

Zooming-in Co-management of Coastal Resources to Community Level: a Case in Southern Iloilo, Philippines

WILLIAM BOEH^{1, 2}, RODELIO F. SUBADE^{3, *}, LEVI GUILLERMO GEGANZO³ and ANA LIZA A. SUBADE⁴

¹Bureau of National Fisheries, Ministry of Agriculture, Monrovia, Liberia.

²Institute of Fisheries Policy and Development Studies, College of Fisheries and Ocean Sciences, University of the Philippines Visayas, Miagao, Iloilo, Philippines 5023.

³Division of Social Sciences, College of Arts and Sciences, University of the Philippines Visayas, Miagao, Iloilo, Philippines 5023.

⁴Office of the University Registrar, University of the Philippines Visayas, Miagao, Iloilo, Philippines 5023.

Abstract

The past two decades have witnessed the emergence of co-management as an approach in managing coastal resources. Co-management covers various partnership arrangements and degrees of power sharing. It includes the sharing of responsibility and authority between the government and the community of local fishers to manage a fishery. As such, several co-management arrangements exist depending on the role of the fishers in the formulation of the regulations ranging from consultative roles to delegated roles. While many studies look into co-management in a higher level of government, this case analysis looks into community-level initiatives towards co-managing coastal resources with the local government unit and coastal community in Barangay Sinogbuhan. Review of previous studies and relevant documents, key informant interviews and focus group discussions were undertaken to collect data for analysis. Using key conditions for successful co-management, enabling policies and legislation, and delegation of authority were rated high at both levels. Other key conditions were rated medium while participation and management rules enforced were rated low. At the outset it was assessed that the evolving co-management has promising prospects, though more still needs to be done.

Introduction

The continuous overexploitation and degradation of the Philippine coastal and marine resources have been unabated and have been primarily due to human-made activities, resulting in various unintended consequences to the resources such as pollution, degradation of critical coastal habitats, squatting, conflicts arising from resource use and many more.

These activities in turn affect diversity and ecological protection, food security and livelihood. Like other coastal municipalities in the Philippines, the Municipality of San Joaquin is not free from human-made activities that increasingly destroy the coastal and marine resources in the municipality. In order to prevent these problems from further occurring, the municipality initiated

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*Corresponding author. E-mail address: redabus@yahoo.com

several plans, programmes and activities for the protection, conservation and improvement of their coastal and marine resources.

The enactment of the Local Government Code of 1991 or Republic Act 7160 (RA 7160) ushered the formal devolution of powers and responsibilities from the central government to the local government units (LGU) and people's organizations. Administrative arrangements resulting from RA 7160 have created a supportive environment for co-management to prosper. An administrative power shift placed the local governments at the forefront of coastal resource management (CRM). RA 7160 also enabled the local leaders to come together with the community and various stakeholders to plan, enact laws and implement programmes suited to the area. The municipality of San Joaquin particularly in Barangay Sinogbuhan has embraced the co-management arrangement for coastal resources with the LGU and the community.

This study comprises a critical review of the co-management arrangement for CRM in the Municipality of San Joaquin, especially at the community level. It specifically describes and analyses the co-management arrangements in Barangay Sinogbuhan using the key conditions of successful co-management.

Co-Management Arrangements

At present, one of the emerging CRM arrangements increasingly used in the Philippines is co-management. In areas where there are shared common resources, co-management utilizes the involvement of several sectors in the society collaborating with inter-LGU partnerships and different resource sharing schemes (Adan 2004; Napilan 2004). Resource sharing schemes and power are delegated among several stakeholders and several LGUs that form alliances or integrated councils rather than each autonomously working on its own plans (Yandle 2008; Nielsen et al. 2004). The rationale behind this kind of management setting arises from the problems brought by overlapping responsibilities and the nature of common coastal resources. Problems in coastal areas of a particular local government go beyond its jurisdictional boundaries and can only be addressed effectively through collaborative management with adjacent coastal governments (Christie and White 1997). In an archipelagic country like the Philippines, a need for expansion on managing coastal resources is highly recommended. An inter-LGU governance structure is needed beyond the municipal water boundaries because what one municipality does will eventually affect nearby municipalities sharing the same coastal and marine resources (Pomeroy et al. 2009; Eisma-Osorio et al. 2009).

