

## 4. Operation and Maintenance Plan

### 4.1 Coordination Method of Overall Operation

As described in III. 2.8 "Summary of Sector Plans", this master plan is composed of seven (7) sector plans, which will bring good results by the mutual influences when they are implemented.

Therefore, the operation body of this master plan is required to have following functions:

- To coordinate the implementation schedule among sector plans in order to avoid various wastes in terms of time, fund, and human resources
- To arrange required implementation budget for each sector plan
- To identify and recruit necessary technical experts and/or trainers in time to support the implementation of each sector plan, and to arrange the assistance request of foreign experts when necessary
- To monitor and evaluate the implementation progress of each sector plan, and to adjust a track if necessary. And to report periodically the implementation progress of the master plan to the responsible ministry.

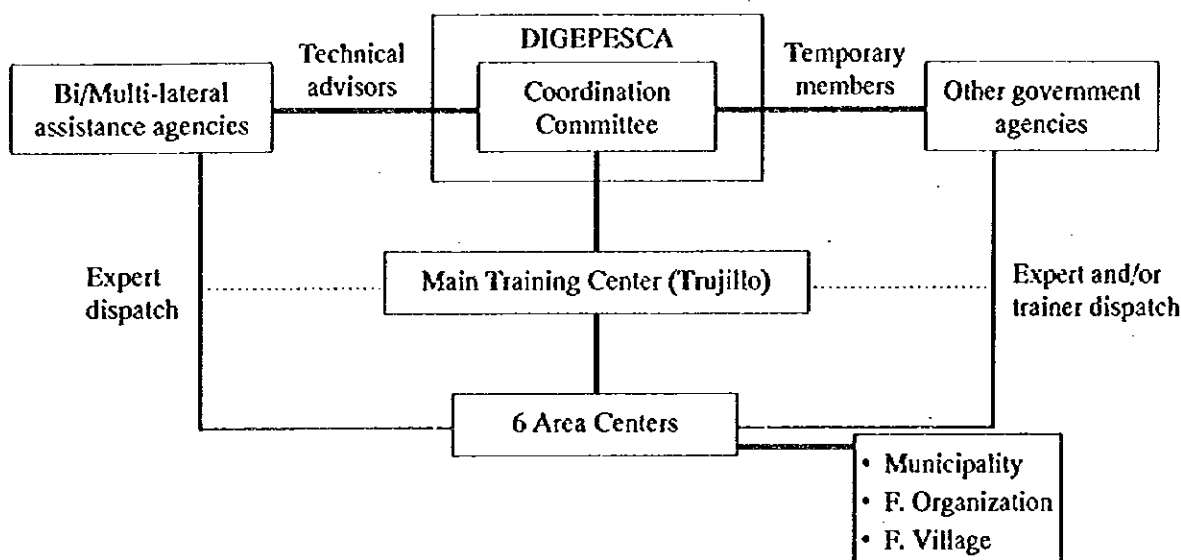
To satisfy above conditions, it is required to set up some specific coordination committee inside the responsible ministry, tentatively named "The Coordination Committee of Artisanal Fisheries Development in the North Coast" (hereinafter referred to "The Coordination Committee"). This committee is consisted of five (5) permanent members and unfixed number of temporary members as shown in the table below.

Role	Agency in Charge	Position
(1) Chief	DIGEPESCA	Permanent
(2) Legal Advisor	DIGEPESCA	Permanent
(3) Planning Coordination	DIGEPESCA and SAG	Permanent
(4) Budget Coordination	DIGEPESCA	Permanent
(5) Technical Coordination	DIGEPESCA and/or Other Agencies	Temporary
• Fisheries resources aspects		
• Technical training aspects		
• Marketing aspects		
• Fishermen organization aspects		
(6) Technical Advisor <sup>1</sup>	Foreign Expert	Temporary

Remarks /1: Necessary to accept some foreign technical experts in a proper time stage of each sector plan.

## 4.2 Operation Organization

This master plan is to be implemented principally under following operation organization system as shown in the figure below. Prior to the implementation of each sector plan, the Coordination Committee will set up relevant project execution committee through the procedures of opinion adjustment by inviting temporary members from other government agencies when necessary. Each Area Center will organize an Area Execution Committee consisting members of representatives of related municipalities, fishermen organization, fishing villages, etc.



## 4.3 Maintenance Plan

This master plan will invest money for providing various facilities and equipment of seven (7) sector plans. During the plan period of 15 years, the maintenance cost of these facilities and equipment could be covered by operating this plan. However, as for the period after 16th year, the maintenance cost shall be shared in the following manners from a stand point of recipients' responsibilities.

### (1) Plan of Capacity Building for Coastal Resources Management

This project evaluation period is to be the first 4 years of the master plan period. Even after this sector plan period, DIGEPESCA can use the research vessel, wet lab, etc. for further 16 years, and collect data/information necessary for resources management. The

maintenance cost for these activities is to be burdened to DIGEPESCA.

**(2) Plan of Small-scale Fisheries Modernization**

Fishermen should purchase their own fish production means such as fishing boat, etc., from the 11th year when the Plan of Small-Scale Fisheries Credit will start. The period of 11th - 15th year is to be considered as a transition period, and from the 16<sup>th</sup> year, further investment will not be done for the renewal of fish production means. Other kinds of maintenance costs will be covered by the plan operation.

**(3) Plan of Fish Marketing Improvement**

The fixed-type fish sales unit installed to the consumer's market will be transferred to relevant municipalities after the plan period. Other kinds of maintenance cost will be covered by the plan operation.

**(4) Plan of Fisheries Community Infrastructure Improvement**

Most of planned equipment are hand operated tools, the lives of which are short. During the plan period those equipment will be renewed, however they will be transferred to relevant municipalities after the plan period since the mutual assistance spirit of village people would be fostered and strengthened by that time.

**(5) Plan of Fisheries Community Women Support**

Taking the same way of consideration, the project will be transferred to relevant municipalities after the plan period.

**(6) Plan of Fishermen Organization Improvement**

The plan will be continued since the fostering of fishermen organization principally needs longer period than the plan period.

**(7) Plan of Small-scale Fisheries Credit**

Taking the same way of consideration mentioned above, the project will be continued even after the plan period.

The maintenance cost by sector plan is shown in the Table 5.4.

## 5. Project Evaluation

### 5.1 Economic Evaluation

#### (1) Preconditions for evaluation

1) Construction schedule: See "III. 2.8 Summary of Sector Plans"

2) Price setting: Fixed price of US dollars in December 1996

#### 3) Evaluation Period

The buildings and fish transport vessels (100HP ) will last for about 25 years and 20 years respectively. However in this study the evaluation period is set up as 15 years since the master plan period is 15 years.

#### 4) Costs

The project costs consist of the following items.

##### a. Construction costs

The construction costs of each sector plan is shown in the Table 5.1. The contingency and consulting fee are estimated at 7% and 8% of the total construction costs, respectively.

##### b. Facilities renovation costs

The facilities will be renovated based on their life periods shown in the Table 5.1. The sum of the renovation costs of each year during the plan period has been calculated as shown in the Table 5.2.

##### c. Operation costs

The operation costs in each sector plan consist of following items. (See Table 5.3)

- Labor costs: All sector plans (Summed up the cost of main duty in case of concurrent duty).
- Itinerating training: Plan of Small-scale Fisheries Modernization and Plan of Fisheries Community Women Support are evaluated.

- **Traveling costs:** Plan of Capacity Building for Coastal Resources Management and Plan of Small-scale Fisheries Modernization are evaluated.
- **Operation costs of fishing:** Plan of Fisheries Modernization is evaluated.
- **Fuel costs of transport vessels:** Plan of Marketing Improvement is evaluated.
- **Electricity costs of ice factories:** Plan of Fisheries Modernization and Plan of Marketing Improvement are evaluated.

**d. Maintenance costs**

The maintenance costs is summed up at the fixed rate of 2% for buildings and 3 - 5% for equipment, respectively (See Table 5.4). The costs are not summed up for materials or such equipment that seldom accrue repair works.

**5) Direct benefits**

The direct benefits of the master plan are derived from Plan of Fisheries Modernization and Plan of Marketing Improvement. The benefits consists of following items. Applied fish price and fresh fish volume are shown in Table 5.5.

- a. **Fresh fish production increase :** Plan of Fisheries Modernization
- b. **Export increase :** Ditto
- c. **Increase of added-value by fish transport :** Plan of Marketing Improvement

**(2) Result of economic evaluation**

The costs/benefits of this plan is shown in the Table 5.6. The EIRR has been estimated at 6.2%. This value can not be said high although this master plan covers some sector plans not accruing direct benefits, such as Plan of Community Infrastructure Improvement, Plan of Community Women Support, etc. As mentioned above, direct benefits are derived only from two sector plans out of seven sector plans. Since total costs of all sector plans was burdened to the benefits of these two sector plans, such low value of EIRR has been obtained.

The EIRR indicates 13.6% if the master plan excludes following three sector plans(see

The EIRR indicates 13.6% if the master plan excludes following three sector plans(sec Table 5.7):

- Plan of Resources Management
- Plan of Infra. Improvement
- Plan of Women Support

Furthermore the EIRR would indicate more than 16% if the building space for fishermen's training of the Plan of Fisheries Modernization is reduced to 70 - 80% of the planned space which currently includes some common use space for other sector plans.

Five sector plans except Plan of Fisheries Modernization and Plan of Marketing Improvement could be expected following indirect benefits:

a. Plan of Resources Management:	<ul style="list-style-type: none"> <li>• Fish production guideline based on academic evidences will be set up in order to protect coastal resources from over fishing.</li> <li>• Capacity of DIGEPESA technical staff on resources management will be built up.</li> <li>• Through obtaining cooperation of fishermen, more reliable fish production data will be collected.</li> </ul>
b. Plan of Infra. Improvement:	<ul style="list-style-type: none"> <li>• To be a contribution to secure minimum health requirement for fishing community people.</li> <li>• To obtain more effective fishing activities.</li> </ul>
c. Plan of Women Support:	<ul style="list-style-type: none"> <li>• To upgrade social participation capacity of community women.</li> <li>• To be a contribute of obtaining side income for community women.</li> </ul>
d. Plan of Org. Improvement:	<ul style="list-style-type: none"> <li>• To promote self-reliant fisheries by fishermen themselves</li> </ul>
e. Plan of Fisheries Credit:	<ul style="list-style-type: none"> <li>• Economic activation of coastal area will be promoted influenced by the trend toward self-reliant fisheries using fisheries credit.</li> </ul>

## 5.2 Financial Evaluation

### (1) Preconditions for evaluation

The construction schedule, price setting and evaluation period are the same as in the

economic evaluation.

1) Source of funds

As mentioned in "III. 5.1 Economic Evaluation", in this master plan, direct benefits are derived only from Plan of fisheries Modernization and Plan of Marketing Improvement out of seven sector plans. In addition to this, the benefit scale is not so large compared with that of the total construction costs. Even in the case of financial evaluation, the income is derived only from these two sector plans. Therefore, it is necessary for its implementation to obtain a grant fund from the government or from foreign countries (including international agencies), since its implementation by loan can not be expected.

When the cash deficit happens to accrue during the period of its implementation, it is to be balanced by the borrowed money without interest from the government.

2) Expenditures

The expenditures consist of 6 items such as construction, renovation of facilities, operation, maintenance and depreciation. The costs for construction, renovation and maintenance are the same figures as in the economic evaluation.

a. Operation costs

The operation costs consist of 6 items. Five of them, labor costs, itinerating training costs, travel costs, fuel costs of transport vessels, electricity costs of ice factories are the same figures as in economic evaluation. The rests are following two items.

- Purchase cost of fresh fish ( Eastern Region)  
To purchase fresh fish at US\$0.349/lb. in order to transport and resell them in the Western Region
- Purchase cost of fuels and lubricant ( Western region)  
To purchase the fuels and lubricant at US\$2.0/gallon, US\$10.0/gallon respectively, in order to transport and resell them in Eastern Region.

b. Depreciation costs

The cost is depreciated at the fixed rate indicated in the Table 5.1.

3) Revenue

The revenues consist of following 5 items.

a. Rental fee for fishing boats

The amount of maintenance cost and depreciation of fishing boats and payment share for fisheries development cost is collected as a rental fee for fishing boats. The payment share is 5% and 3.5% of the fish sales amount in Western Region and Eastern Region respectively.

b. Sales of fresh fish ( Western Region)

The fresh-fish purchased in Eastern Region are reselled in Western Region at the price of US\$0.583/lb. The amount of depreciation by sector plan is shown in Table 5.8.

c. Sales revenues of fuels and lubrication

The fuels and lubrication purchased in Western Region are reselled in the Eastern Region at the price of US\$2.4/gallon and US\$12.0/gallon respectively.

d. Sales revenues of ice

The ice for fishing operations is sold at the price of US\$0.024/lb in both Regions.

e. The handling commission of 5% is charged to the purchased amount of fresh fish for export which are collected to the Trujillo Fish Collection Base and each Area Center.

**(2) Results of financial evaluation**

The statement of profits/losses and the cash flow are shown in the Table 5.9 and 5.10. According to the statement of profits/losses, the profit before depreciation will be deficit during the first 2 years, but will change into surplus after the 3rd year. The net profit will be deficit during the whole plan period. As for the cash flow, cash will be insufficient in the first 2 years, however, from the 3rd year it is constantly surplus during the plan period. In case the construction is done by a grant fund of the government or of foreign assistance, maximum cash shortage during the first 2 years is less than US\$50,000. Therefore it is desirable to provide this amount as an government capital for this project at the initial stage of the plan implementation. Table 5.11 shows the case of financial evaluation for 30 years period in order to check the financial conditions after the plan period (15 years). The calculation was done under the following conditions on the maintenance of facilities/ equipment as described in "III. 4.3 Maintenance Plan".



- a. Plan of Resources Management - To be evaluated during the period of the first 4 years.
- b. Plan of Fisheries Modernization - As for fish production means, to be purchased by fishermen themselves through the credit project by "Plan of Small scale Fisheries Credit". No further investment for renewal of fish production means after the plan period.  
- Other facilities/equipment to be maintained.
- c. Plan of Marketing Improvement - Fish sales promotion unit to be transferred to relevant municipalities.  
- Other facilities/equipment to be maintained.
- d. Plan of Infra. Improvement - To be transferred to relevant municipalities.
- e. Plan of Women Support - To be transferred to relevant municipalities.  
- Other facilities/equipment to be maintained.
- f. Plan of Org. Improvement - To be maintained
- g. Plan of Fisheries Credit - To be maintained

Even under such conditions, net profit will not change into surplus. And after the 23rd year, large amount of cash shortage will happen because much expenditure will accrue for the renewal of buildings, ice plants, transport vessels, etc.

The core purpose of this master plan is to modernize current fisheries through training of artisanal fishermen, and the buildings are provided for this purpose. Therefore it might not be necessary for DIGEPESCA to renew the buildings if it takes the stance that fishermen should make efforts by themselves to achieve self-reliant fisheries after fostering sufficient number of core fishermen through the training programs within the life period of the buildings.

In the cases of fish transport service and ice sales, these are financially viable. Therefore fishermen organizations can continue these projects by investing the renewal for these vessels and ice factories using the loan by "Plan of Small-scale Fisheries Credit" after

receiving the training on operation/management of these projects during the period of 20 years.

Taking into account above mentioned discussions, the implementation of the master plan is sufficiently viable from the financial view points.

### **5.3 Environmental Impact Evaluation**

Through the discussions on the contents of this master plan among the Study team, DIGEPESCA, DECA, Environmental Committee and Environmental Impact Evaluation Dept. of SEDA, it was agreed that the projects of the master plan are expected to induce favorable results from economic and environmental view points by balancing fisheries modernization with resources management.

In order to attain sustainable fisheries, the capacity building for resources management and the improvement of statistical reliability of DIGEPESCA are required. And it is essential measure for future resources management of Honduras to establish and intensify self-imposed management system by fishermen organizations and/or by fishing communities. The possibility of marine pollution would be least by the introduction of training boats because they are small in scale and not many in number.

The results of environmental impact scoping on the projects of the master plan are summarized in Table 5.12, 5.13 and 5.14.

## **6. Conclusion and Recommendations**

### **6.1 Conclusion**

The objectives of this study are to mobilize artisanal fisheries in the north coast (with a coastline of 680km) which is presently economically disadvantaged, and to formulate a small-scale project to promote fisheries, in order to improve the livelihood of fishermen.

In this study, the north coast was divided into the Western Region where the socioeconomic infrastructure is relatively developed (the coastal areas of Cortes, Atlantida, and Colon Departments) and the Eastern Region where public investment has widely fallen behind (the coastal areas of Gracias a Dios Department). Fisheries/fishing community activities, fisheries marketing, administrative system for fisheries, relevant assistance programs, etc. were comprehensively reviewed. Due to the lack of regional information about the Eastern Region, aside from the 1988 population census data, a census on artisanal fisheries was implemented and detailed information was obtained. Based on the results of this study, the following conclusions have been reached on policies promoting artisanal fisheries on the north coast.

#### **(1) Policies promoting artisanal fisheries**

##### **1) Policy content and financial resources**

In order to foster sustainable and independent artisanal fisheries in the area targeted by the Study, it is necessary to integrate the improvements in the aspects of "fisheries production", "fishermen organizations and financing", and "fishing community life and environment." A master plan to implement countermeasures to improve seven sectors in these three aspects has been formulated in this Study. Based on the project evaluation of this master plan, it has been determined that it is financially feasible to implement a plan for all sectors, if foreign assistance or special government subsidies is invested for the initial investment cost. As a result, the total sector plans have been included in the master plan. Since the financial conditions of the government have not improved, foreign assistance should be actively pursued as the source of financial resources needed for the initial investment.

##### **2) Countermeasures for resources management**

Due to the weak structure of fisheries resources in the north coast, the conditions surrounding resources of major fish species must be immediately and scientifically understood, in order to devise suitable resources management countermeasures. As

a result, priority was given to implementing the "Plan of Capacity Building for Coastal Resources Management", one of the sector plans.

### 3) Beneficiaries and regional priority

Development targeting the poverty class, such as artisanal fishermen, must produce a large number of beneficiaries. But, the effectiveness of an assistance system that maintains complete impartiality is doubtful. Therefore, fishermen capable of fulfilling a nucleus role in modernizing fisheries over a short period of time will be put in priority and be fostered in this plan, in the anticipation that they will be influential in changing the awareness of neighboring fishermen.

In terms of regional priority, the Western Region was selected due to ongoing related projects; and the need to expand the sustained impact of current and related projects both horizontally and vertically.

### 4) Recruiting technical experts

One of the major factors to consider when implementing this master plan, is the difficulty in recruiting technical experts in the Honduras for each sector plan. Technical experts in the following fields must be recruited with the foreign assistance.

- Analysis of coastal resources, coastal management policies
- Processing technology in fisheries
- Management and operations of cooperative shipping activities
- Management and operations of fishermen organizations

Technical experts in these fields will be actively recruited and allocated from abroad in this plan.

## (2) Impact of the study

Due to the implementation of this master plan which aims to modernize fisheries, the impact of educational and training programs for fishermen, fishermen organizations, and women in fishing communities will rise; and independent, modernized fisheries operations and a more active fishing community lifestyle will be fostered.

Presently, approximately 10,000 people are engaged in fisheries in the north coast, of which about 5,300 are engaged in fisheries retail activities. This plan will enable about 30 percent of the fishermen or 1,700 individuals to conduct self-supporting fisheries

operations during its 15 year implementation; and its disseminating impact will be large. The present income level of fishermen will rise 48 percent in the Western Region and 83 percent in the Eastern Region.

The fisheries resources of the north coast are fragile and chaotic development of these resources will lead to overexploitation. Therefore, the dynamics of these resources will be scientifically studied and fisheries production guidelines will be established based on this scientific analysis. In addition, due to a change in the awareness of fishermen, the foundations of a system based on sustainable use of resources will evolve with the cooperation of the government and the fishermen.

This plan will address the issue of poverty in Honduras and will alleviate the distrust of the central government by the ethnic groups in the region. The Garifuna who inhabit the coastal area of the Western Region engage in fisheries activities; and roughly 70 percent of the Misquito Indian population in the Eastern Region inhabit the coastal area, maintaining a livelihood based on a combination of farming and fisheries. Very limited public assistance has been extended to these ethnic groups and their living standards have remained low, which has led to a distrust of the central government. If this plan is implemented, it is expected that the majority of the beneficiaries will be these ethnic groups. It will contribute to raising their living standards and help alleviate their distrust.

This plan will completely concur with the policies of the Honduran government which is currently undergoing economic structural adjustments, since it aims to improve the living standards of the poverty class in a short period of time with minimal investment, promote export, and control the contribution of the public sector.

As a result, it has been concluded that the implementation of this project is extremely significant from a national standpoint.

## **6.2 Recommendations**

### **(1) System of implementation**

Seven sector plans according to region and time stage have been intricately adopted in this plan. Therefore, the overall progress must be accurately grasped and adjusted. Arrangements to procure the cooperation of foreign technical experts and financial

assistance from donor countries during the initial stages of the plan must also be pursued in a timely manner. Therefore, a "coordination committee for the promotion of small-scale fisheries of the north coast" (tentatively named) should be formed immediately within DIGEPESCA, to begin the preparations for plan implementation.

When the plan of community women support is implemented, it is desirable that the coordination and instruction to the implementation program are to be made from view point of women's situation. Accordingly it is necessary to take into consideration to make careful member selection for the said coordination committee.

**(2) Procure human and financial resources**

One of the major themes of this plan is to scientifically grasp the coastal resources and to formulate a strategy on resources management. This will require a study of four to five years in duration. However, the number of technical staff members specializing in fisheries biology is extremely limited in DIGEPESCA. Therefore, it is important that DIGEPESCA procure counterparts that will work with foreign experts and to set up a budget for local funding.

**(3) Request for assistance**

As explained in section (1), it is necessary to request assistance for the initial investment from foreign donors, in accordance with the implementation schedule. Since the replies to such requests are often made very late, DIGEPESCA must obtain a consensus from within government circles and actively pursue preparations for the request.

**(4) Improvements in fish marketing**

The fisheries consumption volume in Honduras is still at low levels and this is largely due to the food habits of the country. However current fish sales method in existing consumption markets lessen the incentives to purchase fishes and there is room for improvement. In addition, there is no distribution system of fisheries products for the poverty areas in the mountainous regions. In order to rectify this situation, DIGEPESCA needs to implement a survey, adopt a strategy for improvement, and strive to raise the fisheries consumption level of the population.

**(5) Credit system for artisanal fisheries**

Presently, there is no credit system available in the country for artisanal fisheries. By the end of the 2nd short-term period, a large number of fishermen able to manage

modernized fisheries will evolve. In order for a credit system to successfully develop, DIGEPESCA must actively negotiate with relevant ministries and also study the feasibility of different types of credit, the required human resources, guidelines, etc.

**(6) Changing the awareness of artisanal fishermen**

In order to enable fishermen to achieve self-supporting fisheries activities, the training program only to raise the level of fish production by lending modernized means of production is insufficient. In order for fishermen to qualify for public credit, they must have management capability to balance viability of fishing activities with repaying their loans used for procurement of fishing boat and gear. The fishermen who participated in the training programs under the Trujillo MODERPESCA project have yet to reach such levels. It is important that DIGEPESCA thoroughly understand this situation and pursue measures to change the awareness of fishermen, accordingly.

**(7) To secure initial operation capital by the government budget**

It is necessary to provide the initial operation capital by the government budget to implement the projects of "Plan of Small Scale Fisheries Modernization" and "Plan of Fish Marketing Improvement" that will generate direct benefit, it is necessary to make sure to provide following initial operation capitals

- The initial one month operation expense for fishing training by using small-scale modernized boat; about US\$180/boat/month (for fuel, ice, food, etc.).
- The first time operation expense of the transportation vessel for fish shipment; about US\$3,400/vessel/opration (for fish purchase, fuel, ice, etc.).

By providing the public capital for these initial operation expenses, relevant projects could be operated continuously, and be secured their financial independence (occurrence of "lend and borrow" relation with middlemen will be prevented).

