

**AN ANALYSIS INTO COMMUNITY-BASED MARINE  
PROTECTED AREAS: CHALLENGES AND  
OPPORTUNITIES**

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## **Abstract**

The global marine crisis is of grave concern to many people worldwide. Currently, global fish stocks are being exploited at an increasing rate and fears are escalating that humans will cause a fisheries collapse. In response to these concerns, a variety of management tools have been developed to achieve sustainable marine ecosystems. Community-based conservation has evolved as a popular solution to solve sustainability and marine protected areas (MPAs) are the dominant management tool currently used. These two, in combination, have worked towards creating sustainable marine areas with high levels of biodiversity. They have, however, faced criticism regarding their effectiveness in the recent past.

The project focuses on and analyses community-based MPAs; their nature, the issues and the potential options. An interviewing approach was taken to engage with the discourses surrounding the marine conservation field. The interviewees were from non-governmental organisations or were researchers studying various aspects of marine conservation.

The results of this paper contribute the conservation discourse. It reflects upon the notion that there is not a single issue or solution to marine conservation. It is a range of complex issues that are rapidly changing and new ones are continually emerging. At the centre of these complex issues is scale. Scalar tensions underpin the conservation process and the focus on all scales is crucial. In the future, there is a need for an increasingly holistic approach to conservation that considers all scales, vertical and horizontal.

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# 1. INTRODUCTION

Images of four minke whales slaughtered on Japanese ships on 6<sup>th</sup> January 2014 sparked worldwide controversy (see appendix A). The whales were slaughtered in an international protected area: the Southern Ocean Whale Sanctuary (Gander, 2014). The Japanese Foreign Ministry, in response to the outrage caused, stated the research was legitimate and not a breach of international convention claiming that whaling in this area was in line with a research plan agreed by the International Whaling Commission (IWC) (*ibid*). Australia criticised these claims and condemned Japan's actions by taking them to the UN International Court of Justice (Milman, 2014). At the end of March 2014, it was announced the International Court of Justice had halted Japan's whaling programme (BBC News, 2014). Such headlines are illustrative of the political and ecological debates surrounding marine conservation.

## 1.1 The global marine crisis

There is significant reliance on marine ecosystems as a source of food worldwide. In Asia alone over 150 million people rely on fishing and its related activities. Due to the increased dependence on fish as a source of food, fishing power has increased since the 1950s. Worldwide it has increased ten fold and in Asia the increase has been 25 fold (Zhou *et al.*, 2014). Consequently, by the late 1980s, global exploitation limits were reached and perhaps even exceeded (Worm and Branch, 2012). Worldwide concern has escalated as human population growth and global warming will exert further strains on marine environments, their biodiversity and resources (Watson *et al.*, 2013). In particular, the global demand for fish as the result of an increasingly affluent human population is causing a higher dependence on global fish markets (Jones *et al.*, 2013).

It is widely debated whether it is possible to maintain fish production and, simultaneously, end overfishing so fish populations and ecosystems can recover (Worm and Branch, 2012). Many believe the global marine crisis is the result of selective harvesting where exploitation is concentrated on relatively few target species and groups within the marine ecosystem (Zhou *et al.*, 2014). Commercial fisheries generally strive for short-term profit by exploiting a favoured species, rather than focusing on sustainable food security (*ibid*). As a result overexploitation has undermined the productivity of fisheries and the marine ecosystems in which they are embedded (Watson *et al.*, 2013). Marine ecosystems are facing collapse and therefore, something has to be done to curb demands in order to create sustainable levels.

## 1.2 Why marine protected areas?

In response to the global marine crisis, the Convention on Biological Diversity (1992) set the target that "by 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas...are conserved through effectively and equitably managed, ecologically

representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.” Marine protected areas (MPAs) are the dominant management tool being used currently. An MPA is defined as any marine area that is actively managed for conservation (Burke *et al.*, 2012). The area has been placed under restrictions in order to protect the natural environment from damage and disturbance (Agardy, 1997). The governance of these areas ranges from a few restrictions on fishing and other harmful activities, to comprehensive protection based on strict legal frameworks targeting multiple activities (e.g. recreational boating, fishing, pollution, coastal development) (Burke *et al.*, 2012). This project will focus on MPAs due to my personal interest in this method of conservation which developed after spending ten weeks on two coral reef conservation projects in Cambodia and the Philippines.

### 1.3 Research on marine protected areas

The literature attending to MPAs ranges across many academic fields. A proportion focuses on the ecology of an MPA and its biological effectiveness such as replenishing fish stocks and improving biodiversity rates within a protected area. However, this is beyond the domain of this project. The focus of the project lies with the wide-ranging debates surrounding the economic, political, social and cultural aspects community-based MPAs, which are all closely interrelated. There is a paucity in the literature with regard to these socio-cultural factors. The project aims to look at the nature, issues and options for MPAs to evaluate whether there are consistencies across the multitude of contexts.

### 1.4 Importance of the project

The project is situated within geography as it investigates and analyses the relationship between communities and their resources. Geographers are “centrally concerned with the ways in which place, space and environment are both the condition and in part the consequence of human activities” (Gregory *et al.*, 2009, p. 350). Therefore, marine conservation analysis provides a vital contribution to wider literature on socio-environmental interactions.

The project is also valuable within geography and beyond. The project will focus predominantly on local scale projects (i.e. community-based conservation). Scale, in this project’s context, refers to the “size at which geographic structures exist and over which geographic processes operate in the world” (Montello, 2001, p.13505). For geographers, establishing the “true” scale of particular phenomena is a key area of research (*ibid*). The range of scales have a variety of descriptive terms, this project will refer to the local-global scale. The importance of local projects extends beyond the local community towards the national and global scale. It is critical to attend to all

scales to analyse how conservation techniques can potentially be improved enabling the world to move towards a more sustainable future.

In 2013, the International Union for Conservation of Nature (IUCN) announced that 2.8% of the global ocean is currently protected with Marine Protected Areas (IUCN, 2013). This is a 0.6% increase on 2012 and, according to Carl Gustaf Lundin (Director of the IUCN's Global Marine and Polar Programme), "we should be able to reach the agreed 10% by 2020." For the first time, the IUCN have produced a map showing the current MPAs globally (see appendix B). They want marine specialists and countries to use this map to work together to create MPAs illustrating the pressing nature of establishing effective MPAs worldwide. However, rapid population growth, and changing dietary needs and demands, is putting ever increasing demands on marine resources. It is vital action is taken soon; collectively we are powerful actors within the world and we therefore have the choice to shape it in the ways that we wish. Learning from previous mistakes and moving towards sustainability is more important than ever.

## 1.5 The project structure

The project will initially focus on the current literature and debates surrounding conservation and MPAs. It will go on to justify the methods used for collecting and analysing the data. A results and discussion section will follow to analyse the nature, issues and future options for MPAs to establish if they are consistent across all contexts. Finally, this paper will conclude that MPAs are a context specific, variable management tool facing a host of cross scale issues affecting their integrity. The potential solutions are wide ranging, too, and a cross scalar holistic approach is required in the future to improve marine conservation and give it cohesive structure and voice. The conclusion will also make some recommendations for extended study.

## 2. LITERATURE REVIEW

Following the introduction, the project will be justified by situating it within the relevant literature. The literature review will illustrate how the project contributes to some of the key debates surrounding marine conservation and marine protected areas (MPAs). It begins by considering the conservation space and the notion of scale. It goes on to focus on non-governmental organisations (NGOs) and how they work with MPAs. Then the focus narrows to MPAs and their governance. The literature review then pays attention to the successes and failings of MPAs. Lastly, it looks to the future and the potential responses to try to solve these difficulties.

### 2.1 Conservation

Until the 1970s, few had questioned who had the right to control the environment and economic growth was perceived predominantly as a good thing (O'Riordan, 1970). At this time there was a shift in conservation concepts and theories (*ibid*). The concern about reducing waste was disregarded in favour of trying to solve the more complex environmental crisis as a whole. This prompted scholars to be interested in areas which had been a focus of geographers for many years. Academics from all disciplines were drawn in and began studying human-environment interactions. Consequently, since the 1970s, environmental studies have increased significantly (*ibid*). Within the conservation space, there are a multitude of debates. One of the major debates within this field is the tension between economic development and sustainability.

Following the 1987 Brundtland Report the narratives of conservation and development merged because the concepts were deemed to be opposite sides of the same coin (Campbell and Vainio-Mattila, 2003). The report cited community-based conservation as the dominant theme within conservation policy statements (Campbell and Vainio-Mattila, 2003). The funding of conservation activities increased in order to retain biodiversity protection alongside development (Campbell and Vainio-Mattila, 2003). Since the report, criticism of this joint objective has grown. Berkes (2004) emphasised the conservation and development agendas should be delinked because the mixed objective does not serve either well. His research illustrates the tension between conservation and humanitarian objectives pulling in different directions resulting in difficulties. Despite his reservations, Berkes (2007) concludes by stating that ecosystem management and human well-being should be integrated because they are complementary goals. MPAs are a management tool being used to achieve marine conservation and some have humanitarian objectives too.

### 2.2 Scale

Scale is a discourse within the whole conservation field and is important for marine conservation too. Berkes is a scholar in the conservation sphere whose main area of research is the commons. The term "commons" relates Hardin's theory "The tragedy of the commons" in which the commons

are land or resources that belong to a whole community. Hardin's theory states these common resources will be overexploited (Berkes *et al.*, 1989). Berkes work is closely concerned with the conditions under which the "tragedy of the commons" may be avoided. In doing so, he focuses on aspects of community-based conservation, among other areas. He has focused on management and scale throughout his career.

Berkes is well known in this domain, with at least six pieces of his work being cited by over one thousand papers. His work will be used to address scale in the context of this project. His current research involves using complex systems theory to look at scalar issues. The theory holds that all levels are interlinked with each level requiring attention (Berkes, 2007). Throughout his work Berkes holds that a cross scale approach to conservation is necessary because it is the correct way to deal with complex systems (Berkes, 2004, 2006, 2007). Scale is important to community-based management projects such as MPAs because all case studies involve multiple levels and scales (Berkes, 2006).

