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ISLAND COMMUNITY GOVERNANCE AND COASTAL RESOURCES MANAGEMENT

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The interest in inquiring into the contemporary regime of island governance associated with coastal resource management has been triggered by the cogent realization that the Philippines, as an emerging economy, is dangerously poised at the threshold of the 21st century and confronted with a bleak future.

In responding proactively to these debilitating realities, the study focuses on strengthening the governance of island communities through a carefully planned intervention for the protection and conservation of coastal resources as mechanisms for achieving the goals of sustainable development. Particular attention is given to the assessment of the islands' natural resources in relation to development needs, crafting governance mechanisms for the development and management of coastal resources, harnessing the role of civil society organizations associated with managing coastal resources, designing co-management initiatives and collaborative partnership with stakeholders, increasing the effectiveness level of promotion and enhancement of coastal resource management in the scattered island communities.

In the Philippine context, island communities are faced with great challenges in sustainably developing their coastal resources. Every island government unit faces this sustainability challenge in the midst of limited and scarce resources within a changing environment aptly characterized by a revolution of rising demands and expectations for public goods and service delivery. This socio-economic situation with political and administrative implications is aggravated by the surge of uncontrollable population growth. The current decentralization policy under the 1991 Local Government Code precisely gives mandate to local chief executives to install and utilize enabling mechanisms and techniques towards efficient, effective, and efficacious delivery of basic and supplementary services, as well as the holistic development of local communities.

This paper describes and examines the existing practices of island governance and the condition of coastal resources in Concepcion, Iloilo province. The local government unit of

Concepcion, whose territorial jurisdiction include scattered island *barangays*, faces a tough challenge of crafting functional island governance for providing human sustainable development.¹ Given the municipality's archipelagic nature, it is possible that the distance and isolation of certain islands from the mainland and other nearby islands can create a demand for peculiar island governance. The paper investigates the relationships among *barangay* officials, household heads, and representatives of civil society as they participate in developing and managing coastal resources, solicit the involvement of civil society organizations, collaborate with various stakeholders in crafting co-management schemes, and promote coastal resource management to enhance the integrated development of the island communities.²

This paper seeks to answer five queries:

- 1) What are the nature and magnitude of natural resources available in the island communities that could become the adequate basis for crafting a sustainable development program for the island? Island communities, in view of the limitations that may be brought about by their being separated by bodies of water from the mainland, have greater need to become more viable and self-reliant.;
- 2) What are the existing local governance mechanisms for the development and management of coastal resources to attain the desired level of integrated island development? This problem was supported by the observation that, in spite of the

¹ The 2000 census for Concepcion indicated that fifty-two per cent (52%) or 34,250 of the population are found in the 11 island barangays. These island barangays include Bagongon, Botlog, Dungon, Igbon, Macatunao, Malangabang, Maliog-liog, Polopiña, Salvacion, Taloto-an, and Tambaliza (Municipality of Concepcion 2000).

² In the study, two hundred one (201) respondents were randomly chosen proportionate to population of the 11 barangays. Categorized by sector, these respondents consist of 133 household heads, 47 barangay officials, and 21 representatives of civil society organizations. Primary data was drawn from responses to the survey questionnaire and interview schedule. The survey questionnaire consisted of close-ended or premise questions (questions answerable by 'yes,' 'no,' 'don't know,' 'not sure,' and 'no answer') and open-ended or probe questions that seek explanations of answers given to premise questions, but were confined only to categorically affirmative and negative responses. The first part of the interview schedule focused on questions about local government mechanisms, civil society groups' roles, co-management mechanisms, and some recommendations for the development and management of coastal resources. The second part dealt with questions on the socio-demographic profiles of the respondents. In addition, key informants including barangay officials, selected representatives of civil society organizations and private sectors, and household heads were interviewed. Secondary data were taken from the barangay and municipal records, as well as publications related to governance and management of coastal resources. Descriptive and inferential statistics, which rely on chi-square tests to measure significance in differences of responses, were used for statistical analysis. The corresponding contingency coefficient was computed to show levels of association among various sectors, given the particular area or subject of inquiry.

existing legislation of coastal resources program for the municipality and *barangays*, there has been no successful mobilization of the local government machinery in identifying, developing, and evaluating the extent to which the coastal resources management program has been implemented within the island communities.;

- 3) Are there existing civil society groups and organizations engaged in coastal resources management? What are their roles and capabilities in affecting the development of these coastal resources? To what extent are they networked among themselves or linked with local officials in coastal resource management activities?;
- 4) How is coastal resources management utilized in terms of co-management initiatives in the island community? As a corollary, has the island government provided conditions for the promotion of co-management arrangements with civil society groups and other individuals?;
- 5) Are there effective mechanisms for the promotion and enhancement of coastal resources management in the different island communities studied? This query was raised to find out how effective the island governance is in designing and applying appropriate and adequate mechanisms for the promotion and enhancement of coastal resources management in the island communities.

