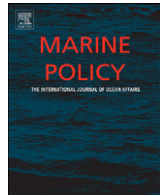


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## Achieving MPA effectiveness through application of responsive governance incentives in the Tubbataha reefs

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### ABSTRACT

The dynamic institutional arrangements, which characterized the past two decades of management in the Tubbataha Reefs Natural Park (TRNP), reflect flexibility and diversity in the use of governance incentives. At the initial stage, legal and knowledge incentives provided the main guidance in identifying the appropriate organizational structure to manage the Park and to establish its boundaries and jurisdictional limits. Knowledge incentives provided the added value of generating credible information that showed the significance of the Tubbataha Reefs and the positive impact of management actions. Communicating information to the public, as an interpretative incentive, supported greater recognition and influence at the national and international levels. During the middle stage, the use of economic incentives ensured that the Park management benefitted from tourism through user fees and that Cagayancillo Municipality received a fair share of benefits to partly compensate foregone income opportunities. The Tubbataha Trust Fund was created serving as a depository of revenue from grants and donations and included instituting fiscal management to encourage more partners and stakeholders to contribute. Presently, in the light of current issues and the recently passed TRNP Act, striking a balance between legal-economic-participative incentives takes precedence over interpretative and knowledge incentives which are in place and only need to be maintained.

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### 1. Context

To safeguard the Coral Triangle's marine and coastal resources, a multilateral partnership of six countries<sup>1</sup> was formed called the Coral Triangle Initiative (CTI). The Philippines is one of the six countries comprising the Coral Triangle which is recognized as a global priority for marine conservation. Under the CTI, a Regional Plan of Action was formulated which identified as one of its goals for the establishment and effective management of MPAs. This supports the Philippines Fisheries Code of 1998 which stipulates that 15% of coastal municipal waters, generally referring to bodies of water extending 15 km from the coastline including offshore islands, must be protected within no-take MPAs. A previous study [1] recorded that as of 2008 at least 985 MPAs had been established in the country covering an aggregate area of 14,943 km<sup>2</sup>, of which 1459 km<sup>2</sup> had been designated as no-take. Community-based MPAs which represents 95% of the total MPAs have a combined no-take area of only 206 km<sup>2</sup> while two

nationally designated no-take MPAs, the Tubbataha Reefs Natural Park (970 km<sup>2</sup>) and Apo Reef Natural Park (275 km<sup>2</sup>) have a combined area of 1245 km<sup>2</sup>, which is 85% of the total no-take area. The study showed that there is an apparent inability to meet conservation targets through community-based MPAs alone, and highlighted the importance of large no-take MPAs. However, establishing and effectively managing large no-take MPAs in an archipelagic country faced with diminishing marine resources and rapidly increasing coastal populations is a real governance challenge. The Tubbataha Reefs Natural Park (TRNP), established in 1988, is the largest no-take MPA in the country and is widely recognized as exemplifying good practice in MPA management [2].

The TRNP is nestled in the middle of the Sulu Sea, approximately 150 km from Puerto Princesa, the capital city of Palawan, in the southwest corner of the country (Fig. 1). It is under the political jurisdiction of the Municipality of Cagayancillo, 130 km to the north. "Tubbataha" derives from the Samal language of the seafaring people of the Sulu Sea, which means "a long reef exposed at low tide". Two coral atolls, the North and the South, and a submerged reef, the Jessie Beazley Reef, comprise the TRNP. The islet in the north atoll is called Bird Islet and hosts most of the 7 species of resident seabirds in the park while the South Islet has a lighthouse and a smaller population of seabirds. Some of these

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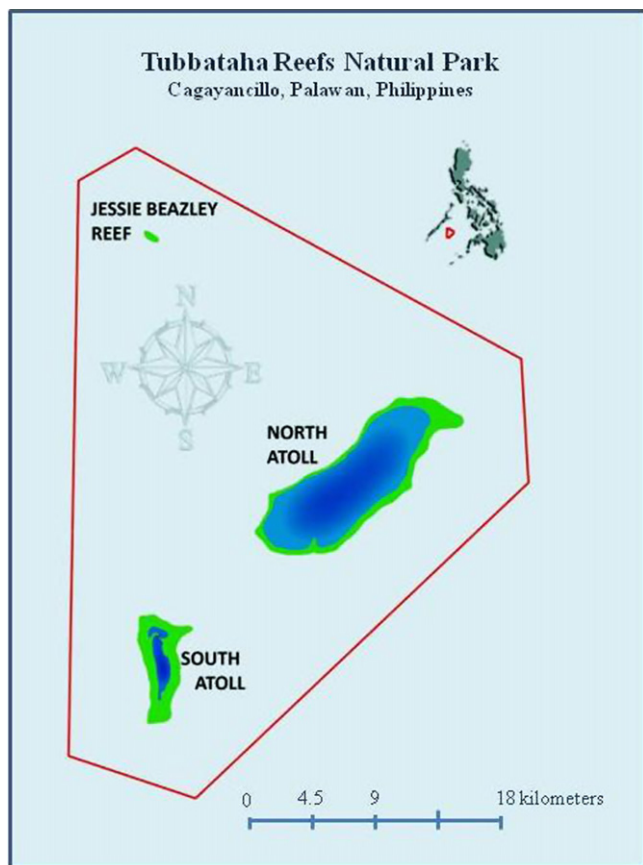


