Achievement	Current Status		

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4.30 The team introduced the concept of PPMS during the five Logframe Workshops (Annexure - 5) meant for senior-level officers including Heads of Department, middle level and field level staff. The five Logframe Workshops were attended by over 100 participants representing all the departments, institutions and other agencies of the MFARD. The concept was very well accepted by the Heads of Departments including those who are directly involved in the M&E. The team explained the concept of Logframe and PPMS to the staffand demonstrated selected applications. The participants took active part in developing the Logframe, with performance indicators in selected areas of interest as a classroom exercise. As most of the participants did not have any previous exposure t0 this concept and approach, the output under some case studies did not come up to expectations. However, they understood the concept during the workshops and recognized its usefulness as a monitoring and management tool. The participants rated the workshop as educative, very effective and successful.

4.31 MFARD 's institutions have an annual programme of implementation, with yardsticks to measure physical and financial progress. But they lack performance yardsticks to measure long-term objectives. This weakness is not peculiar to MFARD, it is common to most public sector institutions. The Parliamentary Committee on Public Enterprises (COPE), repeatedly highlighted the absence of the Corporate Plan for public sector institutions as a serious weakness which came in the way of proper performance measurement. COPE also noted that those institutions that do have corporate plans do not put them to use; they exist merely to satisfy statutory requirements.

4.32 Every public sector institution should prepare a corporate plan, preferably for a five-year period. It should be rolled over annually to reflect current policies and objectives. Such a long-term corporate plan should clearly spell out the vision, mission, goals, objectives, strategies and targets and activities. Such a plan will make convenient the task of gauging the performance of these institutions and putting them in the right track. The corporate planning system will also enable the organisation to analyse its strengths, weaknesses, opportunities and threats and move forward towards its own goals.

4.33 While preparing the corporate plan, the objectives of the public sector institutions should be made specific, measurable, achievable, realistic and time-bound. This will enable the institution itself or outside agencies such as COPE to assess and measure performances in a meaningful manner.

4.34 Performance yardsticks set up through this process will facilitate a meaningful performance audit or evaluation. The concept of value for money will be expanded, and public institutions will be made more accountable in terms of money spent and results.

4.35 Discussions with MFARD's officials revealed that its present system of monitoring and evaluation caters to the needs of "super structures" such as the External Resources Department, the National Planning Department, donors and the Ministry of Plan Implementation. In other words, MFARD 's information systems are geared to meet the needs of super structures rather than its own requirements. It was also noted that the super structure normally requires summarized physical and financial information for the annual monitoring at the national level, rather than information such as benefits, effects, and impacts to drive and reformulate projects. Senior staff of the M & E unit of the Ministry and its agencies must be trained to design and implement M & E systems suitable to their own needs and level of hierarchy.

4.36 Existing M & E systems are pre-occupied with capital investment. Little attention is paid to monitoring utilization of invesiments and re-current expenses. The monitoring system should cover recurrent expenditure – this is hardly done at present.

4.37 Further, M & E systems in a project or department are generally supported by donor funding while the project is on. The system disappears after the donor funding ends. One should therefore think of institutionalizing the M&E system – it should be active even after the completion of a project.

4.38 With the introduction of a corporate plan with a clearly spelt out vision and mission, the annual implementation programme of an institution and its budget could be linked well to the institution's objectives. This will result in harmonizing the institution's work programme with its long-term goals, thereby eliminating the ad-hoc work programmes prepared as and when the super structures want them.

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4.39 It is a matter for regret that many institutions have not had a corporate plan. Discussions with the Public Finance Department revealed that action is being taken to introduce corporate planning in statutory authorities and corporations by conducting seminars and workshops. As regards Ministries and Departments, the Public Administrative Reform Unit in the Presidential Secretariat has initiated improved systems and procedures. Every Ministry/Department will therefore have to develop and adopt a Mission Statement which will set out briefly its *raison d'etre* that will serve as a guiding principle. The organization will have to review its workload and rationalize its activities, and introduce a performance-oriented management system to make it more accountable.

D. Indicator -Based MIS for an Effective Fisheries Management

4.40 MIS is a basic requisite for responsible fisheries management. Informed decision-making may require information on financial, physical, social and environmental aspects. In the absence of an accurate information system, a policy of open access to fisheries resources has resulted in over-exploitation of fisheries resources which has severely threatened fisheries as a whole. A sound information system may have provided the management with early warning signals, so that it could have taken timely action in a phased manner, averting sudden and damaging change. Discussions with MFARD officials reveal that lack of proper monitoring of fishing techniques, methods and approaches in the past, has led to depletion of resources and had other devastating effects on fisheries. Even at present, there is no continuous tracking system to monitor fishing methods and propose environmentally-friendly fishing techniques. Unlike other sectors, the fisheries sector is very sensitive, as it affects of the livelthood of thousands of fishermen and many others in the industry. Any reduction in the fish stocks to biologically harmful levels will mean grave losses in terms of nutrition, incomes, jobs, and other benefits.

4.41 An effective fisheries MIS is vital for fish stock assessment. Sustainable fishing should not allow more of the resources to be harvested than what can be replaced by net growth in stocks. Irresponsible fishing could make stocks fall below acceptable limits and lead to resource collapse or the extinction of certain fish species. Hence the authorities must promote comprehensive stock assessment. The team noted that present information on stock assessment is outdated and reflects the picture of the late 1970s. An updated assessment is essential, to enable a strategy to manage the fisheries resource effectively.

4.42 To operationalise a sustainable fishery management system, the monitoring authorities should collect information on the type and methods of fishing, the gear used, the size and age of fish catch, and the time and location of fishing. This will enable decision-makers to determine .a suitable regulatory mechanism when required.

4.43 Subsidy schemes on the one hand, and the practice of open access to marine resources on the other, can result in overexploitation of natural resources. This is what has happened. Subsidies for coastal fishing boats without any reference to resource sustainability have led to over-fishing and resource depletion. The team recommends that a MIS be in place that will provide sufficient, reliable and authentic data for effective management of resources.

4.44 In order to develop the local fisheries industry, it is necessary to introduce a system to keep track of the number of foreign vessels and their operation, especially within the EEZ, as the local fishermen complain that most foreign boats fish within Sri Lanka's EEZ, depriving opportunities available to local fishermen.

4.45 The team appreciates the Government's effort to introduce a licensing system through the recently enacted Fisheries Act to control the practice of open access to fisheries resources. The licensing system has not so far proved to be effective in terms of its implementation and enforcement. In this context, it would be timely for DFARD and its extension officers to closely monitor vessels operating with or without licenses and take appropriate action. A computerised MIS will make possible close monitoring of the licensing system, enable the authorities to enforce the Fisheries Act and optimise sustainable use of fisheries and other aquatic resources.

4.46 As regards the marketing of fish products, the Government should assist producers by providing sufficient information on consumer preferences. While evaluating the Aquacuiture Development Project, the team observed tha most seasonal tanks and reservoirs the fingerlings supplied did not take consumer preferences

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into account. Better attention to consumer preferences will increase the consumption of fish, improve nutrition, and generate higher prices and incomes for producers.

4.47 Policy-makers should prepare a fishery management plan that outlines the broad direction and the priorities of the fisheries sector over a five-year period. The mission of fisheries should be spelt out in terms of measurable targets. The performance of fisheries as a whole could be monitored against the plan. This will facilitate the establishment of a result-oriented monitoring system for the whole sector

4.48 This five-year fishery management plan should be broken down into annual plans with achievable targets. Such annual plans will be more effective and practical for monitoring purposes, with sectoral performance targets and a substantial emphasis on sustainable resource management.

4.49 The team would like to emphasise that fisheries data collected are analysed and disseminated in time to facilitate decision-making by the authorities concerned.

4.50 The MIS should suit different hierarchical levels of management. The Ministry of Fisheries has three levels of decision-making: policy formulation at the highest level of management, planning at the middle level and implementation at the third level. At the level of implementation, detailed information such as current biomass, age structure and distribution of stock may be important. At the policy-making level, macro information on the fisheries sector – such as its contribution to the GDP and nutritiçn, the level of exploitation of available resources, and its effects on environment – may be important. An information system must be designed to serve the different hierarchical levels without overburdening the concerned users with unwanted information.

4.51 The team notes that as fisheries data is usually based on sampling approaches, the risk of collection of erroneous data is very high. To improve the information system, it is necessary to design improved statistically valid sampling techniques based on ground realities rather than on past experiences, because fish landings differ from hour to hour, day to day and from centre to centre. This being an important technical exercise, staff training on PIP, community interaction, data collection and validation techniques is very essential.

4.52 As regards offshore and deep sea fishing, data has to be collected from fishing vessels. It should include catch rates at different locations, catch by species and size, fishing strategies, etc. Policy-makers should be told about successes and failures of past fishery management strategies.

