

Chapter 9

Socioeconomic Development Plan

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9.1 Overview

The socioeconomic constraints of coastal communities are, in general, originated from the seasonality of coastal activities and the poor alternative livelihood existing in the coastal area, compared with the inland communities. Consequently, the average income tends to be lower in the coastal than in the inland area, and coastal communities do not have other choices than to exploit coastal resources and, in most cases, they do not take any conservation measures. Problems seen in the coastal areas are, so to speak, mainly based on these socioeconomic constraints of coastal communities.

In this chapter, the Socioeconomic Development Plan aim to fill the gap between the coastal and the inland communities and to contribute to coastal area management by easing socioeconomic constraints of coastal communities, thereby lowering the exploitation pressure on the coastal resources.

The Socioeconomic Development plan is composed of Coastal Fishery Development, Coastal Tourism Development, and Improvement of Coastal Community Living Environment. The Coastal Fishery Development Plan aims to increase the income and diversify the income sources from fishery development. The Coastal Tourism Development Plan aims to utilize existing coastal tourism resources and to establish the mechanism to bridge the gap between tourism development and environmental conservation.

The Improvement of Coastal Community Living Environment Plan aims to upgrade community living conditions and consequently reduce the environmental impacts on coastal areas and improve the condition of the communities' coastal area in short and long terms.

9.2 Coastal Fisheries Development

9.2.1 Scope of Coastal Fisheries Development

(1) Scope of Coastal Fisheries Development

Human activities conducted in coastal sea areas and/or wetland areas such as fishing, culture, collection or otherwise harvesting in general of other aquatic life are now taken as Target Fisheries under this Study. The target study area is defined as the inland area that forms watershed areas and also the sea water-mass within twelve (12) miles from the shoreline. However, the coastal resource use management planning is more closely focused at inshore coastal areas, where most of socioeconomic activities are conducted and expected to develop.

For working out development plans for fisheries, it is therefore contemplated to focus on the target fisheries conducted mainly in coral reefs and surrounding areas within the 0-3 mile area of the coastal sea, and also those conducted in coastal wetland areas (including the area of mangrove forest). Concentrating more efforts of study on resource use activities in limited inshore areas may also be justified as explained below:

- a) The current fisheries legislation designates only the 0-3 mile sea area as specifically reserved fishing area for marginal inshore fishers and fish farmers, leaving the adjoining 3-6 mile sea surface area still open to fisheries of various types and scales under the open access policy framework permitting fishers from other areas to enter;
- b) The jurisdictional powers and responsibilities for district administration over sea areas under the newly enacted regional autonomy legislation are limited to inshore sea surface area of up to 4 nautical miles from shore; and
- c) Community-based, self-governing resource use management is therefore feasible only in the 0-3 mile area.

Inland open water fisheries and freshwater aquaculture are excluded from the target fisheries for reason of not substantially affecting the ecosystem and natural environment in coastal areas.

Target segments of fishermen, fish farmers and other workers in resource use are those living in coastal villages, relying on fisheries for their household's livelihood.

(2) Constraints and Problems in Coastal Fisheries Development

There are two areas where the major constraints and problems are identified. One area is the basic policy formulation for and the attitude of the government in planning and implementing the governance of resource use activities, fisheries being one major component to constitute resource use activities. Weakness in the government policy formulation and strategy determination for fisheries development, particularly in rural coastal areas, is the absence of determination and firm commitments to support and protect marginal coastal fishers, fish farmers and fishery-related workers. Policy formulation and program/project planning even for regional development had been done by the central government. The regional governments lacked initiatives to consider and determine what is good for their own people in the region and waited for handouts of programs and projects with budget allocations or grants for what the central government thought and decided to be good for the people and for regional development.

The other area where the constraining and problematic elements found is the assessment and evaluation of resources existing and available for exploitation in coastal waters. Weakness in resource potential assessment and evaluation has given rise to incorrect, unprecise perceptions that are used as basis for policy formulation and development planning. Both the governments at all levels and the people who were always led by the governments were fascinated with rosy and ambitious development goals and targets set and promised by the central government.

For future development of resource-based businesses and operations in the new age of democracy and regional autonomy, a bold and complete shift in the basic concept of regional governance is essential. At the same time, solutions to problems that constrain development and growth in regions and districts must be sought and found with own initiative. Problems and constraints identified in the two areas and to be taken up for solution in the master plan are as follows:

- lack of initiatives and commitments on the part of government to encourage coastal people to be self-reliant and self-sufficient and create enabling and conducive climate for attainment of sustainable livelihood security;
- common property open access regime of fisheries and lack of law enforcement permitting free access and entry into fisheries that cause exposure of artisanal fishermen and fish farmers to the risk of declining livelihood opportunities;
- increasing pressure of excessive harvesting efforts against limited resource regeneration capacity;
- low-productive capital means of resource harvesting by coastal fishermen and fish farmers, turning out minimal returns in harvesting and their weak financial standing;

- continued and increasing illegal fishing with destructive measures and use of harmful fishing gears; and
- over-emphasized attention to and highly ambitious target setting for aquaculture development as illustrated in Program *Peningkatan Ekspor Hasil Perikanan* 2003 (PROTEKAN 2003), a national 5-year development plan for promotion of marine products export and aquaculture development, and over-expectation on marine culture prospect.

(3) Development Issues

The key issue in fisheries development is sustainability and one other essential issue is livelihood security, which could only be attained when linked with sustainable utilization of resources. Efforts in seeking answers for removal of constraints and solutions to problems as addressed in the foregoing sub-section should evolve from the key issue of sustainability linked with livelihood security.

Therefore, development of coastal fisheries should be planned in this perspective and direction, namely,

- attainment of resource use sustainability which should be linked to livelihood security of fishermen, fish farmers and workers in coastal communities;
- improvement in productivity for saving on harvest cost and increasing harvest value that would redound on generating increase in income from resource use in coastal waters for marginal fishermen, fish farmers and workers;
- reinforcement of resource regenerating capacities;
- reduction of workforce from coastal fisheries to reduce pressure of harvesting effort and to attain increased outputs of harvesting for remaining fishermen, fish farmers and workers;
- implementation of fisheries management, the effective mechanism to control, check and balance effort of resource exploitation; and
- formulation and institutionalization of policy and legal framework incorporating the new rights, restricted resource use right and custodian right to facilitate fisheries management.

9.2.2 Strategies for Fisheries Development

The most fundamental strategy for attainment of sustainability in resource utilization is implementation of effective management and control over resource use efforts to contain and sustain them within ecological limits. Clear recognition of the need for, and firm commitments to support a community-based, self-governing resource use management must be made on the part of government and self-reliance and self-determining attitudes must be cultivated and developed in the minds of fishermen and/or fish farmers.

At the same time, strengthening and reinforcing limited capacities of resource regeneration will be a most important strategy for ensuring improved livelihood to sustain its security for coastal fishermen, fish farmers and workers.

The strategies for attaining these targets in dealing with the issues are:

- to implement community-based, self-governing coastal resource use management;
- to reinforce and strengthen natural resource regeneration capacity by:
 - installation and use of Artificial Reefs and FADs (Fish Aggregating Devices) for enhancement of resource potential and for diversion of fishing efforts from coral reef areas creating/providing artificial habitat as breeding, nursery and grow-out grounds for sedentary species and as feeding shelters for migratory species,
 - creation of protected and/or prohibited areas and restricted seasons, and
 - extension of efforts in experimental researches for realizing artificial stocking of coastal waters by release of fries and seedlings;
- to formulate an institutional framework in support of resource use management for:
 - establishing a firm legislative basis to facilitate resource use management that incorporates the new rights of use and custodian rights and licensing systems,
 - imposition of restrictions and limits on fishing/culture efforts, particularly on on-going and future operations of mariculture for which no effective regulations are existing,
 - development of consciousness for responsible behavior and obligations in fishing and culture operations, and
 - intensive training and extension services to provide technical information and practices for sustainable operations for coastal fishermen and fish farmers (example is the Coastal Fisheries Management Center in Tacloban, the Philippines);
- to review and restructure systems and practices on statistical data and information handling and dissemination services with a view to develop voluntary reporting of daily performances in place of top-down monitoring and also to serve as reliable basis for policy formulation and strategy determination; and
- to study and establish a basic system and practices for fund-raising and/or fee/levy collection for:
 - funding scheme for self-governing, self-reliant resource use management,
 - determination of resource fee scale in affordable range proportionate to the value of harvested resource value,
 - other systems or arrangements for collecting and seeking contributions from commercial resource users and market intermediaries,
 - planning and preparing a guideline for expenditure program, and

- preparing legislative framework for facilitating imposition of fees and the funding scheme.

9.2.3 Community Based Fishery Development

(1) Promotion of Community based Fishery Development

For the management of the coastal fishery resources, the dominant users of the fishermen of the coastal communities play an important role in the sustainable development of the coastal fishery industry. In this regard, the Study Team proposes the fishery development plan and program including the rehabilitation of the fishing grounds and artificial reefs in the Resources Management Plan in Chapter 7: Management Unit Plans.

(2) Establishment of Community Artificial Reefs and FADs (Fish Aggregating Devices)

During the Study period, the Pilot Project of the artificial reefs was tried in Basaan and Basaan-1 in the Minahasa Regency. This project resulted in success to provide new fishing ground, while the natural fishing grounds of coral reefs have been destroyed. The artificial reefs can be used for rehabilitation of fishing grounds and stabilizing the amount of fish catch, if the environmental conditions (geography, depth, current, potentiality) is right for the artificial reefs.

The artificial reefs and other FADs, which will be implemented and managed by the communities, are proposed in the section of the Resource Management Plan in Chapter 7.

(3) Establishment of Fish Sanctuary

For the sustainable use of the fishing grounds, it is required that the excessive or over fishing activities should be controlled to maintain the natural reproduction system of the fishes. The Coastal Resources Management Project (CRMP) in the region recommends the promotion of implementation of the marine sanctuary strategy by decision of the communities; however, the system of the marine sanctuary is too strict for the communities, because once the sanctuary was delineated, the communities cannot access and obtain the profits from the natural resources forever in the sanctuary.

The JICA Study Team proposes different ideas from the CRMP by establishment of fish sanctuary, such as seasonal sanctuary and shifting fish sanctuary, in the section of Resource Management Plan in Chapter 7.

9.2.4 Promotion of Mariculture

If fishers depend only on the catching form in the coastal area, then too much pressure is going to affect the coastal area. According to the community survey of the Study, the amount of catch really depends on the natural conditions, and sometimes fishers cannot go fishing at all during a monsoon season. The alternative fishery measures should be exploited for stabilizing and diversifying the income sources of the fishermen. The Study Team proposes the development of mariculture of Groupers and seaweed processing factories in the region.