Fig. 1. Location map for the Tubbataha Reefs Natural Park.

seabird species are classified as priorities for conservation. North Islet is the breeding ground of an endemic subspecies of black noddy, *Anous minutus worcestri*, and is an important rookery of the critically endangered Christmas Island frigate [3].

The reef systems are composed of continuous reef platforms 200–500 m wide, completely enclosing sandy and coral substrate lagoons with a maximum depth of 40 m. On the inner side of the platform are shallow reef flats and seagrass beds. The TRNP harbors a diversity of marine life equal to or greater than any such reef of its size in the world. It is home to at least 360 species of corals or almost 72% of all coral genera in the world, 600 species of fish, 19 species of rays and sharks, 7 species of seagrass, 66 species of algae, 2 species of marine turtles and 13 species of marine mammals. Large pelagic fish, such as tuna, mackerel, jacks and barracudas, are observed in schools near the reef crests [4].

## 2. Objectives

Tubbataha falls under IUCN Category II: National Park, defined as protected areas which are large natural or near natural areas set aside to protect large-scale ecological processes. The species and ecosystems characteristic of the area also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities [5]. Three overarching policies apply for the long-term management of Tubbataha:

- The TRNP shall be managed under a no-take policy to conserve and protect its values for the enjoyment of present and future generations;
- In accordance with the above, any exploration, exploitation or utilization of non-renewable resources within the TRNP shall not be permitted;

- Active collaboration and participation from all stakeholders shall be fostered to engender a sense of ownership and promote compliance to regulations.

The following specific objectives reflect the desired results of management programs for the TRNP:

- Biological diversity and ecological processes are protected from unnatural threats and direct human impact;
- Legal and management structures are effectively maintained;
- Stakeholder participation and representation are ensured;
- Public understanding of the benefits of conserving the TRNP is improved; and
- Revenues from ecosystems targeted for conservation are enhanced.

## 3. Drivers and conflicts

Pressures threatening the Park and its management are dynamic, hence there is a need to maintain vigilance in addressing these within the park. In the updated Park Management Plan (January 2011), the biological threats, socio-economic issues and institutional constraints identified were:

### 3.1. Biophysical threats:

- Solid waste: an increasing volume of solid waste materials are brought by tidal currents and wind from various origins outside the Park;
- Crown of Thorns (COTS) infestation: a study [6] showed that the COTS population in Tubbataha is native to the place and not introduced as previously suspected, thus another outbreak is predicted to occur within two to four years;
- Invasive seabird species: the proliferation of red-footed boobies in the TRNP results to intense fertilization from droppings and denudation of trees which are the habitat of other tree-breeding seabirds; and,
- Climate change: intensifying monsoon winds and wave action increase the vulnerability of the reef and islets to coral damage and erosion.

### 3.2. Socio-economic issues:

- Stakeholder ownership: due to seasonal access, allowing only three months (mid-March to mid-June) of tourism operation, and the isolation of the TRNP, there is limited opportunity for stakeholders to experience it, thereby hindering the development of the desired critical mass possessing a sense of ownership of TRNP;
- Illegal use of resources: fishers from communities in mainland Palawan and the nearby provinces in the Visayas continue to enter the Park, targeting endangered or threatened species known to have high commercial value in the illegal trade such as Napoleon Wrasse, top shells and sharks;
- Energy exploration: the rising cost of imported fossil fuel potentially increases the possibility that the Department of Energy will allow oil explorations in the Sulu Sea, increasing the threat to marine mammals and other species within the Park.

### 3.3. Institutional constraints:

- Slow judicial process: while there is currently strong support for the litigation of cases, Philippine courts are generally

overwhelmed with lawsuits, hence the protracted resolution of illegal use cases;

- Financial sustainability: funding from government and other foundations is erratic while the conservation fees collected from tourism operations remain insufficient to fund the rising cost of management, thus threatening to drain the Trust Fund raised in the previous years when funding from international sources covered operational expenses;
- Political dynamics: with the passage of the TRNP Act, the Tubbataha Protected Area Management Board (TPAMB) and the Tubbataha Management Office (TMO) face political issues in their transition to being a full-fledged government agency, which tend to be the subject of bureaucratic systems prone to the influence of political personalities who may or may not support the Park during their term in office.

