

Local government units initiatives on coastal resource management in adjacent municipalities in Camarines Sur, Philippines

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Abstract. This research was conducted to determine the local government units (LGUs) initiatives on coastal resource management (CRM) in adjacent municipalities in Camarines Sur, Philippines. The respondents of this study are 100 fisherfolk leaders in the municipalities of Calabanga, Tinambac and Siruma. Descriptive, comparative and evaluative methods of research were employed and a survey questionnaire was used as the primary tool in data gathering. On the test of difference, the computed F-value of 12.038 and p-value of .001 revealed a very high difference in the implementation of CRM initiatives in the adjacent municipalities. The respondents in this study live below the poverty threshold. The intrusion of commercial fishers and the use of active fishing gears inside the 15-km municipal waters significantly affect the marine habitat while fishpond conversion kills the natural cycle in the mangrove forests. However, the FOs membership in the Municipal Fisheries and Aquatic Resources Management Council empower them to engage in governance which can be a venue for them to recommend policies related to CRM. As a result of this study, a CRM monitoring and evaluation model was crafted to guide the LGUs in the review, revision and crafting of CRM programs.

1. Introduction

The Philippines, with a general coastline of 18,000 sq km, is composed of 7,100 islands [1]. Its 2.2 million square kilometers territorial waters is considered its Exclusive Economic Zone (EEZ) [2]. Its coastal ecosystems namely coral reefs, seagrass beds and mangroves, said to be among the most biologically diverse in the world, are interconnected forming an intricate web of food chain essential to the survival of living organisms found in it. However, these resources are continuously exploited and it depleted the fishery resources of the Country. This brought the national government agencies (NGAs), non-government organizations (NGOs) and academic institutions to act on the rapid degradation of the coastal resources [3].

Coastal management in the Philippines started as early as the 1980s, even before the Earth Summit and the United Nations Conference on Environmental Development (UNCED) in 1992 which concretized the concept of Integrated Coastal Management [4]. Implementation of coastal management in the country is a result of various economic, environmental and governance concerns affecting the poor fishing communities. Most of these initiatives were started by academic institutions and non-government organizations (NGOs) such as the Siliman University and Haribon Foundation. Both of these institutions/organizations applied community-based approaches and showed a great contribution



to the success of coastal management and one of which is the island-based community fish sanctuary in Apo Island in Negros Occidental. The engagement of the fishing community in governance brought them to be in the front-line of environmental protection and management of their resources [5]. Since most of the initiatives are school-based and NGO led, LGUs participation in this was limited to permitting these groups to implement CRM program, participation in the planning process and provision of manpower to assist the program implementers.

This set-up had changed when the Local Government Code (LGC) or Republic Act 7160 (RA7160) was enacted into law [6]. The LGC gave the LGUs the autonomy to manage the affairs of their respective municipality and the resources within their territorial jurisdiction. This devolution of powers, from a centralized flow of government to devolved function, gave the LGUs the authority to protect and conserve their coastal environment. This mandate of the local government was further cemented upon the enactment of the Fisheries Code of the Philippines or Republic Act 8550 (RA 8550) in 1998 [7]. The salient features of RA 8550, to name a few, are (a) extending the municipal waters from 4.83-km (3 nautical miles) to 15-km (9.32 nautical miles); (b) creation of the Fisheries and Aquatic Resources Management Council (FARMC) which will recommend necessary and appropriate policies and ordinances related to fisheries development and (c) designating competent deputy fish wardens from fisherfolk organizations who will partner with the local police in patrolling and surveillance operations. These provisions under RA 8550 gave the LGUs and the communities the opportunity not only to explore but also to preserve their coastal and marine resources. Furthermore, this change brought the local government to develop programs on coastal management and eventually formulating CRM plans to address the continuing and worsening situation in the coastal environment. Since then, the LGUs became a partner implementer of the different NGAs, NGOs and academic institutions in CRM.

Numerous studies have already been conducted on coastal resource management (CRM) and fisheries development in the Philippines focusing on its impacts on the environment and the economic well-being of the fishing communities and most of these programs though are initiated by NGAs, NGOs and academic institutions. Seldom that the LGUs initiatives are reviewed through the ‘eyes’ of the fisherfolk. It is in this premise that the researcher wishes to assess the LGUs initiatives on CRM in the adjacent municipalities in Camarines Sur, Philippines. The researcher also hopes to provide a CRM Monitoring and Evaluation (M & E) model which can serve as guide to the LGUs and the fisherfolk organizations to strengthen their CRM programs.

