PARTICIPATORY APPRAISAL AND PLANNING FOR COMMUNITY BASED MANAGEMENT OF COASTAL RESOURCES. A PHILIPPINE CASE STUDY*

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INTRODUCTION

The Philippines is an archipelago with diverse fishery resources Its total territorial water area of 220,000,000 ha is divided into 12 percent coastal and 88 percent oceanic (Figure 1) The length of its coastline is 17,460 km. The contribution of fisheries to the economy in 1993 is reflected in its 4.45 percent contribution to total GNP at constant prices and the 990,872 persons employed in 3 categories of the fishery sector, namely, aquaculture, municipal and commercial fishing. The total fish production from 1984 to 1993 (Table 1) shows an average annual growth rate of 2 7 percent in quantity and 11 8 percent in value

The resources in the expansive coastal areas provide the main source of livelihood for most of the coastal population In 1993, the total number of persons employed in the fishery sector is 990,872 broken down into 258,480 in aquaculture, 675,677 in municipal fishing, and 56,715 in commercial fishing (BFAR, 1993) The importance of fisheries to the economy and to a large fisheries sector becomes even more salient as fishery resources are being degraded and the livelihood of fisherfolks is imperilled, thus, aggravating poverty in coastal communities The communities with the biggest stake in fishery resources are potentially the best resource managers to ensure sustainable use of resources, ecological balance, biodiversity conservation and alleviation of poverty Such a tall order is the ultimate aim of a community based resource management (CBRM) scheme

CBRM is a process by which the people themselves are provided the opportunity and responsibility to manage their own resources, define their needs, goals and aspirations and make decisions affecting their well-being (Fellizar, 1993) CBRM as a strategy for sustainable development seeks to regulate people-resource interactions within a given setting in order to minimize ecological aberrations, thereby ensuring benefits and services for the future generations CBRM is biased toward

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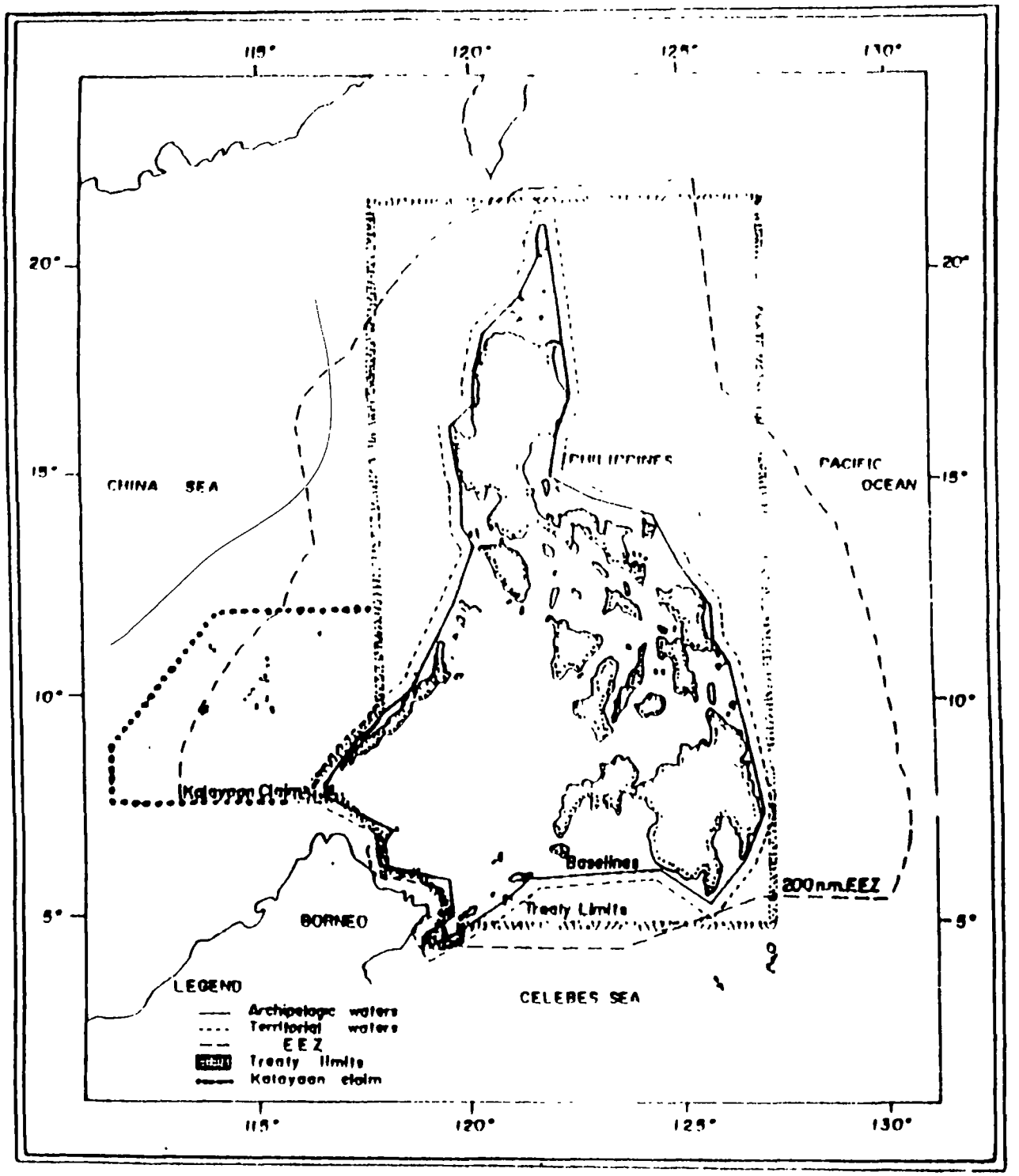
Figure 1 Philippine Marine Jurisdictional Boundaries



units with distinct patterns of organization and resource use. It starts where the people are, with what they have and what they know The essence of CBRM is to enhance the capabilities of communities to manage their resources for the long term.