The Framework, Actors and Practice of Coastal Resource Management

The framework for coastal resource management in the Philippines gives precedence to local government units, and participatory mechanisms at that level. The 1991 Local Government Code (Republic Act No. 7160) brought about the devolution of authority over fishery matters to local government units (LGUs). Under this law, the LGUs have the exclusive authority to grant fishery privileges and to impose rentals, fees or charges without the permission from any national agency. Such privileges cover fish, corals, shellfish beds, milkfish

fry and the issuance of licenses for fishing vessels three gross tons or less. The LGUs are also authorized to penalize violations of the fishery law, and to enforce laws and regulations relating to pollution control and the protection of the environment. The Fisheries Code, meanwhile sets limitation of access to the fishery matters based on scientific decision, provides for integrated fishery management consistent with inter-LGU cooperation as articulated in the Local Government Code, and legalizes institutionalized participation of the community in fisheries management through the establishment of Fisheries and Aquatic Resource Management Councils (FARMCs). The Fisheries Code also clarifies issues pertaining to the delineation of jurisdiction of LGUs in municipal waters and the operation of commercial fishing vessels therein. By making the establishment of Municipal FARMCs (MFARMCs) obligatory, the Fisheries Code creates a forum for fisher folk organizations or cooperatives, NGOs in the locality, the LGUs and other government entities to discuss and craft initiatives in managing their collective fishery resources.

This new framework and fresh mandates have caught many LGUs and communities ill-prepared. In previous study, many of the municipal authorities consulted expressed surprise when informed that the LGUs were mandated to be responsible for managing the municipal fishery because they thought this was the responsibility of the FARMCs or the BFAR. In many locations, the capacity of the FARMCs to act as a vehicle for community fisheries establishment and operation is limited, as the organization of fisher folks commonly requires the facilitation of an external agent such as an NGO and the regional fisher folk representative of Region VI (NACA STREAM 2004).

The capacity of any local government to deliver coastal management as a basic service depends to a large extent on local leadership, community participation, inter-LGU cooperation, and support mechanisms from national government agencies, non-governmental organizations, academe, and the private sector. In cases where the marine and coastal ecosystem presents a

larger management unit than one LGU can handle, one municipality or city enter into shared management arrangements. Bays bordered by more than one LGU require bay-wide management plans that are common to all concerned LGUs. Fisheries in such instances do not follow jurisdictional boundaries and must be planned and managed with an ecosystem focus. Coastal areas with a complex mix of management issues to resolve require multi-sector arrangements and plans to address the issues. Some areas with industrial or tourism development concerns require plans that are developed with the participation of the appropriate national agencies, private stakeholders and the concerned LGUs. Such plans must also consider economic criteria in decision making that value coastal resource benefits and revenues. All multi-sector and multi-municipal planning areas require the establishment and monitoring of baseline information and databases to measure the effectiveness of management activities. Academic institutions can play an important role in collecting and managing this baseline information. All coastal management implementation activities can only be measured for success if monitored results are checked against baseline information. Because the management of information is not always done efficiently by government institutions, non-government institutions can assist with this important function (DENR-CRMP 2001).

One of the most touted frameworks for effective coastal resource management is co-management. It is a set of institutional and organizational arrangements (rights and rules), which defines the cooperation among the fisheries administration and relevant fishing communities (Nielsen and Vedsmand 1999). The emergence of co-management has been based on considerations of both *democracy* (involvement of citizens in decisions concerning their own livelihood) and *efficacy* (reduction of implementation costs and improvement in compliance). Co-management represents a more democratic governance system because it implies an increased involvement of users and the delegation of decisions to be taken as close to the users as possible. Co-management is expected to improve the efficacy of fisheries

management because the acceptance of management measures is assumed to be higher when users have been involved in the decision-making process and the contents of management measures are assumed to be more adequate and better reflect the actual situation if users knowledge is included in their development (Nielsen et al. 2002).

