



## Examining the assumptions of integrated coastal management: Stakeholder agendas and elite cooption in Babuyan Islands, Philippines

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### ABSTRACT

In the Philippines, Integrated Coastal Management (ICM) represents the dominant response to narratives of ecosystem decline. However, there are persistent challenges to implementation, manifested in continued resource degradation, questioning of the exercise of stakeholder involvement and rising resource conflicts. This paper examines the implementation process and how the assumptions embodied in the ICM regime meet the local reality in one group of islands in the Philippine archipelago. The evidence shows how the transformation towards a supposed equilibrium state of coastal ecosystems is undermined in the face of diverging stakeholder agendas. Expected actors are disempowered by the incoherence between the policy owners' worldview and reality, paving the way for unethical influence from elite alliances. This is coupled with a deepening of the dominance of state, international development banks, foreign aid agencies, and NGOs in promoting their respective interests. In localities such as the Babuyan Islands, when assumptions of ICM collapse it has destructive consequences for fisherfolk and the coastal environment. We conclude that if ICM is to foster an effective and equitable correction of current unsustainable exploitation patterns, then there is a need to institute improved accountability mechanisms in the devolved governance system as well as taking seriously the espoused commitment to stakeholder involvement in determining the goals and assumptions of ICM.

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### 1. Philippines integrated coastal management (ICM)

The national response in the Philippines to narratives of coastal ecosystem decline and degradation has been the institutionalisation of the Integrated Coastal Management (ICM) paradigm (Balgos, 2005; Lowry et al., 2005). Building on former coastal resource management (CRM) programs, ICM aims to reverse ecological degradation through rehabilitation, reforestation and restocking in coastal zones. The ICM policy regime espouses a procedural shift towards increased stakeholder participation and balanced employment of coercive and non-coercive policy instruments (DENR, 2001; Milne and Christie, 2005; Alcala, 1998). This ambition mirrors the global trend in environmental governance and management towards exploring a more diverse set of policy instruments, comprising mixtures of regulation, voluntary measures and economic instruments (e.g. UNEP, 2007). The 2006

Millennium Ecosystem Assessment, in the chapter on marine and coastal ecosystems, recommends both ICM and stakeholder participation in decision-making as one of the response options for policy makers to current resource degradation (UNEP, 2006).

The establishment and promotion of the ICM regime and co-management is located in a regional South East Asian government trend towards decentralisation and devolution in resource management. The Philippine Local Government Code (LGC) of 1991 (Republic Act 7160) is featured as the most ambitious and complex system of law and programme of devolution of government authority in the country (DENR, 2001). It devolves management of municipal waters to the Local Government Unit (LGU) with a consequent localization of fisheries governance and with general fiscal autonomy of the LGU. It thus embodies the result of a transition from central to local authority over management measures, where the municipality is the primary unit of government (White et al., 2006; Cruz-Trinidad, 2003). The LGC is seen as having paved the way for the opportunity to form formal partnerships between LGUs, NGOs (Non-Governmental Organizations) and POs, (Peoples' Organizations), where the local chief executive, often the mayor, through the municipal legislative council (*Sangguniang Bayan* or SB) can allocate funds to NGOs and POs (Mungcal, 2007;

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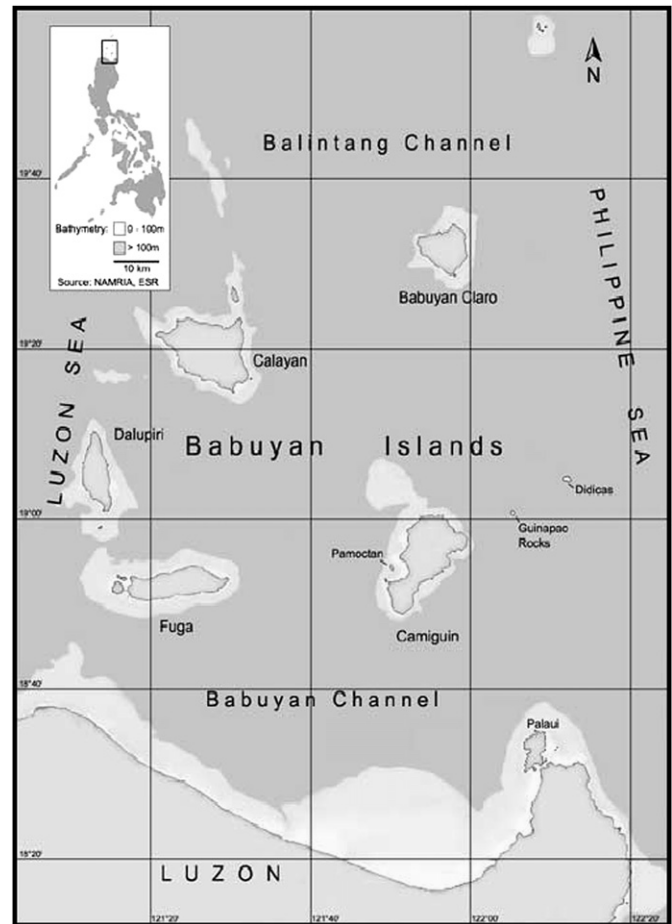
Fisher and Ulrich, 1999). The Municipal SB and *barangay* (village) SB are the legislative councils for the two lowest levels of government, to which representatives are elected every 4 years.

The ICM co-management approach builds on pioneering efforts in community-based coastal resource management converting unregulated open access into co-management regimes (White et al., 2005; Lowry et al., 2005; DENR, 2001). Different narratives exist to explain these community-based initiatives. Many initiatives of communities and national civil society groups are seen to emerge in the tradition of social mobilization (“people power”) after years of suppression during the Marcos era (e.g. Chuenpagdee and Jentoft, 2007). The specific proliferation of environmental NGOs after the martial law regime under Marcos, has been explained as a consequence also of international donor interventions promoting ICM and the establishment of Marine Protected Areas (MPAs). Some community-based management initiatives in upland agricultural communities were later pioneered in marine reserves by Siliman University and subsequently by a large number of NGOs (Rivera and Newkirk, 1997).

Development banks, the Bureau of Fisheries and Aquatic Resources (BFAR) and the Department of Environment and Natural Resources (DENR) frequently seek to enhance the coordination and integration of what is seen as scattered community-based initiatives (e.g. World Bank, 2005). Local initiatives are evaluated in the light of the expectations from the national ICM regime, e.g. through awarding municipalities for ‘best practice CRM’ (LMP and DENR, 2000). In community programs, local people are considered as public ‘guardians’ and ‘stewards’ of the environment, a rationale which has also entered the National Integrated Protected Areas System (NIPAS) regime Law in 1992 and the Indigenous Peoples’ Rights Act (IPRA) in 1997 (Snelder and Bernardo, 2005). Pollnac and Pomeroy (Pollnac and Pomeroy, 2005) describe how more than 100 known community-based projects have been carried out since 1980.

The official ICM project cycle emphasises broadened stakeholder involvement, multi-sector collaboration and the leadership of local governments (White et al., 2005). The paradigm is often presented as a reaction to former command-and-control management, and the colonial imprint on Philippine natural resource management. Under Spanish rule and American administration, state-led centralised schemes led to dissolution of common property regimes in the provinces and *de facto* unregulated open access in many coastal waters (Abinales and Amoroso, 2005; Dressler, 2006; Barut et al., 2003). Eisma et al. (Eisma et al., 2005) and Pomeroy et al. (Pomeroy et al., 2007, p. 655) thus interpret the ICM regime as a governance shift from regulatory and controlling measures to ‘a broader approach that recognizes fisher’s participation, local stewardship, and shared decision-making in the management of fisheries’.

