

Motivations to Support Marine Conservation Projects in North Tarawa, Kiribati

Turang Teuea^a and Naohiro Nakamura^{a,#}

^aSchool of Geography, Earth Science and Environment, Faculty of Science, Technology and Environment, The University of the South Pacific, Suva, Fiji

[#]Corresponding author. E-mail: nakamura_n@usp.ac.fj

Abstract

Local communities' support for resource conservation projects are essential for their success. Nevertheless, in the Pacific Island countries, many community-based conservation (CBC) projects remain ineffective due to the lack of community members' engagement. To better understand the motivations of local community members to support resource conservation projects; this research looks at the four community-based conservation sites in North Tarawa, Kiribati. We conducted semi-structured interviews and focus group discussions to investigate why community members support (or do not support) CBC. The findings reveal that while local community members are overall aware of the significance of resource conservation, they do not always support or participate in conservation projects. Indeed, the local community members' motivation to participate in such projects are influenced by various factors, including their status in a household or community, village practices, the quality of community leadership, and their past experiences with similar projects. Our research also finds that community members become unsupportive with conservation projects when their daily livelihood activities are restricted by the projects. This research suggests that project organisers need to understand such factors and be strategic to retain community members' support for the success of conservation project.

Keywords: community-based conservation, marine resources, participation, motivation, livelihood, small island countries, Pacific, Kiribati

INTRODUCTION

Community-based conservation (CBC) values the participation of the local community members in the planning, design, and implementation of a conservation project. CBC also strives to empower local communities by integrating their knowledge and values into the designs of a conservation project (Vargas and Díaz 2014). In the Pacific Island countries (PICs), community-based marine conservation initiatives have been implemented amongst other CBC projects (Johannes 2002). Kiribati, for example, incorporated CBC initiatives in the

country's Fisheries Policy 2013-2025 and Environment Policy; and several CBC initiatives to protect coastal marine resources have been implemented. Nevertheless, a number of past conservation initiatives in Kiribati have struggled to gain the support of local communities, which has resulted in the lack of positive outcomes from the projects and eventual project terminations. Kiribati is an isolated atoll island country where access to large-scale commodity supplies is limited. Hence, people's livelihoods substantially rely on marine resources and conserving marine resources is inevitable to sustain livelihoods. Why then do CBC initiatives fail to gain support from communities? What do (or do not) attract community members to conservation projects? While the literature on CBC has stressed the importance of community support and local participation in conservation projects, it appears that there are still challenges to retain community support in CBC projects. In particular, individual community members' motivational factors, i.e. the reasons why each individual does (or does not) support conservation projects have not been much investigated. This article addresses these questions, using the case studies

Access this article online	
Quick Response Code:	Website: www.conservationandsociety.org
	DOI: 10.4103/cs.cs_19_51

of four community-based conservation sites in North Tarawa, Kiribati.

THE PARTICIPATION AND SUPPORT OF LOCAL COMMUNITIES IN CONSERVATION INITIATIVES

Environmental conservation scientists have intensively discussed the concept of CBC and its definition varies depending on management aims, governance systems, autonomy arrangement, and community participation processes. According to Ruiz-Mallén et al. (2015: 1), 'community-based conservation is a wide range of natural resource management practices improving the conditions for the co-existence between humans and nature'. CBC is concerned with decision-making processes regarding the use and access of the natural resources within local communities (Risien and Tilt 2008) and attempts to incorporate traditional ecological knowledge and values of communities on the earmarked natural resources while designing and planning conservation initiatives (Gruber 2011). The accumulation of knowledge and experiences of the local communities in natural resource management combined with those of the external actors (such as the government and donors) can better inform the designs of CBC projects (Kothari et al. 2013).

In light of the paradigm shift to a people-centric approach, the CBC approach has also been observed in the PICs since the 1980s. According to Johannes (2002), CBC has widely practiced in the PICs more than any other regions. This is because in the Pacific, customary tenure and the high dependence on natural resources for human sustenance and livelihoods prevail and the establishment of marine protected areas without community consultations is undesirable in the region (Hunnam 2002). In this respect, the region has recognised CBC as the most practical and effective conservation model to protect biodiversity (Aalbersberg et al. 2005). For instance, Fiji offers a classic example of initiatives founded on traditional marine tenure and is renowned globally for its well-established Locally Marine Managed Areas (Aswani et al. 2017).

Despite such development, CBC initiatives have been criticised for the lack of participation of local communities (Agrawal and Gibson 1999); the very element it is praised for. According to Hunnam (2002) and Keppel et al. (2012), one of the main reasons why conservation initiatives in the Pacific region have been ineffective is due to the inadequate participation of local communities in the planning process. Keppel et al. (2012) argue that in the PICs, investigations on local livelihoods and cultural values of community members have not been conducted as part of the procedures of CBC projects. That is, project organisers lack the understanding about local people's marine resource use and cultural practices and fail to incorporate them into projects, which results in the mismatch between local people's needs and the project design. Such CBC projects are socially and culturally unacceptable among community members and fail to gain community support. A solution is to incorporate the community's perspectives into CBC projects in the planning

stage and to motivate community members to participate actively.