According to Pomeroy and Berkes (1997), co-management necessitates a clear commitment on the part of any governmental system to share power and authority with any local government, local fishery and community organizations. They asserted that the goals of both co-management and decentralization are: (a) to mobilize and strengthen people's participation in governance, and (b) to distribute more equitably the power and resources to local communities and groups of people. The form and process of decentralization can be viewed as foci for user participation in management. Within a co-management system, government functionaries and coastal resource users jointly develop an agreement on the terms and conditions of co-management to include the aims, the form, and the means thereof. There must also be a clear understanding of the long-term goals for power sharing, where the differing interests and peculiar needs of government officials and community resource users are reconciled.

By including community members in the management processes, co-management approaches have the potential to instill feelings of pride and ownership in stakeholders. When fostered among community members, this sense of empowerment can be highly effective in the immediate and long-term preservation of natural resources, as local stakeholders have developed a vested interest in conserving their natural resources. In addition, when community members are involved in the planning process, local values and indigenous knowledge are also taken into account in decisions and actions.

Some critics of the co-management approaches claimed that these are not universally replicable. For instance, they argued that when there is little or no sense of community among

inhabitants, local empowerment in heterogeneous communities may in fact increase local differentiation and internal strife. In such cases, not only do power struggles have the potential of erupting, but the natural resources in question are exposed to the possibility of not being ably protected (Loimann 2003). The significant learning gained for the study from these ideas reviewed is that the democratization of island governance through multi-sectoral collaboration provides the inquiry into the quality of participation in the implementation, identification, and resolution of problems in island governance.

Fisheries co-management, in particular, refers to the sharing of responsibility and/or authority between the government and local fishers and the community to manage a fishery or a coastal resource (Pomeroy and Williams 1994; Bailey 1984; Berkes, George, and Preston 1991). It covers various partnership arrangements and degrees of power sharing. The government can provide administrative, regulatory, and infrastructure capabilities that do not exist at the community level. The community of resource users, in turn, can contribute their knowledge, their presence in the resource setting, and community-based mobilization in support of management efforts. A key premise of fisheries co-management states that management authority should be devolved from government agencies to the community of resource users. This premise had emerged from the widespread failure of government-led efforts to manage coastal and aquatic resources on their own (Sunderlin and Gorospe 1997).

Because the extent of responsibility and authority vary according to country- and site-specific conditions, there is no single model of co-management. There is a continuum of co-management arrangements from those in which the government merely consults the fishers before regulations are introduced, to those in which fishers design, implement, and enforce laws and regulations with advice and assistance from the government (Pomeroy and Berkes 1997).

The Fisheries and Aquatic Resources Management Councils (FARMCs) form the basis for fisheries co-management in the Philippines. FARMCs were established to enable fisher

folks to take an active role in the development, management and conservation of local fisheries resources. The council also provides a venue to raise fishery related issues, discuss problems and recommend solutions that could eventually be adapted into legislative agenda (Felsing et al. 2003). The FARMCs are multi-sectoral bodies of fisher folk representatives from municipal and commercial fisheries, fish workers (casual or long term employees in the fishing industry), representatives from NGOs and the private sector, representatives from the LGU (planning and development officer, chairperson of the Agriculture and Fisheries Committee of the *Sangguniang Bayan* (municipal legislative body), and a representative from the DA / BFAR (Felsing et al. 2000). The municipal, city, and integrated FARMCs (M/C/IFARMCs) act as advisory bodies to LGUs, assisting in management of local fisheries resources. *Barangay* FARMCs (BFARMCs) also exist in some barangays.

The experience in Southeast Asia and South Asia shows that co-management is largely seen in terms of functional communities where rights and responsibilities have to be assigned to representatives of fishing industry organizations or otherwise-defined groups of harvesters. These groups are usually defined in functional terms, e.g. harvesters using particular gears such as trawls and purse seines; fishers harvesting certain species, such as shrimps and bivalves; or defined by area of operation of fishing grounds, such as inshore and offshore fisheries. Co-management requires a clear commitment on the part of governments to the sharing of power and authority with local governments and groups of people such as local fisher and community organizations (Viswanathan et al. 2003).

Governments can provide healthy conditions for co-management systems to originate and prosper. Allowing fishers to hold meetings to discuss problems and solutions and to develop organizations and institutional arrangements for management is a step in the right direction. Another is to give fishers access to governments and government officials to express their concerns and ideas. Fishers should also be encouraged to form networks and coalitions

for cooperation and coordination. The role of governments in establishing conditions for co-management is the creation of legitimacy and accountability for the local organization and institutional arrangements. Especially crucial is providing the legal basis (by way of ordinances) for the functioning of community organizations and community enforcement of user rights and resource extraction rights (Viswanathan et al. 2003).