The Southern Iloilo Coastal Resource Management Council (SICRMC) is one of the examples of the co-management alliances formed in the Philippines to manage and develop coastal and marine resources in the Province of Iloilo's southern coastal communities. The municipality of San Joaquin

is one of the five members of the council, together with the municipalities of Oton, Tigbauan, Guimbal and Miag-ao.

The municipality of San Joaquin is located in the southern tip of the Province of Iloilo, in the island of Panay. It is composed of 85 barangays (or villages), twenty-two of these are coastal. The barangay is the basic political unit of government in the Philippines. Barangay Sinogbuhan is located in the southernmost part of the municipality (Fig. 1).

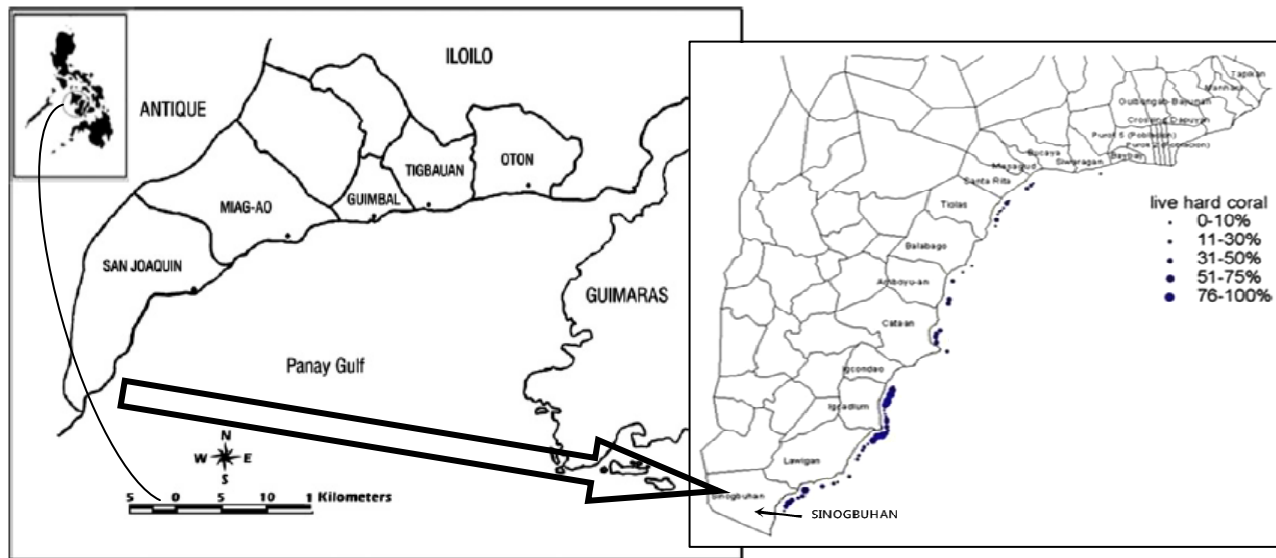


Fig. 1. Location map of San Joaquin Iloilo and Barangay Sinogbuhan.

Source: Corvera (2011); Espectato et al. (2011)

For the past 5 years, the LGU of San Joaquin initiated a co-management arrangement involving the coastal communities. Realizing the crucial role played by the coastal community, the LGU has entered into partnership with them through fisheries ordinances and resolutions. The municipality has designated an authority structure delegated to the community through a Municipal Technical Working Group (MTWG) led by the municipal mayor as the chief administrator. This group implements all administrative orders to the community with the help of the Municipal Marine Sanctuary Management Board that consists of the barangay representatives from the coastal communities. Several municipal ordinances and resolutions were passed to manage and protect their coastal resources, and to establish marine protected areas (MPAs) or sanctuaries in 15 of the 22 coastal barangays from 2009-2011.

The LGU of San Joaquin together with SICRMC came up with a 5-year coastal resource management plan that serves as a guide in the rehabilitation, protection and preservation of the coastal resources. The plan was subjected to series of public consultations to incorporate relevant comments and suggestions from the communities. All barangays with MPAs are tasked to institute

Barangay Marine Sanctuary Board (BMSB) under the umbrella of Municipal Marine Sanctuary Management Board which was put in place to oversee activities or programmes in the MPAs or marine sanctuaries. Ultimately, the Integrated Coastal Resource Management Plan (ICRMP) was formulated. This ICRMP emanated from the coastal resource management plan (CRMP) that covers major components in coastal management that includes among others: legal aspects, livelihood, zoning and tourism and waste management.