**Table 2.2.1 Income Statement per Fishing Boat Implemented by Fisheries Modernization in Western Region**

**1. Fishing Condition by 25HP Boat**

Number of Fishermen per Boat		3		
Number of Trips		Fish Catch		
(weeks/year)	(trips/week)	(trips/year)	(lbs/trip)	(lbs/year)
45	3	135	89	12,015

**2. Income by Fish Sales**

	Hand Line	Gill Net	Total
Share of Fish Catch	70%	30%	100%
Number of Trips	95	40	135
Fish Catch by Fishing Gear	8,410	3,605	12,015
Unit Price (US\$/lb)	0.821	0.583	
Amount of Sales (US\$/year)	6,905	2,102	9,007

**3. Operation Cost**

	Unit Cost	Quantity	Amount
Fuel	2.000 US\$/gallons	3.85 gallons/trip	1,039.5
Lubricant	10.000 US\$/gallons	0.16 gallons/trip	216.0
Ice	0.024 US\$/lbs	89.00 lbs/trip	288.4
Food	1.000 US\$/person/trip		405.0
Partial Charge for New Boat (5% of Sales Amount)			450.4
Total			2,399.3

**4. Investment Cost & Depreciation of Fishing Facilities & Equipment**

Description	Quantity (pcs)	Unit Price (US\$/pc)	Amount (US\$)	Life Span (years)	Deprec. (US\$/year)	Mainte. (US\$/year)
1. Boats	1	3,000	3,000	15	200	60
2. Motores	1	2,500	2,500	5	500	125
3. Gears						
3.1 Gill Nets	2	400	800	3	267	16
3.2 Hand Lines	9	40	360	3	120	7
4. Hand Reel	3	150	450	7	64	
5. Ice Boxes	2	300	600	7	86	
Total			7,710		1,237	208

**5. Net Profit from the Operation of Fishing Boat Implemented by Fisheries Modernization**

	Unit: \$/year	
	per group	per fisherman
a. Revenue	6,339	2,113
b. Expense	3,027	1,008
1. Operating Cost	1,894	631
2. Maintenance Cost	157	52
3. Interest	-	-
4. Depreciation	976	325
c. Net Income	3,312	1,105
d. Income before Depre.	4,288	1,430



**Table 2.2.2 Income Statement per Fishing Boat Implemented by Fisheries Modernization in Eastern Region**

**1. Fishing Condition by 25HP Boat**

Number of Fishermen per Boat		3	
Number of Trips		Fish Catch	
(weeks/year)	(trips/week)	(trips/year)	(lbs/trip)
45	4	180	120
		(lbs/year)	
		21,600	

**2. Income by Fish Sales**

	For Western Region	For Local Consumptio	Total
Share of Fish Catch	50%	50%	100%
Number of Trips	90	90	180
Fish Catch by Fishing Gear	10,800	10,800	21,600
Unit Price (US\$/lb)	0.349	0.238	-
Amount of Sales (US\$/year)	3,769	2,570	6,339

**3. Operation Cost**

	Unit Cost	Quantity	Amount
Fuel	2.400 US\$/gallons	1.92 gallons/trip	829.4
Lubricant	12.000 US\$/gallons	0.08 gallons/trip	172.8
Ice	0.024 US\$/lbs	60.00 lbs/trip	129.6
Food	1.000 US\$/person/trip		540.0
Partial Charge for New Boat (3.5% of Sales Amount)			221.9
<b>Total</b>			<b>1,893.7</b>

**4. Investment Cost & Depreciation of Fishing Facilities & Equipment**

Description	Quantity (pcs)	Unit Price (US\$/pc)	Amount (US\$)	Life Span (years)	Deprec. (US\$/year)	Mainte. (US\$/year)
1. Boats	1	3,000	3,000	15	200	60
2. Motores	1	1,450	1,450	5	290	73
3. Gears						
3.1 Gill Nets	3	400	1,200	3	400	24
4. Ice Boxes	2	300	600	7	86	
<b>Total</b>			<b>6,250</b>		<b>976</b>	<b>157</b>

**5. Net Profit from the Operation of Fishing Boat Implemented by Fisheries Modernization**

	Unit: \$/year	
	per group	per fisherman
a. Revenue	6,339	2,113
b. Expense	3,027	1,008
1. Operating Cost	1,894	631
2. Maintenance Cost	157	52
3. Interest	-	-
4. Depreciation	976	325
c. Net Income	3,312	1,105
d. Income before Depre.	4,288	1,430

**Table 2.2.3 Planned Increase of Fresh Fish Production by Region along Northern Coast**

Unit : tons/year

Year	Deficit of Fresh Fish Supply in Without Project Case <sup>&lt;1</sup>			Increase of Frsh Fish Export in With Project Case <sup>&lt;1</sup>			Planned Transp. Volume of Fresh Fish <sup>&lt;1</sup> (E --> W)	Planned Increase of Fresh Fish Production <sup>&lt;2</sup>		
	West	East	Total	West	East	Total		West	East	Total
	-1 1996	0	0	0	0	0		0	0	0
0 1997	0	0	0	0	0	0	0	0	0	0
1 1998	97	0	97	102	0	102	0	199	0	199
2 1999	148	0	148	155	0	155	0	303	0	303
3 2000	202	72	274	208	104	312	104	306	280	586
4 2001	253	181	434	210	106	316	141	322	428	750
5 2002	305	220	525	212	108	320	177	340	505	845
6 2003	361	261	622	214	110	324	214	361	585	946
7 2004	419	303	722	218	112	330	218	419	633	1,052
8 2005	478	347	825	222	114	336	222	478	683	1,161
9 2006	541	393	934	226	116	342	226	541	735	1,276
10 2007	606	441	1,047	230	118	348	230	606	789	1,395
<b>Planned Volume <sup>&lt;3</sup></b>	<b>640</b>	<b>466</b>	<b>1,106</b>	<b>232</b>	<b>119</b>	<b>351</b>	<b>232</b>	<b>640</b>	<b>817</b>	<b>1,457</b>
11 2008	674	491	1,165	234	120	354	234	674	845	1,519
12 2009	743	543	1,286	238	122	360	238	743	903	1,646
13 2010	816	597	1,413	242	124	366	242	816	963	1,779
14 2011	891	653	1,544	246	126	372	246	891	1,025	1,916
15 2012	969	712	1,681	250	128	378	250	969	1,090	2,059

Remarks

<1 : Details are shown in II.8 "Estimation of Demand and Supply of Fishery Products along Northern Coast"

<2 : Increase of Fresh Fish Production (Western Region) = Deficit of Supply + Planned Increase of Export

Increase of Fresh Fish Production (Eastern Region) = Deficit of Supply + Planned Increase of Export

+ Planned Transp. Volume (East --> We

<3 : Planned Volume is a figure at the end of 2nd Term.

**Table 2.2.4 Arrangement Plan of Training Facilities for Fisheries Modernization**

Location	Main Center	Area Center	Area Branch	Sub-Station
<b>I Western Region</b>				
1) Trujillo Area				
- Trujillo	* <1	-	-	-
- Santa Rosa de Aguan	-	-	* <1	-
- Limon	-	-	* <1	-
2) La Ceiba Area				
- La Ceiba	-	*	-	-
- Nueva Armenia	-	-	*	-
- El Provenir	-	-	-	*
3) Tela Area				
- Tela	-	*	-	-
- Tornabe / Miami	-	-	* (Tornabe)	* (Miami)
- El Triunfo	-	-	-	*
4) Omoa Area				
- Omoa / Masca	-	* (Omoa)	-	* (Masca)
- Baja Mar	-	-	*	-
<b>II Eastern Region</b>				
1) Brus Laguna Area				
- Brus Laguna (including Barra Brus Laguna)	-	*	-	-
- Patuca	-	-	-	*
- Batalla / Pelacios	-	-	*	-
2) Puerto Lempira Area				
- Puerto Lempira (including Barra de Caratasca)	-	*	-	-
- Cruta	-	-	*	-
- Barrila	-	-	-	*
<b>Total Number of Facilities</b>	<b>1</b>	<b>5</b>	<b>7</b>	<b>6</b>

Remark <1 : Scheduled to be provided by other related project by August 1998.

**Table 2.2.5 Number of Boats / Gears for Modernization Training Area** <sup> <sup>

Description	Area	Western Region			Eastern Region		Total	
		Omoa	Tela La Ceiba	Trujillo	Brus Laguna	Puerto Lempira		
Number of Fishermen in 1996 <sup> <sup>		360	722	487	671	1,055	2,059	5,354
Number of Boats in 1998		-	-	34	41	-	-	75
Number of Boats during 1st Term		20	40	-	-	12	-	72
Number of Boats during 2nd Term <sup> <sup>		16	35	17	21	17	61	167
Totals by end of 2nd Term (2007) <sup> <sup>		36	75	51	62	29	61	314

Remarks

<sup> <sup> : Arranged based on number of fishermen. Priority was put on Western Region.

The ratio of arrangement is more or less the same among Areas /sZones inside the same Region.

<sup> <sup> : Scheduled to be provided by other related project.

<sup> <sup> : Including number of boats recruited to the project by utilizing accumulated fund by recipient fishermen trained by the project.

**Table 2.3.1 Planned Increase Volume of Fish Production by Area by end of the 2nd Short Term (2007)**

	Eastern Region		Total
	Brus Laguna	Puerto Lempira	
Planned increased volume in Eastern Region (ton/year) <sup>&lt;1</sup>	-	-	817
Planned number of boats <sup>&lt;2</sup>	29	61	314
Arrangement rate of boats (%)	-32.2	-67.8	-100
Planned increase by Area based on the arrangement rate of boats (ton/year)	263	554	817
Remarks			
<1 : See Table 2.2.3			
<2 : See Table 2.2.5			

**Table 2.3.2 Number of Shipment of Fish Transportation Service at Break-Even Point**  
Unit : times / year

	Brus Laguna - TFCB	Puerto Lempira - TFCB
Number of shipment at break-even point	43	60

Remark : Number of shipment at break-even point was obtained from the following formula ;

$$X = FC / (S - UF - UI)$$

Where

X : Number of shipment at break-even point

FC : Fixed cost of transportation operation

= (Depreciation of ship) + (Maintenance cost of ship) + (Labor cost of crews)

S : Fish sales amount per shipment

= (Difference of unit price between TFCB and Production Site) \* (Fish volume per shipment)

UF : Fuel cost per shipment

= (Unit price of fuel) \* (Fuel consumption per hour) \* (Navigation time per shipment)

UI : Ice cost per shipment

= (Unit price of ice) \* (Fish volume per shipment) \* (Ice/Fish ratio (0.5 or 1.0))

Details of each items are as follows;

	Brus Laguna - TFCB	Puerto Lempira - TFCB
<b>1. Fixed cost of transportation operation</b>	<b>31,200</b>	<b>31,200</b>
Depreciation <sup>&lt;1</sup>	11,000	11,000
Maintenance cost (5% of vessel price) <sup>&lt;1</sup>	11,000	11,000
Labor cost (US\$/year)	9,200	9,200
Captain	3,680	3,680
Chief engineer	3,680	3,680
Crew	1,840	1,840
<b>2. Fish sales amount per shipment</b>	<b>1,030</b>	<b>1,030</b>
Loading volume of fish (lbs/shipment)	4,400	4,400
Sales price at TFCB (US\$/lb)	0.583	0.583
Purchased price at site (US\$/lb)	0.349	0.349
<b>3. Fuel cost per shipment</b>	<b>253.4</b>	<b>405.4</b>
Fuel consumption (gallon/hour)	5.27	5.27
Unit price of fuel (US\$/gallon)	1.923	1.923
Navigation time per shipment (hour)	25	40
<b>4. Ice cost per shipment</b>	<b>52.8</b>	<b>105.6</b>
Fish volume (lbs/shipment)	4,400	4,400
Ice/fish ratio	0.5	1
Unit price of ice (US\$/lb)	0.024	0.024

Remark <1 : Vessel price = US\$220,000 and physical life of vessel = 20 years

**Table 2.5.1 (1) Plan to Assist Women in Fishing Communities**

*A. Plan to Foster and Disseminate Women Groups in Fishing Villages*

<b>1. Foster Core Women in Fishing Villages and Improve the Base Area</b>	
<b>(Objective)</b>	<b>(Targeted Regions)</b>
1) Improve the base area in order to foster core with the potential to fulfill a leadership role among the women in the fishing village.	- Western region: Trujillo, Ceiba, Tela, and Omoa
2) Implement various educational and vocational measures in the base area.	- Eastern region: Palacios, Brus Laguna, Cruta, Puerto Lempira
<b>(Policy and Approach)</b>	<b>(Scope of Improvements)</b>
1) In order to promote activities to foster core women, incentives will be given to create revenue generating fishery activities and to learn the technology needed to improve living standards.	- One improvement will be implemented in the base area of each district listed above (total of 8 base areas).
2) Improvements to base areas will be carried out conjointly with the master plan to construct a Fishery Training Center in each area.	- One base area will accommodate the participation of about 20 women.
3) Improvements to the base area in the other towns will be implemented in stages, in conjunction with the improvements to the Fishery Training Center in each area.	- Western region: One woman from the core group will be recruited annually for training from the 30 fishing villages found in the four areas listed
4) Improvements to each base area will be carried out according to the following priority: Trujillo, Ceiba, Tela, Omoa in the western region and Brus Laguna, Palacios, Cruta, Puerto Lempira in the Trujillo will be the priority model area since the Fishery Training Center will be completed at an early period. Details on the schedule of improvements planned for each base area is given in Table 2.7.2.	- Eastern region: One woman from the core group will be recruited annually for training from the 30 fishing villages found in the four areas listed
	<b>(Implementation)</b>
	- Organize the personnel-in-charge and the supervisors for each of the training programs in fishery related technology and improvement in living standards
	- With the exception of the supervisors in charge of the program to improve living standards, the remaining supervisors who have been allocated under the "Project to Modernize Small-scale Fisheries" will be employed.
<b>2. Foster and Disseminate Women Groups in Fishing Villages</b>	
<b>(Objective)</b>	<b>(Target Area)</b>
Promote women groups in all of the fishing villages in the project area targeting measures to women, promote participation in revenue generating fishery activities such as supplementary fisheries, processing, sales, etc., and educate, train, and expand activities in	- Western region: 80 fishing villages dispersed in the Trujillo, Ceiba, Tela, Omoa areas
	- Eastern region: 81 fishing villages dispersed in Palacios, Brus Laguna, Cruta, Puerto Lempira areas
<b>(Policy and Approach)</b>	<b>(Scope)</b>
1) The objective of measures to organize women groups in fishing communities is not only to implement various training and educational programs but to organize a system of operations which will enable these women groups future to small-scale financing, etc. which are needed to implement their fishery activities and to improve their living standards.	- One group in one fishing village (of about 10 members) will be set up in the fishing villages in both the western and eastern regions.
2) A training supervisor will circulate among the fishing villages where women groups already exist and carry out training and guidance on generating fishery activities and activities to improve living standards.	<b>(Implementation)</b>
3) Improvements to base areas will be implemented on a priority basis, in order to foster core women in fishing communities. Priority will be given to establishing women groups in the fishing villages the Trujillo area. Activities to establish women groups in other areas will be carried out as improvements to each base area are completed.	- Core women who have completed their training will help foster and disseminate other women groups in the base area with the cooperation of
	- Activities to educate and train women groups in fishing villages will be carried out by supervisors circulating among fishing villages in the base
	- The motor vehicles which will be provided separately under the "Project to Modernize Small-scale Fisheries" for each center will be used conjointly by the supervisors circulating among the villages.

**Table 2.5.1 (2) Plan to Assist Women in Fishing Communities**

*B. Plan to Assist Revenue Generating Fishery Related Activities*

Training Program	Objective	Content of Training	Staff Allocation (For Each Base Area)
1. Supplementary Guidance on Fishery Related Activities	* Create revenue generating fishery activities through education/training activities that will assist and supplement fishery production activities	* Create/repair fishing gear * Repair external fishing boat gear	* Allocate one supervisor for each area of training * Allocate circulating supervisors for each base area
2. Instruction on Fish Processing and Quality Control	* Teach simple fish processing techniques and quality control and preservation methods; and thereby generate income from the sales of processed fish products	* Salted fish processing technique * Develop processing technology using fish	* Allocate one expert in fish processing
3. Instruction on Fish Sales	* Generate revenue from small-scale sales of fishery products in the	* Provide instruction on joint sales * Improve transport system	* Allocate one supervisor for fishery product sales * Allocate circulating supervisors for each base area
4. Program to be Implemented	* Verify the feasibility of market distribution, balance of costs, etc.  * Following verification of processed fishery products with marketability, sales activities by core women groups will be carried out. The results of these activities will be used	* Carry out processing and sales of fishery products  * Select a market that will serve as a retail base.	* Implement technical cooperation through the programs that will be implemented

*C. Assistance Plan to Improve and Disseminate Living Standards*

Assistance Program	Objective	Content of Training	Staff Allocation (For Each Base Area)
1. Informal Basic Education	* Promote the participation of women in society and in fishery activities through instruction of the basic skills of reading, writing, and arithmetic.	* Implement adult education in reading, writing, and arithmetic. * Create accounting books.	* Allocate supervisors in charge of education. * One supervisor per one area
2. Provide instruction in simple vocational training.	* Secure supplementary income through processing, manufacture, and sales using raw materials and resources supplied locally.  * Improve living standards through simple vocational training.	* Simple processed foods (bread, etc.)  * Create handicrafts  * Sewing instruction (sewing machine instruction)	* Allocate one supervisor per field of study.  * Allocate circulating supervisors for each base area.
3. Provide instruction on improving hygiene and nutrition	* Improve living standards by disseminating information on improved nutrition and public hygiene	* Improve cooking methods and food preservation.  * Health management  * Guidance on family planning	* Allocate one supervisor on disseminating improved life standards.  * Allocate circulating supervisors for each base area.

**Table. 2.5.2 Implementation Schedule of Community Women Support plan**

Improvements programs		1st Short-Term	2nd Short-Term	3rd Short-Term	
Targets	- Implementate the experimentation Programe				
	- Foster core women in Fishing villages and improve the base area				
	- Foster and disseminate women groups in fishing village				
	- Implementate the training programs				
<b>West Region</b>					
TRUJILLO	1. Implementate the experimentation Programe				
	2. Foster core women in Fishing villages and improve the base area				
	3. Foster and disseminate women groups in fishing village				
	4. Supplementary technical guidance of fishery related activity				
	5. Training of fish processing and sales				
	6. Training and education of living improvements				
LA CEIBA	1. Foster core women in Fishing villages and improve the base area				
	2. Foster and disseminate women groups in fishing village				
	3. Supplementary technical guidance of fishery related activity				
	4. Training of fish processing and sales				
	5. Training and education of living improvements				
TERA & OMOA	1. Foster core women in Fishing villages and improve the base area				
	2. Foster and disseminate women groups in fishing village				
	3. Supplementary technical guidance of fishery related activity				
	4. Training of fish processing and sales				
	5. Training and education of living improvements				
<b>East Region</b>					
BRUS LAGUNA	1. Foster core women in Fishing villages and improve the base area				
	2. Foster and disseminate women groups in fishing village				
	3. Supplementary technical guidance of fishery related activity				
	4. Training of fish processing and sales				
	5. Training and education of living improvements				
PALACIOS CRUTA & PUERTO LEMPIRA	1. Foster core women in Fishing villages and improve the base area				
	2. Foster and disseminate women groups in fishing village				
	3. Supplementary technical guidance of fishery related activity				
	4. Training of fish processing and sales				
	5. Training and education of living improvements				
Remarks: - - - - -		Preparation,	Implementation.		

**Table 2.6.1 Examples of Profit Occurrence by Join Fish Sales by Fishermen Association**

**(1) Monthly Crude Profit**

Unit: US\$ (Lps.)

Number of Fishermen groups (%)	Commission Rate for Fish sales through the Fishermen Association						
	10%	8%	7%	6%	5%	4%	3%
68 Groups (100%)	3,756.07 (48,829)	2,736.07 (35,569)	2,226.07 (28,939)	1,716.07 (22,309)	1,206.07 (15,679)	696.07 (9,049)	186.07 (2,419)
48 Groups (70%)	2,400.21 (31,203)	1,680.21 (21,843)	1,320.21 (17,163)	960.21 (12,483)	600.21 (7,803)	240.21 (3,123)	-119.79 (-1,557)
34 Groups (50%)	1451.11 (18,864)	941.11 (12,234)	686.11 (8,919)	431.11 (5,604)	176.11 (2,289)	-78.89 (-1,026)	-333.89 (-4,341)
22 Groups (30%)	637.58 (8,289)	307.58 (3,999)	142.58 (1,854)	-22.42 (-291)	-187.42 (-2,436)	-352.42 (-4,581)	-517.42 (-6,726)

Remarks:

- Surplus less staff expenses = US\$ 853.85 (Lps. 11,100) and ice expense for the product maintenance. (refer prior table)
- Ice expense = 30% of the fish volume (300 lbs.) per each 1,001 lbs. = 300 lbs. x US\$ 0.024/lb = US\$7.20
- Fishing volume obtained per fishermen a group/1 month = US\$750 (Lps.9,750)

	Fish volume (Lbs.)	Ice (Lbs.)	Price of ice (US\$)	Total sale price (US\$)
68 Groups	68,068	20,420	490.08	1,343.93
48 Groups	48,048	14,414	345.94	1,199.79
34 Groups	34,034	10,210	245.04	1,098.89
22 Groups	22,022	6,607	158.57	1,012.42

**(2) Profit Annual Trend (1-5 years)**

Unit: US\$ (Lps.)

Number of groups	Fiscal year	Commission Rate for Fish sales through the Fishermen Association						
		10%	8%	7%	6%	5%	4%	3%
68 groups	1 year	45,072.84	32,832.84	26,712.84	20,592.84	14,472.84	8,352.84	2,232.84
	1 year	585,947	426,827	347,267	267,707	188,147	108,587	29,027
	3 year	135,218.52	98,498.52	80,138.52	61,778.52	43,418.52	25,058.52	6,698.52
	5 year	225,364.20	164,164.20	133,564.20	102,964.20	72,364.20	41,764.20	11,164.20
48 Groups	1 year	28,802.52	20,162.52	15,842.52	11,522.52	7,202.52	2,882.52	
	1 year	374,433	262,113	205,953	149,793	93,633	37,473	
	3 year	86,407.56	60,487.56	47,527.56	34,567.56	21,607.56	8,647.56	
	5 year	144,012.60	100,812.60	79,212.60	57,612.60	36,012.60	14,412.60	
34 Groups	1 year	17,413.32	11,293.32	8,233.32	5,173.32	2,113.32		
	1 year	226,373	146,813	107,033	67,253	27,473		
	3 year	52,239.96	33,879.96	24,699.96	15,519.96	6,339.96		
	5 year	87,066.60	56,466.60	41,166.60	25,866.60	10,566.60		
22 Groups	1 year	7,650.96	3,690.96	1,710.96				
	1 year	99,462	47,982	22,242				
	3 year	22,952.88	11,072.88	5,132.88				
	5 year	38,254.80	18,454.80	8,554.80				

Remarks: The interest generated by saving is not included.



**Table 2.6.2 Divided by the Surplus of Fresh Fish Sales****Example**

- The financing reserves from the management fund at short term = 30%, fund for social welfare =20%, fund for the organization management M =50%.
- The commission for fresh fish sales for the fishermen organization is 5% and is supposed that 68 groups will be selling fresh fish.

Unit: US\$ (Lps.)

Period	Surplus fund for financing 5%	Reserve fund for financing 30%	Welfare fund 20%	Fund for the organization management 50%
1	14,472.84 (188,147)	4,341.85 (56,444)	2,894.57 (37,629)	7,236.42 (94,073)
2	28,945.68 (376,294)	8,683.70 (112,888)	5,789.14 (75,259)	14,472.84 (188,147)
3	43,418.52 (564,441)	13,025.55 (169,332)	8,683.71 (112,888)	21,709.26 (282,220)
4	57,891.36 (752,588)	169,332.15 (2,201,318)	11,578.28 (150,518)	28,945.68 (376,294)
5	72,364.20 (940,735)	21,709.25 (282,220)	14,472.85 (188,147)	36,182.10 (470,367)

**Remarks**

1. Divided share will be object of resolve in the general assembly in the Administration Council of the Fishermen Association
2. Interest generated from saving not considered.

**Table 2.6.3 Reserve Fund for Welfare Works**

**(1) Case of earnings utilization of join sales**

- It is assumed that from 3 to 15% of the fresh fish surplus will be taken as reserve for welfare works.
- It is assumed that the commission for fresh fish sales will be of 5% and that 68 groups will sell fresh fish to the Fishermen Association.

Unit: US\$ 1.00 (Lps. 1.00)

Period	Fresh fish sales surplus		Resave share for the welfare works fund			
	5%	20%	15%	10%	5%	3%
1	14,472.84 (188,147)	2,894.57 (37,629)	2,170.93 (28,222)	1,447.28 (18,815)	723.64 (9,407)	434.19 (5,644)
2	28,945.68 (376,294)	5,789.14 (75,259)	4,341.86 (56,444)	2,894.56 (37,629)	1,447.28 (18,815)	868.38 (11,289)
3	43,418.52 (564,441)	8,683.71 (112,888)	6,512.79 (84,666)	4,341.84 (56,444)	2,170.92 (28,222)	1302.57 (16,933)
4	57,891.36 (752,588)	11,578.28 (150,518)	8,683.72 (112,888)	5,789.12 (75,259)	2,894.56 (37,629)	1736.76 (22,578)
5	72,364.20 (940,735)	14,472.85 (188,147)	10,854.65 (141,110)	7,236.40 (94,073)	3,618.20 (47,037)	2170.95 (28,222)

Remarks: Interest generated by saving is not considered.

**(2) Case of deposit for fishermen welfare by member fee**

- It is assumed that every month will reserve a share from Lps. 1.00 to 3.00, for a period of 5 years.
- It is expected that the total of members in the Trujillo Fishermen Association will be of 415, including the fishermen participation of Santa Rosa de Aguan and Limon.

Unit: US\$ 1.00 (Lps. 1.00)

Share reserved amount (number of members = 415 members)			
Period	1 Lps	2 Lps	3 Lps
First year	383.08 (4,980)	766.15 (9,960)	1,149.23 (14,940)
Second year	766.15 (9,960)	1,532.31 (19,920)	2,298.46 (29,880)
Third year	1,149.23 (14,940)	2,298.46 (29,880)	3,447.69 (44,820)
Forth year	1,532.31 (19,920)	3,064.62 (39,840)	4,596.92 (59,760)
Fifth year	1,915.38 (24,900)	3,064.62 (39,840)	5,746.15 (74,700)

Remarks: Interest generated by saving is not considered.

**Table 2.6.4 Stage Plan and Implementation Schedule for Improvement of the Fishermen Organization**

Plan Stage		1 <sup>st</sup> Short Term		2 <sup>nd</sup> Short Term		3 <sup>rd</sup> Short Term	
year		1/1998-12/2002		1/2003-12/2007		1/2008-12/2012	
• Target of fishermen organization		<ul style="list-style-type: none"> <li>To establish the basis</li> <li>To provide the system</li> <li>To foster core fishermen</li> </ul>		<ul style="list-style-type: none"> <li>To develop economic function</li> <li>To establish financial basis</li> <li>To expand core groups.</li> </ul>		<ul style="list-style-type: none"> <li>To establish welfare works</li> <li>To expand economic works</li> <li>To expand modernized fishing</li> </ul>	
• Target of organization management		<ul style="list-style-type: none"> <li>To foster management capacity</li> <li>To foster mutual assistance</li> <li>To foster planing capacity.</li> </ul>		<ul style="list-style-type: none"> <li>To foster the administration technology.</li> <li>To foster mutual assistance sprit.</li> <li>To foster the administrative and planing capacity</li> </ul>		<ul style="list-style-type: none"> <li>To establish the technology for the organic administration</li> <li>To foster mutual assistance sprit.</li> <li>To foster the administrative and planing capacity</li> </ul>	
• Plan contents		First half	Letter half	First half	Letter half	First half	Letter half
Training program by expert							
Eastern	<ul style="list-style-type: none"> <li>Fishing training</li> <li>-Cooperative fish shipment</li> <li>Cooperative purchase</li> <li>Repair works</li> <li>Welfare works</li> <li>Fishing credit</li> <li>Agency work of DIGEPESCA training centers</li> </ul>						
Western	<ul style="list-style-type: none"> <li>Fishing training</li> <li>-Cooperative fish shipment</li> <li>Cooperative purchase</li> <li>Repair works</li> <li>Welfare works</li> <li>Fishing credit</li> <li>Agency work of DIGEPESCA training centers</li> </ul>						
T r u j i l l o	<ul style="list-style-type: none"> <li>Fishing training</li> <li>-Cooperative fish shipment</li> <li>Cooperative purchase</li> <li>Repair works</li> <li>Welfare works</li> <li>Fishing credit</li> <li>Agency work of DIGEPESCA training centers</li> </ul>						
L a C e i b a	<ul style="list-style-type: none"> <li>Fishing training</li> <li>-Cooperative fish shipment</li> <li>Cooperative purchase</li> <li>Repair works</li> <li>Welfare works</li> <li>Fishing credit</li> <li>Agency work of DIGEPESCA training centers</li> </ul>						
I e l a y c e	<ul style="list-style-type: none"> <li>Fishing training</li> <li>-Cooperative fish shipment</li> <li>Cooperative purchase</li> <li>Repair works</li> <li>Welfare works</li> <li>Fishing credit</li> <li>Agency work of DIGEPESCA training centers</li> </ul>						

Remarks:

\_\_\_\_\_ Implementation period  
 - - - - - Preparation period

**Table 2.6.5 Expected Income of Fishermen Association from Commission**

Examples: Income for the fresh fish sales commission through the fishermen association(sales amount)  
 Income for the fresh fish sales commission through the fishermen association(1 month)

	Unit: US\$ (Lps.)						
	10%	8%	7%	6%	5%	4%	3%
68 Groups	5,100.00	4,080.00	3,570.00	3,060.00	2,550.00	2,040.00	1,530.00
100%	(66,300)	(53,040)	(46,410)	(39,780)	(33,150)	(26,520)	(19,890)
48 Groups	3,600.00	2,880.00	2,520.00	2,160.00	1,800.00	1,440.00	1,080.00
70%	(46,800)	(37,440)	(32,760)	(28,080)	(23,400)	(18,720)	(14,040)
34 Groups	2,550.00	2,040.00	1,785.00	1,530.00	1,275.00	1,020.00	765.00
50%	(33,150)	(26,520)	(23,205)	(19,890)	(16,575)	(13,260)	(9,945)
22 Groups	1,650.00	1,320.00	1,155.00	990.00	825.00	660.00	495.00
30%	(21,450)	(17,160)	(15,015)	(12,870)	(10,725)	(8,580)	(6,435)

Remarks:

1. Supposing that the 100%, 70%, 50%, 30% of the fishermen groups (68 groups in total) that have received training for the artisanal fishing modernization in the Trujillo Zone will sell their fresh fish through the fishermen organization.
2. The number of trips of each fishermen group is 135 times per year (1 month = 12 times)
3. Production per each fishermen group is 89 lbs./trip.
4. The fishing amount in dollars, per each fishermen group is US\$750/month (US\$9,007/yaer).
5. Exchange rate: US\$ 1.00 = Lps. 13.00.

