

# The Relevance of Governance Institutions in Marine Protected Area Design and Management: Lessons from Northeastern Iloilo, Philippines

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## ABSTRACT

The experience of the Philippines on decentralized marine protected area (MPA) management can provide an instructive purview of nature-society processes and politics of scale in a post-colonial and tropical marine fisheries setting. This paper examines and analyzes the comparative advantage and limitations in adopting government regulation, community-based initiatives and co-management arrangements (i.e., rules) in designing and implementing MPAs to meet conservation and livelihood goals. The theoretical discussion will be enriched by providing relevant contextual factors (i.e., biophysical setting, community attributes and institutional setting) from secondary literature and social science field data gathered from March to December 2005 in various coastal municipalities in Northeastern Iloilo Province, Philippines. The study site contains 17 MPAs established between 1994 to 2004 with diverse backgrounds and profiles, and are governed by various alliances (state and/or non-state actors) in different scales (i.e., local to international). The paper will argue that no single institutional arrangement is likely to be effective in addressing all the circumstances surrounding MPA design and implementation. But in the milieu of a depleted natural resource base, and the continued deterioration of the livelihood and health of poor people, environmental protection of MPAs and municipal fishing grounds of subsistence fishers should be prioritized by various actors and policy networks.

## INTRODUCTION

A significant proportion of the social and economic welfare of an archipelagic country like the Philippines depends directly or indirectly on the availability of environmental goods and services provided by productive coastal and fisheries resources. The countries tropical coastal areas<sup>1</sup> are characterized by highly diverse ecosystems and equally diverse related functions such as providing a source of income and food. The Philippines is the 8th largest producer of fish and other marine products in 2004 and its 13.6 million metric tons output is 2.5 percent of world total (FAO Statistics Division website). The country is also the 11<sup>th</sup> largest fish harvester in the world with fisheries contributing 22.59 percent of agricultural export (FAO 2003). Although estimates reveal that only 1.7 million of the 85 million of the population are directly earning a living from fisheries<sup>2</sup>, 40.7 per cent of per capita daily animal protein intake of the country comes from fisheries products (Green et al. 2003, World Bank 2005: 30). Philippine coastal and marine resources, aside from contributing vast quantities of food and supports an economy based on nature, also functions as a trade and transportation route. Coasts also provide tourism dollars, by attracting people who want to explore these unique environments and engage in various recreational activities.

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<sup>1</sup>Is technically "... a band of dry land and adjacent ocean space (water and submerged land) in which terrestrial processes and uses directly affect oceanic processes and uses and vice versa; its geographic extent may include areas within a landmark limit of one (1) kilometer from the shoreline at high tide to include mangrove swamps, brackish water ponds, nipa swamps, estuarine rivers, sandy beaches and other areas within a seaward limit of 200 meters isobath to include coral reefs, seagrass beds and other soft-bottom areas" (The Philippine Fisheries Code of 1998, 5).

<sup>2</sup>Approximately 1.3 million are municipal fishers while 375,000 are commercial fishers. But fish catch is skewed in favor of the latter with a share of 54.3 percent of total annual catch. The contribution of aquaculture and marine ranching or fish pen culture to total Philippine fish production, on the other hand, is on the rise and currently employs 16,497 individuals (Green 2003:33, Rosario 2006:3).

Since coastal and marine resource systems are environmentally, economically, socio-culturally and politically important "managing" and "protecting" them has always been an important goal for government (i.e. local and national levels). But the conventional approach of optimizing economic and biological yield of a few species thru maximum sustainable yield (MSY) calculations is unsuited in tropical countries like the Philippines with a multi-species marine resource (Pomeroy 1995). Moreover, in these tropical and less-well-managed economy contexts where target species are often highly vulnerable, ecological data are incomplete, fish landings often undocumented, with ill-defined property rights (Roberts & Polunin 1991, Roberts 1997, Johannes 1998), important public interest issues such as sustainable fisheries and environmental justice can be compromised. Since the 1980s coastal and marine policy is increasingly adopting various kinds of marine protected area (MPA)<sup>3</sup> strategies to achieve multiple objectives (Russ & Alcala 1999).

But a large number of MPAs are not effective and do not achieve their goals (McClanahan 1999). A lack of efficacy can occur because of the lack of community acceptance and institutional support by concerned actors/stakeholders in various scales (White & Voght 2000, Dietz et al. 2003). Since the late 1980s environmental awareness and calls for "sustainable development" (i.e., economic growth coupled with environmental protection and social equity) from multilevel locations, have encouraged the participation of civil society (e.g. people's organizations or POs, non-governmental organizations or NGOs, academe, etc.) and market forces (e.g. business enterprises, financial institutions, multinational corporations, etc.) in the

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<sup>3</sup>MPAs can be generally described as coastal or marine environments that are established or constructed for conservation and protection, and where activities are managed based on specific rules and guidelines that are imposed by individuals and/or groups through technologies and methods of socio-cultural, political and economic institutions. The work of Foucault (1991) provides insights on how the governance of MPAs involves not only what people can do (rules), but also what goals and behaviors are considered socially desirable (norms/expectations).

discourse of coastal area management and the remaking and recomposition of governance regimes. This outcome was institutionalized through devolution and decentralization of marine and coastal area governance.

In the Philippines, following the enactment of the 1987 Philippine Constitution<sup>4</sup>, the promise and trend of increased people's participation in multilevel development processes and natural resources management was legitimated by enabling national legislation such as the Local Government Code of 1992 and Fisheries Code of 1998. In terms of legislation, the Philippines is now one of the few countries in the world that: transfer decisionmaking authority to local communities; shifts decisionmaking and fiscal powers to local branches of government, and; holistically incorporates the fisheries sector in coastal resources management or CRM (Fernandez et al. 2000, Meltzer 1998).