#### 4. Governance framework

The TRNP was initially protected by Presidential Proclamation 306 (1988) and later on by Presidential Proclamation 1126 (2006) which corrected the erroneous boundaries in the first proclamation and strengthened enforcement. In 1993, the park was declared a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO), whilst in 1999 Tubbataha was included in the Ramsar List of Wetlands of International Importance. The governance approach within which the TRNP could be classified is best described as being managed by the government with significant decentralization and/or influence from private organizations [7]. The enactment of Republic Act 10067 (TRNP Act of 2009) on 6 April 2010 established Tubbataha as a Protected Area under the National Integrated Protected Areas System (NIPAS-R.A. 7586) and the Strategic Environmental Plan (SEP-R.A. 7611) for Palawan. The TPAMB published the Implementing Rules and Regulations of this Act on 24 November 2010.

The management of the park was transferred in 1990 from the Department of Environment and Natural Resources (DENR) to the Tubbataha Foundation, a group of concerned divers and sport fishers based in Metro Manila. In 1995, then President Fidel V. Ramos established the multi-sector Task Force Tubbataha under the Department of National Defense (DND) which replaced the Tubbataha Foundation, and instructed one of its units, the Armed Forces of the Philippines, to maintain a year-round presence in the site. Based on the Tubbataha Management Plan formulated through a series of consultative iterations from 1992 to 1998, the Task Force morphed into the Tubbataha Protected Area Management Board (TPAMB) in 1999 through a local resolution. It is a multi-sector body that formulates policies for Tubbataha. Under the recently enacted TRNP Act, the TPAMB consists of 21 representatives from the national, provincial and municipal governments, Cagayancillo people's organization, NGOs, local universities and the dive tourism sector. The TPAMB meets quarterly, while its Executive Committee (ExeCom) meets monthly to provide operational guidance. The ExeCom members are representatives from the Palawan Council for Sustainable Development (PCSD), DENR, Provincial Government, Municipal Government of Cagayancillo, Philippine Navy, Philippine Coast Guard, WWF-Philippines, Saguda Palawan and Conservation International. Day-to-day park management is carried out by the TMO, the executive arm of the TPAMB that is solely dedicated to implementing the management plan.

The Tubbataha Management Plan approved in 1998 was revised in 2002 to incorporate systems developed in regulating park activities, entry permits, collection of conservation fees and ecosystem research. In 2004, another revision incorporated the

park management effectiveness monitoring and evaluation program. Other programs were streamlined, based on experiences in the implementation of the UNDP-GEF funded Tubbataha Conservation Project. The component on policy and advocacy was also incorporated into the conservation management program [8]. In January 2011, the TRNP Management Plan was updated and approved by the TPAMB.

#### 5. Effectiveness

Management effectiveness evaluation for Tubbataha started in November 2003 using the IUCN framework [9]. The monitoring and evaluation process is carried out by an evaluation team composed of representatives from different sectors. The collection of data is undertaken through participative methods with contributions from community members. The most recent evaluation was conducted on 25–26 November 2010.

##### 5.1. Biophysical indicators

Seven transect sites for benthic and fish community surveys have been established at depths of 10 m and 5 m covering approximately 1 km<sup>2</sup> coral reef of the 100 km<sup>2</sup> total area of the Park. Monitoring for the last 15 years in Tubbataha has shown that the live coral cover has been stable after the bleaching of 1998, when coral cover declined by about 22% [10] (Fig. 2).

Fish biomass in the TRNP remains stable at 278 mt/km<sup>2</sup>, still the highest recorded in the Philippines [11]. Other research [12] indicated that target fish biomass ranged from 45.7 to 134.3 kg/500 m<sup>2</sup>. This suggests that the total reef fish standing biomass of target species in Tubbataha would range from 9140 mt to 65,140 mt for the total reef area approximated at 100 km<sup>2</sup>, thus reinforcing the Park's significance as an important source of fish larvae.

The mean total fish density recorded in Tubbataha decreased slightly to 485.6 individuals/100 m<sup>2</sup> in 2011, but was not statistically significant (Fig. 3). The density for demersal fish, which are more associated with the status of the reef, was estimated at 465 individuals/100 m<sup>2</sup>. The combined biomass and density of families belonging to commercially important fish such as Acanthuridae, Labridae, Lutjanidae, Scaridae, Siganidae and Serranidae from 1998 to 2011 show an increasing trend. These families are mostly territorial and usually one of the first to disappear from a heavily fished reef. The increasing trend signifies that fishing activities are absent or very minimal, a good indicator of the Park's protection as a no-take zone.