Keppel et al. (2012) identify additional reasons for the failure of CBC initiatives. That is, CBC initiatives have not provided alternative sources of income to community members. Resource conservation often involves the restriction of daily resource use, hence providing an alternative source of income (e.g., conservation subsidies, employing resource users at conservation sites, aquaculture) for community members is necessary to ensure their survival (Karki 2013; Doane 2014). Kronen et al. (2010) argue that fishing communities without alternative sources of income are much more reluctant to implement conservation projects, while more prone to exploit their resources due to their over-dependence on fisheries. The lack of awareness amongst community members on the nature of biodiversity-environment conservation projects has been an additional hindrance (Hunnam 2002). For example, in some conservation projects, the communities were not informed about the goals and objectives of a conservation site and local community members saw the restrictions on collecting resources for their daily life as injustice (Thaman et al., 2016). Furthermore, the conservation initiatives in the PICs have tended to be implemented through a top-down approach, which has undermined local community values and practices (Gaymer et al. 2014). Keppel et al. (2012) illustrate an example from the northern Pacific where a biodiversity conservation project failed due to the lack of knowledge among the conservation practitioners on the social and cultural norms of the island. Hence, they suggest that a social and cultural analysis is a vital component in conservation planning and should be undertaken thoroughly to avoid the conflict of interests in conservation initiatives. Likewise, Haraguchi et al. (2014) emphasise the importance of integrating customary tenure values into conservation planning and monitoring. Based on a case study from the Solomon Islands, Boso et al. (2016) prove that biodiversity conservation initiatives that have integrated community's perspectives have a higher chance to produce a positive result and the likelihood to retain community support is high. Such projects are also sustainable. A similar argument is made by Souto et al. (2014), who demonstrate that if community members elaborate conservation targets, projects are more likely to directly address local needs. Eventually such projects will improve the well-being of the community and gain support from the local population. Overall, investigation and incorporation of the values and needs of the local people in conservation projects is essential for their success (Hunnam 2002). Such arguments have been made by many others in order to make CBC initiative more beneficial to communities (e.g., Abdullah et al. 2014; Bennett and Dearden 2014; Katikiro et al. 2014; Kincaid et al. 2014; Masud and Kari 2014; Méndez-López et al. 2015; Bennett 2016; Aswani et al. 2017).

It is ultimately an individual's choice whether or not they support a conservation initiative. The decision may be influenced by various factors, either external or internal to the community in which they live, and it all depends on

context. For instance, Broad and Sanchirico (2008) identify important reasons as to why community members support (or do not support) the establishment of marine reserves. They support the establishment of marine reserves when their livelihood is reliant on the income generated from the tourism activities borne by the marine reserve. They are unlikely to support the establishment when they depend largely on fisheries for livelihood and their activities are restricted. Individual decisions and motivations to support conservation projects are also shaped by the complexity of social, cultural, and economic systems as well as individual concerns on the well-being of the community (Ruiz-Mallén et al. 2015). Young et al. (2016) highlight the contrast of the motivations among fishermen in Australia and in the Solomon Islands. For Australian fishermen, to enjoy the ‘environment’, ‘nature’ and ‘scenery’ were the top motivations. Meanwhile, for the Solomon Island fishermen, gaining food and income from fishing was important, demonstrating the diverging motivations between a subsistence fishing community in the Solomon Islands and a recreational fishing community in Australia. This study suggests that the establishment of marine reserves in the Solomon Islands might face challenges, if the project planners do not try to understand the need of local community members and find alternatives for local fishermen. As such, individual fishermen’s views and values on marine resources need to be integrated into conservation initiatives. Hence, it is critical to analyse not only community values and practices but also individual views on the resources and how they are connected to their motivational factors to support conservation projects.

BACKGROUND

Kiribati is an island country with a land area of 811 square kilometres, situated in the South Pacific region. The country is divided into three island archipelagos: Gilbert, Lines and Phoenix Island groups. According to the 2015 census, the population of Kiribati was 99% I-Kiribati or Kiribati/Mix with no substantial difference between ethnic subgroups (Kiribati, Kiribati/Mix, Tuvalu, Other) (Delisle et al. 2016). Gilbertese (Kiribati language) is the national vernacular and English is used as the official language being taught in schools across the country. A traditional Kiribati culture conforms to a patriarchy system placing males as heads of households and senior men as heads of village communities.

Located in the Gilbert Group of the Kiribati islands, North Tarawa is one of the three administrative subdivisions that make up the Tarawa Atoll (Figure 1) with the other two being Betio and the country’s capital, South Tarawa. North Tarawa is the only rural subdivision of the atoll (with Betio and South Tarawa classified as urban towns) and comprises 15 islets with a total land area of 31.2 square kilometres (Delisle et al. 2016). Many of these islets are separated by a lagoon channel and some of the bigger islets have been connected by a causeway construction. The island is the 13th largest island of Kiribati and according to 2015 census, it hosts the second largest population in the country with 6,629 persons.

Atolls are often classified as marginal habitats for humans based on their small size of habitable landmass (Thomas 2001). As such, the challenges faced by the Kiribati societies include poor soil fertility, absence of surface fresh water, and extreme vulnerability to coastal erosion and flooding due to the island’s low elevation (Thomas 2009, 2014). However, the extensive reef and oceanic environment provides the mainstay of protein and a vital source of revenue, income, employment, and livelihood in Kiribati. Kiribati has one of the largest exclusive economic zones (EEZ) in the world spanning over 3.5 million square kilometres of ocean. Oceanic fisheries in particular contribute to over 70% of the Kiribati’s government revenue, 80% of I-Kiribati are directly engaged in coastal fishing activities and fish constitutes over 80% of the country’s annual protein intake (Delisle et al. 2016). Fisheries are therefore extremely important to the revenue, food security, and livelihood of the people of Kiribati. North Tarawa shares a lagoon with South Tarawa and Betio and has an extensive lagoon flat that imposes difficulties for travellers to the island when caught by low tide (Figure 1). The Island is the main source of many marine and agricultural products in the South Tarawa market such as fish, coconuts, and building materials (Office of Te Beretitenti and T’Makei Services 2012). (Source: Google Earth)

Our four case study sites – Buariki, Nooto, Marenanuka, and Tabonibara – are all located on North Tarawa atoll (Figure 1 and Table 1). In all villages, the major livelihood activity is fishery-related. While in Nooto and Marenanuka, villagers fish predominantly for their own consumption; Buariki and Tabonibara villagers commute to South Tarawa on a daily basis to sell marine products. Silver biddies, *te amori* (*Gerres ayena*) from Tabonibara has been particularly in high demand at the South Tarawa market. The villages are also home to the three community-based marine conservation initiatives, namely i) the Community-based Fisheries Management (CBFM) Projects; ii) the Community-based Mangrove Management Plan (CBMMP) Project; and the Turtle Monitoring Project (Table 2).