(1) Grouper Culture

The world market of the Grouper is positive for the producers, and in fact Grouper trading is successful at high sales price at present. It is a chance to develop mariculture of Grouper farming. On the other hand, the mariculture development is risky business, because it requires large amount of investment cost and technological know-how. The following are the major factors to be examined for the development of mariculture.

a) Building facilities

The fish farming facilities at the land should have enough space and quality for larva production. However, there is no such facilities in the North Sulawesi region at present. Therefore, it is necessary to have such land facility which has enough capacity for mariculture.

b) Selection of species

The selection of the type of species of fish is very important for the mariculture; however, the Grouper has higher value in any species. The following criteria are applied to select the species: main species in the region, the species that grows to a bigger size, and the species that many instances of success were seen. Based on these criteria, *Plectropomus leopardus* or *Epinephelus spp* are recommended for the mariculture in the region at the moment.

c) Technological consideration

There is a similar and successful project of mariculture of Grouper in Bali, which is supported by a JICA technical assistant, and the issue is how to apply the Grouper mariculture in Bali to North Sulawesi. Also, facility needs to have enough amounts of water, electricity and feeds constantly.

d) The traders and transport measures

The Grouper is consumed as luxurious Chinese cuisine and the major traders are in Jakarta, Singapore and Taiwan. The market research needs to be taken because there are many competitors in this business. Examination of the effective and economical transport measures is also important for especially export of fresh Grouper.

(2) Seaweed Processing Factory

Seaweed is used for the raw materials of cosmetics, diet food, stabilizer for wastewater treatment, paste, medical paper, etc. Although accurate data is not available, the production of seaweed seems to increase in these years in the region. It is said that the production of seaweed is 700 to 800 tons/month in the North Sulawesi province. The quality of the seaweed in the area has good reputation.

It is fact that the coastal communities engaged in seaweed culture have better income than the coastal communities that do not engage in it, based on the rural rapid survey. At present, they sell the seaweed in raw form to the export traders without any processing and undisrupted by the market price. The processing factory is suggested to make semi-raw materials of seaweed in the region because it adds some economic value to the materials, i.e., exports can be more stable than 100% raw material.

The basic points to be examined for the success are the quality and quantity of the production of seaweed and the situations of the world market.

9.2.5 Promotion of Training and Extension Services for Fishing Communities

The training and extension service for fishing communities should be reinforced in the following fields:

- the extension service should be more intensive through strengthening of the capability of the extension officers in the fishery sector at the District offices; and
- the extension officers at the district level, should have more close contact and training works to the fishermen of each village, especially on sustainable fishery development, illegal and inappropriate fishing methods, new fishing technology, etc.

9.2.6 Enlightenment Education for Fishermen and Fish Farmers

The dominant users of the coastal waters are fishermen. Most of the fishery villages in the region rely on the fishery resources in the coastal seawaters, including coral reef flat areas.

They are also the illegal actors of dynamite fishing, mangrove cutting and coral mining. The enlightenment and education to the fishermen and fish farmers is truly important for the management of not only fishery resources, but also coral reefs and other coastal resources. This program is described in the Enlightenment and Education Plan in Chapter 8: Institutional Supporting Plan.

9.3 Coastal Tourism Development Plan

9.3.1 Scope of Coastal Tourism Development Plan

(1) Scope of Plan

Tourism development in the coastal areas of North Sulawesi depends heavily on the natural resources in the coastal areas. Particularly, the coral reefs and the reef fishes are the most attractive tourism resources among other natural resources. In the situation of North Sulawesi, the coastal tourism development should be compatible with the protection of coral reefs and other marine life. In other words, one of the objectives of the tourism sector is for the economic development of the region, and the objective is to play an important role for environmental conservation of the coastal areas.

This section describes the directions and strategies of the coastal tourism development within the context of the coastal management plan of the region. The scope of the plan for coastal tourism development is as follows:

- The coastal tourism in the region centers on the type of tourism utilizing the tourism attractions existing in the coastal areas and also contributing to the socioeconomic development, at the same time taking serious consideration to protect natural environment. The time frame of the plan is not only short-term, but long-term as well.
- The coastal tourism development plan covers the integrated area between tourism and environment. Precisely speaking, the plan aims to establish the mechanism that will serve as a bridge between coastal tourism sector and environmental conservation management in the region.

(2) Development Constraints

In the coastal tourism of the region, which North Sulawesi is aiming for, many development constraints are existing such as difficult access from the central area of Indonesia, not enough human resources in the industry and difficulties such as lack of financial and human resources in the local government agencies which are supposed to

give support to the industry. These constraints can be categorized into mainly two as follows:

- a) Deterioration of the environmental conditions of the existing tourism areas in the coastal areas

The coastal environmental conditions, especially coral reef environment, is deteriorating due to destructive human activities, pollution from human waste, waste water and scattered garbage, reclamation and encroachment by illegal settlers and so on. The causes of deterioration of coastal environmental conditions are various and so complex. What the tourism sector should consider is how to contribute to solve this main constraint for coastal tourism. The solutions will have to take all actions from various aspects, and at the same time, the tourism sector has to use all the channels, human resources, and other resources in order to address this constraint together with other sectors.

- b) Constraints for the tourism development in the coastal areas

In general, the area has two main constraints. One is that the international tourism market does not know the potential tourism attractions of the region other than diving. The current attractiveness of the region is far below Bali Island's, where a wide variety of tourism attractions are available. The other constraint is that the region is far from Jakarta, the capital of Indonesia, and Java, the population center, so that the transportation is expensive by air and takes a long time by ship to visit the region.

More specific constraints are seen as follows.

Lack of basic tourism infrastructure

Because of the delay of road and other infrastructure development throughout the region, accessibility to the many potential tourism areas is very bad.

Climate

During the western monsoon period (November to May), the coastal tourism activities are discouraged and restricted due to high waves and heavy rains in the Bunaken area, which is a well-known tourism destination.

Lack of water resources

Generally, the small islands often have good conditions of coral reef and white sand beach and appear beautiful. However, it is very difficult to get enough water sources for the tourism development in most of the islands.

Lack of local attractions

Lack of historical and cultural attractions are also constraints in serving enjoyment of the local flavor including cuisine and souvenir items.

Constraints for local investors

The constraint for local investors to participate in the coastal tourism industry is that the diving tourism industry requires good access to the international market and high skilled services to customers. And many of dive operators and cottages are invested in and operated by foreigners, which makes it hard for local investors to participate in the industry. This fact leads to less contribution to the regional income.

Lack of capacity of local government for tourism development

The institutional side of constraints follows. The local government also has not enough capability such as human resources, know-how, financial support, and so on to support the private investors.

(3) Development Issues

Based on the development constraints analyzed in the previous section, the following issues are identified to achieve the development of coastal area tourism in the North Sulawesi context:

- orderly tourism development must be achieved in terms of minimizing socioeconomic and environmental impacts in the region; and
- establishment of system and workable mechanism to contribute to the management of coastal areas in the tourism development process.

9.3.2 Development Strategies

The tourism development of the region should have the following strategies:

(1) Diversification in the tourism development, through:

- deconcentration of the tourism development and activities from the Bunaken National Park area to mitigate the over-use and environmental load problems and create new channel of tourism development;
- establishment of new marine protected areas and wise-use of the marine and coastal resources for the diversification of the tourist attractions in the region by developing new areas with different tastes of amenities;
- the eco-tourism development should be promoted to attract not only the diver market, but also other potential markets of eco-tourism; and
- to introduce community based tourism and encourage communities through participating in the tourism development process, to create alternative jobs and incomes for the coastal communities, and also provide alternative tourist attractions to the visitors.

(2) The Needs for Coastal Tourism Development and Management Plan

Preparation of coastal tourism development and management plan should be prepared based on coastal management zoning and tourism potentiality, and review and establishment of rational procedures. It includes criteria for permissions of buildings and businesses in the coastal areas for controlling and guiding the coastal tourism development.

(3) Improvement of the Environmental Conditions of the Existing Tourist Areas

It includes the cleaning of garbage in the seawaters and beaches in the Bunaken National Park, cleaning and beautification of the tourist ports and the main streets of the coastal areas of Manado and Bitung, through:

- reliance not only on the City Cleaning Service but the participation of users, tourism operators, tourists, community people themselves and others in making sure that the beaches and coastal waters are kept clean;
- provision of design guidelines to control and supervise the buildings and townscape along the existing important tourist roads in the coastal areas;
- formulation of the special programs for the cleaning and beautification of the most important road of the Boulevard with the cooperation of the private sector; and
- cleaning of the ports by the respective port authorities.

(4) Sharing Management for the Coastal Environment

- Financial support to the management cost
At least, the necessary cost for the management of the Bunaken National Park should be secured by the present entrance fee system.
The possibility of entrance fees from the proposed Provincial Marine Protected Areas in Lembeh Island and Beleng – Kotabunan will be examined.

- Day-to-day management works
 - share the management programs of day-to-day monitoring
 - cleaning and beautification of the tourist areas
 - visitor education and service
 - cooperation in the installation of buoys, tourist trails and signboards, etc

9.3.3 Appropriate Coastal Tourism Development

The present situation of coastal tourism and the analysis of management problems and constraints, especially in the area of interaction with environmental aspects were discussed in detail in the previous section. Also the strategies to develop an appropriate coastal tourism development in the region were discussed.

In this section, the plan to develop appropriate coastal tourism in this region is to be discussed. Firstly, “Control and Guiding the Coastal Tourism in the Region” that is lacking in the region is discussed. Its importance, the approaches and components are discussed. Secondly, “Environmental Improvement of the Existing Tourism Areas” is explained in detail. Thirdly, a new “Coastal Tourism Development at Proposed Provincial Marine Protected Areas” is discussed including sharing of coastal management between the local government and the private sector.

9.3.4 Control and Guiding the Coastal Tourism Development in the Region

(1) Preparation of Spatial Plan for the Coastal Tourism Development and Management

The objective of the plan is to formulate the tourism development and management plan of the region and identify the priority tourism development areas in the coastal areas, based on coastal management zoning, prepared by the Study Team, and to analyze the tourism development potentiality of the areas for controlling and guiding the tourism development in sustainable way.

a) Components:

Study and formulation of the coastal tourism development and management plans of the region. (This program will actually examine the process of the Formulation of the Spatial Use Plan of the Coastal Areas, which is described in the Spatial Use Management Plan in Chapter 7.)

b) Implementation agencies:

PICMO and KICMOs initiate discussions and coordination with Tourism, Fishery and Sea Transportation Offices and other agencies concerned and the private tourism companies on the coastal tourism development and management of the region

(2) Enforcement of the Regulations of the Procedures and Criteria for the Evaluation of the Application of Business and Building Permits in the Coastal Areas

The regulations on the procedure and the criteria for the evaluation of the application of business and building permits in the tourism sector are provided; however, these regulations are not often enforced in reality, due to lack of law enforcement and lack of basic information on spatial use plan, which is an important basis for the evaluation. The law enforcement and preparation of spatial use plan in the coastal areas are necessary.

The details of this component are discussed in Spatial Use Management Plan in Chapter 7.