This paper describes two processes towards the formulation of a community based management scheme for the coastal and other resources in Natipuan, a barangay (village) in Batangas, Southern Luzon, Philippines (based on Lamug and Catalan, 1995) These processes are participatory appraisal and participatory planning The appraisal of resources and capabilities is the starting point in CBRM The compatible uses of resources are determined with that of communities' abilities to manage such resources The decisions on what to do with their problems and concerns are made at the community level through participatory planning in order to allow for greater autonomy and control and the enhancement of the distinct cultural identity of the people in the community (Fellizar, 1993)

Following this introduction is a description of the participatory appraisal process with focus on the methods used and a brief description of results. The third part of the paper is a description of the participatory planning process and an outline of barangay plans The final part presents some concluding comments

Table 1 Total Fisheries Production (1984-1993)

Year	Quantity (mt)	Value (M Pesos)
1984	2,080 40	25,649 90
1985	2,052 10	31,297 30
1986	2,089.50	37,331.50
1987	2,213 00	37,349.40
1988	2,299 70	42,118 20
1989	2,371 10	45,093 70
1990	2,503 40	52,117 20
1991	2,599 00	60,033 30
1992	2,625 00	65,443 50
1993	2,647 00	70,000 00

Source 1993 Philippine Fisheries Profile

PARTICIPATORY APPRAISAL

The appraisal of rural coastal communities aims to better understand the productive activities of people in a community and to determine the effects of such activities on their well-being and on the natural resource base. The process involves the identification of problems, constraints, opportunities, and challenges relating to the use of natural resources, and in turn, suggests projects for development

There is a growing realization of the need to understand and appreciate traditional management systems, livelihood systems, indigenous technologies, and ways and reasons for how people feel, see, think and act in rural communities Participatory appraisal offers a way by which outsiders and villagers cooperate to discover the situation through a process of joint observation, interaction, and shared analysis

The idea of villagers participating in research or in the appraisal process is not new Four general modes of participation in agricultural research have been identified (Biggs, 1989) The first mode is the contractual mode or minimal participation where scientists contract with villagers to provide, for example, farm land or services The second mode is consultative participation where the scientists consult fisherfolks about their problems and then prescribe solutions to these The third mode is collaborative participation where scientists and fisherfolks collaborate as partners in the research or appraisal process. Collegial or maximal participation mode is the fourth where scientists work to strengthen the informal research and development systems of fisherfolks in rural areas The modal types of participation are consultation and collaboration

The circumstances for the initiation of participatory appraisal in the coastal community were a confluence of basic research and pragmatic objectives where academe based researchers wanted to develop participatory methods and techniques while the community needed the appraisal for development planning purposes at the village level

The researchers and barangay leaders impressed upon the villagers the value of the information and knowledge to be generated by the appraisal A powerful incentive was the building of their capacity to make their insights, opinions and decisions the basis for project design and implementation "A participatory approach means bringing people into not only decision-making but also resource mobilization and management" (Uphoff, 1991 491). Meetings with local leaders provided the forum for initial determination of appraisal purposes which were then presented in a general barangay assembly for comment and eventual concurrence A prior reconnaissance of the village by the outside researchers provided the opportunity to make initial observation of the biophysical environment, talk to people in their houses and farms, and invite them to the general assembly. Different information dissemination modalities were employed to have a wide reach and attract interest in the appraisal process

Different disciplinal areas of expertise were represented in the composition of the appraisal team The team included a sociologist, a marine biologist, and an agriculturist They not only had the needed disciplinal expertise but, more importantly, they each have had experience in employing the

participatory approach to community appraisal and thus had internalized the requisite perspective and attitudes Not the least important was their ability to work together as a team and with villagers

In the same barangay assembly wherein the purpose of the appraisal was determined, the general design of the study was also agreed upon The components of the study design that were discussed included the following· (1) participatory perspective and the research process; (2) scope of study, (3) description of specific methods and techniques of data gathering, (4) role expectations and motivation for participation in data gathering; and (5) identification of persons or groups to work with researchers in data gathering and analysis

1. Participatory Methods and Techniques for Data Gathering and Analysis

1 1 Participatory Mapping This is a method designed to integrate a variety of spatial information about the residents Villagers placed the different information on corresponding maps based on their knowledge of the place and the prevailing conditions Three kinds of maps were generated through the joint efforts of different groups and sectors in the community These were the barangay and settlement map by villagers, the coastal and fishing areas map by the fishers, and the land use map identifying the location of various productive endeavors in the community by the farmers

1 1 1 The Village and Settlement Map Eight people altogether participated in the preparation of the barangay and settlement map (Figure 2). Two women started it using only the perimeter boundary of the barangay and the road that runs through the center of the barangay as reference points Colored pencils were used to draw on the map the barangay landmarks, foot trails, houses, resorts and beaches The participants corrected and complemented each other's input A disagreement on the configuration of the coastline was settled by an actual observation ride on a boat by a group consisting of the village head, the marine biologist and a fisherman

1.1 2 The Coastal and Fishing Areas Map Using a validated map of the shoreline, a group of 5 fisherfolks participated in identifying the places where they gather different types of fish varieties, the healthy and damaged corals, and the proposed fish sanctuary (Figure 3) They specifically indicated the places where they collect milkfish fry, reef fishes, and other kinds of fishes that are sold or consumed locally

1.2.3 The Land Use Map Usingthe same base map for preparing the barangay and settlement map, a group of 6 villagers prepared the land use map Earlier different maps of puroks (subvillages) were prepared and the composite was the land use map First, the croplands, grasslands, and forest lands were marked Then the types of crops were identified within the croplands. The location of both annual crops and perennial crops as well as forest tree species was indicated (Figure 4) Also indicated were the location of shrubs and indigenous tree species which were collected for firewood and/or processed into charcoal. In addition to land use, the participants indicated the relative fertility of the soil in the farming areas and the location of water sources