However, despite the promotion of ICM, the Philippines continues in recent years to face a significant decline in the fisheries sector of more than 25% in its contribution to Gross Domestic Product (GDP), and the management of declining near shore fisheries have led to rising resource conflicts. This has stimulated calls for urgent, concerted action from a number of government agencies and international bodies (e.g. World Bank, 2005; BFAR, 2003). The degradation of coastal resources through destructive and excessive resource use mirrors trends in the wider South East Asian region, where scientists are arguing for a vital need for improved concerted action at various institutional levels to halt the decline in fish stocks (e.g. Silvestre et al., 2003). Further, there is an increasing questioning of the exercise of stakeholder involvement in the ICM regime. Stakeholder participation in programmes is low and formal recognition of community organizations is problematic (Silvestre et al., 2003; Barut et al., 2003).



**Fig. 1.** Geographical location of Babuyan Islands in Northern Philippines (Courtesy of Leonard Soriano). The Babuyan Islands consists of the five main islands of Calayan, Camiguin, Dalupiri, Fuga and Babuyan Claro. Calayan Municipality has jurisdiction over the vast majority of the islands and their waters, including Camiguin Island. The Municipality is located in Cagayan Province of Region 2 of the Philippines.

With this understanding of the ICM regime as the point of departure, this paper examines the practical implementation of its goals and underlying assumptions in one group of islands in the Philippine archipelago. The analysis is based on evidence from a case study in conservation action planning carried out through a stakeholder dialogue from November 2007 until May 2008 in the Babuyan group of islands, located at 121° 36' E and 19° 18' N, bounded by the Balintang and Babuyan Channels in northern Philippines (Fig. 1). The concrete objective of the dialogue was to develop an adaptive conservation action plan for the Babuyan Islands, focusing specifically on Camiguin Island. The project was originally proposed as a spin-off of a previous project initiated by *Kabang Kalikasan ng Pilipinas* (KKP) or World Wide Fund for Nature - Philippines (WWF-Philippines), and was entitled ‘Science and Community-based conservation of Humpback Whales and other cetaceans in the Babuyan Islands, Philippines’. Inspired by previous efforts by WWF, the project contained four core activities: Cetacean survey with photo-identification, rapid coral and fisheries assessments, and conservation planning. The survey and two assessments provided scientific inputs to the planning process (Belen et al., 2008).

The waters around the Babuyan Islands, particularly Camiguin Island, were verified in 1999 as the only known breeding ground for humpback whales in the Philippines (Acebes et al., 2007). Vessel surveys conducted around the five main islands since 2000 sighted 12 other cetacean species living in these waters (Acebes and Lesaca, 2003). A number of conservation projects have been implemented,

including investigating and monitoring of whale stocks and other biodiversity in the islands and recommending the establishment of protected areas regulated by provincial and municipal ordinances (WWF-Philippines, 2001; Broad and Oliveros, 2004). In 2000, WWF initiated the Humpback Whale Research and Conservation Project (HWRCP) in the Babuyan Islands. As part of the HWRCP, WWF facilitated a conservation planning process which in October 2001 led to the formulation of a first conservation action plan (BFAR, 2003). In 2003, motivated by the research conducted by WWF, Provincial Ordinance 09-2003 was passed declaring the humpbacks a protected species within the jurisdiction of the province of Cagayan (PGC, 2003). After WWF pulled out, the only conservation NGO present in Calayan Municipality is Isla Biodiversity Conservation Foundation Inc. who from 2006 has taken the leadership in involving other stakeholders in biodiversity conservation in Calayan Island (Isla Conservation Foundation Inc., 2006).

Cagayan Province is now seeing the implementation of a 6-year ICRM initiative funded by the Global Environment Fund (GEF), Asian Development Bank (ADB) and Government of the Philippines (GoP), as part of the Country Strategy and Program for Philippines in five regions which have not yet benefited from CRM programmes (ADB, 2006). This is the latest of a series of major international bilateral or multilateral donor assisted projects with matching funds from the national government, of which Balgos (Balgos, 2005) lists 10 implemented since 1980. A preceding one, the USAID and GoP sponsored Coastal Resource Management Project (CRMP), institutionalised the ICM worldview in a benchmark system for CRM planning in 2001, which was subsequently adopted by the Philippine government (DENR, 2001).

## 2. Research approach and methodology

The conservation planning was facilitated as a process of social learning. Social learning is an alternative policy instrument to environmental problems which views policy itself as a form of praxis, in that it does not exist in isolation from its implementation (Ison and Watson, 2007). This is based on a growing recognition that efforts for sustainable development under conditions of complexity and uncertainty encounter a lack of agreement on what comprises the exact resource problem and its possible solutions. Environmental 'problems' are therefore instead approached as resource 'dilemmas', which are characterised by the existence of multiple legitimate perspectives on what constitutes the actual problem and its solutions (Steyart and Jiggins, 2007). Resource dilemmas are characterised by subtractability, i.e. that the management utilises and draws upon a number of finite financial, social and ecological resources; multiple stakeholders with potentially competing claims for the resources; high levels of controversy, uncertainty and complexity, and interdependency between stakeholders' perspectives, behaviours and actions (Ison et al., 2007). Just as the ICM paradigm, social learning thus rejects the command-and-control approach which 'implicitly assumes that the problem is well bounded, clearly defined, relatively simple and generally linear with respect to cause and effect' (Holling and Meffe, 1996, p. 329) and argues, with Ludwig, that this 'management paradigm fails when confronted with complex problems' (Ludwig, 2001, p. 758).

A range of theoretical frameworks has been developed in which social learning is approached within a positivist-realist epistemology where it is assumed that the manager and/or researcher can position her/himself outside the system of interest and define what exactly constitutes improvement. However, the approach to social learning used in this planning process relied on a constructionist epistemology or sociology of knowledge in the empirical science tradition (Berger and Luckmann, 1966) which appreciates that human knowledge emerges through people's social

interactions and multiple levels of feedback between stakeholders (Röling and Wagemakers, 1998).

The methodology of Dialogical Boundary Critique (Ulrich, 2000) was integrated into a participatory stakeholder planning process guided by Soft Systems Methodology (Checkland, 1999) to stimulate creative thinking about how current stakes are constructed, potential conflicts of interests, scenarios for change, and collective actions (SLIM, 2004). The dialogue followed a methodological pluralism, drawing on communicative tools suitable for the specific meeting or consultation (Billaud et al., 2004), including Venn diagram, mind mapping, brainstorming, force field analysis. The planning process consisted of different facilitated forms of interaction, including workshops, open space meetings, focus groups, semi-structured interviews, and informal conversations (for details on the methodology see Larsen (Larsen, 2010)).