##### 5.2. Socio-economic indicators

This aspect of management is evaluated every three years and evaluation results in 2008 showed that of the seven indicators applied, only one indicator was indeterminate while the other six were positive. The Park management appears to be effectively attaining its objectives, with an increased fish catch per unit effort in Cagayancillo, an improving level of understanding of human impacts on resources, and an increase in household income by 26% from 2004 to 2007 [13]. The number of tourists is growing in both Tubbataha and Cagayancillo. Scientific knowledge generated from studies was found to be successfully disseminated to a wider audience through information, communication and education campaigns.

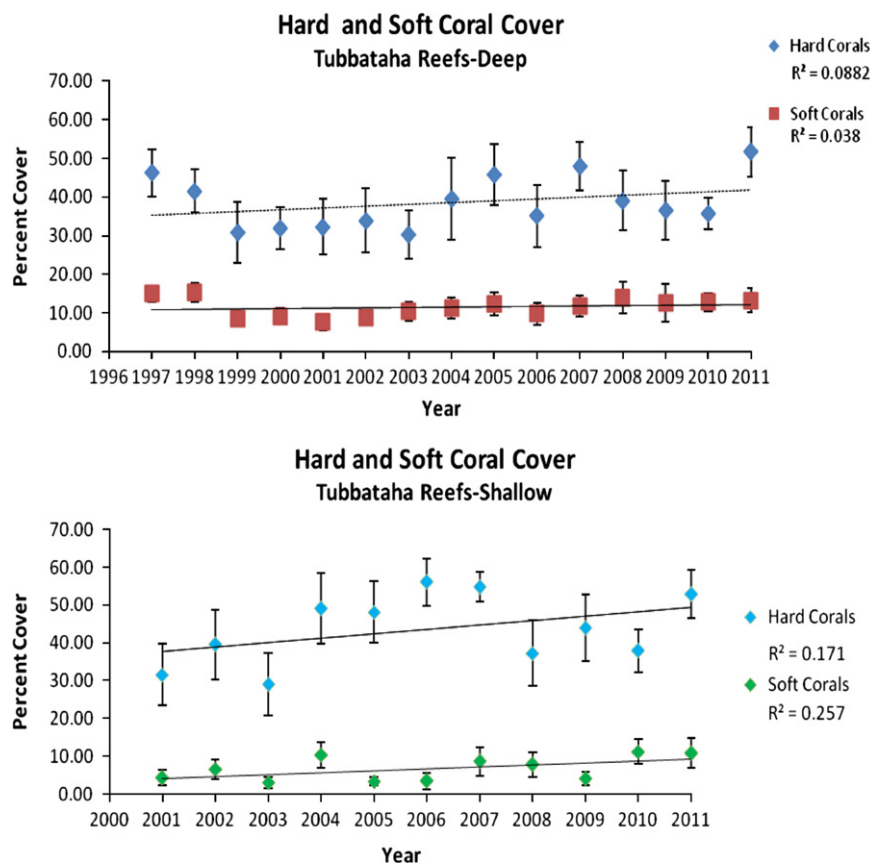


Fig. 2. Mean percentage cover of hard and soft corals at 10 m and 5 m depths. Error bars represent the standard error of the mean.

### 5.3. Governance indicators

All of the eight governance indicators showed positive change in 2010 especially with the passage of the TRNP Act. This is evidenced by a reduction in recorded violations and the performance of institutions including the TPAMB, TMO and Execom. Although financial resources remain insufficient, core activities which consist of enforcement, tourism management, benthos-fish-seabird monitoring and Park administration are still carried out through contributions from various partners.

## 6. Incentives

A combination of governance incentives has been applied in Tubbataha over the 23 years of its existence (Table 1). The first decade dwelt on the legal and knowledge incentives, to establish jurisdiction over the area and to attribute efforts and conservation results to a dedicated management body. The second decade saw increasing use of economic, interpretative and participative incentives to develop a constituency that supports the Park.

### 6.1. Economic incentives

Economic incentives serve as one of the pillars of governance of TRNP. They balance the Park's no-take policy and provide the platform to generate the financial resources and institutional partnership needed to sustain the management of the TRNP.

Promoting economically and ecologically sustainable resource exploitation has been encouraged through the Tubbataha Management Plan which contains a program on sustainable resource management for Cagayancillo, which is populated by 6000 households. Other locally-managed marine protected areas were

established, using Tubbataha as a model. From being a source of pressure on the resources in the Park, Cagayancillo now serves as a buffer to TRNP. At a larger scale, the TRNP is the source of fish and coral larvae seeding the fishing grounds in the greater Sulu Sea, specifically in the eastern coast of mainland Palawan [14]. The wider scale impacts of conserving the TRNP thereby benefits an estimated 200,000 fishing households, each with an average of five members.