**Table 2.6.6 Expected Income of Fishermen Association from Fish Sales (1 month)**

	Unit: US\$ (Lps.)							
	US\$ 0.15	(2 Lps)	US\$ 0.12	(1.5 Lps)	US\$ 0.08	(1 Lps)	US\$ 0.04	(0.5 Lps)
68 Groups (100%)	10,210.20	(132,733)	8,168.16	(106,186)	5,105.10	(66,366)	2,552.55	(33,183)
48 Groups (100%)	7,207.20	(93,694)	5,765.76	(74,955)	3,603.60	(46,847)	1,801.80	(23,423)
34 Groups (100%)	5,105.10	(66,366)	4,084.08	(53,093)	2,552.55	(33,183)	1,276.28	(16,592)
22 Groups (100%)	3,303.30	(42,943)	2,642.64	(34,354)	1,651.65	(21,471)	825.83	(10,736)

**Remarks:**

1. In the case of buying from 22~68 groups, the commission of US\$ 0.15 (2 Lps)/lb to US\$ 0.04(0.50 Lps)/lb.
2. Calculation example = US\$ 0.5 (Commission per pound) x 1,001 lbs. (monthly fishing production/group) x 68 groups.
3. US\$ 0.15 = approximately 20% of the fresh fish sales price.  
US\$ 0.04 = approximately 5% of the fresh fish sale price.
4. Fishing production per each fishermen group = US\$ 750 monthly (US\$ 9,007 annual).

**Table 2.6.7 Sales Staff of the Fishermen Association in Trujillo Area**

	Number	unit: US\$(Lps.)	
		ASOPESCA	ASMIPARCO
<b>A. Trujillo (Main center)</b>			
1. General manager	1	2,200.00	2,200.00
2. Sales manager	1	2,000.00	2,000.00
3. Chief accountant	1	1,500.00	1,000.00
4. Sales assistant	1	800.00	600.00
5. Guard	1	800.00	800.00
6. House keeper	1	200.00	200.00
<b>B. Santa Rosa de Aguan (Sub-station)</b>			
1. Accounting and sales	1	1,000.00	1,000.00
2. Sales assistant	1	800.00	800.00
<b>C. Limon (Sub-station)</b>			
1. Accounting and sales	1	1,000.00	1,000.00
2. Sales assistant	1	800.00	-
<b>Total expense (one month)</b>		<b>11,100.00</b>	<b>9,600.00</b>
<b>Total expense (one year)</b>		<b>133,200.00</b>	<b>115,200.00</b>

**Remarks:**

1. Positions and salaries are based on current situation (Jan. 1997) of ASMIPARCO
2. Fishermen in Santa Rosa de Aguan and Limon are not members of ASMIPARCO, but, they have expressed their wish to participate, therefore an approximate calculation was made.

**Table 2.6.8 Resave Fund for Short Term Financing**

**Example: Trujillo Fishermen Association**

Unit: US\$ (Lps.)

Period	Resave fund for Short term financing		
	5%	30%	20%
1	14,472.84 (188,147)	4,341.85 (56,444)	2,894.57 (37,629)
2	28,945.68 (376,294)	8,683.70 (112,888)	5,789.14 (75,259)
3	43,418.52 (564,441)	13,025.55 (169,332)	8,683.71 (112,888)
4	57,891.36 (752,588)	169,332.15 (2,201,318)	11,578.28 (150,518)
5	72,364.20 (940,735)	21,709.25 (282,220)	14,472.85 (188,147)

**Remarks:**

1. If by five continuous years 30% of sales commission is reserved from the fresh fish sales 56 loans at short term could be made for Lps. 5,000 each one.
2. Interest generated from saving is not considered and the fishermen of Santa Rosa de Aguan and Limon are not members of ASOPESCA, but they have expressed their wish to participate, therefore they are included in the calculation.

**Table 2.7.1 Estimated Fund Necessary for Fisheries Credit**

Description	Western Region	Eastern Region	Total
A As of 2012 Fish Production With Plan (ton/year)	5,085	3,824	8,909
B As of 2012 Fish Production Without Plan (ton/year)	4,116	2,734	6,850
C As of 2012 Required Production Increase (A-B) (ton/year)	969	1,090	2,059
D No of boats necessary for the required production increase	340	120	460
E No. of boats already provided by end of the year 2007	224	90	314
F No. of boats to be required by end of the year 2012 (C-D)	116	30	146
G Set price of boat / fishing gear (US\$/boat&set)	7,710	6,250	
<b>H Procurement cost of boats (F x G) (US\$)</b>	<b>894,360</b>	<b>187,500</b>	<b>1,081,860</b>

Remarks

- <1: See II. Table 8.1
- <2: See II. Table 8.2
- <3: See III.2.2 (2)
- <4: See II. Table 2.2.1 and 2.2.2



**Table 2.8.1 Relation of Sector Plans with Development Area Division**

Sector Plan	Western Region				Eastern Region		
	Omoa	Tela	La Ceiba	Trujillo	Brus Laguna	Puerto Lempira	Central DIGEPESCA
	Area	Area	Area	Area	Area	Area	
<b>(1) Cap. Building / Resources Management</b>							
- Wet Lab.	0	-	-	0	0	-	-
- Equipment	0	-	-	0	0	-	0
- Expert (Oversea)	0	-	-	0	0	-	0
<b>(2) Modernization of Artisanal Fisheries</b>							
- Training center	0	0	(0)	(0)	0	0	-
- Equipment for training, etc.	0	0	(0)	(0)	0	0	-
- Expert (Oversea)	-	-	-	-	-	-	-
- Trainer (Domestic)	0	0	0	0	0	0	-
<b>(3) Improvement of Fish Marketing System</b>							
- TFCB	-	-	-	0	-	-	-
- Transportation vessels, etc.	-	-	-	0	0	0	-
- Fish sales unit	0	0	0	0	-	-	-
- Expert (Oversea)	-	-	-	0	0	-	-
- Trainer (Domestic)	-	-	-	0	-	-	-
<b>(4) Community Infrastructure Improvement</b>							
- Storage, etc.	[0]	[0]	[0]	[0]	[0]	[0]	-
- Tools, etc.	0	0	0	0	0	0	-
- Expert (Domestic)	+	+	+	+	+	+	-
<b>(5) Community Women Support</b>							
- Office, etc.	[0]	[0]	[0]	[0]	[0]	[0]	-
- Equipment for processing, etc.	0	0	0	0	0	0	-
- Expert (Oversea)	-	-	-	0	-	-	-
- Expert (Domestic)	+	+	+	+	+	+	-
- Trainer (Domestic)	0	0	0	0	0	0	-
<b>(6) Fishermen Organization Support</b>							
- Office, etc.	[0]	[0]	[0]	[0]	[0]	[0]	-
- Office equipment, etc.	0	0	0	0	0	0	-
- Expert (Oversea)	-	-	-	0	-	-	-
- Trainer (Domestic)	[0]	[0]	[0]	[0]	[0]	[0]	-
<b>(7) Fisheries Credit</b>							
- Office equipment	-	0	-	0	0	0	-
- Credit fund	-	-	-	-	-	-	0
- Expert (Oversea)	-	-	-	0	-	-	0
- Expert (Domestic)	-	0	-	0	0	0	-

Remarks) 0 ; planned - ; not planned ( ) ; by related projects [ ] ; commonly use + ; whwn necessary

**Table 2.8.2 Relation of Sector Plans with Stage-wised Plan**

Sector Plan	Plan Period (1998 - 2012)		
	1st Short Term (1988 - )	2nd Short Term (2003 - )	3rd Short Term (2008 - )
<b>I. Western Region</b>			
(1) Cap. Building / Resources Management			
(2) Modernization of Artisanal Fisheries			
(3) Improvement of Fish Marketing System			
- TFCB			
- Fish Sales Units			
(4) Community Infrastructure Improvement			
(5) Community Women Support			
(6) Fishermen Organization Support			
(7) Fisheries Credit			
<b>II. Eastern Region</b>			
(1) Cap. Building / Resources Management			
(2) Modernization of Artisanal Fisheries			
(3) Improvement of Fish Marketing System			
- Fish Transportation Vesels			
(4) Community Infrastructure Improvement			
(5) Community Women Support			
(6) Fishermen Organization Support			
(7) Fisheries Credit			

**Remarks :**

- : Construction Period
- : Operation Period
- : Experimental Period

**Table 2.8.3 Relation among Sector Plans, Area Division and Plan Stage**

Sector Plan	Area / Sub-area	WESTERN REGION														EASTERN REGION									
		ONCOA AREA			TELA AREA				LA CEIBA AREA			TRUJILLO AREA				BRUS LAGUNA AREA			PUERTO LEON AREA						
		AC	B	S	AC	B	SI	S	AC	B	S	MC	FCB	IB	IB	AC	ST	B	S	AC	ST	B	SI		
ONCOA	BAJA MAR	MASCA	TELA	TORNABE	EL TRIUNFO	MIAMI	LA CEIBA	NUOVA ARMENIA	EL PORVENIR	TRUJILLO	PUERTO CASTILLA	SANTA ROSA DE AGUAN	LIMON	BRUS LAGUNA	BARRA DE BRUS LAGUNA	BATALLA	PATUCA	PUERTO LEON	BARRA DE CARANTASCA	CRUTA	BARRITA				
A	Cap. Building / Resources Management	S2									S1				S2										
B	Modernization of Artisanal Fisheries	S2	S2	M2	S2	S2	M2	M2	S0	S2	M2	S0	M1	S0	S0	S2	S2	M1	M2	M1	M1	M1	M1	M2	
C	Improvement of Fish Marketing System (Fish Sale Promote)	S2	S2	M2	S2	S2	M2	M2	S2	S2	M2	S0	M1	S0	S0	S2	S2	M1	M2	M1	M1	M1	M1	M2	
		M1			M1				M1			M1			M1				M1						
D	Community Infrastructure Improvement	M1	M1		M1	M1			M1	M1		M1		M1	M1	M1		M1	M1	M1		M1	M1		
E	Community Women Support	S2			S2				S2			S2			S2		M1		M1		M1				
F	Fishermen Organization Support	S2	S2		S2	S2			S2	S2		S2	M1	S2	S2	S2		M1		M1		M1			
G	Fisheries Credit				M2							M1			M2				M2						

Legend: **S0** 1996-1997    **M1** 2003-2004    **L** 2008-2012

**S1** 1998-1999    **M2** 2005-2007

**S2** 2000-2002

AC : Area Center  
 B : Branch  
 S : Service Station  
 FCB : Fish Collection Base  
 St. : Fish Depot Station

**Table 3.1.1 Summary of Facility, Equipment Component of Sector Plan**

Region/Area/Sub-area	CENTRAL	WESTERN REGION												EASTERN REGION										
		OMOA AREA			TILA AREA			LA CEIBA AREA			TRUJILLO AREA			BRUS LAGUNA AREA			PUERTO LEMPIRA AREA							
		AC	B	S	AC	B	S	AC	B	S	MC	TFC	B	AC	POS	B	S	AC	POS	B	S			
DIGEPESCA & OTHER ORGANIZATION	OMOA	BAJA MAR	MASCA	TELA	TORNABE	EL TRUJUNO	MUAMI	LA CEIBA	NUOVA ARMENIA	EL PORVENIR	TRUJILLO	PUERTO CASTILLA	SANTA ROSA DE LAGUAN	LIMON	BRUS LAGUNA	PARADA DE BRUS LAGUNA	PALACIOS	PATUCA	PUERTO LEMPIRA	BARBA DE CARATASCA	CRUTA	BENK	BARRETA	
<b>I Main Component</b>																								
<b>A Cap. Building / Resources</b>																								
<b>Management</b>		S2									S1				S2									
1. Field Research Lab (Wat Lab)		O									O				O									
2. Research Boat (R-station)		(O)													(O)									
3. Office Equipment/Vehicle																								
<b>B Modernization of Artisanal</b>		S2	S2	M2	S2	S2	M2	M1	S2	S2	M1	S2	S2	S2	S2	S2	M1	M2	M1	M1	M1	M1	M1	M1
B-1: Construction																								
1. Training Meeting Monitoring		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
2. Administration Office		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
3. Workshop		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
4. Ice Making and/or Supply		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
5. Generator		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6. Waste Water Treatment		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
7. Fuel Depo		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
B-2: Equipment For Training																								
1. Training Boat With Motor											2				1					1				
2. Fishing Gear		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
3. Workshop Tools		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
4. Administration & Monitoring		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
B-3: Equipment For Production																								
1. Fish Boat With Motor		(20+11)			(40+25)			(5)			(62)			(12+10+5)					(30+25)					
2. Fishing Gear		(30+11)			(40+25)			(51)			(62)			(12+10+5)					(30+25)					
3. Handling Box & Equipment		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
<b>C Improvement of Fish Marketing System</b>		S2	S2	M2	S2	S2	M2	M2	S2	S2	M2	S2	M1	S2	S2	S2	M1	M2	M1	M1	M1	M2	M2	
C-1: Construction																								
1. Loading/Unloading Facilities																								
2. Storage																								
C-2: Equipment																								
1. Transportation Boat (100 HP)																								
2. Transportation Boat (40 HP)																								
3. Transportation Boat (25 HP)																								
5. Communication System		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
4. Transportation Vehicle / Motor Cycle		O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
C-3 (市場促進)		M1			M1				M1			M1		M1					M1					
1. Marketing Promotion Unit-1		O3			O2				O2			O1		O1					O1					
2. Marketing Promotion Unit-2		O3			O2				O2			O1		O1					O1					
<b>D Community Infrastructure Improvement</b>		M1	M1		M1	M1			M1	M1		M1	M1	M1	M1		M1	M1	M1		M1	M1	M1	
1. Equipment Unit For Self-support		O	O		O	O			O	O		O	O	O	O		O	O	O		O	O	O	
2. Material Unit For Self-support		O	O		O	O			O	O		O	O	O	O		O	O	O		O	O	O	
<b>E Community Women Support</b>		S2			S2				S2			S2		S2		M1		M1		M1				
1. Training & Educational Unit-1		O			O				O			O		O		O		O		O				
2. Training & Educational Unit-2		O			O				O			O		O		O		O		O				
<b>F Fishermen Organization Support</b>		S2	S2		S2	S2			S2	S2		S2	M1	S2	S2		M1		M1		M1			
G-1: Support Equipment																								
1. Support Unit-1		O			O				O			O		O		O		O		O				
2. Support Unit-2		O	O		O	O			O	O		O	O	O		O		O		O	O			
<b>G Fisheries Credit</b>					M1						M1				M2				M2					
1. Support Equipment					O						O				O				O					
<b>II No. of Boats In 2007</b>																								
1. Fishing Boat With Motor			36			75			51			62			30					60				
2. Fishing Gear Unit			36			75			51			62			30					60				
3. Insulation Box For Boat			36			75			51			62			30					60				
<b>III Current Infra. Condition</b>																								
Electricity		E	E	E	E	E	E	X	E	E	E	E	E	X	X	X	X	X	P	X	X	X	X	
Public Water		E	E	E	E	E	E	X	E	E	E	E	E	X	X	X	X	X	P	X	X	X	X	
Telephone		E	E	E	E	E	E	X	E	E	E	E	E	X	X	X	X	X	P	X	X	X	X	
Road		E	E	E	E	E	E	X	E	E	E	E	E	X	X	X	X	X	P	X	X	X	X	

**(REMARKS)**

MC: Main Center  
AC: Area Center  
B: Area Branch  
S: Service Station  
FDS: Fish Depot Station  
TFC: B Trujillo Fish Collection Base

O: To be planned  
•: To be planned with low a standard  
X: none  
-: Not planned  
P: Very poor  
E: Existing

S0: 1996-1997  
S1: 1998-1999  
S2: 2000-2002  
M1: 2003-2004  
M2: 2005-2007

**Table 2.8.3 Relation among Sector Plans, Area Division and Plan Stage**

Sector Plan	WESTERN REGION												EASTERN REGION																
	OMGVA AREA			DIA LA AGUA				LA CEIBA AREA			DUBUJLO AREA		BRUS LAGUNA AREA			PUERTO LEMPIRA AREA													
	AC	B	S	AC	B	S	AC	B	S	MC	FCB	AC	ST	B	S	AC	ST	B	S										
OMGVA	BAJA MAZ	MASCA	TELA	TORNABIL	EL TRIUNFO	MIAMI	LA CEIBA	NUOVA	ARMENIA	EL PORVENIR	TRUJILLO	PUERTO	CASTILLA	SANTA ROSA	DE AGUAN	LIMON	BRUS LAGUNA	BARRA DE	BRUS LAGUNA	BATALLA	PATUCA	PUERTO	LEMPIRA	BARRA DE	CABATANGA	OKUTA	BARBITA		
A Cap. Building / Resources Management	S2										S1						S2												
B Modernization of Artisanal Fisheries	S2	S2	M2	S2	S2	M2	M2	S0	S2	M2	S0	M1	S0	S0			S2	S2	M1	M2	M1	M1	M1	M1	M1	M1	M1	M2	
C Improvement of Fish Marketing System (Fish Sale Promote)	S2	S2	M2	S2	S2	M2	M2	S2	S2	M2	S0	M1	S0	S0			S2	S2	M1	M2	M1	M1	M1	M1	M1	M1	M1	M2	
D Community Infrastructure Improvement	M1	M1		M1	M1			M1	M1		M1		M1	M1	M1		M1		M1	M1	M1		M1		M1	M1			
E Community Women Support	S2			S2				S2			S2						S2		M1		M1		M1		M1				
F Fishermen Organization Support	S2	S2		S2	S2			S2	S2		S2	M1	S2	S2	S2		S2		M1		M1		M1		M1				
G Fisheries Credit				M2							M1						M2						M2						

Legend: **S0** 1996-1997    **M1** 2003-2004    **L** 2008-2012

**S1** 1998-1999    **M2** 2005-2007

**S2** 2000-2002

AC: Area Center  
 B: Branch  
 S: Service Station  
 FCB: Fish Collection Base  
 St.: Fish Depot Station

**Table 3.1.1 Summary of Facility, Equipment Component of Sector Plan**

Region/Area Sub-area	Facility/Equipment	WESTERN REGION																		EASTERN REGION																																																		
		CENTRAL			CINCU AREA			TILA AREA			LAUREN AREA			TRUJILLO AREA			BRUNSA AREA			PUERTO LEMPINA AREA			PUERTO LEMPINA AREA																																															
		AC	B	S	AC	B	S	AC	B	S	AC	B	S	AC	B	S	AC	B	S	AC	B	S	AC	B	S																																													
		DIGEPESCA & OTHER ORGANIZATION																																																																				
		OMCA			MAJA MAYA			MASCA			TELA			TORNABE			EL TRIUNFO			MIAMI			LA CEIBA			NUEVA ARMENIA			EL PORVENIR			TRUJILLO			PUERTO CASTILLO			SANTA ROSA DE LAGUNA			LIMON			BRUNSA LAGUNA			BARRA DE BRUNSA LAGUNA			PALACIOS			PATUCA			PUERTO LEMPINA			BARRA DE CAMATASCA			CRUTA			IBENK			BARRITA		
I	Main Component																																																																					
A	Cap. Building / Resources Management																																																																					
	1. Field Research Lab (Wet Lab)																																																																					
	2. Research Boat (R-4000)																																																																					
	3. Office Equipment Vehicle																																																																					
B	Modernization of Artisanal																																																																					
B-1	Construction																																																																					
	1. Training Module Monitoring																																																																					
	2. Administration Office																																																																					
	3. Workshop																																																																					
	4. Ice Making and Supply																																																																					
	5. Generator																																																																					
	6. Waste Water Treatment																																																																					
	7. Fuel Depot																																																																					
B-2	Equipment For Training																																																																					
	1. Training Boat With Motor																																																																					
	2. Fishing Gear																																																																					
	3. Workshop Tools																																																																					
	4. Administration & Monitoring																																																																					
B-3	Equipment For Production																																																																					
	1. Fish Boat With Motor																																																																					
	2. Fishing Gear																																																																					
	3. Handling Box & Equipment																																																																					
C	Improvement of Fish Marketing System																																																																					
C-1	Construction																																																																					
	1. Loading/Unloading Facilities																																																																					
	2. Storage																																																																					
C-2	Equipment																																																																					
	1. Transportation Boat (100 HP)																																																																					
	2. Transportation Boat (40 HP)																																																																					
	3. Transportation Boat (25 HP)																																																																					
	4. Communication System																																																																					
	5. Transportation Vehicle / Motor Cycle																																																																					
C-3	(市場促進)																																																																					
	1. Marketing Promotion Unit 1																																																																					
	2. Marketing Promotion Unit 2																																																																					
D	Community Infrastructure Improvement																																																																					
	1. Equipment Unit For Self support																																																																					
	2. Material Unit For Self support																																																																					
E	Community Women Support																																																																					
	1. Training & Educational Unit-1																																																																					
	2. Training & Educational Unit-2																																																																					
F	Fishermen Organization Support																																																																					
G	Fisheries Credit																																																																					
	1. Support Equipment																																																																					
II	No. of Boats In 2007																																																																					
	1. Fishing Boat With Motor																																																																					
	2. Fishing Gear Unit																																																																					
	3. Handling Box For Boat																																																																					
III	Current Infra. Condition																																																																					
	Electricity																																																																					
	Public Water																																																																					
	Telephone																																																																					
	Road																																																																					

(REMARKS)

MC : Main Center  
 AC : Area Center  
 B : Area Branch  
 S : Service Station  
 FDS : Fish Depot Station  
 TFC : Trujillo Fish Collection Base

O : To be planned  
 \* : To be planned with lower standard  
 X : None  
 - : Not planned  
 P : Very poor  
 E : Existing

S0 : 199-1997  
 S1 : 1998-1999  
 S2 : 2000-2002  
 M1 : 2003-2004  
 M2 : 2005-2007

**Table 3.2.1 Summary of Project Construction by Sector Plan**

Unit : US\$1,000	
Sector Plan	Amount
A Cap. Building / Resources Management <sup>&lt;1</sup>	512
B Modernization of Artisanal Fisheries	5,050
C Improvement of Fish Marketing System	2,349
D Community Infrastructure Improvement	116
E Community Women Support	84
F Fishermen Organization Support	72
G Fisheries Credit <sup>&lt;2</sup>	34
- Sub-total	8,217
H Contingency (7%)	575
I Consultancy Fee (8%)	657
J Investment by fishermen <sup>&lt;3</sup>	167
- Total	8,959

Remarks <1 : Not included the construction cost for related project in Trujillo and La Ceiba assisted by Japan.

<2 : Not included planned credit fund.

<3: Investment by the fund collected from recipient fishermen trained by the project of artisanal fisheries modernization.

**Table 3.2.2 Summary of Project Construction Cost by Plan Stage**

Unit : US\$1,000					
Sector Plan	S1	S2	M1	M2	Total
A Cap. Building / Resources Management	431	158	-	-	589
B Modernization of Artisanal Fisheries	-	3,126	1,652	1,112	5,975
C Improvement of Fish Marketing System	-	546	2,101	54	2,701
D Community Infrastructure Improvement	-	-	133	-	133
E Community Women Support	-	64	32	-	96
F Fishermen Organization Support	-	62	21	-	83
G Fisheries Credit	-	-	14	25	39
- Total	431	3,956	3,953	1,191	9,616

Remark : Plan stage is divided into as follows.