The strength of local governments is anchored on their proximity to the citizenry and the knowledge of the problems in their community, but their big weakness is the scarcity of funds and the lack of local skills to generate plans and development projects. Added to this weakness is the lack of experience to manage projects from the technical, financial, and legal point of view. It should be noted that local governments do not always aim to collect funds from the community itself because of political reasons. Responsible officials and leaders of local governments may seek to invest on technical and administrative personnel development. However, these efforts are circumstantial and often do not bear on the expected results. If the leader of the local government is not reelected, the professionals whose capability was developed have to leave their jobs for political reasons. New professionals will come, but most of them lack the required knowledge and experience (Rodriguez and Villagran 2000).

Civil society's involvement in governance is deemed critical. Civil society refers to a sphere of association in society in distinction to the state, involving a network of institutions through which society and groups within it, represent themselves in cultural, ideological, and political senses (Shaw 1999). Non-government organizations, social movements, churches, political parties and associations autonomous and operating independently from government form part of civil society (Rodriguez and Villagran 2000). Because they are separate, civil society can act as a counterbalance to a domineering or atomizing state. The participation of civil society in the stages of planning and execution has been found to have positive effects. For example, through civil society, there is an articulation of moral conscience on the shortage of

certain resources and the tediousness in ways necessary to manage them. If civil society becomes committed to planning, it will be a vigilant defender of its execution (Rodriguez and Villagran 2000). Civil society organizations can also be important actors in the process of change. They can promote ideas for more effective dialogue systems and develop arrangements for effective government structures (Rodriguez and Villagran 2000).

Natural and Physical Resources of the Island Communities

By and large, the islands of Concepcion are physically highland masses, except one island, Baliguian, which is primarily a coral reef. From a distance, these islands appear as half-drowned mountains jutting out from the sea, characterized and manifested by sedimentary rocks. The mountains and hills of these islands are so close to the sea that only very narrow and random strips of arable lands are available for farming. These narrow strips bordering the island shores are limited areas where islanders have built their homes. The combined sizes of these islands comprise 40% of total land area of the municipality.

Although the different island *barangays* have the types of natural and physical resources that can be tapped and explored for implementing the coastal management program, the quantity of production volume and corresponding income earned are not adequate for viable and sustainable livelihood. Although natural sources of water are adequate for irrigation and stretches of coastline are potentially available for tourism development, these have not been functionally explored to support production as means for generating income urgently needed by the island residents.

History of CRM and Local Governance Practice in Concepcion

As part of the landmark in the local government history dealing with concerted efforts to devolve political power and authority from the central government to the local government units (LGUs), the 1991 Local Government Code (LGC) administratively transferred to such local governments, the primary responsibilities of the national government as regards the managing of coastal resources and municipal waters. The LGC provides LGUs with the legislated authority for planning, protecting, legislating, regulating, enforcing, and technically assisting, as well as installing mechanisms to foster community participation and to work collaboratively with each other and with people's organizations and institutions toward the delivery of CRM as a basic service (DENR 2000). This called for more sharing and collaboration among the various sectors in the island communities to ensure the effectiveness and efficacy of CRM at the *barangay* level.

CRM programs were implemented in the island barangays between the years 1994 to 2004. The *barangays*, however, have already formulated CRM plans as early as 1990. CRM Program integration into the *barangay* development plan varies from *barangay* to *barangay* depending on budgetary allocations provided for the implementation of the local CRM plan, fund sources of which come mainly from the *barangay* government.

The municipal government is the most important level of government, which directly addresses the fisher folk's concerns and interests. It must continue to be the local focus of implementing the national policies and plans that were designed and directed to assist coastal communities deliver coastal resource management as a basic service (DENR- CRMP 2001). The roles of the municipal government with regard to CRM include among others, the implementation of fishery policies and regulations; provision of technical assistance; follow-up CRM projects; provision of subsidized FARMC; provision of needed financial assistance;

organization of fisher folks; and, creation of CRM-related livelihood projects for income generation.

As an institutional option, the establishment of the CRM office in the barangay has been judiciously taken into consideration. Island barangays are encouraged to promptly prioritize CRM in their local government agenda, invest more funds, and build their management capacity to plan and implement sustainable CRM plans and programs as basic services to their constituents. Fortunately, some enterprising coastal LGUs have already created CRM units or offices to directly address this development-oriented mandate (DENR 2000).

Local Government Mechanisms for Development and Management of Coastal Resources

The meaningful findings on local government mechanisms for the development and management of coastal resources are presented in terms of percentage distribution of respondents and its statistical significance. Table 1 is presented to quantitatively provide proof of the level of influence and significance of identified variables included in examining local government mechanisms for developing and managing island-based coastal resources.

