

Wildlife Management Areas in Madang Lagoon, Papua New Guinea: Creating or Claiming?

by Catherine Benson, MEdSc 2007

Introduction

In October 2005, my Google protected areas alert showed several links to the creation of new protected areas in Papua New Guinea (PNG). As I clicked on the links, I was already wondering if this issue could be my master's research topic in Summer 2006. I had no idea that the timing of this press release would be the focus of my efforts to understand who was actually achieving conservation in PNG.

The statement, issued by the World Wildlife Fund (WWF), proclaimed: "The government of Papua New Guinea announced today that it will gazette 12 new protected areas covering some of the country's most biologically diverse forests, wetlands and coral reefs" (WWF 2005). The creation of these new protected areas would increase the amount of land protected in Papua New Guinea from 2.7% to 4%, in line with the Government's commitment under the Convention on Biological Diversity to eventually protect 10% of total land.

This announcement by the Government of PNG and WWF mirrors a global trend towards increasing the amount of land in the protected estate in developing countries. While such goals often mention local community involvement, global conservation efforts may not facilitate local participation or ensure that rural communities receive benefits from conserving their resources. In PNG, where 97% of the land is owned communally, approval and consent of local communities on conservation issues is legally required although it may not occur in practice. My research project examined whether or not local communities participate in the decision-making process surrounding the creation of protected areas in PNG, and the roles of non-governmental organizations (NGOs), such as WWF, in driving or facilitating this process. As a result of PNG's unique land tenure system, I was interested in whether or not local landowners were significantly involved in the creation of protected areas.

Research site

There are currently four registered Wildlife Management Areas (WMAs) located in Madang Lagoon: Laugum, Sinub, Tab and Tabad (Photograph 1). These are the first four of 12 new Protected Areas (PAs) announced by the Government of PNG and WWF in October 2005 (WWF 2005). They represent 27% of the total area of Madang Lagoon (Jenkins 2002). Approximately 16 additional areas have been identified by communities as potential WMA sites.

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I conducted research in Madang, Papua New Guinea. Madang Lagoon, located on the north coast of PNG, is four km wide and 16 km long (Jenkins 2002). The population of the lagoon is 7,323, according to the 2000 census data (NSO 2002). The average annual population growth rate in Madang province is 3.7% (NSO 2002). The population in Madang Lagoon is largely dependent on fishing and farming, and a small percentage works in the nearby RD Tuna Canning Factory or in Madang Town. Increasing fish harvests, both for local consumption and for sale in the market, are becoming a concern and are one reason cited by local landowners for creating marine protected areas. Tourism in Madang Lagoon is limited; the majority of tourists are divers. A few landowners are employed by the diving industry and land-owning clans receive payments from non-local dive operators for letting tourists dive on their reefs.

PNG's reef ecosystems are the richest on earth, particularly in terms of invertebrate

species abundance (Sekhran and Miller 1995). Madang Lagoon is the most ecologically diverse lagoon on PNG's north coast (Jenkins 2002). The ecological habitat is composed of coral reefs, mangroves and seagrass. The reef fish within the 1,085 hectares of Madang Lagoon are considered to be of local, national and global importance (Jenkins 2002). Eight hundred and fifty-eight reef species have been recorded within the lagoon. These species are representative of 57% of PNG and 14% of world reef species (Jenkins 2002).

In addition to its ecological diversity, Madang Lagoon contains areas of cultural and historical importance for the populations of Riwo, Sek and Siar. Local landowners within the lagoon respect traditional *masalai* and *tambu* areas within the lagoon, where no fishing zones were previously protected for generations.

In terms of scientific research, Madang Lagoon is one of the most studied marine areas in Melanesia because the Christensen Research



Photograph 1. Tab island is one of the four currently registered WMAs located in Madang Lagoon. This is the most ecologically diverse lagoon on PNG's north coast composed of mangrove, coral reef and seagrass habitats.