9.3.5 Environmental Improvement of the Existing Tourist Areas

(1) Formulation and Implementation of Special Program for Cleaning and Beautification of the Major Tourist Areas

The objectives of the plan are to clean and beautify the important tourist areas in the coastal zone, not only from the hygienic but also the aesthetic point of view. The water front area along the Manado Bay will be focal area to address both aspects for the tourists, visitors and residents.

a) Components:

- study and provision of design guidelines to control and supervise the buildings and townscape along the existing important coastal tourist areas in Manado and Bitung;
- maintenance of the building structures in good condition by public and private sectors;
- formulation and implementation of beautification program for the important coastal areas with the cooperation of the private sector;
- ensuring of the responsibility for cleaning of beaches and coastal water.
- establishment of thanksgiving-day for beautiful marine assets and organization of cleaning program of the important tourist areas such as ports, Bunaken National Park and the Boulevard in Manado; and
- cleaning of the ports by the respective port authorities.

b) Implementation agencies:

The following are responsible agency for special program for cleaning and beautification of the major tourist areas.

- KICMOs Manado and Bitung will prepare local regulations on design guidelines and control of building construction.
- KICMOs promote to maintain the building structures in good condition by respective public and private sectors, including road and sidewalk pavement, street lighting and planting, private building structures and facades.
- KICMOs initiate coordination and formulation of the beautification programs. The beautification of the waterfront areas along the Boulevard in Manado will be priority program in the plan.

(2) Improvement of the Tourist Areas in Manado Area

The objective of the plan is to develop and improve the coastal area for tourists, and to utilize the existing potential areas and attractions in Manado and in the northern part of the Bunaken National Park, which is the existing tourist center of the region. The plan also aims to propose the cost recovery program for the coastal management in the development of the tourist facilities.

a) Components:

Construction of visitor center and museum

This visitor center and museum provide information on tourism and marine coastal environment of the region. The museum in Manado is the exhibition facility for coastal environmental conservation. Most of the space of the museum will be covered by an exhibition of coral reef and its ecosystems, which is the symbol of the Bunaken National Park. A part of the admission fee to the museum has to pay for the management work of the Bunaken National Park.

Ecotourism Island development in Manado Tua

The Study recommends the formulation and development of a Pilot Project for "Ecotourism Development Model in Manado Tua," involving communities, the local governments and private tourism industry, to create new tourist places for relaxation at the beaches and mountain trekking.

A pier, circular road for pedestrian and cycling, and water supply system in Manado Tua need to be developed. Manado municipality is one of the strong candidates to fund these facilities. The community will provide home-stay facilities (renovated or

new building of rooms for guests) for day-use or night-stay, food, beach houses, rest houses, and provide rent-cycle and eco-tourism guides etc. The community has to improve their skill and knowledge on eco-tourism.

The private hoteliers will cooperate to secure and/or send their guests to the island based on the agreement between hotelier and community.

Recreational development of waterfront of Manado

The components of recreational development of waterfront of Manado are:

- to create beautiful and water-friendly coastal line and space, introduce the design with a sense of softness and humaneness to the sea wall/wharf of the land reclamation;
- to establish coastal roads to have steps to the seawater, greening and qualified landscape areas along the coastal line; and
- to develop cycling road, boardwalk, rest houses, gardens, benches, all the way along the seawater front. The implementation of these developments has to be shared by both private sector and public sector.

Marina is an idea to establish "One Gate Policy" to control and manage the traffic of tourist boats at one place. The potential location of the marina is at the part of the land reclamation areas. The renewal and beautification of the existing Manado Port as tourist port is also one of the options to establish this "One Gate Policy."

Pleasure boats cruising in and around the Bunaken National Park is also proposed as one of the options. The involvement of fishermen and community people are expected in the operation of the boats, supply and preparation of seafood, etc.

Beach and recreation area development in Malalayang

Thousands of residents of the Manado and the neighboring areas enjoy the swimming and relaxation at the beaches in Malalayang at present. The problems of the areas are the almost total absence of beach areas for resting, lack of spaces for car parking, beach houses and sanitary facilities.

The construction of artificial sand beach is one of the options to solve the above problems to create sand beach areas and spaces for such necessary facilities. The appropriate sanitary facilities must be installed for minimizing the seawater pollution for both human and marine ecosystems. The parking fee and entrance fee can be collected from the visitors, and the part of the revenue can be used for the coastal management of the area.

b) Recommended implementation agencies:

The following agencies and groups are recommended to be involved for implementation:

- KICMO and the Tourism Office of Manado initiate coordination and formulation of the plan for the improvement of the tourist areas in Manado, including development of marine museum, recreation areas and eco-tourism development, and promote the implementation of the plan to the concerned public and private sectors.
- The appropriate development body has to be found from both private and public sides for the marine museum. The cooperation with the UNSRAT is inevitable, especially in the scientific field.
- The communities in the Manado Tua Island take initiative on the development of Ecotourism Island of Manado Tua, with strong cooperation of the city of Manado and the private tourism sector.
- The city of Manado plays key roles on the development of the coastal recreational area in Gunung Tampa, the waterfront recreational areas along the coastal lines, and also the artificial beaches in Malalayang.

9.3.6 Coastal Tourism Development at Provincial Marine Protected Area

(1) Rationale

The Study proposed Provincial Marine Protected Area in the "Coastal Ecosystem and Marine Wildlife Conservation Management Plan" in Chapter 7 to conserve natural environment which is still in good condition in the area. The idea is to preserve the value of supreme natural environment at provincial level in the area before it is affected by various causes.

In this section, the Study shows the new model of coastal tourism development which is cooperation between government managed protected area and private-sector managed tourism industry. Also the mechanism to share the environmental management in the area is presented in the section.

The development of coastal tourism in several different areas in the region will benefit to diversification of the existing coastal tourism in the region which is concentrated in Bunaken National Park at present time.

This plan of development of coastal tourism at proposed Provincial Marine Protected Area is the realization of a local government initiated new mode for natural environmental ecosystem and coastal tourism in Indonesia.

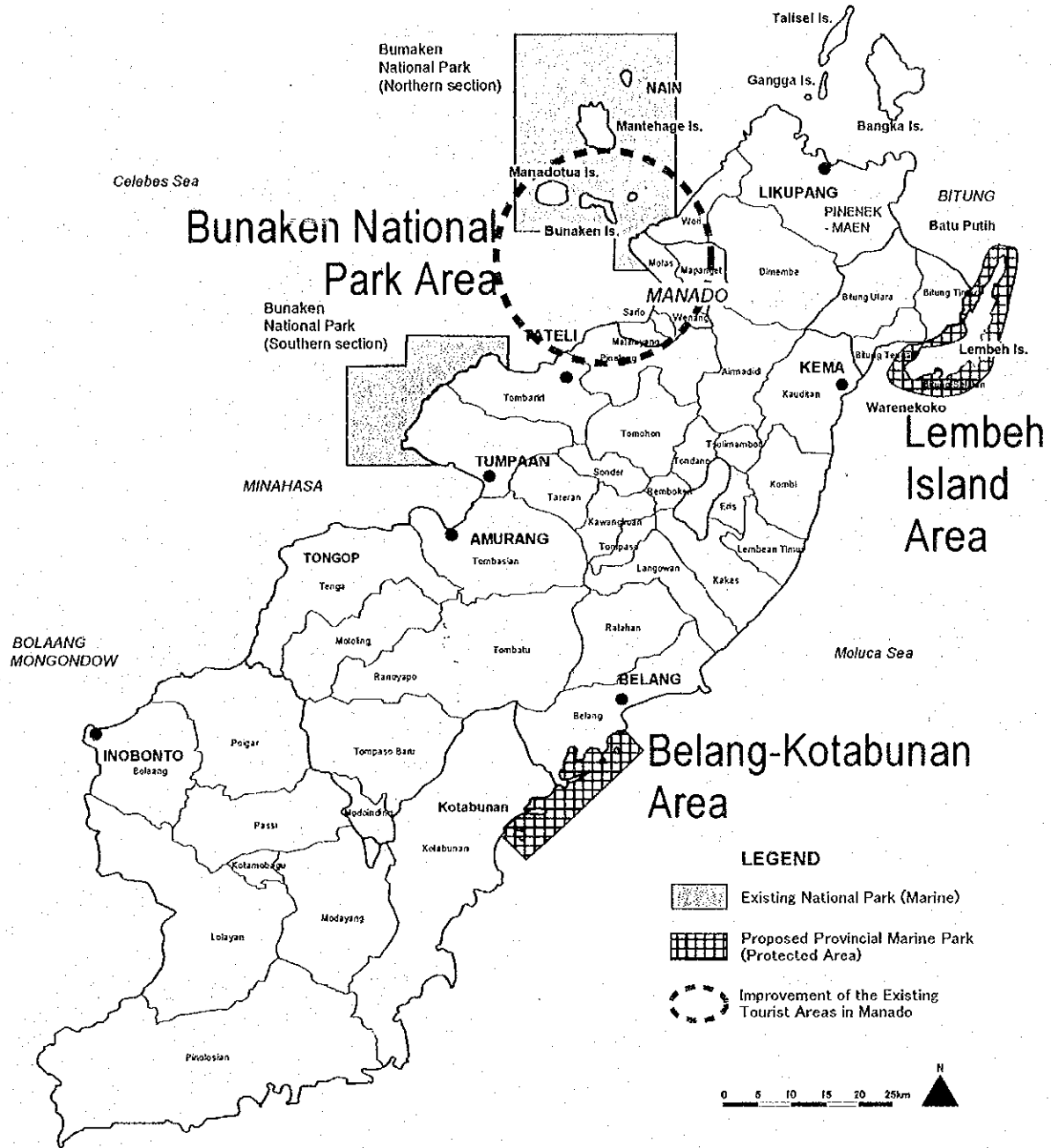
(2) Objectives

The objectives of the establishment of coastal tourism at provincial marine protected area is to strike a good balance between natural environment conservation and utilization of tourism resources by the cooperation of local government agencies, private tourism sector, and community people.

(3) Concept

The main concept of coastal tourism development at provincial marine protected area is to create harmony between tourism development and natural environment conservation. In order to achieve this concept, the size and number of tourism facilities need to be strictly limited. Also the locations of these tourism facilities and attractions have to be carefully designed. Figure 9.1 shows location of the proposed Provincial Protected Areas as marine park.

The financial benefits from the tourism at these parks need to be directed to the park management. The entrance fee and other possible charges and/or environmental tax can be charged to tourists and users, and tourism operators in the parks.



Source: JICA Study Team

Figure 9.1 Proposed Areas for Coastal Tourism Development

(4) Coastal Tourism Development at Proposed Provincial Lembeh Island Marine Protected Area

Some of the concrete ideas of tourism facilities are shown as follows:

Improvement of dive sites

Buoys at the dive sites in the Tj. Batukapal should be installed for protection of the coral reefs from damage by divers and boats. The new dive sites should be explored for reducing the pressure on the existing dive sites.

Beach and recreation development in Lembeh Island

The first priority development area will be in the southern part of the island, where beautiful coral reefs and fishes are found in the very calm Bay of Walenekoko. The necessary facilities to be developed are tourist pier near the Walenekoko and access road between the location of the pier and Walenekoko.

In the Walenekoko, the private investors will develop small-scale lodges, restaurants and other tourist service facilities. Water supply and sewage system must be installed and nature and coastal trails also required for pleasure walks. The coastal trail will be used not only for tourism purpose but also for maintenance of the areas and boundary of coastal buffer zone.

In the long run, the vehicular road network through the island will be required to stimulate this type of beach and recreational development in the other parts of the island, and of course for the communities of the island.