Figure 2 Village and Settlement Map, Natipuan

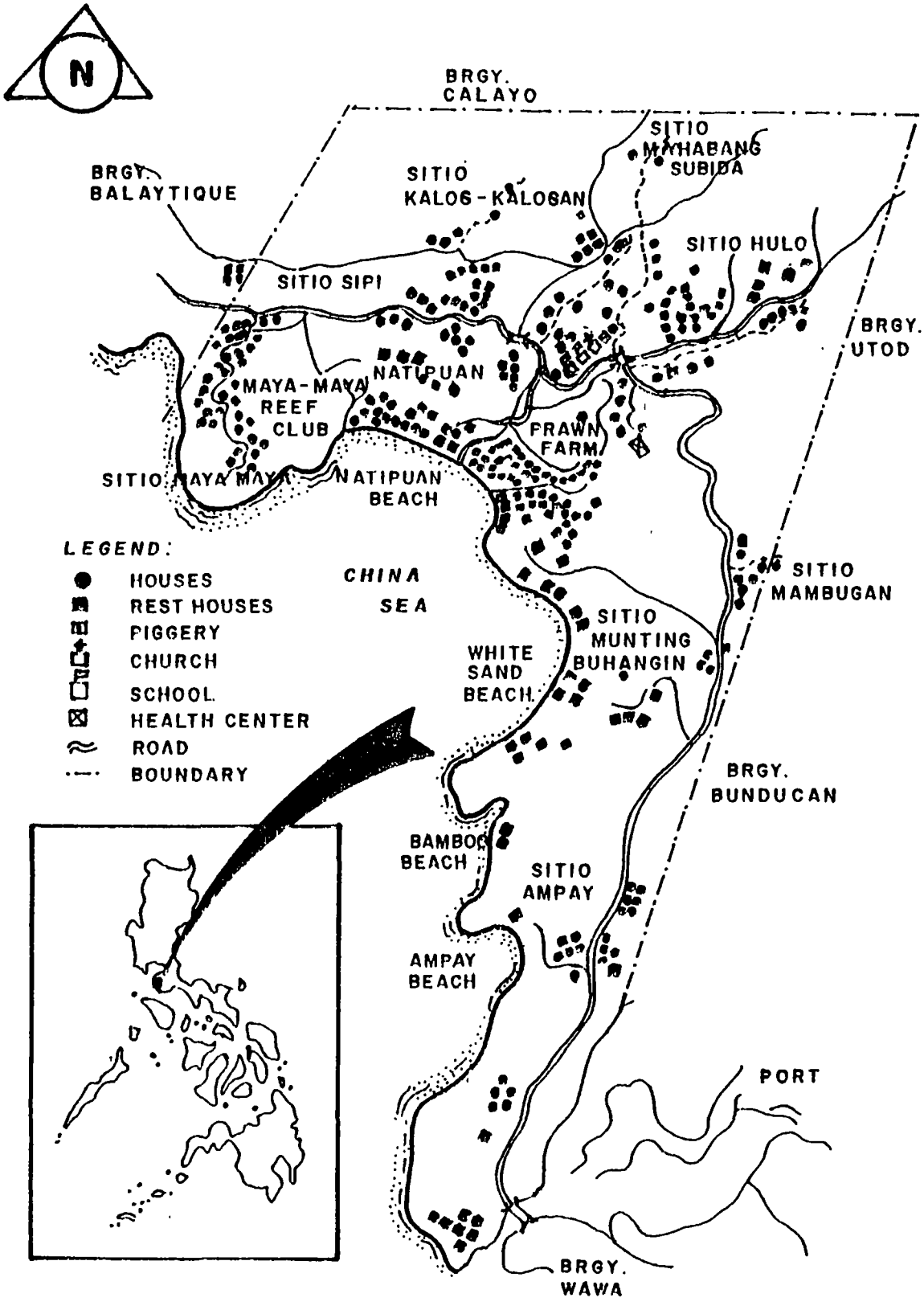


Figure 3. Marine Resources Map, Natipuan

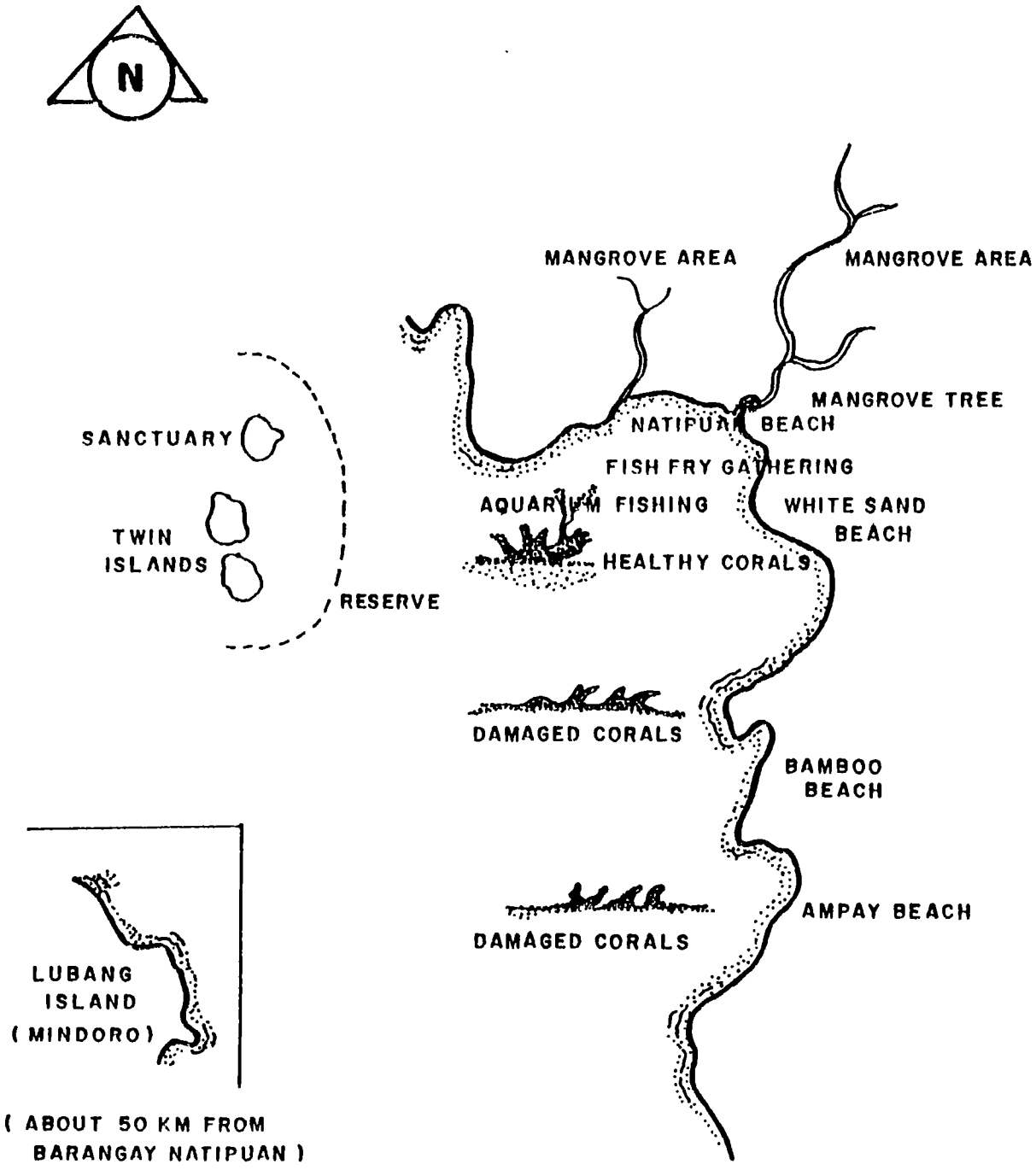
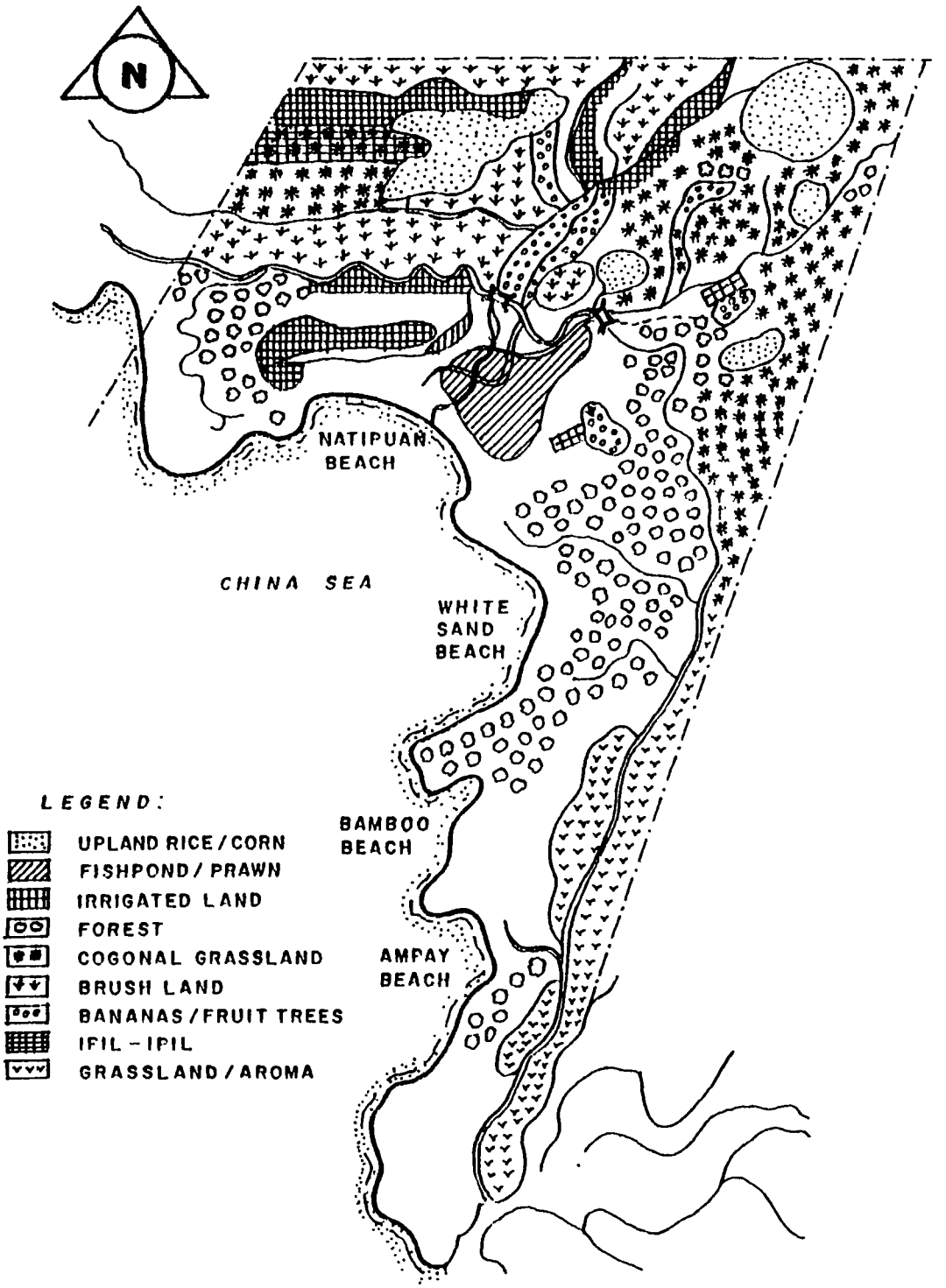