4.53 After extensive discussion with relevant authorities and review of materials the team identified information in the following areas as useful at the level of policy making, planning and implementation

a. Policy Level

i. A brief outline of the fisheries sector and its importance to the national economy

ii. State institutions, NGOs and private sector institutions engaged in fishery-related work at the national, provincial, district and village level

iii. Current position on access to resources

iv. Economic and social dependence on the fisheries sector at the national, provincial and district levels

v. Role of fisheries in providing direct and indirect employment at the national, provincial and district levels

vi. Possible alternative sources of employment for the fishing community

vii. Historical conflicts and conflicts today between fisheries and other sectors. (Irrigation *vs.* fishing, recreation *vs.* fishing, environment *vs.* fishing; prawn farms *vs.* paddy fields)

viii. Taxes collected by the Government through fishery activities and subsidies paid for the fisheries sector

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ix. Critical habitats and marine protected areas; foreign fleets and their activities within the EEZ

x. Fish and nutrition. What are the nutrients provided by fish?

xi. Implementation of international agreements that relate to or affect fisheries

xii. Employment in fisheries – direct, indirect, gender participation and their age groups

xiii. Sectoral contribution to the national economy or GDP. Likely developmental activities in fisheries. Details of any subsidies paid to fisheries. Characteristics and trends in the market. Existing institutional structures, both government and non-government. Activities in support of the fishing community, current and planned. Current and historical catch data

b. Planning level

i. Costs and benefits of fishing operations at different scales

ii. Non-compliance with accepted fishing practices and methods, and the penalties levied

iii. Stock assessment, different harvesting strategies, age and sex composition of the catches, different fleet types, distinct gear, fishing grounds, seasonality in fishing

iv. Average per capita income of fishermen and the farm gate prices of different varieties of fish products

v. Information on fleet registration, licensing, fishing methods and fleet performances

vi. Catch per unit effort

vii. Scientific information and environmental parameters such as sea surface temperature, thermocline, salinity, wind strength and direction, rainfall, etc. Such data should be routinely collected and analysed to assess the impact of seasonal and geographic variation as well as to help detect abnormal phenomena and their influence on stocks as a management measure

viii. Market preferences for fish by species and varieties

ix. Use of turtle excluder devices

x. The number of licenses issued, individual effort quotas, closed seasons, restrictions on the sizes of vessels and gear

xi. Resource surveys for offshore and deep sea fisheries and data from them

xii. Fishing population, its size, composition, age and sex – coastal, off-shore deep sea and inland fisheries

xiv. The number and type of vessels fitted with echo-sounders, satellite navigators, communication equipment, etc

c. Implementation Level

Fishery harbours which have been used as anchorages and discharge points as well as repair bases can and should be used as the focal points for information and data collection as well as for regulation and enforcement. If harbours have a single gate entry/exit system, it will be easy to use harbours as the base for management, regulation, conservation and development of fisheries and aquatic resources in Sri Lanka. This is because almost all multi-day boats and some smaller crafts use harbours for discharging the catch as well as for berthing of crafts. Therefore harbours and anchorages can be used for the implementation of the Fisheries Act, enforcement of its regulations as well as those of the Fish Products (Exports) Regulations of 1998. When implemented properly, registration and licensing of fishing crafts, fishing operations, conformity with HACCP requirements, catch/effort and other related information can easily be collected from these centres.

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Information on field- level activities relating **to** smaller crafts can be obtained on a participatory basis with the co-operation of the fishing community, representatives of NGOs, CBOs, fishermen's co-operatives, etc. The following are areas at the implementation level from which information may be obtained:

(i) Statistics on landing /harvest at each harbour/anchorage/landing centre

(ii) Use of prohibited gear, including gear characteristics such as mesh size, dimension of mouth opening of nets, etc.

(iii) Estimated bio-mass, CPUE, biological and environmental features

(iv) The management plan, economic performance of fleet in relation to management plan

(v) Records and registers related to crafts, fishers and fishing operations; changes in the fleet composition

(vi) Status of stocks

(vii) History and causes of any conflicts in the fishery

5.0 TRAINING NEEDS ASSESSMENT

5.01 As part ofthe exercise on strengthening M&E, the team conducted a series of logframe workshops through which the participants were introduced to concepts on project planning, monitoring and evaluation methodology and techniques and a result- based project performance management system. At these workshops, the team also assessed training needs with a view to strengthen the M&E capability. The following were identified as priority areas for training on M&E capacity.

- Project planning covering identification and preparation including feasibility analysis.
- Environmental analysis and impact assessments
- Participatory development management including PRA/RRA techniques.
- Investment appraisal and cost benefit analysis.
- Monitoring and Evaluation methods and techniques
- Data collection, sampling, tabulation, analysis, evaluation, interpretation and dissemination
- Developing Logical Framework Matrix and identification of performance indicators
- Project Performance Management
- Management Information System (MIS) with computer application
- Developing communication skills, verbal and written.
- General management and analytical skills including report writing
- Involvement of the private sector in national development projects

5.02 These training requirements could be addressed through both local and foreign institutions. Some of the local institutions that can provide such training are the Sri Lanka Institute for Development Administration (SLIDA), Hector Kobbakaduwa Agrarian Research and Training Institute (HARTI), Post- Evaluation Unit of the Ministry of Plan Implementation and Parliamentary Affairs, and the Department of National Planning.

5.03 The training needs can also be met through recognized foreign institutions which conduct tailor- made programmes on M&E. In this regard, the University of East Anglia, UK, University of Reading, UK, Asian Institute of Technology (AlT) Thailand, University of Queensland, Australia, and the University of Bradford (UK) are some of the internationally recognized institutions which conduct programmes in the above areas.

5.04 The team recommends that local training be offered to most of the middle- level field officers. A few who could be used as resource persons should be selected for rigorous and in-.depth foreign training on M&E. Senior-level officers could be given orientation tours abroad to familiarize themselves with the applications of M&E Systems there.

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6.0 FOLLOW-UP ACTIONS AND RECOMMENDATIONS

6.01 Standardization and simplification of data collection: Some of the forms (such as those for licensing, log books, etc) that are presently in use are too lengthy and complicated in terms of the information requested. The relevance and applicability of the information sought in these forms must be reviewed and the forms should be redesigned and made more *practical* so that users and analysts are not overburdened. The problems of data collection, compilation, analysis, information dissemination, etc must be looked at in depth, and necessary steps should be taken to upgrade the system as a whole so that implementation and monitoring can be done in an effective and systematic manner.

6.02 Improvements to data collection methods and analysis: Data for production statistics is collected through eye estimates of a sampling of fish and crafts at a few fish landing sites. Each Fl is expected to visit a maximum of five fish landing sites – once every month for each site – and submit monthly production statistics on the basis of eye estimates. These are used to project the national fish production. It is admitted that the Fl responsible for this activity is burdened with other responsibilities as well, and cannot concentrate on data collection.

During discussions with the fishing community, the latter said that they did not see the FIs at fish landing sites when the boats land or when fish is sold. It is therefore possible that the data submitted is based on past experience rather than on actual field- level enumeration. It also appears that the present sampling method adopted is not very representative; the information furnished may not represent the ground reality. No proper validation checks are performed on the raw data received from the field. It is necessary to improve the data collection process and establish a representative scientific sampling system to enable accurate production estimates. Data and infonnation should be handled, treated and analysed as two separate items.

6.03 Lack of reliable updated information on the number and type of crafts and gear seems to be a serious drawback to effective implementation of fisheries management Under the Fisheries Act of 1996, the registration and licensing of fishing crafts has been mandatory. But compliance is said to be very poor. It is also necessary to re-examine the present charges levied for licensing and renewal of fishing crafts: field-level officers from the DFEO downwards say the charges are un-realistic. (In some cases, the "charges" are no more than the price of a cigarette,) Moreover, establishment of an effective computerized data management and information system will facilitate law enforcement and monitoring.

6.04 Strengthening the statistical functions of the Central Monitoring Unit of the MFARD: The present statistical unit of the MFARD is geared to feed the national census and statistics needs of the Department of Census and Statistics. Discussions with the statistical officer reveal that information on production, distribution, imports, exports and prices is collected periodically and analyzed and submitted to concerned national-level agencies such as the Department of Census and Statistics, Central Bank and Food Security Committee. However, it appears that this unit is not geared to collect and feed information required for operational and management requirements of the fisheries industry.

Information relating to the cost of fishing operations, craft/gear used, catch and effort, boat registration and licensing, resource management, fishing practices, etc is vital for decisions on operation and management. It appears that the statistical unit is not geared for this purpose. However, in accordance with world trends, the MFARD has also reoriented its focus from production towards resource management. It is necessary to strengthen the statistical unit to cater to management- related information The officers of the statistical unit and at the field level should be trained on data collection sampling and statistical methods.

6.05 Strengthen the Log Book Data Collection System: The log-book data collection system must be strenthened to provide a fuller and more detailed monitoring of catch and effort Information needs to be built up on catch to effbrt on the various gear and vessel types to demonstrate the superiority of improved technology and practices. Strengthening of the logbook system will involve enlisting more vessel owners to in the logbook programme However, while strengthening and expanding the logbook system, it is necessary to ensure that boat-owners are not overburdened with complicated forms which will ultimately discourage their active participation.