In particular, the LGU still initiates plans and programmes as well as ensures participation among stakeholders. In response to LGUs management plans, community groups (e.g. barangay council, fisherfolk association, women's group, youth group, senior citizens group, NGOs) were organized at different levels. These community level groups were expected to give their support, cooperation and participation to LGU's activities. Nevertheless, the LGU still oversees all management efforts at the municipal and community level.

Among the coastal communities, the fisherfolks in Barangay Sinogbuhan were the most responsive and cooperative in co-management. The locality has an existing marine conservation programme in the area maintained with the assistance of a fishers' organization and barangay council. The barangay council had created and financed several activities to improve the CRM in the barangay.

Key Conditions for Successful Co-Management

Though there are no blueprints or models for successful co-management, there are several key conditions identified by different studies that are vital in the development and sustenance of successful co-management. With the emergence of CRM, research on co-management has shown that certain key conditions appeared to be necessary to achieve successful and sustainable co-management (Espectato et al. 2011; Pomeroy et al. 2001; Pomeroy and Williams 1994; Ostrom 1992; Pinkerton 1989). The likelihood of achieving successful co-management depends on the degree of the presence of these key conditions in a particular area. However, these key conditions are not meant to be absolute but should only serve as a guide for assessment. There are several key conditions applicable only for specific locations and some key conditions continually evolve, depending on the environment and the socio-political arrangements of a location (Pomeroy and Williams 1994; Pomeroy et al. 2001).

Pomeroy and Williams (1994) identified 11 key conditions which are vital in development and sustenance of successful co-management arrangements. When more of these key conditions exist in a particular situation, the greater will be the likelihood for successful co-management. These key conditions were originally derived from Ostrom (1990; 1992) and Pinkerton (1989).

This study adopted the eight key conditions from Espectato et al. (2011) and three key conditions from Pomeroy and Williams (1994) to assess the co-management arrangements in the Municipality of San Joaquin and Barangay Sinogbuhan. The authors of this paper identified 11 conditions which they deemed to be applicable to the distinct socio-political setting of Southern Iloilo. These are used as the basis to evaluate the LGU and Barangay Sinogbuhan co-management arrangement. The key conditions are the following: (1) enabling policies and legislation, (2) clearly defined boundaries, (3) participation by those affected, (4) leadership, (5) support from higher government bodies, (6) conflict management mechanism, (7) integrated coastal management plan, (8) external agents, (9) decentralization and delegation of authority, (10) management rules enforced and (11) coordination between the LGU and the community.

Materials and Methods

The primary sources of data used in the study were derived from series of key informant interviews (KII) and focus group discussions (FGD) with the MTWG for CRM. The secondary sources of data used in the study were pertinent documents derived from the SICRMC, the LGU of San Joaquin, University of the Philippines Visayas (UPV) and local government of Barangay Sinogbuhan. Through the Municipal Agriculturist Office necessary permits to do field research were first secured. FGD and KII were conducted during the first 2 weeks of October 2012 with the help of the MTWG for CRM. The key informants were composed of the Vice-Mayor, Municipal Councillors, Municipal Agriculturist, the Municipal Aquaculturist, the Municipal Coastal Resource Management Officer, the Municipal Engineer, Municipal Judge and the Municipal Fisheries and Aquatic Resources Council Chair.

Focus group discussions with the Barangay Council, people's organizations and 32 fisherfolks from Barangay Sinogbuhan were done to elucidate information on the status of the barangay fisheries. The fisherfolks include the fishermen or their wives, fish vendors and youth representatives that were randomly selected from the Barangay Fisheries and Aquatic Resources Management Council (BFARMC) list given by the BFARMC chair, based on their fisherfolks registration in the barangay.

A questionnaire was used in the assessment of CRM arrangements and evaluation of co-management initiatives in the municipal and barangay levels, using the defined values for each key condition. The respondents were asked questions and to provide rates on the key conditions of their respective field of concern in CRM arrangements (i.e. the Municipal Judge was only asked to assess and rate the key conditions that he is knowledgeable and relevant to his position).

