

Institutional Feasibility of Scaling Up to Ecosystem-Based Management: A case study in the
Danajon Bank, Philippines

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Abstract

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Ecosystem based management (EBM) has been widely embraced as a guiding management framework without substantial critical evaluation of institutional utility. EBM is attractive because it promises to deliver a variety of services including holistic policy and laws, as well as scaled-up and streamlined management that is centered on ecosystem function at ecologically relevant scales (Christie et al 2009, Leslie and McLeod 2007, Pikitch et al 2004). These goals are all the more attractive in light of globalized concerns such as climate change and ocean acidification. EBM is offered as an approach that can reverse the severe, widespread declines in coastal and ocean systems (Leslie and McLeod 2007). The goal of this research is to present and evaluate recent attempts to scale up to EBM in the Danajon Bank, Philippines. Thirty-five interviews were conducted with local government officials and NGO staff to determine their willingness to participate in the Danajon Bank Project and to identify the preferred governance framework for a large scale marine protected area. Key themes that emerged are: 1. trade-offs exist for all scaled up management frameworks, 2. any efforts to scale up to EBM need to consider the roles of local government units for sustainability, and 3. political will is essential to scaling up management. The most effective institutional scale for implementing EBM in the Philippines will depend upon the consensus between municipal governments and will require developing new governance arrangements with leaders who recognize the need to manage marine resources at ecosystem scales (Eisma-Osorio 2009).

Ultimately coastal management is a government service; EBM proponents must seriously consider the role of formal institutions before EBM can be recommended as a feasible management framework.

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Acronyms

BFAR Bureau of Fisheries and Aquatic Resources
BEMO Bohol Environmental Management Office
CCEF Coastal Conservation Education Foundation
CLEAR 7 Coastal Law Enforcement Area Region 7
CLEC Coastal Law Enforcement Council
CRM Coastal Resource Management
DBMC Danajon Bank Management Council
DENR Department of Environment and Natural Resources
DILG Department of Interior and Local Government
DOT Department of Transportation
EBFM Ecosystem Based Fisheries Management
EBM Ecosystem Based Management
EO Executive Order
FARMC Fisheries and Aquatic Resource Management Council
FISH Fisheries Improved for Sustainable Harvest
ICM Integrated Coastal Management
IEC Information Education and Communication Campaign
IRA Internal Revenue Allotment
LGC 1991 Local Government Code 1991
LGU Local Government Unit
MAO Municipal Agricultural Officer
MFARMC Municipal Fisheries and Aquatic Resource Management Council
MOA Memorandum of Agreement
MPA Marine Protected Area
MPDC Municipal Planning and Development Officer
MPIO Municipal Public Information Officer
NEDA National Economic and Development Agency
NIPAS National Integrated Protected Area System
NGO Non-Governmental Organization
RA Republic Act
PAMB Protected Area Management Board
PFC Philippine Fisheries Code
PhP Philippine Peso
PNP Philippine National Police
SB *Sangguniang Bayan* (Municipal Legislative Council)
SES Social-Ecological System
TWG Technical Working Group
USAID United States Agency for International Development

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Introduction

The Philippines is comprised of an archipelago of 7,107 islands, and is in many ways one of the most advanced Southeast Asian countries in terms of coastal management (CIA World Fact Book 2012, Armada et al 2009). Efforts to regulate fisheries and management in coastal environments were first initiated in 1974; the current Fisheries Code of 1998 stipulates that 15% of municipal waters must be set aside as fish sanctuaries (White et al 2006b). Approximately 1,100 MPAs covering about 500 sq. km have been declared throughout the Philippines and successful large scale integrated coastal management (ICM) initiatives have taken place over the last 30 years (Green et al 2011, Lowry et al 2009, White et al 2006a).

The Philippines, particularly the central region known as the Visayas, has had a long history of coastal management initiatives beginning in the late 1970s (White et al 2006b). Management was initially characterized by top-down command and control measures through national agencies such as the Department of Environment and Natural Resources (DENR) as well as the Bureau of Fisheries and Aquatic Resources (BFAR) until the 1990s (White et al 2006b). A radical shift in coastal management occurred in 1991 with the devolution of management authority to local government units through the 1991 Local Government Code (LGC). This shift from top-down management gave local government units (LGUs) primary responsibility for coastal management with opportunities for coordination with national agencies, academia and NGOs (Christie et al 2007). More recently RA 8550 or the Fisheries Code of 1998 reaffirmed the definition of municipal waters as those extending 15 miles offshore. Commercial fishing, defined by vessels greater than 3 tons, occurs outside of municipal waters except by permission (Christie et al 2007).

The Philippines was among the first to implement community-based marine protected areas (MPAs) in the 1980s in response to degrading coastal communities and environments; fish catch in the Philippines has declined by as much as 90 percent since the 1940s (Christie and White 2007, Carpenter and Springer 2005). MPAs are defined as

‘any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical, and cultural features, which has been reserved by law or other effective means to protect part of or all of the enclosed environment’ (IUCN 1998).

MPAs in the Philippines typically consist of a 'no take area' surrounded by a buffer area where other types of extractive and non-extractive activities are regulated (Christie and White 2007). Municipal governments in the Visayas have established over 300 MPAs, with only 20-30% of MPAs being effectively managed for fishery benefits (Eisma-Osorio 2009, White et al 2006b).

Integrated Coastal Management

Coastal management in the Philippines has largely been implemented using an integrated coastal management (ICM) framework, which addresses coastal impacts that cannot be adequately addressed through single sector or narrowly adopted approaches (White et al 2006b). ICM is a process aimed at guiding coastal area development in an ecologically sustainable fashion; implementation of ICM or more narrowly focused coastal resource management (CRM) frameworks can ensure continued benefits from coastal environments where competition for coastal resources exists (White et al 2006a). ICM is defined as

A continuous and dynamic process that requires the active and sustained involvement of the interested public and the many stakeholders with interests in how coastal resources are allocated and conflicts are mediated. The ICM process provides a means by which concerns at local, regional and national levels are discussed and future directions are negotiated (GESAMP 1996).

Since the 1980s most ICM projects have focused on community-based management to establish marine protected areas. Since then a national framework has been established and local government units have been encouraged to incorporate coastal resource management as a basic government service with planning and field interventions initiated. Benchmark activities for LGUs who incorporate CRM services include (White et al 2006b):

- Baseline assessment conducted
- multi-year CRM plan drafted and regularly updated
- creation and active involvement of CRM related organizations
- annual budget allocated for CRM
- shoreline/foreshore management measures planned and initiated
- at least 2 CRM best practices planned and incorporated (municipal water delineation, coastal zoning, marine protected areas, mangrove management, solid waste management, upland/watershed management, coastal law enforcement)

Acknowledgement of basic CRM services by municipal governments in some cases has resulted in the development of co-management relationships between the national government, local government units, coastal communities, NGOs and academic partners for the provision of CRM services (White et al 2006b).

Currently there is a move towards ecosystem-based management (EBM) in the central Philippines as there is recognition that marine resources cannot be sustained on current levels of exploitation (Armada et al 2009, White et al 2006b). The transition to Ecosystem-Based Management is also due to the need to manage marine resources beyond MPA boundaries to maximize the effectiveness of no-take zones (Eisma-Osorio 2009). Small, locally implemented MPAs will not be effective for increasing fish yields or reversing environmental degradation if they are not embedded in larger management regimes; likewise MPAs do not address land-use patterns that also have a substantial effect on coral reefs (Agardy et al 2011, Christie and White 2007). There is a need for a broader management beyond individual MPAs.

Ecosystem Based Management

EBM is a relatively new management framework that attempts to holistically address marine management in the context of socio-ecological systems (SES). EBM is defined as

An integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive and resilient condition so that it can provide the services humans want and need. Ecosystem based management differs from current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors. (Leslie and McLeod 2009)

EBM is a fundamentally place-based approach where management occurs across a range of spatial scales at local, regional and global socio-ecological systems (Leslie and McLeod 2009). Common themes among EBM programs include a strong emphasis on data collection and monitoring, working across administrative boundaries, adaptive management, interagency cooperation, organizational change, and a strong focus on maintaining ecological integrity (Grumbine 1994). EBM also focuses on the cumulative effects of multiple activities within sectors over time, which involves the recognition of drivers of change that operate on both short and long term scales.

Imperial introduces the concept that EBM is really an attempt to develop an institutional ecosystem, which is the explicit attempt to build, manage and maintain inter-organizational networks (Imperial 1999). From this perspective the inherent goal of EBM is to improve management by changing institutional arrangements and improving coordination between the organizations which comprise inter-organizational networks (Imperial 1999). There is not a single correct scale to implement EBM; rather EBM is most successful when implemented at nested scales (Leslie and McLeod 2009).

The transition to EBM from other management approaches can be viewed as the result of a global decline of goods and services provided by ecosystems and the need to improve marine management and conservation (McLeod and Leslie 2007). The 2002 World Summit on Sustainable Development affirmed international commitment to implementing more comprehensive and holistic approaches to marine management (McLeod and Leslie 2007). Christie et al. (2009) state that the most compelling reason to adopt EBM as a guiding management framework is that coastal management processes and interactions, such as fisheries, are embedded within social and ecological systems which must be managed holistically.

In the Philippines the move towards EBM builds on existing ICM frameworks and the resulting focus on ecosystem based fisheries management (EBFM) (Aswani and Christie et al 2011, Christie et al 2007). The Fisheries Improved for Sustainable Harvest Project (Project FISH), a 7 year USAID project which implemented the first large scale EBFM project in the central Philippines, defines EBFM:

Ecosystem based fisheries management considers geographically specified fisheries management that takes account of knowledge and uncertainties about, and among, biotic, abiotic, and human components of ecosystems, and strives to balance diverse societal objectives. Such an approach will address human activities and environmental factors that affect an ecosystem, the response of the ecosystem, and the outcomes in terms of benefits and impacts on humans. A distinguishing feature of an ecosystem approach is an emphasis on protecting the productive potential of the system that produces resource flows. For an ecosystem that is already degraded, the goal becomes one of rebuilding or restoring the ecosystem. (Project FISH in Christie et al 2007)

The focus on fisheries is warranted considering the importance of food security for growing coastal populations (Christie et al 2007), especially in light of estimations that the

demand for ecosystem services in the Pacific will exceed supply by 2030 (Bell et al 2009). It is hoped that EBFM will provide a guiding framework to help address problems such as diminishing fish supply, increasing prices of fish, changes in fisheries technology, exploitation of valuable fisheries and climate change impacts (USAID 2009). EBFM often requires the scaling up of management, both at ecological and institutional levels (Leslie and McLeod 2009). Putting EBFM into practice involves ‘defining a common vision, developing appropriate governance frameworks, identifying examples of success, and evaluating when the goals of ecosystem based management have been achieved’ (Leslie and McLeod 2007).

In the decentralized context of the Philippines, EBFM often requires that municipal governments coordinate to manage ecological processes that extend beyond municipal jurisdictions. This presumes that municipalities have undertaken or are working towards key coastal management benchmarks such as the adoption and implementation of a CRM plan, coastal environmental profiling, and approval of a coastal management budget and training of CRM staff. The move towards EBFM has been initiated through the creation of MPA networks, integrated coastal management Fisheries and Aquatic Resource Management Councils (FARMCs), and Coastal Law Enforcement Councils (CLEC). These social networks facilitate the sharing of information and increase coordination needed for the management of broader socio-ecological systems (Lowry et al 2009).

Lowry et al. (2009) states that the combination of community-based MPAs in combination with municipal, multi-municipal, and national management is essential for the creation of synergistic benefits. The challenge of scaling up is that it must be done in a way that does not threaten stakeholder engagement or overwhelm institutional capacity (Christie and White 2007). The match between the spatial extent of the ecosystem and corresponding institutional context is the most important consideration of EBFM and will play an important role in scaling up of fisheries management initiatives (Armada et al 2009). Scaling up governance whether it is to MPA networks or EBM is often a slow process that requires considerable capacity development (Christie and White 2007).

Institutional Context

Governance is defined as the “formal and informal arrangements, institutions and mores which determine how resources or an environment are utilized; how problems and opportunities are evaluated and analyzed, what behavior is deemed acceptable or forbidden, and what rules and sanctions are applied to affect the pattern of resource and environmental use” (Juda 1999: 91). This analysis largely considers the role of formal institutions in coastal management although it is important to consider social norms of governance which are heavily influenced by the contextual socio-political, historical and socio-economic realities which are inherent in coastal communities (Christie and White 2007). Institutions provide a means for addressing collective action and common pool resource problems; they are organizational constraints that structure incentives and shape human interactions (Imperial 1999, North 1992).

Various levels of government in the Philippines have mandates to invest in coastal management. There are national level agencies such as the Bureau of Fisheries and Aquatic Resources (BFAR) and Department of Environmental and Natural Resources (DENR) that manage marine resources past 15km from shoreline. Regional, Provincial and Municipal governments are all considered local government units. Barangays, or villages, are the lowest level of governance in the Philippines.