Figure 4 Land Use Map, Natipuan



1 2 Transect Walk and Boat Ride Using the land use map prepared earlier, two transect lines were drawn from the ridge to the coastline The basis was the representativeness of the condition or situation such as state of resource, elevation, and settlement. The lines served as guides for joint observation walks of villagers and researchers During the transect walks, the villagers described the past and present conditions and uses of the land, the problems they encountered, and other biophysical characteristics of the sections traversed by the transect

In a similar manner, two transect lines were drawn on the coastal and fishing areas map from the coastline into the sea Boat observation rides were then made using the transect lines as guides The village head, a fisherman, and the marine biologist made the observations from a motorized boat using a glass bottom device noting particularly the state of coral reefs, aquatic flora, and other marine resources

1 3 Semi-structured Interviews Each of the 3 researchers conducted interviews with individual respondents and key informants The selection of respondents depended on the types of questions and topics of the interview The respondents included fisherfolks on fishing methods, farmers on farm issues and concerns, women and the rural health midwife on health, young people on their productive activities and concerns, and the barangay officials on development concerns and plans Probing of responses for elaboration and clarification was extensively done

1 4 Focus Group Discussion FGD sessions with homogeneous groups were conducted separately on specific topics and problems The discussion gave the group an opportunity not only to answer specific questions but also to discuss issues and concerns peculiar to their group or sector The researchers individually served as facilitators of the FGD on such topics as fishing methods and fish catch among fisherfolks, household enterprises and health among women, crop production and protection among farmers The analysis of data was also undertaken through FGD

1 5 Village Meetings Several village meetings were held in connection with conducting the appraisal. The first two meetings introduced participatory rural appraisal. A third meeting was held towards the end of the appraisal process when most of the information needed had been collected While the community members were participants in the generation of findings of the appraisal, it was important that the findings be presented in their entirety and the analysis involve a large number of community members This was conducted for an entire day with 28 community members participating All sectors were represented fishers, farmers, women and the youth The findings were validated and additional problems and concerns were identified

2 Appraisal Results

2 1 General Features and Social Organization of Natipuan

Natipuan is one of 42 barangays of Nasugbu, province of Batangas in southern Luzon It is a coastal village whose access is through a private all weather road Regular jeepney trips to and from

town are the main means of transportation Motorized boats owned by fisherfolks may also be rented for special trips No distinct pattern can be discerned from the location of settlements A few are clustered along the road, some close to the coastline and the rest are dispersed along the slopes close to the farmlands The view from the road that traverses the village from south to north is picturesque The coastline has coves with fine white sand beaches in some parts and rough rocky ones in others. Several beach resorts line the southern coast and a membership club-resort is located on the north end In addition to public recreation facilities, there are several vacation houses owned by prominent government officials and business people East of the road are grasslands, farmlands, and a few forest tree species close to the ridge that separates Natipuan from the next village.

Before the 1940s, Natipuan was a forested area (Figure 5) The 1940s marked the start of in-migration from nearby villages or other towns in Batangas The entry of migrants correlated with the illegal cutting of trees and other activities attendant to clearing of land for agricultural cultivation The purchase of land by non-residents started in the 1950s As the rate of in-migration increased, the clearing of land for crop cultivation continued The construction of vacation houses by rich non-residents started in the 1960s and the all weather road was built in 1967.