Data were then reviewed and analysed using qualitative and quantitative methods based on the assessment and rating of each respondents for each key condition during the KII and FGD. The key conditions defined values for assessment of co-management initiatives were adopted from Espectato

et al. (2011) and Pomeroy and Williams (1994) as shown in Table 1. The quantitative ratings for each key condition were based on the defined values.

Results and Discussion

Analysis of the key conditions for successful co-management

This study evaluated 11 specified key conditions for successful fisheries co-management in the LGU of the municipality of San Joaquin and coastal community at Barangay Sinogbuhan. Table 2 shows the summary of assessment of the key conditions at the LGU and barangay levels. Each of the key conditions is treated in turn through the following discussions of findings.

Enabling policies and legislation- It is not surprising that this key condition was rated high at the municipal and barangay level. This key condition includes establishment of supportive legislation and authority structures to provide legitimacy to the co-management arrangements of the municipality. The LGU of San Joaquin has localized the 1998 Fisheries Code as well as other national laws through a municipal fisheries ordinance that specifies local application of the said national law.

Table 1. Ratings for assessment of key conditions present at Barangay Sinogbuhan.

Key condition	Ratings	Definition of Value
Enabling policies and legislation	Low	Absence of CRM ordinances/resolutions in the municipal or barangay level.
	Medium	Presence of CRM ordinances/resolutions but absence of enabling policies and plans.
	High	Presence of CRM ordinances/resolutions and presence of enabling policies and plans.
Clearly defined boundaries	Low	Defined municipal waters but not disseminated and not certified by NAMRIA.
	Medium	Informed of defined municipal waters, certified by NAMRIA but not recognized by nearby municipalities.
Participation by those affected	High	Informed of defined municipal waters, certified by NAMRIA and recognized by nearby municipalities.
	Low	Fishers attend up to 25% of the meetings and activities.
	Medium	Fishers attend up to 50% of the meetings and activities.
Leadership	High	Fishers attend more than 50% of the meetings and activities.
	Low	The LGU and the barangay council do not exhibit strong leadership. Skills, duties and responsibilities are not fairly shared.
	Medium	The LGU and the barangay council exhibit strong leadership. Skills, duties and responsibilities are mostly held by the LGU and/or barangay council.
Support from higher government bodies (National and Provincial Government)	High	The LGU and the barangay council exhibit strong leadership. Skills, duties and responsibilities are fairly shared.
	Low	No or very low support from the higher government level.
	Medium	Presence of support from the higher government level in some cases.
Conflict management mechanism	High	Presence of support from the higher government level in most cases.
	Low	Twenty-five percent of the concerns brought to the attention of the LGU/barangay council were resolved.
	Medium	Fifty percent of the concerns brought to the attention of the LGU/barangay council were resolved.
	High	More than fifty percent of the concerns brought to the attention of the LGU/barangay council were resolved.

Integrated Coastal Management Plan	Low	No CRM plan and no effort to integrate.
	Medium	Has a CRM plan and has an effort to integrate.
	High	The CRM plan is fully integrated.
External agents	Low	No external agents are present and there are no plans to include any in the Management Board.
	Medium	External agents are present but are not represented in the Management Board.
	High	External agents are present and represented in the Management Board.
Decentralization and delegation of authority	Low	Fishers representation is about 25% but the LGU/barangay council makes all the decision.
	Medium	Fishers representation is about 50% and their suggestions are incorporated in the Board.
	High	Fishers representation is more than 50% and their suggestions are incorporated in the Board.
Management rules enforced	Low	The management team effectively enforce at most 25% of the total rules of the CRM plan.
	Medium	The management team effectively enforce at most 50% of the total rules of the CRM plan.
	High	The management team effectively enforce more than 50% of the total rules of the CRM plan.
Coordination between local government unit and community	Low	There is no or minimal coordination of the LGU/barangay council and the community in management plans and projects.
	Medium	The LGU/barangay council and community coordinate with each other in about 50% of plans and projects.
	High	The LGU/barangay council and community coordinate with each other in more than 50% of plans and projects.

Legend: Quantitative ratings are the following: Low =1, Medium = 2, High =3; Definition of values were adapted from the study of Espectato, et al. on their review of Southern Iloilo Coastal Resource Management Council.