Green marketing of products and services from the MPA occurs through dive tourism in Tubbataha that generates \$80,000 to \$110,000 a year from conservation fees during the three summer months when weather conditions permit these activities. A business plan was formulated in 2007 which aims to promote Tubbataha as a premier diving destination capitalizing on its World Heritage status. Promotion of the Park for non-divers was also initiated by WWF-Philippines through its World Heritage Expedition package, which offered visits to three World Heritage Sites: Underground River of Puerto Princesa, Tubbataha, and Miag-ao Church and to Cagayancillo for an adventure cum educational experience.

Measures to reduce the leakage of economic benefits have been implemented. Dive operators and tourists pay conservation fees to ensure that the values of the park are maintained thereby enabling a vibrant dive tourism industry. Cagayancillo residents have foregone access to the Park but in return receive financial and technical support for the management of their own resources. Cagayancillo residents are given preferential consideration in employment opportunities in the Park.

Providing economic compensation for restricted users for profits foregone helps maintain the no-take status of the Park. The residents of Cagayancillo historically used the park for part of the fishing season but have been forced to give up this access due to the establishment of the park by the national government. As compensation for their economic losses the TPAMB endorsed the



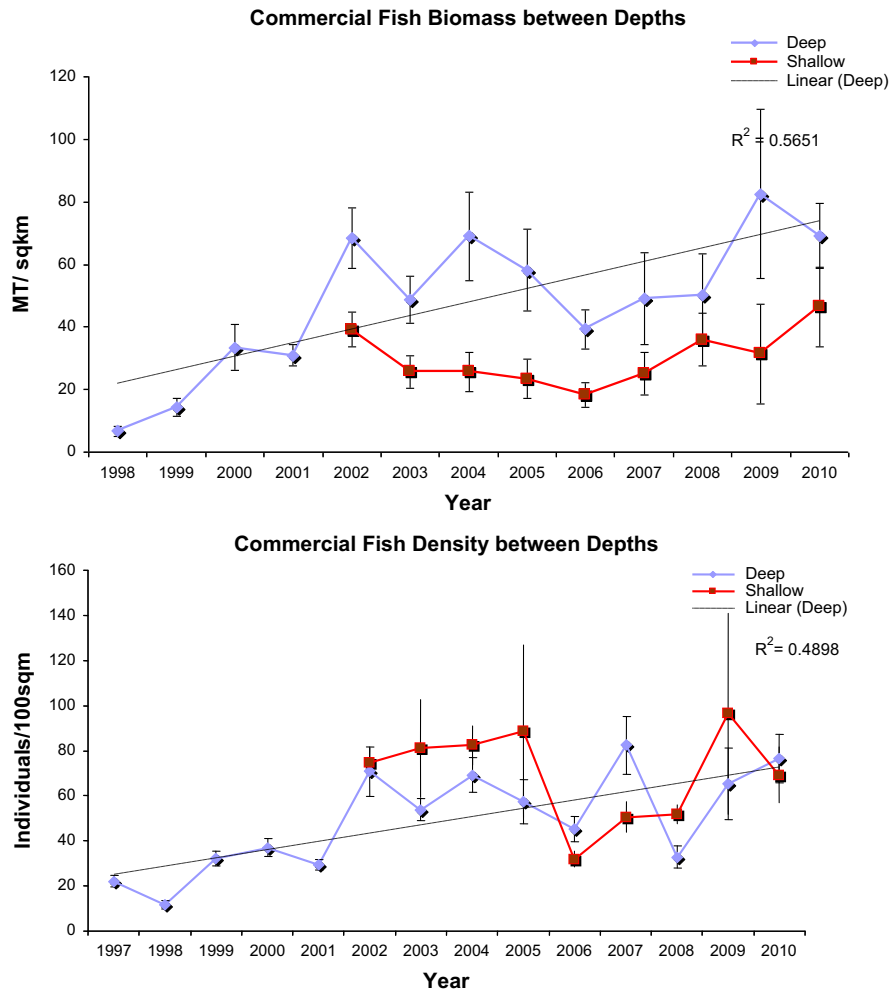


Fig. 3. Commercial fish biomass and density at 10 m and 5 m depths. Error bars represent the standard error of the mean.

provision of 10% of conservation fee collections for livelihood development in Cagayancillo. This fund is managed by the Municipal Government and has partly served as their leverage for additional funds in facilitating a more comprehensive Coastal Resource Management (CRM) program.

Promoting alternative livelihoods has also aided the Cagayancillo community. To support the socio-economic needs of the residents in Cagayancillo, components on micro-finance, adventure-ecotourism, and information and education were made part of the CRM design. The micro-finance facility is run by a local people's organization in Cagayancillo and provides capital for small businesses among residents of the islands. About 300–400 residents have availed themselves of loans to augment capital of existing businesses or to start new enterprises (i.e. general store, eatery, fishing, homestay). Some utilized loans for the education of their children or for emergency cases such as sickness or accidents. The performance of this micro-finance facility is measured using the Portfolio at Risk (PAR) indicator, which has been maintained within the viable level of 3–5%. Cagayancillo is being promoted and is gaining popularity as an adventure-ecotourism site bringing a new source of revenue for the municipal government in the form of user fees. An ordinance requiring the payment of PhP300 per single visitor entry was passed by the Municipal Council in 2007. Alternative livelihoods such as trade in household commodities, mat weaving, and production of coconut vinegar reduce pressure on marine resources.

