

Community-led conservation on Pemba Island *Preliminary investigations into fisheries improvement strategies*

December 2013 Mission Report

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Table of Contents

1. Summary	1
2. Context	2
The Partners	3
<i>Blue Ventures Conservation</i>	3
<i>The Manta Resort</i>	3
Summary of interviews conducted	4
3. Key findings	6
State of resources and perceptions of fisheries management	6
Community perception of existing marine conservation efforts	6
Resource use and conflict resolution mechanisms	7
Status of key fisheries.....	8
Alternative livelihood activities.....	10
Community relations.....	10
4. Next steps.....	11
<i>i. Determine existing policy frameworks and existing best practices for community-based management through consultation with national and local government and non-governmental organizations</i>	<i>11</i>
<i>ii. Identify a lead organization with adequate human and financial resources to dedicate to a robust community consultation process</i>	<i>11</i>
<i>iii. Undertake a thorough community consultation process</i>	<i>12</i>
<i>iv. Utilize peer-to-peer learning</i>	<i>13</i>
<i>v. Identify a potential target or action which can quickly demonstrate the benefits of conservation.....</i>	<i>13</i>
<i>vi. Reinforce existing efforts, such as the Kwanini Conservation Area</i>	<i>13</i>



1. Summary

The Pemba Channel, a 50-km wide channel located between Pemba Island, Zanzibar and mainland Tanzania, is considered to be a high priority for marine conservation both internationally and by the Tanzanian government. The Pemba Channel Conservation Area (PECCA) was created in 2005 to protect the area's biodiversity, however funding for the initiative ended in 2010 and there has been only limited conservation efforts undertaken since.

In late 2013, Blue Ventures (BV) was invited by the Manta Resort (MR) to undertake a scoping trip in order to review the potential for community based marine conservation in the coastal area surrounding the resort. The MR created a no-take-zone (NTZ), the Kwanini Conservation Area (KCA), approximately two weeks prior to the visit. Over a period of three days BV staff met with MR staff, held consultations with local community members and fisheries stakeholders and conducted an exploratory dive to gain a stronger understanding of the health of the marine environment in question.

Results of these consultations suggested that local stakeholders are aware that the marine resources around Pemba are in a state of decline and recognize that there is a need for improved management, as well as developing alternative livelihood opportunities to fishing. Marine resources around Pemba are open access, and local fishers feel marginalized by migrant fishers who are better equipped and often use destructive fishing techniques. Local fishers are open to the idea of creating temporary and/or permanent marine reserves, but significant barriers remain, such as the lack of a partner organization with the means to provide adequate technical support. Community members also stressed the importance of developing alternative livelihood activities in parallel with management measures. While consultation participants seemed interested in the temporary octopus closure model pioneered by traditional fishing communities in southwest Madagascar, some doubt remains as to whether this is a suitable option due to the potential damage to healthy coral reefs on opening days.

Key recommendations from the three-day consultation include:

- Consult with civil society actors, as well as national and local government to determine existing policy frameworks for supporting community-based management and to learn from previous community-based natural resource management efforts
- Identify a lead organization with adequate financial and human resources to dedicate to a robust community consultation process
- Undertake a thorough community consultation process
- Explore possibilities for the use of peer-to-peer learning and community exchanges
- Identify a potential catalyst for management which can quickly demonstrate the benefits of conservation to resource-dependent fishing communities
- Reinforce existing conservation efforts, such as the KCA



Local communities are reliant on Pemba's coastal and marine ecosystems for their livelihoods, with fishing and aquaculture being important sources of income for coastal villages. In 2005 the Government of Tanzania created the Pemba Channel Conservation Area (PECCA) as part of the World Bank-funded Marine and Coastal Environmental Management Project (MACEMP). PECCA was formed in order to **protect the outstanding biodiversity of the Pemba Channel** and enhance the contribution of marine and coastal resources to economic growth, while also reducing poverty on the island.

After the funding period ended in 2010, financing for the continuation and sustainability of PECCA was intended to be maintained through an entry fee system, whereby tourists would be charged for visiting the conservation area. To date, revenues from entry fees have been insufficient to sustain PECCA's previous donor-funded work programmes, resulting in a considerable reduction in the level of conservation activities.

Interested in supporting community-based marine conservation initiatives, and recognizing PECCA's limited capacity to provide proactive and timely support to local marine conservation efforts, the Manta Resort (MR) contacted Blue Ventures (BV) in mid-2013 to organize a preliminary scoping trip, aimed at identifying opportunities for community-based conservation. This report has been prepared by BV to summarize the results of this scoping visit and make key recommendations for moving forward in the development of community-based fisheries management in the waters around Manta Resort.