The decade of the 1970s was a historical one Natipuan officially became a barangay of Nasugbu, Batangas The barangay elementary school was constructed The transfer of ownership of land continued as did the construction of more vacation houses A barangay health center was constructed close to the school in 1980. This was followed by the building of the barangay hall and chapel

The total population of Natipuan in 1993 was 1,097 with a total of 217 households Females (52%) slightly exceeded males and younger age groups were proportionately larger than the older age groups The structure for the school age population reflects a large segment of the 7 to 12 age bracket or those in the elementary level of schooling (54%) compared to those in the secondary level (35%)

Natipuan is basically an agricultural community consisting of 2 main occupational groups, the fisherfolks and the farmers Most residents, however, engage in both fishing and farming at different times of the year Other productive endeavors include professional, clerical and technical work, construction related labor, caretaking of vacation houses, and management of small grocery stores

The barangay council is the most evident formal organization in Natipuan It is headed by a female barangay captain with 6 councilpersons (2 of whom are women) and a female secretary and a treasurer It has 21 persons serving as barangay tanod (village guards). There is a formal organization of fishers, the Natipuan Aquamarine Group with 28 members The youth sector is organized into the Kabataang Barangay (KB) a government structure that is supervised by the barangay council

2 2 Marine Resources and Fisheries

2.2.1 Coral Reefs and Reef Fish The condition of Natipuan's marine resources shows the result of prolonged and extensive human abuse The coral reefs that cover an extensive area are generally in poor condition considering that dynamite fishing has been practised since the 1970s and

Figure 5 Timeline, Natipuan

1940s		**Natipuan is a forested area**
		Natipuan is a *sitio* of Balaytigue
		People from nearby towns started migrating to Natipuan
		People engaged in *kaingin* farming, charcoal making, and cutting of trees
		People engaged in fry gathering
1950s		**People continued *kaingin* farming**
		Purchase of land by non-residents
1960s		**Continuation of migration of people from other towns**
		Start of construction of resthouses/ beach resorts
		Use of *palubog*, a fishing gear used during non-monsoon season
	1967	**Construction/Improvement of road**
	1968	**Construction of Maya-Maya Reef Club**
1970s		**Natipuan became a barangay**
		Construction of Natipuan Elementary School
		Continuation of cutting of trees
		Continuation of purchase of land by non-residents
		Construction of more resthouses/ beach resorts
		Use of *pangkulong*, a fishing gear used during monsoon season
		Aquarium fishing started
		Use of dynamite in catching fish
1980s		**Construction of health center and construction of barangay hall and chapel**
		Construction of more resthouses/ beach resorts
		Use of fertilizer and pesticides on crops
		Use of cyanide in catching fish
1990s		**Construction of more resthouses/ beach resorts**
		Implementation of Local Government Code

then followed by use of cyanide in the 1980s Presumably, the corals which were not blown up by the blasts were ultimately poisoned by cyanide Destruction of the coral reefs displaced the remaining reef associated fishes The dead corals no longer served the function of nursery, source of food, and refuge against predators of reef fishes The recent reduction in use of illegal fishing methods has led to the recovery of the corals

There were around 40 reef fish gatherers in 1990 The number has since increased. Collection is almost daily except for the monsoon months of June to September The type of fish collected varied depending on the month of collection, presumably during the month the species exhibit their peak in population (Figure 6). The most numerous type usually gathered in the months of January and February is the Domino (*Dascyllus trimaculatus*), followed by Red Wrasse (*Coris gaimardi*) and Auriga (*Chaetodon auriga*) In March, Orange Skunk (*Amphiprion sandracinos*) is the fish collected In the peak of summer in April, there are three types of aquarium fishes that are commonly caught, Red Checkered Butterfly (*Chaetodon sp.*), Cowfish (*Tetrosomus gibbosus*), and Blue Coran (*Pomachanthus semicirculatus*) In May, there are three types of fish usually gathered but in low quantity These are Cowfish, Black and White Hiniochus (*Hiniochus acliminatus*) and Moorish Idol (*Zanclus canescens*) From October to December, the dominant types collected vary In October and November, Auriga is the least abundant whereas the Moorish Idol is the most numerous. The Red Checkered Butterfly and Red Wrasse are of equal abundance in both months In December, the most numerous is Birdfish followed by Hogfish (*Rodiamus mesothorax*) and the least is the Red Wrasse

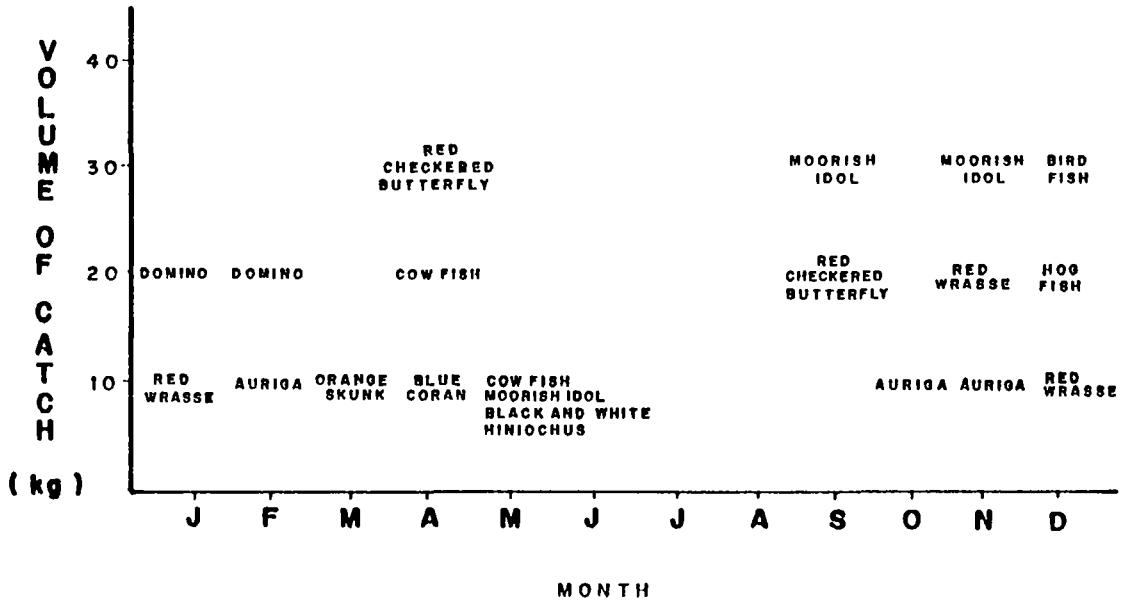
Although the data provided by the fisherfolks of Natipuan are limited, these contain information which is noteworthy. The data are consistent with the general observation among tropical species that temperature does not play a key role in the time of spawning as it does in the temperate seas (Johannes, 1978).

