



Formulating an Early Stakeholder Involvement Plan for Marine Protected Areas (MPA) in Catanduanes Island, Philippines

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Abstract

This paper presents an early stakeholder involvement plan using *SID-SIN-SEN* scheme [*Stakeholder Identification (SID) - Stakeholder Inputs (SIN) - Stakeholder Engagement (SEN)*] for planning and implementation of marine protected areas (MPA) in the typhoon-prone island province of Catanduanes Island, Bicol Region (Luzon) in the Philippines. An early engagement plan is presented for (1) Agojo Point Fish Sanctuary and Marine Reserve in San Andres as to stakeholder's involvement and management; and (2) for preparing an enforcement plan of the MPA in Kalapadan Bay Area (KBA) of Baras town. This stakeholder involvement plan explored the importance of identifying the stakeholders, linking their inputs and engaging all major and minor stakeholders in the co-management process. The involvement plan developed from the devised scheme can help MPA managers and academic institutions in developing MPA management plans and monitoring stakeholder interactions in marine space protection of the island province and possibly other locations by using stakeholder theory and stakeholder analysis.

Keywords: conservation, marine spaces, fish sanctuary, planning, stakeholder.

Introduction

Marine protected areas (MPA) in the Philippines have been established for conservation and protection of fishery resources/biodiversity, for cultural and historical purposes, for aesthetic reasons, and for research and educational concerns (Miclat & Ingles, 2004). For most (about 70%), however, the major objective is to protect resources within the MPA to enhance fisheries production in neighboring waters (Campos & Aliño, 2008). Reports on the MPAs in the Philippines (Campos & Aliño, 2008; Kelleher, Bleakley, & Wells, 1995) reveal that in terms of management there are only about 10 to 15% of these more than 1,300 protected areas had been managed effectively. Horigue *et al.* (2012) discloses that about 20-30% of the MPAs are now effective. Weeks *et al.* (2009) revealed that despite the success of community-based approaches to the MPAs in the country, the strategy will not be able to meet the conservation targets. While there is an urgent need to scale up MPAs to form networks in order to improve individual MPAs in Catanduanes and elsewhere, there are other more pressing issues that must be addressed. For instance, enforcement and implementation of

MPAs legalized under the local governments of the island province in the Philippines have to be carried out. Likewise, aspects on understanding the status of stakeholders' management and stakeholders' engagement in the MPAs have to be dealt with prior to the creation of alliances or networks. Several reports disclose that collective action and sharing of information can improve effectiveness in managing MPAs. For instance Fox *et al.* (2012) describe stakeholder processes to region-specific challenges in MPA network planning.

Stakeholder involvement is largely recognized as a mechanism that can help in managing MPAs effectively and efficiently as participatory/collaborative/co-managed relationship between the municipal (town) or barangay (village) local government unit, the local people through the various organizations, peoples' organizations (POs), intervening institutions and the local stakeholders who can significantly contribute to solving complex management planning and implementation questions.

Following the principles of stakeholder involvement (NATREG, 2010), this paper recognized the three principles of (1) "Efficiency (requiring clear and well-designed procedures as well as a stakeholder

engagement plan for informing, consultation, and active participation of stakeholders in decision-making”); (2) “Inclusiveness and transparency (requiring an open and transparent engagement process and inclusion of a wide range of participants from the community with special focus on the proper identification of major and minor stakeholders and appropriate consultation processes”); and (3) “Effectiveness (requiring that stakeholders’ views are taken into account through their inputs and integrating these to the over-all involvement process to link the major stakeholders, minor stakeholders and intervening stakeholders into the management planning and implementation to have the real impact on plan or policy development and implementation)” (NATREG, 2010).

Stakeholders’ engagement in MPA is critical for ensuring the long-term success of this conservation tool of having MPAs in this island. It is said that participatory decision-making leads to smoother enforcement of MPAs legalized by local governments. Stakeholder engagement is central to MPA planning (Gilliland & Laffoley, 2008; Pomeroy & Douvère, 2008; Fox *et al.*, 2012) as well as broader coastal and marine spatial planning. There are many ways to involve stakeholders, and approaches that vary depending on planning requirements and regional characteristics (Halpern *et al.*, 2012; Leslie, 2005). Expectedly, there will be enhanced compliance with regulations for community managed MPAs and at the same time, while also promoting the livelihood and ensuring equity or fairness among the local communities whose income and livelihood activities are affected. In spite of the evidences that effective stakeholder engagement in MPAs in other parts of the country, reports about stakeholder management and engagement about MPAs are few and need to be probed so that MPA enforcement will not fail because of poor involvement processes.