Recently, scientific research has adjudged the Philippines as the epicenter of marine biodiversity per unit area in the world (Carpenter and Springer 2005). The study also provides ample evidence that the marine and coastal resources of the country, and elsewhere, are threatened and overexploited. Some attribute these problems to flawed science, as well as the interrelated socio-economic problems (i.e., population increase and poverty) putting pressure on fragile natural resources. Others argue that fisheries management fails to change incentive structures, and promotes inefficient fishing practices that are also inconsistent with community values. Still others observe that even though political will may exist to manage coastal fisheries, various stakeholders often lack the data, skills and resources necessary for effective management (see Roberts 1997

and WB 2005 for an overview). Also, CRM in tropical contexts, also presents a complex social problem or classic collective action problem (Sandler 1992), coupled with intense competition over scarce marine resources. It is therefore expected that governing and managing such "heritage" will increasingly become an international agenda spurring diverse and complex political and power relationships across scale. But dominant and apolitical perspectives do a poor job of analyzing issues related to institutional design (means) and performance (ends) of coastal management systems in the country.

The paper begins with a brief overview of three major types of institutional arrangements used to manage coastal zones and MPAs in the Philippines in order to identify their characteristics and illustrate the importance of considering institutional design and performance indicators. The experience of coastal municipalities in Northeastern Iloilo Province (NIP) in institutionalizing MPA efforts are then weaved into the discussions to support arguments and insights. The paper concludes by calling for the adoption of an approach to institutional analysis that considers the context and varied outcomes of relational politics in designing and performing coastal management and development.

## METHODS

This paper is based on research results from field data gathered in coastal municipalities of Northeastern Iloilo (NI), particularly those organized under the Northern Iloilo Alliance for Coastal Development (NIACDEV)<sup>5</sup>,

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<sup>4</sup>The Constitution provides an explicit call for active grassroots and civil society participation in democratic and distributive processes in development work for the welfare of the country (Art. II, Sec. 23). It recognizes the obligation of the State to "protect, develop and conserve marine resources (Art. XII, Sec. 7) and "protect the right of subsistence of fishermen, especially local communities (Art. II, Sec. 22).

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<sup>5</sup>The NIACDEV is a registered non-profit decisionmaking and management council composed of 10 municipalities (seven have coastal areas) and led by local chief executives (i.e., mayors). Founded in 1998 by six municipalities (seven have coastal areas) and led by two volunteers (i.e., a municipal councilor and a CRM officer). The NIACDEV coastal area has island barangays. Subsistence and commercial fishing activities, as well as fish processing, abound in its shallow (below 100 feet) fishing ground, dotted with patches of coral reefs, mangrove areas, and seagrass beds.

from March to December 2005<sup>6</sup>. Although proximate with one another, the biophysical and socio-economic context of the members of NIACDEV is diverse (see Figure 1 and Tables 1 & 2). Data were collected, organized and analyzed using qualitative research techniques and include the following:

1. Analysis of secondary data, mostly from municipal and government offices, and published and unpublished reports of experts/researchers.
2. Key informant interviews with actors from government, non-government organizations, and local communities to verify and enrich the secondary information.
3. Participation and attendance in various CRM-based planning, implementation and monitoring exercises at the barangay, municipal and intermunicipal levels.
4. Participant observation further enhanced the collection and analysis of data.

Due to the sensitivity of enforcement and compliance issues that were encountered in the field, the exact location of key events and identity of key informants are not revealed in the text. The various data sources for this study were reviewed and analysed together so that findings were based on convergence of information from different origins. The development of converging lines of inquiry through the process of triangulation, and the comparison of case study sites, allowed for the corroboration of evidence. This paper was also enriched by a multidisciplinary perspective (i.e., political science and human geography) in analysing socio-ecological systems at various scales. The use of triangulation and multidisciplinary in the research process attempts to reduce biased conclusions and overcome the limitation of looking at the topic using a specific research method or academic perspective.

	AJUY	BALASAN	BATAD	CARLES	CONCEPCION	ESTANCIA	SAN DIONISIO
Land area (km <sup>2</sup> )	175.52	57.3	52.61	103.52	97.2	30.55	127.07
Surface area of mun. waters (km <sup>2</sup> )	250	0.6	8	368	320	10	7.6
Hectarage for coral reefs, mangrove and seagrasses*	--;	--; 13.5; --	27; 33; --	--; 200.27; --	--; 17.43; --	2.5; 5; 6.5	3; 13; 14
Length of shoreline (km)	74.83	3.5	8.2	94.7	120	28.51	23.7
No. of islands (0-10; 10-15; 15+ kms. from shore)	8 (8; 0; 0)	0	2 (2; 0; 0)	30 (16; 4; 10)	17 (11; 4; 2)	3 (3; 0; 0)	1 (1; 0; 0)

NIs municipal waters are relatively shallow (less than 60 meters). Anchovies, goatfish, mackerel, sardine, herrings, slipmouth, nemiptepids, crevalles, whittings, therapons, as well as blue crabs, squids, and shrimps, lobsters, seashells are targeted species. milkfish, tilapia, prawns, and seaweeds are cultured.

**Table 1. Bio-Physical Context of Coastal Municipalities in Northeastern Iloilo (NI).**

<sup>6</sup>Part of thesis fieldwork results for the PhD Program of the Department of Human Geography-RSPAS. A travel grant was provided by the Australian National University, with support from the Doctoral Studies Fund of the University of the Philippines.