The back bone of the planning process was a series of planning workshops in Camiguin and Calayan Islands, and in Tuguegarao City, the capital of Cagayan Province. In addition, individual consultations with key informants explored questions which emerged from the workshops. Close to 100 people participated in these workshops. The interviews comprised 11 people from the three Camiguin villages (*barangays*) (Legislative Council members (*Kagawads*), farmers, fisherfolk, parish ministers); 4 people from the LGU (SB members and administrators); 6 senior officials from the Provincial Government Unit (PGU) (from offices of environment, agriculture and tourism); 9 officials from the regional representations of line agencies DENR and BFAR (directors, programme leaders and field staff); and 4 NGO staff (local and national). The planning process was implemented in two rounds, the first taking place November 25th to December 6th 2007 in mainland Cagayan, the second implemented May 4th to 16th 2008, in Camiguin and Calayan Islands, and in Tuguegarao City. In the intermittent period between the two rounds, the marine research activities of the project took place, and the outcomes were fed into the second round of planning interactions.

Below, the results from the planning process is presented in a narrative form by means of the mnemonic soft systems tool referred to as TWOCAGES (Checkland, 2009) (see Box 1). In the

Box 1. TWOCAGES, Mnemonic Soft Systems Tool (from Checkland (2009), adapted from Powell et al. (2010)).

T – Transformation – details of the proposed change (protection and rehabilitation of coastal biodiversity)  
 W – Worldview – the particular view that makes change meaningful to the "owner" of the process. (rehabilitate and protect coastal ecosystems and biodiversity, incl. for the benefit of the poor fisherfolk).  
 O – Owners – have the authority to authorise the change (Ministry of Environment and Natural Resources, and Bureau of Fisheries and Aquatic Resources)  
 C – Clients – these are beneficiaries or victims of the change (Fisherfolk, elite, investors, patrons).  
 A – Actors – those implementing the change (Local GU, Provincial GU, NGOs, line agencies BFAR and DENR).  
 G- Guardians- those who watch or monitor for unintended outcomes of the change (in this case the planning project).  
 E – Environment – The operating environment in which a change is being undertaken (in this case the governance trends of devolution and co-management).  
 S – The system of interest bounded by change related issues identified by the clients (to be discussed below).

discussion below, the notions which comprise this framework are used to analyse the findings. The narrative begins with an outline of the worldview embodied in the ICM regime, notably the assumption of the existence of balanced coastal ecosystem equilibrium state, which can be defined by the policy owners and experts. It then examines how the expected actors are disempowered due to the collapse of the owners' worldview in the face of diverging stakeholder agendas and local innovation from resourceful elites.

### 3. Results and analysis

#### 3.1. Worldview and owners: preserving an ideal ecosystem balance

Whilst spearheaded by NGOs, the coastal management activities in Babuyan Islands are to a large part supporting the protection and rehabilitation of coastal biodiversity, sanctioned by the central government, most notably the DENR and BFAR, who thus are the owners of the transformation promoted by ICM. The underlying worldview of this process is structured around the aim of rehabilitating and protecting coastal ecosystems to maintain or recover an ideal, assumed equilibrium, ecosystem state with optimal diversity and richness of biodiversity for the benefit of poor fisherfolk. In this section, this assumption and its significance will be outlined.

The 1987 Philippine Constitution explicates the 'right to having a balanced and healthy ecology' of the nation's marine wealth. The LGC stipulates the responsibility of local government units to 'manage and maintain ecological balance within their territorial jurisdiction' (World Bank, 2005). The Fisheries Code (Republic Act 8550) of 1997 (p. 162) institutionalizes the goals of maintaining a sound primordial ecological balance and stipulates the details of autonomy and mandates of different users and management authorities in relation hereto. The ArcDev Framework for Sustainable Philippine Archipelagic Development, developed from the National Marine Policy with assistance from UNDP, departs from similar equilibrium based theory in using the notion of Maximum Sustainable Yield (MSY). It argues that MSY has been exceeded and that the State is obligated to ensure goals of poverty alleviation and livelihoods within 'ecological limits' and 'optimal utilization' (DENR and UNDP, 2004, p. 163) (for details on 'equilibrium based management' see Powell (1998)).

In these articulations it is assumed that the boundaries around what constitutes the desirable stable state of the ecosystem, including the degree of overfishing and degradation, can be determined via expert knowledge, e.g. prescription of biological sciences. Problem definitions of 'biological overfishing' is thus a common starting point for management plans, and target areas are chosen according to priority ecosystem and biodiversity corridors as identified by biodiversity science (ADB, 2006). Plan International draws on an Ecosystem Approach to enforce the NIPAS zoning rules for ecosystems (van Lavieren et al., 2005). In the management of the Sulu-Sulawesi Sea, WWF is inserting and popularising the notion of Ecoregion as a biogeographic unit of management (Miclait et al., 2006). Ecologically defined boundaries are also evoked in the classification of the national legislation for the delineation of coastal areas into management zones (Batongbakal, undated). This is also the case in the ArcDev Framework, which despite claimed to be rooted in 'traditional society', has priority actions defined according to scientifically defined ecosystems.

Mainstream conservation planning frameworks thus draw on the international tradition of expert-led and science-driven systematic conservation planning, legitimated through biogeographical research and data. It attempts to optimise conservation efforts, e.g. representativity of species richness and persistence over time (Pressey et al., 2007; Whittaker et al., 2005) and is also

inspired by the tradition of expert-based monitoring in marine fisheries management (Leslie, 2005; Froese, 2004). Such planning and results-based frameworks support the fundraising strategies for the NGOs to attract financial support in competitive economic environments (Chapin, 2004). However, as will be apparent below, this tradition creates the risk that articulations for stakeholder involvement contribute to integrate public discourse into coastal zone management through paternalistic expert decisions rather than opening coastal management to public discourse (Davos, 1998).

In the articulations of the scientific ecosystem management paradigm a metaphysical ontology of nature is evoked which is not disputable (Purdon, 2003). ICM inserts the 'coastal' as a valid unit for organizing and integrating knowledge for the purpose as it is made meaningful in the worldview of its owners and in relation to their interests. The definition of what comprises the desirable and optimal stable state of the ecosystem is frequently determined based on economic calculations and accruals which can be derived for the government or business partners. This reflects that fishery is an economic sector of great importance for the Philippine state, corporations and the trade partners.

In the ArcDev Framework this economic value is coupled to interests of territorial integrity, national security and enforcement of the United Nations Convention on the Law of the Sea (UNCLOS). The preferential use of coastal resources is therefore regulated with the goal to attain MSY of resource harvest aiming at maximising economic benefits, resource rents and economic yield. The Fisheries Code overlays the ecosystem classification with a system of Exclusive Economic Zones (EEZ), which aims at distinguishing between municipal (artisanal, small scale, traditional) and commercial (or large scale) fishing, which is carried out with different gear and vessel sizes. Only municipal fishing is allowed in the coastal zone, i.e. within the 15 km boundary of the coastline (Cruz-Trinidad, 2003; Barut et al., 2003).

#### 3.2. Collapse of the policy owners' worldview and disempowerment of expected actors

In Babuyan Islands, the implementation of the ICM regime encounters a challenge in negotiating progress in the face of significantly diverging perspectives and agendas amongst actors and clients. A 4th class municipality in the national poverty ranking, the constituents depend mainly on small-scale fisheries and backyard farming for their livelihood. The municipal elite does not take interest in humpback whale issues or other biodiversity conservation issues for that matter, and directs preferential attention to tourism development, a process in which conservation objectives must be aligned accordingly. Outsider's interventions are often met with general apprehension from the municipal elite who express that NGO or line agency intervention challenge the LGU autonomy under the LGC. NGO emphasis on whale conservation thus reflects a predetermined problem definition based on a strong conservationist perspective which excludes the municipal government. The prioritization of the LGU has in recent years been on production and suffers from an absence of coastal resource management planning and an under-resourced planning office. Previous conservation efforts in the islands have produced a contentious relationship and decreasing trust between the elite and 'outsiders'. Disputes regarding responsibilities for combating illegal resource use such as dynamite and cyanide fishing, metal salvaging from shipwrecks and its impact on whale and fish stocks have reached media attention, further aggravating the interpersonal relations between stakeholders.