The CBFM and Turtle Monitoring projects conform to similar approaches. That is, both projects were initiated by government agencies and donors, introduced into the communities, approved in village assemblies and eventually established into community-government collaboration initiatives. Meanwhile, the CBMMP project was initiated by the Nooto village leaders, who approached the Ministry of Environment on their vision to protect mangroves from deforestation. The dialogue culminated in the creation of

Table 1
Population by Village in 2015

Village	Population Sample			Household	18 or above
	Population	Female	Male		
Buariki	752	362	390	152	54%
Nooto	891	474	417	107	37%
Marenanuka	161	87	74	29	55%
Tabonibara	310	158	152	152	65%

Source: 2015 census



Figure 1
Tarawa Atoll (after Tebano 2008)

Table 2
Summary of studied projects

Name of Project	Location	Year Started	Implementing Partners	Objectives	Key Outcomes	Status
Community-based Fisheries Management (CBFM)	Buariki, Tabonibara	2014	Government of Kiribati (MFMRD), ANCORS, SPC, Buariki and Tabonibara community	Buariki - conservation of bonefish, <i>ikari</i> (<i>Albula neoguinaica</i>) and goatfish, <i>te maebo</i> , (<i>Mulloides</i> spp.) Tabonibara - conservation of silver biddies (reef fish), <i>te amori</i> (<i>Gerres oyena</i>)	Seasonal fishing bans for target species; village management plan; bylaws	Ongoing
Community-based Mangrove Management Plan	Nooto	2012	Government of Kiribati (MELAD), SPREP, Nooto Community	Deter mangrove deforestation and conserve mangrove ecosystems in Nooto	Nooto Mangrove Management Plan; Nooto bylaw on mangrove	Ongoing
Turtle Monitoring Project	Marenanuka	2007	MELAD, NZAID, Marenauka Community	Monitor the status and conserve marine turtles in Marenanuka	Increase community awareness on the importance of turtle conservation; train villagers on turtle tagging and monitoring, record tagging and turtle nesting	Intermittent

Source: Government of Kiribati 2013; Ministry of Environment, Lands and Agricultural Development 2013; Environment and Conservation Division n.d

the CBMMP project, which was also approved in the village assembly.

In Kiribati, a few marine conservation initiatives were documented within the Gilbert group (Government of Kiribati 2013; Campbell and Hanich 2014; Environment and Conservation Division n.d). While there have been some seasonal closed marine areas created by the local communities for the purpose of stock enhancement (Environment and Conservation Division, n.d), the past practices of conserving the marine biodiversity in Kiribati has rather been ‘exclusionary and restrictive’ (Vierros et al. 2010: 4) in terms of community participation. In North Tarawa, government-driven marine management initiatives began in the mid-1990s. These include: the North Tarawa Conservation Area (NTCA), created in 1996 (Government of Kiribati 2013) and the Nooto Ramsar Site,

created in 2013 (Environment and Conservation Division, n.d). The NTCA was created to protect important marine species and ecosystems and North Tarawa was selected based on its high biodiversity and proximity to South Tarawa. The proximity of North Tarawa to the capital island often puts it in a vulnerable position due to the pressures of overfishing from the South Tarawa fishermen. (Government of Kiribati 2013). The Nooto is a Ramsar wetland conservation site that covers the terrestrial and marine habitats of Nooto. According to the MELAD, the Community-based Mangrove Management Plan (CBMMP) project in Nooto was developed as one of the objectives of the Ramsar Site project. As stated above, marine resources are crucial for the livelihoods of North Tarawa and the communities should benefit from any projects to protect marine resources from over exploitation. Nevertheless, the

NTCA became ineffective and was eventually terminated. In addition, the development of the Ramsar Site project was not widely recognised among community members and the Nooto's village chairman was under the assumption that the project was no longer active (Village Chairman, Nooto, pers. comm. 2017). We could not find any archive that documented the reasons for its demise but according to a senior citizen of North Tarawa whom we interviewed in 2017, the NTCA failed due to the weak legal framework and absence of community support.

The basis for the creation of the NTCA and the disconnection between the government actors and the communities in the Ramsar Project revealed how community participation and input was undervalued in the processes of marine conservation in the past and how the conservation agenda is often imposed onto island communities. Despite its infancy stages, the CBC initiatives in Kiribati can provide important lessons and good practices particularly as initiatives proliferate in the country over time, on the assumption that the government retains its vision for CBC.

METHODS AND FINDINGS

Methods

The interviews were conducted in the period between the 6th and 21st of April, 2017. Firstly, two government officials of the MELAD and the MFMRD on South Tarawa were interviewed to provide background information on the marine conservation initiatives in North Tarawa and the government's views and roles in the initiatives. The MELAD official was a project coordinator for the CBMMP and the Turtle Monitoring Project, whilst the MFMRD official was a project officer for the CBFM project. They were both extensively engaged in the planning and implementation phases of the project(s). Secondly, face-to-face interviews with 31 locals (10 people participated from Buariki and Nooto respectively, while Tabonibara had six and the smallest village of Marenanuka had five participants) were conducted in North Tarawa (Table 3). These 31 participants were strategically selected based on their age, gender, and occupation (such as the village chairman, housewife, fisherman, etc.) and were recruited on each site through the assistance of the village councillors. Finally, 4 focus group discussions were arranged as follows: 1) the Catholic men group, consisting of 8 men aged between 20 to 70 representing different villages from North Tarawa; 2) the Catholic women group, consisting of 6 women aged between 25 to 50 from

the villages of Tabonibara and Marenakua; 3) the Kiribati United Church male youth group, consisting of 5 youths aged between 16 to 25 from Nooto; and 4) Buariki female youth group, consisting of 4 female youths aged between 16 to 22 from Buariki (Table 4).