Moreover, the LGU also issued several ordinances and resolutions for the protection and conservation of the coastal and marine resources. Barangay Sinogbuhan adopted the CRMP of the municipality and has established necessary barangay resolutions compliant with the ordinances of the LGU and the national laws. The establishment of CRM in the barangay was also formalized through local legislation and implementing bodies. However, despite the legal and institutional arrangements established in the coastal management, there are still lapses in the implementation. Coastal law enforcement is still non-existent.

Table 2. Rating of key conditions for successful co-management.

Key condition	Indicator	Rating for the LGU San Joaquin	Rating for Barangay Sinogbuhan
Enabling Policies and Legislation	Presence of ordinances and enabling bodies and plans for enforcement	HIGH	HIGH
Clearly defined boundaries	Defined municipal waters and certified by NAMRIA and nearby municipalities and barangays	MEDIUM	MEDIUM
Participation by those affected	Participation of fishers in meetings and CRM activities	LOW	MEDIUM
Leadership	Exhibition of strong leadership skills of those from the management and responsibilities are fairly shared among the stakeholders	MEDIUM	MEDIUM
Support from the Higher Government Bodies	Presence of support from higher government levels	MEDIUM	MEDIUM
Conflict Management Mechanism	Concerns are brought to attention of the board and are resolved	MEDIUM	HIGH
Integrated Coastal Resource Management Plan	Presence of a coastal resource management plan and fully integrated it up to the community level	MEDIUM	HIGH
External Agents	Presence of support from other sectors and institutions	MEDIUM	MEDIUM
Decentralization and Delegation of Authority	Presence of proper representation and exclusive rights for the fishers	HIGH	HIGH
Management Rules Enforced	Effectiveness of management team in enforcement of the rules of the coastal resource management plan	LOW	LOW
Coordination between government and community	Presence of coordination between the LGU and the barangay in plans and projects	HIGH	MEDIUM

Clearly defined boundaries - The physical boundaries of the coastal areas are defined to avoid possible conflicts related to resource utilization and jurisdictional responsibilities. The National Mapping and Resource Information Authority has clearly defined and certified the boundaries of the municipal waters of San Joaquin, Iloilo, and officially landmarked it in 2002.

The report of the certified boundaries was endorsed by the Municipal Mayor. However, the municipality of Dao in Antique as of this time does not recognize the municipal waters boundaries and the two municipalities have yet to come up with an agreement to resolve this issue.

The progress of delineation of municipal water boundary in the municipality of San Joaquin affects Barangay Sinogbuhan. Though the fisherfolks are informed of the defined municipal waters boundaries, these are not recognized by nearby barangays in the next municipality. Clearly defined boundaries, as a key condition, is rated medium at the municipal and barangay levels.

Participation by those affected – According to the San Joaquin LGU, coastal communities through their barangay council, BFARMC and people's organizations are part of the organizational structure of the CRM. The fisherfolks and barangay council usually participate in strengthening law enforcement, compliance to ordinances and policies, coastal clean-up, protection of marine sanctuaries, monitoring and evaluation among others. Despite fisher's participation in various CRM activities, there was minimal involvement in the decision-making body particularly during meetings. Participation as one of the key conditions was rated medium at the barangay level.

Organizations such as Municipal Fisheries and Aquatic Resources Management Council (MFARMC) and people's organizations are present in the community but either inactive or non-participative. Secondary data collected from the MTWG and Office of the Municipal Agriculturist revealed that since 2009 MFARMC regular meetings and full participation of the elected members no longer exists. Participation as one of the key conditions was rated low at the municipal level. This low participation among coastal resource users was also observed in Tingloy, Batangas (Subade et al. 2009) and found in several coastal towns (Courtney et al. 2002). According to Wallerstein (1992) as cited in Jentoft (2005), community empowerment is a "social action process that promotes participation of people, organizations, and communities towards the goal of increased individual and community control, political efficacy, improved quality of community life, and social justice". Empowerment is what co-management is all about (Jentoft, 2005). Thus, the lack of it could be a reason for low participation in co-management.

Leadership – According to the fishers, the LGU and the barangay council of Barangay Sinogbuhan exhibit strong leadership in the management of coastal resources in the barangay level. Duties and responsibilities are mostly held by those in the LGU and the barangay council and only minimal involvement of fishers in the activities and decisions affecting the management of the resource.