Sport fishing

Bitung is a Mecca of Tuna fishing industry, so that the resources and information of tuna fishing are available in Bitung. Sport fishing is also one option to make use of the existing potential.

Visitor center and museum

The museum in Bitung is the exhibition facility for flora and fauna of the region and also functions as a visitor center to provide tourist information of the region and management office of the proposed Provincial Lembeh Marine Protected Area. The theme of the proposed museum will be "Encounter between forest-eco and marine-eco," to exhibit information on ecological links of volcano, forest, bird, flora, fauna, mangrove, coral reefs, coral fishes.

A part of the admission fee to the museum has to pay for the management work of the Provincial Lembeh Protected Area.

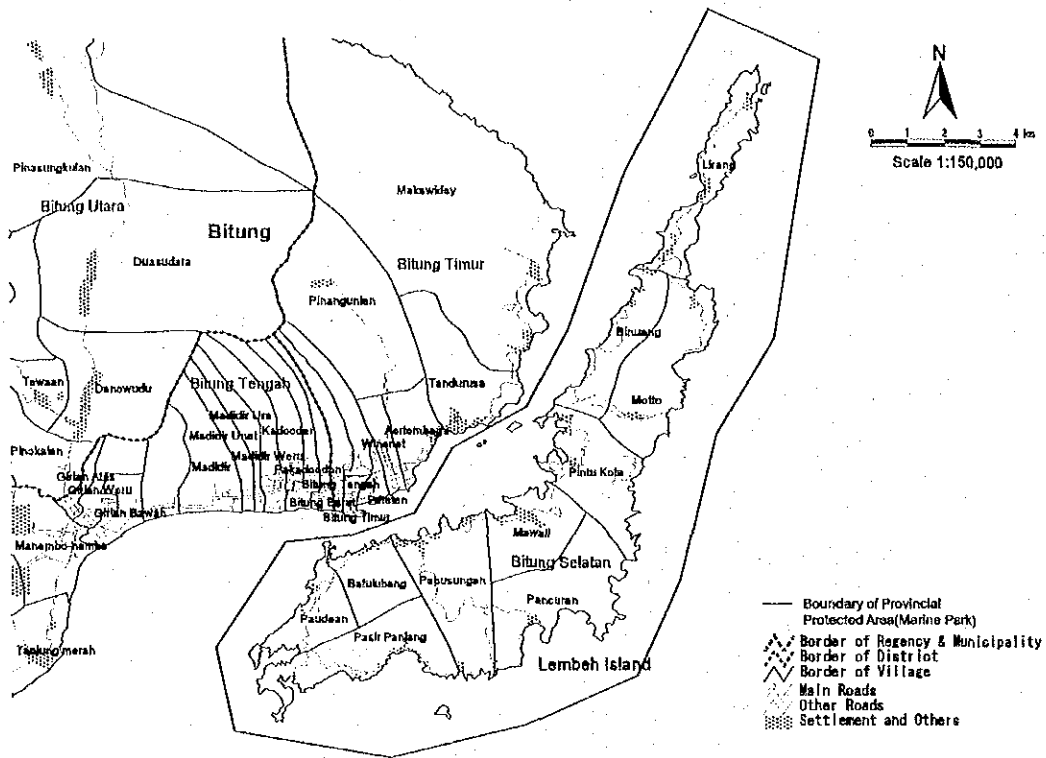
Observation tower

An observation tower overlooking the Lembeh Strait and Island is proposed to provide a place for enjoyment of panoramic view to the Provincial Protected Area and to serve as watch tower for visitors. Renewal of the existing Trikora Manadala Sakti Monument will present a possible site for the observation tower.

a) Implementation bodies:

The following agencies are involved for implementation:

- PICMO establishes the Provincial Marine Protected Area and necessary *regulations and management guidelines*;
- Governor of North Sulawesi establishes Protected Area Management office, which is responsible for the day-to-day park management at the Lembeh Protected Area Management Office;
- Private tourism investors will develop and operate the tourist facilities in accordance with the regulations of the Provincial Protected Areas, and share in the management cost and/or participate in the protected areas management programs; and
- The local communities will participate in the tourism development and in the protected area management programs.



Source : JICA Study Team

Figure 9.2 Proposed Provincial Lembbeh Island Protected Area (Marine Park)

(5) Coastal Tourism Development at the Proposed Provincial Belang-Kotabunan Marine Protected Area

The Provincial Belang –Kotabunan Marine Protected Area has the same concept as the Provincial Lembbeh Marine Protected Area.

Visitor center and museum

The marine museum in this area is the exhibition facility for coastal fishing culture and also functions as a visitor center to provide tourist information of the region and administration office of the proposed Belang – Kotabunan Marine Protected Area.

Theme of the exhibition will be ‘traditional fishing gear,’ life of coastal community,’ ‘coastal fishes and other lives.’ Other necessary facilities, such as waiting rooms at boat pier, toilets, parking areas, guide board of the protected area, etc., will be developed in this area.

Community based tourism and recreation development

- Beach houses in Teluk Ratatotok and Teluk Buyat

- Boating service (including BBQ)
- Utilization of Bagan for tourism use (fishing)

Mangrove and bird watching in Ratatotok

The existing mangrove can be utilized for mangrove watching for the visitors, accessed by canoe or traditional small boat. The visitors can also enjoy the birds, such as white heron and white dove.

The required facilities are walkway in the mangrove forest, parking area, toilets, signboards, shelters or fences to use for bird watching.

The entrance fee can be collected from the visitors, and the income from the fees will be used for the conservation and maintenance of the mangrove forest.

Hotel and coastal recreation development in Basaan

Hotel development at the hill of the Basaan village as a core of the recreational area can be promoted to investors. Further, rental vacation houses, camping sites, sports courts, and gardens in the neighboring areas of the above hotel(s) can be promoted and developed. The community can manage the parts of the above facilities and services.

The coastal area in front of Pulau Babi is good for the development of marine recreational area. The coastal water between the coastal land and the island can be used for relaxation, swimming, snorkeling, fishing and boating.

The coastal trails will be developed along the shorelines. This aims to build the coastal trail system to provide pleasant walkways for the visitors, maintenance works and also contribute to the establishment of the coastal buffer zone.

Tourism and recreation development in Kotabunan

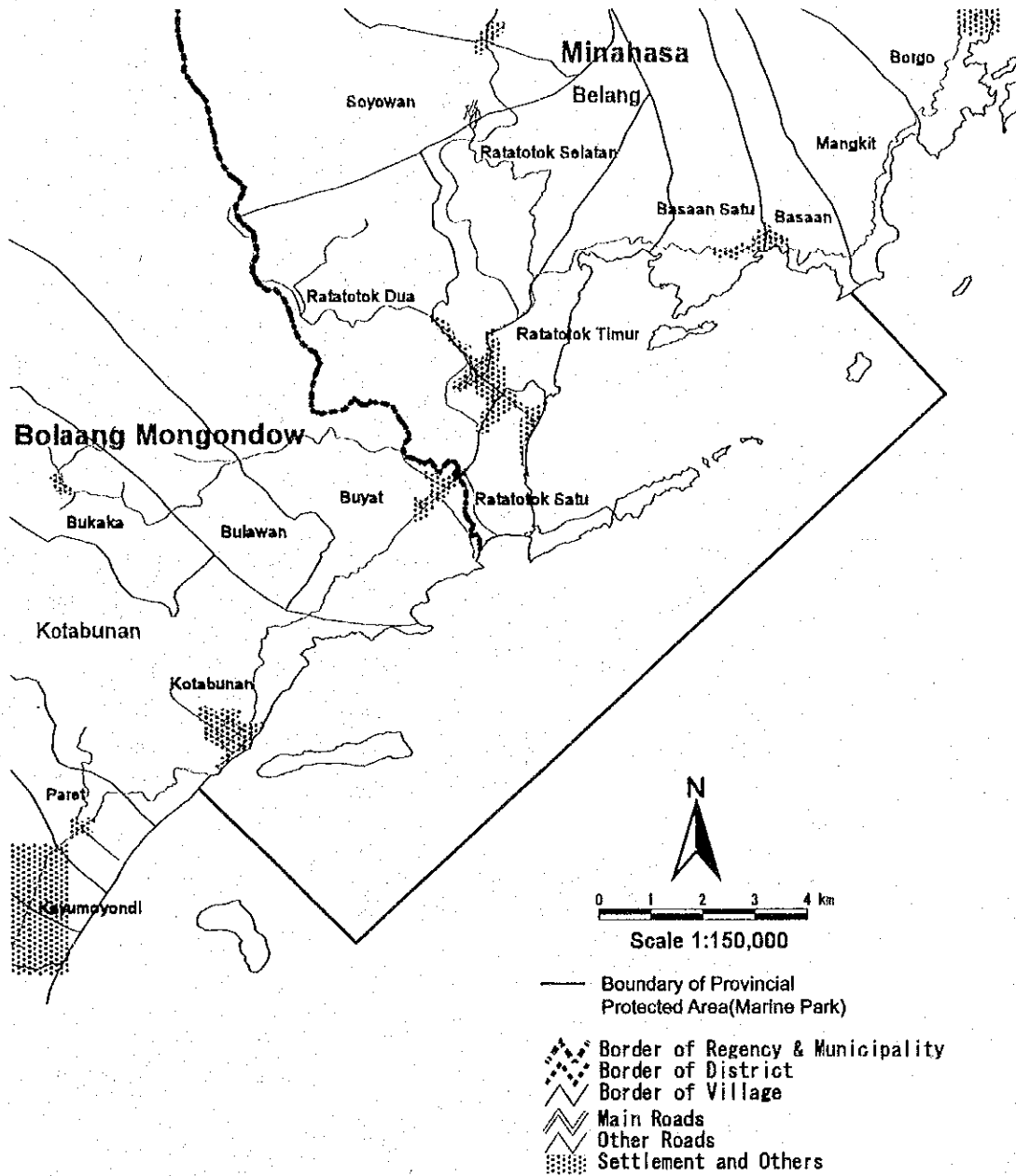
The road condition between Buyat to Kotabunan is very bad, and the improvement of this road must be first priority. In addition to this road, from the socioeconomic point of view, the development of the road connecting to the capital city of Kotamobagu is also urgent in general. The development priority for the tourism and recreation of the area will be the Ratatotok area, first, the Basaan area, second, and the Kotabunan, third.

The Pulau Bombatangi in Kotabunan can be utilized for beach relaxation and boat sailing. The Lake Buyat provides attraction for boating and camping.

a) Implementation bodies:

The following agencies are involved for implementation:

- PICMO establishes the Provincial Marine Protected Area and necessary regulations and guidelines concerning the Provincial Marine Park;
- *Government of North Sulawesi* establishes the Protected Area Management office, which is responsible for the day-to-day park management at the Belang - Kotabunan Marine Protected Area Management Office;
- Private tourism investors will develop and operate the tourist facilities in accordance with the regulations of the Provincial Protected Areas, and share in the management cost and/or participate in the park management programs; and
- The local communities will participate in the tourism development and in the protected area management programs.