Line agencies are expected to support the LGU in the implementation of the transformation process embodied in ICM.

However, mainland agencies are rarely engaged in the Babuyan Islands. The legislative framework stipulates that line agencies can only support the LGU upon being formally approached by the municipal government. Collaboration is further constrained by the remoteness of the islands as well as the tense relationships outlined above. Most agency staff have never visited the islands, and service delivery and programme implementation is limited to brief field visits. This is further complicated by the fact that the different components of the ICM policy framework remain ambiguous and un-harmonised in theory as well as in implementation (Batongbakal, undated). Conflicting and overlapping policies and lack of common sanctioning of mandates are derailing coordinated action amongst government bodies (World Bank, 2005; Milne and Christie, 2005; Pollnac and Pomeroy, 2005). This is considered to lead to jurisdictional tangles between the main implementing agencies, i.e. DENR and BFAR (DNER, undated). In sum, most of the coastal municipalities in Cagayan have not yet initiated the participatory resource assessment in collaboration with DENR which is the first step in the coastal resource management planning process.

The 15 km boundary which delineates municipal waters for non-commercial fisherfolk from the marine economic zone of the Philippines is, as other centralised planning measures (Dressler, 2006, p. 402), experienced as an unrealistic boundary drawn by the policy owners to reorganize municipal resource management. As has been observed elsewhere (White et al., 2005), resources are not available for local government to enforce this boundary. There is no Philippine Maritime Police representation in Camiguin Island and the Philippine Coast Guards are without basic equipment such as patrol boat or binoculars. Poaching foreign vessels most often manage to avoid the Filipino patrol boats due to their modern equipment and the vastness of the ocean. The LGU presence in Camiguin is mainly by mobile texts messages and only in the most urgent cases the Philippine National Police (PNP) officers are sent to the island.

There are also concerns that national policies lack clarity in implementing guidelines which complicate their application. This, in turn, shifts the responsibility to the municipal and barangay legislative process to enable local policy implementation. However, most municipal ordinances have remained unchanged for decades, and democratic procedures enshrined in the LGC to effect local governance, e.g. public hearings and *Barangay* Development Planning, are not practiced. In the islands, law enforcement is – as elsewhere – characterised by ‘political interference and discretionary prosecution’ (Eisma et al., 2005, p. 350) and widespread rumours of remittances of bribes. Whilst the PNP is a national line agency, in isolated localities such as the Babuyan Islands, the national linkage can be broken and the PNP staff are seen in effect be under the authority of the highest bidder. Moreover, government officials have a low trust in the efficacy of public meetings citing that dialogues are held with a lack of political commitment from chief executives who delegate junior staff and rarely participate personally in the discussions.

The conservation NGO Isla is experiencing lacking interests from municipal and *barangay* officials, and the previously developed WWF-led humpback whale conservation action plan has not been implemented. Meanwhile, sustainability problems have grown; including encroaching on prohibited protected areas, use of illegal fishing equipment such as compressor diving, cyanide and dynamite, as well as pebble and shell collection, illegal logging and slash-and-burn farming (*kaingin*). Several of these practices pose severe human health and safety risks. Metal salvaging from shipwrecks started initially with walls and sidings but has now moved to main frames, which require larger amounts of explosives. This practice destroys the shelter of various species of fish and other

animals and marine life on the seabed in the wreck’s vicinity as well as disturbs the breeding and nursing ground of whales. In addition to the local offences, Taiwanese fishing vessels are frequently seen hiring local residents for the poaching in municipal waters with long-line fishing and lobster cages. The catch of highly priced yellow fin tuna is a particular incentive for these practices.

### 3.3. Unethical exerting of influence by elites

The collapse of the owner’s worldview and disempowerment of the expected actors pave the way for the formation of stakeholder alliances through creative formal and informal connections between different levels of government, political parties, families/clans, and organizations. Their main purpose is to enhance the access to and control over natural capital which in the absence of an effective management regime can be converted into financial assets. Tuna fishing, which originated as a formal fishery in the 1960s, is one of the high income fisheries in Asia (Cruz-Trinidad, 2003), and national and international investors are important indirect actors as well as beneficiaries. Throughout the country, several examples exist where municipal elites open their waters to foreign vessels to benefit from external cash flows. Camiguin fisherfolk described how in particular Taiwanese vessels recruit locals in Babuyan Islands to work for them as guides.

Also, the growing tourism industry is an arena for competition between different alliances. A national survey by Women in Travel ranked Cibang Cove of Calayan Island as third in terms of potential for tourism development, and the islands are publicly considered as great tourism potential, a ‘Baby-Boracay’. However, an absence of guidelines for distinguishing between support to private and public initiatives is experienced to make the use of financial and technical support from government to private initiatives ambiguous. Other resource exploitation is captured by the stakeholder alliances, including metal salvaging, where many island residents are hired to dive, financed by a few individuals. In addition, classification of land areas has become a battleground for political strategies, as local officials use the classification to manipulate the view of the state of land management, e.g. ranking forested land as grasslands to be able to clear cut the area without repercussions. This is further complicated by the fact that delineations between public and private/communal forest land is not in place.

With the Fisheries Code, the policy for the creation of Fisheries and Aquatic Resource Management Councils (FARMCs), Executive Order 241 of 1995, was one of the key priorities for fisherfolk organizations. The formalisation of local management bodies was heralded as a major victory for local resource users, institutionalizing their role in community-based planning and policy implementation and mandating representation of fisherfolk in *barangay* and municipal decision-making (BFAR, 1999). However, mirroring the pattern at national level, several island associations and management initiatives have dissolved or discontinued following municipal elections as political sponsors of the associations left offices. In addition to the cash-strapped financial conditions of LGUs nationwide to implement local programmes (Balgos, 2005), isolationist strategies enforced by stakeholder alliances can effectively curb collaboration between FARMCs and sub-national arms of line agencies. Elites may selectively silence public discussions on contested resource access and management in order to maintain their status as well as relationship with parts of the constituency.

Scattered and often opposing forces of government and NGO efforts for organizing the communities mean that many externally initiated organizations have stagnated as ‘shell organizations’ at the *barangay* level, for instance the FARMCs are largely inactive throughout the province (as in Manalili (1990)). Joint actions in Camiguin are frequently undermined by infighting between the

different elite factions and lack of accountability in economic management has led to the closure of several community-based organizations after member protests. FARMCs have to be initiated by respective level of government and have only advisory functions. In the province, few LGUs allocate the required funds to the FARMC as stipulated in the Fisheries Code because local chief executives do not see the value of the FARMC initiative. Elsewhere (Mungcal, 2007), it took the election of a new administration before the M-FARMCs would be endowed with the necessary financial resources to take on an active role. Also the multi-stakeholder platform Calayan Environmental Council (CEC) led by Isla is struggling to find backing amongst municipal executives.