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6.06 The data base and information system should be strengthened in crucial areas where new technology and practices are proposed. Discussions with the fishing community and some of the officials revealed that sufficient information was not made available to convince fishermen about the superiority of tuna longlining over conventional fishing practices using gillnets and related techniques. There were comments that the tuna longlining method introduced through the ADB project was not financially viable: it entailed high operational cost and low returns. Data on CPUE from tuna longlining was insufficient to convince fishermen about its profitability. It is pointed out that even the three vessels engaged for pilot-testing of tuna longlines have not adopted the tuna longline fishery and have resumed conventional practices. It is necessary to keep in mind that while introducing new technology and practices to compete with or displace the traditional system, reliable data base to demonstrate the-superiority of the new technology and practices should be aviailable. The need for a reliable data base to successfully introduce new technology has been highlighted in the ADB Country Portfolio Review Mission Report 1999.

6.07 Reliable Decision-Support System: Important decisions on resource management are based on resource survey studies undertaken a couples of decades ago. There has been no reliable statistical data collection since. The current SY of exploitable resources based on the above survey results may not reflect the current status of the bio-mass. The last reported resource survey was done in 1978 and 1979. This information must be updated to reflect the current situation.

The team recommends that the present LogBook system be strengthened and improved. It is also necessary to ensure the reliability and accuracy of the data collection process. Data collectors – the FIs and NAR.A staff – should visit the field more frequently when the activities are at their peak. At least a few Fl from each DFEO office should be assigned exclusively to data collection, extension and M&E related work.

6.08 Data transmission through online network: At present, information is processed at the statistical unit of the MFARD with the assistance of stand-alone computers. Linkages should be established between different agencies/departments to the central computer system. The couple of computers at the district level must also be linked to the central computer; additional computers with peripheral equipment should be provided and linked to the central computer so that data collection and transmission could be made possible through online networking. Decision-makers would then have access to data and information as and when necessary, without waiting for monthly, quarterly or annual information reports.

6.09 Establishment of a Computerized Fisheries MIS: The team recommends that a detailed and comprehensive study should be undertaken to examine the existing fisheries information management system in the DFARD and DFEO and at community levels. Data needs and output requirements should be assessed, and a computerized MIS established to enable effective two-way feedback from the community through DFEO to the management and *vice versa.* The study should identify the hardware, software and lifeware requirements for the computerized MIS. It should recommend an statistically acceptable representative sampling system with simplified formats for data collection, processing, analysis and dissemination. In this connection, computers should be provided to district level DFEO offices with modem to enable data entry, processing, storage, retrieval, transmission and dissemination. The field-based computerized MIS should be networked to enable flow of information from the centre to the periphery and *vice versa.*

Officers will have to be trained on using the proposed computerized fisheries MIS.

6.10 Introduction of new technology should be substantiated with sufficient data/information to prove viability: The fishing community did not accept the recent introduction of tuna long-line fishing technology. This is partly because it was not convinced about the superiority of the technology to the prevailing system of gilinetting and long-lining. The gillnet fishery is universally discouraged as being environmentally unfriendly; there is now a thrust towards the long line fishery. But an MIS should provide data about the viability of the technology so that it can be marketed; else the introduction will not be successful. This point was was also made by the evaluation reports of funding agencies. Hence, while designing the M&E system, it is necessary to collect data/ information about the new technology, build awareness about it through an energetic campaign, and carry out promotion and demonstration.

6.11 Strengthening Monitoring, Control and Surveillance (MCS): Under the MFARD, an MCS unit has been established to facilitate fisheries management. The MCS concept is a three-tiered system comprising

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(a) collection and management of data/information (monitoring) (b) legislation and licensing (control) and (c) law enforcement (surveillance). It is necessary to strengthen and expand this newly established unit, as MFARD will have to take a lead role in the fishery management. This basically would include effecting improvements to the present data collection and monitoring system at the district level and strengthening linkages between districts and DFARD through DFEOs by establishing a computer network system. A computerized data management system is a pre-requisite for the success of MCS which is at the core of fisheries management. Moreover, it is also necessary to strengthen the licensing system and enforcement capability so that district officers could handle these functions efficiently and effectively. The MCS should involve the community in its routine activities, if it is to function satisfactorily. Moreover, the licensing system should be effectively enforced so that it will complement and supplement the existing information collection mechanism. The licensing system will provide information on fishing effort, identify the fishermen/ boat owners, the type of gear used, area of licensing/operation as well as annual renewals. At the time of licensing/renewal the furnishing of catch data and other related information could be made mandatory.

6. 12 As part of the effort of strengthening the **MCS,** sufficient training and awareness-building programmes should be organised for fisheries personnel and community volunteers on the principles of fisheries management. They should also be educated about the Fisheries Act and punishments for violators; and about the need for community action to root out illegal and destructive fishing practices that damage the environment. The Coast Guards employed presently by the MFARD should be utilized to support field-level MCS activities.

6.13 Strengthen the Monitoring and Evaluation Capabilities of the MFARD and its agencies: Separate M&E units/cells should be established in the DFARD, NARA, CFHC, CFC, CCD, NIFT, NAQDA, Cey-Nor and other foreign funded projects and programmes of the MFARD. These units should be provided with computers. A compatible MIS should be established through networking arrangements and linked to the central M&E Unit of the MFARD.

6. 14 Establishment of M&E Cells: A central M&E system is essential to the consolidate the impact of all relevant sub sectors. But decentralization is important for the development of a comprehensive set of indicators to monitor the organisation's achievements and meet project objectives. It is recommended that the central M&E Unit which has been already established at the MFARD should be re-structured and strengthened. As regards M&E arrangements for the MFARD's agencies, the team suggests that M&E cells be established at each institution to enable an effective monitoring and feedback system. The cells should have close links with the Central M&E Unit of the MFARD. However, in respect of NARA and CFHC, the team feels that the volume of work merits separate M & E units.

6.15 The central M&E unit of the MFARD should have an Economist and Statistician on their staff in addition to technical personnel, to ensure the successful conduct of monitoring activities. These Units/Cells must be provided with computers, equipment and relevant software to strengthen their capability. The staff should also be trained to design and operate an effective result- based. M&E system. At the initial phase, the agencies of MFARD could have 'stand alone' information systems with a provision for networking of the system with the central M&E unit. Duplication of information collection by different agencies under MFARD should be avoided.

6.16 Establishment of a Result-based Project Performance Management System: It is necessary to develop clear monitorable indicators on input, output, effect and impacts at the identification and planning phase of a project. It is recommended that any project or programme without a properly designed M&E mechanism should not be cleared. All projects should develop a Logical Framework matrix with clearly defined objectives and objectively verifiable indicators specifying the means of verification. It is also necessary to identify the critical assumptions that determine success at each phase of the project These assumptions should also be monitored. This system will facilitate the evaluation process by reducing the element of subjectivism. Establishment of a result- based M&E system is feasible with the incorporation of a log-frame matrix developed through a participatory process. The team recommends the following.

Expand the existing input- output based monitoring system to cover benefits, effects and impacts.

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- Improve the existing physical progress reporting system, so that it reflects the real situation without arbitrary, ad-hoc and subjective progress reporting. Streamline the data collection process with strong community representation/participation coupled with set milestones, or criteria to assess the physical progress.
- Establish and institutionalize a mechanism to monitor project performance while a project is still on. This will enable project managers to focus not only on physical accomplishment but more importantly on performance or results that ultimately determine the success or failure of the intervention. This will help establish a culture of result- oriented accountability and institutionalize it within the MFARD 's departments and agencies.
- The M&E system should take into account the responses of the beneficiaries to the various interventions. Timely adjustments and modifications should be made wherever necessary to projects/ programmes to suit the requirements of beneficiaries.
- Project-specific performance indicators should be identified and developed to monitor the performance/ progress of projects, programmes and activities. Moreover, there should be a system to identify and monitor key assumptions and risks which are external to the project but which influence the success of the intervention.
- To establish a result- based M&E system, it is necessary to train senior, middle-level and field-level officers on the concept and application of the logical framework matrix.

6. 17 Improvements to the existing physical progress reporting system: The present physical progress reporting system is based purely on subjective judgement rather than an objective weightage- based approach. As a result the reliability, accuracy and completeness of the physical progress is questionable. Moreover, the reporting formats of the MFARD are geared to the requirements of national- level agencies such as the Ministry of Finance & Planning and MPI&PA. The M&E does not cover items such as recurrent expenditure and fails to obtain beneficiary responses to assess the effects and impacts of development projects.

The financial-and-physical-progress reporting system should be modified to include warning signals about time and cost over-runs, reasons for shortfalls in performance, and recommendations for corrective action. As regards the biological and other resource information generated by NARA and DFARD, it is necessary to expand the number of field visits, widen representative sampling to include more sites and fish varieties, introduce validation and verification checks and involve the community more closely in M&E related activities.