This study developed a stakeholder involvement plan for the management of MPAs in Catanduanes Island in Luzon, Philippines. Specifically, historical aspects on the creation and practices in stakeholder involvement process were analyzed in the MPA of Agojo, San Andres (Lat. 13.67°, Long. 124.1167°). This paper develops an early stakeholder involvement scheme for other MPAs and particularly for Kalapadan MPA in the municipality of Baras (Lat. 13.64306; Long. 124.3613) in northeastern portion of the island that focus on stakeholder identification and analysis and integrating and linking stakeholders’ inputs or contribution and engagement process to the management plans (Acronym: *SID-SIN-SEN*). This exercise was undertaken to assist the municipal planning development officers (MPDO), municipal agriculture officers (MAO, upcoming MPA managers, officers of the mangrove associations, the fisher-folk leaders, local village councils, researchers on MPAs, school administrators and other leading stakeholders with future strategy formulation and implementation

of the protected area management or zoning plans.

Materials and Methods

The study followed what Glass *et al.* (2013) emphasized on the need to integrate a many different disciplinary perspectives when translating sustainability principles for application in the ‘real world’ that is emblematic of a shift towards transdisciplinarity research approaches (Reed *et al.*, 2009; Pohl *et al.*, 2010). A participatory research process was followed here that includes a series of field work, one-on-one interviews, focus group discussions (FGD), general assemblies and council meetings for the re-development of the management plans. Appraised extant literature and gathered official documents from the government units, conference reports, unpublished or under review papers and news clippings about the existing MPAs on involvement and decision-making processes in the island for the documentary analysis. Documentary data were organized from the materials on relevant local legislations or ordinances related to MPA establishment, management and institutional collaboration. Table 1 shows the summary of the methods, activities and schedule research work undertaken.

In preparing the stakeholder involvement plan, two MPAs (one implemented and the other to be implemented) are considered in this paper, namely: Agojo MPA and Kalapadan MPA that include marine reserves, sanctuaries, and no-take areas. Informant interviews were done among 50 fishers-part-time farmers and 85 women leaders (members of mangrove association). Moreover, qualitative informant interviews were carried-out using semi-structured questionnaire in the said MPAs. These interviews centered on stakeholder management particularly on stakeholder identification (SID), stakeholder inputs (SIN) and stakeholder engagement (SEN). The methods used to achieve these goals also included stakeholder meetings conducted three times, as organized by the local government units involve in the study. In addition, key informants consisted of local government officials, members of mangrove associations, women groups, non-government organizations, youth organizations and academics from the local state university.

An examination of the two MPA examples (the Agojo and Kalapadan) was done in order to demonstrate how these stakeholder involvement practices were applied in different contexts. Lessons learned through this inquiry informed a set of recommendations for the MPA stakeholder s’ management of the province for possible scaling up of MPA network planning in the island or in the region. In taking the information in this paper, it is expected that the province could develop a strong stakeholders and public participation strategy for MPAs.

After designing this process, it is being proposed

Table 1. Methods and research activities utilized in the study

Methods	Activities	Schedule
Preparation	<ul style="list-style-type: none"> ▪ Literature review ▪ Participation observation ▪ Informal key informant interview ▪ Village selection ▪ Interview guidelines preparation 	September 2014 to January 2015
Key informant interviews (total of 45 fishers and part-time farmers and 85 women leaders, local government officials; and members of mangrove associations, non-government organizations, youth organizations and academics from the local state university)	Interviewing elderly people, local village leaders	January 2015
FGD (4 sessions)	Mixed group discussions	January & May 2015
Data processing	Qualitative data processing	June 2015
Preliminary research integration	Writing up literature review	July 2015
Second Research Integration	<ul style="list-style-type: none"> ▪ Qualitative Data Processing ▪ Revising write-up ▪ Further literature review 	February 2015 March-June 2015
Final Research Integration	Final revision of write-up Final literature review	July- August 2013

here as an Early Stakeholder Involvement Plan for MPAs in a unit of the planned multidisciplinary research institute on water, renewable energy, environment and climate with the university's Natural Science Department (NSD) College of Arts and Sciences (CAS) as the lead unit. Stakeholder involvement in MPA combines policy-oriented organizing and consensus-building functions with mixed-methods approach. From the start, the goal is to help shape sound policy based on careful observation and analysis of the research team for this inquiry.

Results and Discussion

The MPAs of Catanduanes.

Agojo Point Fish Sanctuary and Marine Reserve (APFSMR). There are two coastal villages or barangay, the basic political unit (BPU) of the Philippines located at the Agojo peninsula: the villages of Agojo and Tominawog with a combined population of about 25,000 people. Approximately, one-third of the male population is full-time fishermen and the remaining two-thirds are part-time fishermen. Majority of the fishermen in the surrounding villages rely heavily their fishing activity on the area. Due to the fact that 70% of the entire population of San Andres live in the coastal villages, which rely heavily their source of food and livelihood from the harvests at the municipal swamps, estuaries and coastal waters, using fish gears (hook & line, gillnets, spear guns, fine mesh nets, deep sea spear guns with compressors), the fishing activity puts pressures on the coastal area. These practices deplete the coastal resources of the municipality which

threatened to decreased fish availability. Having this situation, the population appears to be nutritionally and economically-threatened (Vargas & Asetre, 2010).