Scott (Scott, 1994, p. 6) has described the irony in the use of the term *barangay* in Philippine politics; today it is the lowest form of formal government, but the native meaning was a 'political unit loyal to one boss' (*datu*). The leadership of such elite *datu*s, or strongmen, in stakeholder alliances can still be discerned. They are prominent figures in daily politics representing the larger alliance, which is not necessarily synonymous with a clearly defined political unit. Strongmen champion localised management practices which often conflict with the views of other stakeholders, e.g. through the sponsoring of logging and fishing activities. These practices are characterised by the exertion of powers and influences by the elites, which often run against the publicly espoused values.

Actual mandates and access rights are often-times negotiated through an unregulated and untransparent system of checks and balances. Strongmen use verbal threats and insults to patronize people and carry their will through and disposing of government and parish resources. Intruders from other municipalities together with international poachers dismantle communities into competing factions which can employ tactics such as bribery, intimidation or threat. Thus co-opting the envisioned transformation embodied in the ICM framework, strongmen and alliances are the *de facto* owners of the use of the coastal resources in Camiguin. Local enforcement staff is anxious for retaliation in return for their partaking in official duties such as collecting dynamited fish specimen or reporting of legal offences, and *barangay* citizens fear punishments if disclosing information to outsiders (see also Acebes et al. (2008)).

Yet, in a commentary on local politics, an anonymous historian from Mindanao State University suggests that it is hardly fair 'to judge local political leaders using Manila standards: The concept of the state is not well developed...that is why people find more security in their clan or *datu*s...Using public funds and equipment for private use may not be seen as a criminal act but as the normal exercise of authority of the *datu*' (Coronel, 2000, p. 297). This patronage role is prevailing – in the words of one PGU official, when explaining this behaviour in Cagayan: 'We are dealing with traditional...or "modernizing" politicians. The former is easier to understand, while the latter...brought physical development to their turf as a proof of service, wherever it came from, or in whatever process it came through. That's the remaining downside of governance devolution. The financial pie was not included in the downloading of political power...The term participatory governance is not crucial for a modernizing politico while a "no-no" to a traditional politico. What is crucial is what can be delivered to his turf.'

### 3.4. Beneficiaries and victims

The main beneficiaries of the distorted transformation process and collapse of the owners' worldview are the local elite alliances which capture the resource access and control. However, the patronage is not limited to the island or municipality. Local

alliances are rumoured to be connected to other strongmen nationally and even outside national borders. Agency staff commonly experience apprehended Taiwanese fishermen claiming protection by officers in the Philippine military (known as a system of *padrinos*). This parallels experiences from the Philippine forestry sector, where Vitug (1993) has described how resource access has been and still is a source of political patronage, with army officers exerting significant influence and tenuring large concessions. The notion of alliances thus may be seen as capturing the modern form of *datu*-power, which in its historical form goes back to the pre-colonial era (Abinales and Amoroso, 2005). Contrary to the 16th century Philippine society, however, today the politics has evolved from localised to a highly networked form, giving way to complex politico-corporate-family based relationships which prosper from their informal influence. The resource access releases monetary gains, which in the clientalist democratic system of the Philippines can be used to attract voters during elections, and govern their respective territories (see also Mungcal, 2007; Grainger and Malayang, 2006).

Meanwhile, Camiguin residents, who were the expected beneficiaries of the transformation, become the victims of the distorted implementation process. Fisherfolk depend on a composite livelihood from forest products, backyard farming and coastal resources but lack other income sources outside the fishing and farming seasons (see also WWF-Philippines, 2001). As a relatively isolated island community, they cannot as poor fishing communities elsewhere in the Philippines benefit from additional commercial activities geared to tourists or passersby's to make ends meet in the household economy. Further, the malfunctions in the legal system and uncertainties associated with the actions of the stakeholder alliances undermine household economy, for instance when catches confiscated due to suspicions of illegal fishing practices are lost in the absence of trial.

*Kagawads* and medical staff in all three Camiguin barangays complain over lacking social service delivery including medical supplies and basic health services. There is a limited economic cohesion in the *barangays* of Camiguin with a near-zero internal tax return from, for instance, *sari-sari* store permits and fees levied on nets within the barangays. Despite the decline in fish stocks, fish prices have remained unchanged whilst fuel prices have been surging. Middle men operate a credit system which mortgage farmers through advance payment credits in order to procure farming equipment and fertilisers. Due to the weakness of the public service delivery, the role of so-called breadwinners (resourceful persons who can support less advantaged relatives and friends) is important in the *barangays*. This is partly a consequence of the collapse of the management regime and the associated importance of the family and social relationships.

The vulnerability of the island residents and their natural resources is acknowledged by the PGU which is implementing training programmes on livelihoods in Camiguin. BFAR and neighbouring municipalities are similarly engaged in efforts for livelihoods development (WWF-Philippines, 2001). However, whilst local and provincial government is running a number of programmes creating incentives for shifting production patterns, e.g. via free certified rice seeds or financial credits to farmers, executives lack capacity to conduct more radical interventions in managing the price levels or increase the service delivery. They also fear stirring protests and criticisms for favouritism from parts of the constituency.

## 4. Discussion

The evidence from the Babuyan Islands suggests that the transformation process towards re-creating balanced coastal

ecosystems for the benefit of poor fisherfolk is undermined due to the collapse of the policy owners' worldview in the face of diverging stakeholder agendas and local innovation from resourceful elites. The expected actors are disempowered by the incoherence between the underlying assumptions in ICM of the possibility to enforce the idea of expert-defined ecosystem equilibrium and the reality faced by local stakeholders, which paves the way for the dominance of unethical alliances and strongmen. The ultimate beneficiaries of the distorted transformation process are elite alliances, with resulting victimisation of poor island fisherfolk as well as their coastal environments.

Balgos (Balgos, 2005, p. 972) argues that 'the unabated degradation of the marine environment and its resources continue to motivate efforts to improve the existing paradigm'. However, as evidenced above, the fundamental disagreements on plausible knowledge claims positions ICM far from a 'normal' coherent and internally consistent knowledge paradigm. Thus, there is no ICM paradigm in the Kuhnian sense in Babuyan Islands (Ravetz, 1999). Arguably, the islands have not yet seen the implementation of any large scale ICM programme which could have alleviated some of the challenges encountered as it has been reported from other localities. However, the disempowerment of the line agencies and government administrations serve to explain why ICM programmes remain generally unsustainable after their termination (Eisma et al., 2005; Lowry et al., 2005). As elsewhere, sub-national management authorities frequently find themselves disempowered in the messy reality 'political infighting, technical errors, and ensuing misinformation' (Dressler et al., 2006, p. 812, 2). This is also manifested in the nationwide challenges in institutionalizing people's participation in decision-making and the formal recognition of community organizations (Heijmans and Victoria, 2001; Dressler, 2006).