The mandate of Philippine formal coastal management institutions are defined mainly through the 1987 Constitution, the Local Government Code of 1991 (RA 7160), the Agricultural Fisheries Modernization Act (RA 8435), the Fisheries Code of 1998 (RA 8550) and the National Integrated Protected Area System Act (RA 7156). Article II, Sections 15 and 16 of the 1987 Constitution ‘*promote the right to a balanced and healthful ecology in accord with the rhythm and harmony of nature*’. Section 22 encourages non-governmental, community-based and other organizations to collaborate in order to promote the nation’s welfare (Eisma et al 2005). *Article XII, Section 2 declares that ‘all natural resources are owned by the State and accordingly, the State has the duty to protect marine wealth and to provide preferential treatment to subsistence fishermen’* (Eisma et al 2005). Republic Act No. 7160 or the Local Government Code of 1991 devolved authority from the national government to local government units. Chapter 1, Section 2(a) of the Local Government Code states that:

'Territorial and political subdivisions of the State shall enjoy genuine and meaningful local autonomy to enable them to attain their fullest development as self-reliant communities and make them more effective partners in the attainment of national goals. Toward this end, the State shall provide for a more responsive and accountable local government structure instituted through a system of decentralization whereby local government units shall be given more powers, authority, responsibilities, and resources.'

The LGC gives primary responsibility for managing marine resources extending to 15km offshore to municipal governments. The Fisheries Code of 1998 reaffirms municipal waters as extending to 15km. Among other regulations, the Fisheries Code also allows for the creation of municipal Fisheries and Aquatic Resource Councils (FARMCs) in order to aid in the enforcement of fishery laws in municipal waters (Eisma et al 2005). Integrated FARMCs allow for collaboration for the management of shared resources.

The 1991 Local Government Code gave local municipal governments' authority and control for managing their municipal coastal resources, but the devolution did not come with any new resources for carrying out this responsibility (Milne and Christie 2005, Lowry et al 2005). Consequently, 832 coastal municipalities, 57 coastal cities, and 64 coastal provinces had to face the challenge of building institutional capacity for CRM, largely without technical or financial assistance from the national government (DENR 2001). Weak formal government support was mainly due to lack of financial or technical resources (Christie and White 2007). Surveys conducted in 1996 and 1997 revealed that many of the LGUs did not have a complete grasp of their CRM mandate nor the capability to formulate and implement a local CRM plan (DENR 2001). Thus while devolution was an initial start for allowing greater accountability of resource management to local communities, there is significant room for capacity development and reform for the provision of coastal management services.

Community based management has filled the gap of slowing developing formal institutions for coastal management. Christie and White report that 'community based MPA management strategies are frequently employed in contexts with weak formal higher level institutions, decentralization of decision making or where community-rights activism is strong' (Christie and White 2007). This description aptly describes the Philippines where coastal management institutions are developing capacity, responsibility for coastal management services has been legally devolved to LGUs, and where coastal communities have begun to self-organize.

Stakeholder involvement including public hearings, community participation, and people's organization input into protected area planning are considered essential to the effective management (White et al 2002). Bottom-up governance regimes may be the most feasible option in the tropics considering the prevalence of weak government institutions (Christie and White 2007). In this context EBFM is not impossible, but scaling up governance to MPA networks or EBM is often a slow process that requires considerable capacity development (Armada et al 2009, Eisma et al 2009, Christie et al 2007, Fanning 2007).

Danajon Bank Marine Park Project

The Danajon Bank Marine Park Project is a two-year project funded through USAID which seeks to establish the first collaborative large-scale MPA in the Philippines. The project is being undertaken by the Coastal Conservation and Education Foundation (CCEF), a local NGO that has worked with local communities in the central Philippines for over 14 years, in collaboration with municipal and provincial LGUs. CCEF is facilitating the creation of a large MPA on the outer bank of Danajon Bank, an area which has not been under active management and is currently degraded (Armada et al 2009, Christie et al 2006). This project is an extension of recent management efforts in the inner Danajon Bank, namely Project FISH, which have measurably improved conditions in the inner reef (Armada et al 2011). While it is unlikely that the inner reef will fully recover due to sedimentation, it is projected that the outer reef will rapidly recover if appropriate protection is provided (Armada et al 2009, Christie et al 2006).

The purpose of the Danajon Bank Project is to provide food security, protect biodiversity and create alternative livelihood options for fishermen. The project aims to enhance the quality of life for resource dependent stakeholders through increased economic opportunities, improved fisheries output and enhanced coastal environments. Specific project outputs include:

- Baseline profiling of socio-economic, biophysical, institutional, policy and governance conditions in the Danajon Bank;
- Develop a Danajon Bank Marine Park governance framework plan through inter-local government cooperation at the municipal, provincial and regional levels;
- Develop the Danajon Bank Marine Park management plan in conjunction with stakeholders;

- Develop constituencies and support for the establishment and management of the park through an extensive information and education campaign;
- Plan and catalyze tourism enterprises.

Given the continuing challenges facing coastal communities in the Danajon Bank, a collaborative effort to manage resources is critical among stakeholders; there is a need to establish a governance system that supports limits to resource extraction activities (Armada et al 2009). Currently the focus of the Danajon Bank Project has moved away from establishing a large MPA to enacting large scale management. This shift occurred half way through the project in response to discussions with stakeholders that emphasized broader management concerns, rather than limiting the discussion to the particular implementation of a single MPA. This focus is consistent with Project objectives that emphasize EBFM principles and was a strategic move in order to prevent potential derailing of the Project when implementation of a large scale MPA did not emerge as a desired outcome from participatory planning processes. This development does not preclude discussions about implementation of a large scale MPA as tool for achieving EBFM in the future.

Study Objectives

Broad scale management frameworks such as EBM, need to be further assessed and grounded in empirical governance studies (Christie et al 2007b, Fernandez et al 2000, Imperial 1999). This study attempts to add to the marine governance literature by determining the conditions that facilitate or hinder the scaling up of ecosystem based management in a decentralized context, specifically the Danajon Bank.

Successful and sustainable EBM requires nested institutions that coordinate for management of complex social-ecological systems (McLeod and Leslie 2007, Lowry 2000, Ostrom 1998). Governance theory suggests that institutions designed for natural resource management are as complex as the natural systems they govern: both are dynamic, diverse, complex and vulnerable (Jones et al 2011, Jentoft 2007). Scaling up marine management in the Philippines to govern complex social-ecological systems potentially involves the creation of new management regimes (Eisma-Osorio 2009). Designing new management institutions requires allocating responsibility for management, creating understanding and agreement about management roles and

responsibilities, insuring adequate resources for management at all levels, building capacities among implementing officials and creating systems for monitoring agency performance and insuring accountability (Lowry 2000). Institutional change and impetus for new management regimes also are dependent on actor's incentives for change (Ostrom et al 1993). The Danajon Project is an initial attempt to create a governance framework plan through local government cooperation at the municipal, provincial and regional levels. Given these starting conditions, specific research questions include:

- What institutional arrangement will be the most feasible for scaling-up management in the Danajon Bank given the current opportunities and challenges?
- What incentives are there for LGUs to participate in marine EBM within the Danajon Bank?
- What opportunities are there for successful management of the Danajon Bank?
- What barriers/challenges prevent the scaling up of management of the Danajon Bank?

Socio-ecological Context

Danajon Bank is a double barrier reef located in the northern end of Bohol in the central part of the Philippines known as the Visayas (figure 1). Danajon Bank stretches over 130km, covers 270km² and is comprised of an inner reef, an outer reef, as well as 40 islands (Armada et al 2009). It is the only double barrier reef in the Philippines, and one of three double barrier reefs in the Indo Pacific (Pichon 1977). Danajon Bank has been described as an area of 'global ecological significance at the world's epicenter of marine biodiversity' in the Coral Triangle and is identified as a priority area for the conservation of reef fishes, corals, mangroves and mollusks (White et al 2002).

Danajon Bank is considered as a critical resource for approximately 28,240 fishermen in 19 municipalities in the Provinces of Bohol, Cebu, Leyte and Southern Leyte, with the majority of the reef falling under the political jurisdiction of Bohol (Armada et al 2009). While only 5% of the population in the coastal municipalities of Bohol are fishermen, it is estimated that at least 50% of the population is directly or indirectly engaged with fishing as a form of livelihood (Armada et al 2009).

Despite its social and ecological significance, portions of the reef have been degraded due to lack of adequate enforcement, destructive fishing practices, increased sediment run-off and mangrove deforestation (Armada et al 2009). Coral reef ecosystems have proven difficult to manage sustainably because of the challenges of managing multi-species reef fisheries as well as managing reefs on long time scales; coral often appears healthy long after serious degradation has occurred (McClanahan et al 2011). Fisheries management has been historically difficult in the Danajon Bank because of the high dependence of the population on marine resources, overfishing, and population growth (Christie et al 2006). On average, fish stocks have decreased and fish yields have consequentially declined despite increased fishing effort (Dazell et al 1987).

Increasing population is a concern in this area. On average there is a population density of approximately 505 persons/km² in the coastal municipalities next to Danajon Bank as compared to the 282 persons/km² for the Province of Bohol (Armada et al 2009). The median monthly household income for the Danajon Bank in 2011 was PhP 2,500, or approximately US\$50 a month (Danajon Bank Socio-Economic Final Report). Armada et al. (2009) assert that the prevalence of poverty drives fishers to catch small fish and use more efficient but destructive methods. Furthermore, they suggest that poverty significantly lowers the capacity of people to change their behavior and switch to alternative, sustainable livelihoods (Armada et al 2009).

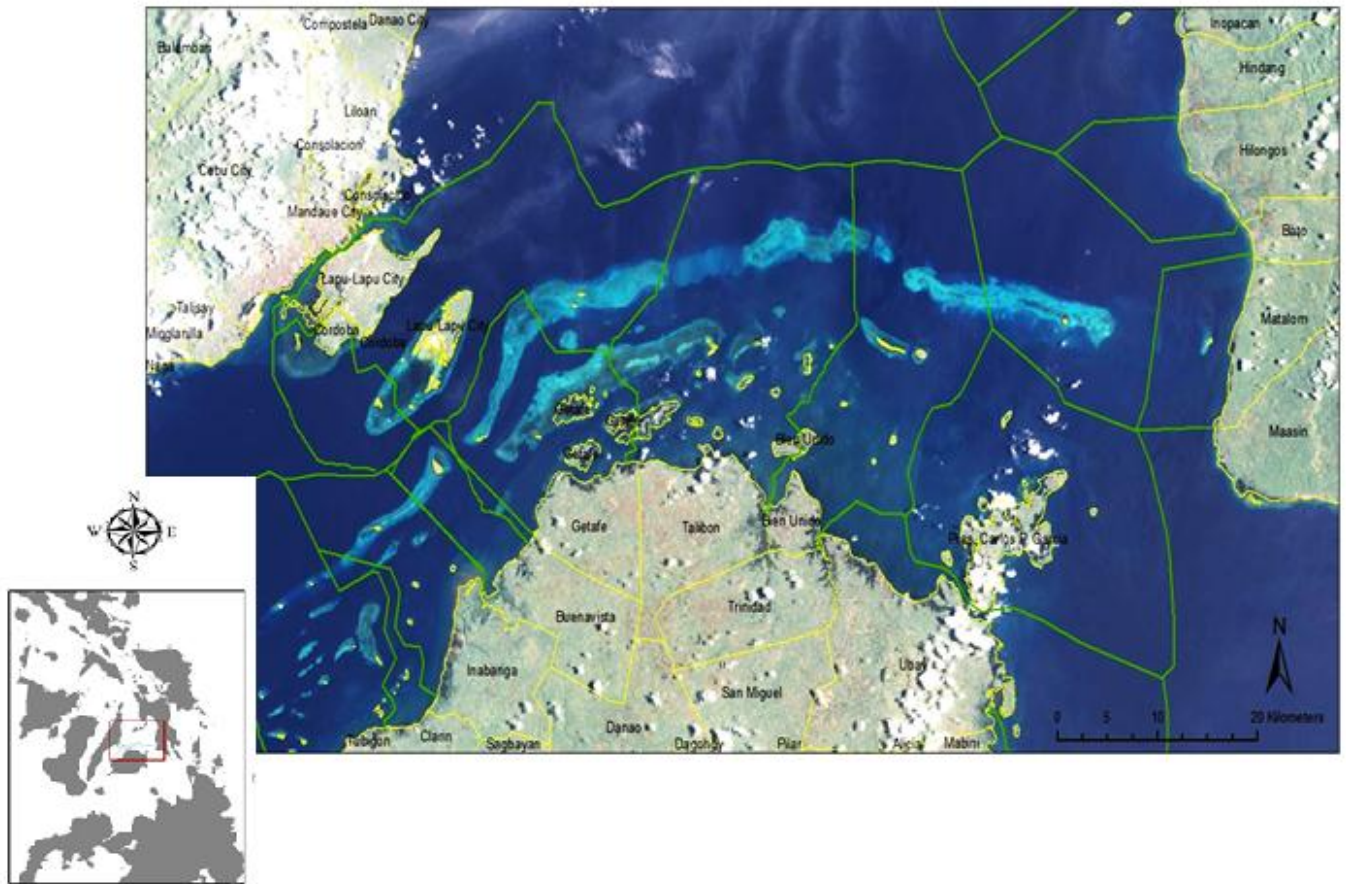


Figure 1: Danajon Bank with Municipal Water Delineations. Courtesy of CCEF

LGU capacities

Municipalities in the Danajon Bank have a wide range of coastal management capacities. A recent (2012) evaluation of local government capacity for coastal management was spearheaded through CCEF (Governance and CLE Framework Study, CCEF). This assessment evaluated municipal CRM programs in the Danajon Bank. Specific CRM initiatives evaluated included progress on municipal water delineation, zoning of municipal waters, presence of comprehensive CRM plans, coastal law enforcement, and the functionality of FARMCs and other fisherfolk organizations. Evaluation was based upon inclusion criteria; with respect to Municipal FARMCs (MFARMCs) inclusion criteria considered whether FARMCs were composed in accordance to Fisheries Code RA 8850, whether they met regularly, whether

minutes were documented, whether there was an organized agenda, and if FARMCs were able to influence municipal fisheries ordinances.

