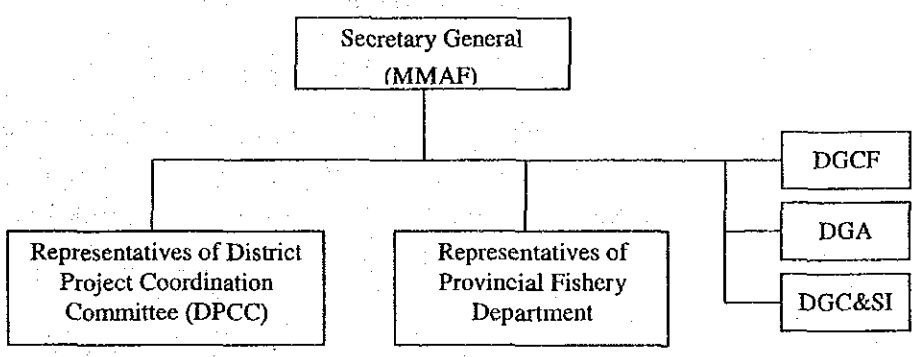
6. Project Implementation Plan

6.1 Executing Agency

The executing agency of this project is the Ministry of Marine Affairs and Fisheries, but under the regional decentralization policy, the district government will be responsible for overseeing the actual implementation of the project. However, due to the resources management programme, infrastructure improvement, the introduction of improved technology in fisheries, marketing, and processing, improvements in the social environment of the village communities, and various other programmes, that will require uniform measures by the central, provincial and district administrative levels in the area of fisheries resources, the Ministry of Marine Affairs and Fisheries must establish a system of cooperation between each respective department and office and to coordinate the activities of the provincial and district Fisheries Offices. In view of these circumstances, an organizational system of equal and mutual coordination and cooperation between the Ministry of Marine Affairs and Fisheries and the district governments is demanded. As shown in the figure below, the cooperation between the Ministry of Marine Affairs and Fisheries and each district government body will be sufficient, but in future an organization that represents neighboring district governments will be needed in future to coordinate the interests of both local governments. A project implementation committee to provide concrete support of the operations of the project and a project coordination committee that will coordinate the roles of the relevant bodies in the district government, which will actually implement the project, will be needed.

6.1.1 Programme Coordination Committee

An organizational chart of the committee that will be responsible for coordinating the various project programmes between the central and district governments is shown below.



Organizational Structure of the Programme Coordination Committee (PCC)

Legend: MMAF = Ministry of Marine Affairs and Fisheries
DGCF = Director General of Capture Fisheries
DGA = Director General of Aquaculture
DGC&SI = Director General of Coastal and Small Islands

6.1.2 District Project Coordination Committee (DPCC)

A District Project Coordination Committee (DPCC) will be established at the start of the project to coordinate the relevant parties and institutions that are relevant to the operations of the project. This committee will be comprised of representatives from the district governor's office (Buppati Office), the district fisheries office (Dinas Perikanan Kabupaten), the district cooperatives office (Dinas Koperasi Kabupaten), the district planning office (Bappeda), the provincial fisheries office (Dinas Perikanan Propinsi), and others. The representative from the district governor's office will chair the committee and it will be responsible for carrying out the administrative coordination and basic policies with regard to the project's implementation. Other related duties are as follows.

6.1.3 Project Implementation Committee

A Project Implementation Committee (PIC) will be created within the district fisheries office and will be chaired by the fisheries office director. The committee will be comprised of the officer in charge of the project, the fisheries extension officer, and representatives of the fishermen cooperatives. It will be responsible for the concrete preparations and implementation of the project in accordance with the basic policy set by the DPCC; and it will mobilize, organize, and strengthen the fishermen cooperatives and kelompoks to coordinate the project activities, and it will take responsibility for providing the needed capital and technical assistance to implement the project. It will also be responsible for the following tasks.

6.1.4 Project Management Office

A Project Management Office (PMO) will be set up in the fishermen's cooperative office that will operate the project. With the assistance and guidance of the PIC, it will be responsible for providing guidance on the organizational system, technical aspects, and loan services. The PMO staff members will be appointed by the PIC.