Photo C. Benson

Institute (CRI) was previously located there. CRI provided a facility for scientific and marine studies from the early 1980s until it closed due to financial mismanagement in 1997 (Jenkins 2002). However, CRI did not conduct research on local communities and resource use. According to Jenkins (2002: 8), “no studies have been carried out on the socio-economic values of Sinub Island (and the other Wildlife Management Areas) to the local resource owners.” Joshua Cinner, a marine biologist, has incorporated some socio-economic research into his studies by conducting surveys in the villages of Krangket and Riwo (Cinner 2005; Cinner et al. 2006; Cinner and McClanahan 2006).

My study is among the first to examine local community perceptions of conservation throughout Madang Lagoon, in both coastal and inland communities. To do so, I used a diverse set of social science research methods including interviews with all communities in Madang Lagoon.

Research methodology

Data collection consisted of over 200 semi-structured interviews with local landowners in Riwo, Siar and Sek villages, all of which are within Madang Lagoon. These communities are relatively close and villagers share the Bel *tok ples* language; they are usually aware of conservation initiatives or fishing practices in other villages. Interviews were conducted in *tok pisin* with the help of a research assistant, and included landowning clans both within and outside the WMAs. Landowners were questioned on seven broad topics: land and land ownership, fishing and marine tenure, creation of conservation areas, knowledge of conservation legislation, interactions with NGOs and government, and overall ecological health of Madang Lagoon, including water and sanitation issues. Topics were selected to allow a general understanding of conservation in Madang

Lagoon and the degree of local landowner involvement in the process. Key informant interviews were conducted with anthropologists, dive operators, donors funding projects in Madang Lagoon and PNG, national and international NGO staff, and they were complemented by participant observation notes and conversations with other researchers.

My overall goal was to identify recommendations to ensure better relationships between communities, protected areas and NGOs that will be applicable not only for PNG but also for other countries currently increasing their percentage of protected areas to meet global biodiversity conservation commitments.

Results

Local landowners are generally both interested in and knowledgeable about conservation. They express willingness to conserve their land and their sea, so their children will have similar access to resources. Some mention declines in fish catch over time and believe conservation has been beneficial by increasing fish yields since the creation of the WMAs in their area. Still others regard conservation as a way of attracting tourism revenue or NGO projects into their region, and so view conservation as a development apparatus from which they can potentially benefit.

Different communities and individuals expressed diverse opinions about the role of NGOs in local conservation. While many people interviewed did object to the existence and power that NGOs had in their communities and in conservation, others appreciated their work. While it is impossible to generalize these relationships, the biggest complaint I heard in Madang is that NGOs do not provide communities with alternative livelihoods when presenting them with ideas for conservation. This is illustrated by a quote from someone in Riwo: “It’s a big thing to not ruin land or sea; WMAs

are good but we must have a place where we benefit, where we catch fish and are able to have a livelihood" (Interviews in Riwo, 9 August 2006).

My research highlighted the existence of traditional forms of conservation prior to the involvement of international conservation NGOs. One Sek man explained the connections between traditional conservation and today's WMAs by saying, "Traditionally, everyone knew and talked about the demarcations and not going into someone else's reef....No WMA, no set of rules written on managing resources. Here, it's shared and talked about at community meetings" (Interviews in Sek, 9 August 2006). International conservation NGOs are now replacing these traditional forms of conservation by more "official", legally recognized WMAs in Madang Lagoon.

While each WMA I examined had some previous form of traditional conservation or local landowners interested in conservation, none of them were created without outside assistance from researchers, national environmental law groups or international NGOs. In Madang Lagoon, the first WMA in Riwo was created when a village elder contacted an American marine biologist, now working with Wetlands International, about options for conserving their land and sea. The biologist then met with local landowners and explained the different types of protected areas under PNG conservation legislation. WWF then became involved in working with the PNG Department of Environment and Conservation to gazette these areas. In this example, an outsider was needed to explain the legislation, pay the gazettal fees and negotiate the process with the government.

