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THE IMPACT OF MARINE PROTECTED AREAS ON POORER COMMUNITIES LIVING IN AND AROUND THEM: INSTITUTIONAL OPPORTUNITIES AND CONSTRAINTS

Appendix 1 – Methodology for case study field work

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Acronyms

AGM	Annual General Meeting
AGRRA	Atlantic and Gulf Rapid Reef Assessment
BAS	Belize Audubon Society
BBRWHS	Belize Barrier Reef World Heritage Site
BEST	Belize Enterprise for Sustainable Technology
BFD	Belize Fisheries Department
BTIA	Belize Tourism Industry Association
CANARI	Caribbean Natural Resources Institute
CBO	Community Based Organisation
COMPACT	Community Management of Protected Areas Conservation Project
CRMP	Coastal Resources Management Project, TCI
CZMAI	Coastal Zone Management Authority and Institute, Belize
DECR	Department of Environmental and Coastal Resources
DFID	UK Department for International Development
EFJ	Environment for Jamaica
EPA	Environment Protection Area
EU	European Union
GEF	Global Environment Fund
GRMR	Glover's Reef Marine Reserve, Belize
HCMR	Hol Chan Marine Reserve, Belize
ICZM	Integrated Coastal Zone Management
LAC	Local Advisory Committee
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MRAG	Marine Resources Assessment Group Ltd
NCRPS	Negril Coral Reef Preservation Society, Jamaica
NEPT	Negril Environmental Protection Trust
NGO	Non-Governmental Organisation
NMP	Negril Marine Park
NPEAC	National Parks Environmental Advisory Committee, TCI
NR	Natural Resources
PA	Participatory Appraisal
PACT	Protected Areas Conservation Trust, Belize
PALSNP	Princess Alexandra Land and Sea National Park, TCI
PAP	Public Awareness Programme
PRA	Participatory Rural Appraisal
PS	Permanent Secretary
RRA	Rapid Rural Appraisal
SEA	Socio Economic Assessment
SI	Statutory Instrument
TCI	Turks and Caicos Islands
TCNT	Turks and Caicos National Trust
UDC	Urban Development Corporation, Negril, Jamaica
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
UWI	University of the West Indies
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund

1 Background & methodology for Caribbean MPA case study research

1.1 Background and site selection

1.1.1 Objective of study

One of the objectives of the project¹ of which these case studies were a part was to ascertain whether MPA's improve livelihoods of poor people by improving their asset base, reducing their vulnerability or increasing their livelihood options. Amongst advocates of MPA's, there has been a tendency to extol their potential value in socio-economic terms. In reality, the establishment of protected areas often generates deep resentment in communities that find themselves excluded from resources to which they have traditionally had access, a state of affairs that can also undermine the viability of the protected areas themselves (Horrill *et al.*, 1996). Partly in recognition of this, management of MPA's has evolved over the last ten years from being an exclusively preservationist tool to integrating considerations of development, sustainable use of resources and stakeholder participation (Meffe *et al.*, 1997). But few studies have actually evaluated the impact of that shift and in particular investigated the impact of MPA's on the communities that live in and around them – the specific objective of this study. Poorer sectors of these communities were a particular focus in this work in recognition of the fact that these sectors are likely to be relatively more affected by, and vulnerable to, any adverse change created by MPA establishment or management.

1.1.2 General approach taken

This research used a case-study based approach. Such an approach is defined as one in which the “researcher explores a single entity or phenomenon (‘the case’) bounded by time and activity and collects detailed information by using a variety of data collection procedures during a sustained period of time” (Creswell, 1994) p.12. Such an approach is particularly good for ‘searching for patterns’ by comparing results with patterns predicted from theory or literature or for ‘explanation building’ in which the researcher looks for causal links or explores plausible or rival explanations and attempts to build an explanation about the case” (Creswell, 1994) p. 157.

The case-study approach has its limitations, and in particular, using this approach to establish the impact of MPA management on poorer communities living in and around parks meant that results were not generalisable outside of the study areas. However, a larger scale survey that would be required to investigate this on a regional, country-wide, provincial or even district basis was beyond the scope of the project, would not have provided valuable depth of information, and given the exploratory nature of the work and the lack of baseline data, was not considered appropriate. Instead, care was taken in the selection of the case study sites to ensure that they were not hugely atypical; that they represented a range of different MPA scenarios and that lessons could be learnt from them. Time restricted the

¹ R7976 Institutional Evaluation of Caribbean MPA's. Natural Resources Systems Programme, DfID, UK

number of sites to 4. Whilst more would inevitably have been more desirable, again this was outside the scope of the project.

1.1.3 Selection of sites

At the start of the project a characterisation review, undertaken by CANARI², had described the basic bio-geographical, institutional and socio-economic characteristics of 75 MPA's within the wider Caribbean region (Geoghegan *et al.*, 2001). This formed the baseline from which sites were selected.

Criteria for initial selection of sites are presented in Table 1-1. Having ruled out MPA's which did not meet these criteria, a further set of criteria, presented under the table, were applied for final selection of sites.