6.1.5 Fishermen Organizations That Will Manage the Project (Model Site)

Fishermen organizations that will be in charge of the operations of the project facilities will be established at each model site. These fishermen organizations will also represent the existing fishing village cooperatives and fishermen cooperatives. (For details about the organization's functions, refer to section 5.1.5, 5.2.5, 5.3.5, and 5.4.5.)

6.2 Implementation Schedule

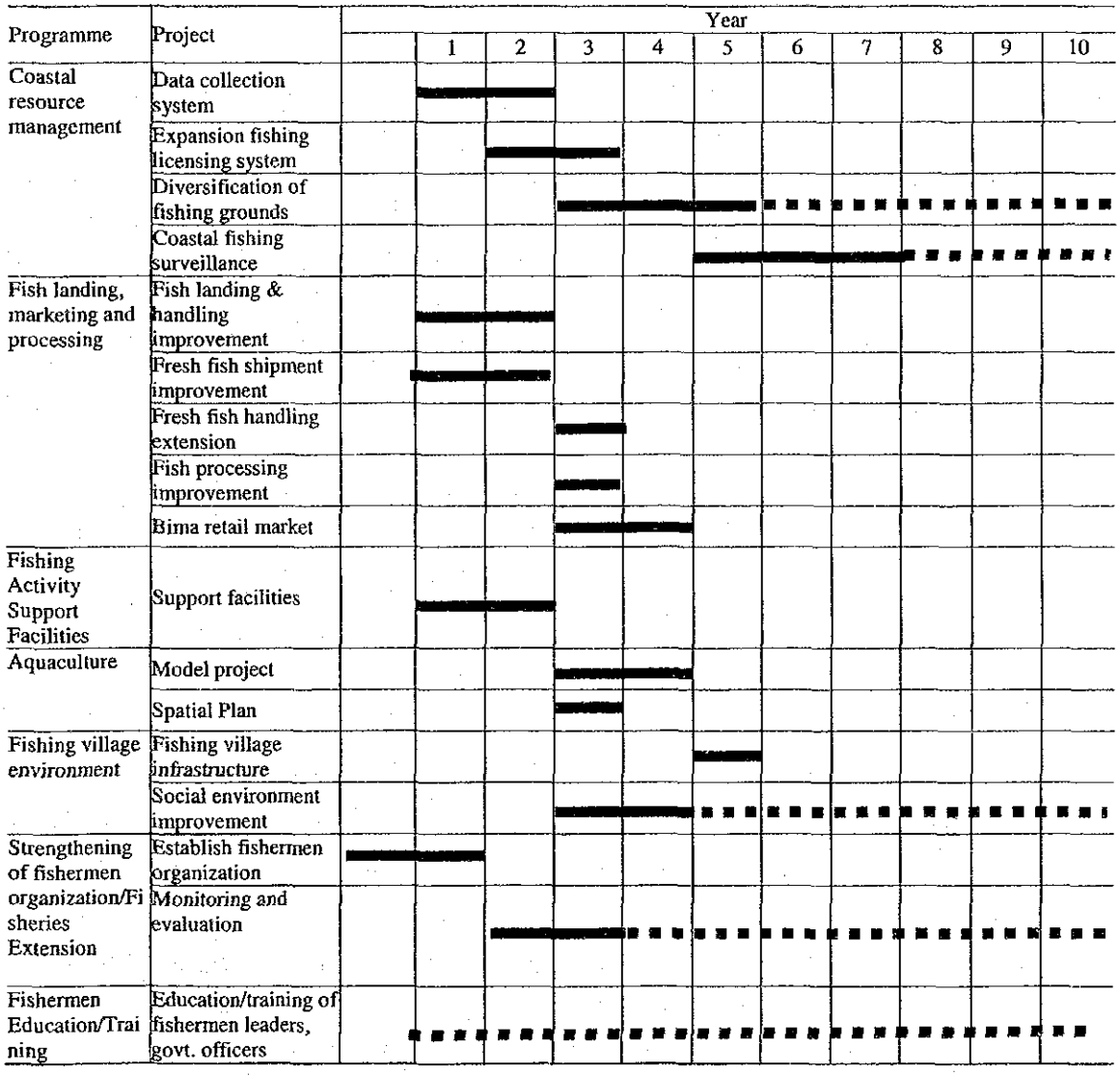
6.2.1 Implementation Schedule of the Priority Zones

Implementation priority will be given to priority zones with a high EIRR that also show a financial plus. The implementation priority ranking based on project evaluation findings is shown in the table below.

