

## Resource User Perceptions of Marine Governance and Coral Reef Management in the Bay Islands, Honduras

### Percepciones de Usuarios de Recursos con Respecto a Gobernación del Medio Ambiente Marino y Manejo de los Arrecifes en las Islas de Bahía, Honduras

### Perceptions des Utilisateurs des Ressources Concernant Marins Gouvernance et la Gestion des Récifs Coralliens dans les Îles Bay, Honduras

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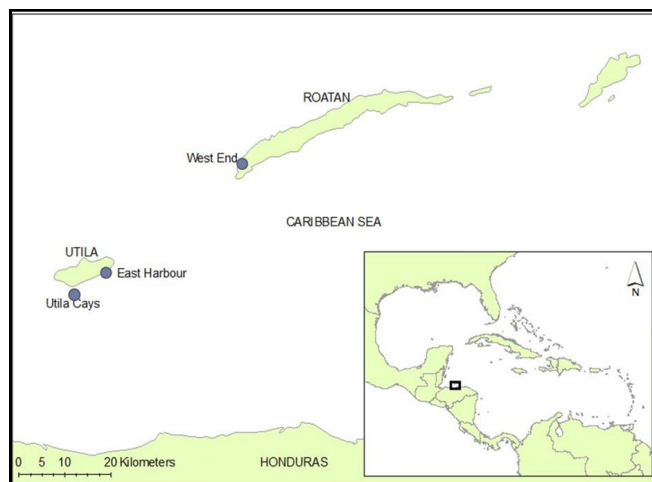
#### EXTENDED ABSTRACT

Caribbean people rely heavily on coral reefs, which contribute billions of dollars each year through tourism, fisheries and the provision of coastal defence (Moberg and Folke 1999, Burke and Maidens 2004). Coral reefs are being damaged by activities such as unsustainable fishing and pollution, and face an uncertain future with global climate change (Kleypas et al. 1999, Gardner et al. 2003, Donner et al. 2005). Effective management of reefs is critical for the economies of many Caribbean countries and the well-being of reef resource users (Knowlton and Jackson 2008). Implementing marine resource management to promote coral reef ecosystem health requires an understanding of the governance systems that influence the success or failure of particular reef management tools (Mahon and McConney 2004).

The Future of Reefs in a Changing Environment (FORCE) project investigates the relationship between governance arrangements and the success of reef management, and the implications of this relationship for reef-dependent livelihoods and reef ecological health. The FORCE project is conducting social science research across four countries in the Caribbean (Barbados, Belize, Honduras, and St Kitts and Nevis). Preliminary results are presented here from the community of West End in the Bay Islands of Honduras. The Bay Islands are the largest island system off the Caribbean coastline and have the most extensive reefs of Honduras' island groups, predominantly fringing reefs but also including a barrier reef north of Roatan (Burke and Maidens 2004). During June - August 2010 research was undertaken at three coastal communities in the Bay Islands, including West End on this island of Roatan (Figure 1). West End is a popular dive tourism destination and is adjacent to the Sandy Bay-West End Marine Reserve (SBWEMR), which is co-managed by local NGOs and the Honduran government. The use of nets, traps, and spear fishing is prohibited within the Bay Islands, and fishing for lobster and conch is banned within the SBWEMR; the majority of fishing activity is centred on deep sea fishing and sport fishing.

As part of a multi-level assessment of governance, interviews were conducted in West End with community members to explore local level perceptions of marine governance. A governance assessment was developed based on existing frameworks (Lockwood 2010, Graham et al. 2003) which detail a set of principles and performance outcomes that may be used to characterise good governance in natural systems. The eight governance principles used in this study provided a framework to develop a series of statements designed to assess local level perceptions of reef governance (Table 1).

Respondents were asked to state whether they agreed or disagreed with each statement, while open-ended questions provided contextual information. Seventy-five households were interviewed in West End, of which 53 were resource users whose livelihood depended at least in part on reef fishing or reef-related tourism, and the remaining 22 were a randomly selected sample of households in the community.



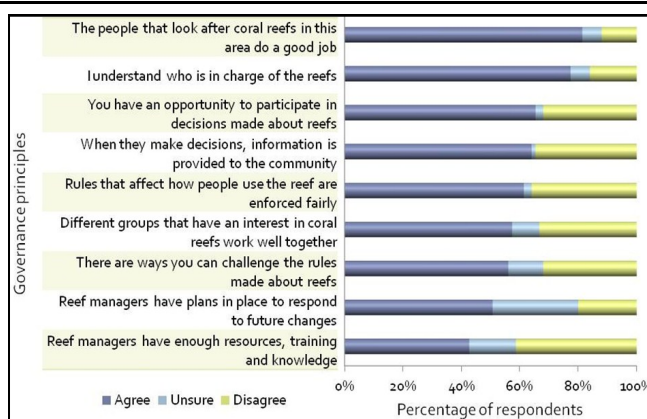
**Figure 1.** Map of social science study sites in the Bay Islands region of Honduras