6.18 Development of Performance Indicators: The Ministry and its agencies should develop a suitable set of performance indicators to monitor performance. At present, little attention is being given to this task. It is necessary to develop indicators concerning fish production, yield, fish prices, incomes of fishermen, types of boats and gear, fishing practices, imports and exports, active fisherman, fisheries co-operative societies, registration and licensing, socio-economic status, employment, per capita fish consumption, catch/ effort etc. As regards fresh water and brackish water fish production, information on the number of farms/water bodies, their average stocking density, survival rate, harvest, local and export prices, number of approved and unapproved farms, etc. should be made available.

6.19. It is necessary to monitor the benefits, effects and impacts of development interventions to assess how far the funds spent have been useful to the community. Further, from a resource management perspective, it is necessary to collect updated information on the destruction of mangroves, coral mining, quality of coastal waters, etc. to ensure responsible resource management. Information on the resource profiles of water bodies is necessary. This should include the type of fish, catch rates, water quality, harvesting seasons, etc. It is reported that at present the stocking of water bodies is being done by different agencies without informing the concerned departments/agencies. As a result, there is no accurate information to assess the performance or productivity of different water bodies.

6.20 The focus of M&E should be expanded from the implementation phase to cover operational phase: The present progress review system at MFARD is designed merely to assess progress in broad terms and meet the requirements of various national agencies. Its focus is on implementation rather than on operation.

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The existing system does not provide for measurable indicators to monitor progress. Decisions are based on stale information provided by the statistical division. It is necessary to expand the M&E to cover the pre-implementation and post-implementation phases and obtain updated information. The M&E system should also cover diagnostic studies, post-evaluations, sustainability monitoring and impact evaluation. A sector progress report with policy level issues should be separately identified and forwarded along with quarterly reports. This report should constitute the base material for discussion on the sector at the quarterly progress review meeting chaired by the.President. hi addition it is also necessary to measure the performance of MFARD's institutions, departments and agencies.

6.21 Harbours/anchorages and all other operations should be identified as cost/profit centres. Profit performance indicators with suitable benchmarks should be established with targets to enable them to operate as profit/ cost centres. It appears that a harbour manager is not aware whether the unit under his purview has sufficient returns at any given time, since its accounts are maintained at the head office and he has no immediate access to it. At present there is no proper system in place for harbour managers to collect any data/information relating to fish landings, sales, farm gate prices, type and weight of fish, quality and production and issue of ice etc. There is also no proper system in place to monitor the movements of fishing vessels in and out of the harbour. These drawbacks should be rectified.

6.22 The M & E system should pay particular attention to the quality assurance of export products. The existing quality control unit should be further strengthened to examine indicators that will assess quality as per HACCP requirements. In this connection, staffmust be trained to develop and use indicators to monitor quality in all its aspects – from the point of capture, storage on-board, handling, preservation, unloading, to marketing, transport, processing and export. The fish landing facilities at the harbour/anchorage, the auction area, water availability and toilet and sanitary conditions are areas that need special attention if export products are to comply with EU regulations. It may be pointed out that the existing harbours may have to be upgraded and sufficient training and awareness be provided to harbour managers, boat operators, fish handlers and processors, if quality assurance monitoring is to be made a success.

6.23 While moving beyond financial and physical monitoring towards results the teams recommends the following:

- It is necessary to incorporate sustainability monitoring into the M&E mechanism to ensure that assets and facilities created under various projects are sustained effectively throughout the operational phase. At present no mechanism exists to monitor the adequacy of operation and maintenance (O&M), both in terms of financial and institutional arrangements and the continuity of programmes or service delivery beyond the project period.

- It is also necessary to incorporate benefit monitoring and post-evaluation into the monitoring system to assess the success of the intervention and learn lessons for the future. Presently such evaluations exist only in foreign- aided projects.

- Progress towards a vision or a mission is possible only if an institution develops a well-defined corporate plan. It should clearly articulate vision, mission, objectives and targets. The absence of corporate plans with benchmark performance targets is a hindrance to any meaningful institutional evaluation mechanism. Any corporate plans now in existence merely meet the requirements of the Department of Public Finance. Performance indicators with a logical framework-based approach should be part of the plan. While setting targets, it is necessary to go into details of key activities. Example: fisheries harbours should maintain separate profit and loss accounts on individual operations such as ice plants, fuel stations, water supply, workshops, etc.

- A cost accounting information system should be introduced to activities such as freshwater breeding centres to assess the operating cost and unit cost of fingerling production. This type of information will assist decision-makers to determine or revise the charges to be levied for the supply of fingerlings. Although the cost-recovery aspect has been repeatedly discussed by many institutions, the absence of a reliable costing system including feedback to the management on cost-related information has been a major problem for decision-makers.

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6.24 Training of Staff: M & B training is essential for the staff of MFARD and its agencies. Training is particularly necessary on developing performance indicators. All senior and middle-level staff should be trained on Logical Framework Analysis. Field- level staff should be given training on M&E orientation with emphasis on data collection, statistical analysis and sampling techniques. The Planning and Monitoring Unit staff of the MFARD and the counterpart staff of NARA should be given comprehensive training on M&E with practical exposure to the fisheries sector in particular. A core group of trainers within the MFARD should be trained in M&E to ensure continuity of training activities.

6.25 Community Should be Actively Involved Throughout the Project Cycle: A feeling of project ownership should be created among stakeholders in general and the community in particular, so that a collaborative and consensus-based M&E mechanism can be developed and implemented successfully. Community involvement in M&E would facilitate the creation of strong public opinion, which will result in behavioural changes for the benefit of the fishery industry. This process will facilitate effective control over:

- Exploitation and exploitation methods
- Conservation and sustainability of resources
- Equitable distribution of the available resources as well as income
- Conflict resolution
- Effective implementation and enforcement of the Fisheries Act and its regulations.

6.26 The team noted that there are 845 Grama Seva Level Fisheries Co-operatives covering the marine and freshwater sector. These co-operative societies have a membership of 98,827 made up of 79,062 males (80%) and 19,765 (20%) females. As per the recent evaluations done by the co-operative unit of DFARD, 428 (52%) have been categorized as active, 165 (20%) as semi- active and 231(28%) as defunct. All these grass-root level co-operatives, most of which are located on the coastal strip and around freshwater tanks, could be tapped as useful M & E partners. Besides fisheries co-operatives, representatives from the various active NGOs and CBOs in each village could also be incorporated into the monitoring and management body. During discussions at the field level, the team found that members of these local- level institutions were interested in active participation in field-level monitoring and fisheries management activities.

6.27 Unless and until the communities who are the main stakeholders are incorporated into the M&E system in a meaningful manner and with responsibility and authority, it is unlikely that the management system will succeed. "Resource users" should be made "resource managers" if the concept of participatory management is to work successfully.

6.28 The effectiveness of the PIP process will depend on a range of factors such as:

- Participation and integration of the stakeholders in the policy- making/implementation process.
- Commitment of those concerned including the community and the officials to bring about the desired change.
- Awareness of the primary stakeholders of the need for change and their ability to participate in a meaningful manner.
- Attitudes, skills, knowledge, commitment and the institutional capacity of all concerned stakeholders.
- Availability of resources – human, financial, etc – to achieve change.

6.29 At present, data collection and information dissemination is a top-down process with little community involvement. To move towards a community-based fishery management, it is necessary to ensure proper dialogue and two- way communication with the community. MFARD and its agencies should work much more closely with the community, and create a feeling among them that they are the resource owners and key players in fishery management functions.

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7.0 OUTCOME OF THE NATIONAL M&E WORKSHOP

7.01 In accordance with its Terms of Reference (TOR), the M&E study team presented its report and findings at the National Workshop held in Colombo on November 26, 1999. This workshop was chaired by Mr S Amarasekera, Secretary, MFARD and attended by the senior officials of the MFARD and its concerned agencies together with representatives from Ministry of Finance & Planning and Ministry of Plan Implementation.

7.02 The Ministry of Plan Implementation was represented by Mr J L Senaratne, Director General, Monitoring & Progress Review Division. The FAO was represented by its Resident Representative. The national M&E advisor of the UNDP made a presentation on M&E and his experiences in the region. The proceedings of the workshop were facilitated by Mr Henry Gunawardena, Technical Advisor, MFARD. Mr G Piyasena, Director, Planning & Monitoring, MFARD co-ordinated the programme. The team presented its report and findings in detail and this was discussed at length.