Improvements in local infrastructure and living standards have resulted from revenues from the Park. The Municipal

Government of Cagayancillo invests part of its share from Tubbataha conservation fees, intended for livelihood, on farm-to-market roads and the improvement of public facilities. This is important because the island municipality is relatively underdeveloped and needs basic infrastructure.

Funding from private or NGO sources to promote the effectiveness of the MPA has also been a source of economic support. Over the years, funding from government and foundations has decreased and has become less reliable. A marketing strategy has been developed to attract broad-based revenue sources through the private sector, which includes the levy of conservation fees from dive tourists as well as private donations? Initially, an airline company was engaged to provide online donation facility to passengers to offset their carbon footprint. The mechanism can be expanded further with creative ideas and time.

## 6.2. Interpretative incentives

Instilling the values of the Park and the rationale of protective measures to a wider audience is instrumental in encouraging stakeholders and partners to support park management and increase compliance to regulations.

Public communication, education and raising awareness have played a major role in building a constituency for TRNP. The park has been very successful in using the "New 7 Wonders of Nature" campaign as a vehicle for promoting the TRNP. Publicized visits by high-profile personalities including the national president have also been very helpful in generating interest. The former President

**Table 1**  
Summary of governance incentives in Tubbataha Reefs Natural Park.

Incentive type	Incentives applied to address conflicts and provide governance steer	Cross-cutting issues
Economic	<ul style="list-style-type: none"> <li>Promoting economically and ecologically sustainable resource use</li> <li>Green marketing of products and services from the MPA</li> <li>Measures to reduce the 'leakage' of the economic benefits of the MPA away from local people</li> <li>Providing economic compensation for restricted users</li> <li>Promoting alternative livelihoods</li> <li>Improvements in local infrastructure and living standards</li> <li>Funding from private or NGO sources to promote the effectiveness of the MPA</li> </ul>	Equity and stewardship: the TPAMB recognized the foregone opportunities of the Cagayancillo fishermen when the no-take policy of the Park was fully enforced and negotiated for the sharing of tourism revenues as a compensatory mechanism. This share may be perceived by many as not enough but it helped the Cagayancillo residents to claim co-ownership of the vision to conserve Tubbataha and take pride in it. Role of NGOs: played a significant role in honing the present leadership of the Park, including the provision of funding, but the park has become reliant on this and sustainable sources of funding from tourism operators and/or the state are also needed
Interpretative	<ul style="list-style-type: none"> <li>Public communication, education and awareness raising</li> <li>Role of celebrity 'champions'</li> <li>Promoting recognition of MPA regulations and restrictions, including boundaries</li> </ul>	
Knowledge	<ul style="list-style-type: none"> <li>Maximizing scientific knowledge to guide/inform MPA decision-making</li> <li>Promoting mutual respect and collective learning between different knowledge owners</li> </ul>	
Legal	<ul style="list-style-type: none"> <li>International-regional-national-local regulatory obligations that require effective MPA conservation</li> <li>Clarity and consistency in defining legal objectives of MPAs, general and zonal restrictions, jurisdictional boundaries, roles and responsibilities of different authorities and organizations</li> <li>Effective judicial system for penalizing transgressors</li> <li>Ensuring that sufficient state capacity, political will, surveillance technologies and financial resources are available to enforce all restrictions equitably on all local and incoming users, including addressing driving forces</li> </ul>	
Participative	<ul style="list-style-type: none"> <li>Participative governance structures and processes</li> <li>Transparent participation and decision-making processes</li> </ul>	

of the Philippines together with some of her cabinet members and media groups dived in the Park annually. Information, communication and education campaigns in local schools, communities and organizations improve awareness and enlarge the constituency not only for the Park but for marine conservation in general.

Promoting recognition of the potential benefits from well-managed MPAs helps raise awareness. Conservation benefits from the Park are made known to the public through the conduct of fora with local stakeholders on results of scientific studies i.e. larval dispersal and oceanography, monitoring of the status of the reefs and other marine life, and contextualizing these in the light of pressing issues on health, poverty, and climate change. WWF-Philippines launched a Summer Fellowship program in Cagayancillo. This involved students from various universities in the Philippines and community members in jointly demonstrating best CRM and MPA practice in Cagayancillo and Tubbataha, thus promoting the areas as living laboratories for learning and as models for replication in other similar sites.