In the face-to-face interviews and focus groups, the participants were asked the same set of questions, i.e., how the conditions of marine resources have changed over the years; what the potential factors of the changes are; if they can identify any community-based marine conservation initiatives and their level of engagements if any; and what their experiences are with these initiatives. The participants were then asked to explain their motivation (or demotivation) factors to support conservation initiatives and marine resource conservation in general. All interviews were conducted in the Gilbertese language and the interviews cited in the text are translated by the authors. We observed that in focus group discussions, a particular view expressed by a participant was often echoed by other participants and similar experiences and perspectives were shared even among the participants who came from different communities, which formed a strong collective voice on matters discussed.

Findings

The low-lying atoll island countries such as Kiribati are now facing the threat of the sea level rise and this phenomenon is internationally recognised. Nevertheless, in all the four sites, approximately 70% of the interview participants pointed out fish decline as the most pressing environmental issue they were facing. The participants identified several reasons for fish decline, most of which are due to various human activities. These include overfishing; the use of destructive fishing methods (using crowbars and undersized gillnets); the practice of gutting *bêche-de-mer*, *te kereboki* (*Actinopyrga miliaris*) in the lagoon (a common practice once in Marenanuka which is believed to discharge toxins to the lagoon flats); the construction of causeways; the breaking of traditional fishing taboos such as the banning of dancing, singing, and the use of bright lights along the coast on the night of a fishing activity which are believed to scare the fish making them flee to other areas; and poor waste management (dumping rubbish onto the sea). With regard to overfishing, fishermen from South Tarawa were in particular blamed by the participants.

The interview participants in North Tarawa do not necessarily recognise warmer temperature and coastal erosion due to sea-level rise as significant threats to their livelihood as households in the village are located inland. Rather, fish decline is substantially impacting their livelihood. According to the interviewees, fish decline over the decade has made fishing more costly and time-consuming and they claim that nowadays they have to sail far from the coast and spend extended time at sea to harvest for a daily meal. The interview results strongly indicate that declining fish stocks has impacted the access to food and cash income in all four villages. As a result, the major source of protein has been shifting from freshly caught fish to

Table 3
Interview sample size per village

Village	Population Sample		
	Sample Size	Female	Male
Buariki	10	5	5
Nooto	10	5	5
Marenanuka	5	3	2
Tabonibara	6	3	3

(Original)

Table 4
Sample size per focus group

Focus Group	North Tarawa Catholic Men Group	North Tarawa Catholic Women Group	Kiribati United Church Youth (Male) Group	Buariki Youth (Female) Group
Sample Size	8	6	5	4

(Original)

imported tinned fish (Unimwane, Nooto, 2017, pers. comm). A few respondents (2 from Marenanuka) stated that the impact of fish decline was minimal because there are other marine life to fish for food such as octopus, locally known as *kikao/kiika* (*Octopus spp.*), which they claimed was abundant in the village. Regarding the measures to deter fish stock and food crop decline, overall, the interviewees expressed a strong willingness to improve food security in their village. The interviewees then wished such measures to be implemented by the village, rather than by the government or NGOs. When they were asked why such initiatives are sometimes not supported by villagers, they expressed mixed views and our interviews demonstrate some controversies over the conservation initiatives developed in the sites.

First of all, the majority of the interviewees of all the four sites, regardless of gender and age, were aware of the importance to protect marine resources for their livelihood, and also for future generations. For example, community support was strong in Tabonibara and Buariki towards the CBFM project since the project would replenish the fish stock that was evidently depleted in both villages. During the implementation of the seasonal closure for fishing mature silver biddies in Tabonibara, a boom of juvenile silver biddies was observed about a year later and this ecological tangible benefit boosted the level of motivation in Tabonibara. This positive outcome even influenced the neighbouring village of Marenanuka, which expressed interest in the potential expansion of the CBFM project. The councillor from Tabonibara stated:

Since the seasonal closure of the mature silver biddies, the village was very excited to see a boom in the juvenile species. This was a very positive outcome to the village because the juvenile species have been depleted for a long time and to see them in abundance in the lagoon was just very inspiring and it reaffirmed that we were doing the right thing. The village is now planning to replicate the same conservation measure on *te mwanai* (mud crabs, (*Cardisoma carnifex*)) which are constantly being harvested here at an alarming rate. (Village Councillor, Tabonibara, pers. comm. 2017)

Another key factor that contributes to enhancing community support in marine conservation initiatives is the community's interest to ensure the provision of key livelihoods. Silver biddy is a key livelihood resource and generates cash-income for the majority of the unemployed population of Tabonibara. According to the interviewees, the people of Tabonibara used to fish silver biddy in abundance and sell in the market in North and South Tarawa. However, the people of Tabonibara feared that they would completely lose their main source of livelihood if the silver biddy vanished completely from their lagoon. The CBFM project provided the opportunity to rectify

the problem of the depleted fish stock and attracted the high level of support:

The project is good because it will bring back thriving mature silver biddies. However, many of the villagers are suffering because they have lost their market produce, their source of income, their main source of food and their fishing nets are now of no use and are hung to rot in their houses. Because our fishing activities are restrained, so too is our access to fish. Many people in the village are now turning to imported canned food in the stores for the alternatives of protein. (Old man, Tabonibara, pers. comm. 2017)

Similarly, there was genuine concern for the health and wellbeing of the marine environment and this concern was noted as one of the strongest factors that attracts community support in marine conservation initiatives. In particular, the older population were inspired to support marine conservation because of their desire to bring back the healthy fish stock and vibrant marine life that existed in their village during their younger days:

I am very concerned about the marine life here in Nooto. In our younger days, we went swimming in the lagoons on a daily basis with our friends and we played around with fish and caught them with our bare hands. Nowadays, fish is disappearing and it saddens me. I support marine conservation in the hope that it may be able to at least restore the fish stock that was once thriving in this very village. (Old woman, Nooto, pers. comm. 2017)