Local leaders in co-management are only those who were politically elected or appointed. The top-down approach of co-management process is still evident, that is, from LGU down to barangay council and to the community. This key condition was rated medium by the barangay council and fishers at the municipal and barangay level.

Support from higher government bodies - This key condition includes the sense of ownership and commitment of the stakeholders in co-management process as assisted by higher government bodies. The SICRMC, the Provincial Government of Iloilo, and various national agencies like the Department of Environment and Natural Resources (DENR), the Department of Agriculture – Bureau of Fisheries and Aquatic Resources (DA-BFAR), are among several higher levels of government bodies which assisted co-management in community and municipal levels. The LGU of San Joaquin have endorsed and actively participated in the co-management activities in the barangay. The SICRMC and the LGU provided internal budget and facilities needed to support various operations. Other agencies provided technical assistance to various training and seminar workshops on law enforcement, monitoring and surveillance. However, these supports were usually short-lived and not enough to sustain and maintain interventions. This key condition was rated medium in both levels.

Conflict management mechanism - The MTWG through the Philippine National Police serves as venues for arbitration and resolution of conflicts among fishers in the municipality, especially those involved in conflicts in resource use and enforcement of the fisheries laws. Most of the complaints raised about resource use are brought to the attention of the management board. Cases will be elevated to the Municipal Trial Court if it cannot be resolved in the board. About 50% of concerns brought to the management board were immediately and amicably resolved. The Municipal Judge also confirms that issues are resolved peacefully. Conflict management mechanism as a key condition was rated medium.

The Barangay Sinogbuhan Marine Sanctuary Management Board (MSMB) serves as the body for arbitration and resolution of conflicts among fishers in the barangay. Complaints about resource use, fishing violations and intrusions, are brought to the attention of the MSMB and are immediately resolved by the board, which is composed of the Barangay council, BFARMC, the Sinogbuhan Marikudo Fisheries Association, Sangguniang Kabataan and the Sinogbuhan Upland Farmers Association. In cases that conflicts cannot be resolved, these are referred for action in the LGU level. Conflict management mechanism as key condition was rated high at Barangay Sinogbuhan.

Integrated coastal resource management plan - As verified from municipal sources, the municipality of San Joaquin has incorporated a master ICRMP with the objectives to preserve, maintain and sustain the coastal and marine resources, integrating the concerns and priorities of the communities. The ICRMP should also include programmes on livelihoods and food security of the community, eliminate illegal fishing, regulate activities in the different zones and control the entry of fishing vessels and transient fishers in the municipal waters.

However, even if the municipality has an ICRMP, there are still problems of commercial fisher's intrusion into municipal waters, illegal fishing, low volume of fish catch by small-scale fishers and insufficient alternative livelihood. Hence, this key condition was rated medium.

The barangay has created its own CRMP and integrated it into the community settings. The establishment, with the help of the LGU, of the marine sanctuary is one of the highlight projects of the barangay's CRM plans. It was found out in the FGD that the fishers are well-informed of the CRM plans and co-management arrangements of the barangay. Their roles on law enforcement, compliance to CRM ordinances, protection of marine sanctuary, monitoring and evaluation, among others, are also well-defined in the management settings. The ICRMP was rated high in Barangay Sinogbuhan.

External agents- The municipality of San Joaquin collaborated with external agents for the sustainable management of the coastal and marine resources for mutual interests of both parties. The external agents have become integral parts in the co-management of coastal resources. These external agents are Southeast Asian Fisheries Development Center, the UPV and various local media. These external agents have helped in the development of CRM plans of the area in the forms of research, technical support and information dissemination. Considering that UPV served as Secretariat in the SICRMC, the LGUs in Southern Iloilo are dependent on the initiatives for plans and programmes on coastal management as well as on the monitoring and evaluation of such plans. External agents, as a key condition was rated medium in both levels.

Decentralization/localization and delegation of authority - The national government has established formal policy and laws for the decentralization of administrative functions and delegation of coastal and marine management responsibilities and authority to the local government and local group organization levels. This is evident in the enactment of the San Joaquin Fisheries Ordinance of 2007, where the roles and responsibilities of both parties (LGU and local community) are well defined. The ordinance provides the formal co-management arrangement between the local government and coastal community.

