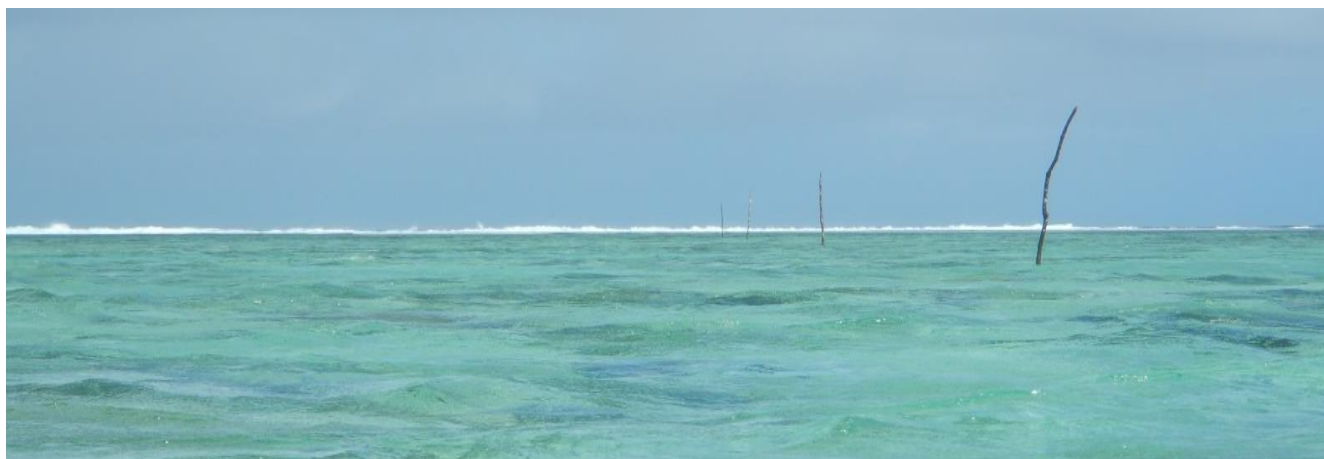




**TOOLBOX & ACTION GUIDE FOR
COMMUNITY BASED MARINE RESOURCE
MANAGEMENT**
LESSONS LEARNED FROM NAVAKAVU, FIJI



Marine and Coastal Biodiversity Management
in Pacific Island Countries



EFFECTIVE MANAGEMENT



Marine and coastal ecosystems of the Pacific Ocean provide benefits for all people in and beyond the region. To better understand and improve the effective management of these values on the ground, Pacific Island Countries are increasingly building institutional and personal capacities for marine spatial planning.

But there is no need to reinvent the wheel, when learning from experiences of centuries of traditional management in Pacific Island Countries. Coupled with scientific approaches these experiences can strengthen effective management of the region's rich natural capital, if lessons learnt are shared.

The MACBIO project collaborates with national and regional stakeholders towards documenting effective approaches to sustainable marine resource management and conservation. The project encourages and supports stakeholders to share tried and tested concepts and instruments more widely throughout partner countries and the Oceania region.

This report is part of MACBIO's support to its partner countries' national marine planning and management processes.

For a copy of all reports and communication material please visit www.macbio-pacific.info.

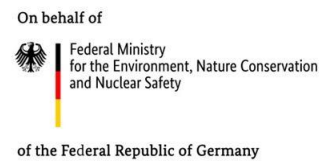
MARINE ECOSYSTEM
SERVICE VALUATION

MARINE SPATIAL PLANNING

EFFECTIVE MANAGEMENT



www.macbio-pacific.info



© MACBIO 2017

All MACBIO Project partners including the Secretariat of the Pacific Regional Environment Programme (SPREP), the International Union for Conservation of Nature (IUCN) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) are the inherent copyright owners of this publication. Reproduction of this publication for educational or other non-commercial uses is authorized without prior written permission from the copyright holder(s) provided the source is fully acknowledged. Reproduction of this publication for resale or other commercial purposes is prohibited without prior written permission of the copyright holder(s). The designation of geographical entities in this publication, and the presentation of the material do not imply the expression of any opinion whatsoever on the part of SPREP, IUCN, GIZ or the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. This document has been produced with funds provided by the International Climate Initiative (IKI). BMUB supports this initiative on the basis of a decision adopted by the German Bundestag. The views expressed herein should not be taken, in any way, to reflect the official opinion of the Federal Government of Germany. The views expressed in this publication do not necessarily reflect those of SPREP/IUCN/GIZ/BMUB.



Marine and Coastal Biodiversity Management
in Pacific Island Countries

Background

In understanding effective marine management, the project aims to support communities in its five partner countries to learn about existing management practices. “Learning sites” were chosen over “pilot sites” as MACBIO aspires to highlight examples of communities who have been recognized for their effective marine management approaches. Within Fiji, two proposed learning sites were chosen including the Vanua¹ Navakavu and the province of Macuata. In this report, we highlight lessons from the Yavusa Navakavu. Navakavu was identified as a learning site due to their long-time success in managing their *tabu* or no-take zone. An indicator of this success has been the rediscovery of the armored crab, *Calappa calappa* in 2009 by the *Turaga ni Vanua* (head spokesman), the late Mr. Asakaia Balawa (Thaman & Fong, 2009).