Source : JICA Study Team

Figure 9.3 Proposed Provincial Belang-Kotabunan Marine Protected Area

9.3.7 Other Development Plans and Programs

(1) Promotion for Development of Local-Based Tourism Products

The objective of the plan is to promote the improvement and creation of local-based or home-made tourism products including souvenir items, foods, traditional dances, etc. to increase the quality and value of such products, attract tourists, and thus the tourist expenditure to the region.

a) Components:

Development of the local-based or home made tourism products in the following areas:

- unique souvenir items;
- local cuisine and foods;
- traditional dance, performance and culture; and
- illustrated booklet, T-shirt, calendar, etc. featuring marine lives, such as coelacanth, fishes, coral reefs, turtles, sea-birds and name of places.

b) Implementation agencies:

- PICMO, KICMOs and Tourism Offices at the provincial and municipal/regency (*Kota/Kabupaten*) levels initiate discussions and give incentives to improve and create the tourism products ; and
- Private tourism companies such as hotels, restaurants, souvenir shops, dive operators, etc. are to support this program.

(2) Support for Development of Media and Campaign for Tourism Promotion of the Region

The objective of the plan is to support to the promotion of the tourism of the region in the fields through development of publicity campaign through the different media available.

a) Components:

The following ideas are some of the options:

- Fireworks;
- marathon or Triathlon Games in the Bunaken Island; and
- PR by web-site in addition to preparation of pamphlets, brochures, maps, and other media.

b) Implementation agencies:

- PICMO and KICMOs will be the ones supporting this program.

(3) Training of Guides and Other Personnel in the Tourism Sector

The objective of the plan is to train guides especially for coastal and marine ecology, dive instructors, flora and fauna, traditional culture and other personnel in the tourism sector.

a) Components:

- provision of special funds for training the above-mentioned personnel;
- preparation of seminar rooms in the Visitor Center and Marine Museum;
- preparation of necessary data and information for training and seminar; and
- establishment of the personnel certification system for dive and boat operators.

b) Implementation agencies:

- PICMO and KICMOs will be the ones supporting this program; and
- PICMO establishes and implements the personnel certification system for dive and boat operators.

9.4 Improvement of Rural Coastal Community Living Environment

9.4.1 Scope of Improvement of Rural Coastal Community Living Environment

(1) The Scope of Improvement of Rural Coastal Community Living Environment

The socioeconomic constraints of coastal communities are, in general, originated from the seasonality of coastal activities, and poor alternative livelihood existing in the coastal area, compared with the inland communities. Consequently, the socioeconomic status of coastal communities is lower than those inland, and living environment tends to be less favorable.

This situation in coastal communities is giving negative impact on the coastal area, especially on the coastal resources such as deterioration of natural environment, which leads to decreasing coastal resources. This plan of "Improvement of Rural Coastal Community Living Environment" is to improve community living by raising awareness of community people, and also building some basic sanitation facilities in coastal communities. In the short and long terms, these improvements are expected to lift the condition of their coastal area.

The scope of this plan is as follows:

- Rural coastal community is dealt with. Urban communities' living environment is taken up in the Urban Environment Unit Plan.
- Impacts such as human waste, wastewater, trash/garbage on coastal area and its resources from rural communities along the coastal area are dealt with, so facilities and measures for them are going to be planned.
- Water facility is particularly emphasized in small islands and remote areas, from basic human needs, poverty alleviation, and equity points of view. Therefore, the specific strategies and the plan of water facilities will be made for those areas.

(2) Development Constraints

There many constraints seen in coastal community living conditions and environment such as the almost absolute absence of sanitation facilities, lower awareness and knowledge of community people on sanitation, basic hygiene, and public health concerns, also inappropriate behavior in terms of environmental conservation, and so on and so forth. However, those constraints can be categorized into two as follows:

a) The lower level of living environment among coastal communities

The level of living environment of the rural community is in general lower than the one in inland rural communities. The suspected reasons for this problem can be several. One reason could be the relatively lower income of rural coastal communities than that of inland communities, because the fishing activity is neither stable nor constant. Moreover, coastal communities do not have much alternative livelihood in general, so that the level of education and the level of living standard tend to be lower as well. Another reason would be the difficulty of access from the central cities; consequently, local government attention is sometimes scarce compared to those on communities located in better and accessible places.

In these existing conditions of rural coastal communities in North Sulawesi, the impacts of communities on coastal areas by wastewater and human waste discharge and garbage would not be negligible.

b) Physical constraints of small islands

Because of the physical setting of islands, water resources are limited in many places, together with lack of other sanitation facilities. Consequently, the living standard tends to be lower particularly in this physical type of places. An outbreak of water-borne communicable disease can occur especially during the dry season. Those particular places also tend to have difficult access to health facilities than other

communities in different settings. The problems of these small islands are, first, the physical setting itself is a constraint, and second, that there are no specific strategies for improvement of social infrastructures in the small islands in the area.

(3) Development Issues

Based on the development constraints, the following issues are identified to achieve the development of living environment of coastal communities:

- There is less attention on the coastal communities including islands from the local governments due to their distance from the central cities, so that they tend to be forgotten;
- This leads to lack of specific strategies and plans to improve social infrastructure in these forgotten places, because of their lower priority in government plans from the economic point of view;
- The local government has not oriented their mind towards equity of governmental services, poverty reduction, and good governance; and
- There is lower awareness of well-being, basic hygiene and sanitation, resulting in negative impacts of wastes on coastal resources.

9.4.2 Strategies for Improvement of Rural Coastal Community Living Environment

Because of these situations of rural coastal communities, it is important to improve their living environment especially those communities in remote areas and islands, so that it will contribute to reduce pollution loads to their environment and resources. Then the healthier natural environment gained would benefit the economy of rural coastal communities in the long run. It is preferable as well from the good governance point of view, that the local government makes efforts to fill the gap between those communities 'who have' and those communities 'who don't have'.

The objective of improvement of coastal community living environment is "to improve the living environment situation in coastal communities and as a result, to reduce the environmental impacts on coastal areas coming from the everyday living of communities." In order to achieve this objective, the following strategic approaches should be taken in the management plan:

- (1) Building of Sanitation Facilities to the High Priority Communities according to Set Criteria

Criteria based on type of shoreline, population concentration

In order to prioritize and make effective strategies to solve the problems of living environment, some criteria were set to identify which areas should come first from the aspect of coastal shoreline type and population concentration.

Based on the criteria, the different levels of impacts to coastal environment are shown in Table 9.1.

Table 9.1 The Levels of Impacts to Coastal Environment

Population concentration	5000<	5000>
Shoreline Type		
Semi - closed	Medium risk	High risk
Open	Low risk	Medium risk
Islands	Low risk	Low Risk

Source: JICA Study Team

The reasons for choosing “shoreline type” and “population size” as criteria for the areas of priority are as follows:

Shoreline Type

The ‘Semi-closed Type’ shoreline has calm sea conditions and shoreline tend to be formed by coral reef, sand beach, tidal flat, and potentially mangrove forest and sea grass. In other words, this type possibly has rich coastal resources, so that any impacts from communities can result in relatively bigger damage than the other types.

The ‘Open Type’ shoreline has wave and stream current conditions and shoreline can be formed by coral reef, sand beach, or rocky shore, potentially mangrove forest and sea grass, but the potentiality to have those shoreline forms is lower than semi-closed type shore line. Because of the stream current, the impacts from communities can be relatively smaller than the semi-closed type

The ‘Island Type’ shoreline has also wave and stream current conditions, and shoreline can be formed by coral reef, sand beach, mangrove forest, and sea grass; however, the potentiality to have those shoreline forms is lower than semi-closed type and open type.

Population

Population size has correlation with the size of pollution loads, such as the amount of human waste, wastewater, and garbage/trash. The middle size community has a

population of around 5000, so that in the criteria, the population size was divided into below 5000 and over 5000.

The priority areas for facilitating sanitation facilities in the Study Area are shown in Figure 9.4.

(2) **Setting up of Specific Policy and Strategies for Improvement of Social Infrastructures in the Small Islands and Communities in Remote Areas**

The small islands and communities in remote areas tend to be neglected by the local government because they are almost nonexistent to the people living in the central cities. However, they have a bigger magnitude of difficulty because of their physical setting. Therefore, the government should be giving more attention and take actions to lend a hand to these communities in difficulty from the aspect of equitable services, and poverty reduction in the area. The strategy here is to set the specific policy and strategies for improvement of social infrastructures in the small islands and communities in remote areas. Preparation of development guidelines for remote small islands and remote areas such as networking system among small islands should be considered.

(3) **Improvement of Community People's Awareness by Campaigns, Formal and Informal Education**

It is important to raise awareness of health concerns and consequence of unhealthy lifestyle onto environmental deterioration. Education in school should emphasize those concerns and community people should learn proper sanitation and basic personal hygiene through informal education, enlightenment, and campaigns. In this way, the community will start to emphasize on building sanitation facilities and setting up a garbage disposal system, and living a healthier lifestyle for their well-being and for a healthier environment as well.