Table 1. Local Governance Mechanisms for the Development and Management of Coastal Resources.

Components	Overall % of Respondents	Statistical Significance		Contingency Coefficient
		Chi-square	P-value	
Responsibility of the <i>barangay</i> to legislate CRM programs	98.9	1.058	0.589	0.073
Creation of CRMP Officer	97.9	0.583	0.747	0.058
Presence of coastal watch group in the <i>barangay</i>	96.4	2.175	0.337	0.105
Government conduct an assessment of CRMP in the <i>barangay</i>	92.4	0.425	0.809	0.048
Support of worldwide program for CRM	85.2	2.307	0.315	0.126
Resolution enacted for CRMP	83.5	0.517	0.772	0.061
CRMP Information dissemination in the <i>barangay</i>	72.8	1.962	0.375	0.124
Knowledge of CRMP integration to <i>barangay</i> development plans	71.4	0.203	0.904	0.041
Collaborative partnership between the <i>barangay</i> and other government agencies in the implementation of CRMP	65.4	4.073	0.130	0.192
Knowledge of CRM programs implemented	64.8	8.167	0.017*	0.200
Knowledge of <i>barangay</i> having formulated a CRM plan	63.6	0.213	0.899	0.044
Knowledge of the development of monitoring plan for assessing local CRMP	54.9	0.753	0.686	0.086
Maximized use of capital for CRM	44.6	1.318	0.517	0.108
Knowledge of the province having developed a provincial CRM framework	43.5	7.608	0.022*	0.257
CRMP incentive system	42.6	2.058	0.357	0.141
Knowledge on the establishment of CRM office in the <i>barangay</i>	1.1	2.167	0.338	0.155

* Significant

For the development and management of coastal resources, the overwhelming majority of respondents recognize the significant influence of the responsibility of the *barangay* to legislate or enact measures for managing the coastal resource management programs (98.9%), the presence of the coastal watch groups in the *barangay* to ensure safety and security (96.4%), and the government function of conducting an assessment of the coastal resource management program in the *barangay* (92.4%). A greater majority of the respondents view that their support for the worldwide program of coastal resource management (85.2%), and the enactment of

resolutions relevant to the coastal management program (83.5%) also substantially affect the development and management of coastal resources. On the contrary, some factors are satisfactorily recognized by the respondents, thereby pointing to their limited effect as local governance mechanisms. Practically, the only respondent who has knowledge of the establishment of the CRM office in the *barangay* left all others no place to go when they need some information about CRM. Other constraints are indicated by the minority's limited knowledge of the incentive system of CRMP (42.6%), and the provincial CRM framework developed by the province (43.5%). Taking into account the average percentage distribution of the respondents, a majority of the respondents (69.5%) considers most of the components of local governance mechanisms sufficient for developing and managing coastal resources in the *barangay*.

However, the test statistics indicates that the findings are significant ($p < 0.05$) only in two instances: 1) the knowledge of the implementation of CRM programs in the *barangay*, and 2) the knowledge that the province has developed a provincial CRM framework. The contingency coefficient shows that in these instances the association of various sectors is substantial. Taking into account the 16 indices used in assessing local government mechanisms for the development and management of coastal resources, the results are generally favorable as evidenced by the positive responses of the greater majority of respondents pertinent to 14 indicators, although the level of significance and association is relatively modest.

Civil Society Groups/Organizations and their Roles in Coastal Resource Management

Taking the entire findings on civil society organizations and their roles in managing coastal resources, the results are very unfavorable as supported by the findings that of the nine indicators, only one indicator dealing with participation of CSOs in CRM-related activities has a positive value. These findings have negative implications in managing coastal resources in the

barangay. Furthermore, these results should be highlighted as the most urgent growth area in island governance. For a better appreciation of findings, Table 2 presents the civil society organizations and their roles in coastal management.

Table 2. Civil Society Organizations and Their Roles in Coastal Resource Management.

