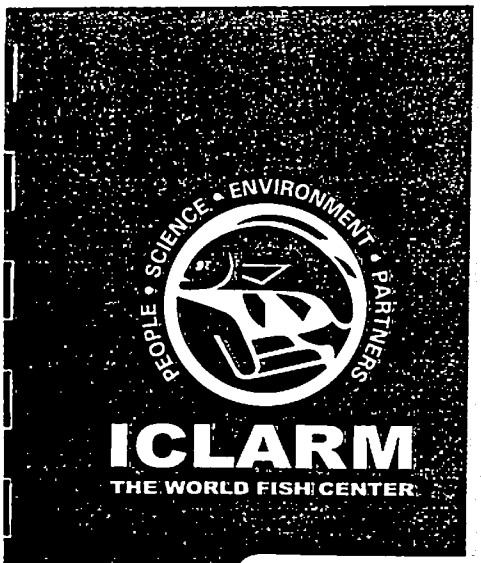

FISHERIES CO-MANAGEMENT RESEARCH PROJECT

Evaluation of the Integrated Municipal Council as an Institution for Co-management in the Coastal Zone

RR NO. 18

November 2002

RESEARCH REPORT

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Carlos C. Baylon

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Draft Final Report

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CONTENTS

1.0. INTRODUCTION

Co-management has been defined as the sharing of responsibilities and authority between the government and the resource users to manage a resource (Pomeroy and Williams, 1994). This involves a varying degree of delegating management authority between the local level (community or resource users) and the state level (national, local government units). For fisheries co-management, this has been described as a partnership agreement in which the government, community of fishers, external change agents and other coastal resource stakeholders share the responsibility in the management of the fishery (Novaczek et, 2001). By promoting the active participation of the fishers, the community and other stakeholders, co-management can serve as a mechanism for addressing fisheries management issues which can then lead to the economic development of fishing communities.

In the Philippines, the coastal areas are presently facing many challenges such as resource overexploitation, degradation of coastal habitat, user conflicts and poverty of sustenance fishers. The Philippine government has passed laws such as the Local Government Code of 1991 and the Philippine Fisheries Code of 1998 to address these challenges. The Local Government Code has devolved many functions and responsibilities of the national government to local government units[1] such as provinces and municipalities. The Fisheries Code gave the jurisdiction of coastal or municipal waters, from shoreline and up to 15 kilometers, to the municipalities. The local government units in the Philippines, specially the municipalities, have to develop strategies and evolve institutions to better manage its municipal waters.

One institution that is evolving in Philippine coastal area is the integrated municipal council (IMC). The IMC has been established by several municipalities to better manage large bodies of water in which these municipalities have jurisdiction like in Banate Bay in the Province of Iloilo and in areas with long contiguous coastline such as Northern Iloilo. The institution of IMCs has legal support and encouraged in the Philippine laws such as the Local Government Code of 1991 and Fisheries Code of 1998. Section 33 of the Local Government Code states that "Local government units may, through appropriate ordinance, group themselves, consolidate or coordinate their efforts, services and resources for purposes commonly beneficial to them. In support of such undertakings, the local government units may contribute funds, real estate, equipment, and other kinds of property and assign personnel as may be agreed upon by the participating local units through a memorandum of agreement". In the Fisheries Code, Section 17 states that "Integrated Fisheries and Aquatic Resource Management Councils (IFARMCs) shall be created in bays, gulfs, rivers and dams bounded by two or more municipalities/cities. The IFARMCs shall serve as the venues for close collaboration among LGUs in the management of contiguous resources to achieve the objectives of integrated fishery resource management." There is an advantage in having an IMC because several municipalities can pool their meager funds in protecting their fishery resources. The IMC can eliminate boundary disputes among municipalities because their municipal waters are combined together and treated as a single management unit.

There had been success stories in the establishment of IMCs in the Philippines and one of these is the Banate Bay IMC which obtained a national award for local governance . It is important to document the elements that contributed to the success

of the Banate Bay IMC. On the other hand, there had been cases in which IMCs were not very successful in fulfilling its mandate. An example is the Batan Bay IMC which even obtained foreign funding but still perceived to be not so successful in accomplishing its objectives. Thus, it is necessary to compare these IMCs to determine the best practices for the establishment of an IMC.

This study on the IMC has the following objectives; (1) to evaluate the IMC as an institution for co-management in the coastal area of the Philippines, (2) to determine the impact of an IMC in the coastal area based on co-management criteria like sustainability, efficiency and equity, and (3) to compare two IMCs in the Philippines and determine the factors that contribute to the success of an IMC.

2.0 METHODOLOGY

Two IMCs were studied, one in Batan Bay in the Province of Aklan and the other in Banate Bay in the Province of Iloilo (Fig.1). The Batan Bay IMC is composed of the municipalities of Altavas, Batan and New Washington while the Banate Bay IMC is composed of the municipalities of Anilao, Banate and Barotac Nuevo. Primary and secondary data were collected in the study. In the collection of secondary data, information were obtained from published literature on the IMC, report of projects that were involved in the establishment of IMCs and reports of IMCs to their respective municipalities.

For the collection of primary data, a semi-structured interview was made on key informants from Batan and Banate IMCs. The questions that were asked were based on the following topics:

1. Personal background of the respondent
2. Historical background of the IMC
3. Structure, leadership, membership and present status of the IMC
4. Impact/effect of the IMC on the bay's resources and users
5. Problems encountered by the IMC
6. Recommendations to strengthen or make the IMC more effective

The key informants in the semi-structured interview were the following:

Type of informant	Number
1. Mayors (present and previous)	4 (2 females)
2. IMC Staff	6 (4 females)
3. Staff of the municipal agriculture office	5 (2 females)
4. Staff of the municipal planning office	4 (0 female)
5. Provincial staff	2 (0 female)
6. Fisherfolk	6 (3 females)
Total	27 (11 females)