The present status of the coral reefs in Natipuan and their exploitation also reflect the condition of other villages along the coast of Nasugbu. The main difference is that the coral reefs in Natipuan appear to be recovering because of the cooperation of the fisherfolks with their local officials The coral reefs in the adjacent villages are continuously being degraded by the resident fisherfolks as well as by nonresidents because resource use in these villages is not controlled

2 2 2 Gathering of Milkfish Fry. In addition to aquarium fishes, milkfish frys are also collected usually after a rainstorm. Most of the members of the community gather on the seashore watching as other collect the fish larvae Fish fry gathering is usually a family affair It takes a pair to manipulate the gear for collecting the fish larvae The net is moved around the estuary and after a few minutes the string at the end of the net is untied and the content of the net is released into a big basin with fresh clean seawater where they are stored until sold to buyers The frys are usually transported in ice boxes

2.2.3 Fishing The fishing area that the fisherfolks frequent depends on the season of the year During the nonmonsoom season from November to May, the fisherfolks fish close to their village and in nearby areas They use the fishing gear locally known as "palubog", a rectangular net (mesh size is 025 - 038 m) with a width of over a meter and length of about 50 m. It is lowered into the water to about 1.5 m and left there for 3 to 4 hours in the early morning or late afternoon. A fisher owns an

Figure 6 Types of Fish Caught, Natipuan



average of eight palubogs The landed catch is low (1 to 5 kilos) and typically composed of only one type of fish, the alumahan (Croaker) Only medium to large sized ones are sold and the remainder are consumed by the household

During the monsoon season, from June to October, the fishers travel to Lubang island to catch fish using large boats (16 HP engines) and accompanied by helpers The length of stay ranges from 2 days to a week The fisherfolks use the fishing gear locally known as "pangkulong" (the same mesh size as palubog but much larger in length and width) which is lowered into the water to 15 m The catch is composed of two types of fishes: alumahan (Croaker) and salay-salay (Carangids) The landed catch ranges from 15 to 70 kg and prices range from P 30 to P 60 per kg

2 3 Land Resources and Farming

2 3 1 Land Tenure and Land Use Over 100 households in Natipuan are engaged in farming either as sole means of livelihood or in combination with fishing Ninety percent of these do not own the land which they cultivate nor the land on which their houses are built About half of the farmers claim that they have the permission of the legitimate land owners to use the land for cropping purposes. Others do not even know who are the rightful owners of the land they are cultivating

Land use in the village is diverse. Some parcels of land are used for cropping purposes A large area remains as grassland A few remaining clumps of ipil-ipil trees are evident but most of these are being cut for fuelwood or converted to charcoal Some privately owned lots close to the coast have been replanted with trees and since cutting is prohibited, these are the remaining areas with thick vegetative cover in the village The coastal areas, especially those south of the village, have been bought by rich Manila residents They constructed vacation houses on these lots and retain some village women as caretakers of the houses. These women also serve as house helpers when the owners come for vacation in Natipuan There are beach resorts catering to tourists in the southern end of Natipuan coast.

2 3 2 Crops and Animals Raised Farmers raise a variety of crops These include upland rice, corn, root crops like cassava and taro (gabi), and a variety of vegetables like eggplant, water gourd (upo), and string beans Rice (palay) is planted in rainfed farms or in small parcels where there is available water for irrigation Corn is grown in rainfed farm parcels The vegetables are planted close to the dwelling units Root crops are seen on mild to steep sloping areas Rice and vegetables are for the consumption of the household Corn is either consumed or sold in the village.

Farmers also plant perennial crops close to their dwelling units or in their farm lands The perennial crops raised are coconut, star apple, jackfuit, mango, Spanish plum (siniguelas) and banana Except for banana, these are cultivated on a small scale and never in commercial quantities Banana is partly for home consumption and partly for cash.

Most households have animals Some of these are domestic pets, others are raised for income generation, and some are draft animals Dogs and cats are household pets, dogs are sometimes

butchered for food Some households raise chickens and ducks as well as pigs and goats for commercial purposes, they are sold to direct buyers in the barangay or middlepersons engaged in trading whenever there is a immediate need for cash. A few households have carabaos used for farming.

2 3 3 Fuelwood Gathering and Charcoal Making. A small segment of the population (15 %) is neither engaged in fishing nor farming The productive endeavors of this segment are in the cutting of small trees for fuelwood and the processing of part of this fuelwood into charcoal The bundles of firewood and sacks of charcoal are transported to the roadside using carabao-pulled sleds for easy pick up by direct buyers or for transport to the Nasugbu market.

2 3.4 Problems in Agricultural Production The transect walks conducted by team members and community representatives provided an opportunity to see a crosssection of the barangay from the ridge to the coast Figure 7 presents some of the major problems encountered in different economically productive endeavors from the very steep to the rolling terrain