	AJUY	BALASAN	BATAD	CARLES	CONCEPCION	ESTANCIA	SAN
Coastal Brgy. (% of total brgy.)	18 (53%)	2 (8.6%)	6 (25%)	32 (97%)	18 (72%)	16 (64%)	9 (31%)
Coastal population (% of total pop. 2000)	27,174 (60%)	1,543 (6%)	6,815 (40%)	18,920 (40%)	28,742 (84%)	27,351 (72%)	10,917 (43%)
Registered mun. fishers, 2005 (# of vessels)	3,185 (1,182)	120 (5 motor 46 non)	142 (200 motor 144 non)	4,500 (est.) (2943 motor 3623 non)	3,211 (932 motor 704 non)	1,296 (232 motor 165 non)	462 (251 motor 176 non)
Commercial fish prod. '003, mt/year (# of vessels, ports)	-- (5; 0)	-- (--; 0)	1,608.4 (--; 0)	783.76 (--; 1)	21.23 (318; 1)	1,144 (420; 2)	968.4 (36; 1)
Fishpond area (# of operators)	1,159 has. (148)	836.3 has. (45)	88 has. (23)	1,539 (--)	220 has. (15)	260.3 has. (2)	281.86 has. (14)
Fish processing plants (prod'n.) in metric tons	1 for crabs (1.5)	--	1 for crabs (10.5-14)	2 for crabs (3.5)	2 for blue crabs (7-21)	4 for crabs & shellfish (3.5)	4 for squids, shrimps, anchovies

**Table 2. Socio-demographic Context of Coastal Municipalities in Northeastern Iloilo.**

Note: Sixty percent of NI municipalities are in the top 10 percent of the poorest in the province, while its annual population growth rate is higher than the national average at 2.8 percent. Child malnutrition in the coastal and island barangays of NI is 32 to 44 percent of the 0-6 year old bracket (Source: Municipal Health Offices in NI)

## RESULTS AND DISCUSSIONS

Coastal area and marine fisheries management and conservation programs in the Philippines, and in less well-managed economies, are often based on three types of institutional arrangements: (1) bureaucracy-based (Fernandez et al. 2000), (2) community-based (Charles 1992, Ferrer et al. 2001), and co-management (Kuperan et al. 2003). The history of natural resource management and conservation reflects elements of control and coercion by government and state institutions. The perceived failures and shortcomings of centralized state institutions, however, drew together disparate communities and interests into collective awareness and action to challenge or reconfigure existing institutions for natural resources management and conservation.

### Bureaucratic Institutions

For bureaucracy-based institutional frameworks a common assumption is that an external leviathan or

Hobbesian leader is necessary to prevent the "tragedy of the commons", an assumed condition where all individuals seek personal benefits in environmental systems. Since costs of extraction (i.e., overexploitation) are shared by the entire members of the community, accelerated individual extraction is pursued and inevitably leads to environmental destruction (Gordon 1954, Ostrom 1990). Institutional arrangements based on centralized national or local government control can be considered as the dominant or default position in managing coasts and related resources (Bryant & Bailey 1997). Analysts do not discuss the need for state control over coastal resources but on how to efficaciously decentralize state control of the existing regulatory system. Effort is made to examine the development and implementation of various coastal and fisheries management plans and regulations (cite government backed studies). Since it occupies the dominant position, bureaucracy-based arrangements are widely criticized by those favoring different arrangements (e.g., Ferrer and de la Cruz 2001).