## 2.3 Non-governmental organisations

In the 1990s, community-based conservation arose from the idea that control should be devolved to the local level as a consequence of policy meetings such as the United Nations Conference on Environment and Development (UNCED) and Agenda 21 (Lundy, 1999). Non-governmental organisation (NGO) popularity arose from concerns about the state ability and willingness to address the needs of local people (Campbell and Vainio-Mattila, 2003). Many NGOs emerged as advocates of conservation and their role in international environmental institutions increased (Raustiala, 1997). NGOs are organisations that operate outside of state control but continue to pursue "public purposes" (Young, 1999). They are a way to implement community-based conservation projects and promote greater participation of local communities (Zimmerer and Bassett, 2003). NGOs are participatory, less bureaucratic than the state, and devolved from the political process. They are perceived to meet the needs of the most vulnerable and poor in societies, at a lower cost, and with greater efficiency (Campbell and Vainio-Mattila, 2003; Lundy, 1999). They have several functions in community-based conservation projects including financiers, researchers and educators (Halpenny, 2003).

It is widely debated whether NGOs represent community interests. They can play an important role in helping population groups and filling in for state services (Clark, 1995). They can also be a voice for the local, often marginalized, people and act on their behalf. However, NGOs can also serve their own personal political agenda which is often non-local (Brosius *et al.*, 1998; Lane and McDonald, 2005; Bryant, 2002). Lundy (1999) focuses on this issue, stating NGOs cannot possibly represent the community because they are often formed of middle classes in society and are

incapable of relating to social circumstances in poorer communities. The NGO workers have a power over the local people and their practices (Campbell, 2007). The only way in which NGOs can act for the community effectively is for local elites to be involved with and dominate the organisation so that their concerns and interests are articulated (Lundy, 1999). Berkes (2004) argues that the underlying issue is that the definition of conservation is too western. It concerns the elites and disregards the locals and in order to solve this a cross-cultural pluralistic definition is required.

## 2.4 Governance and management of marine protected areas

Marine protected areas are a management tool for marine conservation (Rodriguez-Martinez, 2008; Christie, 2011). In the literature it is widely acknowledged that the success of MPAs can be increased by involving the local community in the planning and decision making process (Elliot *et al.*, 2001; Rodriguez-Martinez, 2008). Community participation is a more integrated approach to environmental management. It is crucial the community are involved so that resource management is effective and conservation goals are met (*ibid*). One way to achieve this is through public education to gain community support for the creation and management of the MPA (Rodriguez-Martinez, 2008). Overall, studies stress the importance of community participation.

The role of governance is to ensure the goals of the MPA are reached. Environmental governance exists to facilitate and manage collective action and cooperation (Paavola, 2004). There are a wide variety of governance methods used in community-based MPAs which are discussed widely in the literature. Bown *et al.* (2013) provide a detailed discussion of three modes of governance. First, co-management is the system that arose when the idea of stakeholder participation became widespread. It balances top down and bottom up methods (*ibid*). It requires both an external agent (e.g. an NGO) as well as local leaders to engage in co-management. Second, they discuss adaptive management, a process that seeks to manage change, rather than resist it (*ibid*). It has an adaptive cycle, consisting of a four-stage pattern (growth, consolidation, collapse, reorganisation). This management method is a continuous learning exercise rather than a search for a definite solution (*ibid*). However, this method has been criticised for its lack of scientific grounding and objectives, and has had modest success (*ibid*). Consequently, due to adaptive management's poor record, adaptive co-management (ACM) was developed (*ibid*). ACM integrates the experimentation element of adaptive management with the empowerment of co-management. It has shortcomings too, in particular it takes a long time for this method to be accepted and stakeholders can be impatient to see the benefits (*ibid*).

Jones *et al.* (2013) discusses other broad approaches to MPA governance. These include those managed primarily by the government under clear framework, managed by the government with

significant decentralisation, managed primarily by local communities under collective management arrangements, MPAs managed primarily by private sector or NGOs granted with property rights, and no recognisable effective governance framework in place. In summary, emerging from the literature is the notion that the implementation of governance and management systems is context specific and, therefore, no two MPAs are the same as the delivery mechanisms are different.

## 2.5 The success of marine protected areas

Several studies have focused on the factors that are likely to cause MPA success. It is debated whether it is possible to decide the causes behind a community-based project's success or failure. Ostrom (1990) suggests that we do not yet have the necessary intellectual tools or models to understand the problems that are associated with governing and managing natural resource systems. Furthermore, it may not be possible to decipher the reasons why some institutions seem to work in some settings and not in others (Ostrom, 1990).

A number of suggestions for creating success for MPAs have been made. Berkes (2007) states that successful projects tend to not only have rich networks of support involving dozens of partners, but also links across four or five levels of organisation. Within these networks it is important to deal with the differences in power at different levels of an organisation. It is fundamentally important to deal with these power relations in order to secure the success of an MPA (Berkes, 2007).

Incentives are also cited as a way to increase the success of an MPA. Taylor *et al.* (2013) suggest five types of incentives: economic, interpretative, knowledge, legal and participative incentives. Qui (2013) elaborates on Taylor *et al.*'s suggestions by stating a specific economic incentive could be used to improve an MPA's governance. "Sea Users Rights" will regulate tourism and rely on economic incentives (*ibid*). Governance systems that respect local knowledge, rules and the decision making process are likely to be supported by the local community and become more commonplace (Campbell *et al.*, 2013). The government provide incentives to the local community by assisting them with alternative incomes to unsustainable fishing (*ibid*). The literature generally illustrates the variety of mechanisms employed to ensure the success of an MPA. It is important to recognise that the parameters used for measuring success in each study vary, so the findings have different outcomes. The difficulties for MPAs are equally as widely debated.

## 2.6 The issues with marine protected areas: driving forces

This section will highlight some of the difficulties that arise from poor governance. These issues can affect the success of an MPA and cause significant threat to their integrity. Jones *et al.* (2013) highlight the body of literature that is growing and investigating how MPAs are influenced by

economic, political and social factors, also known as “driving forces”. Driving forces are crucial to this study, which focuses on the difficulties of MPAs, because they can combine to collapse governance and management systems (Jones *et al.*, 2013). This debate is important for geography because the pressures on natural resources are frequently linked to human influences.

The financing of MPAs is a prominent issue and is discussed widely in the literature. Many protected areas have shown impressive conservation and preservation benefits on paper however, they have failed to function effectively and have become “paper parks” (Dharmaratne *et al.*, 2000). Paper parks are protected areas with defined boundaries, but they are not enforced effectively and have little conservation value (Halpern, 2014). Another financial issue is the lack of finance for staff and resources to govern the MPA. When this is combined with a weak local institution, the success of an MPA is limited (Taylor *et al.*, 2013). The finance issue is problematic for MPAs because it affects their integrity, progress and value.

National policies can cause difficulties for local fisherman accessing fishing grounds in the local area (Taylor *et al.*, 2013). Often bureaucratic requirements for clearances and fishing licenses are not adapted to the local language and culture. This lack of acknowledgement for their traditional fishing practices causes conflicts between the resource users and authorities (Taylor *et al.*, 2013). Consequently, users can fail to respect MPA zoning and regulations such as closed seasons and size limits.

Local scale land based human activities can impact upon the MPA. For example, sedimentation can occur as a consequence of deforestation and erosion (Taylor *et al.*, 2013). Population pressure can also have an impact on marine ecosystems such as migration. This increases competition for natural resources causing pressure on the MPA (*ibid*). Another issue identified as a major threat to MPA effectiveness is local leadership. Poor leadership of an MPA is a major driver of conflict causing the ineffectiveness of MPAs (*ibid*). Taylor *et al.*'s (2013) study comprehensively discusses economic and political issues. However, there is a paucity in the literature regarding socio-cultural issues that affect MPAs. This is a crucial element of MPAs because the social and cultural context of the local community cannot be ignored.

## 2.7 Responses to marine protected area difficulties

Some of the literature focuses on ecotourism. It is discussed as a potential option to improve the success of MPAs. Several scholars suggest that an increase in ecotourism may provide sustainable funding for MPAs (Zimmerer and Bassett, 2003; Jones *et al.*, 2013; Di Ciommo and Schiavetti, 2012). Profits made from ecotourism can be reinvested to support MPA management, operation and maintenance (Jones *et al.*, 2013; Dharmaratne *et al.*, 2000). In particular, diving fees

could contribute to the shortfall of MPA budgets and therefore enhance the effectiveness of an MPA (Wielgus *et al.*, 2010). Zimmerer and Bassett (2003) further suggest that not only will ecotourism provide finance, but it will also encourage non-consumptive resource use. Some scholars are sceptical of the levels of success ecotourism can achieve. Qui (2013) discusses the negative impacts of tourism in her study. She argues that tourism developments have resulted in the loss of local access to vital coastal resources in the Sanya Coral Reef Reserve, China thus causing difficulties for the local communities who use the coastal resources as part of their livelihood (Qui, 2013).

Scale mismatch has emerged in the literature of natural resource management. It is the notion that conservation actions are undertaken at a scale that does not reflect the scale required to solve a particular conservation problem. Often the scale is too small for the processes at stake (Guerrero *et al.*, 2013; Sievanen *et al.*, 2012). The “scaling up” of local MPAs has been suggested as a solution to both the criticisms of MPAs and the loss of faith in community-based conservation (Sievanen *et al.*, 2012). A range of large-scale options have been suggested as a potential approach.

Socio-ecological systems (SES) theory states that people are inseparable from ecosystems and we cannot afford to think of these two things separately (Berkes, 2004; Campbell *et al.*, 2009). Conservation social networks are one way to understand the relationships between the actors involved in conservation activities across space. This will lead to a more appropriate planning process and therefore create the greatest success for an MPA (Guerrero *et al.*, 2013). Ecosystem based management (EBM) is discussed as another potential successor of community-based approaches without undermining this scale altogether (Sievanen *et al.*, 2012). The framework has emerged from new understandings of scale and the realisation of the severity of ocean decline (Christie, 2011). EBM corroborates the idea of SES, and therefore considers the entire ecosystem, including humans (Christie, 2011). This management approach attempts to fix scalar tensions between ecoregional and community-based approaches by appealing to the logic, language and practices of both (Sievanen *et al.*, 2012). Another “scaling up” solution is the creation of MPA networks, which are a series of MPAs linked together to create a network (Palumbi, 2001; Sievanen *et al.*, 2012; Christie, 2011). To summarise, the trend in the literature towards scaling up management to “ecologically relevant” scales focuses on maintaining ecosystem integrity through considering the connectivity of the ecosystem and marine species population (Christie, 2011).