Coastal Resource Management. In order to avert the situation in the study area, resource conservation initiatives were undertaken. Hence, the adoption of the Coastal Resource Management (CRM) plan, and the declaration of the Agojo MPA which has a core zone of 72 ha located and an expanded reserve extending to 386.625 ha of coastal areas of the adjoining villages of Bislig, Cabcab, Bagong Sirang and Catagbacan in the municipality.

A document on CRM was prepared for the municipality of San Andres with the assistance of Care Philippines during the infancy period. This ensured the framework for implementation and management of the MPA under consideration. It is pertinent to note that the Office of the Municipal Agriculture (MAO) is the rightful office to manage and facilitate the different programs and projects this MPA in coordination with the different line agencies. The agricultural technician for fisheries at the MAO in San Andres, Catanduanes was designated as the project manager. Deputized Fish Wardens (DFWs) were hired by the LGU of San Andres. In support of the establishment of the MPA, the Development of Sustainable Technology and Livelihood System were incorporated in the management and conservation program. This livelihood system has included the mariculture, aquasilviculture and seaweeds processing projects for the local communities.

Policy and Ordinances in San Andres, Catanduanes. On policy approach related to governance, the municipality of San Andres approved village resolutions and ordinances in support of the

MPA in Agoho Point. Examples of these policy interventions are: (1) Ordinance authorizing 60% of fine/penalty paid to LGU by violators at the sanctuary (Agoho MPA) to go to the apprehending officer (Municipal Ordinance #4 s. 1999); (2) amending and approving sets of rules and regulations covering the conduct of ethics of members of ACOMDO (Resolution # 1 s. 2001); (3) ordinance prohibiting illegal acts in the sanctuary; (4) village ordinance declaring the last Sunday of the month of December as "People's Day" and conduct of "Atag" (Volunteer) System. This indigenous system occurs when the BPU constituents offer free labor in support to the conservation programs and projects at the sanctuary. On corrective programs, site survey and resource assessments at the Agoho MPA had been conducted by BFAR, Care Philippines, ICLARM and Bicol University which were made available to the local communities through the MAO in San Andres. Likewise, the Comprehensive and Sustainable Development CRM Plan was prepared by MAO based on the framework produced by Care Philippines was submitted for the action/implementation of BFAR (Vargas & Asetre, 2010; Aldea & Masagca (2016).

Kalapadan MPA in Baras, Catanduanes, Philippines

The Kalapadan Bay Area (KBA) in Baras, Catanduanes (Lat. 13.64°, Long. 124.36°) is now facing serious problems, including stress from pollution degradation and depletion of resources, including species conflicting uses of resources; and damage and destruction of habitat. Because of these problems, Kalapadan MPA in Baras was enacted by a Municipal Ordinance in 2004 and is currently being enforced that involved four barangays namely: Buenavista, Moning, Osmeña and Poblacion. The incumbent Mayor, Chito Chi is spearheading the enforcement with the Municipal Office Planning Officer and with the technical assistance from the island's local university through a faculty committee created by the university president. Consistent to the two primary purposes in IUCN resolution 17.38: (1) to focus global attention on the urgency of the need for Marine Protected Areas as part of broader programmed to conserve the marine heritage and life-support system of the world and (2) to focus on the various actions that are necessary to ensure that marine protected areas successfully make the transition from the technical processes of planning to the reality of long-term implementation; this MPA being enforced initially considers the high degree of linkage between marine environments and their connection to terrestrial activities and impacts imposes an urgent need for integration of protected area management and overall conservation strategy. With IUCN's policy (Kelleher and Kenchington, 1992) Kalapadan MPA intends to: (1) maintain

essential ecological processes and life support systems; (2) ensure the sustainable utilization of species and ecosystems; and (3) preserve biotic diversity.

Stakeholder Identification (SID)

A stakeholder of the two MPAs under study is any individual, group or community living within the influence of the protected marine space or likely to be affected by a management decision or action of the LGU, and any individual, group or community likely to influence the management of the site. Stakeholders in this paper that delve on the involvement process are represented in the main stakeholder groups: local people or the public, private individuals or the business sector, and civil society.

When developing a stakeholder involvement process it was important to understand who is or who could be affected by the decisions and actions taken by the municipalities. This is within the notion of who has the power to influence and provide livelihood opportunities for the reduced sources of food and income for the local people. Prior to SID, the major stakeholders were carefully identified in order to ensure the representation of different sectors whose interests were directly or indirectly affected by the actions of the LGU officials. These are actually those who have information, knowledge and expertise about the issue, or can control or influence the implementation instruments relevant to the issue (NATREG, 2010).