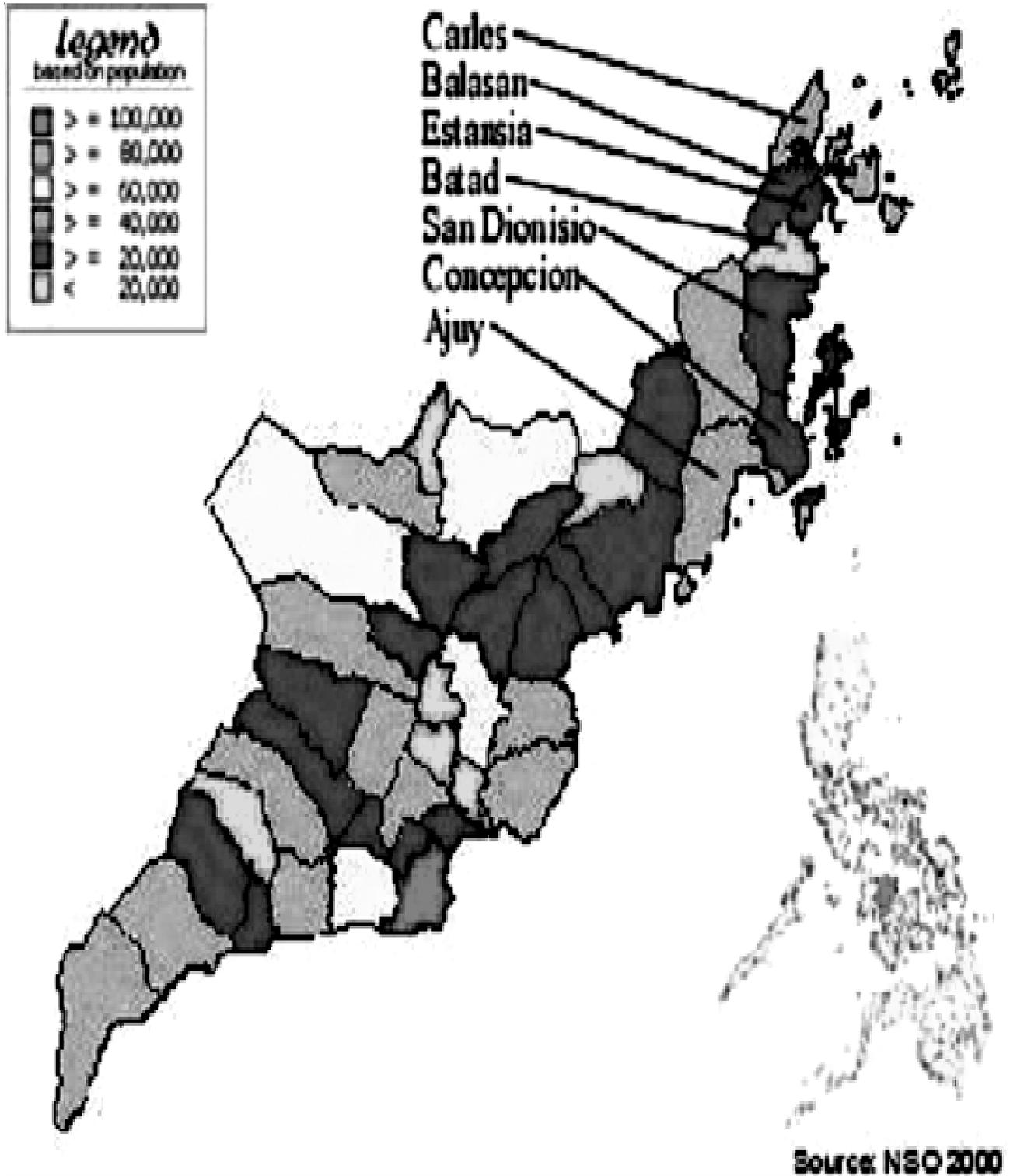


Figure 1. Location of Coastal Municipalities of NIACDEV in Northeastern Iloilo Province

In bureaucracy-based arrangements, property rights to fish and exploit coastal resources are held by government on behalf of the public and the focus is on developing regulations that maintain stocks of resources at sustainable levels. Other socio-economic and conservation goals, however, may be embedded in these programs. In the Philippines, government uses coastal and fisheries policy to promote the twin goals of coastal management for community (i.e., 1998 Fisheries Code) and national (i.e., Agriculture and Fisheries Modernization Act of 1998). But in the context of “depleted state of resources” (Stobutzki et al. 2006:113), and the continued deterioration of the livelihood and health of poor people (WRI 2005), environmental protection to enable resilient and viable local communities should be prioritized.

At the national level determining the maximum sustainable yield (MSY) or total allowable catch (TAC)<sup>7</sup> is considered officially important in bureaucracy-based arrangements because the information is used to control fishing effort by adopting rules that limit entry (e.g. thru a fisherfolk identification system, and boat licensing of vessels below 3 gross tons), creating closed seasons, restricting illegal gear and imposing volume and size limits of fish caught etc.<sup>8</sup> It is assumed that when and where there is some stability in these rules, it improves accountability, lowers administrative costs, and improves equity, since the rules often apply to all fishers or user groups. Although the national government endorses the use of data on MSY or TAC to guide policy, there is no evidence that the strategy is being implemented. In the Municipality of Concepcion, and the rest of the coastal-based members of the NIACDEV, such figures are not utilized in local policy. But enabling local

legislation, efforts at patrolling coastal areas and application of other strategies mentioned earlier (save for the imposition of volume and size limits of fish caught) are being instituted to limit fisher and vessel entry to municipal waters.

The process of developing fishery management plans in bureaucratic systems can easily be politicized and subject to capture by subsistence and commercial fishers, politicians, or even conservation groups (Smith et al. 2003). Conflicts among competing stakeholders can make policy change costly, time-consuming, and increase information costs. Consequently, the system's ability to rapidly adapt to catch declines, change in fishing technology, or changing social, political, and economic conditions may be reduced. Such dilemma can be observed in NIP. Key informant interviews and participant observations reveal persistent conflicts over management plans and strategies between and among subsistence fishers, commercial fishing operators, politicians and their pressure groups, fish processing plants, barangays with marine protected areas (MPAs), and non-governmental organizations (NGOs) that implement various development programs/projects. Recent decline in the harvest of crabs in NIP has ignited an on-going debate on conservation policy and mitigating measures. On the other hand, the adoption of new fishing technology, such as that of fishpots (submerged fish traps that is attached to buoys with flags/markers), for example, has led to intense conflicts between smallscale fishers and commercial fishers. The latter complain that fishpot of artisanal fishers block their passageway towards the open sea, while former accuse commercial fleets of dragging and destroying their fishing gears.

Problems can also occur in any institutional arrangement when the system is "chaotic" and rules are changed or bended frequently in response to political pressures before fishers adapt or decisionmakers can tell if rules are working.

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<sup>7</sup>It should be noted that conventional fisheries management system is heavily influenced by the temperate scientific method of calculating maximum sustainable yield (MSY) of a few species. MSY attempts to model and relate level of fishing effort with the biological optimum that can sustain fish species. As mentioned earlier, authoritative studies show that these models have limited usefulness in tropical fisheries with its multi-species nature (Pomeroy 1995), and in complex large-scale ecosystems (Gunderson and Pritchard 2002; 251-264).

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<sup>8</sup>Determining MSY or “best available scientific data” is a key guide to manage coastal areas as explained in the Philippine Fisheries Code or Republic Act 8550. See Israel and Banzon (no date) for a sample of how to derive MSY for the Philippines.

Controversy over the extent of municipal territorial waters, poaching in MPA sites, and the role of provincial governments in fishery law enforcement are some noteworthy examples in the complex island-based context of NIP.