BV has no prior experience of working in Tanzania, and this visit was undertaken opportunistically to take advantage of a visit by Brian Jones and Joanna Hudson to Unguja. As such this report is intended for the MR only, and does not represent a thorough analysis of literature relating to marine conservation experiences and opportunities in the Zanzibar archipelago.

The Partners

Blue Ventures Conservation

BV is a British conservation charity whose core mission is rebuilding tropical fisheries. BV has over a decade of experience working with coastal communities in Madagascar, and has helped develop pioneering models to incentivize local engagement in marine management. These include locally managed marine areas (LMMAs), temporary octopus fishery closures, and community-based aquaculture. Strategically, BV aims to expand its impact by providing guidance and technical support to partner organizations and communities interested in learning from BV's experience.

The Manta Resort

The MR is a privately run tourist resort located close to the north-western tip of Pemba near the town of Wete. Since opening in 2008, MR's management has promoted the "kwanini" concept within its operations, as well as when encouraging broader development of tourism around Pemba.



This concept is based around the reflective nature of the Kiswahili word *kwanini* or “why?” and is intended to encourage reflection and a measured approach to ensuring that tourism develops in a sustainable manner, sensitive of local culture and customs, while safeguarding the delicate ecology and biodiversity of Pemba and its surrounding waters. To further this vision, MR hosts an annual “Kwanini Conference”, bringing together tourism and fisheries stakeholders to hold an open discussion about the direction of development and natural resource management on Pemba.

MR prides itself on hiring the vast majority of its staff locally, and has made substantial efforts to engage with surrounding communities. Examples include the trial of an organic vegetable garden, sponsoring a local football team, and providing materials for the construction of a primary school in the nearby village ^[2].

Summary of interviews conducted

The short nature of the visit meant that only limited consultations could be held with community members. These were arranged by the MR, and included speaking with a number of representatives of local fishing villages, small-scale seafood collectors, and a field agent from the PECCA office.

A preliminary meeting was organized for the morning of December 13th at MR, with 19 people in attendance in addition to BV and MR staff. Discussions were continued in a second follow-up meeting held on December 15th with nine of the original participants returning for this second meeting. In addition to the two structured meetings organized at MR, a village walk was arranged to speak closely with leaders from the nearby village about general social development in the area.

Octopus reserves - catalysing marine conservation in Madagascar

In remote southwest Madagascar, octopus fishing on the region’s extensive coral reefs provides a vital income for the vast majority of coastal communities, accounting for around 50% of all seafood exports in the region.

Over the past decade, BV has been working to promote sustainable fisheries management through village-level management associations. Temporary community-led octopus fishery closures restrict the use of approximately one fifth of a village’s available fishing grounds for 2-3 months, increasing catches and enhancing fisher incomes upon opening. Temporary closures are a powerful management tool that quickly demonstrate the economic benefits of sustainable fisheries management both to coastal communities and seafood purchasers, building buy-in for broader and more ambitious marine conservation initiatives.

Starting with a single village in 2004, these temporary octopus fishery closures have now spread along thousands of kilometres of coastline to more than 50 communities, and over 150 closures have been held in Madagascar to date.

The success of these temporary fishery closures inspired the formation of the Velondriake Association, uniting Andavadoaka and 25 surrounding villages to create a management and zoning plan, and outlawing destructive fishing practices throughout 678 square kilometres of ocean. Today the Velondriake LMMA includes six permanent marine reserves safeguarding coral reefs, seagrass beds and mangrove forests, as well as numerous temporary fishery closures and sites for sustainable community-based aquaculture.

² BV was unable to find a comprehensive list of nearby villages to the MR. This village has been noted down as Mwomattu



BV first presented a brief synopsis of projects in Madagascar, with a particular focus on its work with traditional fishing communities in western Madagascar over the past decade. Given the high dependence of Pemba's coastal communities on fishing for food and livelihoods, special focus was given to discussing conservation and fisheries management solutions that have been introduced in Madagascar and demonstrated the short-term economic benefits to fishing communities in acceptable timeframes. When providing an overview of these experiences from Madagascar, it was stressed that all management measures were undertaken with the consent and support of communities, with all management decisions being agreed upon by local consensus; the communities themselves were responsible for the enforcement of these measures, which have been enshrined in local law called *dina*. Following this presentation, participants were asked a number of questions about local perceptions of the state of resources, threats to their continued productivity, community attitudes towards conservation efforts and the status of seafood markets.

Topics discussed on the second consultation included resource use and access rights, conflict resolution mechanisms, and the status of seafood markets in Tanzania within the local and national areas.