One most important component in stakeholder involvement process is the identification of the major and minor and intervening stakeholders in the MPAs under enforcement. During the early years from 1993 to 1999 of Agojo MPA, the stakeholders were identified based on the criteria set by the LGU and NGO which spearheaded and prepared the management plan. The major stakeholders include the members of the PO or ACOMDO with the LGU and other groups in the barangay. The minor stakeholders include women groups, barangay officials, SK and local people from the neighboring barangays (e.g. Tominawog, Comagaycay and Catagbakan). The other minor stakeholders include the staff of provincial environment office, the provincial agriculture office, fisheries and aquatic resources bureau, schools around the area, small business operators, excursionists, researchers from the academics, divers, fishers from other barangays (=villages) and beach operators. In other reports, stakeholder multiple groups include government agencies, stakeholders, and other interested parties (Briot *et al.*, 2011; Syms & Carr, 2001; Dahl-Tacconi, 2005).

In Kalapadan MPA, SID was made by the technical working group composed of the university faculty members and planning staff of the municipal

mayor that included the councils of four barangays, fishermen's council (FARMC), the fishermen group, farmers' organizations, women, mangrove organizations, bay fishers and anglers. The minor stakeholders are the tourists who go to the famous Puraran Pacific beach resort, surfers, anglers, boat operators, businessman around Kalapadan Bay area, boat operators, bus and jeepney operators, researchers, environmentalists and faculty/students of the university and other schools of the island.

Stakeholders' identification (SID) of issues, groups and strategies for the Agojo MPA was done through the facilitative discussions or forums during informal talks and LGU council meetings. Identifying specific roles of the main and minor stakeholders was known to be important for both the Agojo and Kalapadan MPAs as it appears to have contributed initially in the success of managing the marine spaces.

Stakeholder Inputs (SIN)

SIN includes integrating and linking stakeholders' inputs or contribution to the management plans for the said MPAs. The component SIN for the development of the management plan was a complex one considering that four (4) villages (= barangay, basic political unit of the Philippines) are to be involved. The areas covered by Kalapadan MPA are characterized by multiple users and values with many individuals or social groups belonging to a number of sectors. Pollnac (1982) and Pollnac *et al.* (2001, 2002) underscored the importance of stakeholder involvement through their inputs (SIN) in MPA management. An increasing body of literature on stakeholders' opinions in relation to MPA performance as reported by Suman *et al.*, (1999) are now in place. SIN or the involvement in the development of MPA performance indicators are also increasing such as that of Dahl-Taconi (2005), Vasconcelos (2011), Dalton, Forrester, & Pollnac (2012) and Heck, Dearden, & McDonald (2012). More recent papers on the stakeholder inputs come from the works of Stevenson, Sikich, & Gold (2012), Smith (2012), Allegretti, Vaske, & Cottrell (2012) and Jentoft *et al.* (2012).

During the interviews, the respondents concurred to the idea that inputs of stakeholders can provide insights to the multiple uses of the local marine space issues in the island. It is most highly likely to be observed in Kalapadan MPA in the ensuing years if fully implemented by the local government units and local communities. At the time that Agojo MPA was established in the 1993, it was known that policy decisions were based upon the context of "accurate understanding of the local social and environmental condition". As suggested by Pomeroy & Douvere (2008) such accuracy can lead to effective and efficient MPA implementation. However, inputs were based on what the local people, the PO or other civil society organizations that will be

getting from the arrangements of contributing organizations. These are the benefits and other livelihood opportunities.

Stakeholder Engagement (SEN)

SEN is a means to enable local people to become involved in the planning and delivery of innovative local solutions to local problems. Stakeholder engagement process provided stakeholders with the opportunity to state their opinions, create the opportunity for debate during public meetings, empower stakeholders in decision-making, and ensure that stakeholders have a sense of ownership in the decisions taken particularly when ordinances were approved. During the field work, informants revealed that to be engaged means an opportunity to get informed about the over-all aspects of marine space protection and over-all ocean governance, to learn and to deliberate about concerns of the locality. In this approach, stakeholders communicate not only with decision makers but also among each other both formal and informal session.

SEN or participation at the early stages of the planning process is particularly useful in order to understand concerns towards the establishment of a MPA (Salz & Loomis, 2004). This concept of *SEN* refers to how reinforcement can the value organizations like the mangrove associations known as ACOMDO in Agojo for protected marine spaces gain from working with their stakeholders, and ensuring that sustainability advantage of the people organization managing the protected area. Heuristically, the POs in Agojo and at present ACOMDO experience numerous setbacks which were due to the (1) inappropriateness of the management plan prepared by an NGO for the major stakeholders, (2) political intervention which is an inevitable circumstance that will have immediate and long-term effects, (3) organizational capability limitations, and (4) inadequate community assets to implement the management plan for Agojo MPA. Based on the cyclic analysis and iteration, it was more likely (based on anecdotal materials) that Agojo had some contributions to the limitations of "paper parks" by not focusing on ways of conducting transparent processes. Flexibility in the implementation of the plan appears to be one of the ways by which little successes have been achieved in the management of the older MPA in the island. The local focal persons or community organizers appeared to have not exercised independent facilitation as asserted within the context of too much 'political intervention', patronage politics with the presence of local political 'riders' known as 'exploiters' in the island and undefined practice political tactics of partisanship.