Out of 18 municipalities considered, 11 had active MFARMCs, 10 had active marine resource law enforcement, 11 municipalities had a CRM plan which was regularly reviewed and provided funding for CRM activities, and 9 municipalities are not involved in conflicting claims for municipal water delineation (table 1) (Governance and CLE Framework Study, CCEF). This study concluded that 36% of municipalities with jurisdiction over the Danajon Bank have comprehensive fisheries management ordinances, 63% have declared some type of fisheries management regulation (open-closed season, gear and vessel restrictions), 52% have declared marine sanctuaries, and 36% have a clear incentive system for law enforcement.

Table 1: Evaluation of LGU progress made towards CRM benchmarks

Municipality	Active MFARMC	Active Coastal Law Enforcement	Updated CRM plan	Do not have municipal water boundary dispute
Cordova	X	X	X	
Lapu-Lapu	X	X	X	
Tubigon	X	X	X	X
Clarin	X		X	X
Inabanga	X	X	X	X
Buena Vista		X		
Getafe		X		
Talibon	X	X	X	
Bien Unido	X	X	X	
Ubay	X		X	X
Carlos P. Garcia				X
Baybay	X		X	X
Inopacan		X		X
Hindang	X		X	X
Hilongos				
Bato				
Matalom				
Maasin	X	X	X	X

It is clear that some municipalities in the Danajon have invested in coastal management services, while others are still developing capacity for coastal management. Scaling up to EBM in the

Danajon Bank will involve increasing municipal LGU capacity for coastal management, particularly those LGUs who do not have active law enforcement.

Methods

This study employed both qualitative and quantitative methods. Triangulation of research methods such as key informant interviews, surveys, participant observation and document analysis increase the validity of findings (Jick 1979).

Qualitative Data Collection

Thirty-five semi-structured, key informant interviews (Kvale 1996) were conducted in the Philippines from July to September 2011 with local government officials and NGO representatives to investigate respondent's receptivity to a proposed marine park initiative as well as possible management options for the Danajon Bank. LGU informants were selected through purposeful and snowball sampling according to their knowledge and legal jurisdiction over municipal coastal management initiatives (Creswell 1998). Two to three interviews were conducted with LGU representatives (typically the mayor, the coastal resource management officer, and the municipal agriculturalist officer) per coastal municipalities in the Province of Bohol; other interviews were conducted in the Province of Leyte according to availability.

Data were also collected through participant observation (Robson 2002). The author attended three coastal law enforcement trainings facilitated through CCEF during July and August 2011 in Bohol and Leyte. The author also observed and participated in CCEF's Danajon Bank Summit in January 2012, which is one of the highlights of the Danajon Bank Project.

Table 2: Composition of Respondents

<i>Bohol LGU respondents</i>	#	<i>Leyte respondents</i>	#
Municipal LGU		Municipal LGU	1
• Mayor	4	• IMFARMC	1
• CRM Officer	5		
• MAO	5	<i>Southern Leyte Respondents</i>	
• MPDC	2	• Municipal LGU	2
• Vice Mayor	2		
• SB official	2	<i>DENR, Region 8</i>	1
• Fisheries Technician	2		
• MPIO	1	<i>CCEF staff</i>	2
• Other	3		
Provincial LGU			
• BEMO official	3		

Qualitative Data Analysis

Qualitative data analysis should produce a strong analytic, traceable trail that improves validity of research conclusions (Miles and Huberman 1994). The author approached data with specific research questions that defined the scope of coding; at the same time *in vivo* and descriptive coding allowed themes to emerge from the data.

Data was transcribed and analyzed using the assistance of Atlas.ti (Version 6, 2010) software. Transcripts were analyzed with a grounded theory framework using *in vivo* coding and descriptive coding. *In vivo* coding allows codes to emerge directly from the data in the language of the participants rather than in terms of an academic discipline or preexisting theory (Saldana 2009). Data in field notes and transcripts were reviewed in an iterative process to identify information relevant to the research questions, which included paying special detail to frequency, omission and declaration of data (LeCompt 2000). 73 initial codes such as ‘local autonomy’ or ‘spirit of optimism’ were produced from the data. Definitions and memos were created for each of the codes which helped to elucidate code meanings and conceptualize similarities and differences; codes were then clustered together to form categories (Kendall 1999). The categories were then examined for their relationship to one another, which paved the way for categories to be woven together to form a broader narrative (Holloway and Todres, 2003). This narrative was compared to current literature to validate findings as well as to

elucidate potential gaps in the literature (Kendall 1999), and was further validated in a presentation to CCEF.

Quantitative Data: Socio-Economic Survey

In addition to qualitative interviews, survey questions about MPAs were administered through a larger socio-economic household survey organized through CCEF. The socio-economic survey was distributed to 18 municipalities (Cordova, Lapu-Lapu, Tubigon, Clarin, Inabanga, Buenavista, Getafe, Talibon, Bien Unido, Ubay, Carlos P. Garcia, Baybay, Inopacan, Hindang, Hilongos, Bato, Matalom, and Maasin) in the Danajon Bank during July and August 2011. Barangays were randomly selected within these municipalities using a random stratified sample with a heavier selection bias placed on island barangays within the Danajon Bank area. Surveys were then distributed within selected barangays based upon the 2007 population census. Surveys were completed with the assistance of Filipino enumerators and were only completed by households that had marine based livelihoods.

Section D of the Danajon Bank Socio-Economic survey focused on perceptions of MPAs and participation in planning. Specific questions included were:

- Are you aware of marine protected areas where you live?
- There are approximately 120 MPAs on the Danajon Bank. Are any of these MPAs beneficial to you?
- Do you think the outer Danajon Bank should be managed?
- Would you be in favor of creating a marine park on the outer Danajon Bank?

Descriptive analysis was conducted for 1,001 respondents.

Results and Discussion

Although some interviews were conducted with respondents from Leyte and Southern Leyte, the majority of this analysis concerns Bohol because the sample emphasizes LGU representatives in Bohol and the majority of Danajon Bank falls under the jurisdiction of Bohol municipalities. Themes that emerged from interviews are arranged according to overarching research questions. Respondents' views are reflective of knowledge of the Danajon Bank Project during July to September 2011 and could have changed since this time.

1. What institutional framework will be the most feasible for scaling-up given the current opportunities and challenges?

Providing a legal framework for EBM will be essential towards scaling up and sustaining management in Danajon Bank (White et al 2005). Scaling up management of complex socio-ecological systems potentially involves the creation of new management regimes (Osorio 2009). The challenge of scaling up management in Danajon Bank will largely depend upon creating necessary institutions needed for monitoring and enforcement that fit within the existing legal framework in the Philippines. This section explores various possible institutional frameworks for the Danajon Bank as identified in interviews. Ultimately, there is no single, correct institutional framework to promote EBM in the Danajon Bank; rather there are inherent trade-offs for any institutional arrangement in terms of participant buy-in, feasibility, and sustainability.

Views of how Danajon Bank should be governed were influenced by the current legal framework in the Philippines. Management suggestions boil down to two options given the legal parameters of the LGC of 1991 and the Fisheries Code of 1998 (figure 2). The first option is that CRM efforts in the Danajon Bank are led by Municipal LGUs (with coordination with other agencies and municipalities to varying degrees). The other broad option is to implement more top-down management approaches such as the NIPAS system or a new Executive Order. An executive order would involve municipal LGUs in management, but would give the lead authority to a technical working group, or a new Danajon Bank management group/authority. There are trade-offs for either type of management framework; no clear preferences emerged from interviews.

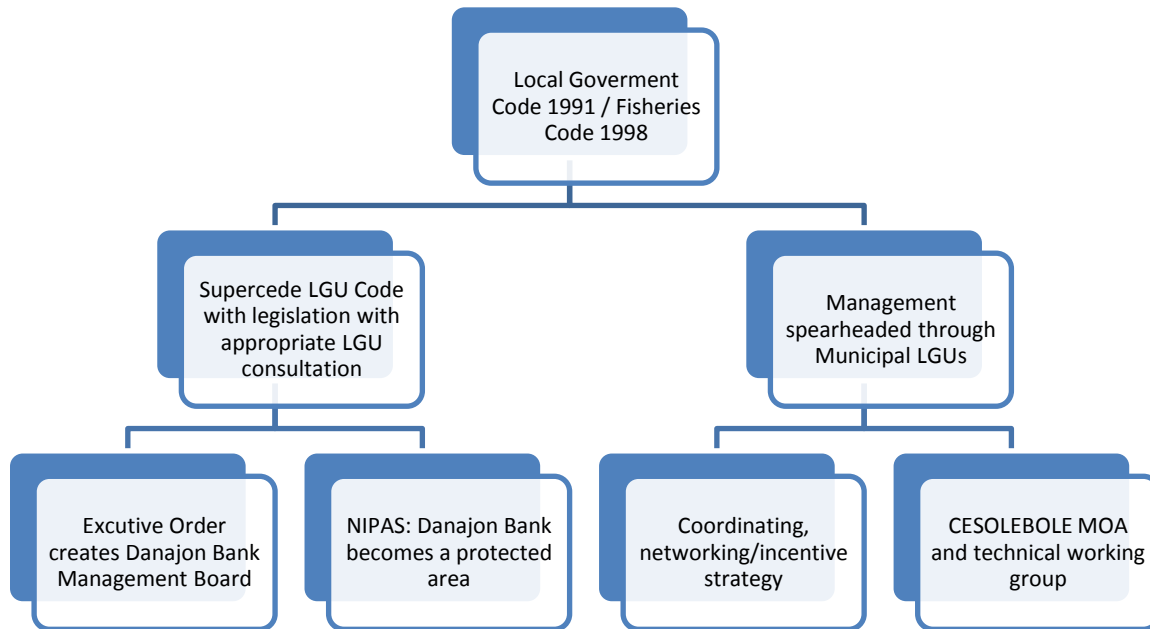


Figure 2: Management frameworks proposed for the Danajon Bank

The following management frameworks demonstrate which government entity should take the lead for management of the Danajon Bank. It is important to note that multiple levels of governance need to be considered for sustainable management of the Danajon Bank, and that in large systems rules are unlikely to match all aspects of governance if they are designed at a single institutional level (Fidelman et al 2012).

‘We’re considering different levels of governance here. There are different levels of management. There are certain activities that cannot be done by the provincial level; there are also activities that cannot be done at the regional level. There are also things that cannot be done at the municipal level, so each of these levels of governance is different; each has limitations, budgets, technical capacities, jurisdictions and stakeholders within their area. At the end of the day...at various level of governance...the municipality has a role, the provincial has a role, regional has a role; there’s so much collaboration, why not do it? (CCEF staff)

The reality is that unless LGU’s authority to manage coastal resources through the LGC of 1991 is superceded through higher legislation, the impetus to manage the Danajon Bank must come from the municipalities. They must ‘endorse or give some true resolution’ (DENR

representative) for management that they are uniformly requesting aid for the management of their municipal resources.

2.1 Status quo –Individual Municipalities Manage the Coastal Environment within their Jurisdictions

Respondents' views of how the Danajon Bank should be governed were shaped through the lens of the current legal framework in the Philippines. The Local Government Code was frequently referred to as the legal basis for which Municipal governments in the Philippines have the autonomy to manage their own resources within their political jurisdictions. Others referred to this law indirectly by stating that they were happy to work with CCEF on a management plan within the confines of their jurisdiction.

There are significant benefits for managing resources at a local level. Community-based management, which has demonstrated some success in the Philippines, is facilitated through legal rights to local marine resources. On the other hand limited and varied capacity of LGUs to manage, with little to no coordination, results in piece meal management of broad and connected ecosystem processes.

'The concept of municipal waters is managing your own area and that's a good concept for managing municipal waters but if you're talking about the Danajon....the goal is more of an ecosystem based management outlook. The Danajon covers several municipal waters and political jurisdiction doesn't always mean ecosystem-based delineation' (CCEF staff)

The LGC has significant implications for management of the Danajon Bank. The Danajon Bank stretches over 19 municipalities, each of which have their own jurisdiction over a portion of the Bank. CCEF (and previous projects) have been trying to introduce the idea of EBM as a preferred option for management – however this idea seems almost intrinsically against the idea of autonomy, as EBM stresses a large scale, ecosystem-defined approach to management. Imperial states that EBM management programs tend to recommend new policies, programs and changes in inter-organizational relationships, and thus are likely to threaten the job security and potentially undermine the priorities of traditional management entities (Imperial 1999). Municipal governments have only received autonomy and increased power within the last 20 years, and would not be inclined to give up the right to manage their respective municipal

waters easily (Christie et al 2007). Because each municipality is autonomous, they can direct their own management plans for their municipal waters, which do not need to be congruent or coordinated with neighboring municipalities. Thus, unless municipal water management objectives can somehow be coordinated, it would seem like EBM, although desirable at an ecosystem level, would be entirely unrealistic and counter-productive at the political scale of the Danajon Bank depending on the attitudes of municipal governments.

2.2 Memorandum of Agreement

RA 8550 or the Fisheries Code of 1998 permits LGUs to coordinate and enter into a memorandum of agreement (MOA) to facilitate scaling up of marine management:

'LGUs which share or border such resources may group themselves and coordinate with each other to achieve the objectives of integrated fishery resource management. The management of the shared resources...shall be done in an integrated manner, and shall not be based on political subdivisions of municipal waters in order to facilitate their management as single resource systems' (RA 8550)

The LGC also allows for collaboration. Section 33 states that *'LGUs may, through appropriate ordinances, group themselves, consolidate, or coordinate their efforts, services and resources for purposes beneficial to them;*' this includes pooling of funds, resources, personal or real estate as approved by the *Sangguniang Bayan* (Municipal Legislative Council) (Eisma et al 2005).