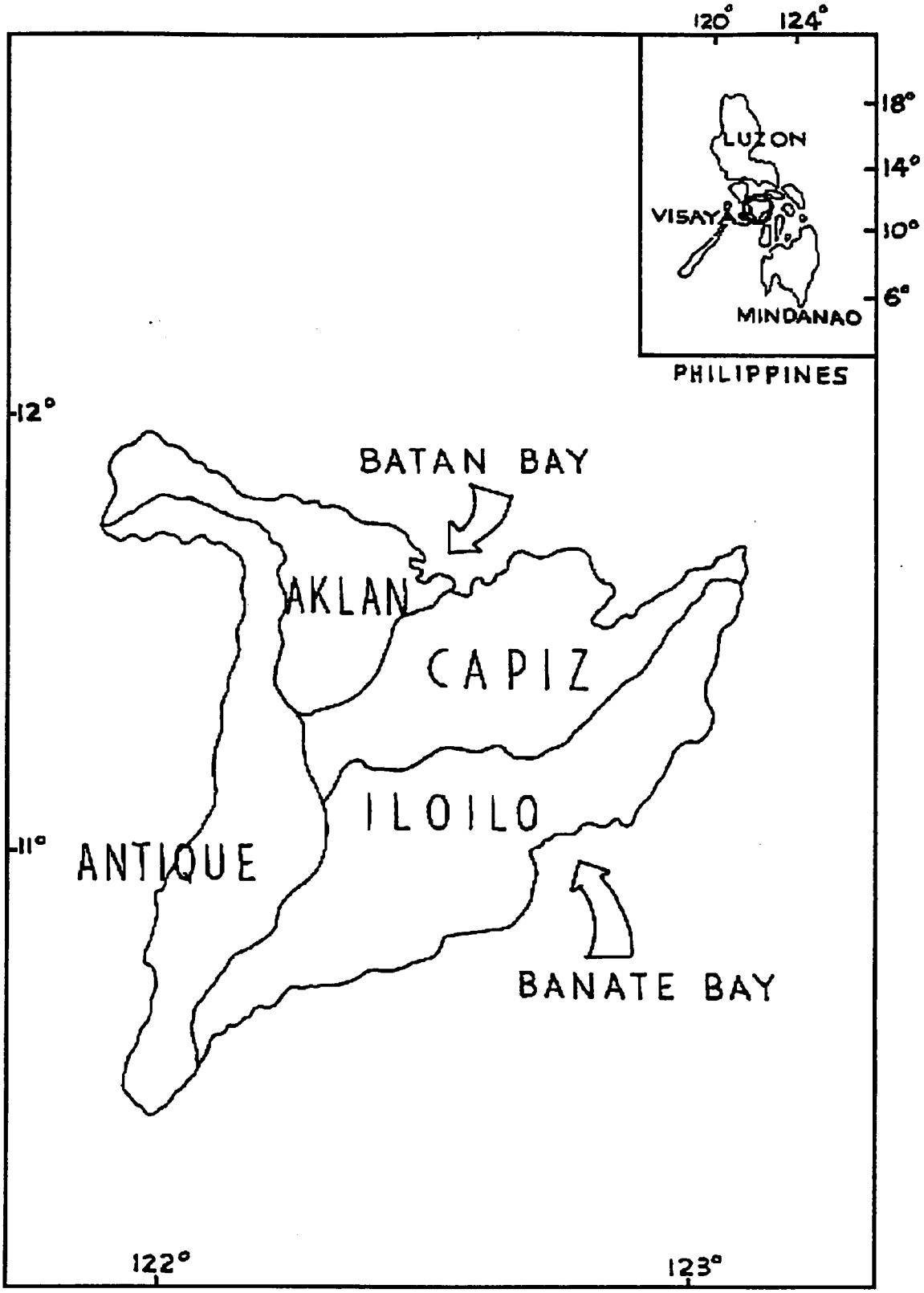

Fig.1. Location of Banate and Batan Bay

A structured interview was also conducted with 60 fishers from Banate Bay using a fixed set of questions. The questions focused on the personal background of the fishers and their perceptions on the impact of the Banate Bay IMC based on co-management criteria like sustainability, efficiency and equity. The fishers were

shown a scale from 1 to 10 and asked to characterize the conditions in the bay with number 1 representing the poor condition and number 10 representing the excellent condition. The questionnaire used was translated to the local dialect and pre-tested with six fishers from Banate Bay to see if the questions could be easily understood. Results of the structured interview were analyzed using the SPSS statistical package.

Thirty fishers were selected from barangays that were actively participating in the programs and activities of the Banate Bay IMC (to be denoted as participating fishers) and another thirty fishers from barangays that were not actively participating in the IMC (to be denoted as non-participating fishers). The staff of the Banate IMC provided the two sets of barangays, one participating and the other is non-participating, from each of the three municipalities of Banate Bay. Ten fishers were selected from each of the six barangays from Banate Bay.

3.0. RESULTS AND DISCUSSION

3.1. Banate Bay IMC

3.1.1 Context of the Banate Bay IMC

Banate Bay is a common fishing ground shared by the municipalities of Anilao, Banate and Barotac Nuevo (Fig.2). It is located in the province of Iloilo within 122° 47' to 122° 54' longitude and 10° 52' to 10° 59' latitude. The bay has an estimated area of 14,385 hectares with a coastline of 24 kilometers (Larroza, 2001). Soft mud deposits characterized the bottom and shoreline areas except for some sandy tidal flats. Eight major tributary rivers empty into the bay, namely; Balandra, Alacaygan, Dangulaan, Anilao, Tinorian, Palaciauan, Talisay and Jalaud creek. The waters of Banate Bay has been classified as SB water which is recommended for public bathing and swimming and suited for spawning of resident fish species in the area (Bayot, 2001). Banate Bay has 3,519 hectares of fishponds, 300 hectares of mangrove and several protected areas for corals, mangroves and other aquatic organisms (Legaspi, 2001). The bay area has two pronounced climatic seasons, dry from November to May and rainy for the rest of the year.

The fishery resources of Banate Bay consist mainly of finfishes, crustaceans and molluscs. For finfish, the most commonly caught species are slipmouths (*Leiognathus sp.*), sardines (*Sardinella sp.*), anchovies (*Stolepherus sp*), mullets (*Mugil sp.*), red sea breams (*Nemipterus sp.*) and sea catfish (*Arius sp.*). For crustaceans, these are mostly shrimps like *Acetes sp.*, *Penaeus sp.*, *Metapenaeus sp.* and the blue crabs, *Portunus pelagicus*. Molluscs that are harvested from the bay are mostly squids (*Loligo sp.*) and bivalves like angel wings (*Pholas orientalis),* oysters (*Crassostrea sp.)* and green mussels (*Perna viridis)*. Most of these species are caught year round except during the typhoon months of June, July and August when the fishers are not able to go out to the sea. Estimated annual catch of commercially-important species are 908,000 kg for sardines, 816,000 kg for slipmouths, 660,000 kg for *Acetes* and 860,000 kg for blue crabs (BBRMCI, 2001).