In Marenanuka, the villagers were inspired to informally ban the killing of turtles in their village after learning that the species are globally endangered:

Sea turtles take many decades to mature and reproduce so our village has decided to ban the killing of turtles to save the species from extinction and to ensure that they remain for our future generations. (Village councillor pers. comm. 2017)

However, the reasons to support such projects are not straightforward. In North Tarawa, each of the four study sites has established their own set of rules and penalties for the respective conservation initiatives operating within their jurisdiction. In Buariki, for example, a person caught fishing during the fishing closure season will be fined AUD 50.00 and have his or her fishing gear suspended. The fishing gear will be returned upon the payment of the fine. The same penalty applies in Nooto and Tabonibara but the fines range from AUD 50-100. If the fine is not paid within the given timeframe, the offender may be forcibly removed from the village. This practice appears to be extreme but in North Tarawa, protecting community values is prevalent and this tendency also influences community members' decisions:

My family is supporting the seasonal fishing ban of silver biddy catching not because we agree to the concept but

because we do not want to be considered outlaws of the village and be given sanctions. (Old woman, Tabonibara, pers. comm. 2017)

According to the interviewees, many people supported the conservation initiatives to avoid public shaming and village punishments. The monetary fines are considered burdensome, as most people are unemployed. The village warden has the onerous task of policing the village but offences can be reported by any member of the community. A number of cases involving monetary fines and fishing gears confiscation had been reported at the time of this research in Buariki, Nooto and Tabonibara. However, there were no reported cases involving the ultimate penalty of forced removal from the village.

Similarly, the trust with their local leaders, and cultural hierarchy--where men hold higher prominence than women exists in Kiribati--plays a crucial role in determining the level of community support. With regard to cultural hierarchy, those who hold a higher cultural status in their families, such as the heads of households or village chairman are culturally obligated to attend village assemblies and consultations and thus have access to information on the matters discussed in the assemblies. For example, the head of a household (a Kiribati household is represented by a male) represents his household in village assemblies and absorbs the information and the knowledge shared and renders opinions on behalf of his household. If he supports conservation initiatives, the rest of his household will follow suit and vice versa. Women, youth, and children are not expected to attend village assemblies; instead, they attend to the house and family chores. In this respect, awareness and information on conservation initiatives and goals is lower among women, youth, and children. As a result their support towards a marine conservation goal is mere adherence to the head of the family:

I only hear of the CBMMP project through my husband but I do not attend any of the consultations held here in Nooto. My husband attends on my behalf. I support the project in principle but I don't intend to partake in any of its programmes because that is my husband's role. I have a lot of work to do at home and I don't have much time to be engaged in such programmes. (Business woman, Nooto, pers. comm. 2017)

Cultural factors as the reasons to support conservation projects also strongly function on the community level. The cultural sentiments of trusting and relying on the local leaders in a traditional village setting is embedded in the lives of many I-Kiribati. The trust and reliance towards village leaders was one of the significant factors that affected the level of personal and communal motivations in community-based marine conservation initiatives in the four study sites. During a focus group discussion with the women group from the Catholic Church, a participant highlighted that communities in North Tarawa become supportive and compliant towards an initiative if their village leaders are committed and show dedication to the course. This view was strongly echoed throughout the four study sites. In Marenanuka and Tabonibara, the locals praised the effective leaderships in their villages and claimed that the

strong community support that exists within their village is the outcome of such leadership styles:

The executive committee and leaders of this village are very proactive. This has helped shape the people's trust towards the leaders and their decisions. The people of Tabonibara are known for their trust and respect towards their village leaders. (Taarai, Tabonibara, pers. comm. 2017)

On the contrary, there was admittance in Buariki and Nooto on the deteriorating community support towards the CBFM and the CBMMP respectively due to the weakened leadership and existing conflicts.

The conflicts between the members of the executive committee is deteriorating the quality of the leadership and ruining the trust of people towards the leaders. Things are not moving in this village because of this conflict and people are losing interest in community initiatives. The people in Nooto are more committed and spend most of their time in church associations and functions because the committees there are strong and active. Unless the internal conflict of the village's executive committee is resolved, community support will remain weak and external projects will become unsuccessful in Nooto. (Village leader, Nooto, pers. comm. 2017)

The executive committee of this village is weak and cannot mobilise the community towards a common agenda. The CBFM is a good project but some people in our village do not want to support the project solely because they do not like the leaders. This is sad and we believe that the traditional leadership system of placing Unimwane (elders) as the village leaders and respecting them should be revived. In old days, there was so much respect for the village leaders and Unimwane but that seems to be dying out. (Old woman, Buariki, pers. comm. 2017)

Furthermore, the sense of inclusiveness and empowerment was identified as the motivation (or demotivation) of the community members to support conservation projects. In the CBMMP in Nooto, consultative meetings were often held whenever a decision was required for the CBMMP and any community members were allowed to attend such meetings. The transparent approach was praised by the interviewees and credited as a motivational factor in the support of the CBMMP:

The mangrove project was very consultative and people of Nooto took part in many of its activities including decision-making. People appreciated the approach to have their say in the project and they became active in the project because they felt included and empowered. (Unimwane, Nooto, pers. comm. 2017)

In contrast, in the CBFM in Buariki, the decisions pertinent to the project were made by the executive committee and then conveyed to the village during village meetings:

As youth, we strongly felt that our role in the community affairs remain unrecognised. In the CBFM project, we were only invited as observers in village meetings but could not express our views. We were not included in the decision-making stages. I support the concept of the CBFM because I understand its objectives to safeguard

our fishery, but I know that the majority of the youth are unsupportive with the project because their voices are not heard. (Youth representative, Buariki, pers. comm. 2017)