There have been previous MOAs established for the management of the Danajon Bank which formed technical working groups in 2005 and in 2007. The most recent MOA, known as CEBOLESOLE, was formed in 2008 and was signed by the provinces of Cebu, Bohol, Leyte and Southern Leyte. The CEBOLESOLE MOA states that *'in order to solve the problems at hand, an inter-regional, multi-province, multi-agency, participatory and fully coordinated approach must be adopted, and that each agency must converge its efforts to help in each of the nineteen coastal LGUs and four Provincial Governments which have jurisdiction over the Danajon'* (CEBOLESOLE MOA).

MOAs provide an important form of collaboration and coordination for the provinces and municipalities bordering the Danajon Bank. Without coordinated law enforcement, the Danajon

Bank essentially is an open access resource that is prone to exploitation. MOAs provide a legal basis for coordination and allow for consensus, collaboration and trust building; they have historically been used to manage the Danajon Bank. All provinces still recognize the legitimacy of the most current CEBOLESOLE MOA. While MOAs foster collaboration, as voluntary agreements they are only binding while LGUs recognize their authority and are thus solely dependent on the interests of LGUs to continue collaboration (Eisma et al 2005, Batongbacal 1997). The technical working group for the CEBOLESOLE MOA never fully materialized due to the lack of leadership and funding. Strong leaders and political will are needed for MOA effectiveness.

2.3 National Integrated Protected Area System

The National Integrated Protected Area System (NIPAS) was established through Republic Act No. 7156 and is a system of the country's significant protected areas:

'To this end, there is hereby established a National Integrated Protected Areas System (NIPAS), which shall encompass outstanding remarkable areas and biologically important public lands that are habitats of rare and endangered species of plants and animals, biogeographic zones and related ecosystems, whether terrestrial, wetland or marine, all of which shall be designated as "protected areas."

It is hereby recognized that these areas, although distinct in features, possess common ecological values that may be incorporated into a holistic plan representative of our natural heritage; that effective administration of these areas is possible only through cooperation among national government, local government and concerned private organizations; that the use and enjoyment of these protected areas must be consistent with the principles of biological diversity and sustainable development' (RA 7156)

The NIPAS system sets up a system of ecologically distinct and important areas; these areas are managed through the national Department of Environment and National Resources (DENR) along with a resulting Protected Area Management Board (PAMB) board for each protected area. PAMB boards are chaired by the DENR and consist of municipal mayors, as well as representatives from each affected *Barangay*. Funding for NIPAS sites is typically

generated locally through tourism or other livelihood projects. This funding is collected by the national government and then is re-distributed to NIPAS sites with the approval of a project proposal.

Consideration of the Danajon Bank as a NIPAS site is the most controversial management suggestion. On the one hand NIPAS is respected because it is institutionalized with a clear mandate and implementing agency; a number of respondents also believe that NIPAS provides national funding. On the other hand NIPAS creates a lot of conflict; there are issues of autonomy, funding mechanisms, displacement of community based approaches and ultimately practitioners report that these sites are often not well managed.

‘One wild observation, wild suggestion is to...proclaim Danajon as a protected area...but we do not encourage the LGU, because, you know, it contradicts and disagrees with our local government code in our development because any waters which are dictated under NIPAS are not considered municipal waters. So that’s why...ah LGUs, like us municipal officials are not...we wouldn’t want that because it would decrease our authority and Danajon covers a whole lot of our municipal area.’ (CRM official, Bohol)

2.4 Executive Order for a new Oversight Body

An Executive Order (EO) is a formal presidential decree that is passed into law (Eisma et al 2005); it is not as legally binding as a Republic Act but is legally more substantial than a MOA (table 3).

Table 3: Hierarchy of laws in the Philippines (DENR et al 2001:26)

<i>Table 1. Types of issuances in hierarchy of importance.</i>
<ul style="list-style-type: none"> • Constitution • Republic Acts and International Treaties ratified by Philippine Congress • Commonwealth Acts, Public Acts, <i>Batas Pambansa</i> • Presidential Decrees issued during the Marcos era and Executive Orders of President Aquino • Presidential Decrees and Executive Orders not included above; Letters of Instruction and Presidential Proclamations • Administrative Orders • Ordinances of local governments

An EO can be abolished by succeeding presidents, but is largely recognized as being more permanent than a MOA. DENR's Legal and Jurisdictional Framework for Coastal Management states that

'Prior to the enactment of the 1987 Constitution, the President of the Philippines exercised legislative powers through the issuance of Presidential Decrees (PDs) and Executive Orders (EOs). These issuances also have the force and effect of a law unless amended or repealed by a Republic Act under the 1987 Constitution. Laws are intended to implement the general principles, mandates, policies, or programs embodied in the Constitution. A common norm in interpreting laws with related and/or conflicting provisions is to use either the most recent law or the special law, whichever is applicable' (DENR et al 2001: 27)

Some respondents stated that they would prefer an EO declaring a specific management board for the Danajon Bank because there might be the potential for national funding, and it would be appealing to have national support and recognition of Danajon Bank. The specific details of the organization and exact functions of this group varied according to different respondents, but overall respondents cited that they preferred this type of management system because it was more permanent considering that management of the Danajon Bank would not be dependent on elected officials.

'If only the governors could...the idea of protecting the Danajon double barrier reef is for me...I think there should be one group...they will declare this area as a sanctuary and have a single management group. We could gather all the officials here and they will form a project management office and this group will be the one who will manage. This group will provide the control authority to the politicians. Yeah, maybe that idea will be good enough because, as I said to you, if these officials, these are locally elected and they are subjected to election every three years...

So, you know, I have an experience here, when I was here as (X office position). Once we apprehended an illegal fisher...after which the husband was put in prison. In this case the wife will bring his children, maybe it's okay if they only have 2 or 3 children, but you know Filipino's have more children. They have an average family of 5 - average, that's only an average, some are 8, 10 or something like that. So if we caught an illegal fisher here, the illegal fisher is in the prison. The wife will bring his children and talk to the mayor saying 'Mayor, have pity on us. How can I feed my children? My husband is

in there.’ What will happen is that the mayor, for humanitarian reasons, will release the fisher because to him, how can he survive the children and his wife? Yeah, that’s that.

So the best maybe for me ...the officials here we’ll group together, and create a board or a group who are not local officials, not subjected for election. That’s maybe the best because this board will be the one to manage here. They will not be afraid when the election comes and will realize ‘wow, we are not politicians. Yeah, we can implement what is agreed.’ I think that’s the best strategy maybe CCEF can introduce to us as a new one’ (CRM official, Bohol)

Respondents also believed this option to be more sustainable because they believed that this group would get national funding, would channel funding through international organizations or more effectively generate funding through other means. However, respondents realize that passing an EO takes a long time and that it may never happen given the need for a strong supporter/lobbyist in Congress. An EO still needs to go through processes of consultation with municipal governments.

Trade –offs

The following tables (4&5) demonstrate opportunities and potential barriers for EBM in the Danajon (a) spearheaded through municipal LGUs (with or without coordination through a MOA) and (b) spearheaded through a more centralized oversight committee mandated by an EO or NIPAS. Both institutional arrangements have trade-offs in terms of financial feasibility, participant buy-in, institutional incentives, and capacity. Table six explores trade-offs for management through (a) individual LGUs (b) MOA (c) NIPAS and (d) EO by considering different costs for implementation. By acknowledging trade-offs inherent in either institutional arrangement, decision makers are more equipped to determine which management regime has the potential to provide the ‘best fit’ that will lead to sustainable EBM in Danajon Bank.

Table 4: Municipalities Manage Danajon Bank Independently or through Coordination (MOA)

Opportunities	Potential Barriers
Bohol has a long history of CRM projects and often municipalities have CRM officers who specifically deal with CRM projects; LGUs recognize their mandate to manage coastal resources	Some municipalities lack capacity in terms of technical capabilities, funding, personal
Each municipality has a CRM budget	CRM activities in Danajon Bank are largely dependent on the priority of the LGU, including CRM budgets
CLECs, CLEAR 7 and other collaborative alliances have been established	Large scale coordination between 4 provinces and 19 municipalities will be difficult
Each municipality has an incentive to protect their municipal waters from illegal fishers, especially when additional income can be generated through licensing fees	Historically, initiating large coordination efforts appear to be dependent on outside entities other than municipal LGUs (i.e. CCEF, FISH Project, Provincial government, DENR)
The Province of Bohol seems to be willing to play an active role in promoting CRM collaboration	Turn-over of elected officials
Potential for harmonization of laws and penalties regarding the entire Danajon Bank	CEBOLESOLE management in the past waived because of lack of funding and political leadership

Table 5: Alternative Institutional Framework: Oversight body manages the Danajon Bank (with proper coordination) which is established through Executive Order or NIPAS

Opportunities	Potential Barriers
Potential for national funding	Executive Order is a difficult and time consuming process that may not be realized
Harmonization of laws and penalties regarding the entire Danajon Bank; Enforceable legal framework	There must be one representative from each affected <i>Barangay</i> on the PAMB board – while this would allow for local participation, for the Danajon Bank this would be a massive PAMB board (234 coastal barangays in 2009)
Continued commitment to the management of the Danajon Bank that is not jeopardized by political elections – hopefully minimizes local political interventions	Management has the potential to be more bureaucratic if it is scaled up; potentially more difficult to involve local resource users
Addresses large scale concerns such as illegal fishing, resource conflicts between fishers and commercial trawling	Negates the work of municipalities that have invested in creating functional CRM programs: NIPAS sites are managed by the PAMB and not municipalities
National recognition of the Danajon Bank	NIPAS funding historically has not made it back to management in a timely manner

Table 6: Summary of Trade-offs for Governance Frameworks in the Danajon Bank

Governing management framework	Degree of conflict likely	Time required for institutionalization	Organizational Complexity	Political Will Required	Budgetary requirements	Amount of Behavioral Change Required	History of management framework	Degree of permanence	Who bears brunt of management costs?
LGUs through municipal waters	Low – LGC currently supports municipal management	N/A	High - municipal leaders must coordinate for EBM	High – depends upon LGU leadership; Political will varies	From LGUs	Capacity still being built, but otherwise none	LGC since 1991	High- Stipulated through the LGC 1991 and Fisheries Code 1998	Each LGU
MOA	Low/medium - latest MOA is still recognized. Funding mechanism could potentially create conflict	Medium – need time for MOA to be drafted and ratified	Medium - Council and TWG need to be established; secretariat appointed	High – Council must maintain municipal support and demonstrate leadership	From LGUs, among other sources	medium	3 previous MOA agreements; most recent CELEBOSOLE is still recognized. Legal authority through LGC and PFC	Medium- Recognized through SB councils, but LGUs choose whether to honor or not	Shared costs
NIPAS	High – creates controversy	Medium; process of public information and consultation	Very high in the Danajon Bank considering the requirements for the PAMB; PAMB will be extremely large	Medium - DENR and PAMB authorized for management	LGUs contribute funding/potential for national funding	High	NIPAS since 1992	High – Danajon Bank would be under NIPAS Act	Depends upon how the NIPAS site is defined, could heavily impact Bohol
Executive Order	Potential for controversy depending on the content of the EO	Very long	Depends upon the content of the EO	High - Need congressional support to get legislation passed	Potential for national funding	High	Creates new legislation	Medium/high -EOs are less permanent than Republic Acts, but more permanent than a MOA	Depends upon the content of the EO

Summary

This section described various institutional arrangements that could lead to EBM being implemented in Danajon Bank. Various management scenarios for EBM were explored, such as management through LGUs, a MOA, NIPAS or an EO. All management scenarios have associated trade-offs in terms of financial feasibility, participant buy-in, institutional incentives, and capacity. Ultimately decision makers will need to determine which institutional arrangement is best suited for the Danajon Bank.

2. What incentives are there for LGUs to participate in EBM in the Danajon Bank?

Institutional analysis identifies problems in management regimes and how rules address these problems by explicitly considering who makes decisions, how decisions are made, and the rules used to allocate and distribute resources (Imperial and Yandel 2005). Incentives affect decision-making behavior; many have argued that fisheries management has historically failed because management fails to change incentive structures (Imperial and Yandle 2005, Ostrom 1998). Ostrom et al. (1993:8) define incentives in a broad sense as any factor that motivates changes in behavior:

'Incentives are more than just financial rewards and penalties. They are the positive and negative changes in outcomes that individuals perceive as likely to result from particular actions taken within a set of rules in a particular physical and social context. Types of inducements include 1. Opportunities for distinction, prestige and personal power; 2. Desirable physical conditions in the workplace; 3. Pride in workmanship, service for family or others, patriotism, or religious feeling; 4. personal comfort and satisfaction in social relationships; 5. Conformity to habitual practices and attitudes; and 6. A feeling of participation in large and important events'.

Andersson (2003) speaks to the need for proper institutional incentives such as funding from the national government, increased accountability, and presence of NGOs to motivate decision making at the municipal level. White et al. (2006b) state that one of the key lessons of Provincial ICM projects in the Philippines has been the need to provide incentives for municipal and city governments to continue to invest in coastal management services. Sharing information

and coordinating can take time and require significant resources; unless officials perceive that there are tangible benefits associated with participating in EBM, coordination efforts are likely to encounter some degree of resistance (Imperial 1999). Given that municipal LGUs in the Danajon Bank have autonomy over their natural resource management, institutional arrangements that attempt to promote EBM in the Danajon Bank must consider incentives for participation.