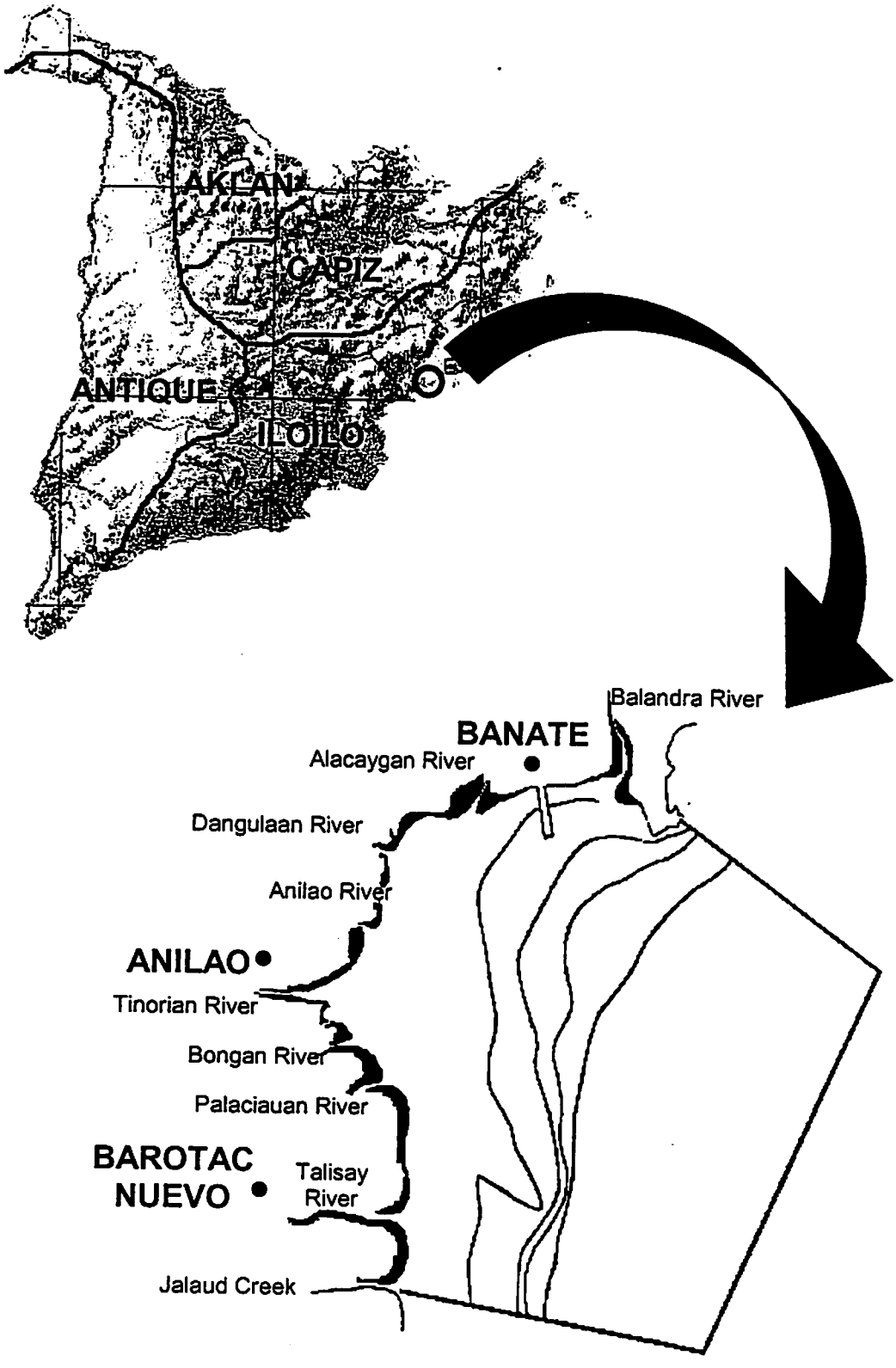

Fig. 2. Banate Bay, Iloilo

Fishers in Banate Bay are classified as commercial fishers who are using boats greater than 3 gross tons and municipal fishers which have boats of three tons and less. There are eight commercial fishing boats that are based in Banate Bay and using Danish seine (*Super Hulbot)*. At present, under the local fishery ordinance and the Fisheries Code of 1998, these commercial fishing boats are not allowed to operate in Banate Bay. For the municipal fishers, there are 549 full-time fishers and 380 part-time fishers for a total of 928 fishers. There are 476 municipal fishing boats in which 292 are motorized and 184 that are non-motorized. The most common fishing gears used by municipal fishers are the push net (with 374 operators), gill net (253), crab pot (125), fish corral (94), hook and line (92), encircling gill net (18), round haul seine (17), cast net (14), beach seine (13) and skimming net (12).

Fish caught in Banate Bay are generally sold in the markets of Anilao, Banate and Barotac Nuevo while fish that can not be absorbed by these markets are brought to Iloilo City. The fishers mainly sell their catch to the ten fish brokers based in Banate Bay and these are then sold to vendors before reaching the consumers. Prices of fish would vary depending on the species and the supply and demand. The fishers usually keep a portion of their catch which is good for one day's household consumption and the rest are sold in the market. A patron-client relationship usually exists between the fishers and the fish brokers. The fish brokers provide for the gears, nets and family needs of the fishers while the fishers are obliged to sell their catch to the brokers where they are indebted.

Banate Bay is a source of livelihood for 6,400 fishing households having a population of 33,000 that are residing in 22 coastal barangays (villages). To get a profile of the fishers in the bay, a structured interview was conducted with 60 fishers of Banate Bay. The 60 fishers that were interviewed had a mean age of 43.2 years and their average stay in school is 7.5 years. Most of them are married (85%) and the average household size is 5.7. Majority (83%) of the fishers were born in the same barangay they are presently staying . The average years of stay in their present residence is 35.7 years. These fishers had a mean fishing experience of 16.8 years and the majority (67%) had other jobs such as carpenters and laborers in sugar cane fields and fishponds before they became fishers. When they were asked if another job is available, would they still choose fishing, only 58% said they would choose fishing while the rest would get another job. For those who preferred fishing, they said that this work is not difficult, money is easily earned, there are no supervisors, the fisher is near his family and it is the only job they know. For those who did not prefer fishing, the reasons they gave are; the work is difficult and dangerous, it is a seasonal job, the income is low and the Banate Bay IMC is strict. Almost all of the respondents (98%) said that fishing is their main source of income and food. Some of the fishers (47%) have other members of the household that work and others (32%) are receiving remittances from outside their household. Most of the fishers (92%) own their house but only 10% own the lot where their house is located. Majority (90%) of the fishers own their fishing gears. The most common fishing gears they use are the gill net, push net, crab and fish traps, hook and line and long lines. Many of the fishers interviewed (85%) have their own boats and 65% of these boats are motorized.

3.1.2 History and Institutional Arrangements in the IMC

The Banate Bay IMC was initiated by Mayor Ramon Antiojo of the municipality of Anilao. His municipality, similar to most coastal areas in the Philippines, is confronted with problems of overexploitation of fishery resources, destruction of coastal habitats, illegal fishing activities and poverty of sustenance fishers. Mayor Antiojo's awareness of the need for coastal resource management and the passage of the Local Government Code, which provided more powers and authority to the local government, encouraged him to form an integrated municipal council with the nearby municipalities of Barotac Nuevo and Banate. A series of consultations and dialogues started in November 1995 which culminated in the signing of a memorandum of agreement in February 1996 in which the Banate Bay Resource Management Council, Inc. (BBRMCI) was established.

The Banate Bay IMC has a Board of Trustees composed of the three mayors, an executive director, heads of operational units, representatives of municipal offices such as the municipal legislative body, municipal planning office, municipal fishery office and other representatives from the provincial legislative body, Bureau of Fisheries and Aquatic Resources, and non-government organizations in the participating municipalities. (Fig. 3). The Board is the policy-making body of the IMC and has been tasked to prepare an integrated management plan of the bay and promulgate the rules and regulations for the preservation and utilization of the fisheries and marine resources of the bay. The Chairman heads the Board of Trustees and presides over its meetings. The meeting of the Board is held once a month. An affirmative vote of the majority of members present is necessary to approve a motion or proposal in the meeting. The Executive Director executes the policies and rules of the IMC and is responsible for its day to day affairs. The IMC has six operational units, namely; Secretariat, Livelihood Unit, Law Enforcement Unit, Mangrove and Land Use Unit, Institutional Development Unit and Research and Evaluation Unit. These units facilitate the implementation of the programs and projects of the IMC. Each of the participating municipalities appropriate funds for the operation of the IMC.