Whilst the last decade has seen an extensive debate within international development regarding the appropriate linkages between decentralisation and devolution, the academic literature on co-management in the Philippines scarcely distinguishes between these two processes. The typical distinction is as offered by Enters et al. (2000), namely that decentralisation denotes the relocation of administrative functions away from the state centre, whereas devolution refers to the relocation of authority/power. With this lens it is commonly argued that South East Asian government reforms have frequently seen a decentralisation of administrative burden without the devolution of authority to enable sub-national levels to participate in meaningful decision-making and resource allocation. However, this case suggests that the Philippines ICM regime, in contrast, suffers from the opposite imbalance, namely an extensive devolution of powers to the provincial and municipal levels to interpret state legislation without the associated decentralisation of administrative procedures to hold provincial and municipal stakeholders accountable. Yet, this case study sheds new light on subtler dimensions of what constitutes governance 'devolution'. Despite formal mandates and fiscal autonomy the continued centralised control over policy formulation undermines the ability of provincial and municipal actors to co-define and collectively own the goals and assumptions underlying ICM.

In integrated resource management in wide sense, three mainstream categories of policy instruments have been highlighted which represent knowledge prescriptive approaches to policy implementation, namely normalisation of practices (coercion), regulation of the market through economic incentives, and awareness raising (Steyart and Jiggins, 2007). Based on the evidence presented above, it is questionable whether the ICM regime as implemented in Babuyan Islands moves beyond such knowledge prescription to truly non-coercive measures which

allow a collective construction of the goals of local ICM. Irrespective of the acclaimed devolution, it thus maintains an attempt to separate the decision and policy making ('steering') from the implementation ('rowing').

Whilst stakeholders are invited into negotiating management arrangements through, for instance, mechanisms for community organizing and participatory planning, the ICM planning model used by the Philippine Government (White et al., 2005; DENR, 2001) perpetuates the underlying assumptions of ICM, including the expert driven undisputable ontology, which supposes the existence of equilibrium ecosystem states. This means that ICM programmes evoke an instrumental approach to stakeholder involvement which places undue emphasis on how coastal stakeholders can be players in formalising the implementation of already established assumptions of ICM (Chuenpagdee and Jentoft, 2007). In the case of Babuyan Islands this serves to compromise formal collaboration between people caught in divisive alliance politics and to maintain the intransparent and unethical control exercised by the elite alliances.

Le Tissier and Hills (Le Tissier and Hills, 2006) have argued that capacity building for ICM must rely more on a holistic picture of governance aiming to create mechanisms for appreciating multiple stakeholder perspectives of what constitutes good management, rather than simplistic rational scientific measures. In Cagayan Province, one official example of enacting this principle is found in the establishment of a provincial office to support the development of local governance in *barangays* and municipalities. The People's Action Center (PAC) was instituted by the Governor in May 2007 in response to the gaps exposed in implementation of the LGC. Following the Governor's provincial agenda Municipal Development Facilitators have been recruited for 145 *barangays* in the Province and are mandated to enable *barangays* and other frontliners in the democratisation of the efforts for livelihoods improvement (Balean et al., 2007).

In the Philippine forestry sector, which served as inspiration for the country's ICM regime, the transition from state-controlled to community-based management has also frequently been compromised by fragile assumptions promoted by the state to control the forests. This is manifested in reductionist conceptions of the 'community' as a stakeholder unit which ignores local groups' multiple identities (Gauld, 2000). It echoes concerns from other resource management experiences regarding the hiding of persistent 'fence-and-fines' management strategies behind a popular narrative of 'partnership' (Eder, 2005; Adams and Hulme, 2001). There has, indeed, globally been growing awareness of how environmental policy often relies on environmental definitions created by cultural and/or scientific elites and imposed in a local setting, leading to marginalisation of local stakeholders (Gómez-Pompa and Kaus, 1992; Colchester, 2004). Within the conservation movement at large these critics, at times as part of the global deliberative struggle to redefine the environmental movement (Rowell, 1996), argue that ethical values are being co-opted by a positivist scientific and economic rationality, which removes environmental action from the public realm (Jepson and Canney, 2003; Roebuck and Phifer, 1999).

The attempt to formalise and legitimise the ICM regime and its assumptions through instrumental stakeholder involvement is visible in the claims that failure of ICM programmes results from lacking awareness of the LGC responsibilities amongst LGUs (CRMP, 2004) and that there is a need to increase social acceptance of ICM (Balgos, 2005). This problem definition is extended to arguing that due to the diversity of stakeholder agendas, effective participation must be built strategically so as not to halt the overall process of the project, e.g. through alliances with supportive leaders (White et al., 2005). If this means avoiding a collective localised critique of the

assumptions of the ICM regime, then there is a risk that such endeavours may further deepen the dominating role of international development banks, foreign aid agencies, and NGOs in promoting the worldview embedded in the ICM regime which frames development from specific neo-liberal premises (Nicholls, 1999; Grainger and Malayang, 2006). It also risks playing into the hands of local elites whose priorities often are contrary to that of the intended beneficiaries of ICM.

## 5. Conclusion

This paper has illustrated that in localities such as the Babuyan Islands, the assumptions perpetuated by the ICM worldview collapse with destructive consequences for its victims and the envisioned sustainable development for the Philippine coastal environment. If ICM is to foster an effective and equitable correction of current unsustainable exploitation patterns, then there is a need to institute improved accountability mechanisms in the devolved governance system. This may partly be achieved through linking the devolution of authority over the interpretation of policy goals more closely to a decentralisation of regulatory functions. However, such a strategy would also require that the espoused commitment to stakeholder involvement in determining the goals and assumptions of ICM is taken seriously by state, NGOs and international development organizations. This could contribute to alleviate the current vacuum established in the meeting between detrimental assumptions of ICM, which are held as non-negotiable by its centralised owners, and the extensive governance devolution which allows the undermining of coastal management when stakeholder involvement breaks down due to a lack of ownership in the periphery. Arguably, collective ownership ought to go hand in hand with mutual accountability.