Components	Overall % of Respondents	Statistical Significance		Contingency Coefficient
		Chi-square	P-value	
Participation of CSOs in CRM-related activities	54.4	3.165	0.205	0.196
CRMP concerns/ problems in the <i>barangay</i>	45.3	1.620	0.445	0.157
CRMP initiation of NGOs/POs in the <i>barangay</i>	25.8	0.827	0.661	0.117
Involvement of civil society groups in the implementation of CRMP in the <i>barangay</i>	25.4	0.010	0.995	0.012
Evaluation of activities undertaken by the NGOs/POs in the <i>barangay</i>	23.2	1.469	0.480	0.160
Endorsement of MOA with CSO by the <i>barangay</i>	14.0	6.483	0.039*	0.317
Soliciting participation of NGOs/POs in the implementation of CRM in the <i>barangay</i>	6.6	9.183	0.010**	0.211
Tangible results of CRMP in the <i>barangay</i>	6.5	1.082	0.582	0.141
Involvement of NGOs/POs in the <i>barangay</i> as member of a sectoral committee	4.0	6.426	0.040*	0.111

** Highly significant

* Significant

In general, the recognition of civil society groups and organizations, as well as their corresponding roles in the management of coastal resources is limited. Only the participation of civil society organizations in activities related to coastal resource management is indicated by a slight majority (54.4%) of the respondents. The four indices where the association is least recognized include the involvement of NGOs and POs in the *barangay* as member of the sectoral committee (4%), the tangible results of the coastal resource management program in the *barangay* (6.5%), the solicitation of the participation of NGOs and POs in the implementation of CRM in the *barangay* (6.6%), and the endorsement of the Memorandum of Agreement with CSOs in the *barangay* (14%).

The results of test statistics are highly significant ($p < 0.01$) concerning the solicitation of NGO/PO participation in the implementation of CRM in the *barangay*. In addition, the test statistics is significant ($p < 0.05$) on account of the endorsement of MOA with civil society organizations in the *barangay*, and of the involvement of NGOs/POs in the *barangay* as members of the sectoral committee. However, it must be underscored that these significant differences admit negative implications inasmuch as very few respondents recognized the influence of these variables. The contingency coefficient indicates that in these indicators, the relationships of various sectors are more substantial. These results should be highlighted as the most urgent growth area in island governance.

Co-Management Mechanisms Employed in Coastal Resource Management

The significant findings concerning the co-management mechanisms facilitated in coastal resource management are presented on the bases of percentage distribution of respondents and its statistical significance. In this approach, the computer-aided statistical description and interpretation of the data generated and analyzed can be determined better, thereby indicating the degree of relationships or associations of identified variables with the major concern of the inquiry. Table 3 integrates the findings on different components of co-management mechanisms.

To facilitate the management of coastal resources, the most influential co-management variable deals with the use of *barangay* funds to communicate and make known the coastal resource management movement to various stakeholders (80.1%). Areas where co-management has been recognized include the formulation of specific programs related to coastal resource management (62.5%), the initiation of coastal resource management activities by the *barangay* (61.3%), and the establishment of the Barangay Fisheries and Aquatic Resource Management Council (BFARMC) (58.9%). However, the co-management

mechanisms have been influenced less by the practice of maximizing the use of resources for CRM (44.7%), the conduct of training to educate and mobilize people through information and education campaign (38.9%), and the knowledge of the presence of fishermen's organizations in the *barangay* (29.1%). Hence, more efforts on resource optimization, training effectiveness, and organizational presence should be expended in governance to synergize co-management structures and their shared operations.

Table 3. Co-Management Mechanisms Facilitated in Coastal Resources Management.

Components	Overall % of Respondents	Statistical Significance		Contingency Coefficient
		Chi-square	P-value	
Use of <i>barangay</i> funds for communication regarding CRM	80.1	0.070	0.996	0.237
Formulation of specific programs related to CRM	62.5	2.620	0.270	0.150
Initiation of CRM by <i>barangay</i> officials	61.3	2.611	0.271	0.124
Establishment of BFARMC	58.9	9.069	0.011*	0.224
Practice of maximizing resources for CRMP	44.7	0.691	0.708	0.090
Trainings conducted to educate and mobilize people through information and education campaigns on CRM	38.9	3.845	0.146	0.181
Knowledge on the presence of fishermen organizations in the <i>barangay</i>	29.1	14.322	0.001**	0.310

** Highly significant
* Significant

Significant findings are shown in two instances. In the case of the presence of fishermen's organizations in the *barangay*, the difference in responses is highly significant ($p < 0.01$). In the other situation concerning the establishment of BFARMC, significant difference is indicated. However, these significant findings vary in implication. While the level of significance in the establishment of BFARMC is favorable, the corresponding significance related to the knowledge of the presence of fishermen's organization is unfavorable. Based on contingency coefficient findings, a substantial association exists in the use of *barangay* funds for communication and on the presence of fishermen's organization in the *barangay*.

Promotion and Enhancement of Coastal Resource Management

Table 4 integrates the significant findings on various components of CRM promotion and enhancement.

Table 4. Promotion and Enhancement of Coastal Resource Management.