The Banate Bay IMC can be considered to be a successful institution and this has been validated when it won the national Pook Galing Award in 1998. This award, a project of the national government and the private sector, is given to programs of LGUs for its innovations and excellence in local governance. Notable achievements of the IMC were increased awareness and empowerment of the fisherfolk of Banate Bay, improved enforcement of fishery laws and provision of alternative livelihoods. The IMC conducted information campaigns about their programs and helped organize the sustenance fisherfolk into associations or cooperatives. Interviews made with these fisherfolk showed their awareness for the need to protect their bay and by becoming deputized fish wardens, they felt they are now able to control illegal fishing activities in their area. The Banate IMC was able to implement an integrated zoning plan which resulted in the regulation of activities and better management of the bay. A municipal task force, the Bantay Dagat, was organized to patrol and conduct surveillance which ensured the proper implementation of the fishery ordinance in the bay. The IMC was able to coordinate with numerous government agencies which provided capital and technical know-how for the establishment of livelihood opportunities for the fisherfolk of Banate Bay.

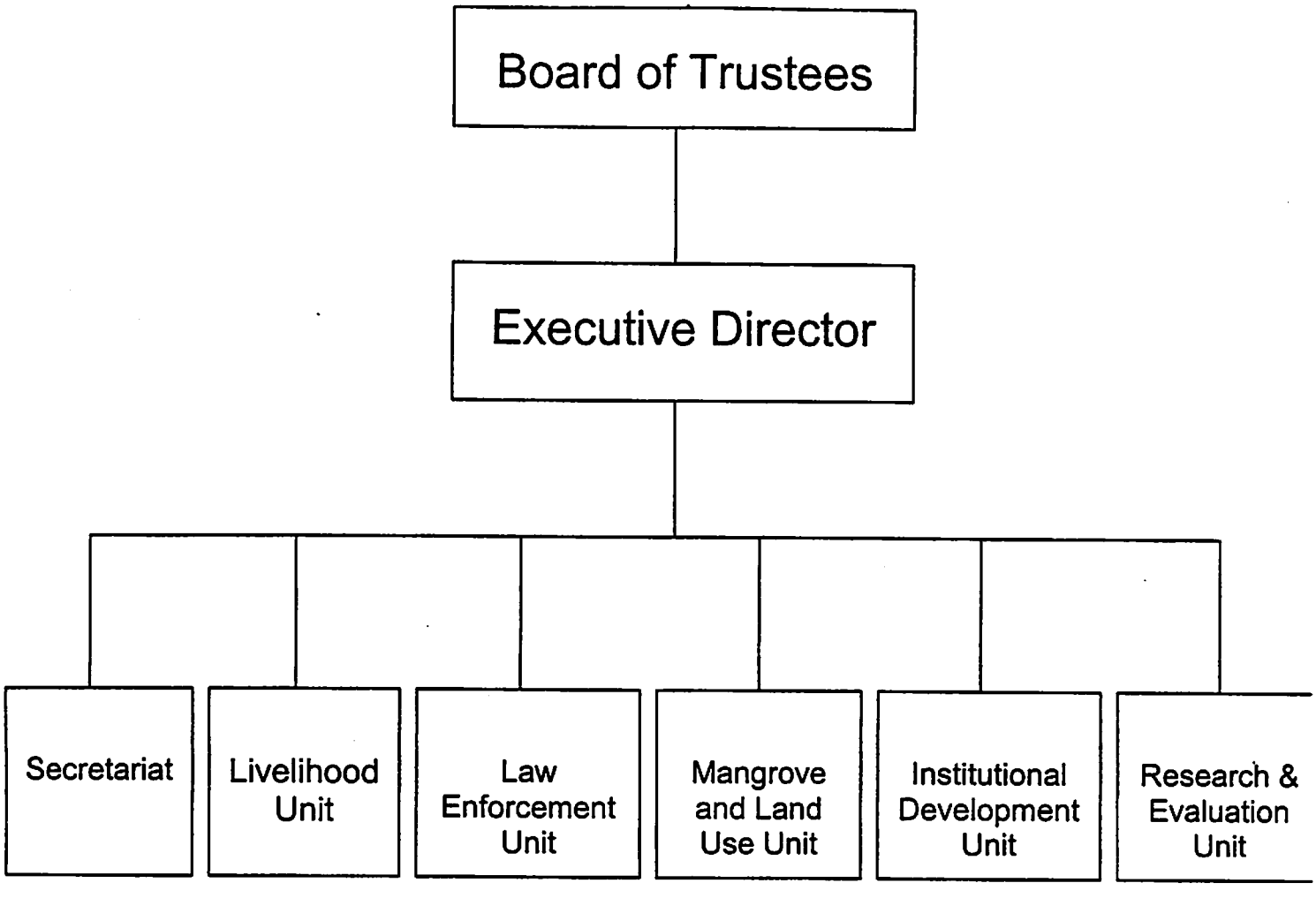

Fig.3 Organizational structure of Banate Bay IMC

3.1.3. Performance of Banate Bay IMC

The performance of Banate Bay IMC was evaluated based on co-management criteria such as sustainability, efficiency and equity and the fishers were interviewed using these indicators (Table 1). With regard to the ten sustainability indicators used, the perceptions of participating and non-participating fishers were not significantly different for the eight indicators (Table 2). Significant differences were found on the perceptions related to the status of fish stocks and economic well-being of the fisherfolk where the non-participating fishers gave significantly higher scores. Both groups believed that there was a significant decline in the state of fish stocks, seagrass and economic well-being of the fishers from the past five years compared to the present. This decline has been attributed by both groups to the growth in number of municipal and commercial fishers in the bay and the occurrence of illegal fishing activities. This would suggest that the interventions made by the Banate Bay IMC could not be felt yet by the fishers in the bay. Both groups think that there was no significant change in the condition of the bay, mangroves, extent of fishing violations of municipal and commercial fishers and they also believed that there was a significant improvement in their present knowledge of the bay's resources and state of information exchange among fishers in the bay. Regarding their future expectations (Table 3), both groups of fishers expressed that the whole bay, the fish stocks and their economic condition will improve in the next 5-10 years. The optimism of these fishers could be attributed to their belief that the Banate Bay IMC and their local officials would be able to curb illegal fishing activities in the bay.

For the efficiency indicators such as ease at which collective decision is made, facility in resolving fishery conflict and ease in enforcing the fishery ordinance, the two groups showed different perceptions (Table 2). The participating fishers believed that there was significant improvement for these three efficiency indicators at present with the Banate Bay IMC compared to five years ago when there was no IMC. The non-participating fishers, however, said that there was no improvement for these indicators even if there is an IMC in Banate Bay.

The following equity indicators were used; access to bay's resources, distribution of government resources and people's participation in community affairs and bay management. Both groups stated that with the establishment of the IMC, there was now limited access of the fishers to the bay's resources (Table 2). This could be traced to the zoning plan that has been effectively implemented by the IMC. Both groups also agreed that there is now more active participation of the people in the management of the bay's resources compared to five years ago. The participating fishers believed that with the IMC, there is now fairness in the distribution of government resources compared to the previous procedure where these resources were distributed by politicians. These participating fishers would think that there is now significant participation of the people in their community affairs compared to 5 years ago and this could be due to the fact they were organized by the IMC. For the non-participating fishers, they believed that there was no change in the manner of distribution of government resources and people participation in their community affairs even if the IMC was established. This perception could be traced to their non-participation in the projects and activities of the IMC which made them feel that they could not avail of the resources and benefits being provided by the IMC.