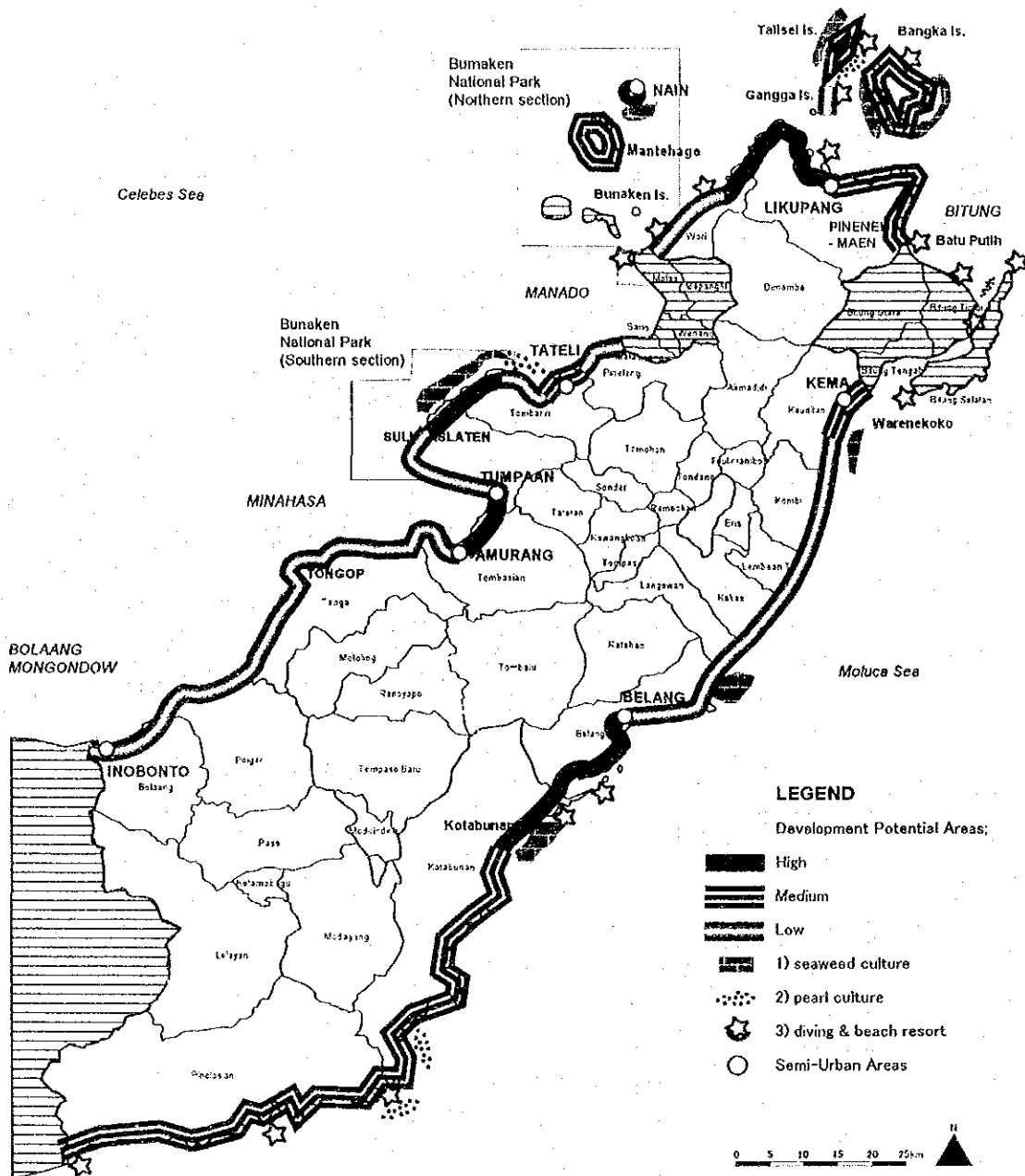


Figure 9.4 Priority Map for Sanitation Facilities

9.4.3 Development of Sanitation Systems for the Rural Coastal Settlements and Villages according to the Priority

(1) Objectives

This plan aims to improve coastal environmental condition by reducing water pollution load of human waste in the rural coastal communities with sanitation facilities according to the prioritization of the area.

(2) Preparation

In order to formulate a realistic and effective project, the preparation for the project is essential. Two studies should be carried out: 1) Survey on People's Awareness and Attitude towards Sanitation Facilities, and 2) Design Sanitation Facility and Identifying Construction Sites in each Communities.

(3) Plan

The project period will be until 2015. This project period is divided into two phases as follows.

Phase 1 (~2010)

In phase I, 46 priority communities are going to be covered by the project. First, 46 communities formulate sanitation improvement project in their master plan. Then community formulates sanitation improvement management groups to deal with the sanitation project.

In 46 priority communities, people participate in the construction of toilets that do not use coral rocks in their communities. Also, a maintenance system for the sanitation facilities will be set up by the community.

Phase 2(~2015)

In the second priority communities of 53, sanitation facilities are established in the same manner as that in the priority communities.

(4) Implementing Agencies

- Leading Agency: PICMO or BAPELITBANG, Provincial Settlement and Regional Infrastructure Office and Ministry of Health
- Related Agency: KICMO, or BAPPEDA/BAPPEKO, and other related Regency/Municipal level agencies

- District: Development and Environment Section of PMD
- Village: Management groups and community people

9.4.4 Master Plan and Feasibility Study for Improvement of Water Supply and Other Social Infrastructure in Small Islands and Remote Areas

(1) Objectives

The objectives of this project is to formulate an appropriate plan for improvement of water supply and other social infrastructure in small island communities and rural areas by establishing new facilities and/or networking.

The studies to be taken are: Study on situation analysis of water resource, People's perception for water resources and use, Design networking for social infrastructure among small islands, Study on people's willingness to pay (user charge for water), and other needed studies.

(2) Preparation

Before the studies, community rapid survey will take place in order to understand the village social structure, economic situation, and other social economic factors that might affect the master plan.

(3) Plan

- The master plan will decide the priority setting for the development of water supply and other social infrastructure systems.
- Development programs of water supply and other social infrastructure systems will be formulated.
- Development guidelines including networking system for medical care service, among other things, will be prepared.

(4) Implementation Agencies

- Related Agency: KICMO, or BAPPEDA/BAPPEKO, and other related Regency/Municipal level agencies
- District: Development and Environment Section of PMD
- Village: Management groups and community people

9.4.5 Improvement of Community People's Awareness by Campaigns, Formal and Informal Education

This plan aims to formulate and implement the programs of enlightenment and education for the rural communities. Campaigns and formal and informal education will be looked into including religious meetings, and women and youth meetings. Details of this plan are discussed in Chapter 8: Education and Enlightenment.

Chapter 10

Proposed Projects and Programs

Chapter 10

Proposed Projects and Programs

10.1 Classification and Prioritization

The master plan has been laid out in the foregoing chapters. In this chapter, the master plan is designed and organized as projects and programs in order to effect smooth implementation as follows:

(1) Classification of Projects/Programs

All the proposed projects and programs are classified into thirteen categories corresponding to the same categories of key strategies of master plan, namely,

- 1) Coastal Spatial Use Management;
- 2) Coastal Resources Use Management;
- 3) Urban Environmental Management;
- 4) Watershed Management;
- 5) Coastal Ecosystem and Marine Wildlife Conservation Management;
- 6) Institutions and Legislation;
- 7) Coastal Information System;
- 8) Human Resources Development;
- 9) Education and Enlightenment;
- 10) Finances;
- 11) Fishery Development;
- 12) Coastal Tourism Development; and
- 13) Improvement of Coastal Living Environment.

From 1) to 5) are categorized as a component of Management Unit Plan. These projects/programs are to be implemented to formulate basic framework and core roles of the master plan. From 6) to 10) are categorized as a component of Institutional Supporting Plan. These projects/programs are to be implemented to support the above-mentioned Management Unit Plan. These projects/programs are intended to deal with common issues to all Management Unit Plan in the five categories. From 11) to 13) are categorized as a component of Socioeconomic Development Plan. Socio-Economic Development Plan aims to develop fisheries, tourism and living environment of coastal community.

(2) Urgent Projects/Programs

The implementation schedule of the projects/programs are divided into three:

- Short-term : Up to 2005 (=target year of PROPENAS and POLDAS)
- Mid-term : Up to 2010 (=target year of RTRW Municipality and Regency)
- Long-term : Up to 2015 (=target year of RTRW Province)

The projects/programs with an asterisk (*) next to their project codes in the list shown in the next section are deemed urgent and important. This phasing and priority are based on urgency and timing with other projects/programs.

10.2 A List of Projects and Programs

Proposed projects/programs are recommended according to the master plan as shown in Table 10.1. Detailed description of each project/program is contained in Volume IV: Proposed Projects and Programs.

Table 10.1 Proposed Projects and Programs

Project Code	Project/Program Name	Implement Schedule						Implementation Body (Main Execution Agency)	Costs (Million Rp)	
		Short-Term				Mid-Term	Long-Term		Initial	Operation Maintenance
		2002	2003	2004	2005	2006-2010	2011-2015			
MS	Coastal Spatial Use Management								2,012.0	0.0
* MB-1	Formulation of Provincial and Municipal/Regent Coastal Spatial Use Plans							PICMO/KICMO, BAPELITBANG, etc.	1,010.0	0.0
MB-2	Establishment of Coastal Development Permission System							PICMO/KICMO	202.0	0.0
MR	Coastal Resources Use Management									
* MR-1	Establishment of Community Coastal Resources User Right							PICMO/KICMO	860.0	6,110.0
* MR-2	Supporting Program for Community Based Coastal Management							PICMO, BAPELITBANG	44,962.4	29,883.0
MR-3	Establishment of Coastal Fisheries Management Center							PICMO, Fishery Office	2,493.0	5,507.0
MR-4	Institution of Community Artificial Reefs and Other FADs							Fishery Office	104.0	1,487.0
MR-5	Community Production Mangrove Forest Development							Forestry Office	0.0	950.0
MR-6	Stop Dynamic Fishing and Coral Mining (Promotion for alternative materials for septic tank without Coral Reef)							PICMO/KICMO	370.0	0.0
MR-7	Program on Fishery Resources Monitoring							PICMO, Fishery Office	340.0	7,150.0
MR-8	Publication of White Paper for Coastal Resources							PICMO	0.0	440.0
MU	Urban Environmental Management									
MU-1	Program on water pollution control in Manado							BAPEDALDA	400.0	150.0
MU-2	Program on water pollution control in Bitung							BAPEDALDA	365.0	100.0
MU-3	Program on Solid Waste Collection System in the Coastal Areas in Manado							Manado Municipality, Manado Port Authority	470.0	420.0
MU-4	Program on Solid Waste Collection System in the Coastal Areas in Bitung							Bitung Municipality, Bitung Port Authority	425.0	420.0
MU-5	Formulation and implementation of beachification programs for the coastal areas of Manado							Provincial/Manado Settlement/Regional Infrastructure, Manado Port Authority	555.0	630.0
MU-6	Formulation and implementation of beachification programs for the coastal areas of Bitung							Provincial/Bitung Settlement/Regional Infrastructure, Bitung Port Authority	525.0	630.0
MW	Watershed Management									
MW-1	Prevention of Soil Erosion for Coral Reef Conservation							Forestry/Agriculture Office	0.0	11,780.0
MW-2	Formulation of Water Pollution Control Plan for Rural Coastal Villages							PICMO/KICMO	100.0	0.0
ME	Coastal Ecosystem and Marine Wildlife Conservation Management									
ME-1	Program on Coastal Environmental Monitoring							PICMO, BAPEDALDA	1,270.0	9,750.0
ME-2	Patrol of Regal Activities for Coastal Environmental Conservation							Water Police	1,940.0	8,450.0
* ME-3	Establishment of Provincial Landmark Protected Area							PICMO, Bitung municipality	3,720.0	4,700.0
* ME-4	Establishment of Provincial Biting - Palabuhan Protected Area							PICMO, Bitung reGENCY	3,660.0	4,600.0
SI	Institutions and Legislation									
* SI-1	Establishment of Provincial Coastal Management Board Regulation							PICMO	240.0	226.0
* SI-2	Establishment of Provincial Integrated Coastal Management Office (PICMO)							Provincial Government	130.0	0.0
SI-3	Establishment of Municipal and Regent Integrated Coastal Management Office (KICMO)							Manado, Bitung, Minahasa, Selayang/Mongondow	520.0	0.0
SI	Coastal Information System									
SI-1	Establishment of Coastal Information Center							PICMO	1,750.0	6,580.0
SI-2	Development and Maintenance of Coastal Provincial GIS							Coastal Information Center	0.0	13,436.4
SH	Human Resources Development									
* SH-1	Establishment of Local Government Training Center							Provincial Government	5,490.0	6,950.0
SH-2	Development of Coastal Management Course in Local Universities							Sam Raskang University	2,034.0	0.0
SH-3	Establishment of Extension Office Training Centers for CBCM							PICMO	659.0	1,822.5
SE	Education and Enlightenment									
SE-1	Revision of Curriculum for Environmental Education							Education Office	143.0	16.0
SE-2	Training Program on School Teachers for Environmental Education							PICMO, Education Office	0.0	1,262.8
SE-3	Training Program on Coastal Community Leaders for Community Coastal Management							KICMO	0.0	142.0
SE-4	Promotion of Awareness for Coastal Management for Local Government Officials							PICMO	0.0	63.0
SE-5	Enlightenment Program on Coastal Users							PICMO/KICMO	0.0	50.0
SF	Finances									
SF-1	Study and establishment of fund-raising and/or fee/levy collection systems							PICMO/KICMO	0.0	326.0
DF	Fishery Development									
DF-1	Development of Seaweed Processing Factory							Fisheries office	2,760.0	3,400.0
DF-2	Feasibility Study on Mariculture of Groupers							Fisheries office	300.0	0.0
DT	Coastal Tourism Development									
DT-1	Establishment of Certification System for Coastal Tourist Operators							PICMO, Tourism office	466.0	0.0
DT-2	Establishment of Tourist Center for Coastal Environmental Conservation							Tourism office	1,393.5	1,264.8
DT-3	Development of Trekking and Cycling Routes in Manado Taa Island							PICMO, Tourism office	18,231.5	3,681.0
LE	Improvement of Coastal Living Environment									
LE-1	Supporting Program for Community Based Coastal Resources Management							PICMO/BAPELITBANG, Ministry of Health, etc.	4,290.0	0.0
LE-2	Master Plan and Feasibility Study for Improvement of Water Supply and Other Social Infrastructure in Small Islands and Remote Area							PICMO/BAPELITBANG, Ministry of Health, etc.	100.0	0.0