The concept of “scaling up” has also been criticised. One criticism is that larger scale management systems cannot simply replace the small scale ones. Some believe regional responses to the conservation problem will not resolve local conflicts. Consequently, regional government policies

can reinforce and exacerbate conflicts over the access to common property at the community level (Zimmerer and Bassett, 2003). Criticism also focuses on social justice because this consideration is important in marine conservation planning (Sievanen *et al.*, 2012). For Berkes (2007) state control would be an appropriate and low cost solution, although he acknowledges that this would be too controversial. Another criticism is that the scaling up of conservation may result in the exclusion of the local people from national and international decisions about conservation (Campbell, 2007). It will place responsibility in the hands of NGOs, national governments and international organisations. She states that scaling up is part of the process of globalising conservation despite the fact that it may not be biologically necessary and may undermine current successful projects (Campbell, 2007).

## 2.8 Summary

The literature review has shown many of the discourses surrounding conservation and illustrates the complexity of the debates about MPAs. There is a paucity in the literature that lacks discussion on socio-cultural issues that could affect the integrity of an MPA. This emphasises an area that will be explored in more detail later in the project. The following research questions have been developed in response to the debates discussed in the literature review. They feed into the overarching project question below.

## 2.9 Research questions

Overarching question: Are the nature, issues and future options for marine protected areas consistent across all contexts?

Sub-questions:

1. Do governance and management methods vary across marine protected areas?
2. Are the issues faced by marine protected areas on a community scale consistent?
3. Are there effective synergies to improve community-based conservation results?

First, the methods used to gather the relevant material and information to answer these particular questions will be explained.

### 3. METHODOLOGY

“A strength of qualitative interviewing is the opportunity it provides to collect and rigorously examine narrative accounts of social worlds” (Miller and Glassner, 2010).

#### 3.1 Interviews

An interview methodology was selected to engage with narratives described by the interviewee. It was an appropriate method to select to focus on the research questions set out at the end of the literature review because they are excellent at probing a particular issue in depth and to focus the research (McDowell, 2010). Interviews allow the researcher to gain a detailed understanding about a particular issue because asking questions will gather information about past behaviour, experiences, motives, beliefs, values and attitudes (Foddy and Foddy, 1994). For this project, interviews were appropriate because it was important to gain a clear understanding about each non-governmental organisation including their aims, their position in a country and their opinions of the issues at hand (see table 1).

Focus groups were a potential method due to their ability to allow ideas to flourish and a broad range of questions to be asked (Bedford and Burgess, 2001). Furthermore, they may have given clarity to each participant's opinions (Kitzinger, 1994). However, this was impractical as my chosen participants were located across the world (see table 1). To gain detailed accounts from the interviewees it was important to conduct individual interviews because in a focus group a dominant participant can intimidate others, leading to an inaccurate impression of the participants' ideas and opinions (Bedford and Burgess, 2001).

Originally, the Philippines were chosen as the focus for the project due to my personal connections to a NGO (Coral Cay Conservation) working with marine protected areas (MPAs). The first interview was structured to suit Coral Cay Conservation (CCC) as their methods and techniques were relatively familiar. The interview questions were developed with the overall research question in mind.<sup>1</sup> They started with open ended, primary questions to establish an overview of the context and nature of their work, a background to their organisation and their perspective for example:

“In summary, what is Coral Cay's main role when assisting with the decision-making process of a national government trying to set up a Marine Protected Area?”

The questions then became more focused to establish specific answers and opinions:

“Does Coral Cay see ecotourism as a potential profit generating area that could assist MPAs? If so, are they currently using it/planning to implement it further?”

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<sup>1</sup> See appendix C for an example interview transcript

It was vital to gain other perspectives, besides CCC, about the issues at hand. Also, the choice to focus on the Philippines was hampered as the result of Typhoon Haiyan, at the beginning of November 2013. Consequently, it was difficult to conduct interviews in the Philippines. For these two reasons, it was necessary to widen the research net and make contacts further afield. The snowball technique was an effective method to gain contacts and interview participants (Bedford and Burgess, 2001). Asking CCC for any contacts they had was appropriate because they have an extensive knowledge of the conservation field, as well as searching on the internet. Participants were established and the interview questions were adapted to the particular organisation, with the main research questions still in mind. Some of the questions remained similar to enable comparison. Seven interviews were conducted in total with people from six different organisations in the Philippines, USA, Hawaii, Fiji, Palau and The Bahamas. Table 1 describes the people interviewed for this project, the type of interview, the nature of their work, their location and their MPA. Different interview techniques and mediums have their advantages and disadvantages. Two were used in this project: email and phone interviews.

### 3.2 Email interviews

As the interview participants were geographically widespread email interviews became an appropriate style of interviewing to conduct. Email interviews were carried out for five of the seven interviews for several reasons but in particular, to reach the international participants. It widened my research net and allowed me to contact people across the world. A number of the interviewees would have not been able to be included in the study otherwise (Meho, 2006). The email interview method was more suited to several of the interviewees. It allowed them to answer in their own time when many of them were very busy (*ibid*). Furthermore, being able to respond to the interviews in a familiar and comfortable environment may have made them feel more relaxed in their response. With email interviews, the position of the researcher changes. Instead of power mainly being held with the researcher, like in an interview situation, it is shifted towards the interviewee (Meho, 2006). This may benefit the research because they were empowered and in control of the interview flow (*ibid*). Therefore, they may have offered a more honest answer to the questions asked because they were able to express themselves more freely. The respondent was given the ability to decide what they thought the most important issues are.

It was essential that ethical standards were maintained throughout the research process. Interviewees were informed of my position as a researcher, the research questions, the type and length of interviews, confidentiality and a choice of anonymity, informed of the use of the data afterwards and were given right to withdraw at any time (Longhurst, 2010).

### 3.3 Phone interviews

Phone interviews were used for two of the interviews (Barbara Klabots and Gerry Marten). The greatest drawback of phone interviews is the absence of visual and non-verbal cues (Novick, 2001). However, in a telephone interview there are reduced interviewer effects because it is conducted in a comfortable environment and there is a relative lack of anonymity (Carr and Worth, 2001; Novick, 2008). Furthermore, it allows interviewees to talk honestly about their opinions and experiences (Carr and Worth, 2001). This method was appropriate for similar reasons as the email interviews, such as being able to reach geographically dispersed respondents (Novick, 2008). However, there is one aspect of a phone interview that has added advantage above an email interview. It is useful to be able to judge the interviewee's intonations when transcribing and analysing interviews (Carr and Worth, 2001).

### 3.4 Data analysis and results

The data was analysed using thematic analysis laid out by Braun and Clarke (2006). In their paper they provide a guide to this method and its application to qualitative research for those who are not familiar with the technique. They acknowledge they are psychologists however, they note that this method is not just used in psychology, but is used widely within qualitative research. This data analysis technique was appropriate for the project because it yielded clear themes from the interview responses for discussion.

### 3.5 Methodological difficulties

Some difficulties were encountered when carrying out the research. It was difficult to make contacts, ask for an interview, and secure a time to carry out the interview (McDowell, 2010). As mentioned previously, this was made harder after Typhoon Haiyan. Another issue encountered was the time difference so email interviews were used in these instances. It was hard to adapt the questions prior to the interview with little background knowledge of the specific NGO. To overcome this issue, thorough research was carried out using NGO websites and other sources such as newspaper and magazine articles. It enabled the interview questions to be focused to the organisation.

### 3.6 Limitations

The email interviews lacked conversational dialogue. Some answers from participants were limited due to the lack of conversational rapport and there was no direct observation of emotion or body language (McCoyd and Kerson, 2006). The lack of face-to-face interaction, in both types of interview, meant that it was hard to gauge intonations and dynamics between the researcher and participant. This was beneficial in some respects because negative power relations between the researcher and participant were minimised. However, an element of the interview process is

participant observation and this could not be carried out in this instance (Elmwood and Martin, 2000). When carrying out email interviews there was no opportunity to ask further questions based on interviewee answers. Further probing may have resulted in different conclusions being made from their answers. The sample size of seven is relatively small compared to the vast number of MPAs worldwide. However, the interviewees were selected from a range of countries and MPAs worldwide.

It is important to consider my positionality throughout the research process. My personal interest in the topic being discussed, as well as personal connections with Coral Cay Conservation, may have affected the interviewing process. However, it was appropriate to be open and flexible to the values and viewpoints of all the interviewees in order to engage with the interviews fully and reduce bias. My analysis of the interviews may have influenced the results. The interviews provided perspectives and opinions from the interviewees. The interview coding for thematic analysis required me to carry out detailed analysis and draw on salient points. It may have been the case that the selected codes and themes were affected by the literature previously read and therefore some discourses may have been subconsciously prioritised above others. These limitations are important to reflect upon as they affect the research process. However, the benefits of interviewing, in both formats, made it the most appropriate methodology for this project.