2. Methods

The respondents in this study were purposely selected in the municipalities of Calabanga, Siruma and Tinambac, in the Province of Camarines Sur, Philippines. Three (3) coastal communities with active fisherfolk organizations (FOs) in each municipality were chosen and its elected leaders, as ‘gatekeepers’ of their respective FO, were identified as respondents of the survey. They are the best source of information needed in the study as they are the most aware of the initiatives being done by the LGUs on CRM. A total of 100 respondents were interviewed using a survey questionnaire which was developed by the Researcher. Focus group discussions (FGDs) and key informant interviews (KIIs) with the key personnel of the Office of the Municipal Agriculturist (OMA) in each municipality were conducted to validate the responses of the respondents.

This study used descriptive-evaluative and descriptive-comparative research methods employing survey technique. Descriptive research, as explained by [8], is a collection of data describing some phenomenon that is may or may not be quantifiable such as close-scales, open-ended survey questions, observations and interviews. Descriptive-evaluative, on the other hand, evaluates or measure the results against some known or hypothesized standards. Descriptive method is most applicable in determining the profile of the respondents regarding age, sex, household size and position in the organization. It is likewise appropriate for identifying the fishery-related issues and concerns along economic, environment and governance. The descriptive-evaluative method, on the other hand, was used to determine the CRM initiatives of the LGUs and its level of implementation in the adjacent

municipalities, while the difference in the level of implementation was analyzed using the descriptive-comparative method of research. It further looks into the factors that caused the difference.

3. Results and Discussion

The demographic profile of the respondents, concerning age, most of them are nearing their senior years and only a few youngsters are involved in the organizational operations. It is also worth mentioning that females are becoming active in the formerly male-dominated fishing industry. Females are well represented in the organization and given positions not only as Secretaries but also as Presidents and Board of Directors. Based on the interview with the fisherfolks, positions in the organizations are given to older members because they are more experienced and most trusted by the LGUs. The younger generation, however, is given responsibilities in the different working committees becoming their training ground in preparation for their eventual handling of leadership positions in the future. It is true that most often the adults are given responsibilities in community building, it is also worthy to note that the youth's engagement in the development of communities is crucial as they are the second liners of the seniors. To encourage youth involvement in the community is vital to understand the influences, motivations, obstacles and feedback that they receive from the community [9].

The LGUs initiatives and its level of implementation differ from one municipality to another. In community organizing, most of the LGUs initiatives have implemented evaluation and planning session, regular meetings and in holding general assemblies. What is ironic though, they have only fairly implemented in the formation of fisherfolk organizations. The value of community commitment and participation in decisions making and in its implementation, resource management consider not only the biophysical aspects of resource management but the social, economic and legal implications. Moreover, the consideration of how these would contribute much to the organization of communities to improve livelihoods and protect coastal resources [10]. Related to this, capacity building programs are pre-determined by the LGUs. Thus the conduct of training needs assessment (TNA) to identify appropriate thematic training and seminars were reasonably implemented while monitoring of the FOs organizational development and the actual conduct of training were moderately implemented. Through thematic some training courses, stakeholders gained the capacity to promote interaction among state interests, government and their communities since they live in connection with the occupations and dynamism of the coastal area. Moreover, capacity building based on the needs of the people is the basis for natural resource protection and for improving the quality of life of coastal dwellers [11].

Initiatives on environmental protection and management are focused on patrolling activities, the establishment of protected areas and in the rehabilitation of the mangrove forests and the coral reefs. These indicators were implemented by the LGUs with the hope that these will rehabilitate the profoundly poor condition of the coastal environment. The basic sector could do the protection and management of the resources as long as they are capable and had been devised on the concepts and principles of paralegal formation process, tactical sessions, constituency building and networking [12]. This will prepare the basic sectors in facing their adversities during patrolling and surveillance activities in the field.

Rehabilitation efforts are usually based on the research conducted by LGU-commissioned research institutions such as BFAR. Results of these studies are said to be accessible in the database of the LGUs and this indicator was moderately implemented. Although formation and training of local researchers from the communities were only fairly implemented, it is still worth mentioning that there is an attempt by the LGUs to promote participatory research in the municipalities. There is only need to enhance further the capacities of the locals on participatory research methods. The common aim of participatory research is to change social reality by insights into everyday practices that are obtained through collaborative research on the part of scientists, practitioners, service users and other stakeholders [13].