The sense of empowerment (or disempowerment) is observed not only inside a community but also between communities. North Tarawa has a long history of conflict over marine resources with South Tarawa, whose fishermen have been notorious in the lagoons of North Tarawa for their aggressive fishing method, using long gillnets. Their fishing in the waters of North Tarawa is perceived as ‘poaching’ by the people of North Tarawa. As stipulated in the Kiribati Local Government Act (2008), the jurisdiction of the island councils extends to 3 nautical miles and the Councils can establish rules to govern their area of jurisdiction. A few bylaws were introduced in the past to exercise this mandate to regulate the fishing activities in North but did not remain long:

We once had a bylaw that banned the use of *te ororo* [a traditional destructive fishing method] in North Tarawa at the time of the NTCA but it was weak because as we learnt, the case that was trialled under this bylaw lost due to weak provisions. The bylaw eventually just faded away and people of North Tarawa lost interest. (Village Chairman, Buariki, pers. comm. 2017)

One of the reasons why the village of Tabonibara and Buariki were driven to implement the CBFM project was to address the challenge of open access to the popular reef fish spawning sites. In North Tarawa, the mature silver biddies spawn only in the Tabonibara channel (Village Chairman, Tabonibara, pers. comm. 2017) and regulating its harvest especially to the outside fisherman was a difficult task. A management initiative such as the CBFM was accepted by the villagers as a solution to the problem. The bylaws established under the scheme have enabled the villagers to manage the key species by imposing a seasonal closure of fishing during the species’ spawning seasons and in turn control access to the species from the fishermen of South Tarawa. The chairman of Nooto village stated:

The main reason for fisheries decline in our lagoons is due to the overharvest by fishermen from South Tarawa. We often fish from the lagoon what is enough to feed our families for the day. Fishermen from South Tarawa come to our lagoons with big boats and deploy their gillnets that can stretch from our village (Nooto) to the next (Abaokoro). We do not fish in such capacity. We would like to claim that they are fishing in our waters and taking all our fishes but we do not have the legal means so can’t stop them. (Village Chairman, Nooto, pers. comm. 2017)

As stated, due to fish decline in North Tarawa, the main source of protein has been shifting from fresh fish to tinned fish. In particular, in Tabonibara, the seasonal ban on the silver biddy species implemented under CBFM has further impacted the livelihood of villagers and the project was rather seen by them as injustice given that the reef fish was a key livelihood resource in the village.

Finally, economic reasons are an important factor. Specifically, community members tend to support the projects when they directly benefit from the projects. In Buariki

and Marenanuka, one of the important motivational factors that triggered support from the community is financial compensation:

In Buariki, the community support is most evident in projects that have financial incentives to the villagers. For projects like the CBFM that do not provide financial incentives, it really relies on how the leaders of the village engage with and motivate the communities to support the project. I know in Buariki for sure that getting community support in a project that lacks financial incentives is a big challenge. (Tour guide, Buariki, pers. comm. 2017)

In Marenanuka, on the other hand, one of the main reasons that led to the lack of support from the turtle watchers in the Turtle Monitoring Project, was the absence of financial compensation to the watchers who claimed that their tasks in the project were demanding and time consuming; and called for financial compensation.

I think one of the important reasons that the support gradually faded in the Turtle Monitoring Project was the lack of incentive from the project to the turtle watchers. If they had some sort of financial incentive, at least, for the long labour hours they committed to turtle monitoring, I think the support from them and their families would have remained today. (Old man, Marenanuka, pers. comm. 2017)

DISCUSSION AND CONCLUSION

Our results show that overall the interviewees are aware of the concept of resource conservation and its significance. It was evident that there was strong willingness with 81% of the total interviewees willing to engage in marine conservation initiatives to prevent their coastal fisheries from declining further. The concept of CBC is also generally understood in North Tarawa and our interviews prove a strong agreement over the necessity to implement conservation measures for the future. Meanwhile, our research also shows that motivation of community members to support conservation initiatives are influenced by various factors. It is not merely the concern for fish stock decline, but also hierarchical status in a community/household; the quality of leadership of the community, the level of power and direct benefits granted from initiatives such as financial incentives. The latter, as noted in this study, has been one of the key reasons for the demise of community support in the Turtle Monitoring Project in Marenanuka.

In addition, the additional hardships experienced by some villages during the restrictions on silver biddy and the lack of alternative livelihood sources should be noted; where the community needs are not genuinely integrated in conservation initiatives (e.g., Kronen et al. 2010; Karki 2013; Doane 2014). This is a challenging situation; in the long-term the catch restriction might bring back the fish population. However, it is not justifiable to compromise the well-being of community members in exchange. In addition, some community members support conservation projects simply because they do not want to be penalised. This situation pinpoints that the participation

of local community members in conservation initiatives should not be regarded as a sole indicator of the high level of support for resource conservation itself. To enhance the level of support towards resource conservation and make conservation projects more sustainable, CBC initiatives first need to address the socio-cultural and economic situations that may influence the level of support of the communities.

What will then make conservation programmes culturally acceptable and sustainable and what motivates local people's participation in such programmes? First, continuous endeavour to increase awareness on the benefit of conservation projects among community members appears to be a key. For example, in Tabonibara, the continuous sharing of information by the village members transformed the sceptic individuals from strong disputers of the CBFM to the now active supporters of the initiative.