Incentives for participation and incentives for not participating in the Danajon Bank Project are considered below. This analysis is particularly concerned with institutional incentives that motivate municipal leaders to participate in EBM in the Danajon Bank. Perceptions of resource condition, the degree of dependence on marine resources and the potential for improved livelihoods are conditions which motivate leaders to invest in coastal management.

1.1 Reasons to participate

LGU respondents were consulted to determine their interest in participating in CCEF's Danajon Bank Project. Almost all LGUs representatives consulted welcomed the chance to hear more about the project and collaboration opportunities with CCEF. Although none of the participants expressed disinterest, representatives from one or two municipalities expressed that they might have alternative coastal resource management priorities. The following sections describe conditions that are political incentives for participation.

1.1.1 Increased population highly dependent on natural resources

Humans depend heavily on goods and services from the ocean and these needs will most likely increase with a growing human population (Reid et al 2005). Hanna (1998) states that increased demand for marine resources driven by increases in population or increases in standards of living can undermine the capacity of institutions to constrain human actions. Management assistance through the Danajon Project was typically sought when respondents perceived that population concerns threatened resource availability, especially in areas where resource users are highly dependent on natural resources. A respondent from Bohol Province

expressed concern over the growing coastal populations and the need to maintain adequate coastal resources in light of continued population growth:

'In terms of population...yeah that's the big problem. It will really create and connect to all other problems if you have a big population.' (BEMO official, Bohol)

Respondents expressed concern over food security in relation to growing coastal populations. Several respondents stated that the price of fish has gone up in recent years, and expressed concern that fish populations need to be properly maintained to make food available and affordable.

'How are we to sustain the source of protein that is coming from here (Danajon Bank) except to do our job. To do our share' (CRM official, Leyte)

LGU respondents are aware of increasing coastal populations in the Danajon Bank and the strain that this will have on maintaining an adequate food supply in the Danajon Bank; the Danajon Project is attractive to the extent that LGU officials perceive the need to protect marine resources for increased food security.

1.1.2 Threat of Illegal Fishing

Andersson (2003) states that the availability and value of natural resources are perhaps the most intuitive drivers of municipal action; in the Danajon Bank a major incentive for participation in the Danajon Project was the threat of declining resources. Management assistance was sought when respondents perceived larger threats that they needed help addressing, particularly the threat of illegal fishing. Almost every respondent identified illegal fishing in some context as a current and on-going threat to their municipality and the Danajon Bank. Some respondents specifically mentioned problems with illegal fishing gears and methods such as dynamite fishing, baby trawl fishing, *liba-liba*, Danish seines and cyanide fishing:

'Illegal fishing activities around this area...are one of the worst problems here. Fishermen opted for an easy way of catching fish. The easiest one is dynamite fishing, blasting. The second is using active gears...using fine nets, using poisons, using chemicals, electrocution' (Mayor, Bohol)

Other respondents highlighted the scope of illegal fishing which varied from marginalized fishers using legal gears in municipalities where they were not registered, to the encroachment of

commercial fishing in municipal waters. The presence of illegal fishers coming from municipalities and provinces where they did not reside was a common theme:

'And just like getting the illegal fishers; momentarily they are not there, but if they see that we have stopped our efforts, they will come in again. It's just like pruning a tree. If we cut off something from the tree, it will sprout again if it is not maintained. That's my experience' (CRM official, Bohol)

A significant portion of respondents stated that illegal fishing in their municipality had been significantly reduced from years past (and often said the same for neighboring municipalities), but still said that illegal fishing was one of the primary issues facing LGUs concerned with coastal management.

1.1.3 Potential for Improved Livelihoods

Respondents are interested in participating if the project results in tangible benefits for their *barangay*/municipality and improved livelihoods of resource users. This finding is consistent with White et al. (2005) which found that improved economic returns and income generation are basic elements of sustainable ICM and that improved socio-economic conditions often increase support for management. There is increasing interest in investing in tourism to bring additional income, especially considering that this is a priority for the Province of Bohol and the relative success of tourist destinations such as Panglao in Southern Bohol.

If you can really protect the Danajon it's proven already that there are a lot of fish in the area...fishermen could really have an income if they would really help to protect the environment' (CRM official Leyte)

'Basically good management in the Danajon is good because we want our area to develop into a tourism destination...so if it's well managed, then good for us...not only for fisheries but for tourism as well' (CRM official, Bohol)

It is important to note that alternative livelihoods may provide a necessary, but not sufficient incentive for investing in coastal management. It is also important to note that tourism is not a panacea for improved livelihoods in the Danajon and may not be feasible in all potentially desired locations.

1.2 Reasons against participating

1.2.1 Perception that local autonomy is threatened

The Danajon Bank Project intends to establish an EBM framework. LGU representatives were asked what type of management structure they would prefer if the Danajon Bank was managed in a more holistic way which could potentially transcend political jurisdictions. While there is the possibility for many confounding variables, many respondents were taken aback with the framing of the question that assumed scaled up management was the best way to proceed. Officials continually reminded the author of the current political jurisdictions and the right to manage resources as stipulated in the Local Government Code and Fisheries Code. One respondent stated *‘There are only municipal waters; there are no provincial, no barangay waters’* (CRM official Bohol). While most LGU officials said they would be more than happy to collaborate with CCEF and the Project, a few made it very clear that they had the autonomy to accept or reject interventions in their municipality and would not welcome initiatives that jeopardized their local autonomy.

1.2.2 CRM priority other than Danajon Bank Project

A few LGU representatives from select municipalities subtly expressed that they were not strongly interested in the Danajon Bank Project for various reasons. One municipality in Bohol expressed support for the project, but also expressed that they have alternative coastal resource management goals which included pursuing recent municipal initiatives that could take priority over the Danajon Bank Project. Another municipality participated in coastal management initiatives, yet it was apparent that the Danajon Bank Project was not a priority of the LGU.

‘Not all LGUs have the same prioritization. Different prioritizations you know, and if CCEF will go to the mayor, the mayor could have a different priority. Their priority is not coastal management, maybe their priority is for infrastructure. So it depends on the different priorities and then some LGUs have just a small area and this is a large area that will be affected so...and then they’re also thinking of their own political survival, no?’ (Bohol Mayor)

3. Opportunities for successful management

The following section provides current opportunities for scaling up to EBM in Danajon Bank. Current opportunities for progress towards EBM in the Danajon Bank include: general consensus of LGU respondents and the general population on the need for management in the Danajon, high educational awareness, and CCEF's enthusiasm for the Danajon Project.

3.1 Consensus for management

Shared understanding leading to consensus is a critical factor for successful collaboration and cooperation (Ansell and Gash 2007). LGUs are keenly aware of the importance of and ongoing problems with CRM, namely controlling and eradicating illegal fishing, educating fisherfolks and providing alternative livelihoods for fisherfolks.

'We're more than willing to collaborate and cooperate on development initiatives that will of course improve our community, the living conditions of our communities as well the environmental condition of our coastal resources'
(CRM official, Bohol)

Respondents agree that the Danajon Bank should be managed. Danajon Bank was consistently described as an important source of fish production, a rare area, and an important source of livelihoods; these include fishing, seaweed and sea grass culture, as well as other mariculture and tourism opportunities. Regardless of the specific management framework preferred, most respondents cite the need for coordination regarding law enforcement and harmonization of laws within the Danajon Bank. The Coastal Law Enforcement Councils, or CLECs were most often cited as an example of proper coordination within the Danajon Bank in the Province of Bohol and seem to be well regarded aside from a few remarks about irregular meetings and lack of funding.

At the time of interviews the Province of Bohol and the BEMO were supportive of the Danajon Bank Project. An aligned vision with the Province could open doors to personnel, resources, funding and is potentially a good entity to take a leadership role to ensure the sustainability of project goals.

'I was quite optimistic when we talked to the Bohol Province. That was a good meeting, you know, they were very supportive of the project, and they said 'you

know, if you need our help, we can lead that and, you know, if you need resources we can even have the resources for you.’ So they’re talking about leveraging their own funds because they’re also quite interested in making this work...so that’s something, that’s something’ (CCEF staff member)

3.2 Building on the work of past CRM initiatives

LGUs in Bohol recognize their legal mandate to govern and manage coastal resources. Bohol has had a long history of CRM interventions; most respondents welcome the assistance of an NGO and awareness of previous CRM interventions and projects such as Project Seahorse, CRMP, FISH Project, the Aquatic Marine Resource Council, and CLECs is widespread.

‘The good thing with the Danajon is there is twenty years of CRM experience there. Awareness wise...it’s good. They know that the problems in the Danajon exist, overfishing exists. Before I don’t think this would have worked. This will not work in other areas. Like x province, like areas where you need to explain to LGUs that... the fishery is going down and this is your function...apart from your basic services, this is also a basic service they need to provide to their local constituents...in Danajon there’s already that. There are workers already, and they’ve been exposed to so many projects already’ (CCEF staff member)

All municipalities have incorporated CRM services as basic local government services even if capacity to perform these functions still have room for improvement.

CRM interventions in Bohol have often incorporated public education campaigns as a way to raise awareness of the importance of coastal resources. The investment in information, education and communication (IEC) campaigns in this region may explain why public awareness of the need for coastal management in Bohol is also high. Survey results demonstrate that the general population in the Danajon Bank is aware of the need for coastal management and are largely supportive of management tools such as MPAs. 90% of the population indicated that they thought the outer Danajon Bank should be managed (figure 3). 89% of respondents were aware of MPAs in the Danajon Bank and 81% of respondents believed that these MPAs were beneficial to them (figure 4).

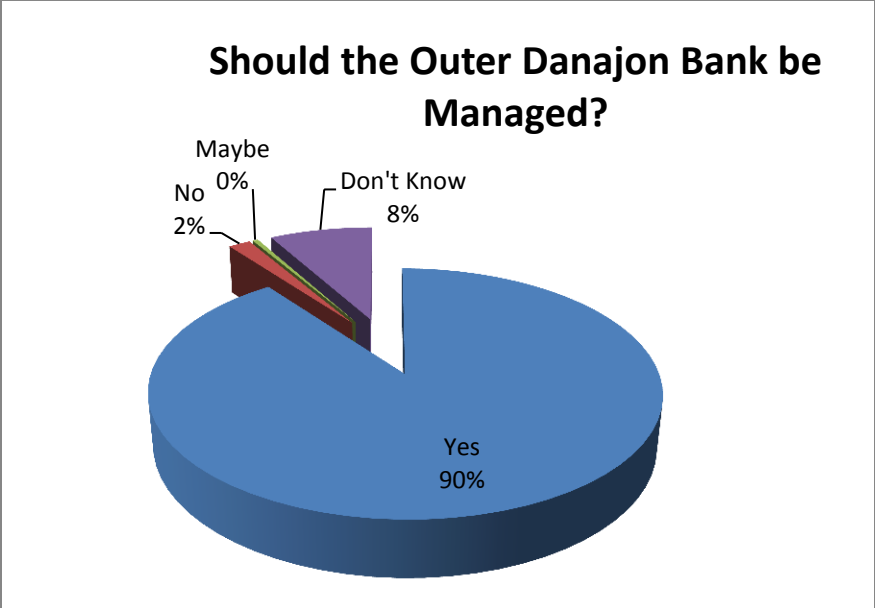


Figure 3: Percentage of respondents who support management of the outer Danajon Bank

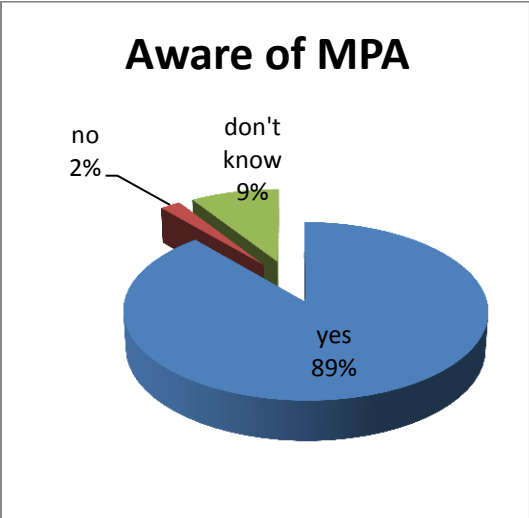


Figure 4: Percentage of respondents aware of MPAs

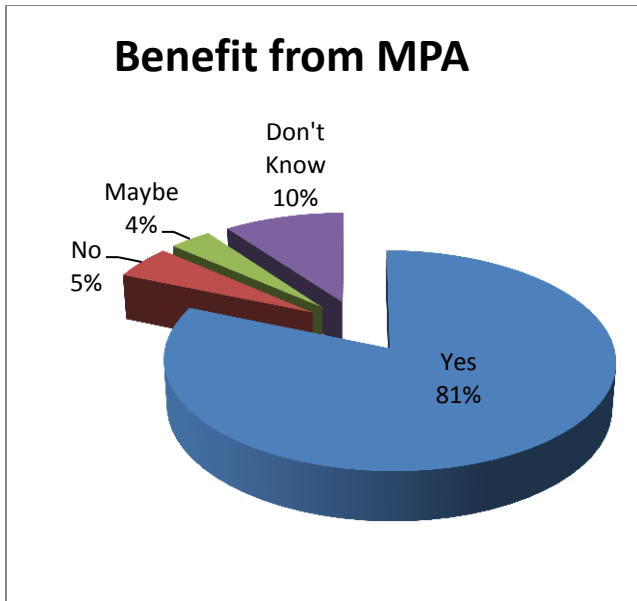


Figure 5: Percentage of respondents who benefit from an MPA

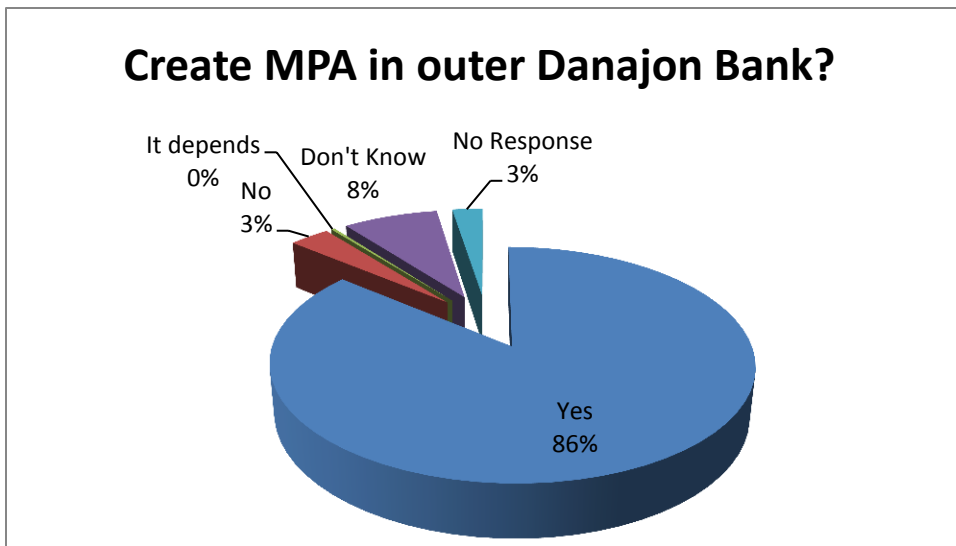


Figure 6: Percentage of respondents who support the creation of an MPA in the outer Danajon Bank