Table 1: Table to show details about the interviewees.

| Respondent         | Email or Phone Interview | NGO                                                       | Occupation                                                                                                                                                                                                                                                                                                                                                                                                          | Country                                      | Name of MPA                                                                                                                                              |
|--------------------|--------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1: Anonymous       | Email                    | Yes: Coral reef conservation NGO                          | Program Manager at an NGO specialising in restoring and protecting coral reefs in partnership with the local communities. Completed a master's degree in International Nature Conservation. Personal specialism in developing and improving conservation programs through the engagement of local communities. Three years in field experience working for environmental and conservation non-profit organisations. | Fiji, Hawaii Honduras, Indonesia and Mexico. | Fiji: Namena Marine Reserve; Honduras: Cordelia Banks, Capiro Banks and Roatan Marine Park; Indonesia: Sunda-Banda Seascape and Lamalera (Lesser Sunda). |
| 2: Andrew Kriz     | Email                    | No                                                        | Coordinator at Exuma Cays Land and Sea Park (non-profit organisation).                                                                                                                                                                                                                                                                                                                                              | The Bahamas.                                 | Exuma Cays MPA.                                                                                                                                          |
| 3: Barbara Klabots | Phone                    | No                                                        | Academic who collected data on MPA management in the central Visayas, the Philippines.                                                                                                                                                                                                                                                                                                                              | Siquijor Island, The Philippines.            | 3 MPAs: 1 male run, 1 female run and one mixed.                                                                                                          |
| 4: Gerry Marten    | Phone                    | No                                                        | Ecologist and Founder of EcoTipping Points.                                                                                                                                                                                                                                                                                                                                                                         | Apo Island, The Philippines.                 | Apo Island MPA.                                                                                                                                          |
| 5: Danika Kleiber  | Email                    | Yes: The Projected Seahorse Foundation in the Philippines | Employee for the Palau International Coral Reef Centre. Setting up a socio-economic research program to monitor socio-economic impacts of Micronesia Challenge marine and terrestrial protected areas. Micronesia is aiming to protect 30% of nearshore waters by 2020.                                                                                                                                             | Palau, Micronesia and The Philippines.       | MPAs in Palau and the Philippines in general.                                                                                                            |
| 6: Kyle Gillespie  | Email                    | Yes: The Projected Seahorse Foundation                    | Masters student at the Projected Seahorse Foundation, a marine conservation group dedicated to securing healthy and well-managed marine ecosystems.                                                                                                                                                                                                                                                                 | The Philippines.                             | Danajon Bank MPA.                                                                                                                                        |
| 7: Kate Longhurst  | Email                    | Yes: Coral Cay Conservation                               | Head of Science at Coral Cay Conservation. Masters degree in Conservation at University College London.                                                                                                                                                                                                                                                                                                             | Southern Leyte, The Philippines.             | Napantao MPA.                                                                                                                                            |

## 4. RESULTS

As explained in the methodology, the interviews were analysed using thematic analysis. The results will discuss the themes that emerged from the seven interviews. The themes have been split into subcategories and are considered below.

### 4.1 The non-governmental organisations and their work with marine protected areas

The responses to the opening questions showed a range of goals regarding their associated marine protected areas (MPAs). For the majority, ecological effectiveness of the MPA was at the forefront of their mandate. The ecological effectiveness of a protected area is how well it represents and maintains biodiversity (Gaston *et al.*, 2006). Despite this similar primary aim, each NGO stated a variety of specific ecological aims, as highlighted in table 2. Some interviewees broadly described their work in terms of coral reef ecosystems (e.g. Respondent 1 and Kyle Gillespie). Others were more specific in their responses put forth specific species and habitats protected by the MPAs (e.g. Andrew Kriz and Danika Kleiber).

Table 2: Table showing the responses about the nature of each MPA.

| Respondent                                                                            | Response                                                                                                                                                                                                                                                                                                                             | Aim                                                     |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Respondent 1 (NGO)                                                                    | <i>"Implement a program that works to enforce and sustain the MPA's existence."<br/>"Focus is primarily MPAs that protect coral reefs."</i>                                                                                                                                                                                          | To protect coral reefs.                                 |
| Kyle Gillespie (The Projected Seahorse Foundation, NGO)                               | <i>"MPAs are not designed specifically for protecting seahorses, but instead for protecting many parts of a complex ecosystem."</i>                                                                                                                                                                                                  | To protect many parts of a complex ecosystem.           |
| Kate Longhurst (Coral Cay Conservation, NGO)                                          | <i>"CCC's work is not solely focused on the establishment of MPAs. For example, in the Philippines, CCC's work is primarily focused on ecological monitoring of established MPAs and strengthening the management of these."</i>                                                                                                     | Establishing, monitoring and strengthening MPAs.        |
| Andrew Kriz (The Bahamas National Trust)                                              | <i>"In ECLSP, primarily marine life (crawfish, grouper, conch) but also bird (tropic bird, shearwater), iguana (several species), and mammal (hutia)...Every park has its own reason for being protected."</i>                                                                                                                       | To protect specific marine life, bird life and mammals. |
| Danika Kleiber (The Projected Seahorse Foundation, NGO and Palau Conservation Trust.) | <i>"In previous work it's been shown that while the biological function of the MPAs either too small or too difficult to measure, there is a social function to the MPA."<br/>"Certain MPAs are specifically designed to protect specific habitats (i.e. seagrasses), and others are managed for tourist (i.e. jellyfish lake)."</i> | Protecting specific habitats and tourist purposes.      |

#### 4.1.1 Governance and management

There were contrasting responses to the questions on governance. Bottom up approaches were discussed by several of the respondents:

*"Governance in the Philippines is decentralised to the municipalities."* Danika Kleiber.

*“A community PO [peoples’ organisation] or MPA management board, in consultation with the community and PSF [Projected Seahorse Foundation], develops a management plan that includes infrastructure, enforcement, ecological monitoring, educational and financial strategies...MPA management lies at the community level.”* Kyle Gillespie.

*“Community led approach to MPA governance...However, CCC [Coral Cay Conservation] will support project partners in implementing whichever mode of governance has been deemed appropriate under local circumstances.”* Kate Longhurst.

One respondent, with a different view, discussed top down approaches to governance and management in reference to the case study of Palau:

*“A combination of state and national government manage the MPAs with PICRC [Palau International Coral Reef Centre] and PCS [Palau Conservation Society] also involved.”* Danika Kleiber.

#### 4.1.2 Community participation

Interviewees discussing community participation reiterated the contextual nature of MPAs. The interviews indicated that community engagement was an approach used by NGOs to strive to achieve functioning and well-managed MPAs. The questions regarding community participation prompted a variety of opinions, too. Some of those who were interviewed hosted meetings and events to involve the community:

*“Consultations, to focus groups and other relevant approaches.”* Respondent 1.

*“They [municipal officers employed by the beneficiaries agency] will have a presentation and say here are all the benefits of an MPA to your community...the idea is to address the concerns of the community about what an MPA actually is and what are the long term benefits of putting aside an area.”* Barbara Klabots.

Others discussed a more collaborative approach to include the local community:

*“How they decided things as a community was a combination of initiative of the more involved families through the Barangay [native Filipino term for village or district] Council and through the barangay leadership and council, and consultation with everybody through these meetings.”* Gerry Marten.

*“PSF [Projected Seahorse Foundation] interacts with local communities largely through the community organisers (CO)”* Danika Kleiber.

#### 4.1.3 Education

The majority of interviewees emphasised education as an important aspect of the work with the communities with MPAs. Barbara Klabots explains how the Filipino NGO is *“distributing these tools*

*that they get and educating the people.”* Kyle Gillespie elaborates on this further, by explaining how management methods assist with education programmes:

*“A management plan is written...and a community education programme is initiated.”*

*“There is funding in place that ensures the upkeep of...community education programs.”*

## 4.2 Driving forces

In response to questions regarding the driving forces encountered when establishing an MPA and how these affect the work of an organisation, a wide range of responses were elicited. These driving forces will now be discussed in separate, but closely related and intertwining, sections.

### 4.2.1 Environmental

There are two environmental factors that were elicited from the interviews. These were the weather and MPA violations. They will be discussed in more detail within the analysis.

### 4.2.2 Economic

It was interesting to note that all but one of the NGOs interviewed mentioned financing as a driving force to MPA effectiveness. The main issue associated with insufficient funding was the lack of finance to fund existing projects, their staff, the governance and equipment:

*“Another [driving force] is lack of consistent financial support for enforcement.”* Danika Kleiber.

*“Limited funding to pay for work.”* Kate Longhurst.

It is apparent that financial problems can often determine the success or failure of an MPA. However, there are other factors that can also cause problems for an MPA's effectiveness.

### 4.2.3 Political

Political factors, at all scales, were prevalent throughout the interview responses. Andrew Kriz discussed nation wide political issues in the Bahamas:

*“There are other issues besides poaching, including illegal immigration (primarily Haitian) and drug enforcement.”*

The remainder of the responses regarding political issues focused on government at both the national and local scales. Firstly, Danika Kleiber discussed the potential positive influence of political leaders:

*“Changes in the interest of political figures in MPAs is one major aspect here. One mayor may give financial and political support to the project but the next may not.”*

Kyle Gillespie, in contrast, focused on how to improve the effectiveness of an MPA through local politics:

*“If I were to change anything, I would try to ensure strong leadership from a People’s Organization in regard to the MPA. Having a body that is active in consulting with community members and inclusive of stakeholders in MPA assessment and management planning will, I think, help bring people on side with the MPA.”* Kyle Gillespie.

The responses highlight the extent of political will and influence on MPAs and the difficulties faced by NGOs to ensure their ongoing success through electoral cycles.

#### 4.2.4 Socio-cultural

Two findings were made in respect to socio-cultural issues. The first of these is the issue of sex trafficking, which will be discussed further in the analysis. The second issue was that of family planning. Gerry Marten explained how the local people have taken responsibility for their MPA and its success through taking this approach to solving the issues harming their MPA:

*“The third outside facilitation was for family planning. They came to the conclusion...that their main threat to their fishery and the marine ecosystem was the increase populations...There is a photo in the video of the little stand where they had contraceptives. It was just sitting out in the open, there was a sign saying how much things cost.”*

### 4.3 Future Options

There are some potential options that may be able to help the conservation space develop in order to achieve greater ecological effectiveness. The interviewees were asked to reflect upon ecotourism and scaling up as potential ways forward in the future.

#### 4.3.1 Ecotourism

The ecotourism question focused on whether it is perceived as a potential profit centre to channel sustainable finance for MPAs. The results indicate the optimism about the future of conservation efforts. In general, it is evident that people perceive ecotourism as having a positive impact on MPAs:

*“Gaining funds through tourism and through charging just a few dollars, like 50 cents for snorkel and \$3 or so for a dive.”* Barbara Klabots.

Other respondents went on to express how important they believe ecotourism to be for MPAs and their financing:

*“When tourism is an option for coral reefs, it can certainly be a potential source of revenue for the MPA, which is accepted to be a crucial element to successful local management systems.”*  
Respondent 1.

*“Ecotourism has much potential value in MPA creation and management.”* Kate Longhurst.

#### 4.3.2 Scaling up

Scaling up is the idea that small, local scale projects could be increased in size to meet the scale of broader conservation issues. Some of the interviewees explained how larger scale systems could have a place within the conservation space:

*“Top down can have a role.”* Gerry Marten.

*“Concepts such as ecosystem based management and ecoregions represent an acknowledgement that individual coral reefs are part of a much larger ecological system which needs to be protected for conservation efforts to be effective. This indicates that in the future, more emphasis should be put on developing large scale MPAs and MPA networks.”* Kate Longhurst.