### 6.3. Knowledge incentives

Providing credible and well documented reports on Tubbataha have increased knowledge and had a major influence on decisions of the TPAMB, partners and stakeholders.

Maximizing scientific knowledge to guide and inform MPA decision-making has improved the quality of management in the TRNP. Applying the precautionary principle, the TRNP Act includes a buffer zone of 10 nautical miles (3495 km<sup>2</sup>) from the boundaries of the Park, primarily designed for the protection of marine wildlife such as cetaceans and fish larvae from the potentially adverse effects of offshore oil exploration and navigation of domestic and international vessels in the vicinity of the

Park. Studies and experiences in other areas were used to justify the establishment of this buffer zone.

Promoting mutual respect and collective learning between different knowledge owners has guided research protocols and sharing of information. Methodologies applied in research, planning, monitoring and evaluation have been designed to maximize the advantages of scientific and participatory principles. Standardized resource monitoring protocols are worked out between and among the different research groups working within the Park. A participatory approach to the evaluation of park management effectiveness and CRM engaged the local residents of Cagayancillo and this proved to be effective in generating information first-hand for adaptive management planning. Scientists were engaged to act as mentors to integrate the principles of science with traditional knowledge and to guide the process of learning.

Developing mechanisms for independent advice/arbitration has aided the decision process. The Tubbataha Protected Area Management Board is a sound arbitration panel and its multi-sector composition provides a platform for good governance. While the PCSD used to address administrative cases through its adjudication board, the TRNP Act now provides adjudicatory powers to TPAMB.

### 6.4. Legal incentives

Before the enactment of the TRNP Act, several laws provided the legal framework of Tubbataha. Internal guidelines, procedure and protocols were formulated to harmonize the applicable provisions of existing laws and to simplify operations.

International-regional-national-local regulatory obligations that require effective MPA conservation have provided legal incentives. The Philippines is a signatory of various international treaties including the Ramsar Convention, the Convention on

Biological Diversity and the UN Convention on the Law of the Sea, which represent international legal commitments for the conservation of marine resources. Other than the TRNP Act, there are several national laws supporting the enforcement of TRNP rules and regulations including the National Integrated Protected Areas System (Republic Act 7586), the Strategic Environmental Plan for Palawan (R.A. 7611), the Local Government Code (R.A. 7160), Fisheries Code (R.A. 8550), and the Wildlife Act (R.A. 9147).

Clarity and consistency in defining legal objectives of MPAs is another key factor. The composite enforcement team comprising of the Philippine Navy, Philippine Coast Guard, TMO and the Cagayancillo sea guards operate following a clear enforcement protocol based on the legal mandate and conservation objectives of the TPAMB. This enforcement protocol was formulated in association with the rangers and is periodically reviewed and improved together with the enforcement team, the prosecutors and legal advisers.

An effective judicial system for penalizing transgressors is another important legal element. Criminal cases are generally filed in the courts. Media exposure and strong NGO support at the local and international levels are instrumental in discouraging local political intervention in the prosecution of cases. Good working relations with prosecutors and legal counsel and adequate enforcement equipments are sought to ensure that illegal users are brought to justice. The use of alternative dispute resolution (ADR) or mediation has been incorporated in the Procedural Guidelines for the Adjudication of Administrative Cases by the Tubbataha Adjudication Board (TAB) to expedite the resolution of administrative cases. The TAB may refer an administrative case to a third party mediator acceptable to involved parties, who then facilitates a conference to lay down agreements. If no agreement is reached, hearing of the case by the TAB proceeds without going through formal litigation in the court.

Provision of financial and institutional resources from the state for MPA governance, particularly law enforcement is another essential input. Contributions from the National Government are in kind, i.e. manpower and logistics provided by the Philippine Navy and the Philippine Coast Guard. The DENR and Provincial Government, depending on availability of funds, contribute financial resources for particular activities, e.g., enforcement, and the salaries of some personnel.

### 6.5. Participative incentives

The state failed to take into consideration the views of the wider local sectors in the establishment of the park in 1988. A participatory governance approach in TRNP began when the multi-stakeholder Task Force Tubbataha was created in 1995. Encouraging the community of local stakeholders in Cagayancillo to participate in initial planning has proven to be a key element of success because this group consciously decided to forego fishing access in Tubbataha in 1998. If this decision had been forced, the resistance to enforcement may have been greater than it is today. The consistent practice of participative processes has effectively facilitated the sharing of resources, including revenues, among the Park's stakeholders and partners.

Participative governance structures and processes were instrumental in planning for TRNP. The TRNP Management Plan specifically indicates that participatory mechanisms shall be used in the formulation of specific plans and in the evaluation of results. The Management Plan itself went through a series of consultations with representatives of the Local Government, communities of Cagayancillo and other stakeholders. Participatory evaluation is undertaken as part of an adaptive planning process. Research, information and education campaigns are often-times a collaboration of several organizations. The multi-sector

TPAMB and its consensual decision-making process allows for participative governance.