Figure 7: Why there should or should not be a MPA in the Danajon Bank

- 1: to increase income/ have additional income
- 2: to help the *Barangay*
- 3: to catch fish/increase catch
- 4: to generate income from tourists/ encourage tourism/ have diving
- 5: to protect the marine resources so that the next generation has fish to catch
- 6: protect the resources from illegal fishers, prevent/control illegal fishing
- 7: protect marine resources in the Danajon Bank from destruction
- 8: to preserve the remaining marine species/ protect breeding ground
- 9: for the general benefits
- 10: for more fish supply/ to benefit the fish
- 11: maybe - if it doesn't negatively affect fishing/livelihoods
- 12: for the development of coastal area/habitat
- 13: to have healthier coastal area/ improve habitat
- 14: no because it will reduce fishing area
- 15: to help/benefit the fisherfolk

A majority of respondents stated that they would be in favor of creating an MPA in the outer Danajon Bank (figure 5). The top four open-ended responses as to why respondents would support the creation of an MPA include: an MPA would lead to increased income, protect marine resources in the Danajon Bank, preserve marine species and protect breeding grounds, and increase fish supply (figure 6). These survey results are consistent with findings in Wagner (2012) and Launio et al (2010). While the current focus of the Danajon Bank Project is on improving basic management conditions with enforcement of existing fisheries laws, these results demonstrate that there is potential to implement future MPAs in the outer Bank of the Danajon as part of a large management initiative towards EBM.

3.3 CCEF as a catalyst for management improvement

3.3.1 ‘Spirit of Optimism’

NGOs are widely recognized as being valuable partners in the Philippines (Brillantes 2004, Olsen and Nickerson 2003, 1989 Constitution) and CCEF has established itself as a well-respected NGO working on coastal management issues in the central Visayas. In the Danajon Bank Project CCEF has helped to spearhead and mobilize key participants, and have been taking advantage of current political opportunities to get the Project underway. There is a distinct ‘spirit of optimism’ with staff that they are invested in the Project and despite challenges, are excited to work for a better management system in the Danajon Bank. A general spirit of optimism is apparent in the following staff member *‘It’s up to us to make something happen. And...while that’s kind of a challenge, it’s an exciting one’* (CCEF staff member)

CCEF staff are also optimistic about the Danajon Bank Project because of specific opportunities for collaboration and partnership among key agencies

‘I was quite optimistic when we talked to the Bohol Province. So we’re quite optimistic, but I know two years is moving fast. I’m just hoping that... two years will just be the start of something. We want to see this go through to the fullest’ (CCEF staff member)

3.3.2 A matter of strategy

As a NGO, CCEF realizes that they have limited resources and thus must be strategic in order to make the largest impact given limitations concerning their funding, contacts and political sway. CCEF is developing contacts and political allies in strategic positions in order to promote the Danajon Bank Project.

'I talked to the BFAR director because he's a friend of mine. He just was recently appointed as a national director of the BFAR. And we were talking about Danajon because I was telling him 'oh we're in Danajon we're doing this and that' and he said, 'maybe we can think of a way to manage it'. The Danajon Bank Project is possible, and it's possible right now because BFAR is actually for us now with him there at the helm and because he comes from the NGO sector. It's something within reach.' (CCEF Staff member)

CCEF also acts as an accountability mechanism for improving current coordination efforts such as CLEAR 7 and the CLECSs which would improve management in the Danajon Bank and support the Danajon Bank Project. CLEAR 7 is a collaborative law enforcement group composed of national agencies such as BFAR, DENR, Coast Guard, the Navy, and the PNP which was formed as the result of the Coastal Resource Management Project in 2000. CCEF has been working with current social networks such as the CLECs and CLEAR 7 to ensure that they operate to their full potential.

'Besides the agreement with the LGUs, these are important instruments that we could tell them, 'okay, CLEC is not performing, CLEAR 7 should do this'...there's so much collaboration, why not do it? Lucky that today in the last two meetings we were able to tap the national fishery director to attend the meeting of CLEAR 7, and he was saying 'the President should be more pro-active.' So the national fishery director, as maybe a close friend of the foundation, will say 'why shouldn't CCEF facilitate the planning of CLEAR 7, you know, do some pro-active activities rather than just updating?' (CCEF Staff member)

Incorporating the CLECs and CLEAR 7 into the Danajon Project builds upon existing social networks for EBM in the Danajon Bank.

4. Barriers for successful management

Not all respondents necessarily saw the need for *improved* management in Danajon Bank, but this seemed to be a minority opinion. However it means that LGUs in Bohol are not necessarily unified in their perceptions of CRM needs. Bohol LGUs are not uniformly requesting the presence of an outside NGO to improve management of the Danajon Bank. Along the same lines, there appears to be differences in the use of the term ‘management.’ Thus, while most respondents agreed that the Danajon Bank should be managed, the term management was used broadly to refer to initiatives for increasing law enforcement to establishing an oversight management group. This is confirmed by the varied and diverse ideas of what specific entity should take the lead in managing the Danajon Bank.

4.1 Lack of Political Will

White et al. (2005) state that effective coastal management requires effective leaders that understand, support, implement and enforce coastal management policies. One of the major barriers to the scaling up of management in the Danajon Bank is the lack of leadership and political will referenced to both by numerous respondents and in the literature (Christie et al 2007, White et al 2005). Some LGU representatives mentioned that

‘All of us, the participating municipalities working for this [management of the Danajon]...what is very hard in the area is that...the most critical area where we can protect, there are plenty of illegal fishers. So...I hope that the participating municipalities have their say...political will to...to really protect, because it’s a problem here in the Philippines because sometimes politicians are really good at protecting the environment but others are not. So that’s the score’ (CRM official, Bohol)

‘Yeah, it’s political will. Yeah, it’s political will. So it’s good if...the governance will really be a true governance...true environmentally sound governance in the Danajon because if they try to focus on individual politics they will never focus on it’ (CRM official, Leyte)

The lack of political will is aggravated due to the fact that there are weak institutions in the Philippines, and thus political exchanges often occur between individuals rather than through formal institutions. Coordination among mayors is often difficult because some of these individuals have been rivals in the past, and there are potentially power differences.

'If we look back at what has been done before...just to get these mayors together...it's very difficult. Much, much more to get them to agree on something ...because it's all vested interests among mayors. They want to get the bigger piece of the pie of everything. (whispers) So it's kind of difficult' (CRM official Bohol)

There are also few functioning accountability mechanisms; there have been documented cases where local mayors have supported illegal fishers or reversed the management of a successful MPA (White et al 2005). A more nuanced discussion of political will occurs later in this analysis.

4.2 Scale of the Project

Scaling up management to the entire Danajon Bank will be difficult given that the Danajon Bank is composed of a heterogeneous population with different resource requirements, economic status and affluence, and because Danajon Bank is an open access resource.

4.2.1 Scaling-up and community based management

There is no clear road to scaling up to ecosystem based fisheries management and whether management should be scaled from the bottom up, top down or a combination of the two (Christie et al 2007). EBM tends to lead towards implementation through formal institutions and community members may have fewer incentives for adhering to management regulations when they do not have an active say in management or feel ownership over resources. White et al. (2006b) report that early community involvement through baseline assessment and planning is essential to the success of any coastal management program. Respondents mirror the same sentiments:

'Let them feel the concern. Let them [the fishers] feel the problem and let them feel that this area is not owned by the local government, by the national government, but it is owned by the farmer, fishermen and the fisherfolks. They should have that feeling. Without that, they won't have any concern about the future of this area' (Bohol Mayor)

'They cannot deny that the Danajon Bank has been situated with people. Thousands of people are reliant or depending on Danajon Bank for their livelihood. So if we cannot get them to be involved in the management, then it

will be very difficult because these are the same people that destroy the Danajon Bank' (CRM official Leyte)

Scaling up management may involve inherent trade-offs for involving resource communities in management (Imperial 1999).

4.2.2 Heterogeneous project site

The Danajon Bank encompasses 2 regions, 4 provinces, 2 cities and 19 municipalities. There is significant variation in resource use and dependence, affluence, population density, poverty and culture within this area. A heterogeneous population often has resource conflicts and thus conflicting voices for how the area should be managed, what resource uses should be privileged, and who bears the cost of management (Fidelman et al 2012, WDR 2004, Pollnac 2001). While most respondents state that the Danajon Bank should be managed it will most likely take time to sort out issues of fairness and equity for the many different demands made of the Danajon Bank. Respondents recognize that:

'The major challenge is how to get people to work together for Danajon Bank. That's the main challenge for whatever agency or group that will be given the task of the overall management of the Danajon Bank. To get people, especially leaders, to agree on common ground. Danajon Bank is a big area and the different people are living there. Sometimes they are friends, although we're all Boholanos, but sometimes they have a different culture, different thinking, and different biases. A major challenge there is...first to how to get our people engaged in the development of the Danajon Bank' (CRM official Bohol)

One of the most prominent disparities is the age and wealth of municipalities. Municipalities such Cordova and the city of Lapu-Lapu have substantial funding, whereas newly established municipalities such as Bien Unido are very poor and are heavily dependent on their internal revenue allotment (IRA) from the national government:

'We are one of the municipalities who are very IRA dependent; internal revenue given from the national government. There's no money from the central government given to the local government for projects, not even payment for salaries' (CRM official Bohol)

Coming to terms with a financial arrangement everyone can agree upon will take some time and consideration.

4.2.3 Danajon Bank is an open access resource

Closing marine commons and enforcing fishery regulations remain ongoing problems in the Philippines (Aswani and Christie et al 2012). The Danajon Bank and surrounding waters not only provide livelihoods to municipal fishers, but also migrant fishers from other provinces, as well as commercial fishers who encroach upon municipal waters. While the Danajon Bank has been delineated into smaller, more manageable municipal waters, Danajon Bank is large and there has historically been poor coastal law enforcement, although this trend is changing. Poor law enforcement effectively translates into an open access resource; management in open access regimes is likely to fail (World Bank 2006). One CRM official relates that managing the Danajon Bank is difficult:

'It's really hard, yeah because what, it's an open sea. And we have the biggest area for our fisheries and there are several commercial encroachments here. And that's very a big problem to us, the problem of illegal fishers. That's why the biggest share of the work, our budget, is the fisheries section' (CRM official Bohol)

Effective law enforcement will play a key role in any type of management framework.

4.3 Project Constraints

There are project conditions that make the Danajon Bank Project a daunting project for any implementing organization. Specific difficulties include the short time frame of the project for determining a potential management framework, limited funding, lack of precedence for any EBM project at similar scales and the fact that while NGOs operating in the Philippines have many strengths, coastal management is inherently a government service.

4.3.1 Time limitations

The Danajon Bank Project allots 2 years to reach specified outcomes; respondents and staff alike acknowledge that they must do the best they can, but that 2 years is very short. Comparable projects such as the CRM Project, the FISH project and the South East Cebu Cluster had project lifespans of 5 years, 7 years (2003-2010) and 7 years respectively. Considering the complexity and scope of the project, respondents feel that *'having that large of a, you know, area...and then composed of different municipalities, different priorities, different vision... (whispers) it's too*

ambitious' (Bohol Mayor). Other respondents state that inadequate time to finish a management framework might stall the process due to incompatibility with election cycles:

'It will take ten years? It's a lot. Or how many years will it be? Because every three years there is another mayor. That's a problem. And if the framework will not be finished in three years another mayor might not open to that' (Bohol Mayor)

Christie et al. (2007) state that the 'mainstreaming of new ideas is a long and tedious process,' the implication being that incorporation of EBFM will take time: 'readers should note that it has taken twenty years of concerted effort for integrated coastal management (ICM) to enter into the planning documents of key Philippine national agencies through workshops, educational materials, demonstration projects and sustained financing over decades'. It is unrealistic for donors to expect results within this narrow timeframe.