The situation is that the NIACDEV municipalities previously adopted the Department of Environment and Natural Resources' (DENR) Administrative Order 17 or DAO 17 in delineating their municipal waters. Under the archipelagic doctrine of DAO 17, the extent of municipal waters was set 15 kilometers from the farthest island territory. Under such delineation scheme three municipalities have a municipal territory that is more than 20 kilometers from its mainland shore. Latching on to the promise of increased revenue, and exploiting a loophole in the Local Government Code of 1991, registered municipal commercial fishers in one of the three archipelagic municipalities are allowed (thru a municipal ordinance) to exploit offshore fishing areas from a 10.1 to 15-kilometer radius from the mainland. But the Provincial Government of Iloilo, which set up their own "mobile patrol groups" in NIP, argues that providing municipal access rights to commercial fishing vessels is inconsistent with stipulations of the 1998 Fisheries Code that ban all active fishing gears within municipal waters. This lack of common interpretation of the law, and political conflict between the governor's office and the NIACDEV coalition, has therefore caused enforcement and compliance problems, as well as the continued violation of the territorial integrity of municipal waters and the 17 municipality-endorsed MPA sites (mostly located near offshore barangays) in NIP. Recent reports reveal that the national government has endorsed the operation of a navy gunboat in the wider Visayan Sea area to guard against all forms of illegal fishing. As a consequence, at least three enforcement teams are now operating independently to protect the highly exploited and contested area of NIP and the Visayan Sea.

Bureaucracy-based arrangements can also be inefficient. Increase in fisheries regulations and its operations may increase the effort required to catch the same quantity of fish. High discards of fish result in additional wasted effort and undocumented stock loss. Rules also create incentives to engage in various forms of cheating behavior such as using illegal gears,

violation of size limits for fish caught, fishing during closed seasons or in closed areas, under- or unreported catch (Sterner2003), and even bribery and corruption. Thus, all these can lead to high enforcement costs and the danger of driving out law-abiding fishers when they cannot compete with lawbreakers and their politically powerful allies and patrons. In NIP, municipal governments are regularly challenged to keep up with reports (usually texted via cellphone by local residents to elected officials, coastal patrol groups, and local police forces) and apprehend many types of violations listed above committed by local fishers and outsiders. The municipality of Ajuy experiences these kinds of inefficiencies. The municipality of Ajuy, for example, spends approximately PhP 5,000 a day on fuel cost and food to enable its two patrol boats and crew to operate 24 hours a day. Even when operations are successful, apprehending officers or local residents are hesitant to file court cases against offenders due to the lengthy and expensive process of litigation. In an interview, a former Barangay Captain of Ajuy decried the lack of financial and legal support provided by the municipal government in her attendance of court hearings as a complainant against the owner of a trawling vessel apprehended two years ago.

Consequently, difficulties in implementing a state-centered approach in coastal and fisheries management/conservation have created interest in other institutional arrangements. In the Philippines and elsewhere, there are three main reasons to account for interest in non-bureaucratic arrangements in natural resources management. The first reason has more to do with attempts by government bureaucracies to ensure their continued survival as they face rising debt, declining terms of trade, economic liberalization and market integration. These internal and external economic processes are forcing nation-states to reduce the size of their civil services and thus their capacities for direct service provision (Boer and Roomans ed. 1994). In the drive to 'do more with less', governments forge, at times reluctantly, new partnerships with civil society groups (i.e., private organizations that are non-profit making and are non-political parties) and adopt participatory approaches in development activities which presumably give local people more control over research and development processes (Hulme & Shepherd 2003). The Asian financial crisis of 1997,

caused by highly mobile flows of money and speculative assaults on vulnerable economies, enhanced the need to devolve and decentralize most government service functions to conserve scarce resources.

The second factor is the international community itself, which has been instrumental in stimulating Third World government's growing interest in participatory and decentralized approaches in governance. There is a growing tendency for donor countries and institutions to place conditions on grants and loans to governments that require them to support participatory and democratic initiatives. Some donors claim to be linking participatory development directly to state accountability, empowerment of local groups and transparency in decisionmaking (Grounder 1994). Development-oriented non-governmental organizations (NGOs), which have been at the forefront in enhancing political participation in the Philippines, have been heavily supported by foreign donors to strengthen pro-democracy causes (Clarke 1998), that includes natural resources-based management and conservation issues and concerns.

Third, and perhaps the most important, the "hollowing-out" of the state (i.e., increased inclusion of non-state actors in policymaking and service delivery) in managing society and nature (see Rhodes 1996) is the result of the dissatisfaction with the theories and practices that dominated development and management thinking from the end of World War II, when the United States of America (US) and other developed countries took increased interest about the problems of "underdevelopment" in former colonies. Earlier development paradigms tended to focus on capital formation and technology transfer rather than upgrading of labor, and on industrial rather than agricultural development and thus were inappropriate to the conditions of less-developed countries. Consequently, most development and management approaches adopted during the 1950s and 1960s involved a passive role for the majority of the people concerned whose participation was limited to adoption of the new technology and to resource commitments through the payments of taxes and the consumption of imported and domestic goods. On the other hand,

decision and policymaking were vested in highly trained technocrats and were to be implemented by rationally organized bureaucracies (Dubsky 1993). Community-based initiatives in development and management perspectives have since been enshrined in the 1987 Constitution and policy pronouncements.

### **Community-Based Frameworks**

Community-based (CB) arrangements are more diverse than the bureaucratic counterpart and go by various names such as community-based management or common property resources management (Ferrer et al. 2001, Wade 1987). The framework rests on the understanding that coastal (and other ecosystems) resources over which struggles occur are traditionally managed as collective or common property. Local management structures, often based on local knowledge of such environmental systems, commonly provide rules of use that can maintain subsistence or renewal of these community resources. Community rights to common property are therefore more important for poor and underprivileged people in countries like the Philippines since they have little or no other property, except for their social capital and experiential knowledge of the environment. In the light of continued cycle of environmental destruction and lack of food security in coastal areas, community-based management regimes are usually necessary for the regular protection of sensitive and marginal ecosystems, cost-efficiency, and the inclusion of objectives to uplift people's quality of life (Dasgupta 1995, Cohen & Uphoff 1980).