Table 1-1 Criteria for initial screening of MPA case study sites

Criteria	Justification
MPA management aims include sustainable development	Many MPA's are established with the sole purpose of biological conservation and frequently aim to exclude local stakeholders and prevent exploitation of natural resources. DfID's focus ³ would not be reflected in this type of MPA and such sites were avoided.
MPA's operational for at least 5 years	To enable investigation of the <i>impact</i> of MPA's, only MPA's where management was operational and had been in place for more than 5 years were considered.
Reef dominated coastal systems	The project limited selection of case studies to reef-dominated coastal systems (atoll, bank, island reefs, high energy rocky shore/fringing reef, mixed-shore fringing reef) as these are seen as the most vulnerable type of coastal system (Sullivan Sealey and Bustamente, 1999). Sources of threats to coral reef systems include over-fishing, sewage/shoreline development, upland deforestation/ agricultural run off and physical damage (irresponsible diving, boating or practices).

Having filtered MPA's in terms of these criteria, the remaining MPA's were selected on the following basis:

- Variation in terms of their institutional set up (such variation could be related to operational rules, collective choice rules or the external policy environment)
- Variation in predominant use of Park
- Accessibility and location within the region
- In-house capacity of MPA staff to accommodate research
- Interest of MPA managers in research being conducted

The general locations of the sites selected are shown in Figure 1.1 and key (non-logistic) characteristics that influenced selection in Table 1-2.

² Caribbean Natural Resources Institute.

³ DFID have an explicitly people orientated and poverty-focussed emphasis that would make conservation only based MPA's not relevant in this case.



Figure 1.1 Location of case study sites

Table 1-2 Key characteristics influencing selection

Name	Country	Management Agency	Main use of Park (in order of importance)	Level of stakeholder involvement in MPA establishment
Hol Chan Marine Reserve	Belize	Quasi - independent ⁴	Tourism Fishing (less)	High
Glover's Reef Marine Reserve	Belize	Government	Fishing Tourism (less)	Moderate
Princess Alexandra Land & Sea National Park	Turks & Caicos	Government	Tourism Fishing (less)	Low
Negril Marine Park,	Jamaica	NGO	Fishing & Tourism (equal)	High

Results for each site are presented individually in Appendices 2-5 and key conclusions summarised in the main body of this report.

⁴ Staff employed by government (fisheries department), but Trust established that could access and manage funds generated by the park and make decisions regarding management.

1.2 Methodology

1.2.1 Timing and activities

Table 1-3 shows the itinerary for the case study research. Research was conducted by a multi-disciplinary team including one social scientist and one coastal zone specialist from MRAG Ltd, and local MPA staff with varying backgrounds and skills in each site. As can be seen the time at each site was short and work was therefore highly intensive. Given that time was so short, this study was designed to come after studies conducted by research students from the University of the West Indies (UWI), as part of the wider project (R7976), in order to make the most use from their findings and build on what was already known. Amongst other things, these studies⁵, when available⁶, provided the following baseline information for each park: a review of park history, legislative instruments and policies; an ecological survey and a socio-economic profile of the main park users.

Table 1-3 Itinerary for MRAG staff trip to case study sites

Dates	Country	Park
21 st January – February 1 st 2002	Turks & Caicos Islands	Princess Alexandra Land & Sea National Park
February 2 nd – February 12 th 2002	Belize	Hol Chan Marine Reserve
February 13 th – February 24 th 2002	Belize	Glover's Reef Marine Reserve
February 25 th – March 7 th 2002	Jamaica	Negril Marine Park

Table 1-4 shows the activities that were conducted, where possible, at each of the case study sites. Besides information collection, a number of other activities were considered important. Firstly, where possible, training of MPA staff in research techniques was given (in addition to general explanation of research aims etc). There were several reasons for this including;

- Build staff capacity and enable staff to help plan and be involved in research process;
- Learn from staff locally appropriate ways to engage with local stakeholder groups thereby improving research process; and
- Build interest in, and ownership of, research results.

A second feature of the trips was that, wherever possible, feedback was given to stakeholder groups through a presentation and subsequent discussion at the end of each fieldwork phase. As well as providing an opportunity for dissemination, this also gave local people an opportunity to cross-check our information, provide additional information and further debate the issues raised amongst themselves. It was hoped that this activity would also have benefits that would lead to more effective dissemination and use of project outputs.

⁵ Unfortunately, hurricanes and events of September 11th delayed student activities and not all information was available from students at the time this research was conducted.

⁶ These studies have since been written up into the following MSc theses: Francis (2002); O'Sullivan (2002) and Richards (2002). For full references see Section 1.3

Table 1-4 Activities conducted at each site

Activity	No of days (varied between sites)
1. Training/orientation and interviews with MPA staff ⁷	1-2 days
2. Identification of poverty indicators & poorer stakeholder groups & fieldwork planning with MPA staff ⁸	1 day
3. Interviews with poorer stakeholder groups & those impacting on them	5 -9 days
4. Analysis and feedback to MPA staff (& other interested parties) ⁹	1-2 days

1.2.2 Data collection

Techniques for data collection and analysis most commonly associated with *rapid* and *participatory rural appraisal* (RRA/PRA) were chosen as the most appropriate for conducting this research. These techniques originate from different disciplines and approaches, providing an opportunity for more systematic, inter-disciplinary, and developmentally relevant research. The techniques can be put broadly into four groups:

1. Thorough and systematic use of secondary data sources¹⁰;
2. Direct and participant observation¹¹;
3. Semi-structured interviews (SSI's) (key informant and group interviews)¹²;
4. Visualisation techniques for data collection and analysis, using maps and diagrams.¹³

All were used to some extent during the research. For more information on the different methods, their use and application see references in the relevant footnotes.