Others developed this further by explaining that MPAs should not be negated in favour of larger scale projects. Instead both approaches should be considered in combination to effectively solve the global conservation issue:

*“We certainly believe that MPA establishment is just one piece of the larger conservation puzzle.”* Respondent 1.

*“MPAs were part of a larger spatial management approach.”* Danika Kleiber.

#### 4.4 Summary

Overall, the themes that have emerged from the interviews have illustrated a variety of opinions reflecting both consensus and disagreement. The results provide important insights into the perspective of NGOs and others working with MPAs. In particular, they illustrate the wide range of issues that could cause problems with the effectiveness of an MPA. The next section continues to discuss these themes in close relation to the debates arising from the literature review to address the research questions.

## 5. DISCUSSION

The previous section laid out the results from the seven interviews. This section will discuss these findings, in relation to the literature, to answer the research questions. The thematic map (see appendix D) illustrates the form that the discussion will take. It visualises how scale runs through all the themes drawn out through the analysis. The focus on scale corroborates Berkes school of thought that community conservation (e.g. community-based MPAs) needs to be managed at multiple levels, vertical and horizontal, to make them successful. Conservation action starts from the ground up whilst dealing with cross scale relations (Berkes, 2004).

First, it will examine the NGOs, their work and their goals. Second, it will attend to the methods used by an NGO working in an MPA to achieve their organisation's goals including governance and management methods, community participation and education. This section focuses on the community and local scale. Third, the focus will shift towards the driving forces behind MPA failings and challenges. The driving forces are broken down into clear factors including environmental, economic, political and socio-cultural. The issues with MPAs range across and between all scales. Lastly, the discussion will address the potential options that may be used in the future to address current issues, in order to improve conservation on a global scale.

### 5.1 The non-governmental organisations and their work with marine protected areas

The responses from the opening questions showed a range of goals regarding their associated MPAs. The ecological function of an MPA was laid out in the results section. However, other functions of the MPAs were not discussed in the results, *"there is a social function to the MPA."* (Danika Kleiber). In reviewing the literature, the concept of NGOs aiming to work with the local community arose (Clark, 1995; Lundy, 1999; Elliot *et al.*, 2001; Rodriguez-Martinez, 2008). Therefore, it was expected that some of the interviewees stated that their NGO aimed to do this. Respondent 1 explained that their organisation *"mainly works alongside communities when they are working to establish MPAs"*. Kyle Gillespie stated *"Project Seahorse (PS) has helped in the establishment of 35 community managed MPAs"*. Part of an NGO's focus is the community, to be a voice for them and to represent them. The extent to which NGOs truly represent the local community is debated (Lundy, 1999; Berkes, 2004). A discussion of how NGOs work with communities will be continued later in this section.

#### 5.1.1 Governance and management

The results of this study corroborate with the literature, with interviewees stating a variety of governance and management techniques (Bown *et al.*, 2013; Jones *et al.*, 2013). Emerging from

this debate is the notion that mechanisms should be implemented according to what is most appropriate for a specific context, and consequently, no two MPAs are the same, nor is the political environment within which they sit, either locally or nationally. Respondent 1 summarised this succinctly by stating that they do *“not officially make a suggestion on this since it depends highly on context.”* Kate Longhurst elaborates on this point further:

*Many aspects of our work are dependent on the local circumstances, specific problem being addressed by the work, local customs and culture, and nature of the project partners we are working with.*

Methods vary across scales, with top down preferred by some and bottom up by others, depending on the context. There is a wider political struggle regarding the scale at which these projects should take place (Campbell, 2007) and the interview responses demonstrate the lack of commonality.

Community-based NGOs use a bottom-up approach to conservation because it is in line with their mandate to help and involve communities. For example, Kate Longhurst states that *“CCC generally operates a bottom up approach to conservation”* and Barbara Klabots states the local community in the Philippines *“have to manage it in partnership with the local town council.”* Lundy (1999) debates whether it is possible for an NGO to represent the local community due to the power imbalance of their respective class (i.e. middle class conservationists and poor local communities). Therefore, these results must be interpreted with caution because there is a possible bias. The results are from the perspective of the NGOs and therefore they may have exaggerated the relationship they have with the communities. It is hard to infer if their perspective is a true reflection of the activities they conduct, as there is a lack of perspective from the local communities themselves.

In Palau, in contrast, they have developed a top-down approach to governance and management. Danika Kleiber specified that in Palau *“a combination of state and national government manage the MPAs”*. This top down approach is currently being developed further. In recent news, Palau is reported to being close to sectioning off an area of more than 230,000 square miles across its tropical waters (Service, 2014). This would create one of the world’s largest marine reserves and would set a precedent as the first nation to completely ban fishing vessels from an exclusive economic zone (ibid). Conservationists have hailed this bold move, but what are the implications for MPA governance and management?

Positively, it strives to make governance as effective as possible. MPAs, furthermore, may become more ecologically effective because the no fish zone will allow tuna stocks to replenish. However, it raises issues of ignoring the local context and voices (Berkes, 2004). The local communities will

not have a say in these measures, may feel a loss of their voice and may not believe it is an appropriate mechanism for the governance of MPAs. The intended governance structure for the proposed MPA is unclear, nor is local or national accountability and responsibility. There is a tension when prioritising the national scale over the community scale. The national scale appears to be preferred as a quick fix to solve the problems, but this is controversial (Berkes, 2007). Also, taking a single scale approach ignores other scales. The issues, therefore, are not occurring at a single scale but at several.

#### 5.1.2 Community participation

Another method employed by NGOs to increase the chance of a successful MPA is encouraging participation with the local community. Prior studies, discussed in the literature review, showed the lack of consensus as to whether an NGO can work with the local community effectively (Lundy, 1999). Several of the interviewees for this project used community participation as a method to improve the success of the MPA. They lacked agreement regarding what ways they could achieve this and therefore, a variety of responses were elicited. Respondent 1 stated that they held *“workshops, inviting them [the community] to events”*. Barbara Klabots explained how municipal officers make a presentation to the community about the benefits of an MPA for them. Both of these methods comprise of the NGO “hosting” the local community through presentations and meetings in order to seek community representation. However, this may not be the case due to class imbalances between the two parties (Lundy, 1999).

Danika Kleiber suggested an alternative way to engage with the community. Rather than hosting meetings, the Projected Seahorse Foundation employ community organisers. This method allows them to work closely with the local community. It is an attempt to give the local community a voice within the project. These methods ostensibly show the NGO retaining the upper hand over the community. The question of how to deal with these power inequalities is crucial (Berkes, 2007). Some NGOs work to give full control back to the community when they are ready, as explained by Kate Longhurst: *“working closely with local communities to empower them to manage their own resources.”* Until that time occurs, it is a complex task of balancing opinions and engaging people in the best way possible. The variety of techniques used to engage with the community heightens the argument that the effectiveness of each MPA depends on the context.

#### 5.1.3 Education

Halpenny (2003) argued that NGOs have several functions within an MPA, including education. A lot of the interviewees discussed this as an extremely important aspect of working with a local community and their MPA. Many people believe, although this study cannot substantiate this, that improving local understanding of the importance of the marine ecosystem will increase the

effectiveness of an MPA. Therefore, NGOs often want to educate the community because studies have shown that when a community is educated about the marine ecosystem they will support the creation and management of the MPA (Elliot *et al.*, 2001; Rodriguez-Martinez, 2008). For example, Kate Longhurst explains that CCC use “*education and awareness raising activities to generate local support and understanding for MPAs.*” She went on to give the most detailed account of all respondents regarding education methods used by CCC:

*CCC delivers a range of meetings and events to engage the local communities. In the Philippines, awareness events are held within a barangay before and after MPA assessment take place to engage the local community with their coral reef resources and give them the opportunity to raise issues and concerns. CCC provides regular fun, educational activities for younger members of the community and their parents to educate them on the value of their marine resources and how they can be managed. Where possible, CCC employs local staff with excellent knowledge of the natural resources and local customs.*

Through the employment of local staff, CCC hopes to create a link to the community using their local knowledge. Through this link they aim to educate the local community about the coral reef and the MPA. They also run activities for the children in the community illustrating that they include as many members of the community as possible. They aim to teach the value of the coral reef ecosystem and how to govern the MPA effectively.

Barbara Klabots corroborated Kate Longhurst's response, by saying that educating the local people is appropriate if “*we want to go for a long term reliance of our MPAs*”. Therefore, education is seen as such a pivotal role within an MPA that it is embedded in the management of their projects. Education is an element of the running of an MPA that stands out as a point of consensus. Although the teaching methods vary, the fundamental concept that educating the local community is essential and runs through the majority of community-based projects.

## 5.2 Driving forces

The methods mentioned above are used to increase effectiveness and longevity of an MPA, however, there are often some issues that affect the success of MPAs. This section will provide a detailed discussion of the factors that arose from the interviews. These barriers have been split into sub-categories for effective analysis: environmental, economic, political and socio-cultural. Despite their separation, the categories are closely linked within a complex web of interrelationships and subtleties. The issues faced by MPAs are variable across each context, however, a commonality is the issues occur across all scales.

### 5.2.1 Environmental

Within the literature, environmental and ecological factors are discussed. For this project, the focus of this literature has been on the implications of human activities and the environmental impacts. For example, sedimentation can occur as a consequence of deforestation and erosion (Taylor *et al.*, 2013). Contrary to expectations, this study found one factor that is not discussed in detail in the literature, the weather. Kate Longhurst stated the weather was a key factor that affected implementation of MPAs and something that influenced the success of their work. Illustrative is the recent tropical storm Haiyan that plundered the Philippines, in November 2013. The effects of a global scale meteorological event such as typhoon Haiyan on coral reefs can be disastrous. Storms and typhoons cause strong waves and currents that can break off coral branches, overturn coral heads and smother the reefs with sand (Yan, 2013). This is a major issue within the context of the Philippines because the recent typhoon will have damaged the coral reefs in the local communities and will have long-term repercussions on the quality of MPAs (*ibid.*).