Figure 2 Focus group participants at the Manta Resort





Figure 3 The Kwanini Conservation Area as seen from the Manta Resort's underwater room

The Misali Island Marine Conservation Area (MIMCA) (see text box on page 8) is well known throughout the island, and has been in operation for approximately 15 years. Theoretically, MIMCA is a potential model to be replicated, as it has existed long enough to show a spillover effect to surrounding areas^[4]. Participants mentioned that they had observed the spillover effect, but also believed that the MIMCA was subject to poaching and illegal fishing. The MIMCA was cited a couple of times during discussions as a potential demonstration area to show the effectiveness of permanent marine reserves, however overall the idea received a lukewarm response from participants, perhaps due to its distance from the northern fishing settlements near the MR.

Resource use and conflict resolution mechanisms

Marine resources around Pemba Island are open access. Due to Zanzibar's status as a semi-autonomous part of Tanzania, both mainland Tanzania and Zanzibar have established their own fisheries policies separately^[5]. Fishers from village on the northern tip of the island indicated that large teams of fishers (up to 60) come from as far away as Kojani on the east coast of Pemba, and Unguja (basing themselves out of the nearby town of Wete) to fish in this area. Despite the fact that local fishers are concerned about overfishing and resource depletion as a result of these migrant

⁴ January, M. and Ngowi, H.P. (2010) 'Untangling the Nets' - The Governance of Tanzania's Marine Fisheries. The South African Institute of International Affairs (SAIIA), RESEARCH REPORT 5.

⁵ Levine, A. (2002) Global Partnerships In Tanzania's Marine Resource Management: NGOs, The Private Sector, And Local Communities. University of California, Berkeley.



fishers, they stated that it would be difficult to try to turn these people away, due to the open access nature of Pemba's inshore fisheries. These migrant fishers often employ potentially highly unsustainable fishing gears, including small mesh nets and SCUBA. **Opportunism by migrant fishers is a major challenge for community-based fisheries management;** the benefits from management initiatives may be disproportionately reaped by outsiders, who have sacrificed nothing in forgoing fishing in closed area, and are often better funded with more effective fishing gear.

There does not seem to be any clear mechanism for resolving conflict at the village or inter-village

The Misali Island Marine Conservation Area

Misali is an uninhabited island located 10 km west of Chake Chake on mainland Pemba^[3]. The Misali Island Marine Conservation Area (MIMCA) was established in 1996 as a direct response from the local and international community to its development as a tourist resort^[4]. The protected area covers 22 km² including the core zone of which 1.4 km² is non-extractive. The MIMCA conservation area is currently managed by CARE International and local fishing communities under Islamic Sharia law. By utilising Islamic religious ethics, local fishers were more willing to protect the marine area by abstaining from fishing within the NTZ.

Links

- <http://www.ifees.org.uk/story-activities-cat68-page298>
- <http://news.bbc.co.uk/1/hi/world/africa/4271519.stm>
- <http://www.arcworld.org/projects.asp?projectID=170>
- <http://www.rareplanet.org/en/solution-search-entry/islamic-marine-conservation-misali-island-zanzibar>

level, equivalent to the aforementioned *dina* in Madagascar. When a hypothetical situation was described of a community conservation area that needed to be enforced against poachers, a village chief stated that they have not had to deal with such a situation, and would need to determine an enforcement procedure. The same local leader mentioned that if someone was caught fishing in the new KCA, it might be possible to impose a fine. For example if their catch was worth 20,000 TSH, then 8,000 TSH of that could be taken as a penalty and used for development work, such as contributing to the building of the new school. It was

not apparent if there was a penalty system in place or that there was a clear legal mechanism for how such a fine would be enforced.

When asked about the ability to work with the local police for enforcing the rules of the KCA, community representatives cited levels of mistrust as a potential barrier. Presented with the hypothetical situation of a dynamite fisher coming to fish on their reefs, participants aggressively stated that the person would be threatened with physical harm. While this may not necessarily be true, it at least indicates that there are limits to what is perceived as within the realm of acceptable use of an open access resource. This situation is similar to that which Blue Ventures has encountered from working in the south-west of Madagascar.

Status of key fisheries

Discussions focused on key fisheries that BV has found useful for initiating community-based marine conservation in Madagascar. This discussion was very cursory, and will require further research into the supply chains, market conditions, and presence of buyers to identify whether similar opportunities exist on Pemba.



Octopus

As in Madagascar, the big blue or day octopus (*Octopus cyanea*) is a commercially valuable species in Pemba, targeted for export and could provide an interesting opportunity for cultivating community engagement in marine management, since it responds quickly to short term closures of fishing. In southwest Madagascar, commercial collection infrastructure is well developed, with three separate processing plants exporting octopus purchased directly from fishers, targeting markets in Europe and Mauritius. A network of village-based collectors is in place and receives daily supplies of ice during the spring tides (when octopus is fished). On Pemba no such system is in place; villagers indicated that independent buyers purchase the octopus locally and then ship it across the channel for sale in Tanga or in southern Kenya. This assumes the presence of commercial processing facilities at the final destinations to purchase and process this octopus, though these final locations were not known by the local fishers.