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## References

- Abinales, N., Amoroso, D.J., 2005. *State and Society in the Philippines*. Anvil Publishing Inc., Manila.
- Acebes, J.V., Lesaca, L.R., 2003. Research and conservation of humpback whales and other cetacean species in the Babuyan islands, Northern Luzon. In: Ploeg, J., van der, Masipiquena, A., Bernardo, E.C. (Eds.), *The Sierra Madre Mountain Range: Global Relevance, Local Realities*. Papers Presented at the 4th Regional Conference on Environment and Development. Cagayan Valley Program for Environment and Development. Golden Press, Tuguegarao City, pp. 34–42.
- Acebes, J.V., Darling, J.D., Yamaguchi, M., 2007. Status and distribution of humpback whales (*Megaptera novaeangliae*) in Northern Luzon, Philippines. *J. Cet Res. Man.* 9, 37–43.
- Acebes, J.M.V., Darling, J., Aca, A.Q., 2008. Bioacoustics. *Int. J. Anim. Sound Rec.* 17, 153–155.
- Adams, W.M., Hulme, D., 2001. If community conservation is the answer in Africa, what is the question? *Oryx* 25 (3), 193–200.
- Asian Development Bank (ADB), 2006. Proposed Loan and Administration of Grant from the Global Environment Facility Republic of the Philippines: Integrated Coastal Resources Management Project. Report and Recommendation of the President to the Board of Directors, Manila.
- Alcala, A.C., 1998. Community-based coastal resource management in the Philippines: a case study. *Oc Coast Man.* 38, 179–186.
- Balgos, M.C., 2005. Integrated coastal management and marine protected areas in the Philippines: concurrent developments. *J. Oc Coast Man.* 48, 972–995.
- Barut, N.C., Santos, M.D., Miljares, L.L., Subade, R., Armada, N.B., Garces, L., 2003. Philippine coastal fisheries situation. In: Silvestre, G., Garces, L., Stobutzki, I., Ahmed, M., Valmonte-Santos, R.A., Luna, C., Lachica-Aliño, L., Munro, P., Christensen, V., Pauly, D. (Eds.), *Assessment, Management and Future Directions for Coastal Fisheries in Asian Countries*, vol. 67. World Fish Cent Conf Proc, pp. 885–914.
- Belen, A., Ritarita Jr., B., Patino Jr., N., Ventura, M., Quito, G., Uy, K., 2008. Assessment of corals and fish in the Babuyan islands with emphasis on Camiguin island. Project Rep.
- Berger, P., Luckmann, T., 1966. *The Social Construction of Reality. A Treatise in the Sociology of Knowledge*. Penguin Books.
- Bureau of Fisheries and Aquatic Resources (BFAR), 2003. In: *Turbulent Seas: The Status of Philippines Marine Fisheries*. Department of Agriculture, BFAR.
- Billaud, J.-P., Brives, H., Jiggins, J., Reynolds, M., Röling, N., Toderi, M., 2004. Facilitation of social learning Processes for integrated Catchment management and sustainable use of water. SLIM Thematic Paper No. 2.
- Broad, G., Oliveros, C., 2004. Biodiversity and conservation priority setting in the Babuyan Islands, Philippines. *Sylvatrop* 15, 1–30.
- Chapin, M., 2004. A challenge to conservationists, World Watch, Vision for a sustainable world. World Watch Inst.
- Checkland, P., 1999. *Systems Thinking, Systems Practice*. Wiley Publishing.
- Checkland, P., 2009. Reflecting on SSM: the link between root definitions and conceptual models. *Sys Res. Beh Sci.* 14.
- Chuenpagdee, R., Jentoft, S., 2007. Step zero for fisheries co-management: what precedes implementation. *Mar Pol* 31, 657–668.
- Colchester, M., 2004. Conservation policy and indigenous peoples. *Env Sci.Pol* 7, 145–153.
- Coronel, S.S. (Ed.), 2000. *Betrayal of the Public Trust. Investigative Reports on Corruption*. Philippine Center for Investigative Journalism, pp. 294–297.
- Completion Report: The Coastal Resource Management Project – Philippines 1996–2004, Resource Management Project of the Department of Environment and Natural Resources, 2004. Coastal Resource Management Project (CRMP), Cebu City, Philippines, 170 pp.
- Cruz-Trinidad, A., 2003. Socioeconomic and bioeconomic performance of Philippine fisheries in the recent decades. In: Silvestre, G., Garces, L., Stobutzki, I., Ahmed, M., Valmonte-Santos, R.A., Luna, C., Lachica-Aliño, L., Munro, P., Christensen, V., Pauly, D. (Eds.), *Assessment, Management and Future Directions for Coastal Fisheries in Asian Countries*, vol. 67. World Fish Cent Conf Proc, pp. 543–576.
- Davos, C.A., 1998. Sustaining co-operation for coastal sustainability. *J. Env Man.* 52, 379–387.
- DENR, UNDP, 2004. ARCADEV, a Framework for Sustainable Philippine Archipelagic Development. Revaluating Our Maritime Heritage and Affirming the Unity of Land and Sea. Marine Environment and Resources Foundation Inc., Manila.
- Department for Environment and Natural Resource Management (DENR), Bureau of Fisheries and Aquatic Resources (BFAR), Department for Internal and Local Government, 2001. *Philippine Coastal Management Guidebook No 2: Legal and Jurisdictional Framework for Coastal Management*. Coastal Resource Management Project of DENR, Cebu City, Philippines.
- DENR, DA/Bfar, USAID. A policy study on the clarification of jurisdiction between the Department of Environment and Natural Resources and the Department of Agriculture for Coastal Resource Management, undated.
- Dressler, W.H., Kull, C.A., Meredith, T.C., 2006. The politics of decentralizing national parks management in the Philippines. *Pol. Geog.* 25, 789–816.
- Dressler, W.H., 2006. Co-opting conservation: migrant resource control and access to national park management in the Philippine uplands. *Dev. Chan.* 37, 401–426.
- Eder, J.F., 2005. Coastal resource management and social differences in Philippine fishing communities. *Hum. Ecol.* 33, 147–169.
- Eisma, R.-L.V., Christie, P., Hershman, M., 2005. Legal issues affecting sustainability of integrated coastal management in the Philippines. *Oc Coast Man.* 48, 336–359.
- Enters, T., Durst, P.B., Victor, M. (Eds.), 2000/1. *Decentralization and Devolution of Forest Management in Asia and the Pacific*. Forest Management in Asia and the Pacific. RECOFTC report N.18 and RAP Publication, Bangkok, Thailand.
- Fisher, K.T., Ulrich, P.B., 1999. Information dissemination and communication in stakeholder participation: the Bohol-Cebu water supply project. *As Pac. View* 40 (3), 251–269.
- Froese, R., 2004. Keep it simple: three indicators to deal with overfishing. *Fish Fisher* 5, 86–91.
- Gauld, R., 2000. Maintaining centralized control community-based forestry policy construction Philippines. *Dev. Chan* 31, 229–254.
- Gómez-Pompa, A., Kaus, A., 1992. Taming the wilderness myth. *BioSci* 42 (4), 271–279.