One of the very positive and rewarding outcomes of the conservation initiative here in Tabonibara, is seeing the people who once opposed the conservation of silver biddies are now supporting the course. These people are mostly fishermen who depended heavily on silver biddies for cash income. The promotion of this program was an ongoing task for us and because we knew people that were not too supportive towards the fishing ban, we targeted them and advocated the concept in a friendly and casual manner. Eventually, we earned their trust and they are now standing with the rest of the village in promoting the fishing ban. (Village Councillor, Tabonibara, pers. comm. 2017)

Moreover, Kothari et al. (2013) stress the importance of partnerships between project organisers and communities and argue that conservation projects should be beneficial for both parties. In cases of Buariki and Tabonibara, the strong presence and continuous engagement of the MFMRD, SPC and ANCORS transpired to a strong support of the project from the villagers:

People of Buariki are quite laid-back and often rely on the project team from the government to facilitate project activities and maintain their periodic presence in the village. I noticed from the past projects that government teams will visit the village on few occasions during the lifespan of the project. But with the CBFM, we have been fortunate to retain a constant partnership with the government team which has really made a difference in terms of community participation and support in the project. (Village messenger, Buariki, pers. comm. 2017)

Meanwhile, when the engagement of project organizers was scarce, conservation projects did not receive strong support from communities:

My uncle was one of the designated turtle watchers in the Turtle Monitoring Project and we often assisted him. One of his tasks was to tally the number of turtles that beach in Marenanuka to lay eggs. He was also supposed to report the beaching to MELAD and a team would come and tag the turtles before they are released back to the ocean. On many occasions, my uncle contacted

MELAD when a turtle beached, but the MELAD team never arrived to place the tag on turtles and hence my uncle had to release turtles back to the ocean without tags to prevent them from dying. This frustrated us a lot and diminished our support and trust for the project. (Female resident, Marenanuka, pers. comm. 2017)

The traditional driver of marine conservation initiatives in Kiribati has been the government (Delisle et al., 2016) and these initiatives were proposed and established to serve international multilateral environmental agreements such as the CBD to meet national policy goals such as those listed in the Kiribati Integrated Environment Policy and the Kiribati Fisheries Policy 2013-2025. These top-down decision-making structures were also observed across our case study sites and projects. Given that North Tarawa relies extensively on the traditional governing systems of the villages, it would not be easy to break through a traditional top-down decision-making process. Nevertheless, our findings indicate that community members wish to be consulted over the implementation, progress, and effect of any conservation projects, which may give them a sense of ownership. In this way, conservation projects can sustain support from community members.

A potential strategy for conservation project organisers is to involve village headmen, who can act as a mediator to promote the importance of conservation projects and gradually spread information among community members. In exchange, village headmen can inform project organisers the context and needs of each community involved in the project. In addition, feasibility studies can adopt a participatory approach to pick community members' voices. In Kiribati, prior to the commencement of a CBC project, a feasibility study to understand the socio-economic status and needs of the project area has often been conducted by project organisers. This also applies to marine conservation projects (not necessarily community-based). These feasibility studies themselves should involve community members and seek their input. This is particularly important in the sphere of community-based marine conservation initiatives where local community support becomes a critical component of success in the process. The study should be able to identify amongst many things, the relevant social and cultural characteristics and systems that might affect the progress and effective community participation in upcoming CBC projects.

Surely, conservation projects do eventually benefit the community's well-being on many levels as in the case of the CBFM in Tabonibara. However, it should be noted that 'community-based' projects are still driven by external agents such as governments; and community members need substantial inputs to retain motivation and engage in conservation projects. As our study shows, there is room to increase a success rate of CBC projects in countries like Kiribati, where there are still strong traditional governance structures in place, by enhancing inclusivity, employing community-driven approaches, or providing alternative livelihoods to support the affected communities.

ACKNOWLEDGEMENT

The completion of this study would not have been possible without the kind assistance from Buariki, Nooto, Marenanuka and Tabonibara in North Tarawa. This project was funded by the New Zealand Regional Development Scholarship.

