

Kuuma's journey toward a sustainable coastal fishery

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Figure 1. Fishermen returning from handline fishing on the reefs. (image: © Rutiana Kinonoua, MFMRD)

Introduction

Kiribati's population is highly reliant on fisheries in terms of livelihoods, food and nutritional security. Although off-shore fisheries account for a large proportion of the national income through tuna fishing licensing fees, coastal fisheries support the well-being of I-Kiribati, providing healthy food to the domestic population and generating income for communities.

Coastal fisheries are under pressure from: 1) a growing human population; 2) potential impacts of climate change; and 3) fishing for local consumption and economic benefits. Sustainable fisheries management practices are, therefore, crucial to ensuring that coastal fisheries can continue to play an important role in securing food for local communities, now and in the future (MFMRD 2013; Delisle et al. 2016).

In line with other Pacific Island nations, The Kiribati Ministry of Fisheries and Marine Resources Development (MFMRD) recognises the important role of communities in the sustainable management of their coastal fisheries. Due to the intrinsic relationship between I-Kiribati people and the marine environment, the management of coastal resources by communities is not new. However, increasing threats and the erosion of traditional ecological knowledge mean that new forms of community-based approaches to fisheries management are needed.

Formalised community-based fisheries management (CBFM) is still relatively new in Kiribati, and started in 2014 with a pilot CBFM project from MFMRD with support of the Australian Government. This approach involves working with communities on coastal fisheries management, and aims to initiate and improve marine management at the community level (Delisle et al. 2016). The purpose is to reinvigorate communities' engagement and central role in fisheries management with support of government partners at the national and island levels. To date, information and awareness has been provided to 11 islands. Fourteen villages have completed their fisheries management plans, and 51 communities are at different stages of working on establishing local community fisheries rules.

This achievement builds on the foundation and lessons learned from working with five CBFM communities during the pilot phase of the project from 2014 to 2017. Out of the five pilot sites, this article focuses on Kuuma Village, and its history as a community working with CBFM since 2014. The article provides information on: 1) the involvement of the village with the project; 2) the establishment of the village's fisheries management plan; 3) the impacts of the management plan on people's lifestyle; and 4) the community's progress in implementing their village management plans.

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Figure 2. Kuuma's women preparing and cooking fish. (images: © Rutiana Kinonoua, MFMRD)

Kuuma as a community

Kuuma is the northern-most village on the mainland of Butaritari island, one of the islands in the Northern Gilbert Group that makes up the Republic of Kiribati. The population of Kuuma is 290, and has been growing since the last population census conducted in 2015 (Kiribati NSO 2016). Fish and other marine resources are important and major sources of protein, while imported rice, locally grown root crops, and fruit make up most of the rest of the local diet. Approximately 3% of the population is employed as public service officers, while the majority of the population depends on copra, vegetable exports and fish as a source of food and income (Delisle et al. 2016).

History of Kuuma with CBFM

Introductory meeting

The CBFM introductory meeting was conducted with the full Butaritari island council, including the mayor, the councillors of all villages, the island clerk, and a representative from the elder's association. Basic information about the CBFM project and approach were provided (e.g. background, objectives, goals, and a selection of attributes for pilot sites). After initial discussions, Kuuma was selected as one of the pilot sites of the CBFM project. At the time, the councillor of Kuuma was very interested in the programme and wanted to champion CBFM in his village. The island