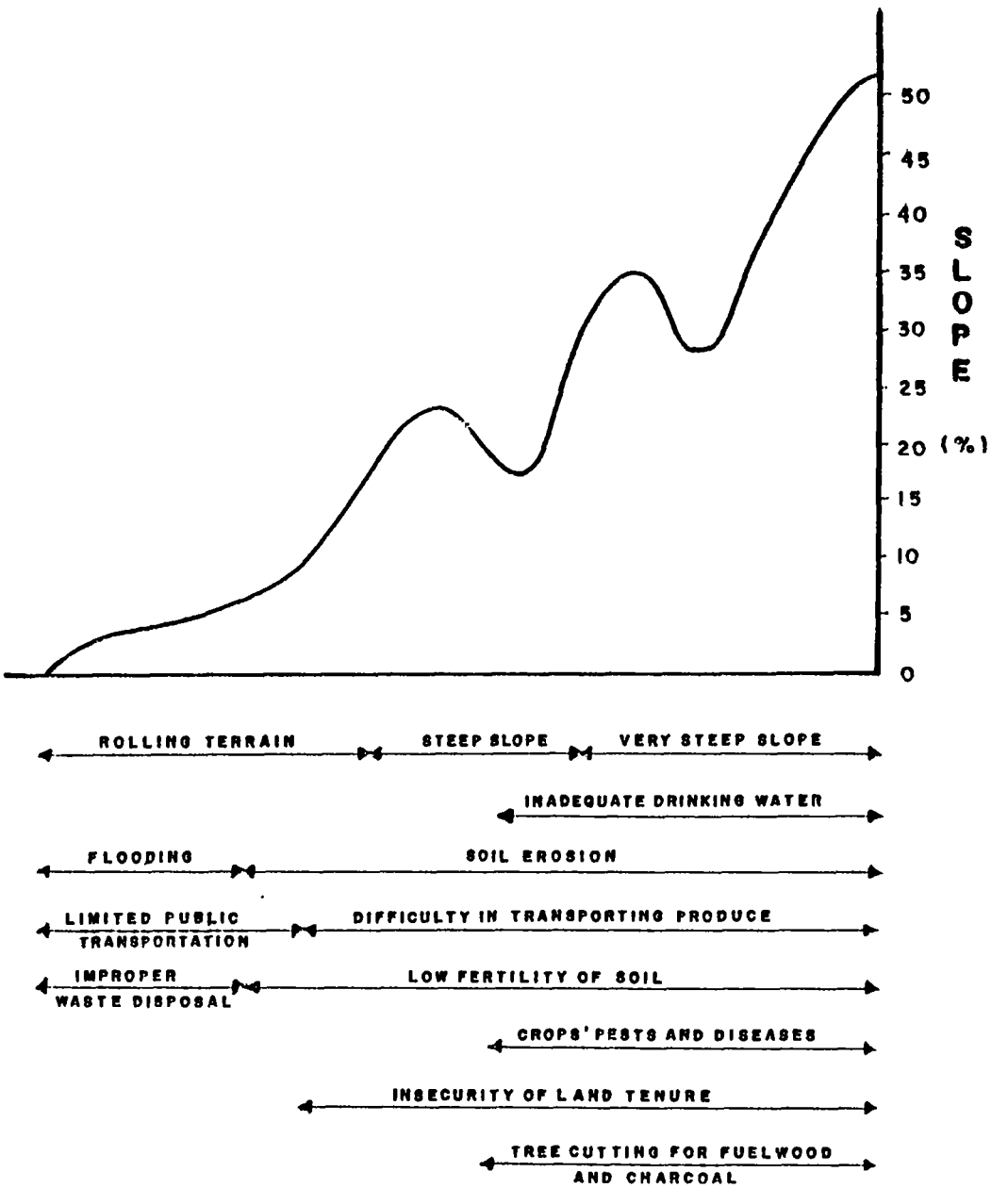
Understandably, water is scarce in the high and very steep areas. In one section of the village a water impoundment structure was recently constructed but is now silted and needs repair. The inaccessibility of many areas in the barangay poses difficulty in transporting agricultural products either to the barangay or town centers Land tenure, low soil fertility and consequent low yield, pests and diseases of crops are among the often cited problems From the perspective of some community members, those engaged in fuelwood collection and charcoal making are the ones responsible for the loss of trees in the village Areas close to the coast are occasionally subjected to flooding and there are reports of siltation and decrease in fish catch

Participatory analysis of the problems related to farming pointed to low crop yield as the central problem which is attributed to the interrelationship of several factors These include decrease in fertility due to loss of top soil, lack of water for irrigation, weeds and pests like rats, birds, stray animals; lack of capital for needed farm inputs, and no security of land tenure.

Other problems identified were low income, inadequate support of local government, improper waste disposal and soil erosion. Some informants reported problems in marketing of agricultural products In addition to the difficulties encountered in the transport of products, there are the problems of low prices and no participation in the bidding process for reef fishes

Having presented the use of marine and land resources separately, it is important to point out their interrelationship Considering the lack of vegetative cover of the land areas that range from rolling to very steep slopes, it is expected that the top soil lost in the farm lands eventually ends up in the coast and marine areas Siltation is evident during the rainy season In addition, the chemical inputs used by farmers on their crops are partly carried by runoff to the sea Furthermore, solid and liquid waste materials from the dwelling units and resorts also end up in the sea All these pollutants have adverse effects on marine biota particularly on the fishes and coral reefs.

Figure 7 Problems Identified During Transect Walk, Natipuan



2 4. Multiple Productive Endeavors

It is common for households in Natipuan to engage in several different economically productive endeavors Some fishers also cultivate both annual and perennial crops as well as raise animals Some male household members are employed as laborers in the constructon of vacation houses and resorts Women also provide laundry services or serve as caretakers of vacation houses or as househelpers Figure 8 depicts the calendar of different types of productive endeavor. It goes without saying that crops raised in rainfed areas are dependent on rainfall for the different phases of crop production Involvement in construction-related work continues throughout the year although it slackens during the monsoon season

PARTICIPATORY PLANNING

The participatory appraisal was designed to generate information that could serve as input in planning specific projects for the village This was a direct response to the expressed need of the barangay officials to identify projects to be proposed by the barangay to the municipal council This, in turn, becomes the basis for appropriating funds for the barangay under the Local Government Code

The participatory planning was undertaken in two phases The first was a presentation and validation of appraisal findings This was done for an entire day with 28 people participating

The second phase was the planning workshop. There were a total of 40 community members who participated representing the fishing, farming, women and youth sectors The group was divided into sectoral subgroups Each subgroup was tasked to identify priority problems and concerns and propose specific courses of action designed to address these problems The proposed action also included the time frame, the resources needed, the person or group tasked to take the lead in carrying out the proposed action. as well as the agencies or organizations whose collaboration would have to be sought The output of each subgroup was then presented in a plenary session wherein refinements and additions were made

Table 2 outlines the output of the planning workshop based on the following identified priority concerns

1 Decline in fish catch;
2 Competition posed by big time fishers;
3. Use of illegal fishing methods by both barangay residents and residents of neighboring barangays,
4 Insecurity of land tenure,
5 Soil erosion due to loss of vegetative cover and consequent decline in soil productivity,
6 Crop protection,
7 Need for additional sources of income for the women,
8 Need to strengthen the youth organization,