7.03 The team's diagnosis and findings were accepted by the participants including the senior officials who commended the report's comprehensive analysis. The Technical Advisor, MFARD, highly commended the team. Some of the comments made by the participants:

- Existing stock assessment data is outdated and cannot be used as a basis for fisheries management, as it doesn't reflect the current situation. A scientific stock assessment that reflects ground realities is urgent.
- The system of data collection through logbooks in multi-day boats was considered a very sound and effective approach since it involves community participation. The need to simplify the fonnat of the logbook and to create awareness among the fishing community on the purpose and use of logbooks was considered essential. It was also agreed to expand the present coverage of the logbook to cover all multi-day boats, as was highlighted in the report.
- Fishery harbours/anchorages are not being effectively used at present to collect information and data for fishery management and enforcement despite the fact that the harbours/anchorages have a properly constituted institutional frame-work and are being patronised by almost all multi-day boats. Participants felt that with a single entry/exit system it will be easy to use the harbour as the base for management, regulation, conservation and development of fisheries and aquatic resources.
- Streamlining data collection at the field level was considered a pressing need. Some issues in this context are: enough field visits by data collectors, making sampling methods more representative and estimation methods more meaningful. These issues were discussed at length. The need for devising a cost-effective community-based information/data gathering system substantiated where necessary with a more scientific approach was emphasized.
- During group discussions, it was proposed that the community should be involved more closely with management and enforcement, including data collection and dissemination. One suggestion made was that management committees should be set up at all major fish landing centres, with a community-based participatory approach towards management and enforcement. Participants believed that in order to achieve maximum benefits, the community should be empowered with authority to assume responsibility and ownership.
- As regards inland fisheries and aquaculture, the need for a comprehensive data/information base on profiles of water bodies was stressed as a priority area. The Geographical Information System (GIS) established in NARA should be effectively made use of for this purpose. The need to continuously monitor all water bodies was repeatedly stressed.
- A proper and well-coordinated M&E system equipped with information to facilitate effective law enforcement and achieve resource management was considered a priority need.

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- It was pointed out that the present Statistical Unit of the MFARD caters to the information needs of its "super structures" rather than its own operational and management needs. The computerization, networking and capacity-building on M&E as pointed out in the report are pre-requisites for an effective result- based M&E system.

- The need for education, awareness and capacity-building programmes for all the stakeholders including the community at the grassroot level was highlighted. It was emphasized that coordination between the community and officials should be strengthened through a two- way dialogue at various levels.. Closer links were urged between the research and scientific wings with the implementing agencies and the community.

- The need to develop indicators based on a log-frame approach to monitor key activities was accepted as a methodology for result- based management. No project should be cleared without a proper M&E plan. Monitoring should go beyond the input-output stage towards benefits, effects and impacts. The M&E system as it exists now, is concerned with implementation; no attention is paid to the operational phase – results, cost recovery and sustainability. Diagnostic studies, mid-term evaluations, post-evaluations and impact evaluation studies were considered effective tools to result-based management and should be incorporated.

704 While accepting the log-frame approach as an effective planning and management tool, the participants stressed the need for more training in developing performance indicators, and in applying log-frames and other performance management techniques.

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Annexure - 1

MFARD-BOBP-FAO Diagnostic Study of the MFARD M & E System

Background

The Bay of Bengal Programme (BOBP) of the FAO, as a part of its third phase, which focuses on enabling and facilitating improved management of the fisheries, is assisting the Ministry of Fisheries and Aquatic Resources Development (MFARD) and the Department of Fisheries and Aquatic Resources (DFARD) of Sri Lanka, in improving the management of the ornamental fisheries sector. The objective of the exercise is, in the context of conservation of critical aquatic habitats such as coral reefs, lagoons, mangroves, sea grass beds, estuanne and nverine systems and sustainable resources utilization from such habitats, to facilitate and enable improved management of the ornamental fish sector of Sri Lanka, through awareness building, strengthening the institutional capacity of concerned agencies and provision of technical assistance.

The problem in the ornamental fish sector needs to be looked at on two levels. First, given that little is known about the populations or the biology of the species, some of which are endemic to Sri Lanka and rare, there is a genuine concern that indiscriminate collection would stress the populations and eventually push them towards extinction. There is also the related question of how these delicate creatures are collected, Luckily thxic substances and explosives do not seem to be used in Sri Lanka, though some of the gear and methods used to collect fish, such as 'moxy' nets, are not eco-friendly. Secondly, and less well known, is the problem of human activities and the impact they have on habitats of ornamental fish. A wide range of activities including deforestation, agriculture, the mining of sand and coral for lime construction, food fisheries, sewage and garbage, dumping, industrial pollution and tourism have direct and indirect effects on the habitats, most of which are detrimental. Given this scenario, only managing the collection of ornamental fish may prove futile, even if successfully implemented and if no attention is paid to the quality of the habitats which recruit and provide a home for the creatures concerned. In practical terms the management of the ornamental fish sector is complicated by the fact that several govermnent agencies are involved and they would need to work in concert to come up with a rational and cohesive programme of management.

Stakeholder analysis conducted by DFAR and BOBP suggests that while a lot differences exist in terms of perceptions of problems and solutions options, there is a clear commonality in that all parties feel that they stand to benefit in the long-term from a programme that ensures the sustainability of the resources and the habitat. The central aim of the project has been to promote consultations and negotiations amongst and between stakeholder groups in order to arrive at negotiated management plan. To aid and assist the consultation process, two parallel activities were undertaken. One, to add to the knowledge of the sector in terms of the status and trends of the resources and the habitats to provide the stakeholders with the 'best available' scientific information to help them in their decisions, and two awareness building on the need for, the benefits of and the methods of management amongst all stakeholders. The stakeholders have recommended the formation of a task force to develop a precautionary management plan which would lead to participatory implementation., monitoring and enforcement MFARD is interested in strengthening its M & E system to enable it to trace performance of its activities and to determine the impacts of its policies programmes and activities.

At the 23rd Meeting of the BOBP's Advisory Committee, in Negombo, Sri Lanka, it was recommended that BOBP should assist two fishery agencies in the strengthening of their M & E Systems. It was hoped that with such capacity-building, the task of improved fisheries management would be facilitated and the two agencies would be models for fishery agencies of the other member-countries to follow. It was further recommended that such strengthening of the M & E systems be undertaken in the State of Taniil Nadu, India and in Sri Lanka

Terms of Reference

The Consultants under the supervision and direction of the Project Operations Office of RAPA, FAO and in close consultation and cooperation with FAO Representation in Sri Lanka, BOBP, MFARD and other agencies in Sri Lanka concerned with the development and management of fisheries shall undertake a diagnostic study of MFARDs M & E system, with a view to recommend strategies, approaches and action in the form of proposal briefs to

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strengthen and improve the performance of the Ministry's M & E System. The Consultants, *inter alia,* shall undertake.

1. Identification, review and diagnostic analysis of monitoring & evaluation and management information practices in use in the Ministry of Fisheries and Aquatic Resources Development (MFARD) and its constituent 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 MFARD and its constituent agencies, in the context of their Mission Statement 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 analysis, based on actual problem, objective and solution tree analyses.

3. Examination of the scope of improving and strengthening existing M & E and MIS in order to provide the identified information needs of the concerned organizations, including improved data collection and dissemination systems. 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 MFARD and other concerned agencies, keeping in mind practicality, feasibility and the art of the possible.

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

6. Presentation of the draft report at a national workshop, revising the report in light of the feedback received and submissions of the final report.

Consultants

The study will be undertaken by a team of four consultants, consisting of three officers of the Post Evaluation Unit, Monitoring and Progress Reviews Division, Ministry of Plan Implementation and Parliamentary Affairs, Sri Lanka (Ms Nanda Piyaseeli Alhakone, Director, Mr V Sivagnanasothy, Deputy Director, and Mr Kulasabanathan Romeshun, Assistant Director) and Mr S P Chandra Silva, an independent consultant.

Institutional Arrangements

I. The services of the three officers of the Post-Evaluation Unit, Monitoring and Progress Review Division, Ministry of Plan Implementation and Parliamentary Affairs, Sri Lanka (Ms Nanda Piyaseeli Aihakone, Director, Mr V Sivagnanasothy, Deputy Director & Mr Kulasabanathan Romeshun, Assistant Director) will be provided at no cost except daily subsistence allowance and travel costs for activities outside the duty station and local travel costs in the duty station) to the Ministry of Fisheries and Aquatic Resources Development by the Ministry of Plan Implementation and Parliamentary Affairs, through a Letter of Understanding between the two Ministries.

2. The services of Mr S P Chandra Silva will be provided to the team of consultants by being assigned as a National Consultant by the FAO through the FAO Representation in Sri Lanka. Mr S P Chandra Silva's Terms of Reference are as follows.