Figure 4 A Malagasy fisher with a large octopus after a temporary octopus closure

While the short-term octopus fishery closures have worked well and been replicated throughout Madagascar, there are concerns about recommending it as a management solution in Pemba:

- First is the ability of collectors and buyers to handle a surplus in production on an opening day when fishing effort can increase dramatically.
- Second, fishers indicated that favored octopus fishing grounds are still largely made up of healthy, complex coral reefs. Opening days tend to focus fishing pressure on a specific area, which could lead to heavy trampling and physical damage to a previously healthy reef. In Madagascar, this is not deemed a serious problem, as the reef flat areas gleaned for octopus are largely rock and rubble with very low levels of coral growth.



Crab/Prawns

Mud crabs (*Scylla serrata*) are found in mangrove areas and are widely fished, and cultivated in other areas in east Africa. Fishers from the village directly to the east of the MR (Tondooni) stated that they don't commonly collect this species, but that some fishers do visit the extensive mangrove forests in the bay on the east side of the northern peninsula to target crabs as well as prawns.

Alternative livelihood activities

Lack of effective management of fisheries came up repeatedly in discussions, as the villagers stressed that catches are declining and that the perceived increase in fishing pressure is not sustainable. Despite the fact that fishers also engage in other activities, such as farming and raising of livestock, all community members encountered on this visit emphasized a strong reliance on the sea for their livelihoods. Organic farming has been trialed by the MR, but still faces significant barriers before it can be widely adopted.

Seaweed farming or aquaculture already exists as an alternative to fishing, and is practiced fairly commonly. As tourism develops in the Zanzibar archipelago, the potential for conflict between beachfront hotels and artisanal seaweed farmers exists. Indeed, the MR has already expressed concern that seaweed lines contribute to littering the beach, increase sand flies, and result in the trampling of shallow-water lagoonal corals, degrading key habitat while at the same time reducing the snorkeling value of the near-shore area.

Development of alternative livelihood activities for coastal communities in resource-dependent tropical coastal communities is an incredibly difficult undertaking, which generally has very little success. A recent study of the socio-economic benefits of marine protected areas (MPAs) found that alternative livelihoods came exclusively through full-time employment in the tourism sector^[6]. Other projects, such as matt weaving and charcoal production generated some income, but ultimately failed due to insufficient capacity building to enable communities to manage the businesses in the long term^[6].

Community relations

Significant progress has already been made by MR in cultivating strong community relations, as indicated through discussions with community members, as well as an address recently given by the Minister of Tourism, which specifically commended the MR on its approach to tourism development. The community leaders that met with BV appeared supportive of the conservation area, however there does seem to be a lack of clarity about whether the area will be closed temporarily or permanently. During discussions community members mentioned that they thought catches would be better in the conservation area once it reopens. This was not explored in more detail, for fear of causing further confusion.

⁶ Leisher, C., van Beukering, P. and Scherl, L.M. (2007) Nature's Investment Bank: How Marine Protected Areas contribute to poverty reduction. The Nature Conservancy. 52pp.



understanding of the local context and community beliefs and perceptions. It has the added benefit of demonstrating to fishing communities that their knowledge and concerns are paramount in the planning process, helps to stimulate analytical thinking about the resource management challenges they face, and will ultimately contribute to building consensus towards eventual conservation actions.

It is very likely that similar exercises have been carried out during the establishment of PECCA. Existing data should be utilized and built-upon as much as possible.

iv. Utilize peer-to-peer learning

The MIMCA provides a great opportunity for Pemba fishers to observe the effects of long-term protection of the marine environment. If the MIMCA has been managed effectively, fish populations within the limits should be abundant, and fishing around the reserves limits should have shown improvement through the “spillover effect”. Fishers from around this area who have witnessed this could provide valuable testimonials to the fishers in northern Pemba.

v. Identify a potential target or action which can quickly demonstrate the benefits of conservation

This is a difficult process, and requires a thorough community consultation process to identify where true potential lies. Octopus may present an interesting opportunity (replicating the successes seen in Madagascar), but there are still some important questions to be answered as to its suitability, especially in terms of not degrading the existing reefs further by the increased fishing efforts on opening days

vi. Reinforce existing efforts, such as the Kwanini Conservation Area

The creation of the KCA is an important starting point, and while it appears to benefit from strong community support, continued communication efforts are necessary. During the discussions with community representatives, it appeared that there was still confusion over the permanent nature of the closed area, as well as whether or not pirogues were allowed to pass through the area. BV's experience in Madagascar has shown that communications with fishing communities are challenging, and even the most straightforward message can become convoluted. Efforts need to be made to engage local leaders in ongoing communications and awareness raising.