Figure 8. Calendar of Economically Productive Activities, Natipuan

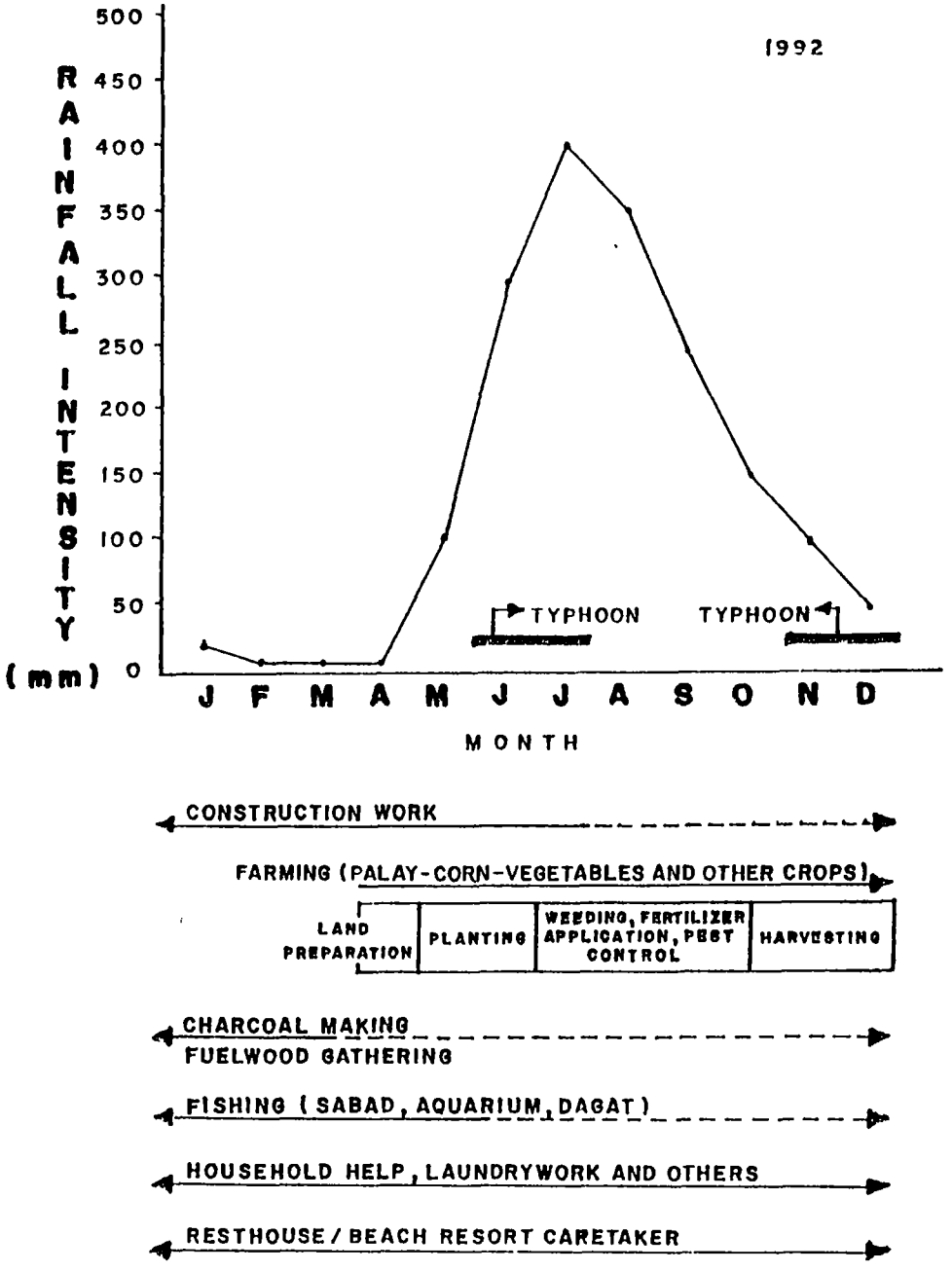


Table 2. Output of Barangay Planning Workshop, Natipuan, 1993

PROBLEM	OBJECTIVE	STRATEGY/ ACTIVITY	DATE OF IMPLEMENTATION	EXPECTED OUTPUT	PERSONS/ AGENCY INVOLVED	INDICATORS
FISHING						
1. Presence of big time fishers -- trawl -- *hulbot-hulbot* (scaring/ herding device with hauling ropes that pass through a metallic ring) -- sonar	To increase volume of fish caught To prevent depletion of fish population	Have a barangay resolution on prevention of illegal methods of fishing Cooperation between the two barangays	Continuous coordination with different government agencies and local government units	To inform town officials	Barangay Council	Written document of agreement
2. Low volume of fish caught due to illegal fishing methods of neighboring barangays	To control those who practice illegal fishing	Coordinate with barangay officials of neighboring barangay	Continuous coordination with different government agencies and local government units		Barangay Council	
FARMING						
1. Forest denudation	To restore forest condition	Have self-discipline Reforestation Cooperation between community members and other agencies	May to September	To inform the barangay	Department of Agriculture Barangay Council	Monitoring

Table 2. Continued ...

PROBLEM	OBJECTIVE	STRATEGY/ ACTIVITY	DATE OF IMPLEMENTATION	EXPECTED OUTPUT
1. Forest denudation (continued)	To prevent occurrence of natural calamities (floods)	Avoid cutting of trees	May to December 1994	
	To have adequate water supply	Preserve water sources		
	To establish a barangay nursery			
2. Insecurity of land tenure	To have titles to residential and farm land	Survey of landless residents and farmers	Immediate	Resolution of barangay council to municipal council
WOMEN				
1. Lack of additional sources of income	To have additional sources of income for the family	Borrow capital from cooperative and start a small enterprise (sewing, piggery)	April to June 1994	
		Conduct trainings and seminars		
		Cooperation among women		

Table 2. Continued ...

PROBLEM	OBJECTIVE	STRATEGY/ ACTIVITY	DATE OF IMPLEMENTATION	EXPECTED OUTPUT	PERSONS/ AGENCY INVOLVED	INDICATORS
YOUTH						
1. Lack of cooperation and communication	To form stronger youth organization	Conduct regular monthly meetings			Barangay Captain Barangay Youth Council Youth sector	Strengthening of organization
		Cooperation among youth members				
		Practice self-discipline				
2. Lack of sports facilities	To avoid use of drugs	Establish sports facilities	April to June 1994	To form stronger youth organization		
HEALTH AND UTILITIES						
1. Lack of medicine	To provide medicine to all families	Coordinate with barangay health worker or Department of Health				50 % of population be given services
2. Lack of potable water	To provide all families with potable water	Have a barangay resolution			Community members Barangay Council Municipal government	
		Cooperation of community members				

9. Inadequate potable water for sections of the barangay,
10 Lack of medicinal supplies for the health center.

SOME CONCLUDING COMMENTS

1 The community members actively participated in the different phases and methods used in the appraisal and planning processes They were particularly delighted in the mapping activities as they ensured that their dwelling unit or farm lot, for example, was included in the map The process by which they corrected each other or arrived at a consensus on some issue was cordial and carried out in the spirit of reflecting valid information about their barangay. The experience in Natipuan showed that given the opportunity, villagers can demonstrate their capability and willingness to play active roles in appraisal and planning for their barangay

2 The insights of community members in the analysis of their problems as well as the proposed responses to these were valuable and reflected their sensitivity to concerns that directly affect them as well as their willingness to take action on these matters

3 The factors that contributed to increased participation were the following:

3 1 The instrumental value of the appraisal to the formulation of barangay development projects served as intrinsic motivation to participate and complete the exercise especially for the members of the barangay council,

3 2 Snacks served during small group activities and meals during village assemblies were a motivating factor to their participation,

3 3 The respect and importance accorded the community members by the research team contributed to their self esteem which was reflected in their cooperation and participation Similarly, the hospitality and concern for the researchers demonstrated by the barangay captain and some community members were extrinsic incentives for sustaining the enthusiasm of the researchers

4 Follow up studies should determine the extent to which community members are able to translate their plans into specific projects and action programs

5 The multiple productive endeavors of residents of coastal communities as they use different resource systems create a bigger challenge for CBRM compared to communities engaged solely in fishing

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