Note : Projects with * show priority projects/Programs

Chapter 11

Evaluation, Conclusion and Recommendation

Chapter 11

Evaluation, Conclusion and Recommendations

11.1 Evaluation of the Master Plan

(1) Technical Aspect

a) Consistency with Indonesian Policy

At present, the Indonesian Government is under process of decentralization of government administrative authority and responsibility from the central government to the local governments. In the master plan, following the decentralization policy, local government initiative is one of four important approaches, and capacity building for local government officials to carry their activities in coastal management is planned as an important component in the plan.

b) Human resources and capability of government staff

It seems that implementation of the master plan is not very effective by present human resource capacities in spite of the fact that local governments have more important and vital roles in the implementation of projects/programs. So, even though the proposed projects/programs do not contain new and sophisticated technology, training for capacity building is also planned for the present government staff who are the implementors of the master plan. Furthermore, in the master plan, human resources development programs are to be carried out in the beginning of implementation period in order to smoothen implementation of the master plan.

c) Appropriate technology

Coastal management, which is the main subject of this master plan, is a relatively new concept in the region. Coastal management requires comprehensive and integrated administration because of the characteristics of the area. Although the concept is relatively new to the area, the individual management technologies are not

new nor highly sophisticated ones. These technologies are rather basic and ordinary for local government officials, so that the implementation of projects/programs would not have any difficulties in terms of technical aspect.

For example, the concept of coastal spatial plan, which is introduced in the master plan, is new to Indonesia; however, this technology is applied from land use planning methods. Another example is land based management. The management of land-based activities is integrated into the master plan from the viewpoint of coastal environmental conservation. Although the concept of integration of land based activities management is new to the area, soil erosion control and water pollution control are slope management and pollution control that have been practiced locally for quite some time.

For proposed projects/programs which will be implemented by coastal communities, for example, artificial reef development, the Study Team conducted substantial assessment through Pilot Project in order to increase possibility of implementation. In order to achieve formulation of implementable plan, implementing mechanism was studied through Pilot Project in order to formulate the more realistic and implementable project..

d) Future situations

There are two types of technologies proposed in the master plan: soft type and hard type. It might be wise to reconsider the hard type of technology such as GIS technology and other computer technologies after several years of implementation, to change to some new technologies. However, the soft type of technology such as management technology is an area oriented and more specific, so that once the appropriate technology is chosen for the area, the technology can last even for longer term of 15 years.

(2) Economic Aspect

Provided that the master plan is not implemented, total net loss of coastal resources to society will be 2.3 to 8.2 times during 25 years than benefit to the people of North Sulawesi. According to cost benefit analysis, however, benefit will exceed management cost in 2006 if master plan will be implemented.

(3) Social Aspect

From the social aspect, the evaluation of the master plan can be concluded as the most appropriate to the area and the acceptance of the projects/programs will be very high. The reasons are as follows:

- a) The master plan took an approach of "Community Based Management," in which local communities are the main implementor. In order to implement community based activities, many technical assistance and capability building for local communities are planned and are going to be implemented.
- b) In order to plan realistic and applicable projects of CBCM, the Study implemented Pilot Project as an operational research to see how things work in the reality. Therefore, the implementation mechanisms in the communities are analyzed in detail and make possible the high acceptance in the communities
- c) The main target of projects/programs is small-scale fishers who are living in the very minimum setting and with limited income. The master plan aims to reduce poverty among these fishers by some economic development projects/programs.

(4) Environmental Aspect

In the Study Area of North Sulawesi, the coral reefs were evaluated as critical condition. The master plan aims to conserve coral reefs by rehabilitating and improving coastal environmental conditions through improvement of inappropriate use of coastal area and stopping destructive activities for coastal resources and environment. Therefore, the environmental impacts of the master plan will be highly positive.

11.2 Conclusion

The Study conducted the first detailed scientific survey on the coral reef conditions and coastal environment in the area and concluded that the coral reef conditions in the area and coastal environment are deteriorated to the critical level. If the destruction of the coral reefs continues, the negative impacts on economic terms will be tremendous in the area. Specifically, the coastal communities are economically vulnerable and easily get negative impacts from the environmental deteriorations, because their economic activities are heavily depending on the coastal area, especially on the amount of resources. In the near future, it will be a big worry to have negative impacts on the North Sulawesi economy, which is depending largely on the coastal area.

It is the most urgent and important strategies for recovering the condition of coral reefs and coastal environment to stop destructive activities on the coastal area immediately and to start the practice of sustainable coastal resource use by coastal communities and other stakeholders who are utilizing coastal resources.

The socio-economic benefits of coastal management is unaccountable, because if the destruction advanced and depleted the resources, it would not be possible to restore anew the environmental conditions for quite a long period of time and the efforts will be tremendous in terms of money and time.

Recommendations of Priority Projects and Programs

Toward sustainable use of the coastal area, it is recommended that the following six points be considered by local government agencies in North Sulawesi.

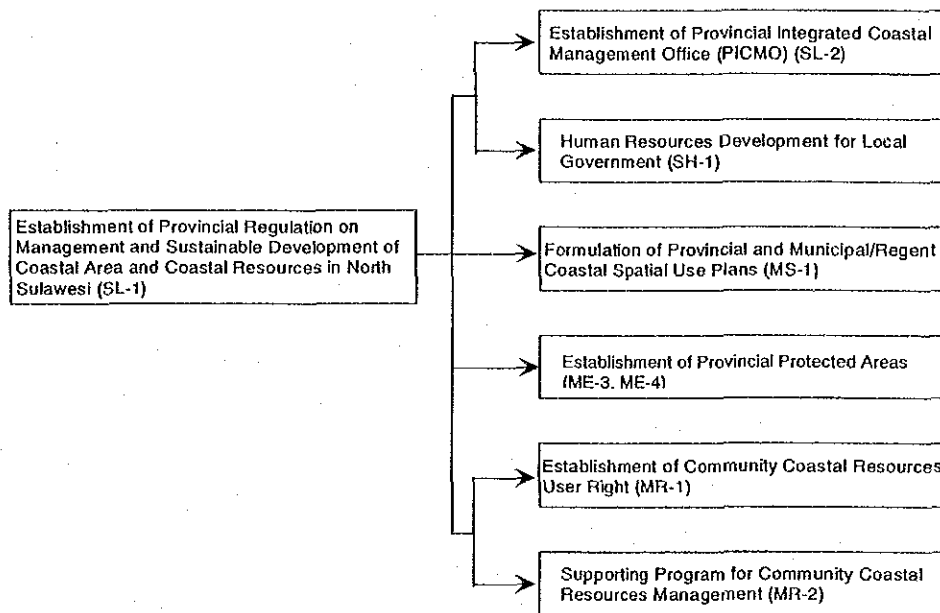
1. There is an urgent need to establish the Provincial Coastal Management Basic Regulations in North Sulawesi and to establish an office which will coordinate coastal management activities at the provincial and municipal/regency levels. These offices shall have roles to make policy and plan, make regulations, issue licenses, monitor, gather information, dispatch people, etc.. These measures could pave the way for smooth implementation of the master plan.
2. Human resource development should be duly considered by the local related government agencies in order to match the needs of implementation of the master plan. Formal and in-house training, and on-the-job training for integrated coastal management should be planned by the government agencies according to their needs.
3. It is necessary that coastal spatial use plan at provincial and municipal/regency levels are established in order to have coordination among resource users, and minimize conflict arising from resource utilization. In order to make the coastal spatial use plan at each level, the plan needs to have a guideline from the ecological and natural environmental points of view. The Study prepared a Coastal Management Zoning, which is a guideline for coastal spatial use. Therefore, it is recommended that local agencies at different levels make their own coastal spatial use plan based on the Coastal Management Zoning.
4. The conserved coral reef in the Study Area is limited (only 0.2 % of total coral reef area). And the size of conserved area is not wide and the conservation effort is not at national level. There is a need to legally protect this limited conserved coral reef. Establishment of Provincial Protected Area is recommended in order to manage limited conserved coral reef appropriately based on local environmental and socio-

economic situations. Protected area management at provincial level is a new concept in Indonesia.

5. It is recommended to stress the introduction of Community Based Coastal Resources Management (CBCRM) in the area. This CBCRM is a participatory approach to the coastal management and this collective effort is the only means to be successful in the coastal management, which involves quite a long stretch of coast as a whole. This CBCRM is also following the decentralization policy, which transfers responsibility to local government and makes possible the preparation and implementation of appropriate strategies and plans to meet local needs.

District level offices such as PMD office will have a key role to implement CBCRM in their areas. It is important for local governments to establish a close working relationship with villages, even to the extent of implementing a project like CBCRM together with the community.

6. The recommended priority projects to be implemented by the local government in the short, medium, and long terms in cooperation with central governments such as DKP, BAPENASS, LIPI, BAPPEDA, Ministry of Environment and others is shown in Figure 11.1.



() Parentheses show project number corresponding to the list of projects/programs found at the end of this report.

Figure 11.1 Recommended Priority Projects and Programs

11.3 Recommendations to North Sulawesi Province

One of the conclusions which this Study came up with after various surveys, studies and discussions is that the situation of coastal area in North Sulawesi is in the very critical stage and needs to have some immediate actions to stop the deterioration of the coastal natural environment. If no actions are to be taken immediately, the coastal people who heavily depend on the coastal area and resources are going to be affected severely and directly, and as a consequence, the area's economy will be also deteriorated one way or another.

Under the new law of local autonomy, it is the local government responsibility to manage coastal area properly and protect coastal people's lives and livelihood, and also to contribute to the area's sustainable development in the long run. In order for the local government to achieve this new role and new goal, the Study Team would like to recommend the following seven items of actions, which the local government should consider to implement as soon as possible in order to achieve the proper management of coastal area by the local government initiative and efforts. As the first step, the recommendations are on the institutional arrangement, legislative arrangement and financial aspect of coastal management.