   Mr S P Chandra Silva under the supervision and direction of the Project Operations Officer of RAPA, FAO and in close consultation and cooperation with FAO Representation in Sri Lanka. BOBP, MFARD and other agencies m Sri Lanka concerned with the development and management of fisheries shall assist Mrs Nanda Piyaseeii Aihakone, Mr V Sivagnanasothy & Mr Kuiasabanathan Romeshun of the Post

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Evaluation Unit, Monitoring & Progress Review Division, Ministry of Plan Implementation and Parliamentary Affairs, m undertaking the study of the Monitoring & Evaluation system of MFARD (the TOR of the studies dealing with the M & E System of MFARD are as attached above). The consultant shall provide in particular assistance to the study team to make the studies more participatory in nature through the use of participatory methods in consultations, workshops and logframes exercises and provide inputs on the social science aspects of fishers and fisher communities as necessary and assist in the reporting of both studies, taking responsibility fpr particular sections as mutually agreed to by the team of consultants.

3. The Ministry of Fisheries and Aquatic Resources Development will depute two officers of its Planning and Monitoring Division to assist the study team in its efforts. The deputed officers will receive no honorarium but will be paid DSA and travel costs for activities outside the duty station and travel costs for activities within the duty station. It is expected that the team of consultants will provide the deputed officers in-service training during their assignment to enable them to undertake similar efforts in the future.

4. The Study Team will undertake their task with guidance and direction from Mr G Piyasena, Director, Planning and Monitoring Division, MFARD. The Planning and Monitoring Division being the primary client and beneficiary of the study will closely follow the progress and performance of the study and its Director, Mr G Piyasena, will be responsible for technical clearance of the draft report of the study, prior to its presentations in the National Workshop, and subsequently before the final draft is submitted to MFARD and FAO.

5. The funds to undertake the study, including Mr S P Chandra Silva's honorarium, DSA and travel costs of the study team for activities outside of the duty station, Colombo, local travel costs for activities in Colombo, costs of conducting a series of consultations and workshops with the stakeholders, costs of stationery and reporting will be provided by the BOBP, through the FAO Representation in Sri Lanka.

Duty Station: Colombo, Sri Lanka

Duration and Timing of the Study: The study will be completed over a four-month period ending 31 July 1999.

Workplan: Details of Activities as per TOR

Identification, review and diagnostic analysis of monitoring & evaluation and management information practices in use in the Ministry of Fisheries and Aquatic Resources Development (MFARD) and its constituent organizations concerned with fisheries development and management.

a. Study Team discussions with individual officers and groups of officers in concerned agencies in Colombo.

b. One two-day stakeholder consultation/workshop at district level, in a district recommended by MFARD, with participation of Study Team (4+2 MFARD Nominees) and approximately *25* stakeholders from fisheries and district level fisheries administration.

c. One one-day multi-agency consultation/workshop in Colombo, to review and finalize findings of diagnostic study with participation of Study Team (4+2 MFARD Nominees) and approximately 30 representatives of MFARD and concerned agencies.

2. Identification of the information needs of MFARD and its constituent agencies, in the context of their Mission Statements and overall and immediate objectives, in particular though not restricted to fisheries management.

a. Approximately five two-day Logframe Workshops in the MFARD Conference room, Colombo, to develop logframes for particular activity types and specify information needs for M & E with the participation of Study Team (4+2 MFARD Nominees) and approximately 10 participants concerned with the particular activity being studied.

3. Examination of the scope of improving and strengthening existing monitoring evaluation and management information systems in order to provide the identified infonnation needs of the concerned organizations,

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with emphasis on how such information and data are collected, compiled analysed and made available to decision-makers.

a. Study Team discussions with individual officers and groups of officers in concerned agencies in Colombo.

4. Development of strategy, approaches and brief proposals for strengthening the monitoring & evaluation and management information systems of MFARD and other concerned agencies.

a. One multi-agency consultation/workshop of I-day duration in Colombo, to review and finalise recommendations of Study Team in terms of strategy, approaches and brief proposals with participation of Study Team (4+2 MFARD Nominees) and approximately 30 representatives of MFARD and concerned agencies including BOBP/FAO staff.

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

a. Discussion amongst Study Team (4+2 MFARD Nominees) and reporting.

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.

a. BOBP and MFARD will separately organize the National Workshop, upon receipt of the draft report of the Study Team. The Study Team (4 + 2 MFARD Nominees) will participate in the workshop and present their findings and recommendations. The National Workshop will be separately funded by BOBP.

b. Discussion amongst Study Team (4+2 MFARD Nominees) and development of final report, incorporating the comments and recommendations derived from the National Workshop assisted by staff of BOBP.

Annexure -2

Strengthening of the Monitoring & Evaluation System of the Ministry of Fisheries & Aquatic Resources Development under the BOBP/FAO Workplan

	April-1999				May-1999				June-1999				July-1999			
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
1. Diagnostic analysis of Monitoring & Evaluation																
2 Identification of the information needs (5 Workshops of 2 days duration)																
3. Examination of the scope for improving and strengthening existing monitoring evaluation and management information system																
4. Development of strategy, approaches and brief proposals for strengthening the monitoring & evaluation																
5. Presentation of the draft report at a state-level workshop																

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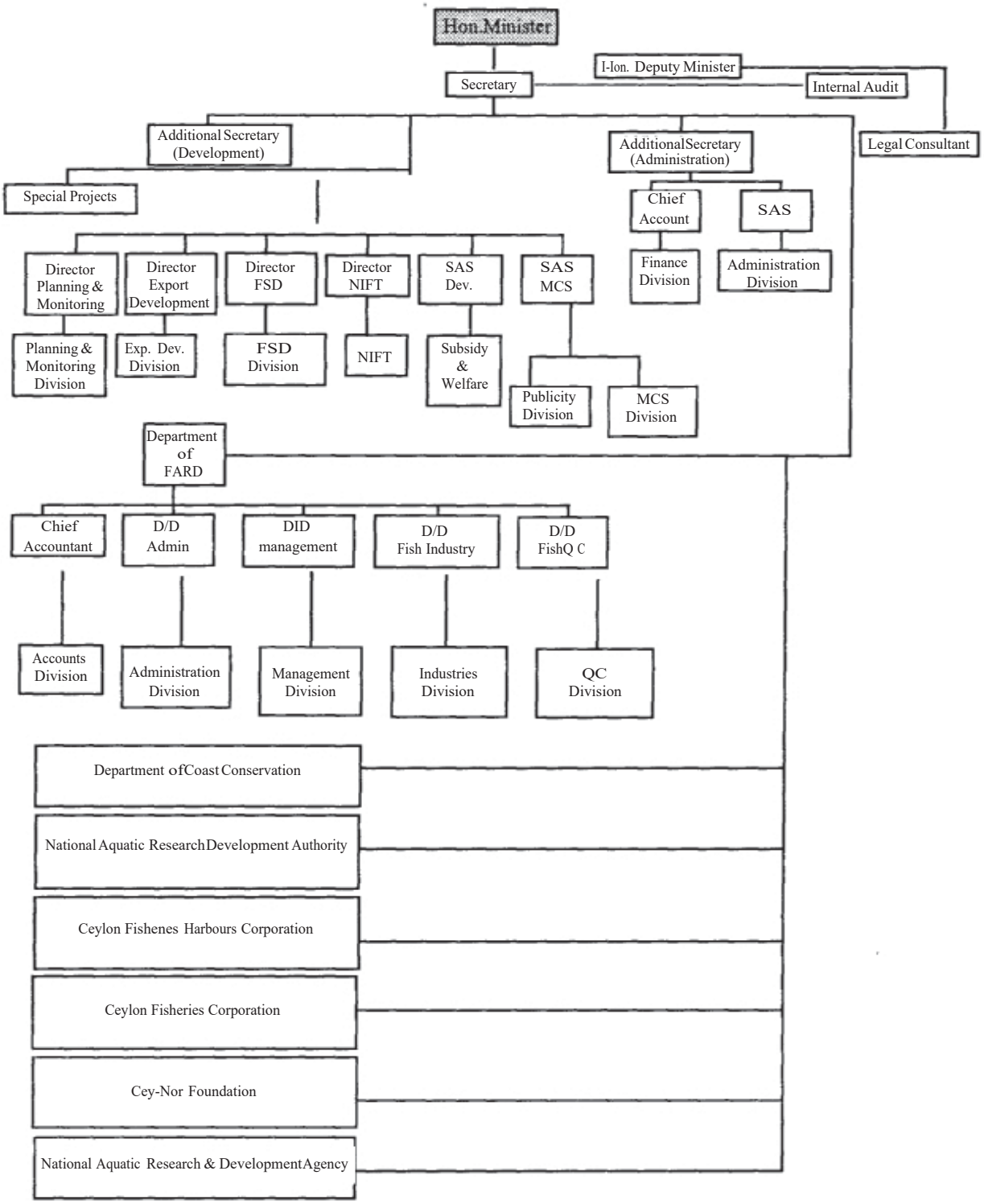
Annexure -3