Another driving force highlighted in the literature is that local resource users fail to respect MPA zoning and regulations (Taylor *et al.*, 2013). The interview results are consistent with the literature. Violations, according to several of the interviewees, are a common issue that hamper the effectiveness of an MPA. Barbara Klabots stated “*there had been a lot of violations*” and Andrew Kriz said “*we still have poaching*”. These violations may have an effect on the ecological success (i.e. fish stocks) in an MPA but the effects may not be profound. This is shown by Barbara Klabots who suggested that the violations happen because the local people are aware that there are lot of fish in the area. She explains when the tide goes out they can visibly see a plethora of sea urchins, perhaps an indication of a healthy MPA. It is a challenge for MPA managers to prevent these violations. Many use beach guards, buoys and whistles to fulfil the MPA regulations. Violation issues, at the MPA level, are predominantly a local scale issue but cannot be taken in isolation from other scales.

### 5.2.2 Economic

Economic factors affecting MPAs are discussed widely in the literature, with two key areas of focus being the economic status of communities and countries, and the funding of MPAs. There are two major issues that arise from the lack of finance for an MPA. “Paper parks” arise because they are unable to self-finance (Dharmaratne *et al.*, 2000). Additionally, a lack of finance can result in inadequate staffing and resources to manage an MPA (Taylor *et al.*, 2013). The latter of these two issues was supported by the interviews, in particular, Respondent 1 explains that a lot more work could be done with more financing:

*Well, as an NGO, having to fund our own involvement through donations and foundation grants, that is our biggest barrier to our work. With unlimited funds we would be able to do so much more, but funding is always an issue.*

The lack of funding is a prominent issue for NGOs because it slows progress and causes issues with enforcement (Taylor *et al.*, 2013). The issue of funding is perhaps more significant for NGOs who often have a charitable status. None of the interviewees, or information on their respective websites, disclosed where they receive their funding from and therefore, it is difficult to establish the exact financial difficulties beyond their responses. Despite this, financing is a cross scalar issue. The issue of funding cannot be pinpointed to one scale, it is a widespread issue across all scales. This issue arguably turns back to the conservation versus development debate. It is difficult to allocate funding to conservation methods when people are struggling to afford food, shelter and water especially in developing countries and after natural disasters. Therefore, solving this funding issue may not be possible for some of the developing countries in which these case studies are found.

### 5.2.3 Political

Political factors that affect MPAs were discussed in the literature. Marine policies implemented at the national level can affect the local fisherman. Policies can cause tension between the traditional fisherman and the authorities (Taylor *et al.*, 2013). As previously mentioned, there can be issues with fisherman respecting the MPA regulations. Another political issue is leadership, nationally and locally, which is perceived to be a major driver of conflict within an MPA (Taylor *et al.*, 2013). The interviews highlighted these issues, as well as other political difficulties, regarding MPA effectiveness.

One issue is illegal immigration. Andrew Kriz stated in his response that this is a problem in the Exuma Cays Land and Sea Park in the Bahamas. He does not disclose any details about the implications of immigration on the MPA. However, two factors could be suggested. Firstly, the increased population in the area could cause pressure on natural resources (Taylor *et al.*, 2013). This may result in increased violations in the marine park because there are more people relying on the oceans as a source of food. Secondly, a suggestion could be that illegal immigration causes the management team in the Bahamas National Trust to combat this issue rather than those directly related to the MPA. It could cause a stretch of resources and their focus will be on the issue on immigration rather than potential violations and other MPA issues. Immigration, by its nature, is cross scalar.

Another issue is that of political leadership. Danika Kleiber, in particular, discusses this issue in detail using the Philippines as her case study. Initially, she explains that the local political leader

plays a crucial role in the success of an MPA project by giving them financial and political support or not. The argument is established further by Kyle Gillespie who states “*strong marine stewardship leadership from the Barangay leader [in the Philippines] and council will often equate to an active MPA management council.*” He believes that having a consultation body will bring stakeholders onside. Therefore, it is clear that NGOs often believe strong local leadership is crucial to the success of an MPA as strong leaders will include many stakeholders in the management process.

However, as explained and illustrated by Danika Kleiber, the overarching political culture and climate can be highly influential in the effectiveness and success of an MPA:

*The management of MPAs in this context needs to be viewed within the larger problems of systematic political corruption in the Philippines. It is hard to expect community buy in and participation when most people expect corruption and misuse by elected officials...I think particularly in a place like the Philippines it is hard to expect local management of marine resources to be sustainable, when all other forms of governance are highly corrupt or susceptible to corruption.*

Dios and Ferrer (2001) discuss the issue of corruption in the Philippines in their study. They state that corruption is a widespread national problem and it plays a disproportionate role in Filipino society. They cite some of the reasons for corruption including the system of patronage in politics, the lack of information among the majority (due to poverty, ignorance and alienation), manipulation of government by powerful outside interests, entrenchment of big money politics and a political system used as a method of wealth accumulation (*ibid*).

Their study also continues to make recommendations to solve this issue. Dios and Ferrer (2001) argue that underlying all reforms is the notion that society must address the network of real social relationships that shape the political relationships. The Philippines need to come to grips with the basic sources of social inequality as a start to solve corruption issues. This is highly relevant to this project because it illustrates how an issue affecting an MPA may not be manifested or solved at merely one level. Corruption is a cross scalar issue across all levels. Solving the broader issue of social inequality may help resolve some of the local issues being found with MPAs.

#### 5.2.4 Socio-cultural

The discussion of socio-cultural factors in the literature is scarce. Two unanticipated findings from the interviews were the issues of human sex trafficking and family planning due to the lack of discussion in the literature. These may have implications on the effectiveness of the MPA. Barbara Klabots discusses human sex trafficking:

*Another interesting new idea that they are going with is promoting women's empowerment by going to a few coastal communities where there has been a lot of domestic violence*

*which is common in the Philippines and pushing for a more local pride campaign to say that we are a community, we are proud of it and our resources, we want to take care of it. We also care about our women and children, we're not going to sell them and we are not going to beat them. So they are really going down this anti-trafficking and anti-violence route to establish a baseline for positive community efforts where they are so far away from governing an MPA together that this is where they have to start...The right campaign fully makes sense in the Filipino cultural context and it fits cultural values. I when arrived there and I was like "you guys are doing an anti-trafficking campaign, I don't get it". I didn't see the connection from that far back because this is a coral reef group.*

Barbara Klabots suggests that solving these issues may prompt an improvement in the MPAs in the Philippines because at present, cross scale issues maybe hindering their effectiveness. Therefore, MPA managers and campaigners are trying to solve these issues and promote community empowerment as a way to try to get people to care about their society and resources (i.e. respect the MPA). There is no evidence that this is causal but it is a pathway they are exploring as a possible solution.

There are cultural implications of sex trafficking embedded in Filipino society. The Visayan Forum is a Filipino NGO whose vision is to protect women affected by human trafficking. Their statement video highlights the extent of the issue, with more than 300,000 women being trafficked from the Philippines yearly. They discuss some of the reasons why women and children are engaging in human trafficking (Visayan Forum Foundation, 2012). These include the promise of paid work in another country and because they are poor therefore vulnerable to being manipulated and deceived by a trafficker. Other factors are discussed in the wider literature. Push factors are any factors that render women and children vulnerable and any which marginalise them (Lee, 2005). For example, lacking employment and education, gendered cultural practices, gender discrimination and gender based violence in families and communities (*ibid*). This issue is a cross scalar one too, with trafficking and its repercussions being felt all the way down to the community and individual level. Consequently, by solving this issue, the Visayan Forum Foundation hopes to empower women. RARE (an Filipino environmental NGO tackling environmental problems with locally led solutions), noted by Barbara Klabots in her interview, believe that in turn this may encourage the locals to take better care of their community and resources (i.e. the MPA).

Gerry Marten argues that family planning is an issue that is causing problems with MPAs. The community on Apo Island in the Philippines came to the conclusion that *"their main threat to their fishery and the marine ecosystem was the increase populations."* Therefore, they had a stand of contraceptives in the village for people to use. Gerry does not go into detail about the links between family planning and an effective MPA. A possible explanation could be that a larger

population creates a greater pressure and competition on natural resources, in turn increasing pressure on the MPA (Taylor *et al.*, 2013). This, too, is a cross scalar issue because it is manifested across all scales. The growing global population is a widespread issue that affects conservation globally down to the individual scale.

### 5.3 Future options

5.1 and 5.2 discussed the methods and issues associated with MPAs. The focus of this section shifts to potential ways forward that may improve conservation techniques in the future. Two main issues are analysed in this section, ecotourism and scaling up. Both have been highlighted in the literature and the interviews.

In the current literature ecotourism is widely debated. Some scholars believe it is a method that could provide sustainable funding for MPAs, particularly through redistribution of diver fees (Zimmerer and Bassett, 2003; Jones *et al.*, 2013; Di Ciommo and Schiavetti, 2012). The interviews corroborated this view too, as shown in the results section. Danika Kleiber who discussed tourism fees in Palau made an interesting response. The Protected Area Network (PAN) in Palau receive funding from the *“national government which comes from the green departure tax (50\$) that all tourists pay when they leave Palau.”* She goes on to explain *“states can also institute state specific fees for tourists. The state of Koror, holds the majority of Palau’s residents, jobs, and tourists, and so gets most of the state based tourist dollars.”* Ostensibly it appears that tourism is a successful source of revenue for MPAs in Palau because all tourists are taxed creating revenue. However, Danika explains that the redistribution of these funds is not equal. Koror gets most of the tourist dollars, leaving the other states with little access to this budget. Consequently *“the resources used to manage and enforce MPAs are stretched thinner and so may be less effective”* (Danika Kleiber). Her response illustrates that money from ecotourism is an effective method to funding MPA management but only if it is distributed efficiently and appropriately. The issue in Palau is within the national scale and between communities, highlighting the complexity of the scale issue.

Scaling up is a notion that has arisen from criticisms surrounding MPAs and a loss of faith in community-based conservation (Sievanen *et al.*, 2012). The literature highlighted the idea of scale mismatch which argues that often the scale of conservation projects and policies does not match the issue at hand (Berkes, 2006). Consequently, alternatives have been sought in order to increase the success of marine conservation efforts. Nearly all of the interviewees acknowledged that larger scale management methods are required in the future to match the scale of the problem and deliver effective governance across all levels. Kate Longhurst comments on this suggestion:

*The rise of large-scale MPA networks does not negate the value of small-scale community-led conservation action and, in order to be successful, conservationists will need to embrace all available approaches.*

Her opinion reflects that of many of the NGOs interviewed. She thinks that MPAs are a small scale element of a larger conservation effort. She recognises that lots of options are available and should be explored in the future. However, not all interviewees showed the same level of optimism, and possibly influenced by the political and economic sphere in which they operate.