Table 1-5 shows the principal types of information that, where relevant, were collected at each site. As already mentioned, prior to arrival and during the first few days on site there was a review of literature to gain as much insight as possible into current community characteristics and livelihood options, and where information existed, impacts of MPA's on different stakeholder groups. The focus of the research

⁷ Training/orientation did not occur at Glover's Reef due to unavailability of staff to work with.

⁸ Did not occur at Glover's Reef due to unavailability of staff to work with.

⁹ Formal presentation and feedback to multiple stakeholders at Princess Alexandra & Negri Marine Park. Informal feedback to MPA staff at Hol Chan. No feedback at Glover's Reef, instead feedback to Fisheries Department in Belize City.

¹⁰ These included academic papers, annual reports, project documents, government statistics and maps.

¹¹ Observation was a crucial part of the methodology as it provided the catalyst for many discussions and provided many new insights. Whenever possible, interviews occurred at the place or time where certain events or processes were supposed to take place.

¹² The principal method used in this research. Interviewing was integral to the whole research process and literature on interview techniques and skills were considered carefully. Those which were most influential included: Pratt and Loizos (1992); Bulmer and Warwick (1993); Bernard (1994); Pretty (1993); Grandstaff and Grandstaff (1985). Semi structured interviews were used in isolation, and in combination with all the other techniques

¹³ Methods used are indicated in Table 1-5. For more information on the different methods, their use and application see: RRA notes(1988-1994); PRA notes (1995 continuing); Pretty *et al* (1995)

was to interview those working within the poorer job sectors or engaged in activities identified as being associated with poorer livelihoods. Interviews were also conducted with park staff and other decision-making bodies, and where relevant, those in positions of power and/or authority whose actions impacted in some way on the marine park or the livelihoods associated with it. Detailed information on specific respondents at each site are presented in the relevant appendices.

Table 1-5 Principal information requirements¹⁴

	Data collected	Methods used
1	Identification of poorer stakeholders groups using, or living in and around, the MPA	<ul style="list-style-type: none"> • Literature review • Adapted 'wealth-ranking'¹⁵ by cards procedure with MPA, and other relevant staff
2	History of park and management	<ul style="list-style-type: none"> • Literature review • Semi structured interviews (group & individual) with park staff and other relevant organisations • Time lines • Trend matrices of park activities against timelines
3	Current management practices (including linkages with other organisations) and perceived opportunities and constraints within organisation	<ul style="list-style-type: none"> • Semi structured interviews (individual) with park staff and other relevant organisations
4	Biological impact of MPA on reef and fishery <ul style="list-style-type: none"> • Scientific evidence • Local stakeholder perceptions (park staff, dive operators, fishers) 	<ul style="list-style-type: none"> • Literature review • Semi structured interviews (group & individual) • Maps and trend matrices of fish populations and catches, and reef condition through time
5	Impact of MPA on fishing practices and therefore fishery related livelihoods. <ul style="list-style-type: none"> • Local stakeholder perceptions (commercial and subsistence fishers) 	<ul style="list-style-type: none"> • Literature review • Semi structured interviews (group & individual) • Maps showing fishing grounds and/or species, their relative importance and changes through time • Seasonal calendars of fish catches/ species/ fishing effort and changes through time

¹⁴ This table provides an overview. Precise information collected at each was site dependent

¹⁵ In this process, criteria for poverty were identified, livelihood options associated with poverty ranking (poorer, middling, richer), and constraints and opportunities of stakeholder groups identified.

6	Impact of MPA on activities in tourism industry and therefore tourist related livelihoods. <ul style="list-style-type: none"> Local stakeholder perceptions (hotel workers, vendors, peddlers, construction workers) 	<ul style="list-style-type: none"> Literature review Government/tourist industry statistics Semi structured interviews (group & individual) Seasonal calendars of income generating activities and matrices showing changes through time
7	Any additional impacts of MPA management perceived by stakeholders (+/-) e.g. educational, social, indirect effects	<ul style="list-style-type: none"> Literature review Semi structured interviews with all stakeholder groups previously mentioned
8	Levels of participation of local stakeholder groups in management design and/or operation, and opinions on this	<ul style="list-style-type: none"> Literature review Semi structured interviews (group & individual) with all stakeholder groups previously mentioned
9	Opinions on benefits, costs, opportunities and constraints of MPA management as perceived by local communities and organisations	<ul style="list-style-type: none"> Literature review Semi structured interviews (group & individual) with all stakeholder groups previously mentioned

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