Plan Period (1998 - 2012)		
1st Short Term	2nd Short Term	3rd Short Term
S0 1996 - 1997	M1 2003 - 2005 (M)	L 2008 - 2012
S1 1998 - 2000 (M)	M2 2005 (M) - 2007	
S2 2000 (M) - 2002		

(M); middle of the year

**Table 5.1 Summary of Construction Cost by Sector Plan**

Unit : US\$1,000

Description	Life Span	% of Mainte.	S1 1993	S2 2000	M1 2003	M2 2005	L1 2008	Total S1 - L1
<b>A Resources Management</b>			<b>375</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>512</b>
1 Field Research Lab. (Wet Lab.)	25	2%	25	137	0	0	0	162
2 Research Vessel (Rotation)	20	3%	300	0	0	0	0	300
3 Central Level Equipment	6	3%	50	0	0	0	0	50
<b>B Modernization of Artisanal Fisheries</b>			<b>0</b>	<b>2,718</b>	<b>1,440</b>	<b>974</b>	<b>85</b>	<b>5,217</b>
<i>B-1 Building</i>			<i>0</i>	<i>2,055</i>	<i>1,107</i>	<i>420</i>	<i>0</i>	<i>3,582</i>
AC Area Center	25	2%	0	1,590	735	0	0	2,325
B Area Branch	25	2%	0	465	372	0	0	837
S Service Station	25	2%	0	0	0	420	0	420
<i>B-2 Equipment for Training &amp; Management</i>			<i>0</i>	<i>126</i>	<i>53</i>	<i>38</i>	<i>0</i>	<i>217</i>
AC Area Center	10	3%	0	95	31	0	0	126
B Area Branch	10	3%	0	31	22	0	0	53
S Service Station	10	3%	0	0	0	38	0	38
<i>B-3 Equipment for Productions</i>			<i>0</i>	<i>537</i>	<i>280</i>	<i>516</i>	<i>85</i>	<i>1,418</i>
A Fishing Vessel	15	2%	0	216	132	219	36	603
B Motor	5	5%	0	167	67	149	25	408
C Fishing Gear Unit	3	2%	0	84	53	86	14	237
D Hand Reel, Ice Box & Equipments	7	0%	0	70	28	62	10	170
<b>C Improvement of Fish Marketing System</b>			<b>0</b>	<b>475</b>	<b>1,827</b>	<b>47</b>	<b>0</b>	<b>2,349</b>
<i>C-1 Building</i>			<i>0</i>	<i>315</i>	<i>1,027</i>	<i>0</i>	<i>0</i>	<i>1,342</i>
1 Loading/Unloading Facilities	25	2%	0	210	530	0	0	740
2 Storage	25	2%	0	105	497	0	0	602
<i>C-2 Equipment</i>			<i>0</i>	<i>160</i>	<i>600</i>	<i>47</i>	<i>0</i>	<i>807</i>
1 Transportation Vessel (100Hp)	20	3%	0	0	466	0	0	466
2 Transportation Vessel (40Hp)	15	3%	0	34	51	17	0	102
3 Communication System	5	0%	0	66	48	30	0	144
4 Transportation Vehicle / Moto.Cyc	6	5%	0	60	35	0	0	95
<i>C-3 Marketing &amp; Promotion</i>			<i>0</i>	<i>0</i>	<i>200</i>	<i>0</i>	<i>0</i>	<i>200</i>
1 Marketing Promotion Unit-1	5	0%	0	0	120	0	0	120
2 Marketing Promotion Unit-2	5	0%	0	0	80	0	0	80
<b>D Community Infrastructure Improvement</b>			<b>0</b>	<b>0</b>	<b>116</b>	<b>0</b>	<b>0</b>	<b>116</b>
1 Equipment Unit for Selfsupport	5	0%	0	0	64	0	0	64
2 Material Unit for Selfsupport	5	0%	0	0	52	0	0	52
<b>E Community Women Support</b>			<b>0</b>	<b>56</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>84</b>
1 Training & Educational Unit	5	0%	0	38	19	0	0	57
2 Material Unit for Selfsupport	5	0%	0	18	9	0	0	27
<b>F Fishermen Organization Support</b>			<b>0</b>	<b>54</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>72</b>
1 Support Unit-1	5	0%	0	34	6	0	0	40
2 Support Unit-2	5	0%	0	20	12	0	0	32
<b>G Fisheries Credit</b>			<b>0</b>	<b>0</b>	<b>12</b>	<b>22</b>	<b>0</b>	<b>34</b>
1 Support Equipment	10	0%	0	0	12	22	0	34
- Sub-total			<b>375</b>	<b>3,440</b>	<b>3,441</b>	<b>1,043</b>	<b>85</b>	<b>8,384</b>
<b>H Contingency</b>	<b>7%</b>		<b>26</b>	<b>241</b>	<b>239</b>	<b>69</b>	<b>0</b>	<b>575</b>
<b>I Consultancy Fee</b>	<b>8%</b>		<b>30</b>	<b>275</b>	<b>273</b>	<b>79</b>	<b>0</b>	<b>657</b>
- Total			<b>431</b>	<b>3,956</b>	<b>3,953</b>	<b>1,191</b>	<b>85</b>	<b>9,616</b>



Table 5.2 Replacement Cost of Facilities by Sector Plan

Unit : US\$1,000

Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15 Residual
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 Value
<b>A Resources Management</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	427
1 Field Research Lab. (Wet Lab.)															147
2 Research Vessel (Rotation)															240
3 Central Level Equipment															40
<b>B Modernization of Artisanal Fisheries</b>	0	0	0	0	0	84	0	167	137	70	153	137	470	86	2,388
B-1 Building	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,936
AC Area Center															1,204
B Area Branch															446
S Service Station															286
B-2 Equipment for Training & Management	0	0	0	0	0	0	0	0	0	0	0	0	126	0	96
AC Area Center															95
B Area Branch															31
S Service Station															22
B-3 Equipment for Productions	0	0	0	0	0	84	0	167	137	70	153	137	344	86	356
A Fishing Vessel															175
B Moto.								167		67			316		126
C Fishing Gear Unit						84		137		86		137		86	29
D Hand Reel, Ice Box & Equipments								70					28		26
<b>C Improvement of Fish Marketing System</b>	0	0	0	0	0	0	0	66	60	0	248	35	96	0	1,080
C-1 Building	0	0	0	0	0	0	0	0	0	0	0	0	0	0	767
1 Loading/Unloading Facilities															419
2 Storage															349
C-2 Equipment	0	0	0	0	0	0	0	66	60	0	48	35	96	0	313
1 Transportation Vessel (100Hp)															233
2 Transportation Vessel (40Hp)											48		96		29
3 Communication System								66							38
4 Transportation Vehicle / Moto.Cyc								60				35			12
C-3 Marketing & Promotion	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0
1 Marketing Promotion Unit-1											120				
2 Marketing Promotion Unit-2											80				
<b>D Community Infrastructure Improvement</b>	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0
1 Equipment Unit for Selfsupport											64				
2 Material Unit for Selfsupport											52				
<b>E Community Women Support</b>	0	0	0	0	0	0	0	0	0	0	116	0	56	0	22
1 Training & Educational Unit								38			19		38		15
2 Material Unit for Selfsupport								18		9	18				7
<b>F Fishermen Organization Support</b>	0	0	0	0	0	0	0	54	0	0	18	0	54	0	22
1 Support Unit-1								34			6		34		14
2 Support Unit-2								20			12		20		8
<b>G Fisheries Credit</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
1 Support Equipment															4
<b>- Total</b>	0	0	0	0	0	84	0	287	197	70	735	172	676	86	3,943

**Table 5.3 Project Operation Cost by Year**

Unit : US\$

Year	Personel Cost	Itinerant Expense	Travel Allowance	Operation Cost of Fishing Boat	Fuel Cost of Trans. Vessels	Power Cost of Ice Plant	Total
1 1998	0	0	3,720	0	0	0	3,720
2 1999	0	0	3,720	0	0	0	3,720
3 2000	39,000	2,489	10,090	118,136	0	4,847	174,562
4 2001	39,000	2,489	10,090	118,136	0	4,847	174,562
5 2002	39,000	2,489	1,450	118,136	0	4,847	165,922
6 2003	72,200	8,769	2,900	186,348	44,444	9,421	324,082
7 2004	72,200	8,769	2,900	186,348	44,444	9,421	324,082
8 2005	81,400	12,590	4,350	303,779	57,269	14,516	473,904
9 2006	81,400	12,590	4,350	303,779	57,269	14,516	473,904
10 2007	81,400	12,590	4,350	303,779	57,269	14,516	473,904
11 2008	81,400	7,463	4,350	323,114	58,030	15,310	489,667
12 2009	81,400	7,463	4,350	323,114	58,030	15,310	489,667
13 2010	57,400	3,185	4,350	323,114	58,030	15,310	461,389
14 2011	57,400	3,185	4,350	323,114	58,030	15,310	461,389
15 2012	57,400	3,185	4,350	323,114	58,030	15,310	461,389

**Table S.4 Maintenance Cost of Facilities by Sector Plan**

Unit : US\$

Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	On and after
<b>A. Resources Management</b>	11,000	11,000	13,740	13,740	0	0	0	0	0	0	0	0	0	0	0	0
1 Field Research Lab. (Wet Lab.)	500	500	3,240	3,240												
2 Research Vessel (Rotation)	9,000	9,000	9,000	9,000												
3 Central Level Equipment	1,500	1,500	1,500	1,500												
<b>B. Modernization of Artisanal Fisheries</b>	0	0	59,230	59,230	59,230	90,010	90,010	113,100	113,100	113,100	113,100	113,100	113,100	113,100	113,100	78,150
<i>B-1 Building</i>	0	0	41,100	41,100	63,240	63,240	71,640	71,640	71,640	71,640	71,640	71,640	71,640	71,640	71,640	71,640
AC Area Center			31,800	31,800	31,800	46,500	46,500	46,500	46,500	46,500	46,500	46,500	46,500	46,500	46,500	46,500
B Area Branch			9,300	9,300	9,300	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740	16,740
S Service Station						8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400	8,400
<i>B-2 Equipment for Training &amp; Management</i>	0	0	3,780	3,780	3,780	5,370	5,370	6,570	6,570	6,570	6,570	6,570	6,570	6,570	6,570	6,570
AC Area Center			2,850	2,850	3,780	3,780	3,780	3,780	3,780	3,780	3,780	3,780	3,780	3,780	3,780	3,780
B Area Branch			930	930	930	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590
S Service Station						1,140	1,140	1,140	1,140	1,140	1,140	1,140	1,140	1,140	1,140	1,140
<i>B-3 Equipment for Productions</i>	0	0	14,350	14,350	14,350	21,400	21,400	34,950	34,950	34,950	34,950	34,950	34,950	34,950	34,950	34,950
A Fishing Vessel			4,320	4,320	4,320	6,960	6,960	11,340	11,340	11,340	11,340	11,340	11,340	11,340	11,340	11,340
B Motor			8,350	8,350	11,700	11,700	11,700	19,150	19,150	19,150	19,150	19,150	19,150	19,150	19,150	19,150
C Fishing Gear Unit			1,680	1,680	1,680	2,740	2,740	4,460	4,460	4,460	4,460	4,460	4,460	4,460	4,460	4,460
D Hand Reel, Ice Box & Equipments																
<b>C. Improvement of Fish Marketing System</b>	0	0	10,320	10,320	10,320	48,120	48,120	48,630	48,630	48,630	48,630	48,630	48,630	48,630	48,630	48,630
<i>C-1 Building</i>	0	0	6,300	6,300	6,300	26,840	26,840	26,840	26,840	26,840	26,840	26,840	26,840	26,840	26,840	26,840
1 Loading/Unloading Facilities			4,200	4,200	4,200	14,800	14,800	14,800	14,800	14,800	14,800	14,800	14,800	14,800	14,800	14,800
2 Storage			2,100	2,100	2,100	12,040	12,040	12,040	12,040	12,040	12,040	12,040	12,040	12,040	12,040	12,040
<i>C-2 Equipment</i>	0	0	4,020	4,020	4,020	21,280	21,280	21,790	21,790	21,790	21,790	21,790	21,790	21,790	21,790	21,790
1 Transportation Vessel (100Hp)						13,980	13,980	13,980	13,980	13,980	13,980	13,980	13,980	13,980	13,980	13,980
2 Transportation Vessel (40Hp)			1,020	1,020	1,020	2,550	2,550	3,060	3,060	3,060	3,060	3,060	3,060	3,060	3,060	3,060
3 Communication System																
4 Transportation Vehicle / Moto,Cyc			3,000	3,000	3,000	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750	4,750
<i>C-3 Marketing &amp; Promotion</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 Marketing Promotion Unit-1																
2 Marketing Promotion Unit-2																
<b>D. Community Infrastructure Improvement</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 Equipment Unit for Selfsupport																
2 Material Unit for Selfsupport																
<b>E. Community Women Support</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 Training & Educational Unit																
2 Material Unit for Selfsupport																
<b>F. Fishermen Organization Support</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 Support Unit-1																
2 Support Unit-2																
<b>G. Fisheries Credit</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1 Support Equipment																
<b>- Total</b>	11,000	11,000	83,290	83,290	69,550	138,150	138,130	161,730	161,730	161,730	161,730	161,730	161,730	161,730	161,730	126,780

**Table 5.5 Fishery Production and Benefit along Northern Coast**

Unit: \$1,000

Year	Increase of Fresh Fish Production in With Project Case				Increase of Fresh Fish Export in With Project Case				Benefit									
	West		Total		West		Total		West		Total							
	Grant Aid	This Project	East	Total	Grant Aid	This Project	East	Total	Increase of Fresh Fish	Trans- portation to West	Increase of Export	Trans- portation to West						
1 1998	111	88	199	0	199	0	199	0	102	0	146	0	49	0	194			
2 1999	168	135	303	0	303	0	303	0	155	0	223	0	74	0	298			
3 2000	170	136	306	280	586	116	208	104	312	104	225	147	99	230	379	117	818	
4 2001	179	143	322	428	750	117	93	210	106	316	237	225	461	100	234	334	159	955
5 2002	189	151	340	505	845	118	94	212	108	320	250	265	515	101	258	340	200	1,055
6 2003	201	160	361	585	946	119	95	214	110	324	265	307	572	102	243	345	242	1,159
7 2004	233	186	419	633	1,052	121	97	218	112	330	308	333	640	105	247	352	246	1,238
8 2005	266	212	478	683	1,161	123	99	222	114	336	222	351	559	107	252	358	251	1,319
9 2006	301	240	541	735	1,276	126	100	226	116	342	397	386	783	108	256	364	255	1,402
10 2007	306	300	606	789	1,395	128	102	230	118	348	496	415	911	110	261	371	260	1,541
11 2008	340	334	674	845	1,519	130	104	234	120	354	553	444	997	112	265	377	264	1,638
12 2009	340	334	674	845	1,519	130	104	234	120	354	553	444	997	112	265	377	264	1,638
13 2010	340	334	674	845	1,519	130	104	234	120	354	553	444	997	112	265	377	264	1,638
14 2011	340	334	674	845	1,519	130	104	234	120	354	553	444	997	112	265	377	264	1,638
15 2012	340	334	674	845	1,519	130	104	234	120	354	553	444	997	112	265	377	264	1,638

**Remarks**

1) The benefit from the increase of fresh fish production by boats donated by the grant aid from Japan (to be carried out in 1997) was excluded from that at this plan in Western Region. Therefore the benefit of this project was calculated in proportion of the number of boats donated by the grant aid and that at this plans. As for the increase of export in Western Region, the benefit was calculated in the same way as the increase of fresh fish production.

2) Unit prices of fresh fish in this project are as follow :

For Consumption in Honduras		Unit : US\$/kg	
West	East	For	Export
1.65	0.53	2.73	

**Table 5.6 Cost, Benefit and EIRR in Case of Operating All Sector Plans**

Year	Cost				Benefit				Benefit - Cost
	Investment and Reinvestment	Operation Cost	Maintenance Cost	Total	Increase of Fresh Fish Production	Increase of Export	Trans. to West	Total	
1 1998	431	4	11	446	146	49	0	194	-252
2 1999	0	4	11	15	223	74	0	298	283
3 2000	3,956	175	83	4,214	372	329	117	818	-3,396
4 2001	0	175	83	258	461	334	159	955	697
5 2002	-427	166	70	-191	515	340	200	1,055	1,246
6 2003	4,037	324	138	4,499	572	345	242	1,159	-3,340
7 2004	0	324	138	462	640	352	246	1,238	776
8 2005	1,478	474	162	2,114	710	358	251	1,319	-795
9 2006	197	474	162	833	783	364	255	1,402	569
10 2007	70	474	162	706	911	371	260	1,541	835
11 2008	820	490	162	1,472	997	377	264	1,638	166
12 2009	172	490	162	824	997	377	264	1,638	814
13 2010	676	461	162	1,299	997	377	264	1,638	339
14 2011	86	461	162	709	997	377	264	1,638	929
15 2012	-3,516	461	162	-2,893	997	377	264	1,638	4,531
- Total	7,980	4,957	1,830	14,767	10,317	4,801	3,052	18,170	3,404

Economic Internal Rate of Return (EIRR) = 6.2%

**Table 5.7 Cost, Benefit and EIRR in Case of Excluding Coastal Resources Management, Community Infrastructure Improvement, Fisheries Community Women Support**

Year	Cost				Benefit				Benefit - Cost
	Investment and Reinvestment	Operation Cost	Maintenance Cost	Total	Increase of Fresh Fish Production	Increase of Export	Transportation to West	Total	
1 1998	0	0	0	0	146	49	0	194	194
2 1999	0	0	0	0	223	74	0	298	298
3 2000	3,247	149	70	3,466	372	329	117	818	-2,648
4 2001	0	149	70	219	461	334	159	955	736
5 2002	0	149	70	219	515	340	200	1,055	836
6 2003	3,381	293	138	3,812	572	345	242	1,159	-2,653
7 2004	0	293	138	431	640	352	246	1,238	807
8 2005	1,330	440	162	1,932	710	358	251	1,319	-613
9 2006	197	440	162	799	783	364	255	1,402	603
10 2007	70	440	162	672	911	371	260	1,541	869
11 2008	504	461	162	1,127	997	377	264	1,638	511
12 2009	172	461	162	795	997	377	264	1,638	843
13 2010	620	461	162	1,243	997	377	264	1,638	395
14 2011	86	461	162	709	997	377	264	1,638	929
15 2012	-3,494	461	162	-2,871	997	377	264	1,638	4,509
- Total	6,113	4,658	1,782	12,553	10,317	4,801	3,052	18,170	5,617

Economic Internal Rate of Return (EIRR) = 13.6%

**Table S.8 Depreciation by Sector Plan**

Description	Unit : US\$															
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	15 On and after 2013
<b>A. Resources Management</b>	24,333	24,333	29,813	29,813	0	0	0	0	0	0	0	0	0	0	0	0
1 Field Research Lab. (Wet Lab.)	1,000	1,000	6,480	6,480												
2. Research Vessel (Rotation)	15,000	15,000	15,000	15,000												
3 Central Level Equipment	8,333	8,333	8,333	8,333												
<b>B. Modernization of Artisanal Fisheries</b>	0	0	180,600	180,600	180,600	274,047	376,571	376,571	376,571	376,571	376,571	376,571	376,571	376,571	376,571	164,980
<i>B-1 Building</i>	0	0	82,200	82,200	82,200	126,480	143,280	143,280	143,280	143,280	143,280	143,280	143,280	143,280	143,280	143,280
AC Area Center			63,600	63,600	63,600	93,000	93,000	93,000	93,000	93,000	93,000	93,000	93,000	93,000	93,000	93,000
B Area Branch			18,600	18,600	18,600	33,480	33,480	33,480	33,480	33,480	33,480	33,480	33,480	33,480	33,480	33,480
S Service Station			0	0	0	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800
<i>B-2 Equipment for Training &amp; Management</i>	0	0	12,600	12,600	17,900	17,900	21,700	21,700	21,700	21,700	21,700	21,700	21,700	21,700	21,700	21,700
AC Area Center			9,500	9,500	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600
B Area Branch			3,100	3,100	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300	5,300
S Service Station			0	0	0	0	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800	3,800
<i>B-3 Equipment for Productions</i>	0	0	85,800	85,800	85,800	129,667	129,667	211,591	211,591	211,591	211,591	211,591	211,591	211,591	211,591	0
A Fishing Vessel			14,400	14,400	14,400	23,200	23,200	37,800	37,800	37,800	37,800	37,800	37,800	37,800	37,800	37,800
B Motor			33,400	33,400	33,400	46,800	46,800	76,600	76,600	76,600	76,600	76,600	76,600	76,600	76,600	76,600
C Fishing Gear Unit			28,000	28,000	28,000	45,667	45,667	74,334	74,334	74,334	74,334	74,334	74,334	74,334	74,334	74,334
D Hand Reel, Ice Box & Equipments			10,000	10,000	10,000	14,000	14,000	22,857	22,857	22,857	22,857	22,857	22,857	22,857	22,857	22,857
<b>C. Improvement of Fish Marketing System</b>	0	0	38,067	38,067	38,067	161,280	168,413	168,413	168,413	168,413	168,413	168,413	168,413	168,413	168,413	128,413
<i>C-1 Building</i>	0	0	12,600	12,600	12,600	53,680	53,680	53,680	53,680	53,680	53,680	53,680	53,680	53,680	53,680	53,680
1 Loading/Unloading Facilities			8,400	8,400	8,400	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600	29,600
2 Storage			4,200	4,200	4,200	24,080	24,080	24,080	24,080	24,080	24,080	24,080	24,080	24,080	24,080	24,080
<i>C-2 Equipment</i>	0	0	25,467	25,467	25,467	67,600	67,600	74,733	74,733	74,733	74,733	74,733	74,733	74,733	74,733	74,733
1 Transportation Vessel (100HP)			2,267	2,267	2,267	5,667	5,667	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800	6,800
2 Transportation Vessel (40Hp)			13,200	13,200	13,200	22,800	22,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800
3 Communication System			10,000	10,000	10,000	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833	15,833
4 Transportation Vehicle / Moto.Cyc			0	0	0	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
<i>C-3 Marketing &amp; Promotion</i>	0	0	0	0	0	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000	24,000
1 Marketing Promotion Unit-1			16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
2 Marketing Promotion Unit-2			0	0	0	23,200	23,200	23,200	23,200	23,200	23,200	23,200	23,200	23,200	23,200	23,200
<b>D Community Infrastructure Improvement</b>	0	0	0	0	0	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	12,800	0
1 Equipment Unit for Selfsupport			10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400	10,400
2 Material Unit for Selfsupport			0	0	0	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800
<b>E Community Women Support</b>	0	0	11,200	11,200	11,200	11,400	11,400	11,400	11,400	11,400	11,400	11,400	11,400	11,400	11,400	0
1 Training & Educational Unit			7,600	7,600	7,600	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400	5,400
2 Material Unit for Selfsupport			3,600	3,600	3,600	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
<b>F Fishermen Organization Support</b>	0	0	10,800	10,800	10,800	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,400
1 Support Unit-1			6,800	6,800	6,800	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000
2 Support Unit-2			4,000	4,000	4,000	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400
<b>G Fisheries Credit</b>	0	0	0	0	0	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	3,400
1 Support Equipment			1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	3,400
<b>- Total</b>	24,333	24,333	270,480	270,480	240,667	490,927	490,927	602,784	602,784	602,784	602,784	602,784	602,784	602,784	602,784	311,193

Table 5.9 Income Statement

	Unit : US\$						
	S1 1998	S2 2000	M1 2003	M2 2005	L1 2008	L2 2010	On and after 2013
<b>I. Revenue</b>		185,931	675,452	934,659	972,731	973,275	621,990
<i>a. Rental Fee for Fishing Boats</i>		136,711	202,162	330,112	351,285	351,285	0
<i>b. Revenue from Transportation Service</i>			390,305	499,593	512,326	512,326	512,326
- Sales of Fish in Western Region			337,168	414,406	422,128	422,128	422,128
- Sales of Fuel & Lubricant in Eastern Region			53,117	85,187	90,198	90,198	90,198
<i>c. Sales of Ice</i>		20,403	53,081	73,192	76,498	76,498	76,498
<i>d. Fish Handling Charge for Export</i>		28,817	29,904	31,762	32,623	33,166	33,166
<b>II. Expense</b>	39,053	410,196	1,012,905	1,253,703	1,258,930	1,230,652	904,111
<i>a. Personal Expense and Allowance</i>	3,720	51,579	83,869	98,340	93,213	64,935	64,935
<b>1. Personnel Expense</b>	0	39,000	72,200	81,400	81,400	57,400	57,400
- Modernization of Artisanal Fisheries	0	24,000	39,000	39,000	39,000	39,000	39,000
- Improvement of Fish Marketing System	0	0	9,200	18,400	18,400	18,400	18,400
- Community Women Support	0	15,000	24,000	24,000	24,000	0	0
<b>2. Itinerant Expense</b>	0	2,489	8,769	12,590	7,463	3,185	3,185
- Modernization of Artisanal Fisheries	0	777	1,712	3,185	3,185	3,185	3,185
- Community Women Support	0	1,712	7,057	9,405	4,278	0	0
<b>3. Travel Allowance</b>	3,720	10,090	2,900	4,350	4,350	4,350	4,350
- Resources Management	3,720	8,640	0	0	0	0	0
- Modernization of Artisanal Fisheries	0	1,450	2,900	4,350	4,350	4,350	4,350
<i>b. Expense for Transportation Service</i>			290,558	376,333	385,693	385,693	385,693
- Purchase of Fish in Eastern Region			201,850	248,075	252,698	252,698	252,698
- Fish Transportation			44,444	57,269	58,030	58,030	58,030
- Purchase of Fuel & Lubricant in Western Region			44,264	70,989	75,165	75,165	75,165
<i>c. Electric &amp; Fuel Expense for Ice Plant</i>		4,847	9,421	14,516	15,310	15,310	15,310
<i>d. Maintenance Cost</i>	11,000	83,290	138,130	161,730	161,730	161,730	126,780
- Resources Management	11,000	13,740	0	0	0	0	0
- Modernization of Artisanal Fisheries	0	59,230	90,010	113,100	113,100	113,100	78,150
- Improvement of Fish Marketing System	0	10,320	48,120	48,630	48,630	48,630	48,630
- Community Infrastructure Improvement	0	0	0	0	0	0	0
- Community Women Support	0	0	0	0	0	0	0
- Fishermen Organization Support	0	0	0	0	0	0	0
- Fisheries Development Credit	0	0	0	0	0	0	0
<i>e. Depreciation</i>	24,333	270,480	490,927	602,784	602,784	602,784	311,193
- Resources Management	24,333	29,813	0	0	0	0	0
- Modernization of Artisanal Fisheries	0	180,600	274,047	376,571	376,571	376,571	164,980
- Improvement of Fish Marketing System	0	38,067	161,280	168,413	168,413	168,413	128,413
- Community Infrastructure Improvement	0	0	23,200	23,200	23,200	23,200	0
- Community Women Support	0	11,200	16,800	16,800	16,800	16,800	0
- Fishermen Organization Support	0	10,800	14,400	14,400	14,400	14,400	14,400
- Fisheries Development Credit	0	0	1,200	3,400	3,400	3,400	3,400
<b>III. Income Before Depreciation</b>	-14,720	46,215	153,474	283,740	316,586	345,407	29,073
<b>IV. Net Income</b>	-39,053	-224,265	-337,453	-319,044	-286,198	-257,377	-282,120

Table 5.10 Cash Flow during Project Period

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
<b>Income Statement</b>																
1. Revenue		186	186	186	186	675	675	935	935	973	973	973	973	973	973	
2. Expense	39	39	409	409	359	1,013	1,013	1,254	1,254	1,254	1,259	1,259	1,231	1,231	1,231	
a. Operation Cost	4	4	56	56	48	384	384	489	489	489	494	494	466	466	466	
b. Maintenance Cost	11	11	83	83	70	138	138	162	162	162	162	162	162	162	162	
c. Depreciation	24	24	270	270	241	491	491	603	603	603	603	603	603	603	603	
d. Interest																
3. Profit before Depreciation & Interest	-15	-15	47	47	68	153	153	284	284	284	317	317	345	345	345	
4. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-319	-286	-286	-258	-258	-258	
<b>Cash Flow</b>																
1. Source of Fund	431	0	4,003	47	68	4,106	153	1,475	284	284	402	317	345	345	345	
a. Equity	431		3,956			3,953		1,191		85						
b. Government Loan	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	
c. Loan																
d. Depreciation	-24	24	270	270	241	491	491	603	603	603	603	603	603	603	603	
c. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-319	-286	-286	-258	-258	-258	
2. Use of Fund	431	0	3,986	0	0	4,037	0	1,478	197	70	820	172	676	86	0	
a. Construction Cost	431		3,956			3,953		1,191		85						
b. Reinvestment	0	0	0	0	0	84	0	287	197	70	735	172	676	86	0	
c. Repayment of Government Loan	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	
d. Repayment of Loan																
3. Balance of Government Loan at End	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	
4. Balance of Loan at End	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5. Balance of Cash Flow	0	0	17	64	132	201	354	351	438	652	234	379	48	307	652	