Provision of livelihood projects is crucial in CRM because it will augment the income of the fishing families and at the same time divert the fisherfolks from fish capture thus providing enough time for the coastal resources to regenerate. Provision of capitalization, technical assistance and in strengthening the capacities of the FOs in operationalizing livelihood projects was moderately implemented. However,

the market linkage has been fairly implemented since the LGUs have difficulty in finding better markets where they can introduce and sell the local products. Hence, the FOs maximize the opportunities to get possible buyers during aqua-trade and agri-trade fairs. One of the major dilemmas of using rural commons for industrial uses in developing countries relates to the failure of the state to evolve an agreement on distributing property rights the local and industries sector in a manner that sustains livelihoods and ecosystems [14].

Regarding market linkage, although the LGUs are fairly rated, they implement concerning partnering with different NGAs and NGOs. These organizations usually have implemented or currently implementing CRM projects in their municipalities. According to [15], coastal protection underscores the need for community-based processes that transcend understanding of conservation measures but also invests in sustainable, operative and trustful working relationships, as well as the urgency of interdisciplinary approaches in ensuring effective design and implementation of fishery management tool. It is emphasized that for CRM to succeed, all stakeholders must be committed and engaged.

The difference of LGUs CRM initiatives implementation level revealed an F-value of 12.038 and a p-value of 0.001 (table 1). This indicates that the implementation level of the given initiatives was very highly significantly different.

Table 1. One-way analysis of variance of the CRM initiatives among LGUs in the adjacent municipalities in Camarines Sur, 2017.

Sources	Sum of Squares	df	Mean Square	F	Sig.
Between groups	9.632	2	4.816	12.038	0.001
Within groups	6.001	15	0.4		
Total	15.634	17			

Since there is a very highly significant difference, Scheffe's test was made to determine where lies the difference. Among the comparisons, Calabanga and Tinambac (MD = 1.54000; Sig. = 0.003) and Tinambac and Siruma (MD = 1.56333; Sig. = 0.003) displayed significant difference. On the other hand, the comparison between Calabanga and Siruma was found to be non-significant.

Table 2. Scheffe's test of the significant differences of CRM initiatives in the adjacent municipalities in Camarines Sur, 2017.

(I) Municipalities	(J) Sum of Squares	Mean Difference (I-J)	Sig.	Stat. Sig.
Calabanga	Tinambac	-1.54000**	0.003	Highly significant
	Siruma	0.02333	0.998	Not significant
Tinambac	Calabanga	1.54000**	0.003	Highly significant
	Siruma	1.56333**	0.003	Highly significant
Siruma	Calabanga	-.02333	0.998	Not significant
	Tinambac	-1.56333**	0.003	Highly significant

The fishery sector is considered as the poorest sector in the country according to the National Anti-Poverty Commission (NAPC). This was shown in the results in the economic condition of the respondents that the highest monthly earnings of fisherfolk range from Php 5,501 to 6,500 only, which is below the expected income to meet their basic needs. According to the Philippine Statistics Authority, its 2015 census said that a family of five must earn Php 9,064 monthly to meet its food and non-food needs. In 2012, fisherfolk along with the farmers and children consistently were posted in the substandard from other nine basic sectors in the Philippines [16].

The common fishery-related issues and concerns in the coastal areas are that of commercial fishing and the use of active gears in the municipal waters. Most of those violators are from their neighboring towns and as far as Quezon Province. On the other hand, fishpond conversions threaten the biodiversity of the mangrove forests in the three municipalities. Although some respondents said that they do not tolerate this illegal conversion, there are still some residents who insisted on constructing illegal fish ponds. Aside from the above environmental issues, waste disposal in the coastlines and beaches are becoming a regular thing in the coastal communities. Although the LGUs have already a solid waste management ordinance, there are still households who throw their garbage wherever they like.

Fisherfolk organizations are well represented in the Municipal Fisheries and Aquatic Resources Management Council (MFARMC). They are mandated by law to provide recommendations to the Sangguniang Bayan (SB) to address fishery issues and concerns that affect the lives of the fisherfolks (Sec. 73, RA 8550). Most of those issues that are being addressed in the MFARMC are managing protected areas and illegal fishing inside the municipal waters. Most of their recommendations are considered and enacted into law by the SB. In a governance context, no single organization has surveillance across the variety of interests involved. However, the challenge remains as for how to reach beneficial social goals by negotiation and to balance these overlapping [17].