From these performance indicators, it can be noted that perceptions of fishers showed significant decline in some of the of the biological indicators and a few of them had no significant improvement even with the establishment of the Banate Bay IMC. This would suggest that the interventions made by the IMC had no effect on the fishers or these effects could not be felt within the five years since the establishment of the Banate Bay IMC. During the interview, it could be observed that the non-participating fishers had a very negative attitude toward the Banate Bay IMC probably because they were adversely affected by the establishment of the IMC. The fishers from these non-participating barangays were mostly the ones that were apprehended by the law enforcement units of the Banate Bay IMC for violations of the bay's fishery ordinance. It can also be noted that the zoning plan for the bay is effectively implemented because both groups of fishers say that they can not easily fish in any place of the bay now. There is also a positive outlook among both groups of fishers that the condition of the bay, fish stocks and their economic condition will improve in the next 5-10 years and the presence of the IMC could be one of the contributory factors for this optimistic outlook.

Table 1. Performance Indicators Used to Evaluate Banate Bay IMC

Sustainability Indicators		
1. State of Banate Bay	→	The general condition of the whole Banate Bay
2. Status of fish stocks	→	Abundance of fish stocks in the bay
3. Condition of coral reefs	→	General condition of the coral reefs in the bay
4. Condition of mangroves	→	General condition of the mangroves in the bay
5. Condition of seagrass	→	General condition of the seagrass beds in the bay
6. Violations of municipal fishers	→	Extent of violations of the fishery ordinance by the municipal fishers in the bay
7.Violations of commercial fishers	→	Extent of violations of the fishery ordinance by commercial fishers
8. Knowledge about bay's resources	→	Extent of knowledge by the fishers regarding the resources of the bay
9. Information exchange by fishers	→	State of information exchange by the fishers regarding the bay's resources
10. Economic well-being of fishers	→	Economic condition of the fishers in the bay
Efficiency Indicators		
11. Collective decision-making	→	Ease at which collective decision is made regarding the use of the resources of the bay
12. Conflict resolution	→	Facility in resolving fishery conflict among fishers
13. Law enforcement	→	Ease in enforcing the fishery ordinance in the bay
Equity Indicators		
14. Access to the bay's resources	→	Status of access by the individual fisher to the resources of the bay
15. Distribution of government resources	→	Equality in the distribution of government funds and projects to the bay's residents
16. Participation in community affairs	→	Extent of participation of the bay's resident in their community affairs
17. Participation in bay management	→	Degree of participation of the residents in the management of the bay's resources

Table 2. Perceptions of the Banate Bay fishers of the conditions in the bay 5 years ago when there was no IMC and at present with the IMC. N=60 with 30 participating

fishers (PF) and 30 non-participating fishers (NPF). The scale used is from 1 to 10 with 1 representing poor condition and 10 representing excellent condition. Probabilities are as follows: ns=not significant, *=p<0.05, **=p<0.01.

Indicator	Past Condition 5 yrs ago, without IMC			Present Condition with IMC			Change through time, past five years		
Sustainabilty	PF	NPF	Prob.	PF	NPF	Prob.	PF	NPF	Prob.
State of Banate Bay	5.97	5.77	ns	4.90	4.73	ns	-1.07n	-1.03ns	ns
Status of fish stocks	6.53	7.07	ns	3.70	3.33	ns	-2.88**	-3.73**	ns
Condition of coral reefs	5.58	6.88	*	4.54	4.32	ns	-1.04ns	-2.56**	ns
Condition of mangroves	5.58	6.88	ns	4.90	4.83	ns	-0.97ns	-1.54ns	ns
Condition of seagrass	6.92	6.32	ns	3.96	3.78	ns	-2.96**	-2.82**	ns
Violations of municipal fishers	4.40	4.45	ns	5.27	5.47	ns	+0.87ns	+0.97ns	ns
Violations of commercial fishers	4.23	3.97	ns	5.23	5.37	ns	+1.00ns	+1.40ns	ns
Knowledge about bay's resources	4.40	5.37	ns	7.73	7.77	ns	+3.33**	+2.40**	ns
Information exchange by fishers	4.33	5.00	ns	7.27	6.83	ns	+2.93**	+1.83*	ns
Economic well-being of fishers	5.33	6.93	**	3.83	3.97	ns	-1.50*	-2.97**	ns
Efficiency									
Collective decision-making	4.47	6.00	*	7.00	5.66	*	+2.53**	-0.34ns	ns
Conflict resolution	3.87	4.87	ns	6.47	5.73	ns	+2.60**	+0.87ns	ns
Law enforcement	3.83	5.00	ns	7.00	5.50	*	+3.17**	+0.50ns	*
Equity									
Access to the bay's resources	8.30	9.13	*	2.47	2.37	ns	-5.83**	-6.77ns	ns
Distribution of gov't resources	2.62	2.86	ns	4.40	3.66	ns	+1.90**	+0.97ns	ns
Participation in community affairs	6.70	6.57	ns	8.30	7.33	ns	+1.60**	0.77ns	ns
Participation in bay management	4.53	5.17	ns	7.83	7.00	ns	+3.30**	1.83**	ns

Table3. Perceptions of the Banate Bay fishers of the conditions in the bay at present and the next 5-10 years . N=60 with 30 participating fishers (PF) and 30 non-participating fishers (NPF). The scale used is from 1 to 10 with 1 representing poor condition and 10 representing excellent condition. Probabilities are as follows: ns=not significant, *=p<0.05, **=p<0.01.

Indicator	Present Condition			Future Condition, 5-10 years from now			Change in the condition, 5-10 years from now		
	PF	NPF	Prob	PF	NPF	Prob	PF	NPF	Prob
State of Banate Bay	4.90	4.73	ns	6.47	6.17	ns	+1.57**	+1.43**	ns
Status of fish stocks	3.70	3.33	ns	5.87	5.77	ns	+2.17**	+2.43**	ns
Economic well-being of fishers	3.83	3.97	ns	6.57	6.37	ns	+2.73**	+2.40**	ns

3.2 Batan Bay IMC

3.2.1. Context of Batan Bay IMC

Batan Bay generally refers to a semi-enclosed estuarine environment consisting of Batan Bay, Tinagong Dagat and a complex system of rivers and tributaties (Fig.4). It is located in the province of Aklan within 122° 26' to 122° 30' longitude and 11° 33' to 11°37' latitude. The Batan Bay-Tinagong Dagat estuary has a total area of 14.33 square kilometers and connected by a 2.4 kilometer opening to Sibuyan Sea. The major rivers that drain into the bay are the New Washington river, Gusao river and the Lagatik river. Siltation is high in Batan Bay and this has been attributed to denuded upland areas and the presence of numerous stationary fishing gears that prevent the flushing of sediments to the sea. More than 90% of the 4,800 hectares in Batan Bay has been converted to fishponds. The bay area has no pronounced wet and dry season and with slight differences in the amount of rainfall and temperature throughout the year.