Province	Priority I	Priority II
NTB	Waworada	Kempo, Hu'u
NTT	Larantuka (Oka), Lamahala Jaya, Balauring, Lewoleba, Ende, Paga	Maumere (Kalimati, Wuring), Sagu, Lamalera

6.2.2 Priority Projects in Each Programme

The projects that will raise fishermen incomes and directly eliminate the regional disparity in fish consumption were prioritized. The priority ranking of each project was determined according to the criteria shown in the table below.



Note: Bold line indicates project period and dotted bold line indicates support by local government.

6.3 Capital Procurement Plan

6.3.1 Initial Input Capital

Of the 12 model sites, the EIRR of three sites was 8~9 percent and for the other remaining sites it ranged from 10 percent to 42 percent. Due to the a large amount of initial cost for the provision of infrastructure, only one site indicated a FIRR of 7 percent; eight sites showed 0~4 percent, three sites showed minus one to minus 3 percent, and the FIRR for one remaining site could not be computed. In order to enable the project to be implemented under sound financial conditions, the Indonesian government must pursue to secure grant fund to cover the initial input costs.

In addition, since the project contains elements that may transform the coastal resources management programme and other aspects of Indonesia's fisheries administrative system, it is recommended that the technical cooperation projects of JICA or other similar assistance programmes are implemented in order to reduce the initial input.

For the fishing village environmental improvement programme, it is possible to obtain the assistance of the JOCV and other grass roots assistance to provide technical support and the equipment and materials needed to implement traveling extension activities in the zones and to produce supplementary audiovisual materials aimed at raising the motivation of the local communities to improve the social environment of the fishing villages.

6.3.2 Operating Capital

In this project, the operating capital for the facilities and equipment have been planned to revolve on independent funds. However, in order to achieve this goal, OJT and regulated extension, educational, and training activities are needed. The estimated costs of these activities are 30 to 70 percent of the district fisheries office budget. Therefore, the district fisheries office should explain the content of the project and its benefits and secure budgetary support from the district government.

6.4 Technical Assistance

Much of the technology required by each project is available in Indonesia. Providing appropriate guidance measures can effectively raise the operations of fishermen organizations. Although activities to raise the organizational and operational capabilities of the fishermen organizations will be implemented by the district Fisheries Office, its manpower capacity is limited and there is a need to strengthen its extensions personnel by establishing an extensions division. Moreover, the management and operations of the project will be effectively raised, if an expert or JOCV member can be dispatched to provide technical guidance prior to the start of the project.

Furthermore, the Indonesian government has minimal experience in establishing a coastal resources management system implemented by community residents. Therefore, it is recommended that it dispatch fisheries officers at the central or provincial government levels to undergo the training programme provided by SEAFDEC, which has implemented similar projects in the Philippines or Thailand. Moreover, the cost of the programme is only 50 percent for beneficiaries and the course is conducted in English. The fisheries officers who undergo this training programme will disseminate their newly acquired knowledge to the staff members of the district Fisheries Office and to fishermen.

7. Recommendation

(1) Improving Fishermen Income and Swift Project Implementation

The per capita GDP of NTT and NTB provinces that were targeted in this study is the third lowest among the country's 30 provinces. In particular, the fishermen income level of nine of the fishing villages out of the 33 village communities that were surveyed in this study were at the poverty line level, and the income of 25 villages was under the income earned by farmers working on less than 0.5ha of land.

Due to the difficulty accessing financial institutions, input in fisheries has been minimal. But additionally, fish prices have been kept low mainly due to undeveloped technology in fish processing and fresh fish maintenance.

One of the objectives of this study was to improve fishermen incomes in order to rectify the economic losses. This was a common problem for all the fishing communities in the study area; and since the problem does not require advance technology to resolve, the implementation of the project in the priority zones is anticipated to produce a large ripple effect. Therefore, it is recommended that the Indonesian government implement the projects as quickly as possible at least in the priority zones with an EIRR of higher than 10 percent and a plus FIRR. Appropriate budgetary measures should be enacted and the assistance of donor institutions for the initial input should be requested; and the preparation for the official request should be implemented as soon as possible.