In consideration of the results stated herein, a CRM Monitoring and Evaluation (M & E) model was developed to guide the LGUs and to strengthen its initiatives on CRM. M & E are two different management tools that are closely related, interactive and mutually supportive through routine tracking of project progress; monitoring can provide quantitative and qualitative data useful for designing and implementing project evaluation exercises which can refine strategies and can be further developed or improved [18].

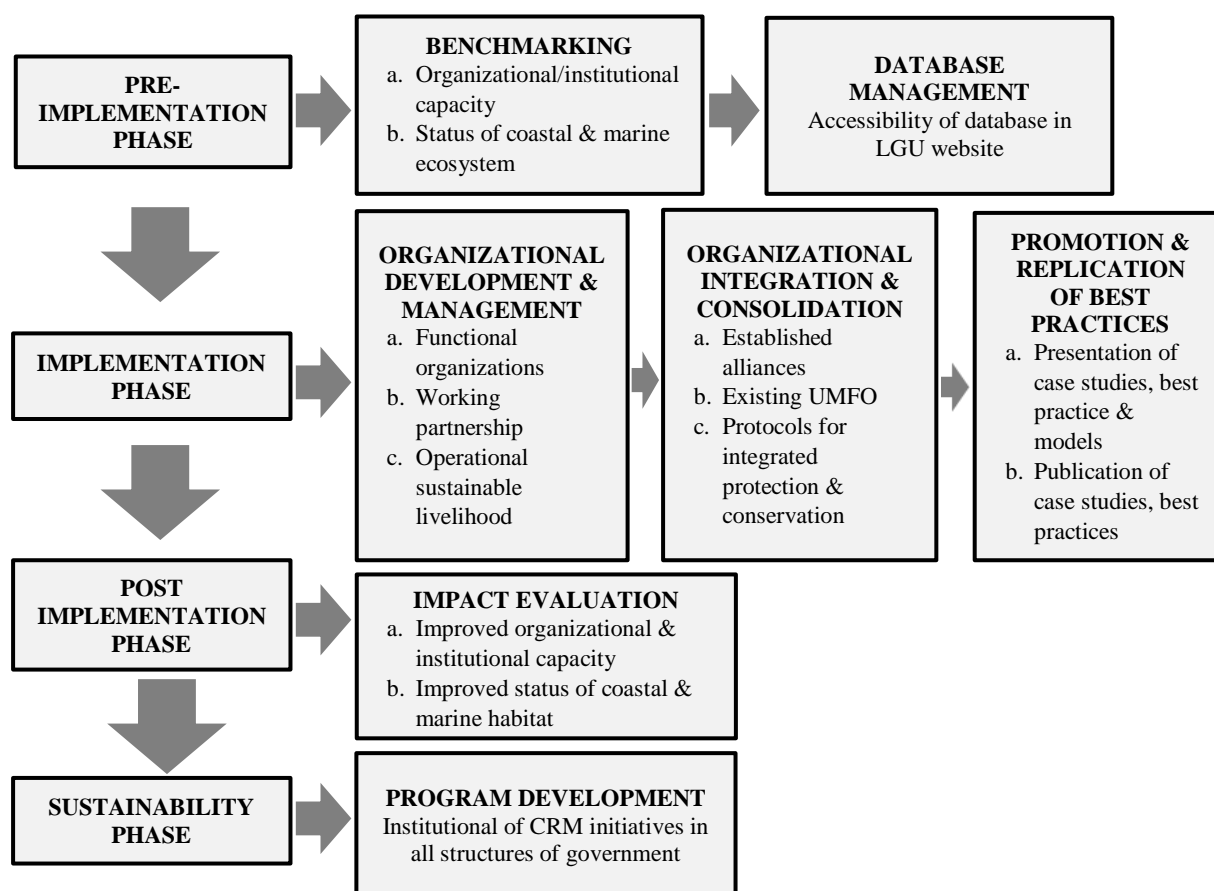


Figure 1. CRM Monitoring and evaluation model for the three (3) adjacent municipalities in Camarines Sur, Philippines.

4. Conclusion

There is a need to strengthen the initiatives of the LGUs on the various components of Coastal Resource Management. The low or moderate level of implementation as revealed in the study can be attributed to the lack of scientific and baseline data such as community needs assessment which can be used as a basis for identifying appropriate strategies to resolve the varying issues and problems encountered by the coastal communities. Community consultations are also important to make the initiatives more relevant and responsive to the needs of the fisherfolks. The LGUs' CRM program implementers must study CRM responsive activities to compliment NGOs initiatives for a sustainable CRM among municipalities.

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