The fishery resources of Batan Bay has been the subject of studies of Motoh *et al*(1976), Motoh (1977), Ingles *et al*, (1991) and Babaran (2001). The major species of finfishes found in Batan Bay are *Stolephorus commersoni, Siganus sp., Gronovichthys sp., Alepes macrurus, and Apogon sp.* For shrimps, the most abundant species are *Metapenaeus ensis, Penaeus marguiensis,* and *Acetes sp.*while for crabs, these are *Portunus pelagicus* and *Scylla serrata.* The major species of molluscs in Batan Bay are green mussels (*Perna viridis)*, oysters (*Crassostrea sp.)* and squids (*Loligo sp.).* The latest study on the resources of Batan Bay (Babaran, 2001) showed an estimated annual fisheries production of 1,742 tons, contributed mainly by fish corrals. The estimated annual production of some of the major species in Batan Bay are 123,600 kg for *Metapenaeus ensis*, 70,000 kg for *Stolephorus commersoni,* 80,000 kg for *Siganus sp.* and 66,000 kg for *Alepes macrurus.*

The number of fishing gears operating in Batan Bay has been estimated to be 2,342 units (Babaran, 2001). The dominant fishing gears used in the bay are the fish corrals (66.4%) and lift nets (18.0%). Other fishing gears utilized by the fishers are the crab lift net (4.9%), filter net (3.7%), gill net (2.8%), barrier net (1.4%) and hook

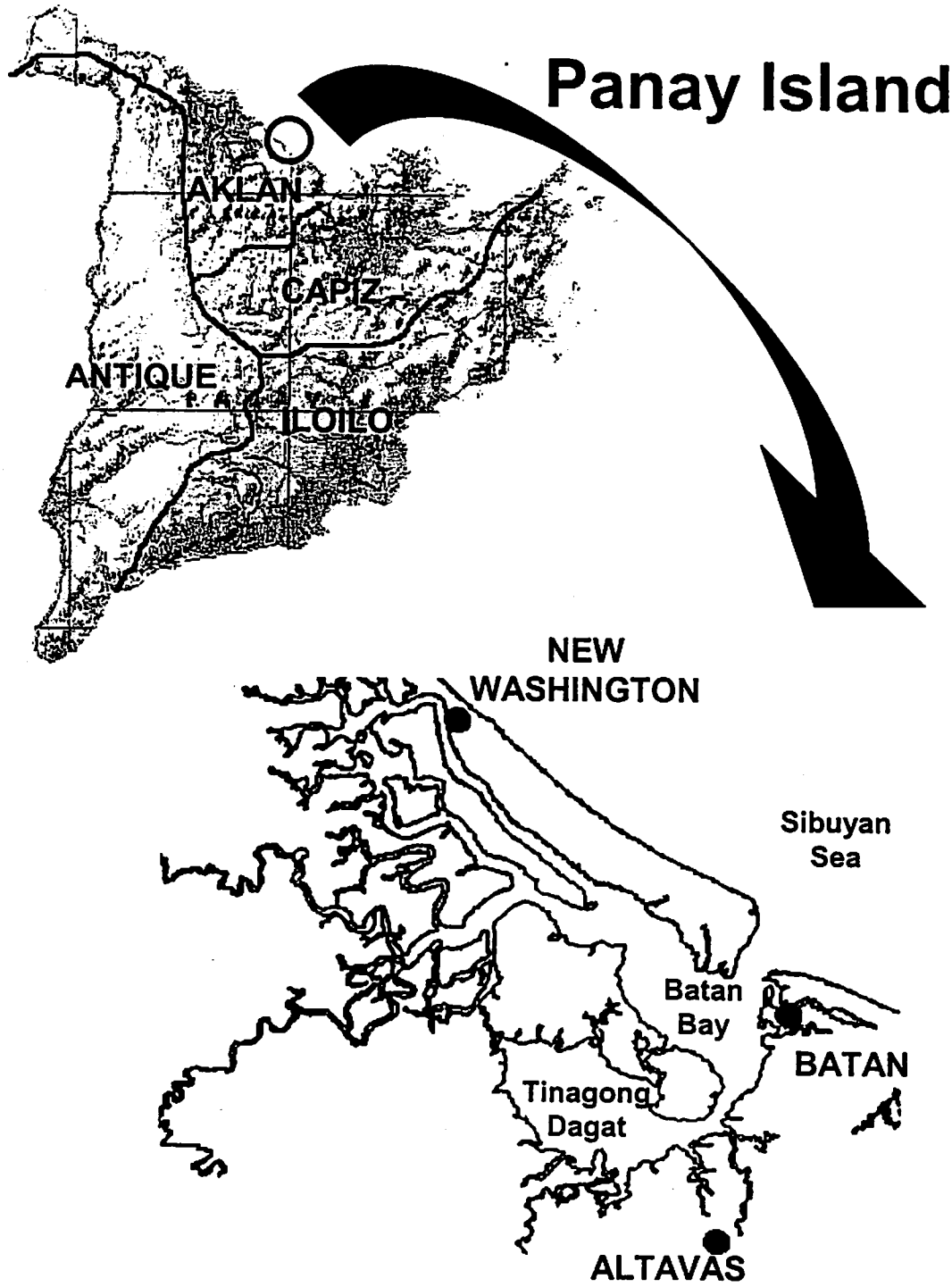

Fig. 4. Batan Bay, Aklan

and line (0.7%). With regard to the fishing boats in the bay, the most commonly used is a small, non-motorized dugout with at least one outrigger, mainly paddled and function mainly as a service craft for owners of stationary gears (Ingles *et al, 1991).* Most of the motorized boats are used to ferry passengers or used as freight carriers of mussels and oyster during harvest season.

The catch from Batan Bay are sold in the public markets of the municipalities of Altavas, Batan and New Washington. In an interview of 155 fishers (Babaran,2001), majority of the fishers (61.9%) market their catch through a middleman. Other fishers sell directly to consumers (14.2%), to owners of the fishing gears (2.6%), to barangay officials (2.6%) and private companies (1.3%). Some of the fishers (17.4%) keep a part of their catch for household consumption while the rest of the fishers sell their catch to the public market in their municipality. Marketing of fishery products is done mainly within the province and the middlemen play a major role in distribution of the catch of Batan Bay fishers (Babaran, 2001).

Batan Bay has a total of 1,378 fishing households, 886 of them come from the municipality of Batan, 440 from New Washinghton and 52 from Altavas (Babaran, 2001). Most of these households (55.3%) have a range of 4-6 members with an average of six members. An interview of 155 fishers (Babaran, 2001) showed a mean age of 43.4 years and most of them (52.3%) have attained only elementary education. Majority of these fishers (59.0%) obtain their income exclusively from fishing. The rest are considered part-time fishers who derive their income from agriculture, local trade and delivery of services to the government and private sectors.

3.2.2. History and Institutional Arrangements in the IMC

The Batan Bay IMC was part of a coastal resource management (CRM) project implemented by the province of Aklan and the municipalities of Altavas, Batan and New Washington. The project was started in January, 1993 to address the issues of resource depletion and environmental degradation of Batan Bay (Legaspi and de Asis, 1998). Technical assistance was provided by the University of the Philippines in the Visayas (UPV) with funding support from the Local Government Support Program of the Canadian International Development Agency (LGSP-CIDA). The main objective of this two-year project was to develop the capability of local government units to plan and implement an integrated and community-based coastal resource management program for Banate Bay and vicinities. Funding support from LGSP-CIDA ended in April 1995 and the CRM project was able to accomplish the following: (1) increased awareness of the stakeholders on the environmental issues affecting the bay (2) conduct of consultation workshops and basic trainings on planning, environment, gender and participatory development perspectives and processes relevant to coastal resource management (3) establishment of a zoning plan for the bay (4) promulgation of a common fishery ordinance for the whole bay which will be implemented by the three municipalities (5) creation of an inter-municipal coastal resource management council or the Batan Bay IMC.