Gerry Marten expressed the opinion that MPAs are not sufficient by themselves and therefore “*comprehensive management*” is required “*for the whole thing to work*”. Therefore, he agreed with the trend in the literature for a scaled up approach to conservation. However, he confounded Kate Longhurst’s response by saying “*national and international scale can be really disappointing*”. Gerry’s response reflects the attitude of many, they want larger scale conservation to take place but are not sure how this will work in practice and often people are despondent about it happening at all. This reflects the tension at the heart of this issue, scale. Scalar tensions require attention due to the highly complex nature of the issue.

## 5.4 Summary

The discussion has demonstrated a number of the complexities surrounding marine conservation. The interrelationships, causality and continuous evolvement of these issues will inevitably mean the debate will be at the forefront of discussions on how to balance the needs of the growing population and the resources required from the natural world in a sustainable format. The conclusion will summarise the key points made.

## 6. CONCLUSION

### 6.1 Summary

The project was designed to examine the effectiveness of community-based MPAs, the challenges each face, and potential future solutions necessary to safeguard the environment in order to meet the needs of ourselves and future generations. It posed the overarching research question: are the nature, issues and future options for marine protected areas consistent across contexts? To answer the question a series of interviews were carried out with people working with MPAs or organisations assisting MPAs. The project used a number of MPAs to analyse their effectiveness as a management tool, consistency of approach and success of implementation.

In answer to research question one, there was consistency that all the MPAs used some form of governance and management technique. There was inconsistency in the particular methods each MPA used, as they are highly variable across contexts and each is unique. For research question two, it was established that tensions apply to all MPAs. It is the specific issues themselves that are a different blend in each MPA and the nature of the issues differs across MPAs. There was a general consensus when answering the third research question among the interviewees that synergies, through a collaborative approach, are a useful way to improve community-based conservation results. The results of the findings indicate that conservation issues cannot be isolated to one location or one scale, they are closely related, interlinked, and not confined within spatial boundaries.

The evidence provided in the project brings together the notion that MPAs are a small part within the complex and variable conservation field (Berkes, 2004; Campbell *et al.*, 2009). The project contributes to Berkes' concept of cross scalar issues by providing additional evidence suggesting that sex trafficking, anti violence and family planning issues within and beyond communities that are thought to influence the effectiveness of MPAs and the integrity to which they are held in the communities in which they operate. The issues found in this study are cross scalar, affecting all scales vertically and horizontally (Berkes, 2004, 2006, 2007). These issues are not discussed in some studies about the driving forces affecting MPA integrity such as Taylor *et al.*, 2013 and Jones *et al.*, 2013. These findings could be of interest to geographers and conservationists who are concerned with scale. It may prompt further research into socio-cultural issues and their impact on MPAs.

The project has shown that there is a need for a holistic approach to conservation. Investigating all scales throughout the conservation process is critical. By focusing on one scale, conservation projects are not going to achieve sustainability and high levels of biodiversity. A more collaborative

and cross-institutional approach is required to achieve the Convention on Biological Diversity's target of having 10% of global oceans and coastal areas protected by 2020.

## 6.2 Critique

Although the project has demonstrated that conservation is an intensely complex and emotive field with a large number of interrelated elements, it has some limitations. The sample of seven is relatively small. However, the sample was across a broad range of geographical locations. My personal interest and connections with Coral Cay Conservation may have affected the project. This is not necessarily a drawback as my prior knowledge and understanding of the NGOs and MPAs will have added to the project as it developed.

## 6.3 Extended research

The project has highlighted potential areas for future research. A further study might investigate the community perspective on marine conservation issues and MPAs which would provide another angle on this subject. The community perspective would be of interest to see how the implementation and maintenance of an MPA is perceived. Their perspective of the issues affecting MPAs could be compared with that of the NGOs and researchers to see if there is a consensus on any of the themes discussed. This extended research could be challenging due to the power relations elicited from the western researcher over a local community.

Given the vast number of MPAs worldwide, further studies could also look at a different selection of MPA case studies to see if the responses were consistent. A more focused study could examine the links between sex trafficking, violence and family planning as factors that can negatively affect an MPA in the Philippines.

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## 8. APPENDICES

Appendix A-Images of four minke whales killed on a Japanese ship

Appendix B-Map to show the current marine protected areas globally

Appendix C-An example of interview transcripts

Appendix D-Thematic map to show how the overarching theme of scale permeates through all of the subthemes.

## 8.1 Appendix A



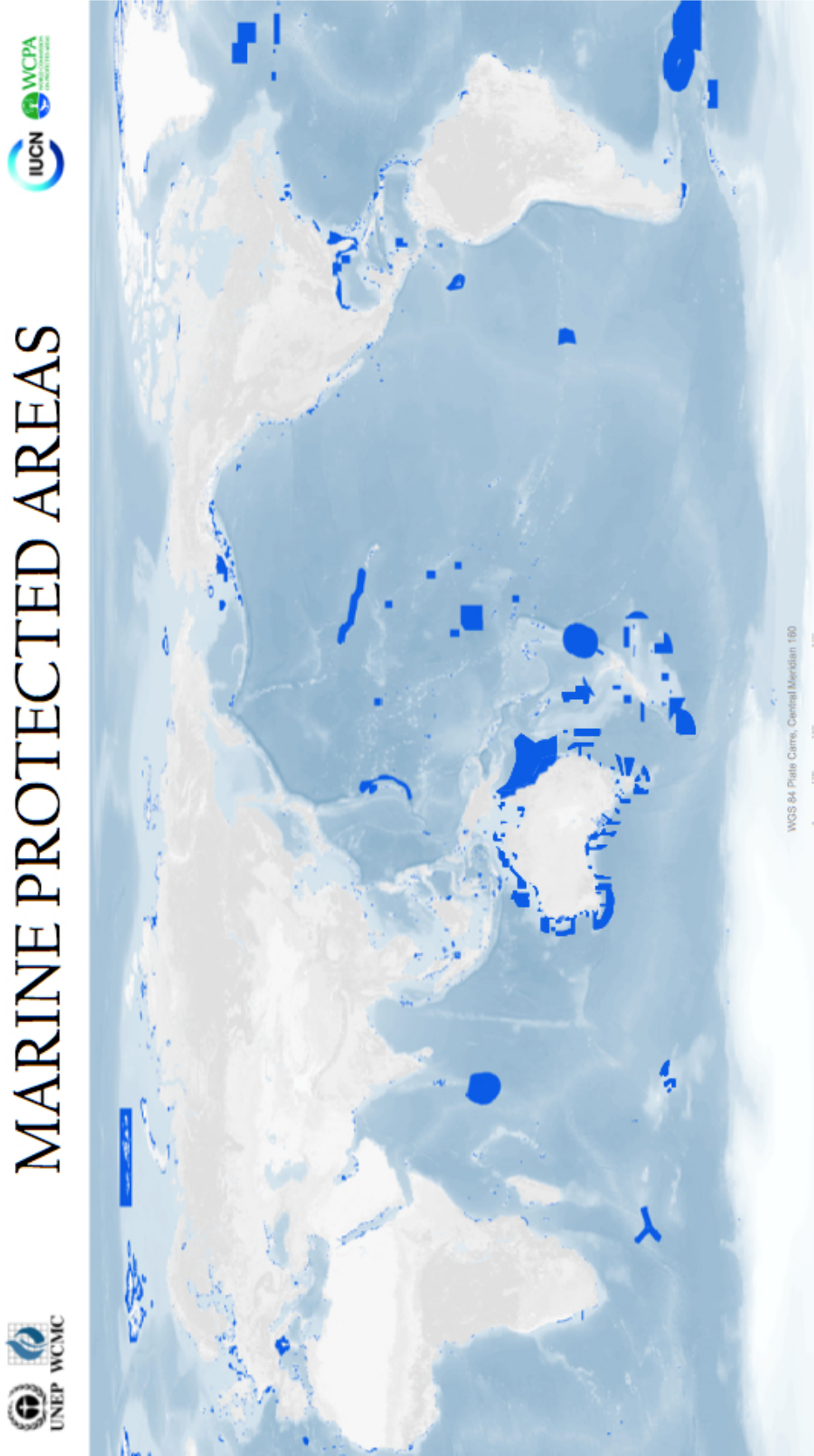
Figure 1. *Three dead minke whales lie on the deck of the Japanese whaling vessel Nisshin Maru as it travels through the Southern Ocean (2014) [Photo], The Independent [Online], Available at: <http://www.independent.co.uk/news/world/australasia/photos-show-japanese-boats-whaling-in-internationally-protected-area-9041112.html> (Accessed 3 March 2014).*



Figure 2. *Japan is allowed to hunt the animals for scientific purposes under an exception to a 1986 ban on whaling. But opponents argue the scientific program is a cover for commercial whaling because whale meat not used for study is sold as food in Japan (2014) [Photo], The Independent [Online], Available at: <http://www.independent.co.uk/news/world/australasia/photos-show-japanese-boats-whaling-in-internationally-protected-area-9041112.html> (Accessed 3 March 2014).*



Figure 3. *Crew members walking amongst blood, allegedly from four minke whales, after they were cut up on the deck of the Japanese factory ship Nisshin Maru inside a Southern Ocean sanctuary, according to anti-whaling activists Sea Shepherd (2014) [Photo], The Independent [Online], Available at: <http://www.independent.co.uk/news/world/australasia/photos-show-japanese-boats-whaling-in-internationally-protected-area-9041112.html> (Accessed 3 March 2014).*



## Protecting 2.8% of the Global Ocean

Figure 4. *Marine Protected Areas Protecting 2.8% of the Global Ocean* (2013) [Illustrative Map], IUCN and UNEP-WCMC [Online], Available at: [http://www.protectplanetoocean.org/images/official\\_mpa\\_map/OfficialMapSeriesM01\\_WDPAOct2013\\_plusAUS\\_highres.pdf](http://www.protectplanetoocean.org/images/official_mpa_map/OfficialMapSeriesM01_WDPAOct2013_plusAUS_highres.pdf) (Accessed 5 April 2014).