(2) Coastal Resources Management and Government Action

Open access to fisheries resources is presently based on the consensus of the Indonesian people. Conversely, this has also been the underlying cause of the low awareness about local resource conservation by the local residents and their insensitivity to the adverse impact of illegal fishing methods used to exploit resources.

Under the decentralization policy, the local governments have begun to see the fisheries resources in their region as a source of financial revenue. However, this perspective is not based on sustained use of resources, but simply a shortsighted aim to collect fishing

revenues. This may lead to abuse of the fisheries licensing system. Therefore, in this project, independent management of coastal resources by the local fishermen has been proposed. The central government should work closely with the provincial and district governments to establish a self-reliant and basic management and surveillance system by the coastal communities to achieve sustained use of the coastal resources.

(3) Establish a Fisheries Coordination Institution in Saleh Bay

Saleh Bay in Sumbawa Island encompasses a wide area where coastal fisheries have flourished. It is an enclosed water area due to an island that obstructs the mouth of the bay. According to the statistics, the fish catch volume has stagnated these past few years and there is a need to closely manage the resources. Private companies have also expressed interest in conducting mariculture activities, and there is a need to separate the water areas for fisheries and mariculture activities based on the mutual consensus of the coastal community. In addition, the boundary between Sumbawa and Dompu districts runs through the middle of the bay, and there is a need to establish an institution that will coordinate the fishery activities of both districts with the aim of achieving sustained use of the fisheries resources.

(4) Assistance to Foster Self-reliant Fishermen Organizations

In principle, the management and operations of the facilities will be carried out by fishermen organizations whose capabilities will be strengthened with the assistance of the district fisheries office and village administrative bodies. As a result, the administrative side plays an extremely important role. Generally, the capabilities of the district level officers are low and it will be difficult for these officers to supervise the fishermen who will be in charge of the operations and maintenance of the facilities. However, based on discussions with district officers about the project during the study, it was concluded that they possess adequate basic capabilities to manage the operations of the facilities under an appropriate plan. To foster self-reliant fishermen organizations, the district government will monitor and evaluate the project's implementation and will provide technical, financial, and administrative support during the initial stages of the facilities' operations to raise the management capabilities of the fishermen organizations.

(5) Review a Financial System for Fishermen

To promote sustainable fisheries in the study area, it is important that fisheries activities are extended to offshore waters. The provision of a model fishing boat in the project will be used to train the younger generation of fishermen in offshore fisheries, which requires the use of large fishing boats. The construction cost of a large fishing boat averages Rp.3,000 million to Rp. 4,000 million, but generally, it is difficult to obtain loans from the

existing financial system, despite special loans of Rp.4000 million to women kelompoks as part of a programme by the department of outlying islands to improve their capabilities. There is a need to combine a training programme for fishermen with a financial system that will help them to purchase large fishing boats for offshore operations. The Ministry of Marine Affairs and Fisheries should endeavor to quickly establish such a financial system. Following points should be considered when a financial system is to be established.

(a) The modernization of fishing boats should be clarified within the policy framework.

(b) The credit fund, both from the government and the donor, should clearly be divided for the existing small-scale fishing activities and for the modernization of fishing boats.

(c) The financial system for small-scale fishermen which is currently provided by the local development bank should be utilized.

(d) The upper limit of the loan amount by each water body should be set up based on the economic viability of off-shore fishing activities within 12 nautical miles evaluated by DGCF of MOMAF.

(e) Minimum criteria for individuals who can access the loan are to be set up. Those individuals should have enough experiences in off-shore fishing or be acquired trainings from formal training centres (ex. Semarang Fishery Training Centre, etc.).

(f) Those centres should establish training programmes for fishermen based on the policy for the modernization of fishing boats and corresponding credit system.