- Grainger, A., Malayang, B.S., 2006. A model of policy changes to secure sustainable forest management and control of deforestation in the Philippines. *For. Pol. Ec* 8, 67–80.
- Heijmans, A., Victoria, L.P., 2001. Citizenry-based and Development-Oriented Disaster Response. Experiences and Practices in Disaster Management of the Citizens Disaster Response Network in the Philippines. Center for Disaster Preparedness, Manila.
- Holling, C.S., Meffe, G.K., 1996. Command and control and the Pathology of natural resource management. *Cons Biol* 10, 329–337.
- Ison, R., Watson, D., 2007. Illuminating the possibilities for social learning in the management of Scotland's water. *Ecol. Soc.* 12, 21.
- Ison, R., Röling, N., Watson, D., 2007. Challenges to science and society in the sustainable management and use of water: investigating the role of social learning. *Env. Sci. Pol.* 10, 499–511.
- J. Batongbakal. A crowded shoreline. Rev Philippines' foreshore Shore Land Manage Policies, Coastal Resource Manage Project DENR USAID, Undated.
- Jepson, P., Canney, S., 2003. Values-led conservation. *Glob. Ecol. Biog* 12, 271–274. Konsultasyon Ng Komunidad at Action-Planning Workshop Sa Calayan, 2006. Isla Conservation Foundation Inc.
- Larsen, R.K., 2010. Adapting Critical systems thinking for the Facilitation of conservation planning in Philippines coastal management. *Sys Res. Beh Sci.*
- Le Tissier, M., Hills, J.M., 2006. Widening coastal managers' Perceptions of stakeholders through capacity building. In: Hoanh, C.T., Tuong, T.P., Gowing, J.W., Hardy, B. (Eds.), *Environment and Livelihoods in Tropical Coastal Zones*. CAB International, pp. 249–257.
- Leslie, H.M., 2005. A synthesis of marine conservation planning approaches. *Cons Biol* 19, 1701–1713.
- LMP (League of Municipalities in the Philippines) and DENR. Best coastal management programs awards 2000, Manila, Philippines; 2000.
- Lowry, K., White, A., Courtney, C., 2005. National and local agency roles in integrated coastal management in the Philippines. *J. Oc Coast Man.* 48, 314–335.
- Ludwig, D., 2001. The era of management is over. *Ecos* 4, 758–764.
- Manalili, A.G., 1990. Community Organizing for People's Empowerment. Kapatiran—Kaunlaran Foundation Inc..
- Miclat, E.F.B., Ingles, J.A., Dumaop, J.N.B., 2006. Planning across boundaries for the conservation of the Sulu-Sulawesi marine Ecoregion. *Oc Coast Man.* 49, 597–609.
- Milne, N., Christie, P., 2005. Financing integrated coastal management: experiences in Mabini and Tingloy, Batangas, Philippines. *J. Oc Coast Man.* 48, 427–449.
- Mungcal A.L.L. Community-based coastal resource management (CB-CRM): a case study of Mariveles, Bataan, Philippines. Paper presented at delta 2007 conference: managing the coastal land-water interface in tropical delta systems, Bang Saen, Thailand; 7–9 November, 2007.
- National FARMC Review and Planning Workshop, 9–11 February, 1999. BFAR, Davao City.
- Nicholls, K., 1999. Coming to Terms with "Integrated coastal management": problems of meaning and method in a new arena of resource regulation. *Prof. Geog* 51, 388–399.
- O. Balean, E. Buenaventura, T. Antonio, People's action Center (PAC). Office of the Governor – Province of Cagayan. Strengthening local democratic processes promotion sustainable integrated area development for marginalised communities sectors as concrete manifestations new governance province Cagayan, 2nd Draft, 2007.
- PGC (Provincial Government of Cagayan), 2003. Ordinance declaring the humpback whales as protected species within the territorial jurisdiction in the Province of Cagayan and providing penalties for the violation thereof. Provincial Ordinance, 09–2003.
- Pollnac, R.B., Pomeroy, R.S., 2005. Factors influencing the sustainability of integrated coastal management projects in the Philippines and Indonesia. *Oc Coast Man.* 48, 233–251.
- Pomeroy, R., Parks, J., Pollnac, R., Campson, T., Genio, E., Marlessy, C., et al., 2007. Fish wards: conflict and collaboration in fisheries management in Southeast Asia. *Mar Pol* 31, 645–656.
- Powell, N., Osbeck, M., Sidik, A.S., Aditya, A., 2010. Understanding and embedding stakeholder Realities coastal governance: the case of Mangroves in the Mahakam delta, East Kalimantan. *Int. J. Sust Dev.* 18 (3).
- Powell, N., 1998. Co-Management in Non-equilibrium Systems: Cases from Nami-bian Rangelands. Doctoral Thesis, Agraria 138. Swedish University of Agricultural Sciences, Uppsala, pp. 87–107.
- Pressey, R.L., Cabeza, M., Watts, M.E., Cowling, R.M., Wilson, K.E., 2007. Conservation planning in a changing world. *Tr Ecol. Evol.* 22 (11), 583–592.
- Purdon, M., 2003. The nature of ecosystem management: postmodernism and plurality in the sustainable management of the boreal forest. *Env. Sci. Pol.* 6, 377–388.
- Ravetz, J., 1999. What is Post-normal science. *Futures* 31, 647–653.
- Rivera, R., Newkirk, G.F., 1997. Power from the people: a documentation of nongovernmental organizations' experience in community based coastal resource management in the Philippines. *Oc Coast Man.* 36, 73–95.
- Roebuck, P., Phifer, P., 1999. The persistence of Positivism in conservation Biology. *Cons Biol* 13, 444–446.
- Röling, N., Wagemakers, A., 1998. A new practice: facilitating sustainable agriculture. In: Röling, N., Wagemakers, N.A. (Eds.), *Facilitating Sustainable Agriculture; Participatory Learning and Adaptive Management in Times of Environmental Uncertainty*. Cambridge University Press.
- Rowell, A., 1996. *Green Backlash: Global Subversion of the Environmental Movement*. Routledge, London.
- Scott, W.H., 1994. *Barangay. Sixteenth Century Philippine Culture and Society*. Ateneo de Manila University Press, Manila, Philippines.
- Silvestre, G.T., Garces, L.R., Stobutzki, I., Ahmed, M., Santos, R.A.V., Luna, C.Z., et al., 2003. South and South-East Asian coastal fisheries: their status and directions for improved management: conference synopsis and recommendations. In: Silvestre, G., Garces, L., Stobutzki, I., Ahmed, M., Valmonte-Santos, R.A., Luna, C., Lachica-Aliño, L., Munro, P., Christensen, V., Pauly, D. (Eds.), *Assessment, Management and Future Directions for Coastal Fisheries in Asian Countries*, vol. 67. World Fish Cent Conf Proc, pp. 1–40.
- SLIM (Social Learning for the Integrated Management and Sustainable Use of Water at Catchment Scale) Policy Brief 2, Stakeholders and Stakeholding in Integrated Catchment Management and Sustainable Use of Water, 2004.
- Snelder, D.J., Bernardo, E.C., 2005. Co-management in Practice. The Challenges and Complexities of Implementation in the Northern Sierra Madre Mountain Region. Ateneo de Manila University Press, Manila.
- Steyart, P., Jiggins, J., 2007. Governance of complex environmental situations through social learning: a synthesis of SLIM's lessons for research, policy and practice. *Env. Sci. Pol.* 10, 575–586.
- Ulrich, W., 2000. Reflective practice in the civil society: the contribution of Critically Systemic thinking. *Refl Pra* 1, 247–268.
- UNEP, 2006. *Marine and Coastal Ecosystems and Human Well-being: a Synthesis Report Based on the Findings of the Millennium Ecosystem Assessment*. Global Environment Outlook: Environment for Development (GEO-4), 2007. United Nations Environment Program (UNEP), New York.
- van Lavieren, H., de Jongh, H., Belen, A., 2005. Managing the coastal resources of the northern Sierra Madre National Park. In: Snelder, D.J., Bernardo, E.C. (Eds.), *Co-management in Practice. The Challenges and Complexities of Implementation in the Northern Sierra Madre Mountain Region*. Ateneo de Manila University Press, Manila, pp. 165–194.
- Vitug, M.D., 1993. *The Politics of Logging. Power from the Forest*. Philippine Center for Investigative Journalism.
- White, A.T., Eisma-Osorio, R.-L., Green, S.J., 2005. Integrated coastal management and marine protected areas: complementarity in the Philippines. *Oc Coas Man.* 48, 948–971.
- White, A.T., Gomez, E., Alcalá, A.C., Russ, G., 2006. Evolution and lessons from fisheries and coastal management in the Philippines. In: McClanadan, T.R., Castilla, J.C. (Eds.), *Fisheries Management: Progress towards Sustainability*. Blackwell Press.
- R.J. Whittaker, M.B. Araujo, P. Jepson, R.J. Ladle, J.E.M. Watson, R.J. Willis. et al 11 (2005) 2–23.
- World Bank, 2005. *Philippines environment monitor 2005*. Coast Mar Res. Man..
- WWF-Philippines, 2001. *Workshop Report, Preliminary Conservation Management Planning-Workshop for Babuyan Channel*. St. Patrick Garden Hotel, Aparri, Cagayan.