The practice in SEN cannot achieve certain successes if planners and implementers of the two MPAs with the management plans will fail in terms of the ability to incorporate the socioeconomic data.

These are needed by the university research team members in using the SID-SIN-SEN scheme. Added to this is the utilization of local knowledge which cannot just be determined by having concisely and succinctly or one- to two-shots of visits of the organizers. The capacity of the research team of living with the local people at a longer period can enhance engagement of through constant and greater interaction. For instance, precise data on the actual family or household incomes, determination of actual benefits of governmental programs such as 4Ps (a pro-poor program of the Philippine government) and data on the benefits of the livelihoods provided by different agencies will form part of a highly acceptable socio-economic data.

In each of the four barangays in Baras, the community coordinator is being trialled to coordinate the participation of a wide - range of stakeholders including local tourists, surfers or divers who frequent beach resorts, fishermen from other localities, conservationists/environmentalists of the island, local officials of the other barangays in Baras, business owners in the Puraran and Kalapadan Bay Area (KBA) authority; and coastal residents, who have recommended for the establishment of Kalapadan MPA.

Stakeholder Management

The concept of stakeholder management as used in the present study attempted to incorporate stakeholder identification (*SID*), stakeholder inputs (*SIN*) and stakeholder engagement (*SEN*) (Figure 1). Based on the combined interviews carried out among the main stakeholders (n=46) and minor or external stakeholders (n=12) there was a general consensus on the positive relation to sustainability of protected marine spaces when communities and local government units are actively engaged in building stronger relationships with their external stakeholders – their local NGO partners, government unit collaborators, some funders of special projects, benefactors/donors and the local people. Further, the informants/respondents believe that these relationships in turn can help these two MPAs (older and younger) of the island province find and pursue opportunities for effective and efficient management resource efficiency.

Starting 1993 until 1998, stakeholder management aspects were analyzed based on the management plan for Agojo MPA prepared within the concept of LGU/NGO-PO arrangement. Several papers were scanned about stakeholder management in Agojo MPA (see earlier papers of Bradecina & Nieves, 2006, Soliman *et al.*, 2004; Masagca, 2006; Masagca & Masagca, 2009; Masagca *et al.*, 2016; and Vargas & Asetre, 2010). Other extant literature published in Ocean & Coastal Management or the Marine Affairs journals include some details aspects of stakeholder management of this MPA which is

currently under intensive reviewing.

Several themes were used in the analysis as to the community engagements from the process of establishing and implementing the Agojo MPA from community entry with the appraisal, planning with financing arrangements, formalization with the ordinance and implementation with the adjustments. Responses of the main stakeholders strongly agreed that throughout these steps followed in Agojo, stakeholder management was ensured to the fullest extent as to the design of the stakeholder scheme of *SID-SIN-SEN*, specifically on the three elements of stakeholders organizing and convening (*SID*), integrating the inputs (*SIN*) and managing stakeholders' engagement (*SEN*) from the different major and minor stakeholders into the MPA design process for this typhoon-prone island.

With the gradual changes as to the increasing responsibility and commitment of the stakeholders, the field workers of the LGU and NGO provided the necessary assistance so that engagements of the local people and members of the mangrove organization do not wane. At the same time that the LGU-NGO are engaged in community building capacities, the external or minor stakeholders started in assisting the management of the Agojo MPA by providing varied inputs such as livelihoods, microfinancing and other community projects. However, the informants expressed during the interviews and discussions that a greater number of external institutions as minor stakeholders performed like the Filipino concept of “*ningas kugon*” which means that at the earlier stage, there is a very high commitment or enthusiasm being displayed or and later on, their engagements slowly diminished within 1 to 2-year period which had some lasting effects on the main stakeholders. This lowering of intensity in the engagement of intervening institutions like academic institutions can be seen from the lack of a functional contract or MOA for at least 2 years to ensure continued community engagement with within the context of accountability if non-compliance occurs. In the case of academic institutions, the semestral and school year phasing of activities could be one valid reason why these institutions were noted by the stakeholders to have reduced commitment. After these institutions have already gathered and obtained data for research purposes or carried out extension sessions, the stakeholders who were interviewed expressed concern that they tend to disappear from their view. This tended to have contributed immensely to the negative attitude of the local people towards the presence of university researchers in the said MPAs. Looking in the frames of understanding used by university researchers that “scientific evidence for MPAs is limited and patchy” (Caveen *et al.*, 2013), local people have the tendency to dislike the university researchers?