Table 5.9 Income Statement

Unit : US\$

	S1 1998	S2 2000	M1 2003	M2 2005	I1 2008	I2 2010	On and after 2013
<b>I. Revenue</b>		185,931	675,452	934,659	972,731	973,275	621,990
<i>a. Rental Fee for Fishing Boats</i>		136,711	202,162	330,112	351,285	351,285	0
<i>b. Revenue from Transportation Service</i>			390,305	499,593	512,326	512,326	512,326
- Sales of Fish in Western Region			337,188	414,406	422,128	422,128	422,128
- Sales of Fuel & Lubricant in Eastern Region			53,117	85,187	90,198	90,198	90,198
<i>c. Sales of Ice</i>		20,403	53,081	73,192	76,498	76,498	76,498
<i>d. Fish Handling Charge for Export</i>		28,817	29,904	31,762	32,623	33,166	33,166
<b>II. Expense</b>	39,053	410,196	1,012,905	1,253,703	1,258,930	1,230,652	904,111
<i>a. Personal Expense and Allowance</i>	3,720	51,579	83,869	98,340	93,213	64,935	64,935
1. Personal Expense	0	39,000	72,200	81,400	81,400	57,400	57,400
- Modernization of Artisanal Fisheries	0	24,000	39,000	39,000	39,000	39,000	39,000
- Improvement of Fish Marketing System	0	0	9,200	18,400	18,400	18,400	18,400
- Community Women Support	0	15,000	24,000	24,000	24,000	0	0
2. Itinerant Expense	0	2,489	8,769	12,590	7,463	3,185	3,185
- Modernization of Artisanal Fisheries	0	777	1,712	3,185	3,185	3,185	3,185
- Community Women Support	0	1,712	7,057	9,405	4,278	0	0
3. Travel Allowance	3,720	10,090	2,900	4,350	4,350	4,350	4,350
- Resources Management	3,720	8,640	0	0	0	0	0
- Modernization of Artisanal Fisheries	0	1,450	2,900	4,350	4,350	4,350	4,350
<i>b. Expense for Transportation Service</i>			290,558	376,333	385,893	385,893	385,893
- Purchase of Fish in Eastern Region			201,850	248,075	252,698	252,698	252,698
- Fish Transportation			44,444	57,269	58,030	58,030	58,030
- Purchase of Fuel & Lubricant in Western Region			44,264	70,989	75,165	75,165	75,165
<i>c. Electric &amp; Fuel Expense for Ice Plant</i>		4,847	9,421	14,516	15,310	15,310	15,310
<i>d. Maintenance Cost</i>	11,000	83,290	138,130	161,730	161,730	161,730	126,780
- Resources Management	11,000	13,740	0	0	0	0	0
- Modernization of Artisanal Fisheries	0	59,230	90,010	113,100	113,100	113,100	78,150
- Improvement of Fish Marketing System	0	10,320	48,120	48,630	48,630	48,630	48,630
- Community Infrastructure Improvement	0	0	0	0	0	0	0
- Community Women Support	0	0	0	0	0	0	0
- Fishermen Organization Support	0	0	0	0	0	0	0
- Fisheries Development Credit	0	0	0	0	0	0	0
<i>e. Depreciation</i>	24,333	270,480	490,927	602,784	602,784	602,784	311,193
- Resources Management	24,333	29,813	0	0	0	0	0
- Modernization of Artisanal Fisheries	0	180,600	274,047	376,571	376,571	376,571	164,980
- Improvement of Fish Marketing System	0	38,067	161,280	168,413	168,413	168,413	128,413
- Community Infrastructure Improvement	0	0	23,200	23,200	23,200	23,200	0
- Community Women Support	0	11,200	16,800	16,800	16,800	16,800	0
- Fishermen Organization Support	0	10,800	14,400	14,400	14,400	14,400	14,400
- Fisheries Development Credit	0	0	1,200	3,400	3,400	3,400	3,400
<b>III. Income Before Depreciation</b>	-14,720	46,215	153,474	283,740	316,596	345,407	29,073
<b>IV. Net Income</b>	-39,053	-224,265	-337,453	-319,044	-286,198	-257,377	-282,120

Table 5.10 Cash Flow during Project Period

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
<b>Income Statement</b>																
1. Revenue	186	186	186	186	186	675	675	935	935	935	973	973	973	973	973	
2. Expense	39	39	409	409	359	1,013	1,013	1,254	1,254	1,254	1,259	1,259	1,231	1,231	1,231	
a. Operation Cost	4	4	56	56	48	384	384	489	489	489	494	494	466	466	466	
b. Maintenance Cost	11	11	83	83	70	138	138	162	162	162	162	162	162	162	162	
c. Depreciation	24	24	270	270	241	491	491	603	603	603	603	603	603	603	603	
d. Interest																
3. Profit before Depreciation & Interest	-15	-15	47	47	68	153	153	284	284	284	317	317	345	345	345	
4. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-319	-286	-286	-258	-258	-258	
<b>Cash Flow</b>																
1. Source of Fund	431	0	4,003	47	68	4,106	153	1,475	284	284	402	317	345	345	345	
a. Equity	431		3,956			3,953		1,191			85					
b. Government Loan	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	
c. Loan																
d. Depreciation	24	24	270	270	241	491	491	603	603	603	603	603	603	603	603	
e. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-319	-286	-286	-258	-258	-258	
2. Use of Fund	431	0	3,986	0	0	4,037	0	1,478	197	70	820	172	676	86	0	
a. Construction Cost	431		3,956			3,953		1,191			85					
b. Reinvestment	0	0	0	0	0	84	0	287	197	70	735	172	676	86	0	
c. Repayment of Government Loan	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	
d. Repayment of Loan																
3. Balance of Government Loan at End	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	
4. Balance of Loan at End	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5. Balance of Cash Flow	0	0	17	64	132	201	354	351	438	652	234	379	48	307	652	

Table 5.11 Cash Flow during 30 years from the Beginning of Project

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
Income Statement																																					
1. Revenue	186	186	186	186	675	675	935	935	973	973	973	973	973	973	622	622	622	622	622	622	622	622	622	622	622	622	622	622	622	622	622	622	622	622			
2. Expense	39	39	409	409	359	1,013	1,254	1,254	1,254	1,254	1,254	1,254	1,254	1,254	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904	904		
a. Operation Cost	4	4	56	56	48	384	489	489	489	489	489	489	489	489	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466	
b. Maintenance Cost	11	11	83	83	70	138	162	162	162	162	162	162	162	162	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	
c. Depreciation	24	24	270	270	241	491	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	
d. Interest																																					
3. Profit before Depreciation & Interest	-15	-15	47	47	68	153	153	284	284	317	317	345	345	345	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29		
4. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-286	-286	-258	-258	-258	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	
Cash Flow																																					
1. Source of Fund	431	0	4,003	47	684	1,061	1,551	475	284	284	402	317	345	345	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29		
a. Equity	431	3,956			1,953		1,191		85																												
b. Government Loan	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
c. Loan																																					
d. Depreciation	24	24	270	270	241	491	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603
e. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-286	-286	-258	-258	-258	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	
2. Use of Fund	431	0	3,986	0	0	4,037	0	1,478	197	70	820	172	676	86	60	131	0	279	0	0	177	0	293	35	29	597	602,580	29	29	29	29	29	29	29	29		
a. Construction Cost	431	3,956			1,953		1,191		85																												
b. Reinvestment	0	0	0	0	0	84	0	287	197	70	735	172	676	86	60	131	0	279	0	0	177	0	293	35	29	597	602,580	0	0	0	0	0	0	0	0		
c. Repayment of Government Loan	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
d. Repayment of Loan																																					
3. Balance of Government Loan at End	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4. Balance of Loan at End	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5. Balance of Cash Flow	0	0	17	64	132	201	354	351	438	652	234	379	48	307	592	490	519	269	298	327	179	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

**Table 5.12 Scoping Check List (Types and Scales of Development)**

Main Component of Facility/Equipment of Sector Plan	Basic Capacity/unit	Western			Eastern		
		OMOA	TELA	LA CEIBA	TRUJILLO	B.LAGUNA	P.LEMPIRA
<b>1. Cap. Building / Resources Management</b>							
Field research laboratory (wet lab.)	30 square meter	0			0	0	
Research vessel <1	8 gross ton	+			0	+	
<b>2. Modernization of Artisanal Fisheries</b>							
Training/Meeting facility	6-48 person	0	0	0	0	0	0
Work shop	15-40 square meter	0	0	0	0	0	0
Administration office	15-40 square meter	0	0	0	0	0	0
Water tank/Septic tank	2-4 ton	0	0	0	0	0	0
Generator	5-20KVA					0	0
FRP boat with outboard engine	8m length with 15-25Hp	0	0	0	0	0	0
Fishing gear and materials	net,hook,total 324 sets	0	0	0	0	0	0
Ice plant	1-2t/day	0	0	0	0	0	0
Chest freezer	500L	0	0	0	0	0	0
Insultated fish box	100-200L	0	0	0	0	0	0
<b>3. Improvement of Fish Marketing System</b>							
Sales promotion unit	2-8 display boxes	0	0	0	0		
Transport boat	8 gross tons					0	0
Loading/Unloading jetty	20-30 m				0	0	0
Fuel depot	5-6 drum				0	0	0
<b>4. Community Infrastructure Improvement</b>							
Equipment unit		0	0	0	0	0	0
Materials unit		0	0	0	0	0	0
<b>5. Community Women Support</b>							
Training/education unit 1		0	0	0	0	0	0
Training/education unit 2		0	0	0	0	0	0
<b>6. Fishermen Organization Support</b>							
Office (Allocated in AreaCenter,etc)		0	0	0	0	0	0
Office equipment		0	0	0	0	0	0
<b>7. Fisheries Credit</b>							
Office (Allocated in AreaCenter)			0		0	0	0
Office equipment			0		0	0	0

Remarks : + ; used by rotation

**Table 5.11 Cash Flow during 30 years from the Beginning of Project**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30																	
<b>Income Statement</b>																																															
1. Revenue																																															
2. Expense																																															
a. Operation Cost																																															
b. Maintenance Cost																																															
c. Depreciation																																															
d. Interest																																															
3. Profit before Depreciation & Interest	-15	-15	47	47	68	153	153	284	284	317	317	345	345	345	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29				
4. Net Profit	-39	-39	-223	-223	-173	-338	-338	-319	-319	-319	-286	-286	-258	-258	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282			
<b>Cash Flow</b>																																															
1. Source of Fund	431	0	0	0	47	68	4106	153	1475	284	284	402	317	345	345	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29		
a. Equity	431	3,956					3,953	1,191	85																																						
b. Government Loan	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
c. Loan	24	24	270	270	241	491	491	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603	603
d. Depreciation	-39	-39	-223	-223	-173	-338	-338	-319	-319	-319	-286	-286	-258	-258	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	-282	
e. Net Profit	431	0	0	0	47	68	4106	153	1475	284	284	402	317	345	345	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	
2. Use of Fund	431	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
a. Construction Cost	431	3,956					3,953	1,191	85																																						
b. Reinvestment	0	0	0	0	0	0	84	0	287	197	70	735	172	676	86	60	131	0	279	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
c. Repayment of Government Loan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
d. Repayment of Loan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3. Balance of Government Loan at End	15	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4. Balance of Loan at End	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5. Balance of Cash Flow	0	0	17	64	132	201	354	351	438	652	234	379	48	307	592	490	519	269	298	327	179	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

**Table 5.12 Scoping Check List (Types and Scales of Development)**

Main Component of Facility/Equipment of Sector Plan	Basic Capacity/unit	Western				Eastern		CENTRAL
		OMOA	TELA	LA CEIBA	TRUJILLO	B.LAGUNA	P.LEMPIRA	
<b>1. Cap. Building / Resources Management</b>								
Field research laboratory (wet lab.)	30 square meter	0			0	0		
Research vessel <1	8 gross ton	+			0	+		
		0			0	0		
<b>2. Modernization of Artisanal Fisheries</b>								
Training/Meeting facility	6-48 person	0	0	0	0	0	0	0
Work shop	15-40 square meter	0	0	0	0	0	0	
Administration office	15-40 square meter	0	0	0	0	0	0	
Water tank/Septic tank	2-4 ton	0	0	0	0	0	0	
Generator	5-20KVA					0	0	
FRP boat with outboard engine	8m length with 15-25Hp	0	0	0	0	0	0	
Fishing gear and materials	net, hook, total 324 sets	0	0	0	0	0	0	
Ice plant	1-2t/day	0	0	0	0	0	0	
Chest freezer	500L	0	0	0	0	0	0	
Insulated fish box	100-200L	0	0	0	0	0	0	
<b>3. Improvement of Fish Marketing System</b>								
Sales promotion unit	2-8 display boxes	0	0	0	0			
Transport boat	8 gross tons					0	0	
Loading/Unloading jetty	20-30 m				0	0	0	
Fuel depot	5-6 drum				0	0	0	
<b>4. Community Infrastructure Improvement</b>								
Equipment unit		0	0	0	0	0	0	
Materials unit		0	0	0	0	0	0	
<b>5. Community Women Support</b>								
Training/education unit 1		0	0	0	0	0	0	
Training/education unit 2		0	0	0	0	0	0	
<b>6. Fishermen Organization Support</b>								
Office (Allocated in AreaCenter, etc)		0	0	0	0	0	0	
Office equipment		0	0	0	0	0	0	
<b>7. Fisheries Credit</b>								
Office (Allocated in AreaCenter)			0		0	0	0	
Office equipment			0		0	0	0	

Remarks : + ; used by rotation

**Table 5.13 Checklist for Scoping (Social Environment)**

Category of Environmental Impact	Level of Environmental Impact				Contents of judgement
	A	B	C	D	
<b>1. Socio-economic Issues</b>					
<b>(1) Social Aspects</b>					
1. Planned residential settlement			O		Not applicable
2. Involuntary resettlement			O		Not applicable
3. Substantial changes in way of life			O		Selection of fishermen
4. Conflict among communities and people				O	Selection of fishermen
5. Impacts on native people, ethics, etc.				O	Necessary to collaborate with ethnic organization
6. Increase of transportation volume			O		Not applicable
7. Others					
<b>(2) Demographic Issues</b>					
1. Population increase			O		Not applicable
2. Drastic change in population composition			O		Not applicable
3. Others					
<b>(3) Economic Activities</b>					
1. Changes in bases of economic activities			O		Not applicable
2. Occupational change, and loss of job opportunity			O		Not applicable
3. Increase in income disparities				O	Possibility of occurrence of unfair feeling
4. Others					
<b>(4) Institutional and Custom Related Issues</b>					
1. Adjustment and regulation of water or fishing (riparian) rights			O		Not applicable
2. Changes in social and institutional structures				O	Influence of current marketing system
3. Changes in existing institutions and customs			O		
4. Others					
<b>2. Health and Sanitary Issues</b>					
1. Increased use of fishery chemicals			O		Not applicable
2. Outbreak of endemic diseases			O		Not applicable
3. Spreading of epidemic diseases			O		Not applicable
4. Shellfish toxication			O		Not applicable
5. Residual toxicity of fishery chemicals			O		Not applicable
6. Increase in domestic and other human wastes			O		Waste of fish processing
7. Others					
<b>3. Cultural Asset Issues</b>					
1. Impairment of historic remains and cultural assets			O		Not applicable
2. Damage to aesthetic sites			O		Not applicable
3. Impacts to deposit resources			O		Not applicable
4. Others					

Remark : Each applicable item is marked with the following classifications.

A : As SEI is identified or expected, the further scrutiny is required.

B : Since SEI is not fully clarified through the preliminary evaluation, the further study is required.

C : As SEI is recognized to be nil, no further study is required .

D : Not clearly recognized (necessary to examine; take into account the cases clarified according to survey progress).

**Table 5.14 Checklist for Scoping (Natural Environment)**

Category of Environmental Impact	Level of Environmental Impact				Contents of judgement
	A	B	C	D	
<b>4. Biological and Ecological Issues</b>					
1. Changes in vegetation			O		Not applicable
2. Negative impacts on important or indigenous fauna and flora			O		Not applicable
3. Degradation of ecosystem with biological diversity		O			Necessary to provide resources management based on academic evidences
4. Negative impact on fishery resources		O			
5. Instructure/polliforation of harmful living thing			O		Not applicable
6. Degradation of tideland			O		Not applicable
7. Degradation of seaweed bed			O		Not applicable
8. Destruction or degradation of mangrove forests			O		Negligibly slight, if any
9. Degradation of coral reef			O		Not applicable
10. Others					
<b>5. Soil and Land Resources</b>					
<b>(1) Soil Resources</b>					
1. Soil erosion			O		No large-scale construction to ocean side
<b>(2) Land Resources</b>					
1. Ground subsidence			O		No large-scale use of underground water
<b>6. Hydrology and Air and Water Quality</b>					
<b>(1) Hydrology</b>					
1. Changes in surface water hydrology			O		Not applicable
2. Changes in ground water hydrology			O		Not applicable
3. Sedimentation			O		Not applicable
4. Impact to current			O		Not applicable
5. Impact to ocean wave			O		Not applicable
6. Impact to drift sand			O		Not applicable
7. Impediment of navigation			O		Not applicable
8. Others					
<b>(2) Water Quality and Temperature</b>					
1. Water contamination and deterioration of water quality			O		Slight influence
2. Contamination and deterioration of bottom material			O		Not applicable
3. Water eutrophication			O		Not applicable
4. Change in temperature of water			O		Not applicable
5. Others					
<b>(3) Atmosphere</b>					
1. Bad smell			O		Slight influence
2. Noise			O		Not applicable
3. Others					

Remark : Each applicable item is marked with the following classifications.

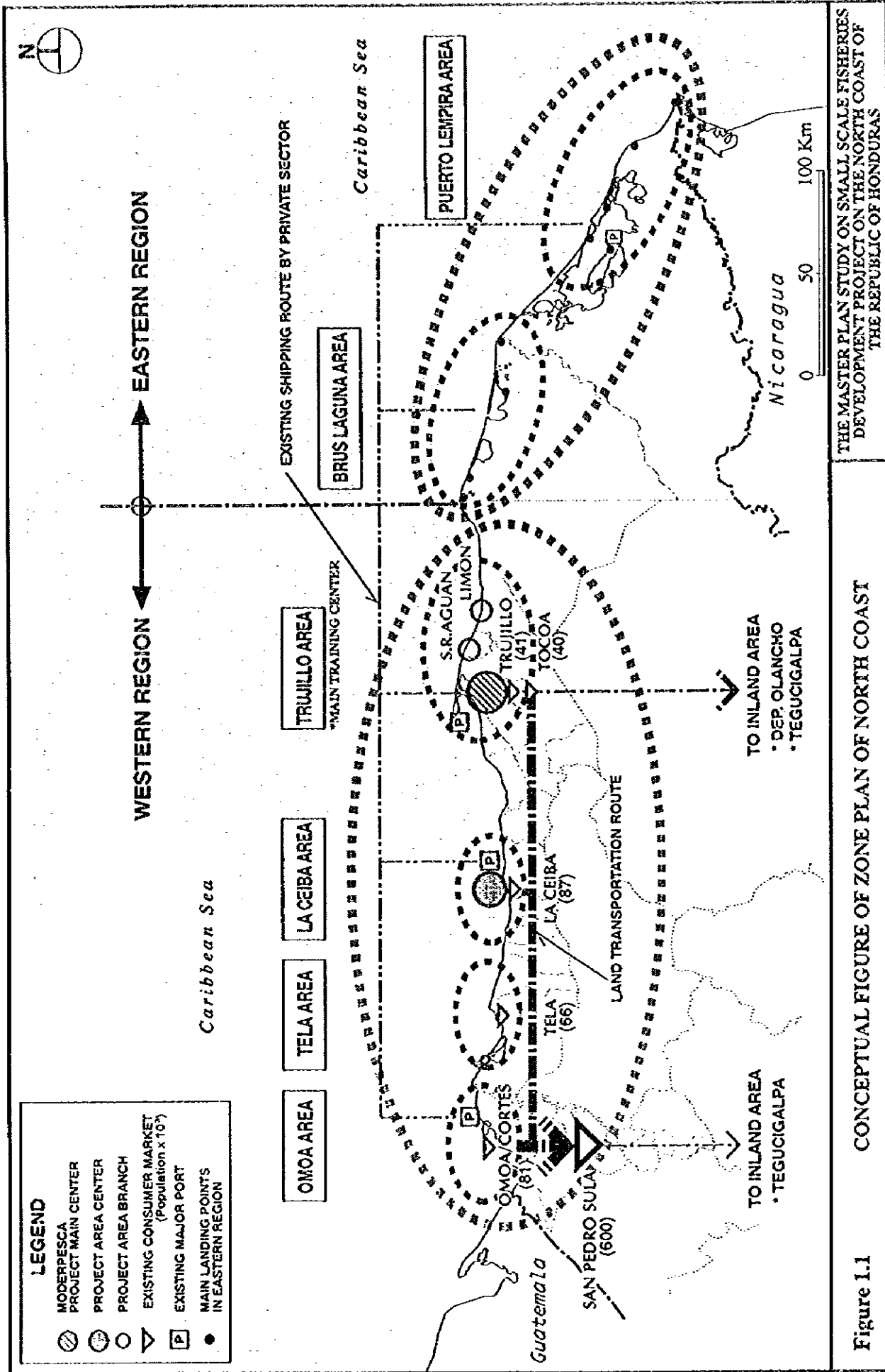
A : As SEI is identified or expected, the further scrutiny is required.

B : Since SEI is not fully clarified through the preliminary evaluation, the further study is required.

C : As SEI is recognized to be nil, no further study is required.

D : Not clearly recognized (necessary to examine; take into account the cases clarified according to survey progress).

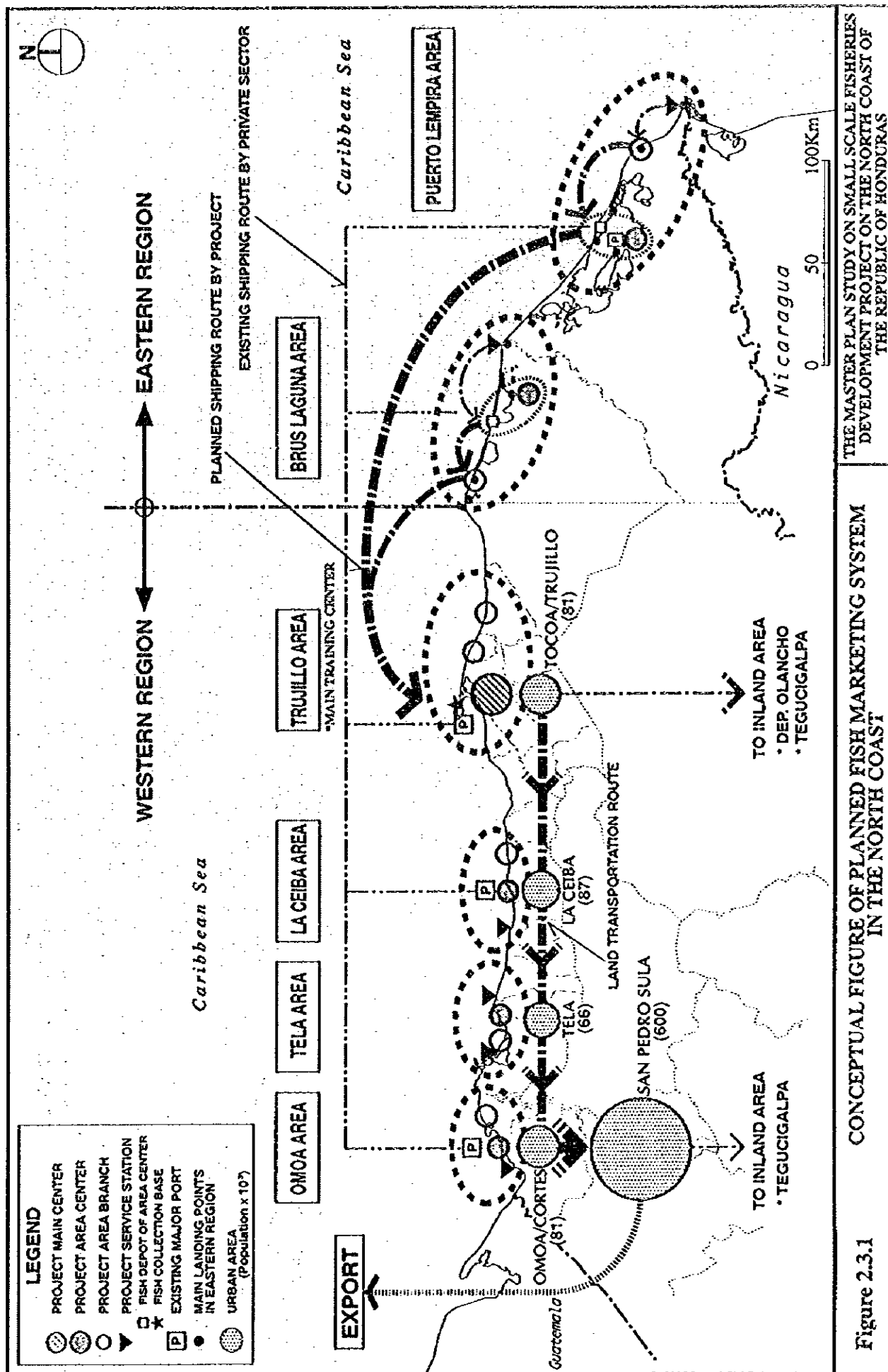




THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

CONCEPTUAL FIGURE OF ZONE PLAN OF NORTH COAST

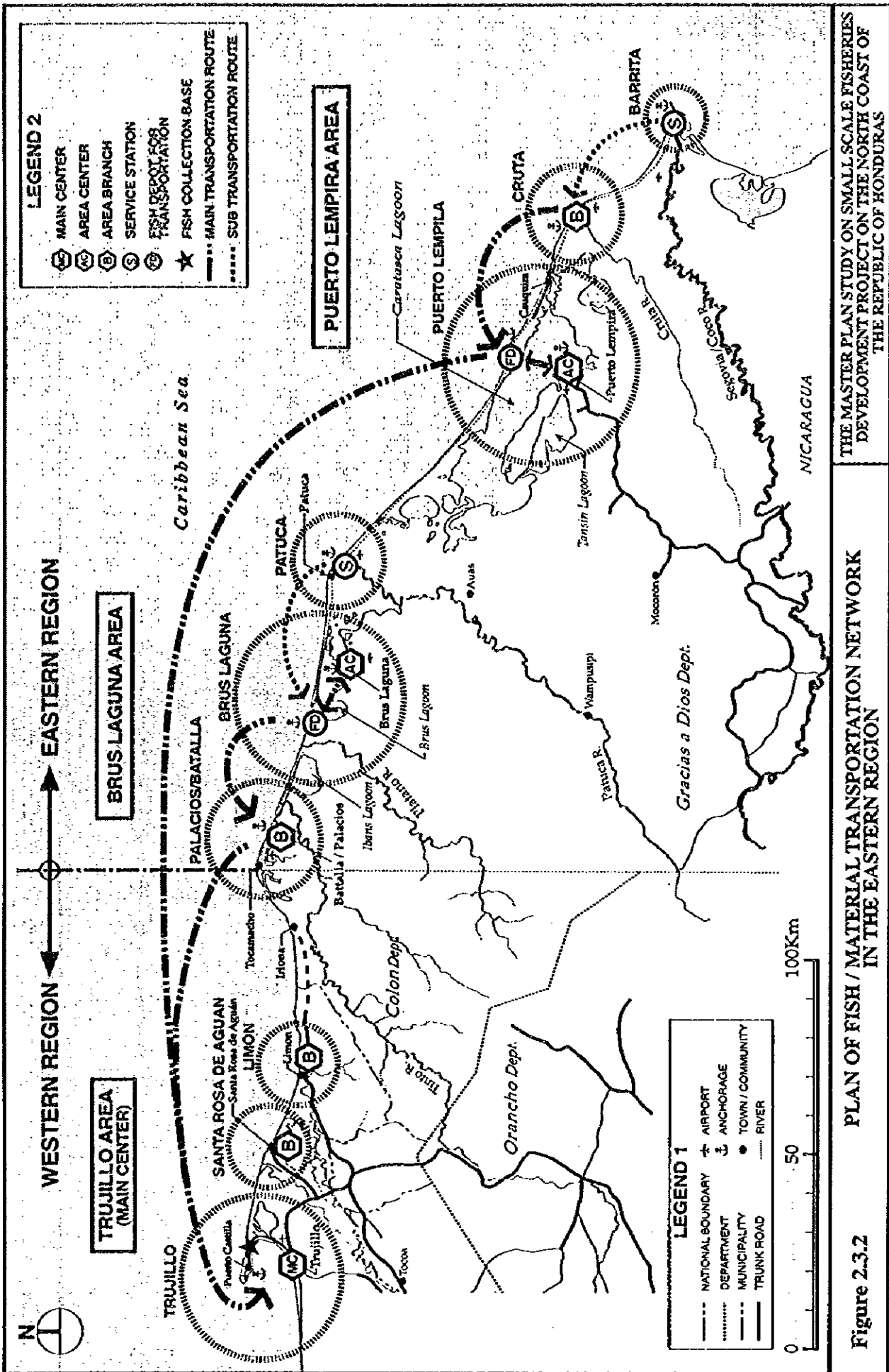
Figure 1.1



THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES  
DEVELOPMENT PROJECT ON THE NORTH COAST OF  
THE REPUBLIC OF HONDURAS