(6) Factors to Consider in Mariculture Development

There is strong interest to develop mariculture at the central, provincial, and district government levels, but the targeted fish species are groupers, lobsters, and other high priced species. However, these species require a long rearing period, in terms of feed and monitoring activities, which makes it difficult for small-scale fishermen with limited capital to participate. Similarly, only private companies with capital are able to engage in high density and intensive brackish water pond culture of prawns. Presently, government supervised cage culture of groupers is underway in three to four locations in the study area. But due to the inadequate preliminary training of the fishermen, the lack of financial assistance to meet the operating costs until shipment, and the lack of a shipping system for live fish, the project will inevitably fail. If the government plans to promote mariculture among the small-scale fishermen, it must first address these issues and provide complete technical and financial support.

(7) Foster Fisheries Extension Officers

Since the fisheries sector was under the jurisdiction of the Ministry of Agriculture, the fisheries extension activities tended to be concentrated in inland fisheries. In addition, since the district extension officers are mainly centered in agriculture, the educational and training activities in marine fisheries have been inadequate and have produced very minimal results. The operations and management of the project will initially be conducted with the participation of the district fisheries and village administrative organization to strengthen the capabilities of the fishermen organization. Subsequently, it is important to raise the capabilities of the district fisheries officers. It is also important that extension activities in marine fisheries are given institutional support in the new ministry and the capabilities of the district level fisheries personnel are improved as quickly as possible.

(8) Assistance to Improve the Village Environment

Under the regional decentralization policy, the local communities must shift from an attitude of waiting to an attitude of self-help to resolve the problems in each fishing community. However, the fishing communities have grown to depend on third parties to resolve their problems, and their motivation to take action among themselves is low. The fishing villages face a variety of problems in their social environment such as the excessive labor of women, the lack of basic education for children, the lack of recreational facilities, and others. There is a need to raise the community's motivation to improve the social environment of the fishing village, and the strong assistance of the district extensions officer is vital in this area. Therefore, it is recommended that the district fisheries office formulate and implement support programmes.

FINAL REPORT

Master Plan

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[Figures and Tables and Appendices]

PART II PRESENT CONDITIONS

PART III MASTER PLAN

Acronyms and Abbreviations

ADB	Asian Development Bank
AMDAL	Analysis of Environmental Impact Process
Bapedal	Environmental Impact Management Agency
Bapedalda	District Environmental Impact Management Agency
BAPPEDA	Regional Development Planning Agency
BAPPENAS	National Development Planning Agency
BIPP	Centre for Agriculture Information and Extension
BPD	District Development Bank
BPLLP	Agency for Agricultural Extension Services
BPSDM	Agency for Human Resource Development in Agriculture
BRI	Bank Rakyat Indonesia
Bupati	District Administrator
COREMAP	Coral Reef Rehabilitation and Management Project
CPUE	Catch Per Unit Effort
DGA	Directorate General of Aquaculture
DGCF	Directorate General of Capture Fisheries
DIKLAT	Centre for Education and Training
EIA	Environmental Impact Assessment
FAD	Fish Aggregating Device
GPS	Global Positioning System
GRDP	Gross Regional Domestic Product
GTZ	German Technical Cooperation
IEE	Initial Environmental Examination
IFAD	International Fund for Agricultural Development
IPPTP	Centre for Agriculture Technology Research and Study
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
Kabupaten	District
Kecamatan	Sub-District
Kelompok	Group
KUD	Village Units Cooperative
KUD Mina	Fisheries related cooperative
MMAF	Ministry of Marine Affairs and Fisheries
MOA	Ministry of Agriculture
MSY	Maximum Sustainable Yield
NGO	Non Government Organization
NTB	West Nusa Tenggara Province
NTT	East Nusa Tenggara Province
PKK	Family Welfare Development
PPI	Fish Landing Place
PPL	Extension worker
PPS	Extension subject matter specialist
PROPEDA	District Development Program
PROPENA	National Development Program
PROTEKAN	Fisheries Development Program
TAC	Total Allowable Catch
TNC	The Nature Conservancy
TOR	Terms of Reference
TPI	Fish Auction Place
UNDP	United Nations Development Programme
VHF	Very High Frequency
WB	World Bank

Exchange Rate

1US$=Rp 8,829
100 yen = Rp 7,089
Source: Bank of Indonesia May 30, 2002