At a theoretical level a CB perspective was a response to the "tragedy of the commons" metaphor that depicted community-led or collective use of resources as tending towards abuse and degradation with actors maximizing individual benefits to the detriment of all. It further argued that centralized bureaucratic regulation or privatization could solve the dilemma of sustainably managing collective resources (Gordon 1954). On the contrary, some radical perspectives argue that the increasingly capitalized or globalized economies profoundly altered (and still altering) the social and political circumstances of actors that manage common resources. This leads to the entrance of more coercive

states and new markets into basic social economies which results in the appropriation of communal capital away from local communities into the hands of elites, non-residents and other distant parties (Muldavin 1996). This Marxist perspective has been further enriched by related institutional frameworks from green materialism (e.g., O'Connor 1996), peasant studies (Blaikie & Brookfield 1985, Scott 1985), postcolonial theory (Said 1985), political ecology (Bryant and Bailey 1997) and feminism (Shiva 1998).

Nevertheless, most responses to statist or centralized management systems took the form of proving empirically that collective or community-based management of commonly held resources can be successful if conditions allow for negotiation and iterative observation of outcomes (Ciriacy-Wantrup and Bishop 1975). Failure of community-based management, by contrast, merely represents failures in the specific structures of rules that govern a collective property. Recovery of sustainable management is a painstaking and time-consuming task of crafting new and better rules, rather than imposing central authority or slicing up the commons into bits of private property or harvest rights (Ostrom 1990).

In community-based institutional arrangement, the "community" (or subgroups within it) holds property rights to fish and the emphasis is on encouraging fishing communities to develop rules to regulate themselves or to maintain existing self-governance systems such that social norms, rules, and sanctions are used to allocate fishing rights or govern fisher behavior (Ostrom 1990). Rules take a variety of forms, including gear limits, restrictions on effort or fishing seasons, and total or partial ban on certain fishing grounds (particularly in protected areas). Social sanctions rather than administrative penalties are the primary enforcement tool, although monetary or material sanctions may also be used (Ostrom 1990). Different goals and values are embedded in community-based arrangements. These include resource user control (rather than centralized government control and private property arrangements), the preservation of community culture, internal accountability, and preservation of

small fishers and communities (McCay & Jentoft 1996).

Compared to bureaucracy and private property/access arrangements, there are few critics of community-based institutional approaches. Analysis tends to explain gains made by focusing on "success stories" that examine socio-economic and biophysical patterns in small fishing or island communities in countries like the Philippines (Russ & Alcala 1996, Ferrer et al. 2001). As a result, analysts interested in large-scale commercial fisheries or integrated management initiatives may not view it as a viable institutional arrangement (Leal 2002).

A major problem though is the resilience, sustainability and capacity of dominantly community-based institutions (CBI) and initiatives. Arguments exist that CBIs can breakdown because of the temptation to "free ride." Individuals tend to vary their behaviour depending on circumstances. Some adopt narrow self-interested behaviour, others behave selfishly only on certain occasions, still others rely on reciprocity and are able to overcome the tendency to free ride (Sternier 2003). A related problem is capture by local leaders and the resulting social inequalities that will prevail (Davis & Bailey 1996). There is also conflicting evidence on whether norms change rapidly enough to respond to changing ecosystems or exploitation levels—particularly when the changes are driven by outside forces (Rose 2002).

The experience of communities with MPAs in NIP indeed shows some weaknesses in CB regimes. Interviews reveal that fishers from neighboring barangays with no MPAs indeed poach on MPA sites. Moreover, the incursion of commercial fishers to protected zones (where sustainable fishing such as hook-and-line is allowed) creates a sense of helplessness among the local barangay protectors such that they end up violating their own rules to ensure that they benefit from their own management efforts. Based on further interviews, however, the continued violation of MPA regulations by "big names" and the ineffective punishment of "influential personalities" who violate MPA rules is the most challenging problem

that needs to be addressed to promote sustained efforts towards local management and conservation.<sup>9</sup>

The absence of central state control can also lead to a lack of public accountability and even "illegal" behavior. In some cases, the rules developed to govern fishers in community-based arrangements are inefficient, unclear and operates on a case-to-case basis. Field data in northeastern Iloilo indicate for example that local community enforcers do not abide by common guidelines in apprehension procedures or in determining the level of punishment or fines for those that infringe MPA ordinances. Community-based arrangements also have problems controlling distant or commercial fishing fleets whose fast crafts easily slip away from protected areas, and evade detection at night. The problem is complicated by the fact that local community members who enforce the protection of coastal areas (usually the area 200 meters from the coastline) are discouraged from doing their job due to verbal threats from influential operators of commercial fishing vessels, and their backers from local government and local police.

Finally, it should be acknowledged that local communities are embedded in a variety of institutions. Community-based institutions do not have unimpeded control of the coastal zone. Municipal/city governments are legally empowered to manage/develop coasts, set-up regulatory structures, legislate ordinances, and muster the resources to enforce rules.

### **Co-management Design**

Co-management has now emerged as a third institutional arrangement that is used in developing institutional arrangements for coastal areas (Kuperan et al. 2003). Co-management refers to various levels

of institutional partnership between local- and state-level management systems. Generally speaking, cooperation or co-management refers to a mode of interaction among various sectors, agencies, or groups to achieve common goals or visions while maintaining their own institutional autonomy. Institutional partnership regimes take on various forms and mechanisms. Such relationships are nurtured and developed depending on the degree of urgency to respond to a particular need, level of trust, organizational culture, target clientele/area, or commonality of mandate. It revolves around the sharing of vision, resources, expertise, and systems to create a greater and meaningful impact on for natural resources management at various management levels or scales. In this perspective cooperation or co-management involves levels or rungs of institutional participation in sustainable development activities and the enabling policy and legislation. Using typologies described by Pomeroy (1994) and, Sen & Nielsen (1996) levels of partnership between/among POs, NGOs and government organizations may be described as:

1. *Consultative* in nature where institutions establish new relations with other organizations for information exchange. Regular venues such as consultations or dialogues are organized to serve as initial mechanisms through which various institutions know each other by sharing experiences, ideas and opinions.
2. *Coordinative* in nature where efforts are extended to avoid duplication of activities and where attempts are made to synchronize separate institutional initiatives for greater efficiency and effectiveness in field operations. As starting point for coordination, interagency committees and activities are usually organized to do a checklist or inventory of project interventions in communities and their resource base.
3. *Complimentary* in nature where institutions conduct separate initiatives guided by a common program framework characterized by purposive efforts to support each other.
4. *Collaborative* in nature where institutions agree to work together, sharing common vision, establishing common objectives, and plans of action on a program level. Mechanisms are institutionalized

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<sup>9</sup>Initial reports of the post-Solar I/Petron "oil-spill" disaster off Guimaras Province (that deposited oil slick in the coasts of Ajuy and Concepcion, Iloilo), however, indicate a swifter and more responsive action of CB and non-state actors at mitigating the disaster (thru the use of indigenous oil spill boom), as compared to the slow and chaotic national government response.

to facilitate delivery of services to target communities and their resource base.

5. *Critical* in nature and perhaps the highest form and level of cooperation where institutions consider each other as indispensable partners in pursuing broad development goals and visions. Sectors work together on a more strategic long-term arrangement on various aspects of the socio-economic and political life of the community and its resource base. Resources are shared and all partners participate actively in policy formulation and decision making process.

In coastal area concerns co-management is a hybrid institutional arrangement that emphasizes sharing responsibility for fisheries management between government and user groups to manage resources in order to reduce costs to government and improve decision making. Fisher involvement improves the quality of the time and place information used to craft management systems by tapping local knowledge. It also results in a greater congruence between local conditions and the institutional arrangement, thus reducing transaction costs.

A key characteristic of co-management is the distribution of property rights. If property rights are viewed as a bundle of rights and responsibilities, then co-management splits the property rights bundle between users and government. The distribution of property rights is important because resource users must, at a minimum, have access, withdrawal, and management rights to have sufficient incentive to manage resources over the long-term (Ostrom & Schlager 1996). Each co-management arrangement is somewhat unique and uses a combination of policy instruments employed by the aforementioned arrangements that is tailored to fit local conditions. Accordingly, enforcement ranges from government penalties to social sanctions and it is problematic when fishers are unwilling to sanction fellow fishers. Cheating behavior still exists and tends to reflect the combination of policy instruments used. These arrangements are subject to capture when the commercial industry is unwilling to reduce catch when necessary. It can be difficult for noncommercial interests or small fishers to participate in these systems

(Kuperan et al. 2003). Moreover, while co-management may reduce costs to government, user groups must have the financial, technical, and administrative capacity to perform their management responsibilities.

MPAs in NIP are mostly established as a co-managed common-pool resource. Various institutional arrangements help frame MPA governance in NIP. Once a barangay council passes a petition for the creation of an MPA, an ordinance is framed and endorsed by the Municipal Sandigan Bayan (local legislative body). Although municipal waters are effectively under the jurisdiction, control and protection of the municipal government, day-to-day MPA management effectively becomes a community-based or barangay endeavor that is temporarily financed or supported by state (national and international) or non-state actors. Area coverage is either 200 meters from a barangay's shoreline or coral reef, or within a 2-kilometer radius enclosure off islands/islets. Enclosures or area coverage are plotted using techniques of convenience (i.e., easy to monitor or facing barangay community) that do not follow environmental features. Core or no-take zones are uncommon (but do exist in a minority of cases) as MPAs are primarily designed for food security and not biodiversity conservation. MPAs in NIP are designed as a type of property right reserved for sustainable exploitation (i.e., hook and line fishing) by community stewards. The goal of regeneration of corals and seagrasses, promotion of breeding area for fish, and enhancement of fishery stocks are of secondary interest. Based on interviews with state and non-state actors on the structure of the intermunicipal management body (i.e., NIACDEV), and assessment of its resources (i.e., personnel and budget for municipal coastal management efforts), a number of organizational weaknesses can be noted (see Table 3). These include: the absence of full-time staff to administer various committee functions of the management council; low annual municipal budgets for coastal management that range from PhP 100,000 to PPhP 250,000 (the council itself has no funds and relies on donations from state and non-state sources); low levels of support from fisherfolk groups, and; weak communication systems to disseminate performance indicators and policy outcomes.

Nevertheless, the intermunicipal management council has achieved some important milestones, such as: meeting regularly (i.e., at least once in two months), thru municipal representatives (i.e. agricultural/CRM/ environmental officials or personnel) to keep pace with each others' activities<sup>10</sup>; drafting of a unified fishery law (although not implemented across the region), and; the effective representation of the management body as a dynamic force, enabling the group to secure multi-million funding from national and foreign sources to create various CRM-related "development" programs

and projects (i.e., health improvement, population control, environmental management/conservation). Moreover, municipal governments like Concepcion have passed legislation to strengthen CRM initiatives by creating a fisheries and aquatic resources management office (supported by the Municipal Fisheries and Aquatic Resources Management Council or MFARMC) management council of selected representatives from coastal barangays), and passing a municipal ordinance calling for barangays to allot PhP 5,000 annually to CRM projects/programs. The