The main stakeholders claim that intervening

institutions like state universities and the different governmental agencies like the Philippine Department of Science & Technology (DOST) and the country's fisheries department (BFAR) appear to have "used" only the MPAs in order to serve their institutional interests and do not look into the general welfare or longer commitment to the whole community. Truthfulness about this finding and the need to validate by using triangulation during the study was vigorously pursued with repetitive interrogation. After a series of discussions and informal meetings the explanation like the very limited role of academic institutions as a technical support and also biased to the monitoring and evaluation phase of the project, the stakeholder respondents finally agreed that universities have limited resources (both time and funding) so that the longer gestation period from 3 to 5 years in MPAs as to the achievement of the objectives will not guarantee for the full commitment owing to the other functions of the faculty involved in the MPAs. There could be some truth about the other intervening institutions but the researchers consider these observations to be anecdotal and cannot be considered plausible generalizations.

Available literature reveals that well-designed MPAs have been shown globally to increase the abundance and diversity of organisms inside as well as outside their boundaries as noted by Stevenson & Gold, (2012) and appears to be true in Agojo, San Andres, Catanduanes (see Vargas & Asetre, 2011). Anecdotal reports and one-on-one interrogation of the newly re-organized mangrove association reveal the increase in population density of rabbit fishes (Siganidae) and other sea grass dwelling fishes. Increased population density of the gastropods, *Cypraea* and *Haliotis* was also known as well as other bivalves of the genus *Tridacna* and *Pinctada*. Questions whether these bio-ecological changes will have relations to stakeholder management need to be addressed but will be difficult to probe. Several studies on the use of nektons or fishes as indicators of success in mangrove rehabilitation deserve further look as what Caveen *et al.* (2013) stressed that "scientific evidence for MPAs is limited and patchy" for those that include mangrove reserves.

Proposed Early Stakeholder Involvement Plan for Mpas in Catanduanes

The results of the analysis in the present study demonstrate that the stakeholder scheme developed here to be a simple one. This can help both the researchers and the various stakeholders understand the social dimensions of managing MPAs in the island, even when the concept of climate change adaptation, mitigation and resilience is about to be integrated. Divergent opinions on the issues related to stakeholder involvement at the time that these MPAs were established and implemented the management plan which the main stakeholders did not prepare and

experienced failures in the implementation as seen by the dissolution and moribund a mangrove association (ACOMDO). The analysis of the inactive condition of the main stakeholders in Agojo MPA can be seen from the low levels of knowledge of the intervening institutions on the real feeling and misplaced information may be of strategic importance in reducing conflict.

It is widely accepted that *SEN* is "something that we do in order to improve site management". Elsewhere, stakeholder engagement is in the function of preparation of a good-quality management plan which is based on the needs and priorities of relevant stakeholders (NATREG 2010). This inclusive approach takes account of the interests and encourages involvement of stakeholders in all aspects of management planning.

Relatedly, experience in the implementation of ecosystem-based management (EBM) has shown to be most successful when a great diversity of stakeholders is engaged early in a process, as opposed to a more top-down decision making process (Stevenson, Sikich, & Gold 2012). In the case of the present enforcement of Kalapadan MPA, earlier stage followed the top-down decision making process and later on moved into the bottom-up process in decisions by fostering meaningful participation, engaging early and establishing clear objectives. The need for an early engagement is deemed important when this new MPA is about to enforced.

From 1993 to 1996, then 1998-1999 and from 2009-2012, the corresponding author (JTM) and all the authors others have gained visibility in the Agojo MPA. The work of Bradecina and Nieves (2006) described the MPAs in the island which include aspects of engagements that involve the intervening academic institutions.

With the invitation of the Baras Municipal Office for Technical Assistance dated May 15, 2012, a committee was created by the university President to work on the CRM project of the municipality that includes the enforcement of Kalapadan MPA. As a response to this request of the municipal LGU, technical committee started to design ways on how to address the myriad of issued to be addressed in Kalapadan Bay Area CRM project.

The university's commitment for technical assistance particularly on the enforcement of an MPA in the KBA yielded a small component for inclusion in the 2012-2016 FYSDP on the creation of a multidisciplinary institute for water, renewable energy, environment and climate within the Ecoville Vision 2020, which will work for a *Water Policy Lab for Rivers and Marine Spaces*. This proposed research lab hopes to integrate technical assistance projects and fisheries R&D particularly on the island's MPAs. As management objectives for the younger Kalapadan MPA will depend on the specific ecological, cultural or socioeconomic problems of the municipality that this MPA is meant to improve, the purpose, type, size