## 8.3 Appendix C

### Interview with Coral Cay Conservation

*Because Coral Cay Conservation has contributed to a number of unique projects around the world (in over 15 different countries), many aspects of our work are dependent on the local circumstances, specific problem being addressed by the work, local customs and culture, and nature of the project partners we are working with. With this in mind, we have answered the questions below in a general sense to give an overview of our approach, but have also provided specific examples where appropriate from our project in Southern Leyte, the Philippines which has been running for over ten years. This is just one of the projects that CCC has worked on over the years and is presented here solely as an illustration of how our approach can be applied in one specific situation.*

#### Introductory Questions

1. In summary, what is Coral Cay's main role when assisting with the decision-making process of a national government trying to set up a Marine Protected Area?

*CCC's main activities are:*

- *Ecological surveys – data collection from marine ecosystems e.g. coral reefs, sea grass beds, mangroves etc.*
- *Scientific analysis of ecological data*
- *Supporting recommendations on location/design with ecological data*
- *Outreach and awareness raising*
- *Capacity building to support designation – e.g. training government staff and MPA guards. Note-CCC does not always work with national governments on this process, for example in the Philippines CCC works with Provincial and Municipal governments, as well as local communities but has no contact with the national government. Additionally, CCC's work is not solely focused on the establishment of MPAs. For example, in the Philippines, CCC's work is primarily focused on ecological monitoring of established MPAs and strengthening the management of these.*

2. What role does Coral Cay play within the local community when establishing an MPA?

*Predominantly education and awareness raising activities to generate local support and understanding for MPAs. In addition CCC seeks to facilitate communication between stakeholder groups and assist with community consultation.*

3. What resources does the protected area preserve (e.g. target species, family)?

*This depends entirely on the purpose of each individual MPA. In general MPAs are established to protect hard corals and commercially important fish and invertebrate species e.g. grouper, snapper, sea cucumbers, giant clams etc. In addition, MPAs usually seek to protect a broad range of marine habitats including coral reefs, sea grass and mangroves. The main driving force for the establishment of most MPAs that CCC works on is the protection of fisheries resources and ensuring their sustainable future.*

4. As an NGO, what are the main barriers (driving forces) you encounter when assisting the implementation of MPAs and how do these affect your work?

- *Limited funding to pay for work*
- *Conflict between user groups*

- *Language barriers*
- *Weather*
- *Limited capacity within host countries*

#### Coral Cay's methods as an NGO

##### 5. How do you, as an NGO, establish a relationship with the national governments?

*As above, we do not always work with national governments. Generally CCC are invited to come in to a country and assist with conservation efforts by a key project partner who is already operating in the country. This may be a government department, local government unit or NGO. We establish and maintain good communication throughout the project, keeping all partners updated on our progress through printed monthly project updates and regular meetings to oversee the work programme. All scientific reports and data are delivered and presented to relevant project partners to ensure complete transparency.*

##### 6. How does Coral Cay establish a relationship with the local community and engage their knowledge, opinions and contributions when assisting with the establishment of an MPA (e.g. community meetings, public consultations, employment of knowledgeable locals)?

*Depending on the project, CCC delivers a range of meetings and events to engage local communities. In the Philippines, awareness events are held within a barangay before and after MPA assessments take place to engage the local community with their coral reef resources and give them the opportunity to raise issues and concerns. CCC provides regular fun, educational activities for younger members of the community and their parents to educate them on the value of their marine resources and how they can be managed. Where possible, CCC employs local staff with excellent knowledge of the natural resources and local customs.*

##### 7. Does Coral Cay use a particular method (e.g. social network analyses) to understand the local actors/stakeholders in order to advise national governments?

*No – CCC generally operates a bottom-up approach to conservation, working closely with local communities to empower them to manage their own resources. As such we develop a good understanding of the local stakeholders and how they interact with their marine resources.*

##### 8. What modes of governance does Coral Cay suggest local and national governments use when implementing a protected area (e.g. MPA managed primarily by government, managed by government with significant decentralisation etc.)?

*As stated above, CCC generally supports a bottom-up, community led approach to MPA governance. For example, in the Philippines, individual barangays who wish to create an MPA will establish an oversight committee which will liaise with the local government, enabling the local government to make decisions based on local thinking. However, CCC will support project partners in implementing whichever mode of governance has been deemed appropriate under local circumstances, as long as local communities are consulted and involved in the process.*

##### 9. Does Coral Cay recommend a preferred mode of management when setting up an MPA (e.g. adaptive management, co-management, or adaptive co-management). If so, why?

*No. The appropriate method of management depends on the specific local circumstances. CCC does not seek to promote one specific approach to MPA management, but rather to support project partners in implementing the approach that they have chosen.*

10. Are there organisations in the Philippines and Cambodia that represent the local community? If so, what do they aim to achieve?

*Yes, there are a number of such organisations, each with their own individual goals. For example, in the Philippines, individual communities are led by a barangay council who manage local issues and seek to represent the community at a higher governmental level. Villages in Cambodia have councils which operate in a similar way. There are a whole host of environmental groups, women's groups, fisheries management groups, fishers cooperatives and many more who each seek to represent their section of society or specific cause.*

#### The future of conservation

11. Does Coral Cay see ecotourism as a potential profit generating area that could assist MPAs? If so, are they currently using it/planning to implement it further?

*Ecotourism has much potential value in MPA creation and management. For example, in the Philippines, there is currently a large drive from within the Provincial and Municipal Governments to increase ecotourism as a means of alleviating poverty in the region. Local communities appreciate that tourists will pay to enjoy the unique coral reefs and other natural resources that are present in the region and are seeking to protect these resources and effectively manage them to generate income. CCC does not seek to promote or implement ecotourism but will support project partners, through research and training, should they wish to do so.*

12. How does Coral Cay perceive the new approaches and methods that are being explored in the conservation space, such as ecosystem- based management and ecoregions?

*Conservation is a field which is constantly evolving and as such new concepts and themes are emerging all the time. This is a good thing as it enables conservationists to find new ways to engage with complex environmental issues. Concepts such as ecosystem based management and ecoregions represent an acknowledgement that individual coral reefs are part of a much larger ecological system which needs to be protected for conservation efforts to be effective. This indicates that in the future, more emphasis should be put on developing large scale MPAs and MPA networks. However, it is still important to engage with communities on an individual basis, and empower them to effectively manage their own marine resources. The rise of large-scale MPA networks does not negate the value of small-scale community-led conservation action and, in order to be successful, conservationists will need to embrace all available approaches.*

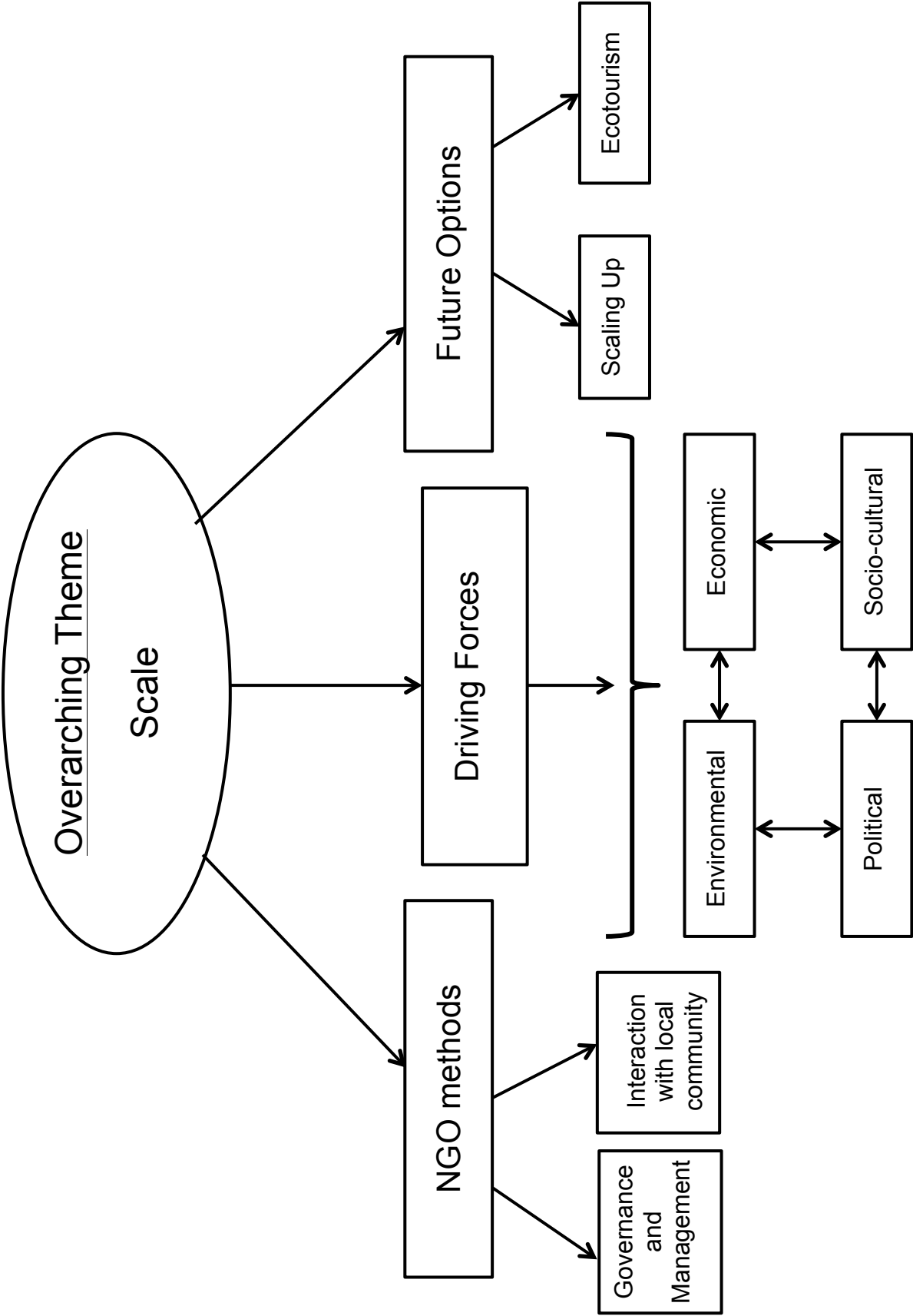


Figure 5. Thematic map to illustrate the overarching theme of scale permeating through all of the subthemes (personal collection).