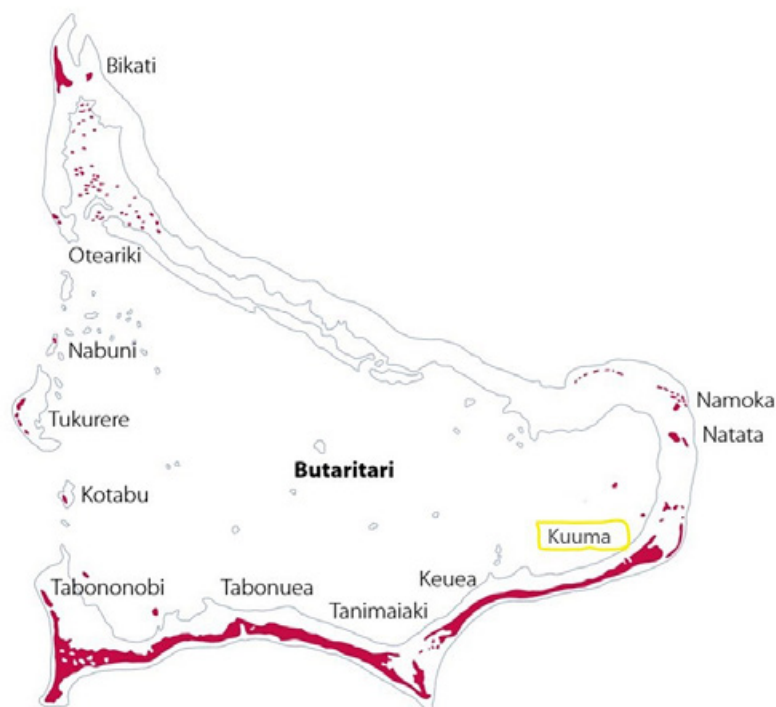


Figure 3. Butaritari Atoll, with study area outlined in yellow. Source: MFMRD.



Figure 4. First meeting with the island council and members of Kuuma Village. (images: © Rutiana Kinonoua, MFMRD)

council agreed that Kuuma would become one of three CBFM pilot sites at Butaritari and that lessons from the sites would be useful to other villages in the future.

The CBFM process

Between late 2014 and early 2015, a series of visits were conducted as part of a scoping process to develop the village's first fisheries management plan. The process involved empowering the community and building awareness on how communities could manage their fisheries, and facilitating focus group discussions for elders, men, women and youth on the importance of obtaining different perceptions of the status of their fisheries. Each group discussed a number of topics, including identifying major marine resource threats, potential management solutions, key species to manage, and resource mapping. At the end of the discussion, each group presented their input to the other groups during a plenary meeting to assist the community with thinking about their coastal fisheries as a whole and consider the different target species of groups within Kuuma. During subsequent visits, the CBFM project team continued to provide information that would assist community members formulate rules to sustainably manage the identified important species for the communities.

The management plan

After three visits to Kuuma, the village's executive committee – together with the CBFM project team – decided that community members were ready to finalise their management plan. Upon advice from the elders of the village and the village executive committee, the project team decided to work with four main community groups (elders, men, women and youth) on different days. Drafting the management plan involved each community group separately working and drafting their group's fisheries management plan. On the final day, during a whole community meeting, the groups' respective management plans were presented,

discussed and reviewed to draft into one whole community management plan. In August 2015, the village's first fisheries management plan was completed and finalised with elders, men, women and youth. Some of the rules adopted in the final management plan included the banning of destructive fishing gear, and the use of size limits. The project team provided advice on possible ways that the community could oversee the implementation of their management plan. The community decided that they would form a village CBFM committee that would be in charge of raising awareness and implementing the plan, and for setting up potential penalties applied to offenders. Throughout the years, community members and the Kuuma CBFM committee have reviewed rules, adding new rules or removing previous rules if they were considered to have negative impacts on community members' livelihoods.

Working independently

Between 2016 and 2018, the village was actively and independently working on its management plan. For about 20 months, the CBFM project team was unable to visit and assist the village with their management plan. During this time, the team continued to provide support by organising meetings with community representatives off-site (annual stakeholder meetings; on request trainings on communication or enforcement) and advised representatives of the three pilot sites on setting up an island-wide CBFM forum which gradually became the Butaritari island-wide CBFM committee; a place where CBFM villages could inform, discuss and gain support from the rest of the island on their village CBFM activities. During that time, the first CBFM committee became relatively inactive due to some conflicts between wards. Elders then took responsibility for the management plan and shared their vision of how different management strategies could bring benefits and changes to the village's fisheries. After several meetings and talks among villagers, representatives from Kuuma's different wards decided to be part of one single CBFM committee, which allowed for



Figure 5. Villagers discussing their management plan. (images: © Rutiana Kinonoua, MFMRD)

better communication. The elder association also decided that new rules should be added to the management plan as the rules could improve important fisheries not currently considered in the plan. The protection of bonefish during its spawning seasons was one new rule added to the management plan. Elders believed that improving fishery resources that most people depend on for cash, could be hard in the short term but that efforts could improve the future livelihoods of villagers.