CONCEPTUAL FIGURE OF PLANNED FISH MARKETING SYSTEM  
IN THE NORTH COAST

Figure 2.3.1



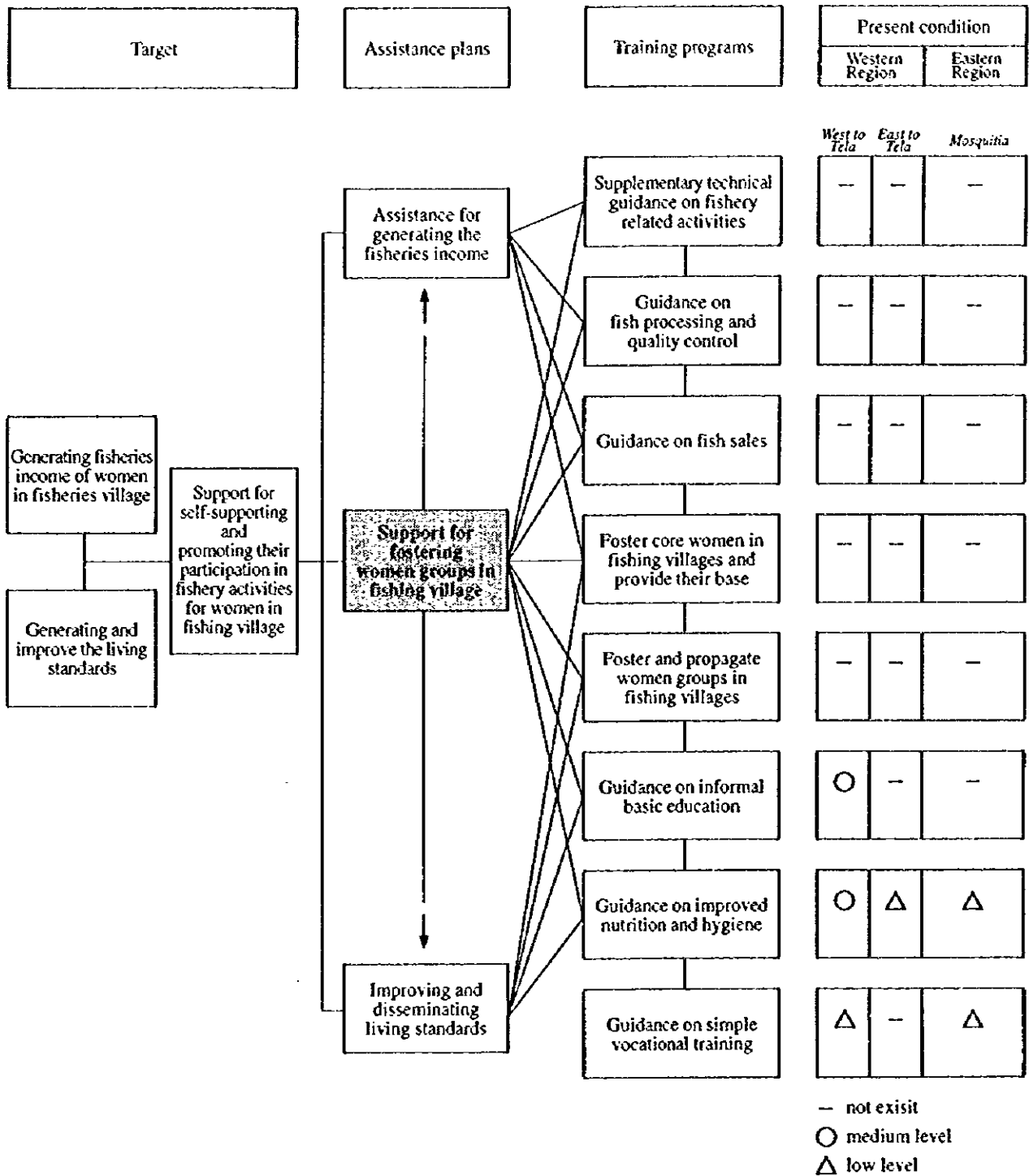
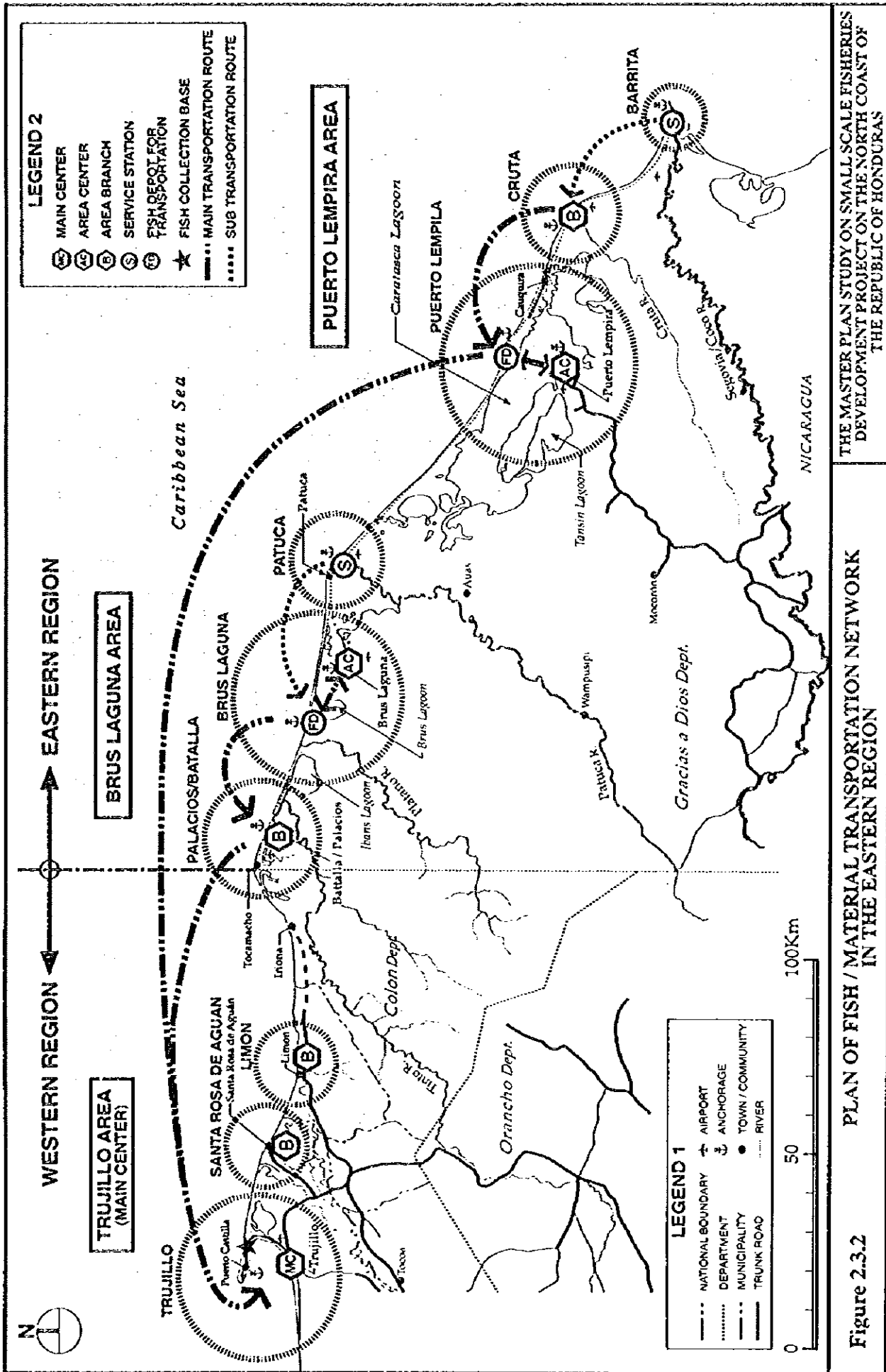


Fig. 2.5.1 Organizational structure of the sub-assistance plans and the respective training programs



THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

PLAN OF FISH / MATERIAL TRANSPORTATION NETWORK IN THE EASTERN REGION

Figure 2.3.2

1980

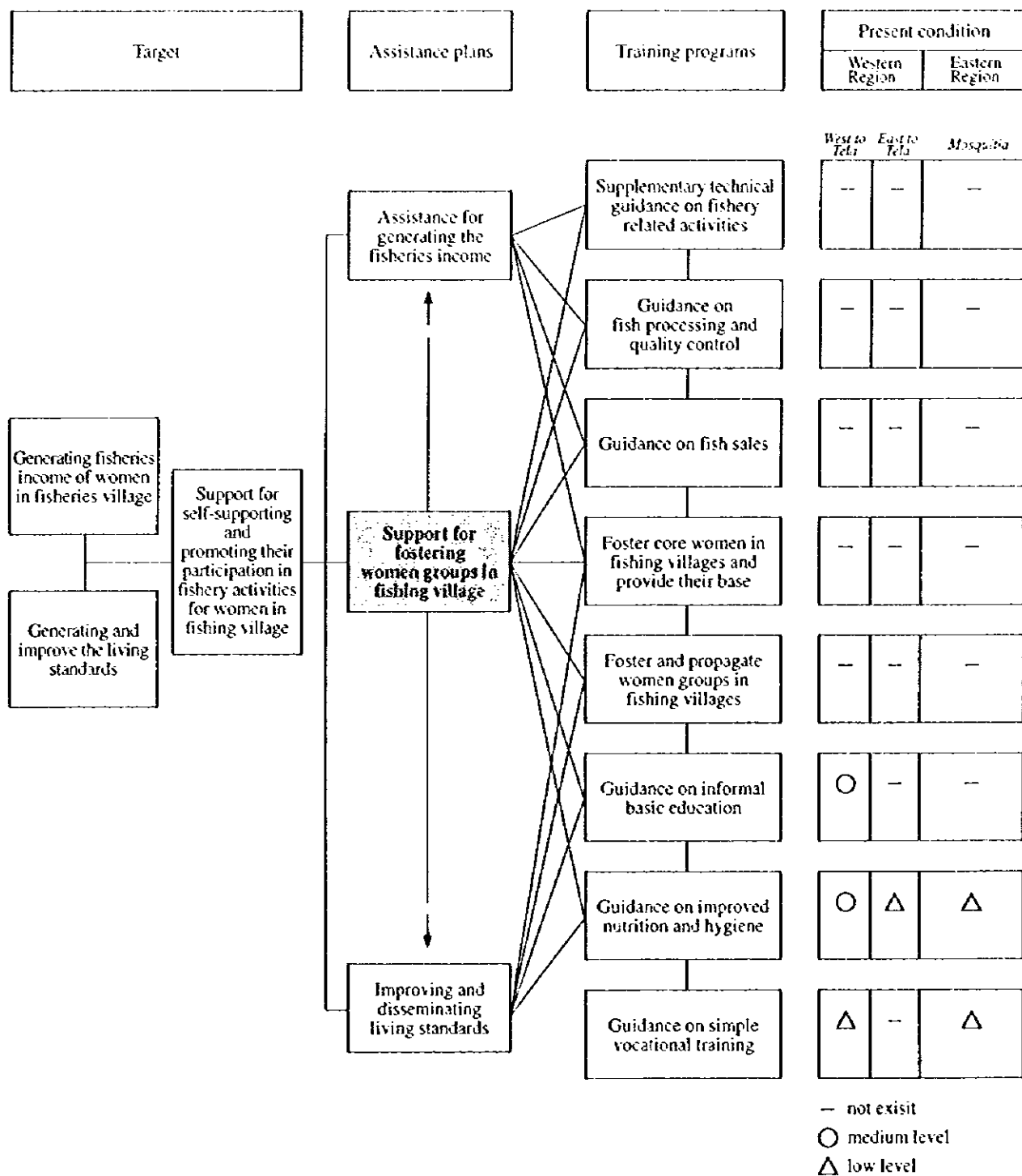


Fig. 2.5.1 Organizational structure of the sub-assistance plans and the respective training programs

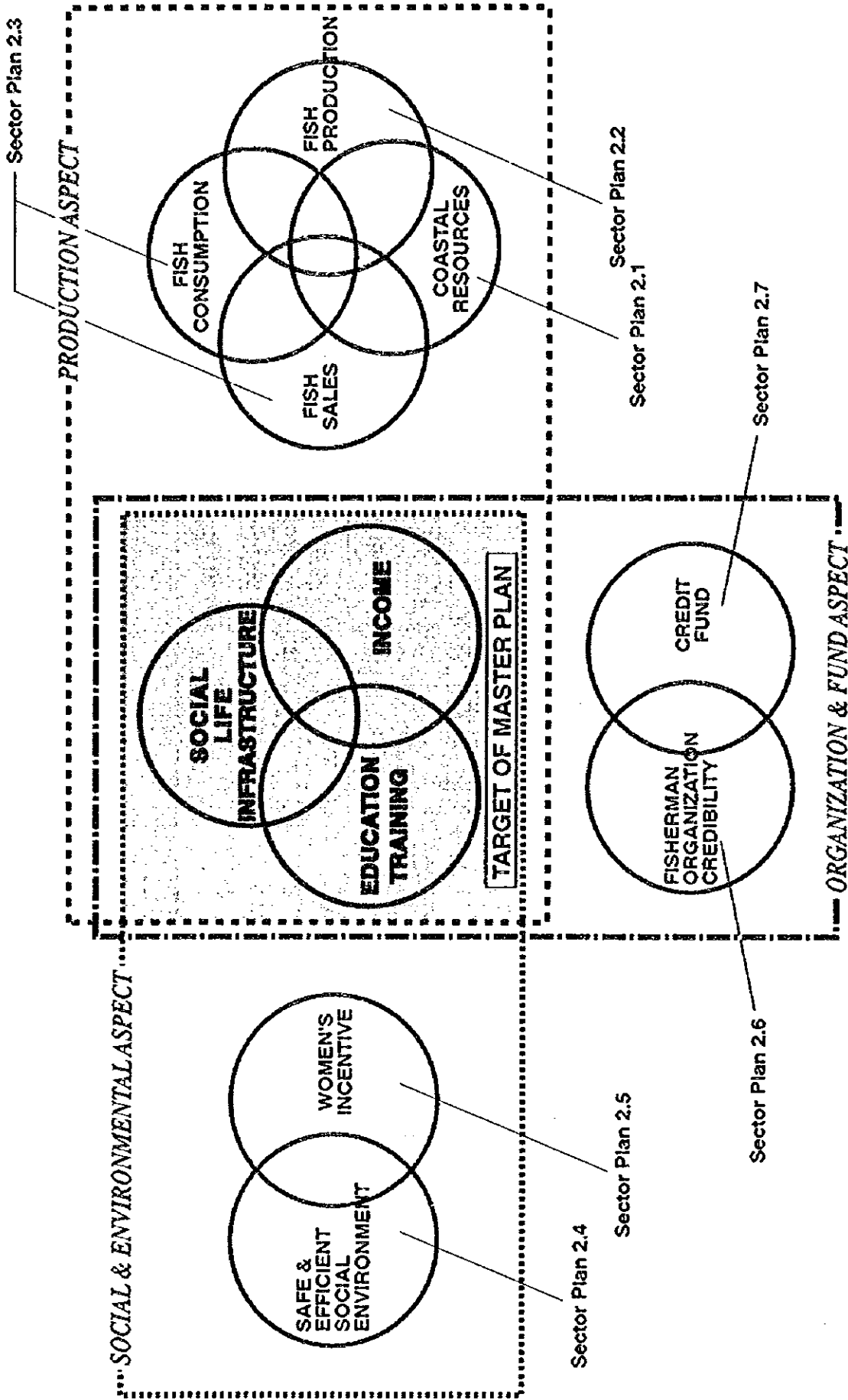
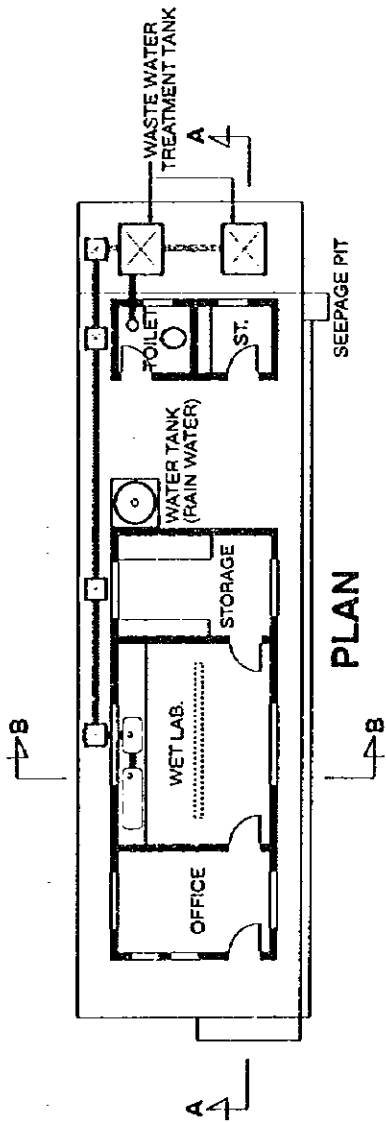


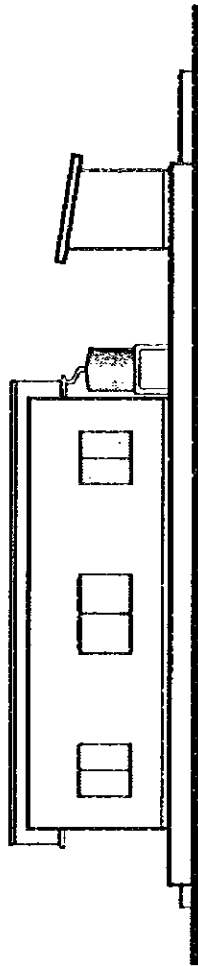
Figure 2.8.1 RELATION BETWEEN MASTER PLAN TARGET & SECTOR PLANS

# OUTLINE OF FACILITIES

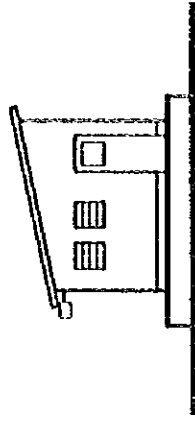
- BUILDING
  - STEEL TRUSS
  - STEEL FRAME & PANEL WALL
  - RC FLOOR
  - SPREAD FOUNDATION WITH SOIL IMPROVEMENT
- ELECTRICITY & PLUMBING
  - WATER TANK
  - PUBLIC ELECTRICITY SUPPLY
  - UTILITY & SANITARY



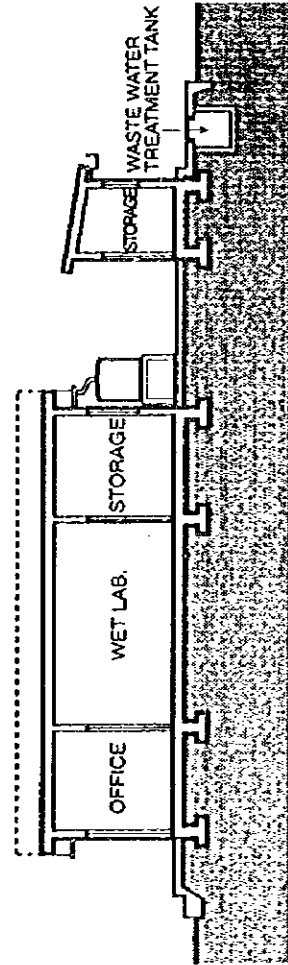
PLAN



ELEVATION-1

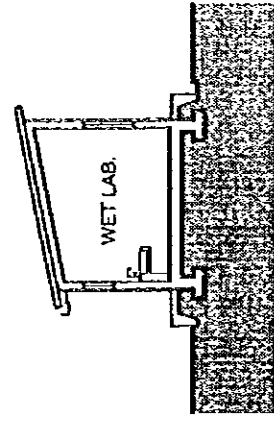


ELEVATION-2



SECTION A-A

0 4 m

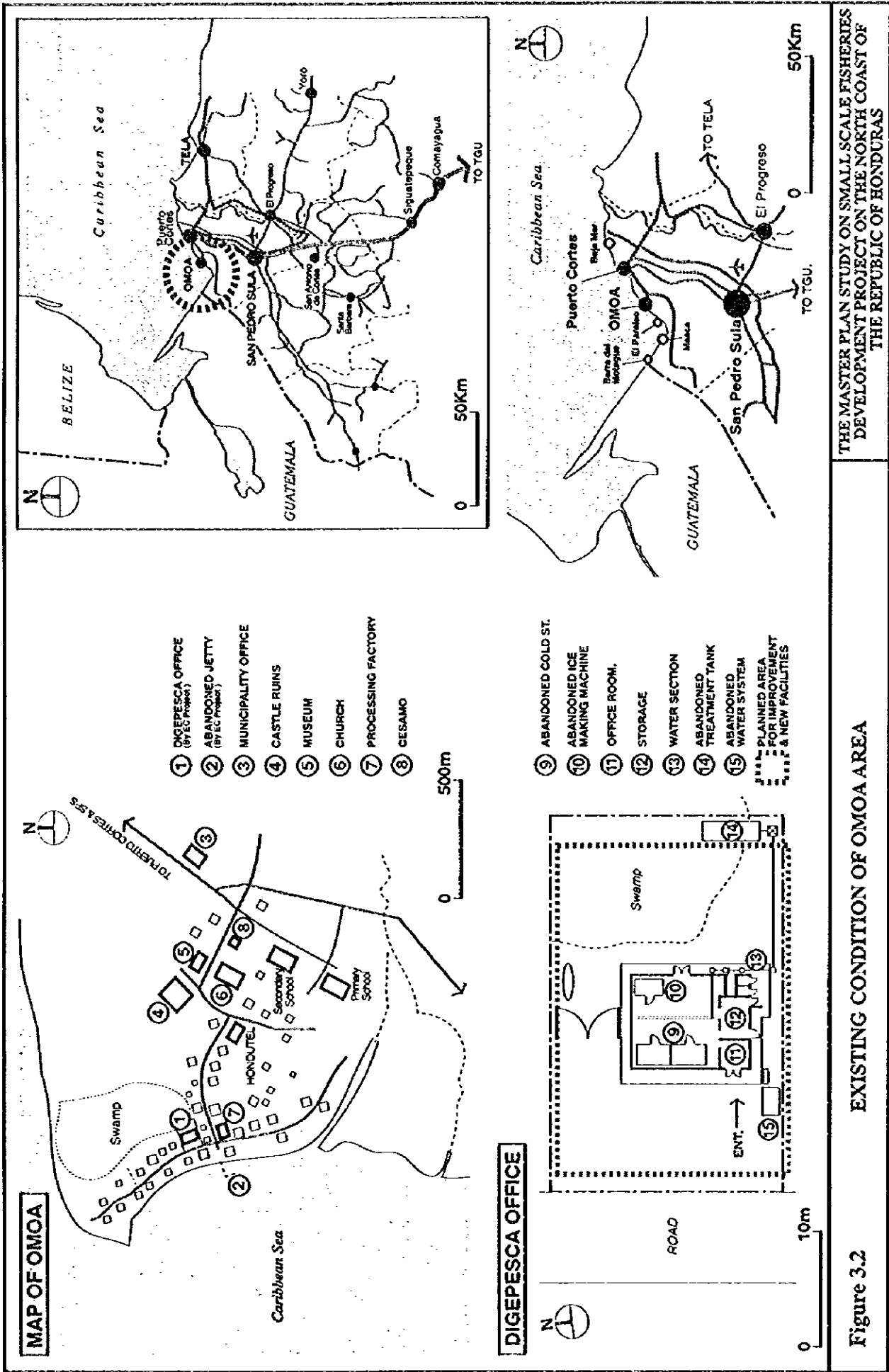


SECTION B-B

Figure 3.1  
(PLAN OF CAPACITY BUILDING FOR COASTAL RESOURCES MANAGEMENT.)  
FACILITY PLAN OF FIELD RESEARCH LABORATORY

THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES  
DEVELOPMENT PROJECT ON THE NORTH COAST OF  
THE REPUBLIC OF HONDURAS





THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

**Figure 3.2** EXISTING CONDITION OF OMOA AREA

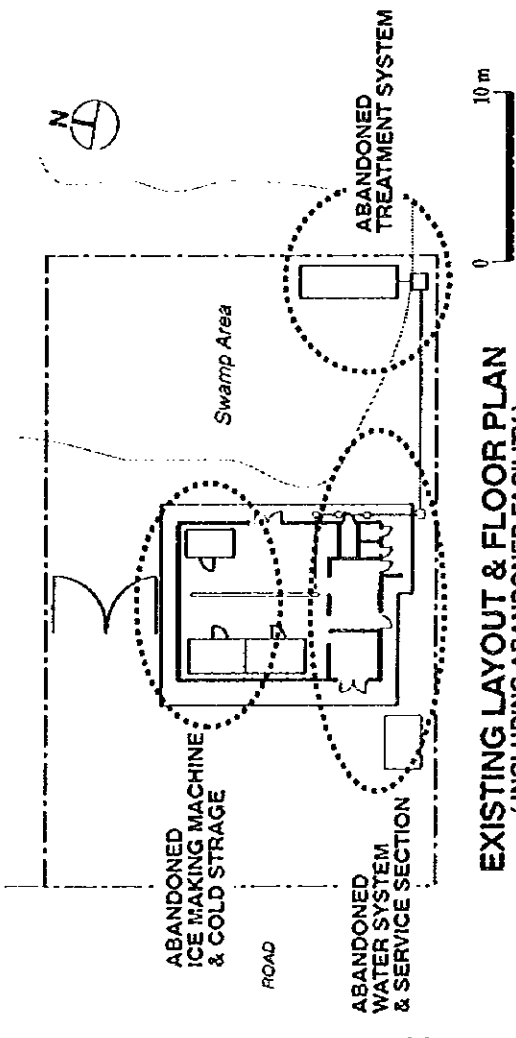
# OUTLINE OF FACILITIES

## NEW BUILDING

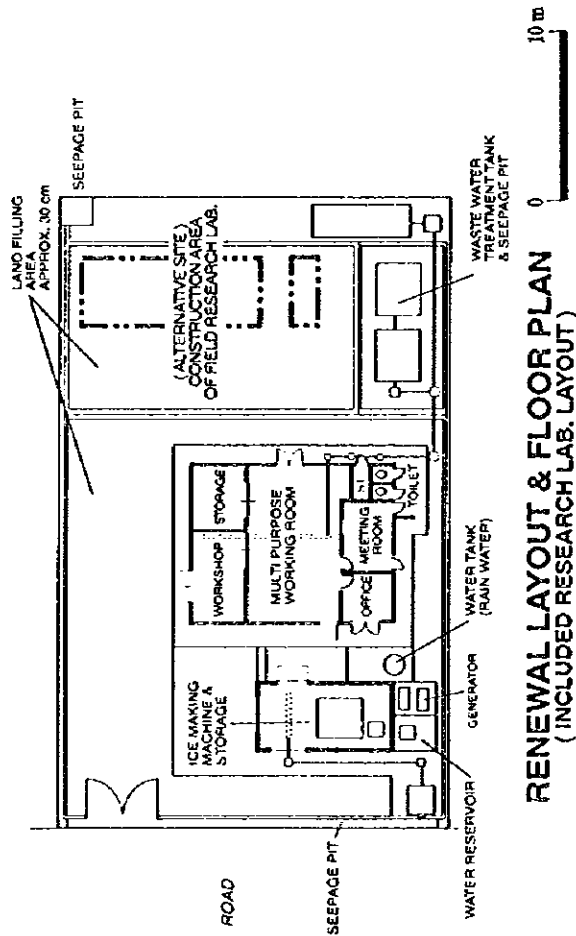
- STEEL TRUSS
- STEEL FRAME & PANEL WALL
- RC FLOOR
- SPREAD FOUNDATION WITH SOIL IMPROVEMENT

## ELECTRICITY & PLUMBING

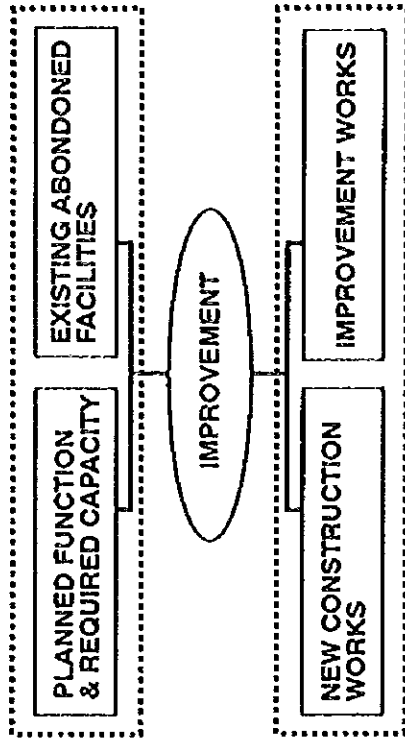
- ICE STORAGE
- WATER TANK(WITH RAINWATER RESERVOIR)
- NORMAL & POWER ELECTRICITY SUPPLY
- UTILITY & SANITARY
- WASTE WATER TREATMENT SYSTEM



**EXISTING LAYOUT & FLOOR PLAN**  
(INCLUDING ABANDONED FACILITY)



**RENEWAL LAYOUT & FLOOR PLAN**  
(INCLUDED RESEARCH LAB. LAYOUT)



(PLAN OF SMALL-SCALE FISHERIES MODERNIZATION)  
**FACILITY PLAN OF OMOA AREA CENTER**

**Figure 3.3**

THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES  
DEVELOPMENT PROJECT ON THE NORTH COAST OF  
THE REPUBLIC OF HONDURAS

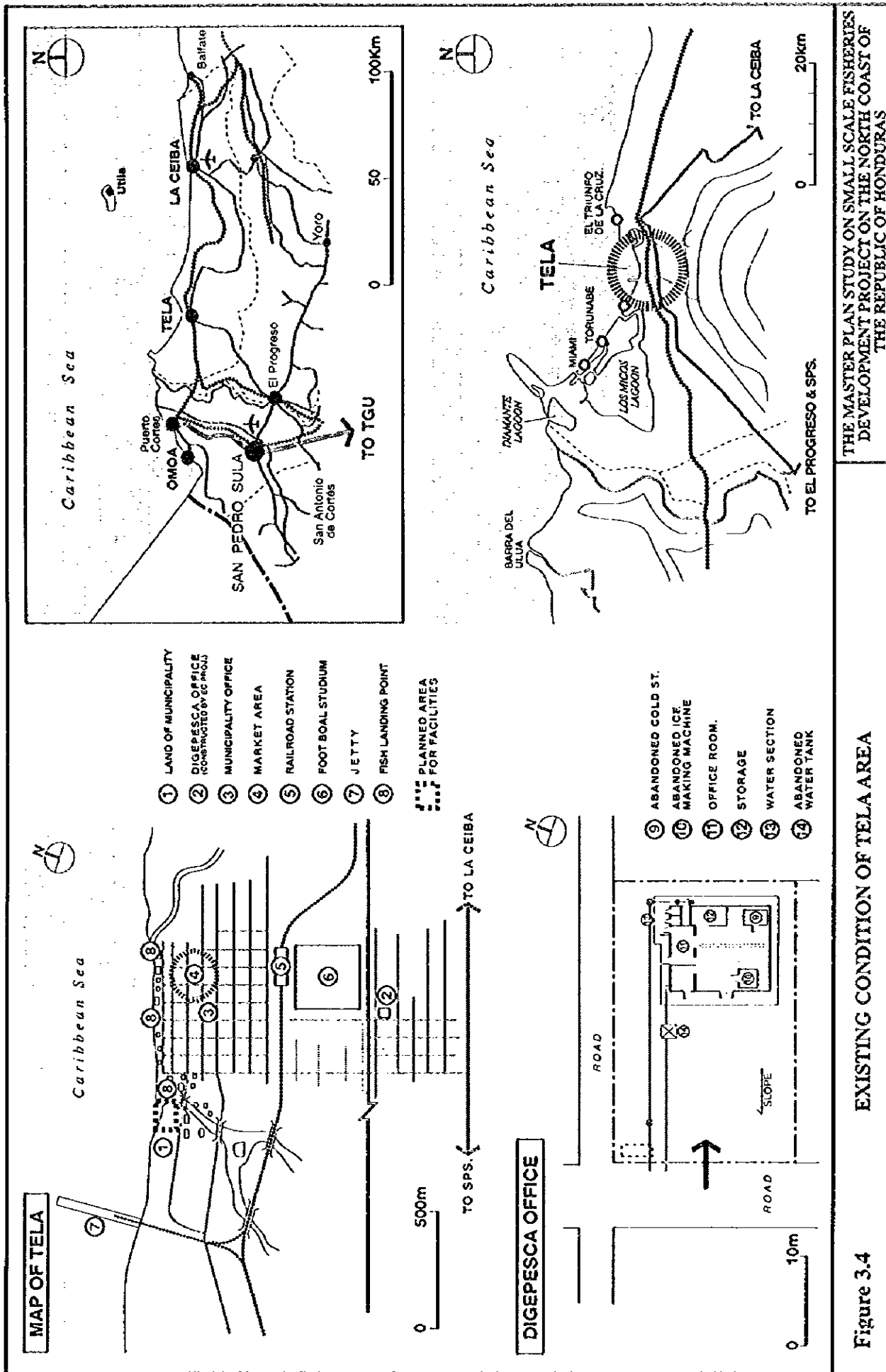


Figure 3.4 EXISTING CONDITION OF TELA AREA

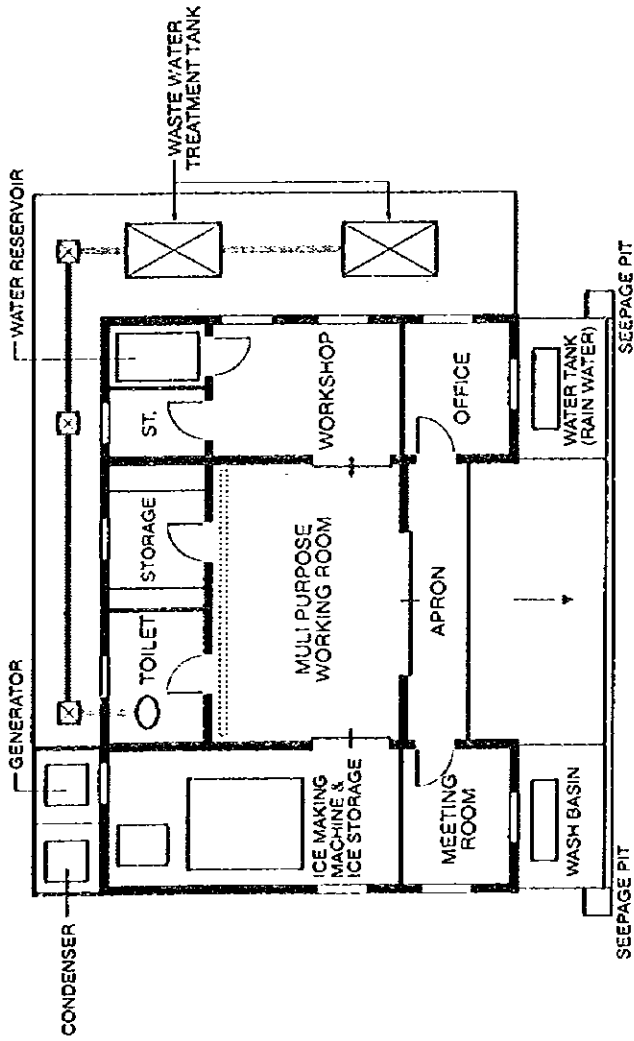
# OUTLINE OF FACILITIES

□ BUILDING

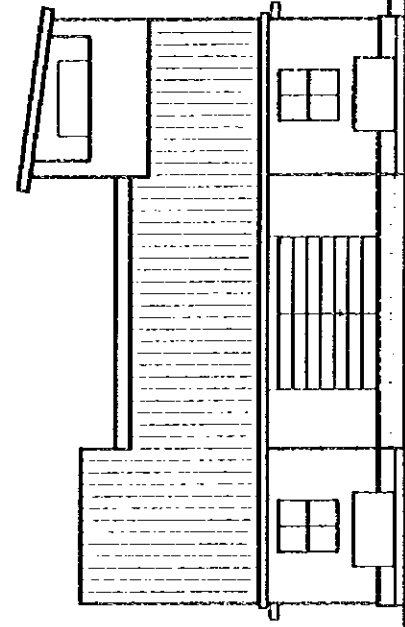
- STEEL TRUSS
- STEEL FRAME & PANEL WALL
- RC FLOOR
- PILE FOUNDATION WITH SOIL IMPROVEMENT

□ ELECTRICITY & PLUMBING

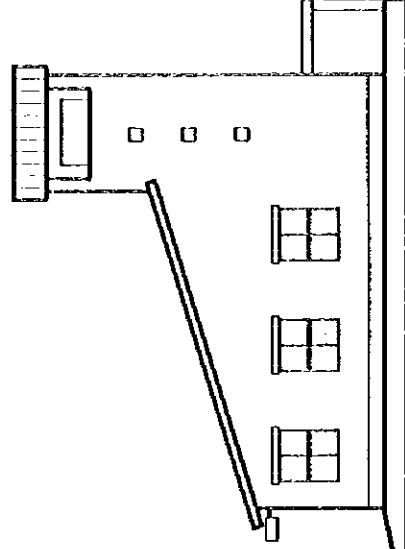
- ICE MAKING MACHINE & COLD STORAGE
- WATER TANK (WITH RAINWATER RESERVOIR)
- POWER & NORMAL ELECTRICITY SUPPLY
- UTILITY & SANITARY



## PLAN



## ELEVATION-1

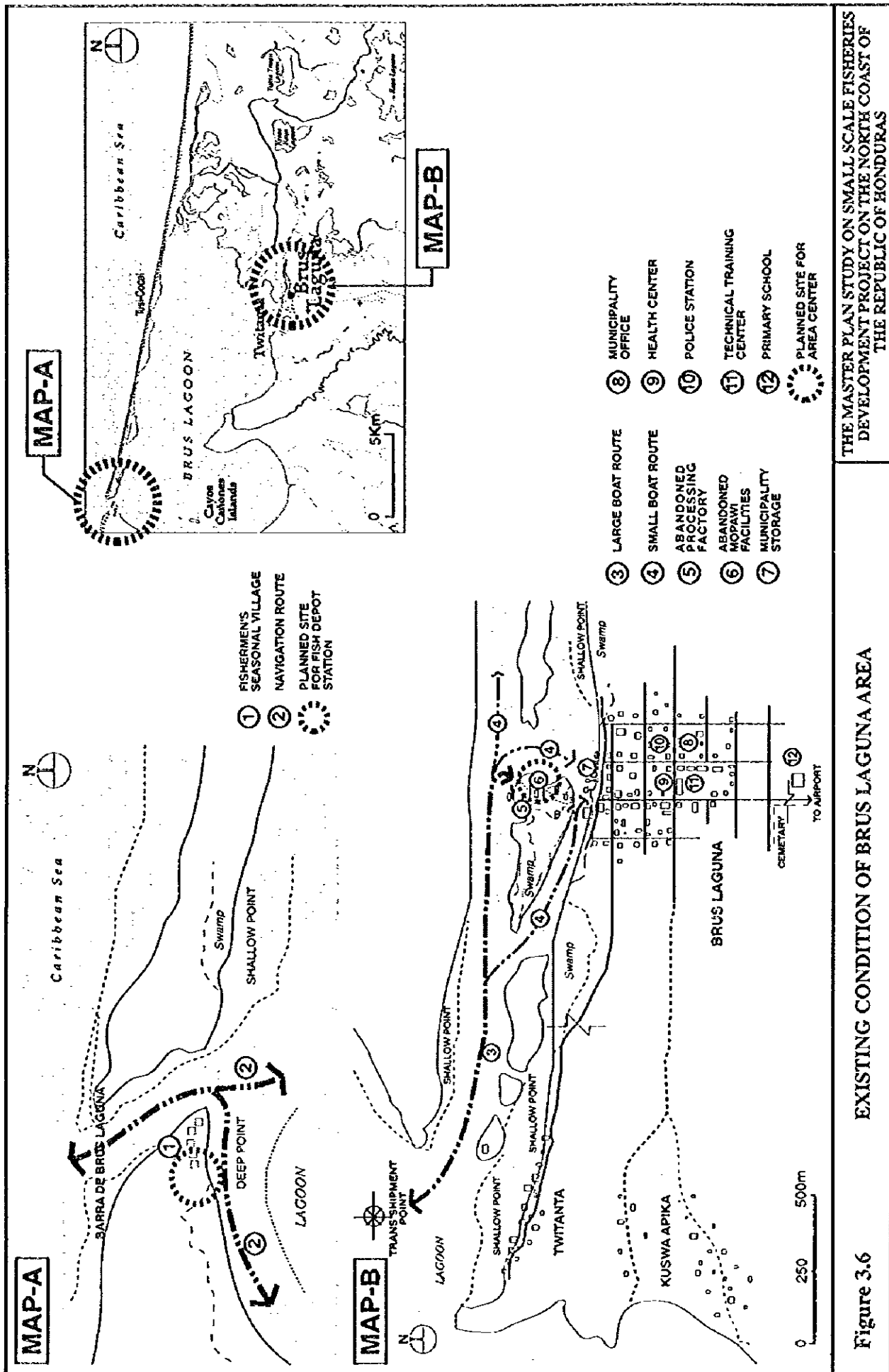


## ELEVATION-2

Figure 3.5

(PLAN OF SMALL-SCALE FISHERIES MODERNIZATION)  
FACILITY PLAN OF TELA AREA CENTER

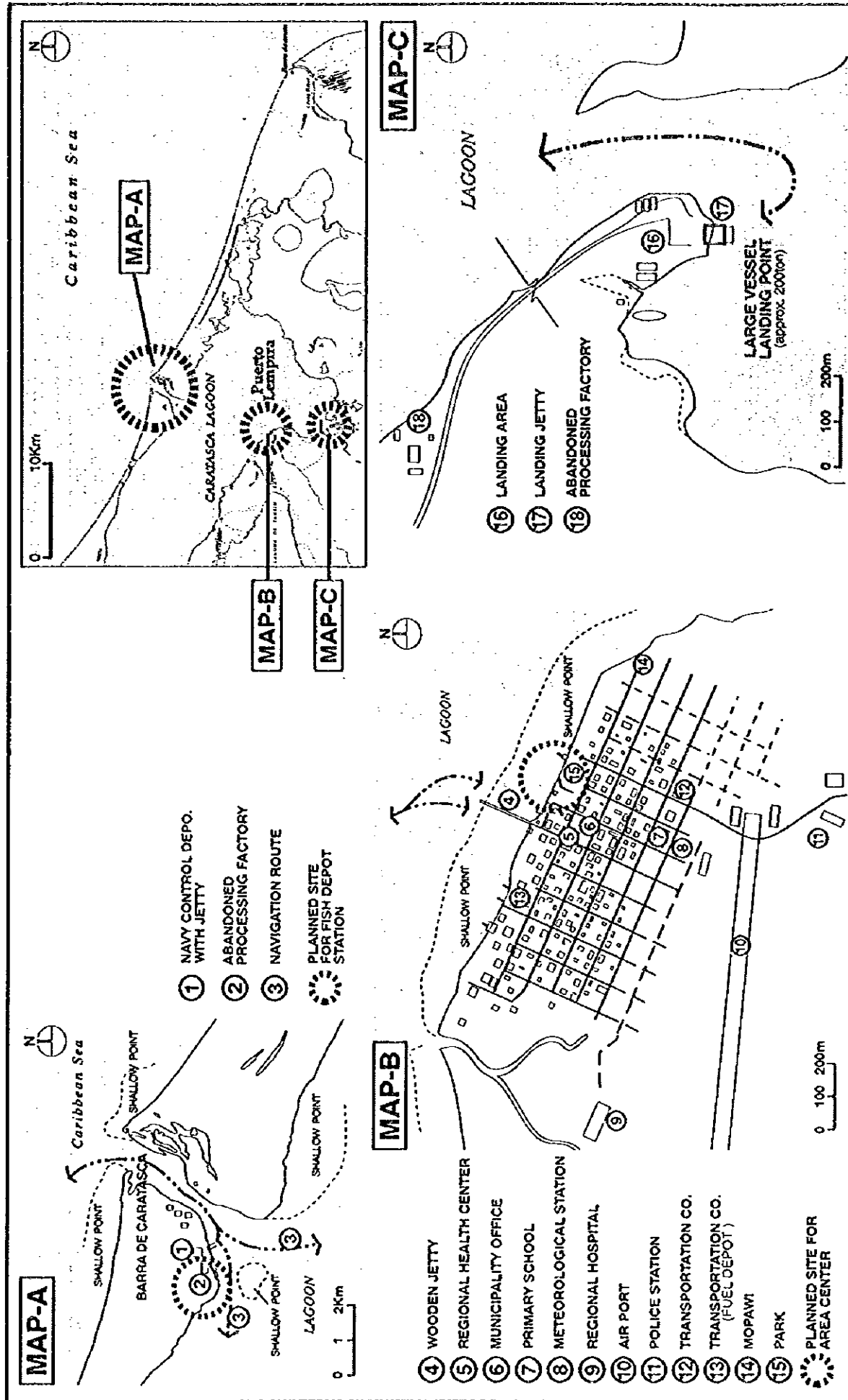
THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES  
DEVELOPMENT PROJECT ON THE NORTH COAST OF  
THE REPUBLIC OF HONDURAS



THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

EXISTING CONDITION OF BRUS LAGUNA AREA

Figure 3.6



THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

EXISTING CONDITION OF PUERTO LEMPIRA AREA

Figure 3.7

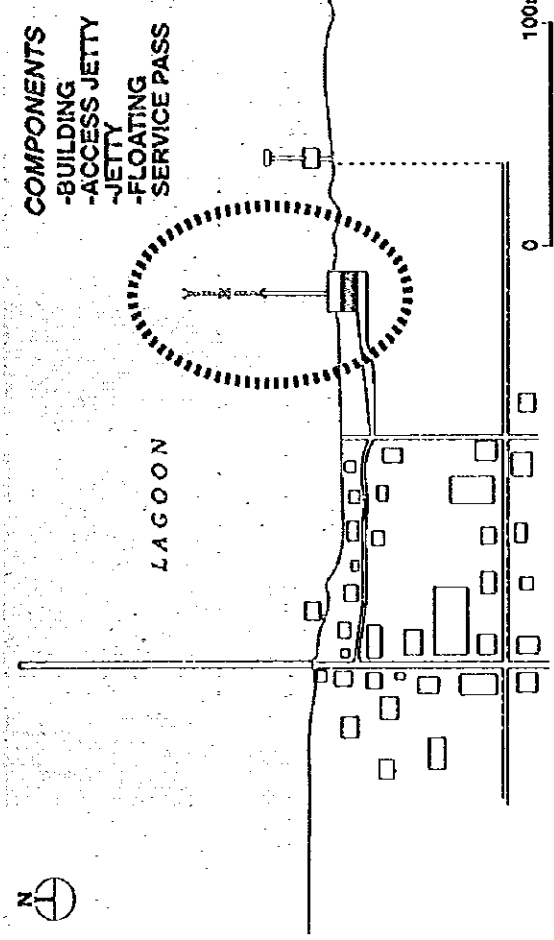
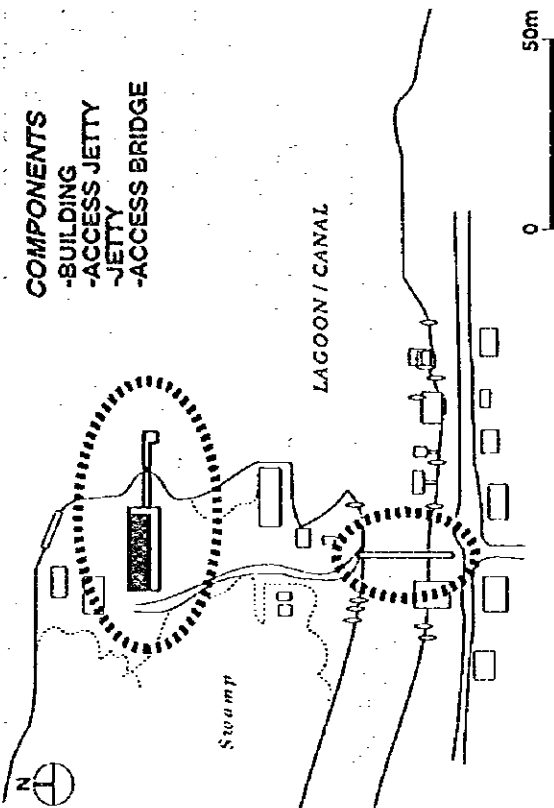
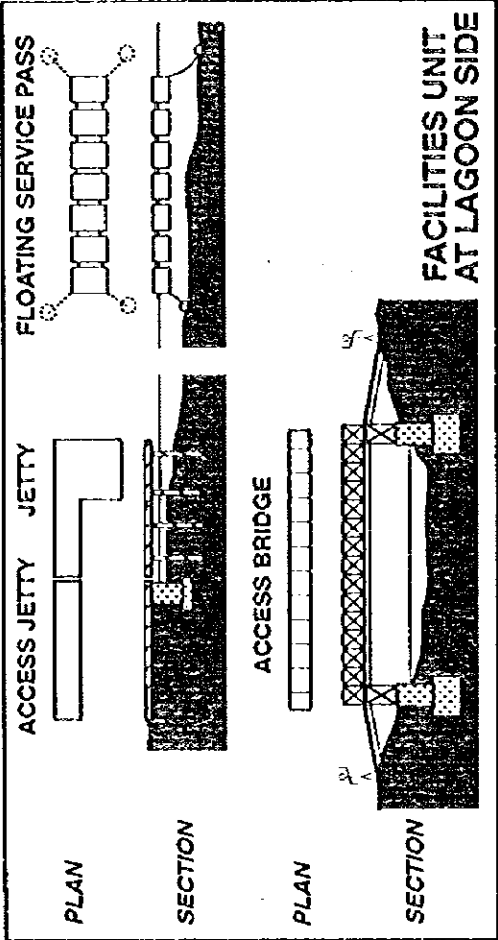
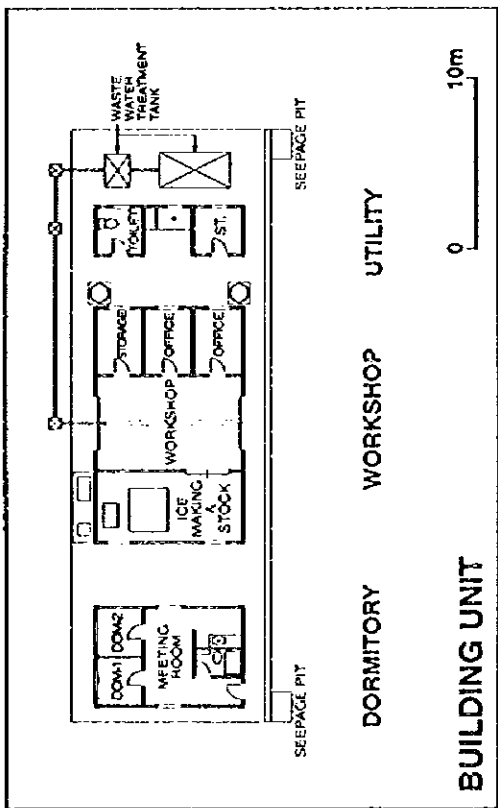
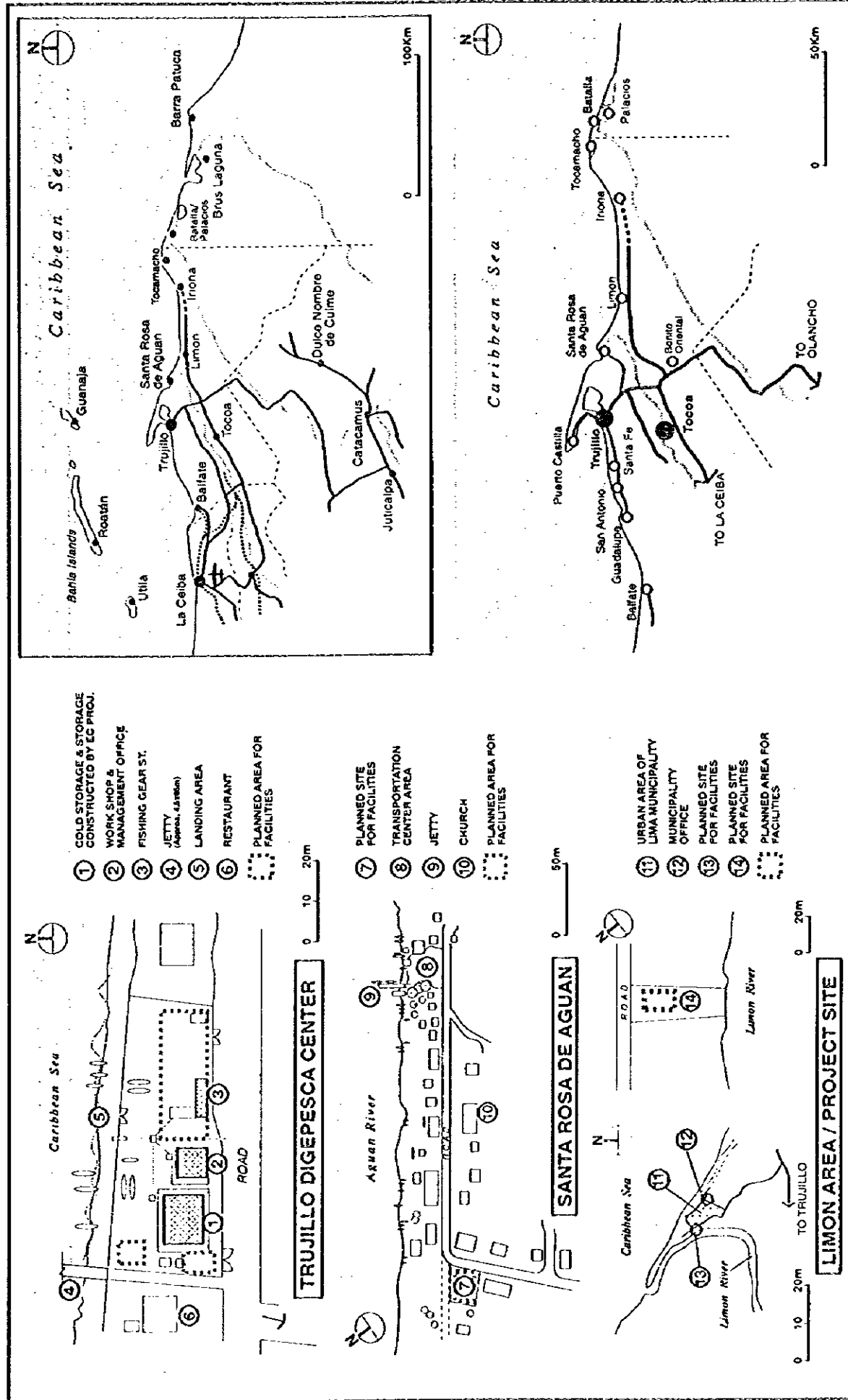