The organizational structure of the Batan Bay IMC is given in Fig.5. The Executive Board is composed of the Governor of Aklan, Mayors of Altavas, Batan and New Washington and the UPV Chancellor. The primary function of the

Executive Board is to formulate policies for the sustainable development of Batan Bay. The Project Management Office (PMO) is composed of representatives coming from offices such the Governor, three Mayors, Provincial Agriculturist, Department of Agriculture, Department of Environment and Natural Resources, Department of Trade and Industry, UPV, non-government organizations and fisherfolk organizations. The PMO has been tasked to provide technical assistance and serve as Secretariat of the IMC. In every participating muncipality, a Coastal Resource Management Body (CRMB) has been organized. The CRMB is chaired by the Mayor and its members are representatives from the Municipal Legislative Council, Municipal Development Council, Municipal Fisheries and Agricultural Council, Department of Agriculture, Philippine National Police, fisherfolk, women, youth and non-government organizations. The CRMB serves as a forum in discussing issues to be taken up with the Executive Board and PMO and initiates municipal-based activities that will serve the goals of the IMC.

The activities of the Batan Bay IMC were not sustained when funding support from LGSP-CIDA ended in April 1995. To activate and strengthen Batan Bay IMC, a second phase of of the CRM project in Batan Bay was started in December 1997. A memorandum of agreement was signed in which LGSP-CIDA will grant the funds and UPV will provide technical assistance to the three municipalities for the continuation of the CRM project in Batan Bay. A series of consultation meetings followed to review the progress of the project and to formulate action plans for the bay. The zoning plan for Batan Bay was reviewed and the municipal coastal resource management body was activated in each of the participating municipalities. A fish warden training was conducted in August 1998 and the Batan Bay IMC structure was reviewed in September 1998. Funding support from LGSP-CIDA, however, ended in October 1998. The second phase of the CRM project in Batan Bay was mainly on capacity building and organizational work. Batan Bay IMC was not really able to take off because with the local elections in 1998, a new set of mayors took office who were not fully supportive of the Batan IMC. The lack of appreciation of the new mayors for the importance of the IMC and the termination of funding support from LGSP-CIDA led to the non-implementation of the plans and programs of the Batan IMC.

3.3. Factors Affecting the Success of the IMC

Sustainability is a major challenge facing a bay-wide management council. The Banate Bay IMC has survived even with changes in the political leadership of the local government units and made notable achievements even with limited financial resources of the collaborating municipalities. The success of the Banate Bay IMC could be attributed to factors such as active support of its mayors, the quality of leadership in the council and multi-sectoral partnerships made by the council.

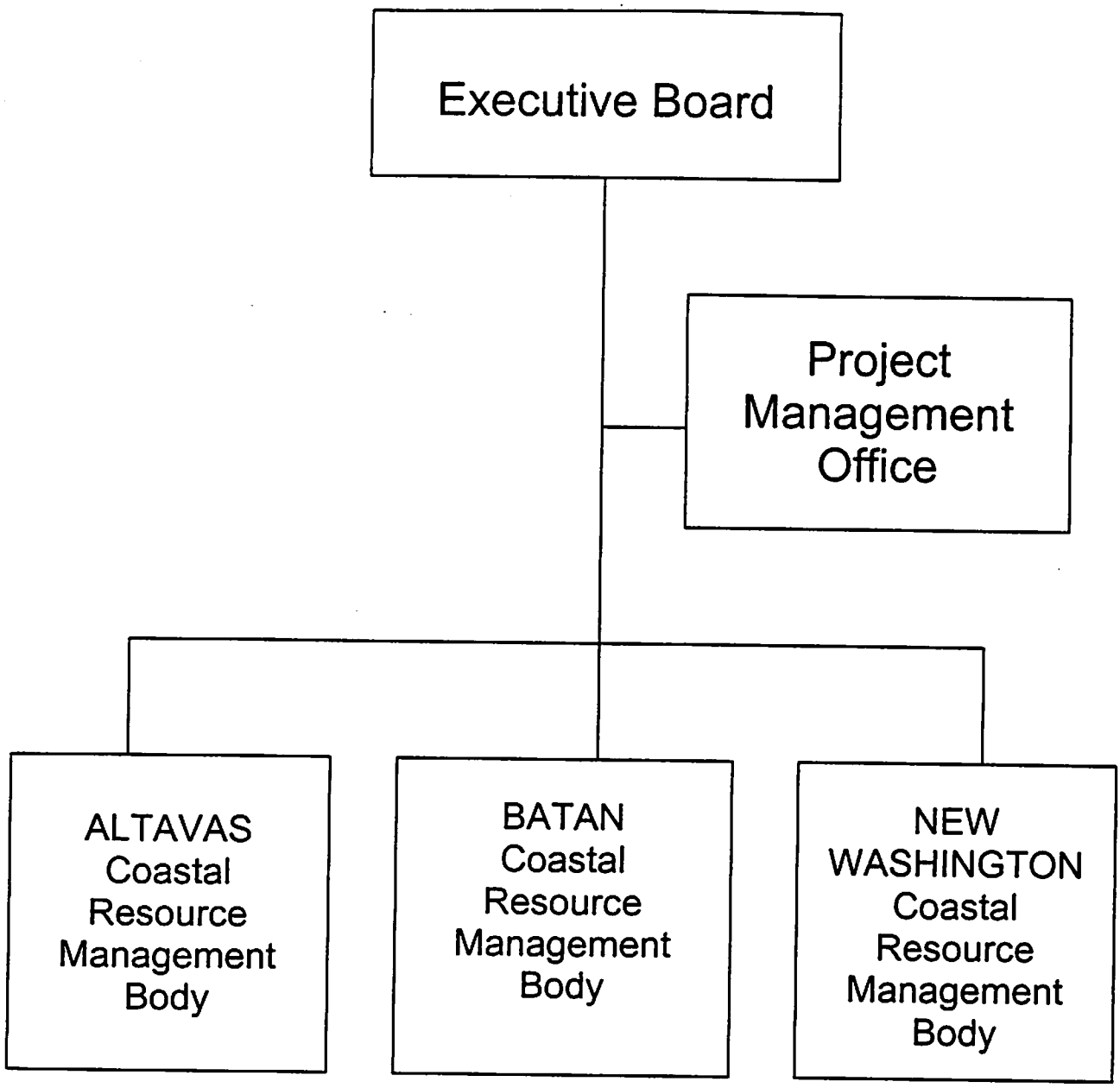

Fig.5 Organizational Structure of Batan Bay IMC

3.3.1. Support of the local chief executives or mayors

The success of Banate Bay IMC can be attributed to the full support of the three mayors which provided funds and full-time personnel to the IMC. Even with very limited funding, these mayors saw to it that the plans of the IMC were implemented in their municipalities. The mayors of Banate Bay did not interfere with the actions of the IMC especially in the apprehension of illegal fishers in the bay. In Batan Bay, the IMC did not prosper because of lack of support from the mayors. The newly elected mayors did not appreciate the need for an IMC that regular meetings of the IMC were not held and the contributions of the participating municipalities to support the operations of the IMC were not provided.