Issues	Overall % of Respondents	Statistical Significance		Contingency Coefficient
		Chi-square	P-value	
Giving top priority to CRM in the development of the <i>barangay</i>	98.3	1.771	0.412	0.099
Supporting the movement to protect coastal resources	92.8	1.942	0.379	0.104
Promotion of CRM activities be given priority by the LGU	86.8	7.275	0.026*	0.189
Supporting the centering of CRM and marine ecosystem in the environmental program of the <i>barangay</i>	82.2	4.981	0.083	0.178
<i>Barangay</i> government to include CRM as part of their values and mission statements	76.1	1.979	0.372	0.117
Integration of economics as a response of the <i>barangay</i> to the call for sustainable development in the 21 st century	60.2	1.921	0.383	0.119
Attainment of CRM goals of the <i>barangay</i>	52.1	0.016	0.992	0.011

*Significant

The promotion and enhancement of coastal resource management have been influenced overwhelmingly by giving top priority to CRM in the development of the *barangay* (98.3%), and by supporting the movement to protect the coastal resources (92.8%). Of high influence level is the support given for centering CRM and marine ecosystems in the environmental program of the *barangay* (82.2%). However, the attainment of CRM goals is reported as having a lesser influence (52.1%), and may be considered as a growth area for promoting and enhancing the management of coastal resources in the *barangay*.

The statistical analysis shows that the only indicator with significant results deals with giving top priority to the promotion of CRM activities. The contingency coefficients of giving top priority to promotions of CRM activities, and centering CRM and marine ecosystems in the *barangay's* environmental program indicate a substantial association among various sectors to

promote and enhance coastal resource management in the *barangay*. The overall results of assessment of the *barangay* efforts concerning the promotion and enhancement of coastal resource management are highly favorable, as proven by the positive responses to all the seven indices of CRM promotion and enhancement. Indeed, there is a bright future ahead for island community governance, particularly on the management of coastal resources for sustainable development.

CONCLUSION

On the natural and physical resources of island communities. The island communities have the type of natural coastal resources that can be tapped and explored for crafting and implementing a sustainable development program. However, such resources are not capable of the quantity of production volume adequate for viable and sustainable livelihood. The natural sources of supply of water from the spring and creek are sufficient for drinking and irrigation, but have not been functionally explored to support production as means for generating income urgently needed by the island residents. Although the islands are generally mountainous and rocky, there are narrow strips of lowlands where houses are built, grains and vegetables are planted, and livestock and poultry are raised. But even if the islands have available land and coastal resources for productivity, the volume of production is low and consequently, the estimated income derived from fishing and farming is also considerably low. While the estimated revenues earned for farming in Taloto-an and Tambaliza are reported to reach PhP 2M to PhP 3M per annum, the estimated average monthly income of the respondents amounts to PhP 3T which is below the poverty line. While the varied land use patterns consist of rice field, forest, grassland, mangrove, *kaingin*, orchard, and beaches, only the rice fields are productive and income-generating. Thus, even if the available natural resources can be tapped

and explored, the outputs in volume of production and amount of revenues earned may not be sufficient for crafting and implementing a sustainable coastal resource management.

On local government mechanisms for the development and management of coastal resources. The component local government mechanisms that have very highly influenced the development and management of coastal resources include the *barangay* responsibility to pass legislation for CRM programs, the importance of creating the position of CRMP officer, the watchful presence of coastal watch groups in the *barangay*, and the government conduct of assessment of CRMP in the *barangay*. The other factors which create favorable impact on developing and managing coastal resources include the active support of the worldwide program for CRM, appropriate resolutions enacted for CRMP, dissemination of information related to CRMP, and the substantial knowledge of CRMP integration into the *barangay* development plans. On the downside, the inadequate mechanisms for coastal resource development and management include the limited knowledge of the establishment of CRM office in the *barangay*, the deficient CRMP incentive system, limited knowledge of the provincial CRM framework formulated by the province, and the failure to maximize the use of capital for CRM. In effect, the indices point to varying degrees of functionality in component local government mechanisms to achieve an integrated island community development.

On civil society groups and organizations and their roles in coastal resource management. The most debilitating components that are considered to limit civil society groups and organizations in performing their roles in fostering coastal resource management include the negligible involvement of NGOs and POs in the *barangay* governance as members of sectoral committees of the Development Council, the lack of tangible results of CRMP in the *barangay*, the ineffective solicitation for the participation of NGOs and POs in the implementation of CRMP, and the limited endorsement of the Memorandum of Agreement between CSOs and the *barangay*. The other constraining factors pertain to limited evaluation of

activities undertaken by NGOs and POs in the *barangay*, the inadequate involvement of civil society groups in CRMP implementation in the *barangay*, the ineffective initiation of CRMP activities by NGOs and POs, and inconsequent handling of CRMP concerns and problems in the *barangay*. In effect, the roles and performance of NGOs and POs failed to foster a productive collaboration and partnership with *barangay* officials for developing and managing coastal resources in the islands.