4.3.2 *Lack of Precedence*

There is a seeming lack of precedence, both legally and experientially, for a project with as large of scope as the Danajon Bank. While there have been successful EBM projects in the Philippines in the past, is it arguable that none have ever been attempted at the scope of the Danajon Bank

'This is the only eco-system based project in the Philippines right now...so it's kind of hard' (CCEF Staff)

Potential management solutions gain more traction when they have worked in the past. The rule of thumb is generally '*don't start with anything too new, don't conjure up anything that is really very vague*' (CCEF staff) because institutional change tends to be path dependent and incremental rather than completely reconstructive (Imperial 1999). There is an inherent struggle between attempting to replicate management arrangements that have worked in the past in order to ensure project success countered by attempts to find new solutions that are specifically tailored to the Danajon Bank.

4.3.3. *CCEF is an NGO, not a government agency*

CCEF fills a gap in coastal resource management; institutions that address marine management in the Philippines are continuing to evolve but at the present moment are often unclear and almost always inadequate (White et al 2006). NGOs in the Philippines are recognized under the 1987 Constitution as being important facilitators of government services; Section 34 and 35 of the Constitution states that:

'Local government units shall promote the establishment and operation of people's and nongovernmental organizations to become active partners in the pursuit of local autonomy. Local government units may enter into joint ventures and such other cooperative arrangements with people's and nongovernmental organizations to engage in the delivery of certain basic services, capability-building and livelihood projects, and to develop local enterprises designed to improve productivity and income, diversify agriculture, spur rural industrialization, promote ecological balance, and enhance the economic and social well-being of the people'

Pomeroy (1995:147) states that NGOs in the Philippines have 'taken over many of the service delivery functions of the government and serve as a countervailing force to the power structures of society and government.' In his critique of the success of the LGC of 1991, Brillantes (2004) states that NGOs in the Philippines are particularly effective at their ability to organize and mobilize citizens and thus are well placed to promote local official accountability.

CCEF provides an accountability mechanism on behalf of citizens for local governments and attempts to build social capital by involving citizens in the process of regulating marine resources, yet it is an organization with limited resources. Like any NGO, CCEF will have difficulty gaining access to government agencies and has to operate in a political environment even though they are not politicians.

'BFAR is actually for us now with him there at the helm because he comes from the NGO sector. It's [the Danajon Project] something within reach and if we do work with him there, it's possible. But what I'm scared of, what if he leaves though? We'll be back to the traditional BFAR director that we had before where you can hardly reach them, you can hardly talk to them even, so...that's scary also. You have to, you know, get heard by the agencies, the BFAR, with NEDA and all those people' (CCEF staff).

Political Will

Recognizing that coastal management services are ultimately government services, political will refers to government officials having the willingness and drive to provide CRM services. Many respondents stated that lack of political will has been the primary barrier towards collective action to manage the Danajon Bank:

'It should be in everybody's business here. It should be this way. This is the biggest reef, the second biggest to the Australia reef. But ours is very unique. This is a double barrier reef, whereas Australia is not. We are blessed by God. This whole area is benefiting through this (Danajon Bank) and yet nobody cares to protect it.' (Bohol Mayor)

Lack of political will is not a new phenomenon in relation to coastal management in the Philippines. It has been documented in the literature as a prominent barrier (Christie et al 2007). Without some attempt at root analysis of the cause of lack of political will, this issue will continue to hamper efforts for CRM project sustainability and is likely to perpetuate the cycle of foreign donor projects and projects that die when these donors eventually leave (Christie et al 2007).

A USAID report developed from a coastal management conference in the Philippines states that 'Municipal leaders should acquaint themselves with the issues, strive to develop a strong sense of stewardship, develop a commitment to conserve, and regulate the population size in coastal areas' (USAID 2009). This is a lofty goal considering that capacity is still being built, national government agencies have largely had a hands off approach to devolution of coastal management responsibilities, and there are few incentives to invest in coastal management when municipal governments must stretch their budgets to cover other basic services such as health care, education and provision of livelihoods for the poor (Christie et al 2007). Political will for implementing CRM services varies widely and is often dependent on personal conviction rather than institutional mandate.

Part of determining appropriate interventions involves analyzing underlying incentives for provision failure and lack of political will by realizing the institutional climate of clientelism. The Philippines, like many developing countries in tropical contexts, has a 'legacy of colonialism and neo-colonialism which has resulted in impoverished societies, weak states, large disparities between the few wealthy and the majority poor, corrupt governments and export-

oriented natural resource-based economies' (Christie et al 2009). Yet the Philippines has a strong commitment to democratic institutional development—particularly through its commitment to decentralized decision making. Hutchcroft and Rocamora (2003) state that Filipinos know both the promise of democracy and all the problems associated with making democratic structures work for the benefit of all.

Hutchcroft and Rocamora (2003) claim that the fundamental values of democracy still are respected in all sectors of Philippine society, yet state that there is a democracy crisis represented as a 'deepening frustration over the inability of democratic institutions to deliver the goods, specifically goods of a public character'. They go on to describe the general clientelistic atmosphere in the Philippines stating that rent seeking activities tend to take place out of public view, but the phenomenon is widely acknowledged and breeds an increasing sense of cynicism with the practice of Philippine democracy (Hutchcroft and Rocamora 2003). Quimpo defines a clientelist regime as 'networks of dyadic alliances involving the exchange of favors between politicians and their supporters', which includes material benefits for political support (Quimpo 2009). The World Development Report definition further clarifies clientelist political environments as those where politicians have strong incentives to shift public spending to cater to special interests or core supporters (WDR 2004).

The uneven and unstained provision of coastal management services in the Philippines can be partially attributed to the fact that coastal conditions are difficult to monitor and the fact that successful management interventions often take longer than three years to appreciate (election cycles take place every three years). The World Development Report concludes that it is harder for citizens to establish rewards or penalties for improvements in health and education because it is difficult to evaluate government performance and outcomes; likewise it is difficult to evaluate government initiatives in coastal management. The physical attributes of marine resources make it difficult to monitor stocks and flows of resources and to moderate and understand levels of resource use (Fidelman et al 2012). On the one hand, municipal fishers are keenly aware of changes in the ocean and regional changes in fish stocks, but it is extremely difficult for citizens to evaluate the interactions of water quality, shoreline modifications, health of coral reefs let alone attribute these changes to a specific policy. Thus, local politicians do not have incentives to invest in coastal management initiatives despite the fact that many Filipinos are highly dependent on coastal resources.

Despite the fact that the Philippines has a history of a People's Power revolution which has left a legacy of citizen participation and involvement in local government affairs, typical citizens do not really have any day-to-day means to assure accountability from local politicians to invest in coastal management. Citizen accountability is reflected in election cycles, which occur every three years. Elections themselves are shaped by several power dynamics, one of them being powerful families that have the money and political legacy to run for office. Political offices often are handed down within families; Hutchcroft and Rocamora attribute this phenomenon to Spanish and American colonialism which imposed literacy and property requirements for those who hoped to enjoy political power (Quimpo 2009, Hutchcroft and Rocamora 2003). Officials are keenly aware that they must garner public support to get re-elected, which has the potential to result in clientelism:

'I had a hard experience, yes politicians say (emphatic) 'oh I have to protect the environment, I have very big budget' but (whisper) times when barangay captains ask mayors to release illegal fishers for example is really my experience. We have an ordinance in the law. We have confiscated five compressors in a night, the matter is already in my custody, all are in place, but the mayor called me to release. It's because the barangay captain pleaded and perhaps because of the election time' (CRM official Bohol)

There is also the potential for powerful lobby groups, such as illegal fishers who have distinct disincentives for active coastal management, to capture the interests of politicians:

'They need a system of government. In any type of program, maybe even in the US or in any other parts of the world...one critical aspect is the involvement of politicians. Because politicians have always had a term of office. So, whether you like it or not you'll be subject for election and the people will elect you. Especially here in Bohol, in the Philippines...our system is that a mayor, we call it local official, only is elected for a three year term. So the people at large will vote for you in the whole municipality. So you cannot really blame the illegal fishers [for coastal degradation], these illegal fishers (pause)...they have money. They have money so they will support a politician. And in the end that politician will win the election so...that person is in office so maybe his decision on protecting the environment will be affected because of the support there' (BEMO official, Bohol).

Even in the best case scenario where elected officials do not have clientelist agendas and government services are designed to be universal for all citizens (WDR 2004), there are issues of competing agendas and limited funding. Municipal governments are also charged with providing infrastructure, health and education services which are all valid, universal concerns especially in areas with high rates of poverty. Projects that target these types of services tend to produce tangible and welcomed outcomes, and it is much easier to claim responsibility for infrastructure projects because the output is constantly visible to citizens.

While there is no panacea for improving political will for providing coastal management services, a step in the right direction would be increasing accountability of local government officials to stakeholders of coastal resources. Officials must be held accountable for their actions; it is important that an EBM management program provide opportunities for key actors to be held accountable for their allocation of scarce resources (Imperial 1999). The capacity for implementing coastal management services is varied throughout the Philippines; CRM knowledge and capabilities are relatively high in Bohol. Generally local government officials recognize their mandate and have taken strides to implement CRM services. There are other municipalities within this same area whose local government officials have little interest in pursuing CRM services.

Policy recommendations:

Citizen awareness and ability to monitor coastal environments would allow for increased accountability for CRM services. Specific initiatives could include the ability of local groups to track the price of fish as a proxy for fish availability, and having access to municipal government records of illegal fishing apprehensions and budget spending for CRM activities. This type of knowledge would allow local people's organizations or people's fishery organizations to begin to attribute local coastal conditions to specific government initiatives. Local government accountability can also be improved through the implementation of an award or certificate system that acknowledges good CRM service performance; this has had some success in the Philippines (White et al 2002). This type of award system would openly acknowledge the work of local governments towards good coastal management, and could potentially be accompanied by financial awards tied to continued improvement of coastal management services. An extensive IEC campaign about coastal management through an independent NGO or project

would also prove helpful in educating citizens about their basic right to receive coastal management services.

The following framework (table 2) is an adaptation of Grindle's ease/difficulty of governance reforms as applied to coastal management interventions for the Danajon Bank (Grindle 2007). The content of the table was developed based on relevant literature, Danajon Bank documents and participant observation. It is meant to be used as a planning tool to determine the challenges associated with specific policies; other individuals would likely come to distinct, and defensible, conclusions. Certain interventions such as implementation of an award program, revival of the MOA, provision of CLEC law enforcement reports, and provision of municipal CRM budget reports emerge as being easier to initially implement. This chart is useful to prioritize interventions if one particular constraint such as low budgetary requirements is necessary for feasible implementation. This type of analysis guides the Danajon Bank Project for determining reform initiatives that are relatively easy to implement in order to obtain early successes to demonstrate success and generate 'buy in' for stakeholders.

Summary:

Recognizing the current climate towards clientelism and the lack of incentives towards universal service of coastal management is one of the starting points for moving forward towards the provision of coastal management services in the Philippines. Acknowledging that coastal management is inherently a government service, it is helpful to explicitly identify lack of political incentives and lack of accountability as driving factors for the lack of political will for the provision of coastal management services. Increased citizen awareness and ability to monitor coastal environments would allow for increased government accountability. Grindle's framework (table 5) helps to identify which interventions are more feasible and thus provide tangible steps forward for reform. Specific attention should be given to engaging municipalities which are not currently active in coastal management.

Table 7: Difficulty of Specific Initiatives for Scaling Up Management/Governance of Danajon Bank (Adapted from Grindle 2007; Pledge of Commitment)

Intervention		Degree of Conflict Likely	Time Required for Institutionalization	Organizational Complexity	Logistical Complexity	Budgetary Requirements	Amount of Behavioral Change Required
Information Education and Communication Campaign		low/medium	low/medium	high	high	medium	low
Increased Collaboration	Establish collation of CRM officers	low	low/medium	low/medium	medium	medium	low/medium
	Establish functional FARMCs in all LGUs – begin to integrate	low	low/medium	high	high	low	low/medium
	Award program for high LGU Performance	low	Low	low	low/medium	low	low
	Begin to harmonize CRM plans	medium/high	high	medium/high	medium	medium	medium/high
	Use arbiters to assist in resolving disputed municipal boundary delineations	high	medium/high	low	medium/high	medium	medium/high
Scaling up of law enforcement	Increased communication among CLECs and IFARMC	low/medium	low/medium	low	medium/high	low/medium	medium
	Award program for high performance and cooperation for law enforcement	low	low	low	low/medium	low	low
	Creation of special prosecution team	low/medium	medium/high	high	medium/high	high	medium/high
Strengthen Institutional Capacity	Authority and roles for different levels of government and stakeholders identified	medium/high	medium	medium/high	medium	low	medium/high
	TWG established	low/	low	medium	medium	medium/high	medium

		medium					
	MOA reinstated	low/ medium	low	low/medium	low	low	low
Establish monitoring program for increased LGU accountability	Track fish prices	low	low	low/medium	medium	low/medium	medium
	Self-reported catch data (quantity and species composition)	low/ medium	medium	medium	medium/ high	low/medium	high
	Public availability of CLEC reports	medium	low	low	low	low	low/medium
	Public availability of CRM budget	medium/ high	low	low	low	low	low/medium

Danajon Bank Summit

The 1st Danajon Bank Summit was held in Cebu City, Philippines January 18-20 as a means of gathering various stakeholders to collectively determine a collaborative management framework for the Danajon Bank. Environmental, socio-economical and governance profiles were presented the first day followed by an open forum. Participants had the opportunity the second day to discuss and participate in 3 workshops targeted on ‘Improving Governance and Policies for Collaborative Management of Danajon Bank,’ ‘Restoring Fisheries and Habitats in Danajon Bank,’ and ‘Economic Enterprises and Relevant Economic Opportunities for Danajon Bank,’ the results of each were presented to the entire summit. The third day culminated with the presentation, commitment speeches and signing of the Danajon Bank Manifesto, a document produced by the collective efforts of summit participants which details priority actions and recommendations for management of the Danajon Bank.