REFERENCES

- Aalbersberg, B., A. Tawake, and T. Parras. 2005. Village by village: recovering Fiji's coastal fisheries. *The wealth of the poor: managing ecosystems to fight poverty*. Pp. 144–152.
- Abdullah, K., A.M. Said, and D. Omar. 2014. Community-based conservation in managing mangrove rehabilitation in Perak and Selangor. *Procedia - Social and Behavioral Sciences* 153(16): 121–131.
- Agrawal, A. and C.C. Gibson. 1999. Enchantment and disenchantment: the role of community in natural resource conservation. *World Development* 27(4): 629–649.
- Aswani, S., S. Albert and M. Love. 2017. One size does not fit all: critical insights for effective community-based resource management in Melanesia. *Marine Policy* 81: 381–391.
- Bennett, N.J. 2016. Using perceptions as evidence to improve conservation and environmental management: Perceptions and conservation. *Conservation Biology* 30(3): 582–592.
- Bennett, N.J. and P. Dearden. 2014. Why local people do not support conservation: community perceptions of marine protected area livelihood impacts, governance and management in Thailand. *Marine Policy* 44: 107–116.
- Boso, D., C. Paul, Z. Hilly, WorldFish Center, J. Pita, and FSPI. 2016. Lessons learnt from community-based adaptive marine resource management in Solomon Islands. *WorldFish Center*. http://www.adaptationlearning.net/sites/default/files/resource-files/Boso%20et%20all%202010%20Lessons%20Learned%20document%20in%20CB%20adaptive%20marine%20resource%20management%20SI%20compr_0_2.pdf. Accessed on February 12, 2018.
- Broad, K. and J.N. Sanchirico. 2008. Local perspectives on marine reserve creation in the Bahamas. *Ocean and Coastal Management* 51(11): 763–771.
- Campbell, B. and Q. Hanich. 2014. *Fish for the future: fisheries development and food security for Kiribati in an era of global climate change*. Penang: WorldFish. Project Report: 2014-47.
- Delisle, A., B. Namakin, T. Uriam, B. Campbell, and Q. Hanich. 2016. *Participatory diagnosis of coastal fisheries for North Tarawa and Butaritari island communities in the Republic of Kiribati*. Penang: WorldFish. Project Report: 2016-24.
- Doane, M. 2014. From community conservation to the lone (forest) ranger: accumulation by conservation in a Mexican forest. *Conservation and Society* 12(3): 233.
- Environment and Conservation Division, and Kiribati Adaptation Program III. (n.d.). *Community-based mangrove management plan*. Nooto, North Tarawa: Office of Te Beretitenti.
- Gaymer, C.F., A.V. Stadel, N.C. Ban, P.F. Cárcamo, J. Ierna, and L.M. Lieberknecht. 2014. Merging top-down and bottom-up approaches in marine protected areas planning: experiences from around the globe. *Aquatic Conservation: Marine and Freshwater Ecosystems* 24(S2): 128–144.
- Government of Kiribati. 2013. *Kiribati biodiversity area report*. Tarawa: Government of Kiribati.
- Gruber, J. (2011). Perspectives of effective and sustainable community-based natural resource management: an application of Q methodology to forest projects. *Conservation and Society* 9(2): 159.
- Haraguchi, S., World Heritage Centre, and UNESCO. (2014). *Safeguarding precious resources for island communities*. Paris: UNESCO World Heritage Centre. <http://whc.unesco.org/en/series/38/>. Accessed on February 12, 2018.
- Hunnam, P. (2002). *Lessons in conservation for people and projects in the Pacific Islands region*. United Nations Development Programme New York. <http://www.reefbase.org/gefil/pdf/South%20Pacific%20Regional%20Biodiversity%20Program%20-%20Lessons%20Learned.pdf>. Accessed on February 12, 2018.
- Johannes, R.E. 2002. The renaissance of community-based marine resource management in Oceania. *Annual Review of Ecology and Systematics* 33(1): 317–340.
- Karki, S.T. 2013. Do protected areas and conservation incentives contribute to sustainable livelihoods? a case study of Bardia National Park, Nepal. *Journal of Environmental Management* 128(15): 988–999.
- Katikiro, R.E., E.D. Macusi, and K.H.M. Ashoka Deepananda. 2014. Challenges facing local communities in Tanzania in realising locally-managed marine areas. *Marine Policy* 51: 220–229.
- Keppel, G., C. Morrison, D. Watling, M.V. Tuiwawa, and I.A. Rounds. 2012. Conservation in tropical Pacific Island countries: why most current approaches are failing: conservation in tropical Pacific. *Conservation Letters* 5(4): 256–265.
- Kincaid, B.K., G. Rose, and H. Mahudi. 2014. Fishers' perception of a multiple-use marine protected area: why communities and gear users differ at Mafia Island, Tanzania. *Marine Policy* 43: 226–235.
- Kothari, A., P. Camill, and J. Brown. 2013. Conservation as if people also mattered: policy and practice of community-based conservation. *Conservation and Society* 11(1): 1–15.
- Kronen, M., A. Vunisea, F. Magron, and B. McArdle. 2010. Socio-economic drivers and indicators for artisanal coastal fisheries in Pacific island countries and territories and their use for fisheries management strategies. *Marine Policy* 34(6): 1135–1143.
- Masud, M.M., and F.B. Kari. 2014. Community attitudes towards environmental conservation behaviour: an empirical investigation within MPAs, Malaysia. *Marine Policy* 52: 138–144.
- Méndez-López, M.E., E. García-Frapolli, I. Ruiz-Mallén, L. Porter-Bolland, and V. Reyes-García. 2015. From paper to forest: local motives for participation in different conservation initiatives. case studies in southeastern Mexico. *Environmental Management* 56(3): 695–708.
- Ministry of Environment, Lands and Agricultural Development. (2013). *Kiribati fourth national report to the convention on biological diversity*. Tarawa: Ministry of Environment, Lands and Agricultural Development.
- Office of Te Beretitenti and T'Makei Services. (2012). *North Tarawa*. Tarawa: Office of Te Beretitenti, and T'Makei Services.
- Risien, J.M. and B. Tilt. 2008. A comparative study of community-based sea turtle management in Palau: key factors for successful implementation. *Conservation and Society* 6(3): 225.
- Ruiz-Mallén, I., C. Schunko, E. Corbera, M. Rös, and V. Reyes-García. 2015. Meanings, drivers, and motivations for community-based conservation in Latin America. *Ecology and Society* 20(3): 1–14.
- Souto, T., J.L. Deichmann, C. Núñez, and A. Alonso. 2014. Classifying conservation targets based on the origin of motivation: implications over the success of community-based conservation projects. *Biodiversity and Conservation* 23(5): 1331–1337.
- Thaman, B., J.D. Icelly, B.D.D. Fragoso, and J. Veitayaki. 2016. A comparison of rural community perceptions and involvement in conservation between the Fiji Islands and Southwestern Portugal. *Ocean and Coastal Management* 133: 43–52.
- Thomas, F.R. 2001. Remodelling marine tenure on the atolls. *Human Ecology* 29(4): 399–423.
- Thomas, F.R. 2009. Historical ecology in Kiribati: linking past with present. *Pacific Science* 63(4): 567–600.
- Thomas, F.R. 2014. Shellfish gathering and conservation on low coral islands: Kiribati perspectives. *The Journal of Island and Coastal Archaeology* 9(2): 203–218.
- Vargas, A. and D. Díaz. 2014. Community-based conservation programs and local people willingness to pay for wildlife protection: the case of the cotton-top tamarin in the Colombian Caribbean.

Lecturas de Economía 81: 187–206.

Vierros, M., W. Aalbersberg, Institute of Advanced Studies, United Nations University, and Traditional Knowledge Initiative. 2010. *Traditional marine management areas of the Pacific in the context of national and international law and policy*. Darwin, N.T.: UNU-IAS Traditional

Knowledge Initiative. http://www.unutki.org/news.php?news_id=102anddoc_id=103. Accessed on February 12, 2018

Young, M.A.L., S. Foale, and D.R. Bellwood. 2016. Why do fishers fish? a cross-cultural examination of the motivations for fishing. *Marine Policy* 66: 114–123.

Received: 31-Mar-2019; **Revision:** 20-Dec-2019; **Accepted:** 20-Dec-2019; **Published:** 10-Apr-2020