**Table 1.** The eight governance principles and household survey questions developed from each principle.

Principle	Interview statement
Legitimacy	The people that look after coral reefs in this area do a good job
Transparency	I understand who is in charge of the reefs and when they make a decision information is provided
Accountability	There are ways I can challenge the rules made about reefs
Inclusiveness	I have an opportunity to participate in decisions made about reefs
Fairness	Rules that affect how people use the reef are enforced fairly
Connectivity	Different groups (e.g. fishers, government) that have an interest in coral reefs work well together
Resilience	The people in charge of reefs have plans in place to respond to emergencies
Efficiency	The people in charge of reefs have enough resources, training and knowledge

The majority of respondents believed those responsible for reef management in the area were doing a good job, and felt that they understood who was in charge of reef management issues. Over 60% of respondents felt that they were able to participate in decisions about reefs and reef use, and that they received information when decisions were made. In contrast, the majority of respondents were unsure about or did not believe that reef managers had enough resources, training and knowledge to implement reef management, and many were unsure whether reef managers had plans in place to respond to changes in the future (Figure 2).

Qualitative comments about reef governance focused mainly on the Roatan Marine Park (RMP), a non-profit organisation involved in the management of the SBWEMR and other environmental programmes throughout the island. While there was widespread support for RMP, there were three main criticisms of existing governance arrangements (Table 2). Firstly, respondents perceived a need for



**Figure 2.** Local level perceptions of reef governance.

improved enforcement, commenting that there was a lack of resources for enforcement, and that current enforcement often gave preferential treatment to certain groups of people, suggesting that the good governance principle of fairness was not always exercised. Secondly, there was demand for greater involvement of local people in decision-making, relating to the principle of inclusiveness. Thirdly, a lack of support and funding from the government related to principles of accountability and legitimacy, as some thought that the government were not fulfilling their responsibilities as a co-manager of the marine reserve (Table 2).

With regard to the impact of reef management on livelihoods, only a small proportion of respondents perceived current management measures to impact them negatively (5%), with the majority stating that the measures in place either had no impact on them (75%) or a positive impact (25%). Those who perceived no impact generally commented that they did not use the reef for fishing or any extractive activity, or that the rules in place

**Table 2.** Qualitative responses indicating perceived limitations to marine governance arrangements in West End, related governance principles, and illustrative quotes.

Reef governance limitation	Governance principles	Selected responses
Poor enforcement (lack of resources and preferential treatment)	Fairness	<p>“They [RMP] have preferences to people who have money.”</p> <p>“It depends who you are. If you’re local you maybe get away because the patrollers know you.”</p> <p>“Rules should be enforced for everybody. No-one should get special treatment. Some guys will take a lobster and say ‘I’m a local’.”</p>
Lack of involvement of local people, particularly native ‘islanders’	Inclusiveness	<p>“Everybody should be in charge of the reefs. Those who live here and live from it.”</p> <p>“[The RMP] never invite the public [to meetings], only foreigners are the ones who manage everything and take the islanders out of the discussion.”</p> <p>“Maybe if they tried to get more people involved. A lot of islanders have a negative view of the marine park. Many of the marine park staff are foreigners. “</p>
Lack of support from the government and lack of funding	Accountability and legitimacy	<p>“I do think they have better ideas but because the funds are not there they can’t do much more than they’re doing.”</p> <p>“The marine park is not recognised by the government. They never have enough help from the government to enforce the rules.”</p>

were mainly guidelines that they already followed (e.g. not touching or damaging the reef). Those who perceived a positive impact suggested that the marine reserve helped to sustain their livelihood by protecting the reef, and that the activities of RMP had increased the level of awareness in the community about the importance of the reef:

*“We grew up in this community, and now we know how valuable the reef is so now we protect it”.*

Negative effects of the current reef management measures related to restrictions on reef fishing, including complaints about fines for fishing in the SBWEMR, and comments that the rules affected traditional use of the sea, such as spearing fish or lobster for food:

*“We used to be able to go and get enough to eat”.*

Responses indicate a high level of awareness and broad level of support among resource users for the reef governance arrangements in West End, but highlight some areas in which improvements to reef governance may be made to help achieve desired environmental outcomes for reef health. Understanding local perceptions of resource governance and the impact of management measures for coastal livelihoods is one component of a multi-level assessment of governance constraints to reef management across the four countries being studied by the FORCE project. Future analysis will involve a comparative analysis of governance performance and constraints to management across case studies, and the findings will be used to formulate recommendations for coral reef managers and policy makers regarding the coral reef management practices most suited to particular governance constraints.

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