3.3.2 Effective leadership in the IMC

The accomplishments of the Banate Bay IMC can be credited to its Executive Director and its dedicated staff. At the start of the operation of the IMC, there were many problems and the salaries of the staff were often delayed but the IMC Executive Director and her staff chose to stay with the IMC even with these difficulties. When new mayors were elected and had a lukewarm attitude to the IMC, the Executive Director conducted a series of dialogues and orientation sessions with them until they fully appreciated the use of the IMC in the management of Banate Bay. For the Batan Bay IMC, there was no full-time Executive Director and staff that could advocate the continued existence of the IMC. So when the new mayors that were elected did not appreciate its existence, the Batan Bay IMC just became inactive.

3.3.3 Multi-sectoral partnerships in the IMC

To augment its meager resources, the Banate Bay IMC collaborated with national government agencies, non-government organizations, people's organizations and the private sector in the conduct of its activities. A memorandum of agreement had been entered to by the Banate Bay IMC with agencies such the University of the Philippines in the Visayas, Southeast Asia Fisheries Development Council, Iloilo State College of Fisheries, Provincial Government of Iloilo and regional agencies of the Department of Agriculture, Department of Environment and Natural Resources, Technical Education and Skills Development Authority, Philippine Coast Guard and Philippine National Police. Technical and financial assistance were received through these collaborative efforts which contributed to the success of the projects undertaken by the Banate Bay IMC.

3.4. Hypothesis Testing in the IMC Study

Hypothesis testing is a part of the Phase II Research Framework of the Co-Management Project. In this study, an attempt is made to answer the following hypotheses:

1. The establishment of an IMC has led to better conservation of the coastal resources of the bay.

2. The establishment of an IMC has resulted to better implementation of the fishery ordinance of the bay.

The answer to these hypotheses will be based on the data collected from Banate Bay since this IMC is already existing for six years when the study was conducted. The Batan Bay IMC could not be used in testing these hypotheses since it was not able to sustain itself and implement its plans and programs.

With respect to the first hypothesis, the Banate Bay IMC has implemented programs and activities that contributed to better conservation of the resources of the bay. The IMC instituted an effective law enforcement program to reduce illegal and destructive fishing practices. A zoning plan was established in the bay which included protected areas like the Hibotkan Rock Fish Sanctuary in Banate (25 ha), the Mangrove Reserve and Aquatic Wildlife Sanctuary in Barotac Nuevo (100 ha), and Reserve Areas for brown mussels in Anilao (5 ha), angel wings in Barotac Nuevo (5 ha) and sea grasses in Barotac Nuevo (25 ha) and Anilao (3 ha). To encourage replanting of mangroves by the fisherfolk, a demonstration project for mangrove reforestation was established in barangay Talokgangan in Banate.

In relation to the first hypothesis, 60 fishers from Banate Bay were asked to compare the status of Banate Bay five years ago when there was no IMC and at present with an IMC. Analysis of the fishers' perceptions showed that there was no significant change in the status of the whole bay before and after the establishment of the IMC. With respect to specific coastal habitats, the fishers perceived that at present, there is a deterioration in the quality of sea grasses and there is no significant change for mangroves and coral reefs compared to five years ago. This would suggest that although conservation measures were instituted by the IMC, their impact could still not be perceived by the fishers that were interviewed in the study. It could be noted, however, that the same fishers believed that the condition of the bay and its fish stocks will improve in the next 5-10 years. One of the reasons for the optimistic outlook of these fishers has been attributed to the presence of the Banate IMC.

With regard to the second hypothesis, the Banate Bay IMC has instituted measures to improve the implementation of the fishery ordinance in the bay. A notable achievement of the IMC is the enactment of a unified fishery ordinance for Banate Bay. Through the initiatives of the IMC, the municipal fishery ordinances of Anilao, Banate and Barotac Nuevo were reviewed and harmonized into one uniform ordinance for the whole bay. This led to a better implementation of the fishery ordinance and a reduction of illegal fishing activities in the bay. A Bantay Dagat (Bay Watch) team was organized for each municipality to conduct patrol and surveillance activities to ensure the effective implementation of the fishery ordinance. Members of the Bantay Dagat teams were trained for fishery law enforcement procedures and were deputized as fish wardens. A licensing system was also instituted to monitor and control fishing activities in Banate Bay.

In the interview of the 60 fishers from Banate Bay, they stated that their municipal government is highly supportive of their Bantay Dagat teams. They

perceived that the members of these teams are adequately trained. They also believed that the fishers of Banate Bay are aware of the existing fishery ordinance in the bay and there is a high level of awareness of the fishers with regard to the provisions of this ordinance. The fishers also mentioned that their access to the bay is now limited and they can no longer easily fish in any place they like in the bay. This would suggest that the zoning plan of the fishery ordinance is being effectively implemented. Based from these findings, it can be concluded that the establishment of the Banate Bay IMC has resulted to a better implementation of fishery ordinance in Banate Bay.

4.0 CONCLUSION

The Banate Bay IMC has shown that an integrated municipal council can be a viable co-management institution in the coastal area of the Philippines. It was able to implement a zoning plan for the bay, effectively reduce illegal fishing activities and provide livelihood opportunities for the fisherfolk. The IMC was able to make the fishers aware of the need for environmental protection and conservation of fishery resources.

A major challenge in the survival of the IMC in the Philippines is the election of mayors every three years. This regular political exercise could cause the demise of the IMC if the mayors could not appreciate the need for an IMC. The IMC should, therefore evolve strategies to win the support of the new mayors who are not fully aware of the importance of the IMC.

The Philippine government has decentralized to local government units its responsibilities in the management of the coastal waters. However, at the local level, governance is still highly centralized. This can be seen in the operation of the IMC where its success is still very much dependent on personalities like the mayor and the executive director. Thus, there is a need to make decentralization reach the grass roots, that is the fishers and the community.

With funding from the Danish International Development Agency (DANIDA), a collaborative research project was initiated in 1994 involving ICLARM – The World Fish Center, Institute for Fisheries Management and Coastal Community Development (IFM), North Sea Centre (NSC), Hirtshals, Denmark, and National Aquatic Research Systems (NARs). The collaboration is based on a mutual interest to gain practical experience in research in fisheries co-management, to demonstrate its applicability as a sustainable, equitable and efficient management strategy, and develop models for use and adoption by governments, fisheries communities, NGOs and others.

The Fisheries Co-Management Research Project conducts research in coastal, coral reef, lake and river/floodplain aquatic resource systems in Asia and Africa. The overall purpose of the project is to determine the prospects for successful implementation of fisheries co-management strategies. General principles and propositions which facilitate successful implementation of fisheries co-management strategies are being identified.

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Fisheries Co-management Research Project publications include:

RESEARCH REPORT: A report of research resulting from the project which is felt to be of high quality, importance and wide scientific appeal. This publication has undergone peer review and has been approved for publication by the steering committee;

WORKING PAPER: A report of ongoing research or research results which are topic or site specific. This publication has undergone review by core project staff and has been approved for publication by the project leaders;

PROJECT DOCUMENT: A document for project administrative and budget procedures;

REPRINT: A reprint of a journal article or book chapter which has been written by project staff or funded by the project.