Transparent participation and decision-making processes help set the tone for sustained management. Rules and regulations for the park were developed with the diving community and published for the information of the general public. Lines of communications with various stakeholders are kept open so that inputs may be given to TMO at any time. The TRNP Act which went through an eight-year legislative process was formulated through several consultations at various levels of the social and government structure in the Philippines.

### 6.6. Incentives needed

Striking a balance between legal, economic and participative incentives today takes precedence over capitalizing on interpretative and knowledge incentives. These last two incentives, mobilized through the utilization of constant feedback mechanisms and the sharing of information among the public, decision-makers and scientists are in place and efforts merely need to be maintained.

As to the other incentives, however, there is a need to identify mechanisms that are responsive to emergent challenges and recent developments.

Legal incentives have been one of several key incentives. The passage of the TRNP Act poses challenges to the capacity of the TPAMB and the TMO to adapt to the changing political climate. While management systems and protocols (e.g. rules and regulations, enforcement protocol, tourism management and financial and accounting systems) have been significantly established, the practices were generally based on informal relations that allow more flexibility in their application. Decisions were made mainly within the TPAMB structure. The TRNP Act, on the other hand, provides permanency to the Park's management systems, protocols and organizational structure that render weight to the more rigid legal order. This set-up also subjects the TPAMB, TMO and partners to the government system which could be affected by bureaucratic issues and potential political intervention.

Although there are no major inconsistencies in the provisions of the TRNP Act and the previous management practices, there is a need to clarify and translate into operational terms the rules and regulations, penalty provisions, zoning plans, jurisdictional boundaries, and the roles and responsibilities of organizations involved in the light of the fresh mandate. This would provide a legal incentive for users to comply with regulations and for managers to collaborate in the governance of TRNP.

Economic incentives have increased in importance with time. In the face of diminishing financial support from the government and external donors, increasing the patronage of tourists to increase revenues was identified as one of the major strategies for funding management efforts. Securing small contributions from the thousands of consumers of private corporations is gaining currency of late perhaps because it makes sound business and economic sense for the private sector to be identified with conservation initiatives. It is therefore maintained that the willingness of the private sector to negotiate the terms of their involvement in the conservation of TRNP is a function of economic incentives.

Participative incentives have helped broaden overall support for TRNP. In both the formulation of legal instruments and the mobilization of economic incentives, the participation of various stakeholders is imperative. Thereby, the mobilization of participative incentives would have to be intensified to attract new partners and maintain existing ones.

## 7. Cross cutting issues

### 7.1. Role of NGOs

The NGOs played a big role in honing the present leadership of the Park under the government structure. They facilitated the development of management systems to support the long-term vision for TRNP. This came in the form of funding, technical assistance, and networking.

### 7.2. Equity and stewardship

It was important that the TPAMB recognized the foregone opportunities of the Cagayancillo fishermen when the no-take policy of the Park was fully enforced and negotiated the sharing of tourism revenues as a compensatory mechanism. Although this share may not fully compensate the Cagayancillo residents who fished in TRNP, it allows non-fishers to share in the benefits derived from the park and therefore serves a wider segment of the population. Additionally, the share in tourism revenues, technical and other forms of support establishes the entitlement of Cagayancillo residents to benefits from the park and their co-ownership of the vision to conserve and take pride in it.

## 8. Conclusions

The combination of governance incentives resulted in effective management of the TRNP. As an MPA deriving its mandate from national and international policies, the management of the Park was able to address local issues and constraints directly affecting conservation results.

An MPA by its nature or definition is a governance tool and therefore should be addressed within a governance framework [9]. It is critical that legal incentives are at play in the initial years of the MPA to establish jurisdiction, operational protocols, and clarity in the roles and responsibilities of the people and organizations involved.

In applying economic incentives it is important to consider that many conservation projects fail because local stakeholders share a disproportionate burden of the cost arising from a no-take zone compared to benefits accruing to global and national stakeholders and more powerful groups [15]. Tubbataha Reefs demonstrated that competing interests could be reconciled based on the sharing of costs and benefits that stakeholders consider satisfactory and equitable [16].

As a strategy for increasing compliance, law enforcement is critical but has proven inadequate to deter illegal fishers. Preventive enforcement is a more desirable course of action than the mere employment of strongman tactics [17]. This gives credence to the significant roles of knowledge and interpretative incentives

whereby the values of the MPA to everyday lives of the people are made known.

The TPAMB and the TMO are at this point effectively and efficiently managing TRNP, considering the limited resources with which they operate. Building the capability to sustain this level of effectiveness in the long-term requires a creative application of participative incentives where linkages and collaborations are designed to contribute to better compliance, increased revenues, wider audience, and greater influence.

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