In my discussions and interviews with landowners and NGOs working in the area, I learned that the WWF notice that I read back in October 2005 was written long after the marine biologist spoke with landowners in Madang Lagoon in 1997. These WMAs were

designated by local landowners in 1997 with Wetlands International, officially gazetted by the Department of Environment and Conservation in 2000, claimed by the WWF press release in 2005 and recognized at a "launch" in 2006. These efforts have been recognized by the international conservation community as achievements in the creation of marine protected areas, yet it remains unclear if they have resulted in any on-the-ground changes.

Conclusions

My research in Madang Lagoon suggests that, despite progressive conservation legislation and a high degree of local control over land tenure, "official" conservation in Papua New Guinea is still driven by external sources. While local landowners may respect traditional *tambu* or *masalai* no-fish areas where fishing is prohibited by clans, these same areas have been recently declared marine protected areas by NGOs through official gazettals. Some clan members have worked with NGOs in this process while others remain unaware of the shift from traditional to legally recognized conservation. While local landowners were not all included in or aware of the decision to create WMAs, their future inclusion will be critical to the long-term viability of the initiative in Madang Lagoon. This communication gap is an obstacle to effective conservation, one that NGOs and other institutions must address.

Agrawal and Redford (2006: 17) argue that "what is often at stake is not [biodiversity] conservation, but who gets to claim it and use it, the institutional arrangements regulating its use, and allocations for losses and gains from use." Their statement is illuminating on the ways in which biodiversity conservation in Madang may be more about *claiming* conservation than *achieving* conservation. My research findings show that local landowners traditionally respected *tambu* or *masalai* areas. But international conservation NGOs have sought their

legal recognition as marine protected areas, claiming credit for “creating” conservation in areas where traditional forms of protection were already in place. It is unclear, however, if on-the-ground management practices have changed as a result of this official recognition.

This example suggests that in international biodiversity conservation circles, claiming of conservation may be becoming more important than actual conservation. International NGOs seem to be focusing more on the creation of such areas while neglecting the implementation and enforcement of WMA management plans. For instance, on the Tab Island WMA created by Siar landowners, dynamite fishing and deforestation continue despite rules forbidding such practices in the Management Plan. If international conservation NGOs are committed to biodiversity protection and livelihood sustainability, they should play a role in actual implementation of WMA management plans and in facilitating enforcement by local landowners, rather than simply playing a peripheral role in the creation of the WMA and taking credit for such protection.

Finally, tensions exist within Madang Lagoon among conservationists, dive operators, landowners and researchers. International conservation NGOs contribute to existing tensions by failing to communicate with these stakeholders. In order for these WMAs in PNG to achieve their conservation and livelihood goals, greater coordination among all groups is necessary. International conservation NGOs could provide a greater service by helping to coordinate conservation perspectives within Madang Lagoon and ensuring enforcement of agreed upon objectives. Such a role would demonstrate to local communities that these NGOs do care about conservation.

As my research shows, past resource management within the lagoon was dependent on strong inter- and intra-clan and village communication. By failing to communicate changes in resource management to local communities,

NGOs are undermining a strong, local social institution that they could strengthen to the advantage of both conservation and their position within the region.

In the global literature on protected areas there is a growing emphasis on quantitative measures of success, such as the 2010 Convention on Biological Diversity benchmarks for protected areas and the Millennium Development Goals. Furthermore, emphasis is placed on the creation of protected areas rather than on their management or monitoring. West and Brockington (2006: 610) say “protected areas are increasingly becoming one of the benchmarks by which conservation activity is measured.” They also suggest that “protected areas are coming to form a way of thinking about the world, of viewing the world, and of acting on the world” (2006: 609). Whether or not PAs are effective means of conserving global biodiversity, their creation remains as the primary mechanism to achieve it conservation; “protected areas are often viewed as a critical component in the race to preserve biodiversity” (Agrawal and Ostrom 2006: 682) and “the cornerstone of strategies to conserve biodiversity worldwide” (Brechin et al., forthcoming).

All of these statements recognize the central role of PAs in international biodiversity conservation and suggest that major conservation efforts have coalesced around PA creation. As my research in Madang Lagoon suggests, the current emphasis of the NGO conservation community on PA creation, without providing the necessary support for enforcement and implementation, may not lead to long-term global biodiversity conservation.

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