Kuuma adds bonefish to their management plan

Bonefish are comparatively rare on Butaritari, so the villagers felt they could sell the fish at a higher price to people in other villages and, thus, derive a good income. To achieve this, the village added another rule to their management plan in December 2017, which was a ban on harvesting bonefish during their spawning aggregation. The ban is in place three days before and after the full moon and third quarter moon during spawning season. The village perceived an increase in the number of bonefish a few months after imposing the spawning closure.

Commitment to management plan

Kuuma community members have been working on their management plan since the village was first visited by the CBFM team in 2014. The use of gill nets with small mesh sizes (i.e. less than 5 cm) was instantly banned in 2014 and is still prohibited. The catch monitoring assessment in 2019 and in March 2020 witnessed fishers' transitioning from using nets with small mesh sizes to nets with mesh sizes greater than 5 cm. Interviews with fishers also showed that more than 70% of fishers were well aware of the management plan's prohibition of destructive gear, especially gill nets with mesh sizes less than 5 cm.

The management arrangements around bonefish were well known in the village; some villagers even talked about it with their relatives in other villages. Elders realised that working

alone would not achieve their management goals due to the fish crossing through different jurisdictions, which the village does not have the power to control. First, the sea does not have any territorial restrictions for fishing activities, and everyone can access marine resource freely. It was, therefore, essential to reach out to other villages and gain their cooperation and support. Without the other villages' support, the bonefish management arrangements would be useless, since the new regulations (fisheries conservation and management of coastal marine resources regulation) that backed village management had not been implemented at that point, meaning that penalties and enforcement of the management arrangements could only happen with cooperation between the villages. In mid-2018, when the bonefish management was first launched, two fishing boats from outside the village broke the new regulation. The fine was not imposed in this instance given the fishers who broke the regulation were not aware of the new management arrangements. The village brought the new management to the island council's meeting and elders association for endorsement, support, and broad recognition. Because both parties have village representatives and monthly meetings who regularly share meeting agendas (including bonefish management) with village members, the management arrangements were popularised and supported in most villages within five months. The CBFM team are now working on a billboard that will show the rules of the management plan. This will help people from outside the village to familiarise themselves with the local management rules.

Benefits from the management plan

In late 2019, villagers started noticing more bonefish in their lagoon. During meetings and talks during catch monitoring assessments, some fishers began to mention that they were catching small numbers of bonefish in their nets while fishing for other species, something that did not happen often before. The incidental catching of bonefish does not, however, necessarily indicate stock recovery. Still, it is something that local fishers mentioned rarely ever happened outside the spawning season. One of the elders also mentioned that 2–4 bonefish were being caught by fishers during a single



Figure 6. Bonefish caught as part of mixed catches during gillnetting. (images: © Rutiana Kinonoua, MFMRD)

trip, which rarely happened before the bonefish management arrangements were put in place, and this change was noticed by many fishers.

These catch rates might not be considered high elsewhere, but because bonefish are considered a rare species in Butaritari, villagers believe this improvement is an indication of increasing numbers of bonefish.

As the villagers' knowledge of marine resource management improves, some men and elders are planning to extend their management plan to protect other species. Giant clam is one of the next species to be addressed. The community's perception is that giant clam is in high demand in Kiribati, and is currently in a declining state. Therefore, giant clams need proper management if they are to support villagers' livelihoods. The strategy involves establishing a marine protected area for giant clams, and this is where the community needs support and demarcation materials from CBFM and MFMRD.

Conclusion

Kuuma villagers have been on a long journey of managing their coastal fisheries resources. The village started things slowly with a few measures, but quickly took ownership of the process. The village is working towards adding more measures including a marine protected area for giant clams, and the people of Kuuma have full ownership of their management plan. They have made sacrifices but are seeing positive effects from these. Village members are now focusing on building awareness, recognition, and broader support of new management arrangements. Various groups, including the CBFM team, island council, and the island elders association, are partnering with the people of Kuuma to do this work. Community-driven catch monitoring has also been identified as being crucial for providing robust information and evidence for gauging whether certain management measures are working or not. Without further catch monitoring, we cannot be fully certain that the management plans are truly benefitting the local fisheries. The CBFM

team will continue to monitor the catches of bonefish and other fish species, work with the community to detect any changes to the fisheries, and continue refining Kuuma's CBFM plan by reviewing and adapting the management plan every few years.

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