On co-management mechanisms facilitated in coastal resource management. Local co-management mechanisms indicate a mixed impact of facilitating and constraining forces. On the facilitating side, the co-management scheme has been accelerated by the purposive use of *barangay* funds for communicating CRM-related activities, the substantial formulation of specific programs related to CRM, the effective initiation of CRM by responsible *barangay* officials, and the establishment of BFARMCs. On the constraining side, the co-management arrangements are burdened with the limited knowledge of the presence of fishermen's organization in the *barangay*, the ineffective training interventions conducted to educate and mobilize people on CRM through information and education campaigns, and the limited practice of maximizing resources for CRMP operations. In view of the interplay of facilitating and constraining indicators, the aims, terms, and conditions of co-management initiatives have not been fully realized through a functional collaboration between civil society and *barangay* officials.

On promotion and enhancement of coastal resource management. Local governance reveals a highly recognized capability to give top priority to CRM in *barangay* development, and to extend strong support for the movement to protect the coastal resources. Giving top priority for *barangay* development, coupled with strengthened protection of coastal resources, certainly augur the regime of sustainability. A higher premium has been granted to the LGU for giving the promotion of CRM activities the top priority, and for supporting the decision of centering the CRM and marine ecosystems in the *barangay* environmental program. Accordingly, top priority

to CRM advocacy with sharpened focus on marine ecosystems-coastal resource management praxis contribute to program viability. Added supports for promoting and enhancing coastal resource management recognize the inclusion of CRM in the values and mission statements, the adequacy of attaining CRM goals targeted in *barangay* governance, and the functional integration of economics as response to the call for sustainable development in the 21st century. In effect, the verdant outcomes of efficacious promotion and enhancement of coastal resource management are highly valued and enshrined in niches of sustainability, viability, and self-reliance which constitute the quality standards appropriate and adaptable for the emerging island communities within the administrative and political jurisdiction of the municipality of Concepcion.

RECOMMENDATIONS

Considering the significant findings of the study, it is strongly recommended that the performance of the roles of civil society organizations must be clarified and strengthened so that their participation and involvement in the planning, implementation, and evaluation of various aspects of coastal resource management can be truly instrumental in achieving the goals of sustainable development for the welfare and benefit of the people in different island communities. To be more specific, the recommendations are centered on:

Functional involvement of civil society organizations, like NGOs and POs, in barangay governance as responsible members of different sectoral committees. This recommendation is justified by the need for NGOs and POs to become more active in the *barangay* development council when formulating CRM policies and in crafting the pertinent implementing rules and regulations to operationally put these policies into the playing field.

Development of mutually acceptable criteria for ensuring tangible results of CRMP operations. This recommendation is in proper order because it puts emphasis on clear indicators of success of CRMP operations, which must be initially agreed upon by every individual or sector concerned. Invoking the importance of logic, it follows that when *barangay* governance has clearly defined quantifiable terms, or developed measurable indicators on qualified results, it is easy to measure the outputs, impact, and outcome resulting for having achieved the goals of the CRM program.

Formulation and design of effective strategies for solicitation of participation of civil society organizations in implementation of barangay-based CRMP. This recommendation is commendable for giving more significance to a more focused, thoughtful, and socially sensitive approach in enlisting and putting to use the productive efforts, resources, and expertise of NGOs and POs for managing and assisting the barangay-based CRM. It ensures the valuable contribution of civil society to the growth and development of island communities through systematized and judiciously planned implementation techniques.

Effective and persuasive endorsement of Memorandum of Agreement with civil society organizations in the barangay. This recommendation elevates into an enforceable contract the collaboration and co-management schemes between the civil society organizations and the *barangay* as formally provided for in the Memorandum of Agreement. With the force of law, the contracting parties are made mutually cognizant of their rights and prerogatives, as well as their duties and obligations.

In a propitious time when these recommendations are put into action, the governance of island communities may have succeeded efficaciously in bringing about the desired social outcomes and in dynamically elevating the quality of life of marginal residents of the islands. Within the contexts of sustainability, viability, and self-reliance, the verdant pathway uniquely chosen by residents in island communities is a bountiful journey into the realm of coastal

resource management, virtually and aptly responding to the development call of the 21st century.

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