and shape and the concept is currently being finalized by the technical team. This is so since MPAs cannot be generalized (Agardy *et al.*, 2003) and the situation of Agojo MPA is different from Kalapadan MPA in many respects but can be integrated in a unified protocol for the early engagement of stakeholders using the *SID-SIN-SEN*. The case of Agojo MPA which has a PO just recently organized with the same President and Kalapadan MPA which will have a management plan to be formulated as well as stakeholders identification and engagements, the necessity to design an early engagement protocol for both MPAs clearly suggest the urgency. In the design of a new MPA such as the enforcement of Kalapadan MPA, the local context according to Heck, Dearden, & McDonald (2012) must be clearly understood and taken into consideration in the development of the goals and objectives. Likewise, clear statements are to be developed, at the early planning stage that will indicate what this new MPA is supposed to achieve and how can it be effective with the early stakeholder engagement. While several cases can be found in different islands of the Philippine archipelago, this paper will subscribe early stakeholder engagement patterns and models from various sources. With the extensive literature reviews, several models can serve as guides as those propounded by various MPA specialists whom some of the authors of this paper have personal or direct contacts. In this way, establishing networks can be done with ease and include research components to increase productivity in refereed publications.

While Kalapadan MPA has just been enforced, we attempted to consider geographical framing as well as the geo-physico-ecological characteristics of the areas covered. These areas are vulnerable to certain threats and natural phenomena in the planning and management of MPAs. During the process we are currently suggesting to the municipality of Baras an approach that includes the integration and encouragement of stakeholders' engagement which

have very strong legal backings in Philippine statutes and policies related to CRM. We propose here the approach which is mainly composed of the marine spatial planning as suggested by Pomeroy & Douvere (2008). The stages of the planning process and the ways in which stakeholders should be included at each stage are as follows: I- *The MPA Management Planning Phase* (Major stakeholders will contribute to the setting of priorities, objectives, and the purpose of MPA management plan; and identify stakeholders who can assist to determine, organize or group, and rank management problems, needs, and opportunities in order of priority; II- *The MPA Management Plan Evaluation Phase* (Stakeholders of Agojo and Kalapadan MPAs will be engaged in the evaluation and choice of plan options; III- *The MPA Management Plan Implementation Phase* (Stakeholders of Agojo and Kalapadan MPA will be utilized in the community-based approach to enforcement in the areas covered); IV- *The MPA Management Plan Post Implementation Phase* (Major and minor stakeholders will be consulted about the overall effectiveness or performance in achieving goals and objectives of the plan.

The strategies formulated for the four-stage process will include *SID, SIN and SEN*. Table 2 shows the programs/activities and strategies for both Agojo and Kalapadan MPA. The formulation of the scheme and the strategies as discussed previously and the engagements will be expected to enhance the level of awareness and role of MPA in conservation of the island's sustainability as well as raising the community response level. Several references were used here such as (Pulina & Meleddu, 2012; Smith, 2012; Treffny & Beilin, 2011; Yang *et al.*, 2011; Salter, Robinson, & Wiek, 2010).

It is proposed that appraisal of the performance of the two MPAs in the next 2 to 3 years will include: I- *Environmental Changes* as seen in (a) biodiversity indices in aquatic resources, (b) reduced pollution as tested in the water and sediments, (c) seagrass and

Table 2. Stakeholder involvement proposed activities/strategies for 2 MPAs in Catanduanes Island, Philippines

<i>Stakeholder Management Component</i>	<i>Activities/Strategies</i>	<i>Locations and Target Actors</i>
Stakeholders Identification (SID)	interviews with potential stakeholders; meetings with the identified major and minor for stakeholders	Kalapadan Bay Area; Office of the Municipal Mayor of Baras; Catanduanes State Colleges
Stakeholder Inputs (SIN)	public consultation with the stakeholders; creation of a barangay-based consultative committee or site coordinators through the FARMC; interviews and clustered workshops for the POs and groups; capacity building; general workshop for Kalapadan MPA protected marine spaces	Project Management Committee of Kalapadan MPA; The MLGU Baras-CSC Technical Committee; and the Barangay Captains of 4 municipalities ACOMDO and Barangay Council of Agojo; Municipal LGU; Catanduanes State Colleges; MAO; DENR, etc.
Stakeholder Engagement (SEN)	In situ meetings, leadership trainings, study visit in other MPAs	All Major and Minor Stakeholders of Agojo and Kalapadan MPAs

Table 3. EARLY STAKEHOLDER INVOLVEMENT PLAN: Component on Performance Appraisal of Agojo Point Fish Sanctuary and Marine Reserve in San Andres, Catanduanes Based On the Local People’s Perceptions