ORGANOGRAM
Ministry of Fisheries and Aquatic Resources Development



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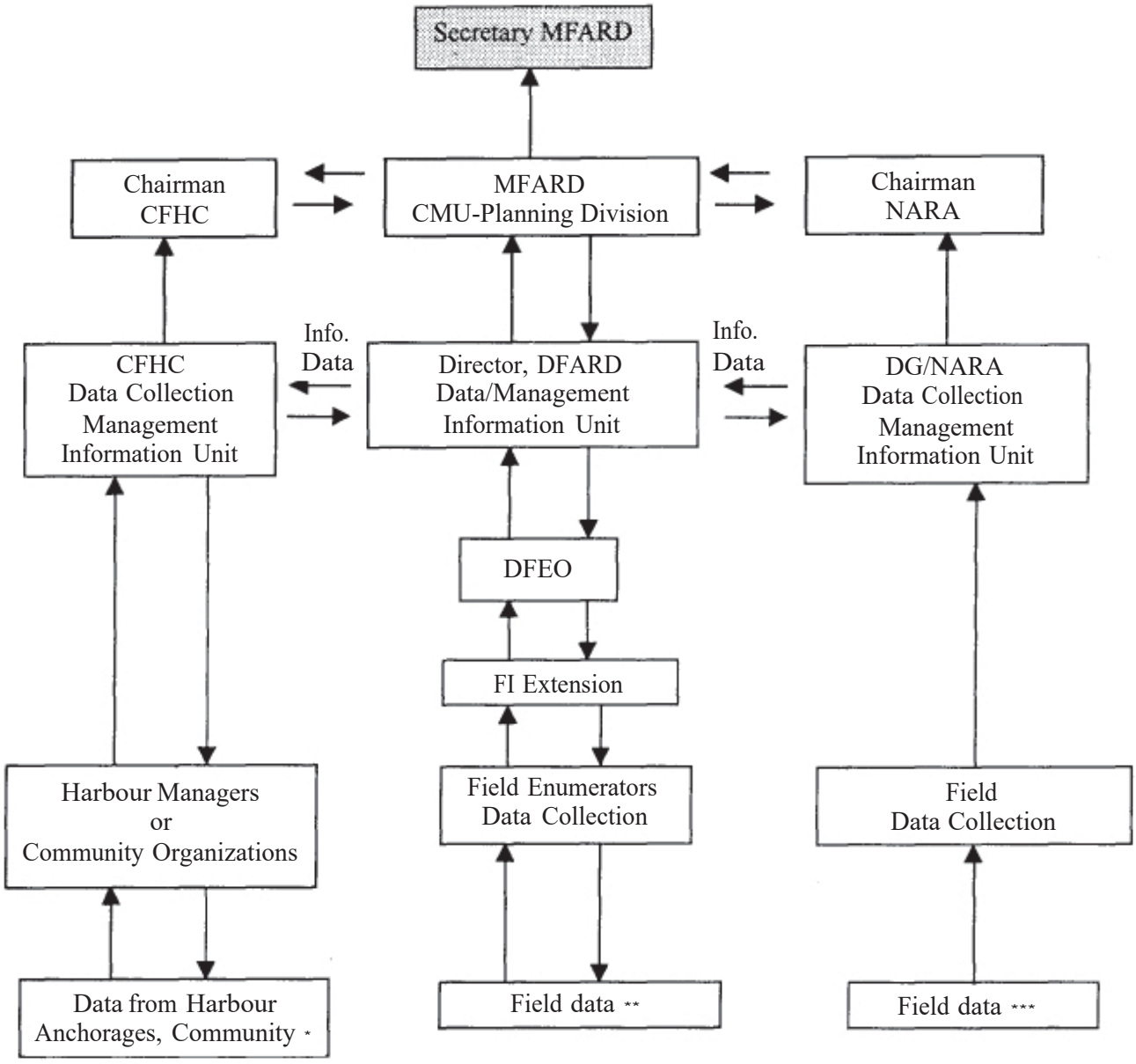
Annexure - 4

Proposed M & E Arrangements for MFARD



* Boat type and gear, boat movements and duration of voyage, new fish landings catch by vessel - variety; quality price, etc.

** Fisheries-related information on craft, gear, licensing, registration, renewals, etc., Fishety resources data; Social and livelihood-related data;

*** Technical, technological, biological resources, quality. Other scientific information on fish, shell fish, ornamental fish exports, etc.;

All agencies, projects and institutions under MFARD and those affiliated including participatory agencies like NGOs, Cooperatives, CBOs, etc. will also receive information to/from the CMU at the Planning Division ofMFARD

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Annexure - 5

Aquaculture Development - Logical Framework Matrix

Hierarchyofobjectives	Objectively venfiabla indicators	Means of verification	Key assumptions
Goal * Increase nutritional status and food security ofpeople through increased fish supply * Increase in employment opportunities m fishenes and fishenes-related activities.	Per capita supply of inland and aquaculture fish increase from 1.58 kg in 1999 to 2.51 kg in 2004. * Incremental employment in the Inland Fisheries sector * 1999 - 100 * 2000 - 100 * 2001 -200 * 2002 - 300 * 2003 - 400 * 2004 - 400 * Annual incremental employment of 100 in shrimp farming: 1999 - 2004 * Annual incremental employment of 300 in fish seed production: 1999 - 2004 * Annual incremental employment of 300 in aquaculture live fish (including export trade): 1999-2004.	* Nutrition Sheet * Aquaculture Development Authority * Socio-economic survey done by the Ministry of Fishenes & Aquatic Resources Development * Labour Ministiy / Department ofCensus & Statistics	Assumptions to sustain goals * The demand for inland and aquaculture fisheries products continue * There would be no major disease outbreak wInch would threaten the production. * No external interference for execution of regulations * Policy commitment to inland aquaculture fisheries continues * Export market for aquaculture can be sustained even with international competition
* Increase in Aquaculture Production	* Increase in exports of Aquaculture from Rs.2.6 bn in 1999 to Rs.6.6 bn in 2004. * Exportofshrimpfrom3,211 mtin 1999to 7,790 mt in 2004.	* Department ofCustoms * Central Bank	
Purpose * Increase in Aquaculture Production	* Aquaculture production increase from 30000 MT m 1999 to 51,000 MT in 2004 * Stock of fingerlmgs in water bodies * Carp increased from 2.5 mn in 1999 to 15 mn in 2004 * Thilapia increased from 0.5 mn in 1999 to 5 mn in 2004	* MFARD & Aquaculture Development Authonty	Assumptions to achieve goals * Acceptance of local and foreign consumers is there and sufficient * Financially attractive for the activities to be continued

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Hierarchyof objectives	Objectively verifiable indicators	Means ofverification	Key assumptions
	* 73 major reservoirs to be stocked with fingerlings of Tilapia nilotica by 2004 * 163 medium and 3,280 minor perennial reservoirs to be stocked by 2004 * Stocking of 7 hill countiy reservoirs by 2004 * Develop 32,500 ha of upland and low land reservoirs in the Mahaweli area by 2004 * Developing 100,000 ha of seasonal village tanks by 2004 * Number of brood stock manufactured/imported in tons	* Customs	* Proper quality standard to ensure the sustainability of the export market and to ensure continued acceptance by the local consumers
Output * Development of aqua infrastructure (reservoirs, capes, ponds, hatchery, feed production centres) * Seed production * Develop manpower-extension * Disease prevention activity	* Number of Hectares/Units increases from to from 1999-2005 * Water area under seed production increases from ha in 1999 to ha in 2004 * Number of people contacted per extension officer per year increased from in 1999 to in 2004 * Occurrences of disease reduced from in 1999to in2004	* MFARD * MFARD * NARA * MFARD * NARA * MFARD * NARA	Assumptions to achieve purpose * Demand for inland fisheries and aquaculture exists * Willingness of Farmers to involve in aquadulture
Input * Establishment of an aquaculture development authority * Regional extension centres * Providing training to members of fisheries co-operative societies and village associations to produce fish seed for stocking of reservoirs	* April 1999 * 12 nos. by December 1999 * Number of programmes/persons	Appointment of Director General & supportmg staff Director & supporting staff * MFARD	Assumptions to achieve output * Staff availability and specialized skill personnel * Timely availability of funds * Suitable lands, water and ingredients

Hierarchy of objectives	Objectively verifiable indicators	Means of verification	Key assumptions
* Training and participation of estate workers and aquaculture farmers to produce fingerlings for stocking of seasonal & perenmal tanks * Training on feed production			
* Funds * Extension Services	* 1999-Rs. 123.8 nm * 2000-Rs.136.2mn * 2001-Rs.149.8mn * 2002-Rs.164.8mn * 2003-Rs.181.3mn * 2004-Rs.199.4mn Recruitment of extension staff nos by (year)	* MFARD	Suitable lands, water and ingredients