Various stakeholders participated in the Summit, including LGU representatives from each of the 19 municipalities involved in the Danajon Bank Project, national government agencies such as BFAR, DENR, NEDA, DILG, DOT, NGOs such as Project Seahorse and PATH Philippines, as well as private, academic, private and religious sectors. Representatives of the governors from each of the four provinces involved in the Project signed the Manifesto and expressed their commitment for the summit’s outcomes on the third day.

Summit Outcomes

The Summit had several major outcomes. These included signing and ratifying a Summit Manifesto among participants, as well as the creation of an official statement opposing the 5154 House Bill which would declare Danajon Bank as a marine park. In terms of governance, participants decided to revive the latest MOA, unanimously named CCEF the interim secretariat and decided on a February 23rd meeting in Bohol with the mayors to iron out further details and creation of a Danajon Bank Management Board.

1. Summit Manifesto

The Summit Manifesto is a working document that was produced based upon the outcomes of the 3 workshops. Major outcomes included the commitment to create a

Danajon Bank Management Council and a technical working group in a follow up meeting through the revival of the CELEBOSOLE MOA; creation of a management plan and funding mechanism through the newly created Danajon Bank Management Council and Technical Working Group, and finally to identify and research viable economic and sustainable eco-tourism activities. The Summit Manifesto was signed by representatives of the provincial governors, 19 municipal mayors, national agencies including DENR, BFAR, NEDA, and DOT, representatives of the academic, NGOs, private and religious sector.

2. Revival of the CELEBOSOLE MOA and the creation of the Danajon Bank Management Council (DBMC)

Participants of the governance workshop debated various governance scenarios and decided that a good preliminary course of action would be to revive the most recent memorandum of agreement (MOA) between the four provinces. This would not necessarily re-instate the specific terms of the CELEBOSOLE MOA as not all participants in the workshop were signatories of the last MOA; rather the intent was to establish a legal basis for collaboration that was still recognized by all the signatories. The MOA could then be modified and provide the legal basis for participants to create an appropriate management council and technical working group in subsequent meetings. CCEF was unanimously named as the appropriate interim secretariat.

3. House Bill 5154

House Bill 5154 was a topic of debate at the Summit, and at times threatened to take over as the focus of the Summit. If passed, the proposed bill would declare the Danajon Bank as a natural park; this would be a form of legislation distinct from NIPAS, although many legal concepts are borrowed from NIPAS. Although the Bill was in its second reading by Congress, many of the affected participants were hearing about the Bill for the first time at the Summit. CCEF agreed to draft an opposition paper to the Bill on the basis that proper public consultation had not been conducted, rather than on the actual content of the Bill. Not all participants were adamantly against the bill; a few prominent leaders

stated that they were not necessarily against the bill, but that they would go along with the majority.

Analysis of the Summit

The summit was an important initial step toward ecosystem based management in Danajon Bank. LGU leaders and other stakeholders were successfully mobilized to re-instate the CEBOLESOLE MOA, an important step towards realizing collective management in the Danajon Bank. Collaboration and participatory planning while scaling up governance involves inherent trade-offs. Thus, while a MOA might not be the strongest form of governance, it emerged as a tangible outcome of participatory processes and provides a platform for further management reform.

The Summit was a positive experience that brought together various stakeholders in the Danajon Bank. Small and successful steps are needed towards collaboration, which will increase social capital for management. Putnam states that ‘When economic and political dealing is embedded in dense networks of social interaction, incentives for opportunism and malfeasance are reduced’ (Putnam 1993). ‘Stocks of social capital, such as trust, norms, and networks, tend to be self-reinforcing and cumulative. Successful collaboration in one endeavor builds connections and trust--social assets that facilitate future collaboration in other tasks,’ (Putnam 1993) By facilitating steps towards collaboration such as the Danajon Bank Summit and the initiation of the MOA, CCEF is building social capital needed for EBM in the Danajon Bank. Building social capital will be one of the greatest assets for unifying a non-homogenous area. Ultimately, the Summit was unifying event that brought together different stakeholders in one place, began to mobilize leaders, and will hopefully pave the way for future progress.

Ecosystem Based Management in the Philippines

EBM is an attractive framework because it promises to deliver a variety of services including holistic policy and laws, as well as scaled-up and streamlined management that is centered on ecosystem processes and ecologically relevant scales (Leslie and McLeod 2007, Pikitch et al 2004). These promises are all the more attractive in light of globalized management concerns such as climate change, ocean acidification and overfishing; Leslie and McLeod (2007) state that marine EBM offers an approach that can reverse the severe, widespread declines in coastal and ocean systems. A significant number of articles related to coral reef management and coral reef fisheries currently recommend ecosystem based management as a guiding framework for addressing socio-ecological concerns (Bellwood et al 2004). EBM is currently being institutionalized in the United States (Pew Oceans Commission, Fluharty 2012) and its offshoot, ecosystem based adaptation, has recently been prescribed as a mechanism for Pacific Island nations facing climate change (see Hale et al 2009). Most evaluations of the impact of EBM initiatives have been in developed world contexts (Christie et al 2007).

EBM needs to consider the role of governance, which includes context specific institutions, incentives and tradeoffs for management (Christie et al 2009, Fernandez et al 2000, Imperial 1999). EBM has been widely embraced as a guiding management framework without substantial critical evaluation of institutional utility; management focus tends to be on an idealized scenario rather than consideration of current efforts and constraints (Christie 2011, Christie et al 2009, Imperial 1999). While EBM offers important insight into holistic management of ecosystem goods and services, it is not a panacea and inherently involves trade-offs due to institutional and management realities that are not yet fully explored in the literature. As a holistic framework that considers resource management in the context of socio-ecological systems, institutional fit needs to be considered as an integral aspect of successful and sustainable management. Scaling up management to ecosystem processes may or may not be feasible given different institutional capacity and mandate.

Ultimately EBM is context specific and cannot be a universal prescription intended to solve coastal management problems; all situations are different and will require local interpretations grounded in local realities (Christie et al 2009, White et al 2006b, Ostrom 1989:48). In the context of the Philippines realizing EBM means integration of EBM principles

with the underlying framework of ICM in order to balance ecosystem and societal goals (USAID 2009). EBM needs to build upon existing institutions and coastal management initiatives such as ICM while recognizing the limitations of EBM given current institutional arrangements (Armada et al 2009, Eisma-Osorio 2009).

CRM/ICM and EBM services are inherently government functions (White et al 2006b). The role of *barangays*, municipalities, cities and provinces have been essential in every instance for long term success of ICM interventions (White et al 2006b, Eisma et al 2005, Lowry et al 2005). Likewise EBM efforts need to consider the roles of local government units for sustainability. The right institutional scale will depend upon the consensus and drive of leaders within municipal governments and will potentially require developing new governance arrangements and cooperative agreements across municipal leaders who recognize the need to manage marine resources at ecosystem scales (Eisma-Osorio 2009). EBM in the Philippines will need to balance the need to scale up management to ecological processes with the expectation for participatory planning (Aswani and Christie et al 2012).

Scaling up of EBM has been achieved in the Philippines as evidenced in the SE Cebu cluster and the FISH Project (Aswani and Christie et al 2012, Eisma-Osorio et al 2009). ‘FISH demonstrated that it is plausible to develop an ambitious, and context-appropriate example of EBM. Its success depended largely on incremental policy development and careful attention to incentives and governance opportunities’ (Aswani and Christie et al 2012: 4). Scaled up management of the Cebu Strait was accomplished when municipalities collectively agreed that they had shared management issues and a common resource base which allowed them to cooperate through an inter-municipal collaborative system (Eisma-Osorio et al 2009).

While there has been steady progress toward implementing EBM management in the Philippines, it is important to note that these successes were contextually grounded. Resource management is influenced according to social variables such as social norms, population homogeneity and the distribution of resources within a given site (Imperial 1999). The Danajon Bank and the SE Cebu Cluster are significantly different sites in terms of scale, population, institutions, drivers of coordination, and resource dependence among other factors. The SE Cebu cluster involved eight municipalities from the same province; the Danajon Bank involves 19 municipalities from two regions and four provinces. Motivation for coordination in the SE Cebu

cluster was largely driven by the threat of commercial fishing by outsiders (Eisma-Osorio et al 2009), whereas in the Danajon Bank the largest driver identified in interviews was the presence of illegal fishing and the use of illegal gear - many times used by local people. This not to say that an EBM approach in the Danajon Bank is inappropriate, rather these considerations need to be factored in order for EBM to have a better chance of success.

Specific difficulties for scaling up to EBM in the Danajon Bank include coordinating among 19 municipalities, which have different incentives for collaborating. While interviews overwhelmingly show that illegal fishing is recognized as a universal problem, it is yet to be seen whether this common issue is potent enough to mobilize all 19 municipalities for intensive management of the Danajon Bank. Attempts to scale up would involve mobilizing strategies for municipal leaders, specifically creating incentives for collaboration, and ultimately should attempt to find the proper management balance between various LGU actors and resource dependent communities. EBM is not a panacea even within the Danajon Bank; there are trade-offs to consider. Local communities may potentially feel usurped and large scale EBM may threaten community ownership and buy-in for coastal management. The Danajon Bank Project is currently the largest attempt at EBM in the Philippines. The challenge will be to sustain initiatives for effective management of the Danajon Bank.

Conclusion and Recommendations

Management of the Danajon Bank through self-governing municipalities that have limited coordination is unlikely to lead towards EBM. Unless municipal governments consider coastal management valuable, there is little potential for scaling up to EBM in the Danajon considering that:

1. The current legal framework supports individual municipal LGU management of coastal resources (LGC 1991, PFC 1998).
2. There is an expectation in the Philippines for participatory planning and consent of municipalities before implementing a holistic management regime.

Given these starting conditions, the importance of effective and sustained leadership for scaling up to EBM cannot be overstated. Currently, the majority of municipal leaders in the Danajon Bank support scaling up management, but not all leaders see the need for improving coastal management.

The challenge of scaling up ecosystem and institutional arrangements to the Danajon Bank is an exciting and daunting one. This Project needs to prioritize appropriate interventions needed to achieve outcomes based upon difficulty of implementation and project restraints. A major challenge to the Danajon Project will be to mobilize leaders and provide greater incentives for decision making that will result in EBM considering that CRM services are dependent upon the personal interests of LGUs rather than being institutionalized. Another challenge will be to involve heterogeneous communities and foster social capital which will ultimately generate participant 'buy in' for management. Improving governance for resource management cannot be achieved without generating sufficient capacity, political will and resources for the enforcement of laws and regulations (Jones et al 2011). As CCEF prepares to create a management plan for the Danajon Bank as the final stage of the Danajon Project they should specifically consider how to foster social capital in the Danajon that will lead towards support of EBM as well as how to increase political incentives for leaders to participate in EBM in the Danajon Bank.

Foster Social Capital

CCEF has had a long history of working with communities and has already begun to foster social capital in the Danajon Bank through the Danajon Bank Summit. So far, the Danajon Project has largely included government officials; at some point community leaders will need to be included in the creation of a management plan. Social capital will come from increasing community awareness and capacity building. Specific recommendations for increasing social capital in the Danajon Bank include:

- Ensure that FARMC groups in participating municipalities are formed and active; representatives from FARMC groups should be involved in the creation of the management plan.
- IEC Campaign for the Danajon Project – While this would be a large undertaking, it is important to note that CCEF would not be starting from scratch. A high percentage of the population is aware of and in favor of marine management tools such as MPAs. There is a need to create support for scaled up management through bottom up processes as well as top down processes.
- Continue to build on social networks that have been created through law enforcement groups, i.e. CLECs; expand existing groups wherever feasible.

Increase Political Incentives for Decision Making

Incentives for political leaders to invest in EBM will likely come because of greater community participation as well as greater political transparency and accountability. Andersson (2003) states that the general population within a municipal jurisdiction may demand that the popularly elected municipal decision makers to provide them with coastal management services, however the strength of the incentive originating from the electorate's pressure partly depends on the availability of accountability mechanisms through which constituents can make their voices heard. CCEF can help empower local communities through education and awareness, and potentially train community members to monitor coastal resources. CCEF should continue to build and maintain partnerships with municipal LGUs in the Danajon Bank to provide information, technical support, trainings and ultimately provide some measure of accountability for participation in the Danajon Project.

- CCEF should act as the interim secretariat until the council is set up; however care needs to be taken that CCEF is not relied on too heavily. Political will needs to be fostered, and a sustainable interim secretariat needs to be found sooner rather than later; this role could potentially come from the Province.
- Engage the private sector as they are potentially a funding source for a management plan. Private funding could provide economic incentives for LGUs to participate in the Danajon Project.
- Explore the interest and feasibility of training community members on how to monitor marine resources.

Finally, scaling up to EBM in the Danajon Bank will not only involve the commitment and support of LGU leaders, but will most likely include a strategic role for international donors such as USAID. Given the magnitude of implementing EBM in the Danajon Bank and the financial constraints of many LGUs, EBM is unlikely to occur without the funding and support of long-term donor based projects (Christie et al 2007, Christie et al 2005). Comparable large scale management projects have been funded for 7-10 years; it is justifiable to extend the initial 2-year Danajon Bank Project to at least four or five years.

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