Environmental Changes	Indicators	Data from Agojo MPA
Biodiversity indices in aquatic resources	Mean fish catch/unit effort; diversity fish resources	50% increase
Pollution as tested in the water and sediments	Total dissolved solids	25% Reduced
Seagrass and coral cover restoration	Percent seagrass and % coral cover	50% increase in seagrass beds; 25% increase in coral cover
Social, Health, Scientific Knowledge and Education	Indicators Used	Data from Agojo MPA
increase in scientific data about flora, fauna and microbial population,	Diversity of floral elements identified before and during engagement	Increase in number and size
	Diversity faunal elements identified before and during engagement	Increase in number and size
	Diversity of microbial population identified	Increase in number of
increase in number as to the usage of marine ecology data of the MPA,	researchers entering the sanctuary	Increase in number of researches Increase in number of birds sighted
	Sightings of birds , amphibians and other endemic faunal elements	Increase in presence of amphibians residing in the area i.e. monitor lizards
event management, leisure, recreational and tourismic events that involve the MPAs	Number of events Number of leisure and recreational activities Number of tourists	Increase in the number of events Increase in number of leisure and recreational activities Increase in the number of tourists visiting the area
Reports and publications of CSC about the MPAs	Reports published Number of Publications	Increase in the number reports published Increased in the number of publications
I. Benefits of the LGU and Economics of the Locality	Indicators Used	Data from Agojo MPA
Income of the fishers, Income from eco-tourism	Income derived from fishing Income derived from eco-tourism	Increased income of the fishers, increased income from eco-tourism
Organizational funding of the POs (ACOMDO)	Funding derived from the maintenance of the sanctuary	increase in the organizational funding of the POs (ACOMDO)
Efficiency of Managing the MPA	Indicators Used	Data from Agojo MPA
tourism ordinances enacted	Number of ordinances enacted	Ordinances enacted in the municipality were enforced in the sanctuary and as well as reenacted in the barangay
enforcement of fisheries and water laws	Number of fisheries and water laws enforced	Strict implementation of RA 8550 and RA 9003
improvement of stakeholder engagement	Stakeholders attitudes	Increased participation in the attendance and involvement in the management of the sanctuary
improved information dissemination about the MPA	Number of information dissemination on MPA	Increased in the information and dissemination campaign
monitoring of the MPA program/projects	Number of times MPA programs are monitored	4 times increase in the monitoring programs
fishery regulations enacted and enforced.	Number of fishery regulations enacted and enforced	Strict observance of RA 8550 in all the areas in the sanctuary

coral cover restoration; II- *Social, Health, Scientific Knowledge and Education* as shown in (a) increase in scientific data about flora, fauna and microbial population, (b) increase in number as to the usage of marine ecology data of the MPA, (c) event management, leisure, recreational and tourismic events that involve the MPAs, (d) number of publications of CSU about the MPAs; III- *Benefits of the LGU and Economics of the Locality* as determined

by (a) increased income of the fishers, (b) increased income from eco-tourism, and (c) increase in the organizational funding of the POs (ACOMDO and Kalapadan Organization; and IV- *Efficiency of Managing the MPA* as shown by (a) tourism ordinances enacted, (b) enforcement of fisheries and water laws, (c) improvement of stakeholder engagement, (d) improved information dissemination about the MPA, (e) monitoring of the MPA

program/projects, and (f) fishery regulations enacted and enforced.

Conclusion and Recommendation

The information gathered during the course of this study on stakeholder management with stakeholder identification, inputs and engagements project with the scheme *SID-SIN-SEN* provided significant insights into stakeholder views toward the efficient and effective achievement of the goals and objectives the MPAs under study. Of equal importance is the process itself on probing into what are in the minds of these stakeholders both main and minor or external intervening institutions fostered new relationships and perspectives among all the stakeholder participants, including the LGUs, peoples' organizations (but not with the NGOs which the researchers did not include as part of respondents) and the educational institutions. With some exceptions, stakeholders have developed certain indifference among the representatives of the intervening institutions knowing little about the ways to improve the management of MPAs by maximizing stakeholder engagements with properly designed management or zoning plans that will incorporate ways to generate funds for the MPAs and not rely on dole-outs as the historically accepted as anti-developmental. Some stakeholders have not yet fully engaged themselves in the management of MPAs and have not realized the emerging practice of converting their organization (POs) as the platform to generate income for the general operation of the MPA. They were understandably concerned and even worried about the coming in and out of external people or institutions as the minor stakeholders who suddenly visit the protected marine space for no reason at all but are willing to assist the management of the protected areas for sustainability. Political intervention and conflicts within the project management team of the LGU and the inability of MAOs to reach out as to the desired needs of the POs taking care of the marine spaces deserve further or another look as to maximizing engagements. It should be clear to the stakeholders that effective engagement will have relations to the overall time, cost, complexity, and uncertainty involved in pursuing their activities for the MPAs. As such, the need to propose early engagement schemes for the enforcement of an MPA in the province with the urgent need for an intervening and co-managing higher education institution or universities to commit at least 2- or 3-year time period of engagement with the community which will ensure success and sustainability of MPAs in the island province. With the establishment of the natural resource or environmental unit in SUCs such as the proposed Water Policy Lab for Rivers and Marine Spaces in the state college can take care the technical needs of MPAs in the island province. This is a positive move towards sustained stakeholder

management approach by carrying out background researches, facilitated dialogues and extension services to LGUs which will be enforcing MPAs in their localities.

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