	AJUY	BALASAN	BATAD	CARLES	CONCEPCION	ESTANCIA	SAN DIONISIO
CRM Budget (% of total mun. budget), 2003	100,000 (0.2%)	100,000 (0.31%)	200,000 (1.0%)	100,000 (0.31%)	970,000 (2.9%)	100,000 (0.29%)	75,000 (0.27%)
CRM Actors	NIACDEV, Mun. ENRO, MFARMC, 18 BFARMCs/ POs, 4 NGOs	NIACDEV, Fisheries technician, MFARMC, 1Coop.	NIACDEV MAO, MFARMC, BFARMCs POs	NIACDEV, Fisheries technician, MFARMC	NIACDEV CRMO, MFARMC, 6 BFARMCs, 12 NGOs	NIACDEV Volunteer, MFARMC, BFARMC, 1 NGO, 3 POs	NIACDEV Fisheries technician, MFARMC, fisherfolk, orgs.
Wardens & Patrol boats (Frequency of patrol per week)	65; 2 boats (3-5 days)	0	60; 3 boats (7 days)	100; 3 boats (7 days)	160; 6 boats (7 days)	45; 1boats (7 days)	inactive
Year MPAs established	1994; 2002	--	1997	1996	2000, 2002, 2003	2004	--
# of MPAs (brgy.-based)	3 (1 with core zone)	--	1	1	9 + 1 sea-scape (some w/ core zones)	1	--
Types of MPA/ CRM initiatives	Mangrove & upland refo.; AR deployment; stock assessment, participatory coastal assessment; CRM, livelihood, paralegal and law enforcement trainings, deployment of markers, buoys, guardhouses in most MPA sites in last two years. Concepcion is showcase with mayor winning national awards as best LCE in the country in 2004. In 2005, Concepcion won the national <i>Galing Pook Award</i> for its "Convergence" program.						

**Table3. Major Features of the CRM and MPA Governance System in Northeastern Iloilo**

<sup>10</sup>Since last year, the municipal members of NIACDEV focused its attention on health issues after getting a multi - million peso grant from the United States Agency for International Development (consult [http://pdf.usaid.gov/pdf\\_docs/PDACG085.pdf](http://pdf.usaid.gov/pdf_docs/PDACG085.pdf) # search = %22ANIHEAD%2Bhealth%22). Ironically, a NIACDEV-member municipality recently endorsed a highly controversial plan (i.e., seen as anti-health and anti-MPA by sections of the local community and various environmental and non-profit groups) to set up a 100 megawatt coal-fired power plant in its coastal community.

local chief executive of Concepcion is also lobbying for the passage of an ordinance to allocate an unspecified amount of money in support of the annual operating expenses of the MFARMC.

## CONCLUSIONS

The analysis of these institutional arrangements, enriched by experiences from NIP, demonstrates the importance of understanding governance/institutional design and performance in MPA and CRM initiatives. It was illustrated that decisions over access and management rules can be taken by central bureaucratic government, local communities, or even in co-managed modes. It was observed, however, that institutions from a top-down nature, whereby government agencies have a dominant decision-making role, are divergent with that of locally led community initiatives. These two contrasting views illustrate that too top-down institutional arrangements raises the risks of imposition which may be manifested by apathy, objections and non-cooperation by other actors. On the other hand, a dominantly community-based approach raises the risks of parochialism, where local resource exploitation interests and free rider behaviour may crop up. It is noted, however, that the tension between bureaucratic and community-based institutional arrangements is, to a degree, a manifestation of the divergent aims that they may harbour. Top-down strategies tend to prioritize the goal of using coastal resources for economic development that may or may not lead to equitable distribution of gains, responsibilities or risks. In the context of coastal resource degradation and destruction, however, more bottom-up frameworks have gained more currency and local community support for purposes of low-cost conservation and protection activities, as well as the promise of social equity.

Due to the continued institutional dilemma faced by bureaucratic and community-based approaches, there is now increased call for a more balanced approach, with government agencies working in partnership with fishers and other interest groups in a co-management arrangement. The coalition of the municipal governments of NIP with selected coastal barangays in setting up MPAs is a case in point. But the question remains as to what balance of power will be appropriate

in such partnerships so as to sustain, on the one hand, the continued success of wider-scale, strategic goals (e.g., increased fisheries production and revenue), and on the other, the fulfillment of more local priorities (e.g., MPA protection, livelihood, and food security). I argue that the balance will, necessarily, be dependent on the context (i.e., actors and their varied biophysical, cultural and organizational setting), aims, and costs of addressing a coastal resource problems or issues. But Dryzek (1987) observes that as the geographic scale and scope of resource exploitation interdependencies increases (such as in the coastal and fishery context of NIP); the need for some central authority to coordinate negotiations and enforce agreements also increases. Whatever stand or policy that the NIACDEV member municipalities take, one can only hope that the MPA and CRM objectives of CB groups can be prioritized, and not marginalized due to the existence of new funding opportunities that focus on other goals (i.e., public health).

The issues and problems confronting coastal areas are diverse and no institutional arrangement is likely to be effective in addressing them in all circumstances. Effective coastal governance and service delivery, particularly in MPA sites, requires much more than designing some theoretically optimal policy. It raises institutional, social, and moral issues that must be clarified through deliberation and negotiation. Ultimately, the selection of policies and the institutional arrangements used to implement them is a political decision. Scholars need to help clarify and define problems and then help decision makers identify appropriate goals, objectives, and values to achieve. This requires understanding how a program/project works, who benefits and loses, how it changes incentives, whether the intervention is likely to accomplish what was intended, and how it can be improved or discontinued.

Sound policy analysis must also remain focused on trying to determine which institutional arrangement will perform best in a particular setting. Analysts should consider important contextual factors affecting institutional design and examine the full range of costs that influence institutional performance. Given the multiple and competing policy objectives that underlie the general management of contiguous coasts in the

Philippines, it is important to use various criteria to assess overall institutional performance and understand the trade-offs that exist between them so as to construct a relevant, site-specific and resilient governance regime. “ But in the milieu of a depleted natural resource base, and the continued deterioration of the livelihood and health of coastal dwellers, environmental protection of MPAs and municipal fishing grounds of subsistence fishers should be prioritized by various actors and policy networks.

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