More than half of the coastal barangays are actively being represented and given political positions in the MTWG board. Fishers are also given preferential rights in the utilization and management of coastal resources at the municipal waters. Decentralization and delegation of authority as a key condition was rated high in the municipal and barangay levels.

Management rules enforced - This key condition requires that the local government and the barangay council should be able to enforce management rules in the CRM plans. However, despite the legal and institutional arrangements established in the coastal management of San Joaquin, coastal law enforcement is non-existent. The LGU lacks a formal and well-structured law enforcement team such as Bantay Dagat to effectively implement the management rules of the CRM plans. Insufficient operational fund is the major reason for such condition.

The Philippine National Police takes all the responsibilities in all serious cases of violations in all barangays. The LGU also relies heavily on the community-led enforcement efforts for settlements on violations in the municipality.

This settlement often leads to negotiations that benefit the violators that often lead the same violators to commit the same offenses. Management rules enforced as a key condition was rated low in the municipal and barangay level.

Coordination between the government and community- A high level of coordination between the government and the community is essential for the LGU to be able to supervise the implementation of CRM plans in the community. A coordinating body in the municipality and the coastal barangays are established (through the MTWG and the Barangay Sinogbuhan MSMB). This coordinating body, external to the barangay council and the local government, is tasked to monitor the local management arrangements, resolved conflicts, and reinforce barangay internal rule. Coordination in the municipal level as a key condition was rated high.

Coordination between the LGU and the community at Barangay Sinogbuhan is essential not only in the implementation of the CRM plans, but also in the monitoring of the progress of the co-management arrangements. It was found out that only about half of the fishers attend and bring up concerns in meetings and public consultations in Barangay Sinogbuhan. Coordination is only evident during policy formulation, coastal clean-up, law enforcement and monitoring of CRM plans. Coordination as a key condition was rated medium in Barangay Sinogbuhan.

Conclusion and Recommendations

This study demonstrates that successful implementation of co-management at a community level largely depends on the degree of presence of key conditions, which are not meant to be absolute but only serve as a guide in the planning and implementation of co-management. There are several key conditions applicable only for specific locations, while some key conditions continually evolve depending on the environment and the socio-political arrangements of a location (Pomeroy and William 1994; Pomeroy et al. 2001). When more of these key conditions exist in a particular situation or locality, the greater will be the likelihood for successful co-management.

Despite the presence of supportive legislations that provide legitimacy to the co-management arrangements, as well as to the decentralization of administrative functions and delegation of responsibilities and authority to the community, the LGU of the municipality of San Joaquin and the community of Barangay Sinogbuhan were not able to meet all the key conditions for successful co-management. Though all of the conditions were deemed to be present, “participation” and “management rules enforced” were observed to be low in existence. The minimal involvement of the community particularly in decision making can put into question whether the co-management that was established indeed empowered the fishing community or only empowered the local elite.

The lack of law enforcement team that weakened the implementation of rules and settlement of offenses, and hence benefitted violators only entrench the inequities that already exist. If communities are empowered, this may reduce social stratification and allow groups in the community to work on a more equal level with the local elite (Pomeroy et al. 2001).

The case of co-management in San Joaquin demonstrates that in order to achieve successful co-management arrangement, it takes more than just crafted policies and support from the government but also needs the strengthening of the community through capacity building and empowerment. Efforts must also be invested in educating and training user groups or stakeholders (Jentoft 2005) coupled with sufficient funds to provide alternative livelihood or new technologies (Pomeroy et al. 2001). Indeed, the community is empowered if their capacities are increased, their decision making participation is deepened and enhanced, and if they realize or capture resource management benefits towards improvement of their living conditions. Law enforcement must be vigorous, fair and sustainable. Individuals must have a sense that the rules in place are equitable and must feel that the benefits obtained from participation in co-management arrangements, including compliance with the rules, will be greater than the costs of such activities (Pomeroy et al. 2001).

While the case study examined by this paper needs corroboration with other case studies in other parts of the country and the world, it highlights the need to zoom-in the analysis of co-management implementation and probability of success in the grassroots level. It is indeed an indispensable component of understanding co-management at the higher levels of governance.

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