(1) Establishment of Provincial Regulation on Management and Sustainable Development of Coastal Area and Coastal Resources in North Sulawesi.

In recent years, the local government gained their authorities on political decisions including management of coastal area in their administrative areas by Law No. 22 and Law No. 25, 1999. It means that the local government responsibility on appropriate use of coastal area and resources by the existing stakeholders including coastal communities and the private sector is now clear. The appropriate and sustainable use of coastal area does lead to reduction of poverty in the coastal area, also to improvement of the quality of life in the coastal communities, and finally to development of the North Sulawesi economy in the long run.

Therefore, it is important for the local government to have a legal framework for the coastal management in their areas. In this sense, the Study Team recommends the establishment of "Provincial Regulation on Management and Sustainable Development of Coastal Area and Coastal Resources in North Sulawesi" as a coastal management basic regulation and make clear each level of local government's responsibilities on coastal management and show the basic direction of coastal use in North Sulawesi.

a) Democratic Process for Making Coastal Basic Regulation

This coastal management basic regulation called “Provincial Regulation on Management and Sustainable Development of Coastal Area and Coastal Resources in North Sulawesi” needs to be processed in a democratic manner because “equity” and “transparency” are the most important aspects of the law making process. In order to keep the democratic approach to make a regulation, as many stakeholders as possible have to meet and exchange views and opinions for the formulation of coastal management basic regulation. This coastal basic law will be legalized by the provincial parliament after various discussions and negotiations among and between each stakeholder who share a common interest and benefit from the coastal area.

BAPELITBANG will be a secretariat for the whole process and will have to disseminate all information necessary for making a regulation for coastal area to each stakeholder and people in the province. The discussions among stakeholders need to reflect onto the regulation.

b) The Contents of the Provincial Coastal Management Basic Regulation

The Provincial Coastal Management Basic Regulation should be based on the master plan of coastal management in North Sulawesi and should include the following:

- Clarification on the responsibility of the existing Provincial Coastal Committee, which is the policy making body for appropriate coastal area management in North Sulawesi.
- Clarification on responsibilities of each stakeholder in the coastal management such as provincial government, municipal/regency governments, community, and the private sector.
- Establishment of Provincial Integrated Coastal Management Office (PICMO) and *Kota/Kabupaten* Integrated Coastal Management Office (KICMO), which are integrated offices of all related agencies in the coastal area and their expected function to make the management in the coastal area more efficient and effective.
- Legalization of Community Based Coastal Management (CBCM) for coastal area. Also, making local government responsibility clear to support coastal communities in the technical and financial aspects to implement CBCM by the communities.
- Making coastal spatial use plan at provincial, municipal/regency, and community level.
- Establishment of information dissemination system to the provincial people on policy of coastal management.

c) Keeping Consistency with Other Regulations

The coastal management basic regulation planned to be established should have consistency among different levels of same basic laws and regulations. Also the coastal management basic regulation has to be consistent with other existing related laws and regulations from the national level to the municipality/regency level laws and regulations. Therefore, it will be necessary to make adjustments among coastal management basic regulation in the different levels, and also consider other existing related laws and regulations for the formulation of the coastal management basic regulation. In other words, the coastal management basic regulation has been structured in order from the national level to the community level without any inconsistencies.

In order to achieve this orderly structured regulation system, some part of laws and regulations might need to be changed or abolished; therefore, a group of experts on local government regulations, and related administrative officers have to have a series of discussions on making a proper coastal management regulation system. Especially, the provincial government has to pay attention to the National Coastal Management Basic Law which is now in the process of establishment, and the provincial regulation needs to be consistent with the national law. Also planned regency/municipality coastal management basic regulations in North Sulawesi province need to be consistent with the provincial coastal management basic regulation in the context, contents, and terms; therefore, provincial government should open the information on the provincial coastal management basic regulation and encourage the municipality/regency related government officers to participate in the law making process at the provincial level.

(2) Establishment of Provincial Integrated Coastal Management Office (PICMO) and Kabupaten/Kota Integrated Coastal Management Office (KICMO)

One of the reasons coastal management has not been carried out in the area is that the responsible agencies are not clearly identified at provincial and municipality/regency governmental organizations. As a result, there are many coastal management problems existing in North Sulawesi, and any measures to solve these problems have not been taken seriously in the area.

It is, therefore, important to identify who is responsible for the coastal management in order to start taking actions to stop the deterioration of the coastal environment. The important facts to consider is that the coastal management problems are attributed to various reasons, that the physical characteristics are influenced by both land and sea, and

that the responsible agencies for the coastal management are various. Taking the fact into consideration, the Study strongly recommends to have a unified office of all related agencies which are responsible for coastal management.

Therefore, the Study Team recommends to establish an office called Provincial Integrated Coastal Management Office (PICMO), which is responsible for coordination and implementation of coastal management at provincial level and also *Kabupaten/Kota* Integrated Coastal Management Office (KICMO) should be established as well to be responsible for coordination and implementation of coastal management at municipal/regency level. PICMO and KICMOs should be working together to coordinate both level of local government agencies in order to achieve an appropriate coastal management in the area. It is probably the most important and inevitable step for local government to realize effective and well functioned coastal management in the area, and it is the local government responsibility to achieve such coastal management in the area for the provincial people.

(3) Support for Provincial Coastal Management Committee

The Provincial Coastal Management Committee, of which the chairperson is the governor of North Sulawesi province, has a key role for coastal management in North Sulawesi including legalization of the provincial coastal management regulation. The agency which is identified as the secretariat of the committee is BAPELITBANG from the establishment of the committee. This role should be replaced by PICMO, which is responsible for implementation of coastal management. However, the establishment of such office will need some time for the procedure. Therefore, BAPELITBANG should continue to provide support to the committee in order to realize appropriate coastal management in the area until PICMO to be established. The following items are expected to be carried out by BAPELITBANG:

- to provide necessary information for the committee for decision making on the sustainable use of coastal area and coastal resources in North Sulawesi;
- to support the committee to legalize the provincial coastal management basic regulation; and
- to support the committee to establish PICMO.

(4) Community Based Coastal Management (CBCM)

It is clear that the coastal communities who heavily depend on the coastal area for their living should participate in the coastal management. In other words, it is almost impossible to establish coastal area management without positive involvement of the prime user of the area, which are namely coastal community people. Although

Community Based Coastal Management (CBCM) has been traditionally existing in North Sulawesi, as the fishing style and methods change and also as the social structure of the area changes, the traditional CBCM has been fading out from the area. It is, therefore, important to form an adequate CBCM which can be adaptable in the area.

The Study implemented a Pilot Project for CBCM in four villages in North Sulawesi from October 2000 to February 2002 to see how things work in the field. The Study coordinated with a USAID-funded project called Coastal Resources Management Project (the local name is *Proyek Pesisir*), which has been implemented in the same area in the last 6 years. Also the Pilot Project involved local government agencies and a local university in order to seek the most suitable form of CBCM and to find strategic approaches to introduce such form of CBCM in the area. In the Pilot Project, the local government offices, local university, CRMP/USAID and NGOs coordinated together the training for Extension Officers which are the catalysis in the pilot communities. Also the environment base line survey and social base line survey were designed and implemented by these organizations together with Pilot Project coastal communities.

The result of this operational research for implementation of CBCM showed that it is quite possible and successful for coastal communities to be responsible for making coastal management plans and their implementation. However, we should emphasize that CBCM cannot be implemented only by the coastal community participation but timely technical support from outside of villages are inevitable for establishment of workable CBCM.

The following items are expected as local government support for establishment of workable CBCM.

- to train Extension Officers who are selected from communities;
- to give technical support to the coastal communities to formulate coastal management plans;
- to give technical support to the coastal communities to implement their own coastal management plans; and
- to give partial financial support to the coastal communities to implement their own coastal management plans

In North Sulawesi, a community empowerment project has been requested by the province to JICA in order to start CBCM in the area. Working together with CRMP/USAID up to the year 2003 when the project ceases is also important for North Sulawesi from the viewpoint of efficient resource mobilization.

(5) Making the Most Use of Output from the JICA Study

The Study developed Coastal Geographical Information System (GIS) through the study period based on the aerial photos taken from July to September 2000 together with various surveys and studies. The Coastal GIS contain not only the natural environment of coastal area and resource information, but the land information and social and economic information as well. The developed Coastal GIS has been the important tool for the Study to analyze the existing conditions and also to make coastal management zoning.

The areal study based on aerial photos which the JICA Study conducted is the first experience in Indonesia and such GIS information is important not only for planning of coastal management but also for other planning and evaluations as well. This Coastal GIS is expected to be utilized for developing coastal spatial management plans, other development plans, and Environmental Impact Assessment (AMDAL) in the area. Moreover, this Coastal GIS is also expected to be utilized not only by the local government in North Sulawesi but also by the national government in Indonesia and foreign donors in order to achieve sustainable coastal use in the area.

Although the JICA Study proposed the establishment of a coastal information center in the master plan, USAID funded project, CRMP, and WWF are also planning to have the same kind of information center in their plans. Therefore, it is recommended that the North Sulawesi government coordinate these ideas on a coastal information center by examining the purpose, concept, and activities of each party's own plans.

(6) Strengthening the Relation with DKP and Foreign Donors

It would be beneficial for the provincial government to request both technical and financial support to the central government especially to DKP in order to implement the master plan proposed by the JICA Study. The coastal management proposed by the Study can be a model in the country if the local government can materialize the implementation, and it would be adequate to expand the model throughout the country with adequate adjustments in each area. If coastal management could be carried out throughout the country, it would make possible to realize the sustainable use of coastal resource in Indonesia and together with conservation of coastal environment, it would contribute to economic development in the country. From these reasons, it is reasonable for the central government to support implementation of this master plan by the local government.

In North Sulawesi, the significant fact is that the area has many foreign donors, which have been interested and invested much money for establishment of coastal management in the area in the past and in the present time as well. For example, USAID is supporting

the Natural Resource Management Program (NRMP) including Coastal Resources Management Project since early 1990s. ADB and WB are also funding a coastal management project called COREMAP in the last 10 years. It is very clear that the implementation of the master plan needs support from external resources such as bilateral donors and international funding agencies; therefore, the provincial and central governments should be encouraged to work on tapping resources from existing external resources for the implementation of proposed projects/programs.

(7) Local Government Initiative on Financing for Coastal Management

It is estimated to cost Rp. 234 billion to implement all proposed 48 projects/programs until year 2015 by the Study. It is recommended, therefore, to seek funds to implement seven (7) priority projects/programs first by the local government (see Figure 11.1). It is remarkable progress and is a first step for some local government offices such as BAPELITBANG and Fisheries and Marine Affairs Office to budget Rp. 200 million and 750 million respectively for coastal management in the 2002 fiscal year. These efforts should be encouraged more and the other local government offices related to coastal management should have their own budget line for the implementation of the projects/programs. Comparing the value of coastal area in the region estimated at Rp. 19 trillion (or Rp. 19,000 billion), this money which is used for coastal management is small in terms of the amount but is significant in terms of the effects. Therefore, every related agency is expected to make efforts to create some budget for their own activities in coastal area.