Figure 3.8

FACILITY PLAN OF BRUS LAGUNA & PUERTO LEMPIRA AREA CENTER

THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

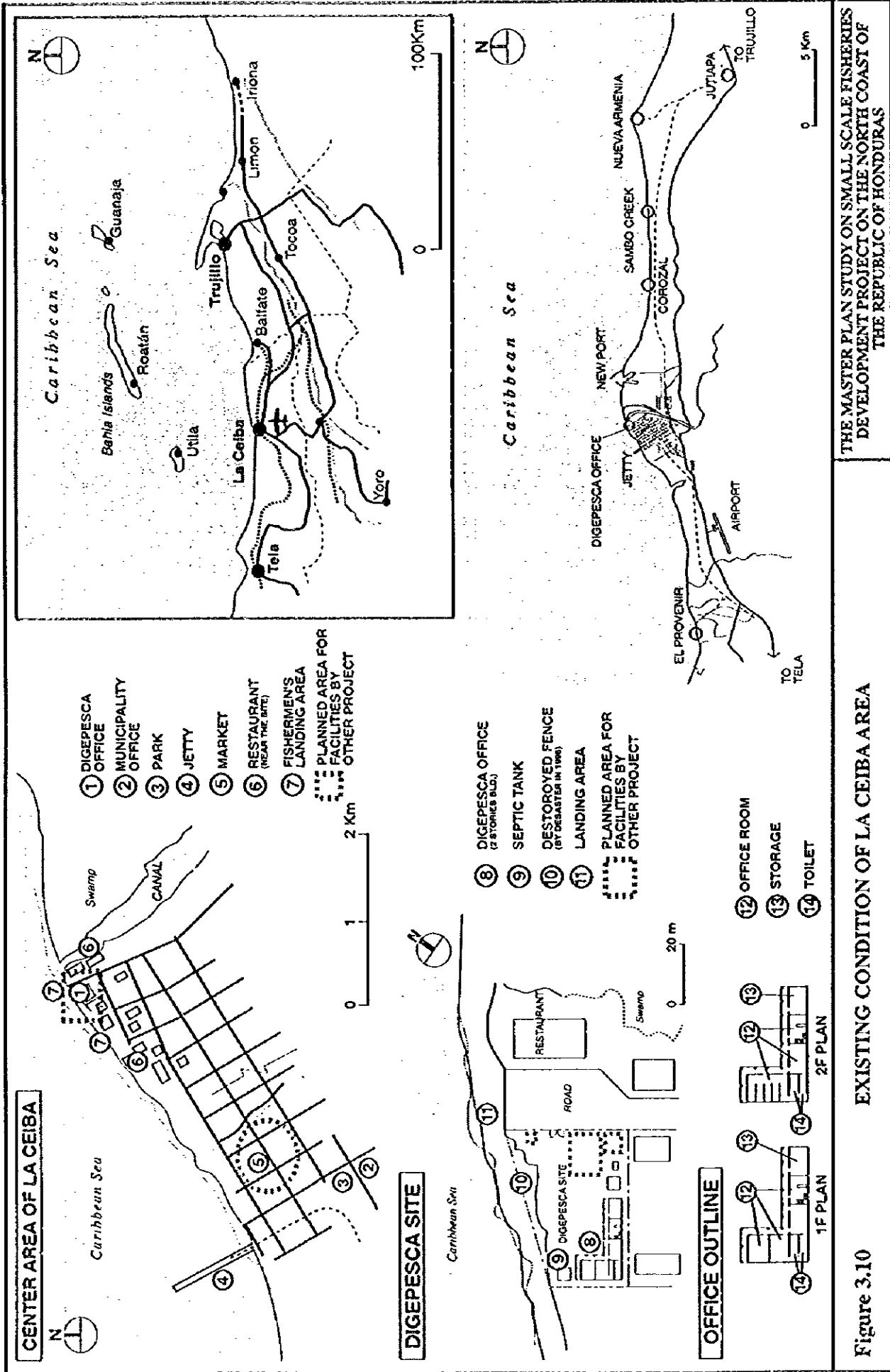


THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

EXISTING CONDITION OF TRUJILLO AREA (TRUJILLO / SANTA ROSA DE AGUAN / LIMON)

Figure 3.9





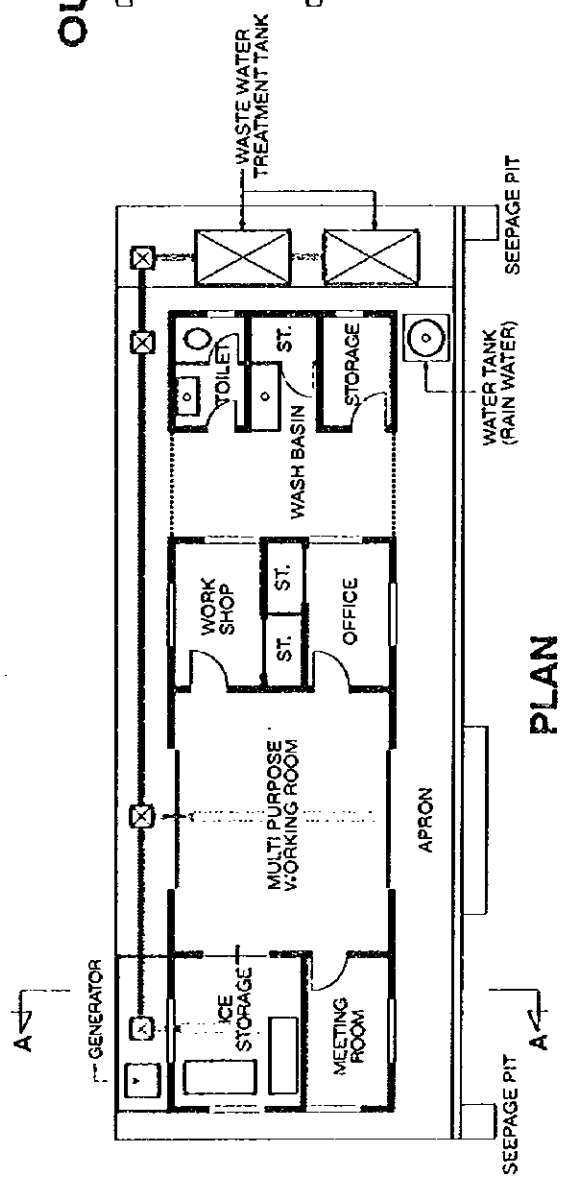
# OUTLINE OF FACILITIES

## □ BUILDING

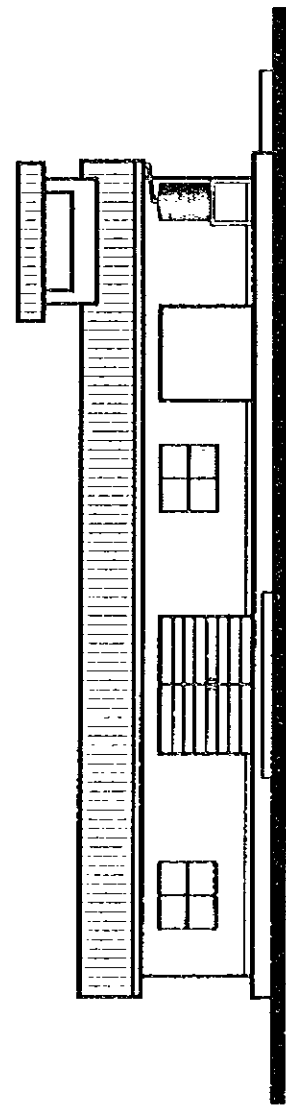
- STEEL TRUSS
- STEEL FRAME & PANEL WALL
- RC FLOOR
- SPREAD FOUNDATION WITH SOIL IMPROVEMENT

## □ ELECTRICITY & PLUMBING

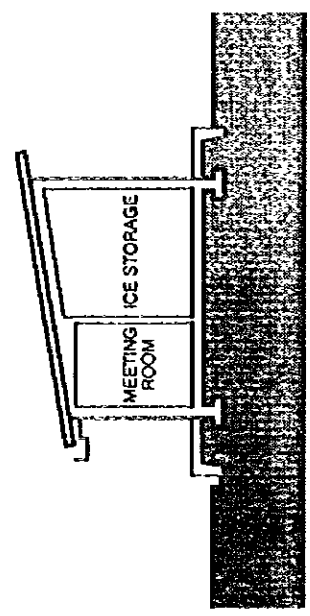
- ICE STORAGE
- WATER TANK (WITH RAINWATER RESERVOIR)
- NORMAL ELECTRICITY SUPPLY / GENERATOR
- UTILITY & SANITARY



## PLAN



## ELEVATION



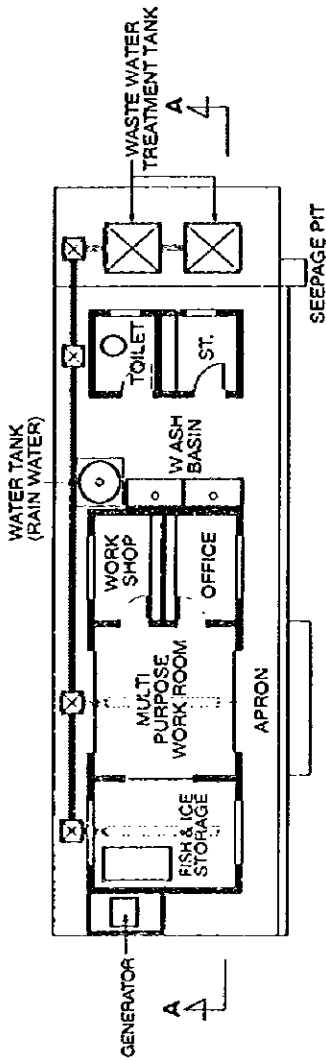
## SECTION A-A

Figure 3.11 FACILITY PLAN OF STANDARD MODEL FOR AREA BRANCH CENTER  
(PLAN OF SMALL-SCALE FISHERIES MODERNIZATION)

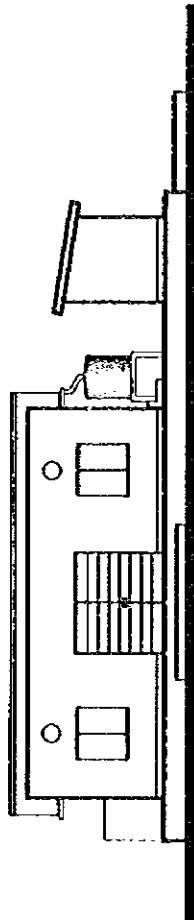
THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

# OUTLINE OF FACILITIES

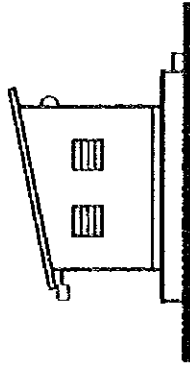
- BUILDING
  - STEEL TRUSS
  - STEEL FRAME & PANEL WALL
  - RC FLOOR
  - SPREAD FOUNDATION WITH SOIL IMPROVEMENT
- ELECTRICITY & PLUMBING
  - WATER TANK
  - GENERATOR
  - UTILITY & SANITARY



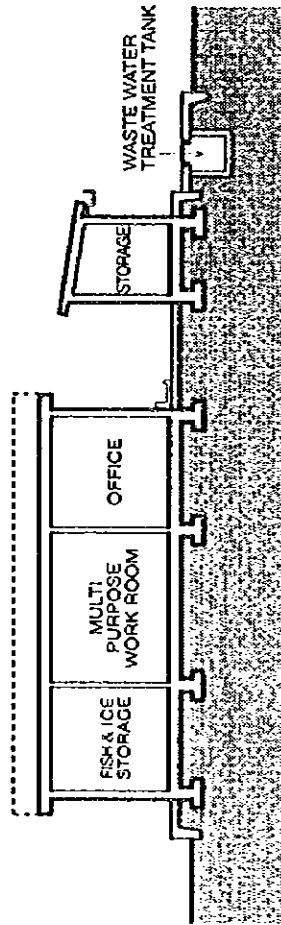
PLAN



ELEVATION-1



ELEVATION-2



SECTION A-A

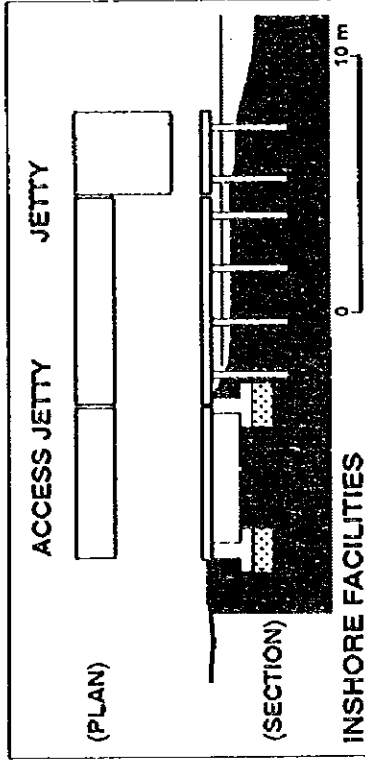
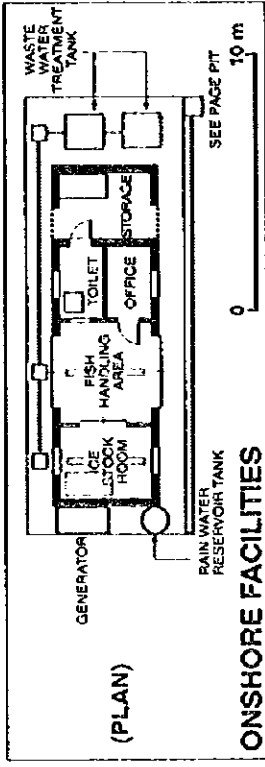


THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

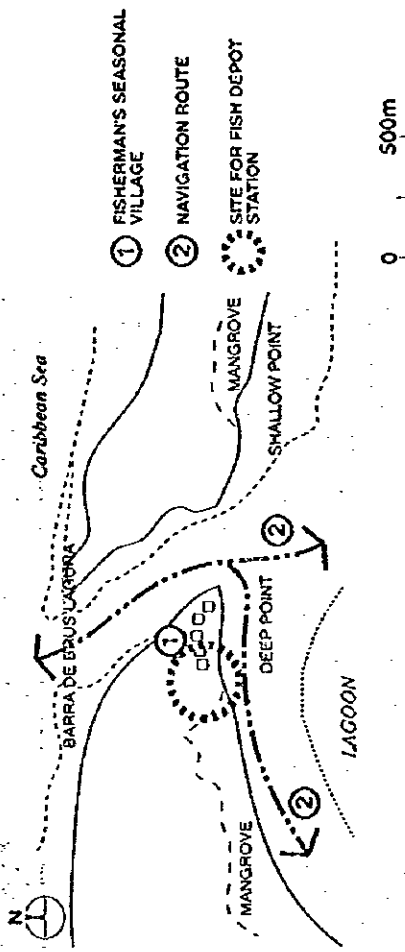
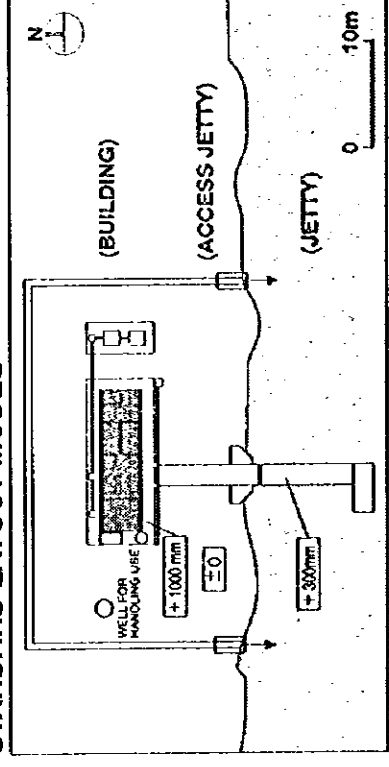
(PLAN OF SMALL-SCALE FISHERIES MODERNIZATION)  
FACILITY PLAN OF STANDARD MODEL FOR SERVICE STATION

Figure 3.12

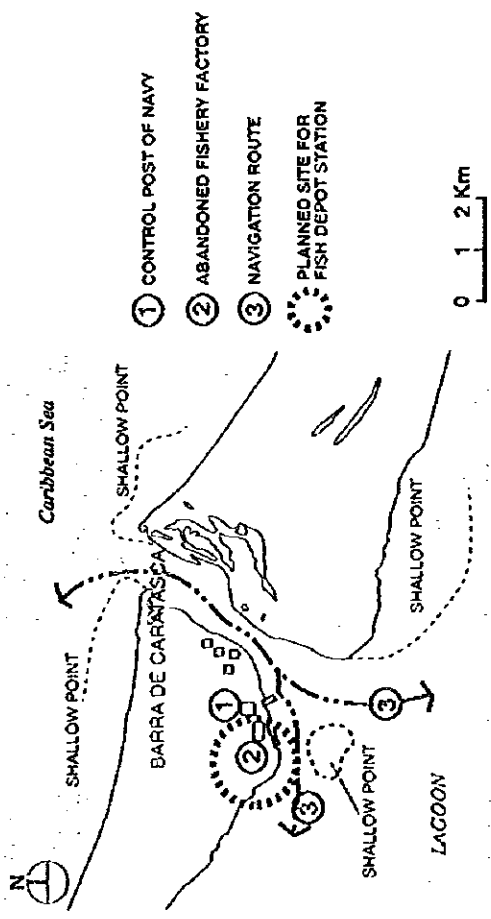
**MAJOR COMPONENT**



**STANDARD LAYOUT MODEL**



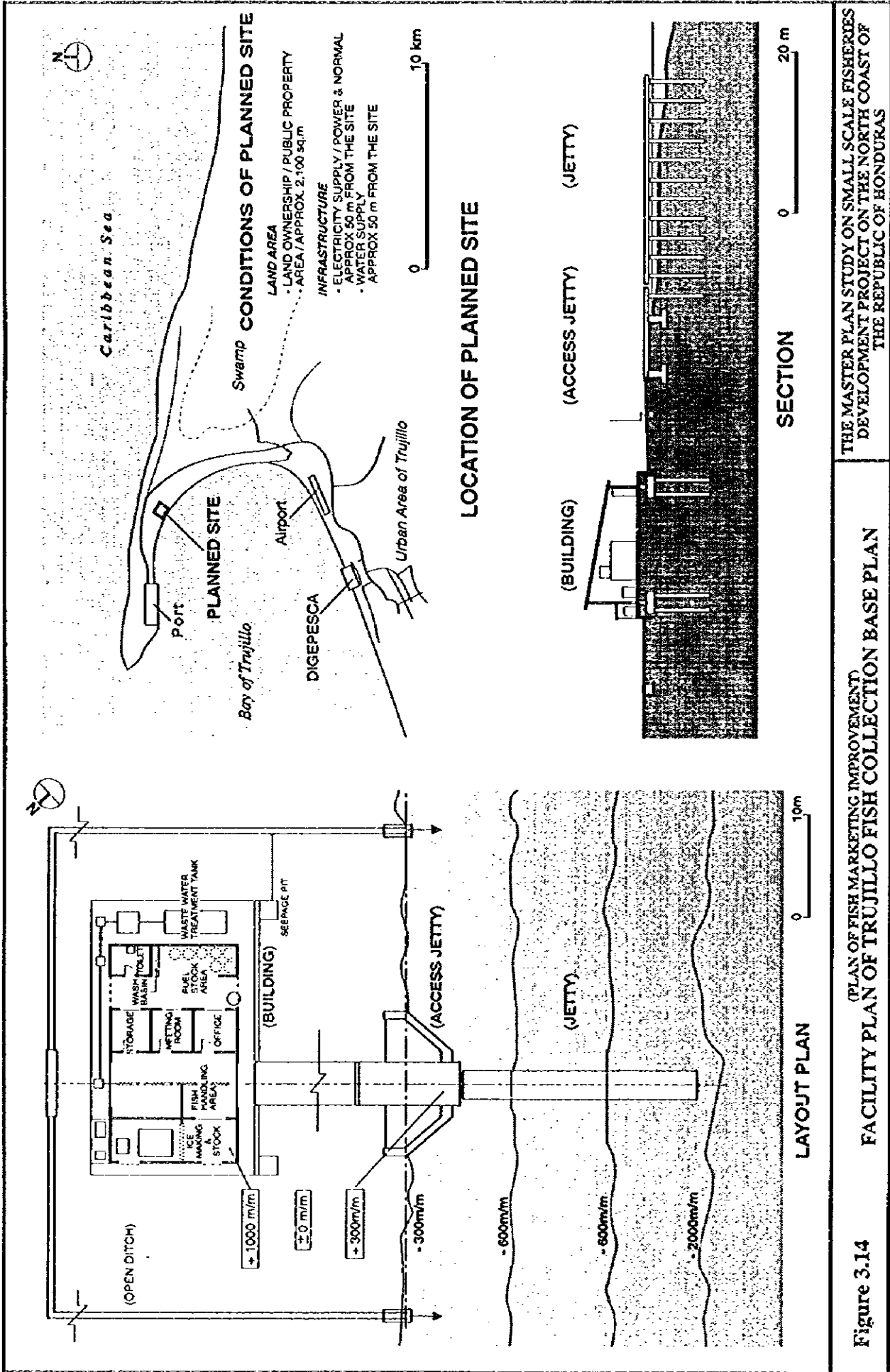
**PLANNED LOCATION OF BRUS LAGUNA FISH DEPOT STATION**



**PLANNED LOCATION OF PUERTO LEMPIRA FISH DEPOT STATION**

THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

Figure 3.13 (PLAN OF SMALL-SCALE FISHERIES MODERNIZATION) FACILITY PLAN OF STANDARD MODEL FOR FISH DEPOT STATION



THE MASTER PLAN STUDY ON SMALL SCALE FISHERIES DEVELOPMENT PROJECT ON THE NORTH COAST OF THE REPUBLIC OF HONDURAS

(PLAN OF FISH MARKETING IMPROVEMENT)  
**FACILITY PLAN OF TRUJILLO FISH COLLECTION BASE PLAN**

Figure 3.14