Logical Framework Matrix
Ceylon Fisheries Harbour Corporation

Hierarchy of objectives	Objectively verifiable indicators (OVI)	Means of verification (MOY)	Assumptions
Overall Goal * Improve nutritional level of the community * Increase job opportunities * Increase foreign exchange earnings	Per capita availability of deep-sea fish up from 3.42 kg in 1999 to 4.5 kg by 2004 An average of 200 job opportunities per year from 1999 to 2004 Fonegn exchange earnings increase from Rs. mn in 1999 to Rs._____mn in 2004	Ministry of Fisheries - Statistical Department; Census & Statistics Department of Census & Statistics Department of Customs	* For the Sustain ability of the Goal * Encouragement to deep-sea fishing will continue * Proper monitoring and management practices for the harbour are established
Purpose 1. Enhancing sustainable exploitation of deep-sea fishery resources	1.1 Increased basin area with annual dredging reduced from mt in 1998 to mt m 2004 1.2 Increase in the number of deep-sea fishing crafts by 60 numbers per year from 1999 to 2004 1.3 Average fishing days per month increase from in 1999 to in 2004 1.4 Average turnaround time decreases from days in 1999 to-days in 2000 1.5 Increase in deep-sea fish catch from 65,000 mt in 1999 to 92,000 mt in 2004	Records of the Harbour Managers Records of the Harbour Managers Records of Harbour Manager and consolidated reports of the MFARD Harbour Manager/Ministry of Fisheries Ministry of Fisheries/Department of Customs	To achieve goal * Stable prices for deep-sea fish * Assured market for deep-sea fish * Consistent government policy * Increase in the number of users of the harbours * Cost recovery for the services provided
2. Improve quantity of fish catch, quality and handling	2.1 Quantity of fish landed in safe methods increase from mt in 1999 to in 2004 2.2 Export quantity as a % of landed fish increases from %in1999to %in 2004 2.3 Quantity of fish waste decreases from in 1999 to_____ mtin2004	Reports of the Harbour Manager Reports of the Harbour Manager Reports of the Harbour Manager	

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Hierarchy of objectives	Objectively verifiable indicators	Means of verification	Key assumptions
3. Reducing environmental effects at fish landing sites 4. Self sustarnability of harbours	3.1 Level of Microbes 3.2 Water quality at landing sites - Chemical Oxygen Demand, Biological Oxygen Demand 4.1 Average income of harbours exceeds the recurrent expenditure of the harbours	Reports of NARA Reports of NARA Records of the Harbour Managers	
Output Fisheries harbours giving safe shelter for the fishing boats and providing necessary facilities, water, fuel, ice and workshop facilities to go out fishing	Number of harbours in operation under category **A-** **B-** **C-** D-	Reports of the Ceylon Fishery Harbour Corporation	To achieve purpose * Fishermen will invest money to do deep-sea fishing * Fishermen's willingness/ability to pay for the services * Acceptance to close gate policy by the users of the harbour
Input * Technical inputs * Material * Funding	Funding during the period of 1999-2004 Foreign - Rs.5097.4 mn Consolidated - Rs. 919.4 mn	Reports of the Ministry to the Parliament	To achieve output * Timely availability of necessary permits * Ideal geographical locations available * Availability of technical know-how * Timely procurement * Timely recruitment of consultants/staff * Commitment for funding

Logical Framework Matrix
Negombo Special Area Management Project

Hierarchy of objectives	Objectively verifiable indicators	Means of verification	Key assumptions
Goal Sustainable fisheries development through community-based management	* Improved income * Improved fish production * Less state involvement in management	* Consumption patterns of the community * Catch data * Less demand for state funds	* Community will continue with the participatory management system
Purpose Sustainable environment in the Negombo lagoon	* Increase of area of mangrove vegetation * Water quality monitoring	* Surveys * Research	* Skilled personnel and laboratory facilities available * Participation of fishermen high * Conflict resolution mechanism available * Support from government agencies forthcoming in a timely manner
Organised fishing community	Species composition of fish catch of the fishery societies		
Responsible fishing	* Decline in the cost of law enforcement * Decrease in the fish catch of endemic species	Number of cases detected	
Output Establish Fisheries Management Committees	Number of committees, membership, attendance & active participation	* Data collection * Surveys * Observation * Catch data * Availability of plans	* Willingness of the encroaches to be relocated * Value of mangrove vegetation accepted * Willingness of the community for resource management * Background information available * Community-based management concept will be accepted by the community * Understanding of pollution driven threat
Relocation of mechanised boats	Number of vessels anchored outside		
Relocation of encroaches	Number of families resettled		
Protection of mangrove vegetation	Species and area protected		
Area demarcation	Survey plans		

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Hierarchy of objectives	Objectively verifiable rndicators	Means of verification	Key assumptions
Input			
Awareness programmes	Number and type of programmes	* Information systems	* Fishery will be participatory activity
Socio-economic and biological surveys	Number of surveys and fmdings	* Government charts	* Surveyors are equipped with necessary knowledge and skills
Determining alternative anchorage facilities	Number of locations and capacity	* Data collected	Suitable locations could be identified and there is positive response for the locations
Preparation of survey plans	Survey fmdings		* Political support
Determining highly protected areas			* Availability of funds
Management procedures for vegetation			* Funds and loans are available
Introduction of fisheries regulations	Time taken for the introduction of regulations		Consultants and skilled persons available
Identification of alternative housing schemes	Number of families relocated		
Developing sound disposal system	Number of complaints from the community		
Establishing project management offices	Number of staff		

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Logical Framework Matrix
Diyawara Gammana Programme

Hierarchy of objectives	Objectively verifiable indicators	Means of verification	Key assumptions
Goal Upliftment of the social conditions of fisherfolk	* % of fisher families having permanent houses	Survey by Ministry of Fisheries and Aquatic Resources Development	Fisherfolk are willing to construct permanent dwellings and use sanitary facilities
Purpose Community-managed housing scheme	* % children pre-school children increase * % of people saving increases * Savings amount increases * % of malnourished children decreases	School attendance register By survey Banks in the community Child Health Development	Continuous repayment of the loan
Cordial relationship among the fisher societies and other societies Community development	Number of joint meetings amongst fisheries societies, and other societies per year	Report - Gramodaya Health Centre Records of joint meetings	Joint meetings would improve services to fisherfolk

Output
Establishment of Diyawara Village Complex
	* Number of Diyawara villages established
	* 15,000 houses constructed during 1999 - 2004
	* Facilities established
	  * Community Centre
	  * Pre-school
	  * Health centres
	  * Cultural centre
	  * Sales outlets
	  * Library
	  * Access roads
	  * Banking facilities
	  * Water and electricity infrastructure
	  * Play ground
		Registered villages under DS office
		Project Office
			Fishermen show willingness to construct houses with the material assistance provided
			Fishermen repay loans provided to them as envisaged

Establishing Scheme Management Companies	Number of Scheme Management Companies established	Registered companies at the MIFARD	Adequate participation by fishermen in management activities

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Hierarchy of objectwes	Objectively verifiable indicators	Means of verification	Key assumptions
Input			
Socio-economic survey(baseline survey)	Preparation of the socio-economic survey report	Identification of land and beneficiaries	Necessary manpower and funds are made available
Awareness creation programmes	Number of awareness programmes		
Suitable lands for the construction works	Acreage of land resave by the Divisional Secretary	District land registrar office	Availability of land
Funds (local and foreign)	Local - Rs.1,543 mn Foreign - Rs.375 mn	Government estimates	Availability of Government funds
Building materials	Quantity of Building Materials	Amount spent for building materials	Availability of building materials in time
Project Office	Number of staff	Required staff	Availability of qualified persons and their willingness

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Logical Framework Matrix
Fisheries Sector (Quality)

Therarthy of objectives	Objectively verifiable indicators (OVI)	Means of venfication (MOY)	Assumptions
Overall Goal * Maximum usage of marine resources(?) * Improve nutrient value of diet of Sri Lankan consumers * Improve living conditions of fishermen and fish traders	Increase in fish catch, especially deep-sea fish Increased availability of fish for consumption Improved average prices for fish	Reports of the Department of Fishenes	For the sustainability of Goal Fish continues to be a staple food due to its affordability Sri Lanka's fish continues to be accepted by international buyers
Purpose * Supply of hygienic fish/fish product	* Number of boats with modern fish storing/ icing facilities on board the vessel * Amount of waste fish handled by Fishery Harbours reduced * Improved export volume	Department of Fisheries Fishery Harbour Managers Department of Customs	To achieve goal The consumers would demand quality fish Improved fish quality improves revenue
Output * Training on new fishing methods, equipment and transport * Facilities at the landing sites improved - water - ice - fuel supplies - storage facilities * Establishment of credit facilities	Number of people trained Number of sites improved Seed fund amount and participating credit institutions commissioned	National Institute of Fisheries Ceylon Fisheries Harbour Corporation	To achieve purpose Those who are trained are willing to implement them The facilities developed will be exclusively used by fishermen and traders Credit facilities provide sufficient incentive for those trained to participate in these activities
Input * Consultants and trainers for training in the use of new fishing methods (longline, etc.) and equipment * Funds * Studies on facilities and improvements	Number recruited Amount Numbers	Ministry of Fisheries and Aquatic Resources Development -do- -do-	***To achieve output*** Those engaged in fishing & fish marketing will attend training programmes

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