MACBIO aims to assist the community to share, and highlight some of the effective approaches these villagers have carried out throughout the years in relation to the management of their marine *tabu* area. In this way, the project hopes to work with national stakeholders to disseminate successful approaches which could inspire other communities to conduct similar management practices.

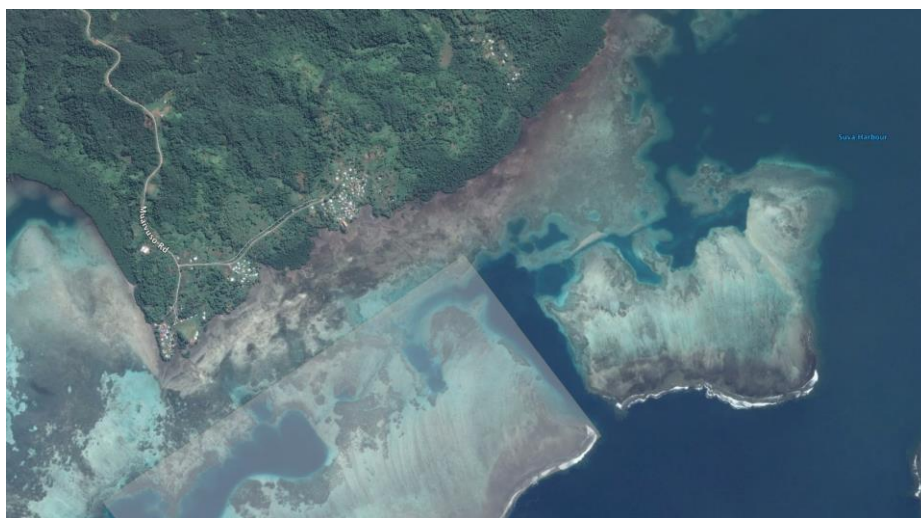


¹ Navakavu is at times described as *Yavusa* Navakavu rather than *Vanua* Navakavu. For the sake of this report *Vanua* will be used to describe the tribal land, traditionally owned by the *Yavusa* (tribe) Navakavu

We Are Navakavu

Located on the Muaivuso peninsula approximately 6 km by boat (~15 km by road) from Suva's Central Business District, are the villages of Muaivuso, Nabaka and Waiqanake. Together with several settlements (Namakala², Wainigasau, Ucuinamono and Bilo) they make up the *Vanua Navakavu*, a traditional sub-district within the Suva district, 1 of 11 districts in the province of Rewa. The Vanua Navakavu comprises the entirety of the Muaivuso peninsula as well as the land stretching northward into the forested mountain range and the iqoliqoli (fishing ground) adjacent to the peninsula (O'Garra, 2007).

According to the Rewa Provincial Council approximately 900 people are registered in Navakavu of which more than two thirds live in the three villages including the settlement of Namakala. A majority of the population depend on fishing, gleaning and/or farming as a source of income. As a result of Fiji's capital relocating to Suva in 1877, urbanization, and increased population, the fishing pressure in Navakavu's fishing ground increased substantially (Thaman, Fong, & Balawa, 2008). This, coupled with unregulated and unsustainable fishing methods (dynamite fishing, fish poisons, etc.), soon led to noticeable changes in fish abundances and overall health of the iqoliqoli (Thaman, Fong, & Balawa, 2008). Upon approaching Institute of Applied Sciences (IAS) and the Fiji Locally Managed Marine Areas (FLMMA) in the mid – late 1990's and after several workshops together with village and Yavusa meetings, the first tabu area within the iqoliqoli Navakavu was established in 2001 (Thaman, Fong, & Balawa, 2008).



© GoogleEarth

² Although described as a village in various literature, Namakala is officially regarded as a settlement. Formalities have begun to officially establish Namakala as a village.

Why Navakavu?

Although the implemented tabu was a traditional one and was opened for fishing two years after its establishment, a subsequent tabu, management plans, and a Qoliqoli Management Committee (QMC) were formed. Today, Navakavu is one of the longest running locally managed marine areas in Fiji (FLMMA site (Thaman, Fong, & Balawa, 2008) (von Beukering, Sherl, Sultania, Leisher , & Fong, 2007)).

What Our Qoliqoli (Fishing Ground) Means to Us

Encompassing the Muaivuso peninsula, the iqoliqoli Navakavu covers approximately 18.5 km² and includes a variety of features and habitats such as streams, lagoons, mangroves, blue holes, seagrass beds, sand beds, reefs and reef channels/passages. The diversity of features within the iqoliqoli allows for a variety of habitats and species and is likely what has allowed Navakavu to become traditionally renowned in south east Viti Levu for their diverse seafood and fishing abilities, and their reputation has been carried forward to the Suva Fish Market (Thaman, Fong, & Balawa, 2008).

As mentioned above, the iqoliqoli has been host to a number of tabu locations since the inception of its first tabu in 2001. The current tabu area is located towards the central-southern end of the iqoliqoli, ideally located to include a variety of habitats and is in direct line of sight of all three villages while not being directly exposed to fishers and sea traffic. The current tabu which was demarcated in April 2016, has officially been in place since 2010 and covers an area of approximately 2 km², equating to approximately 10% of the iqoliqoli.

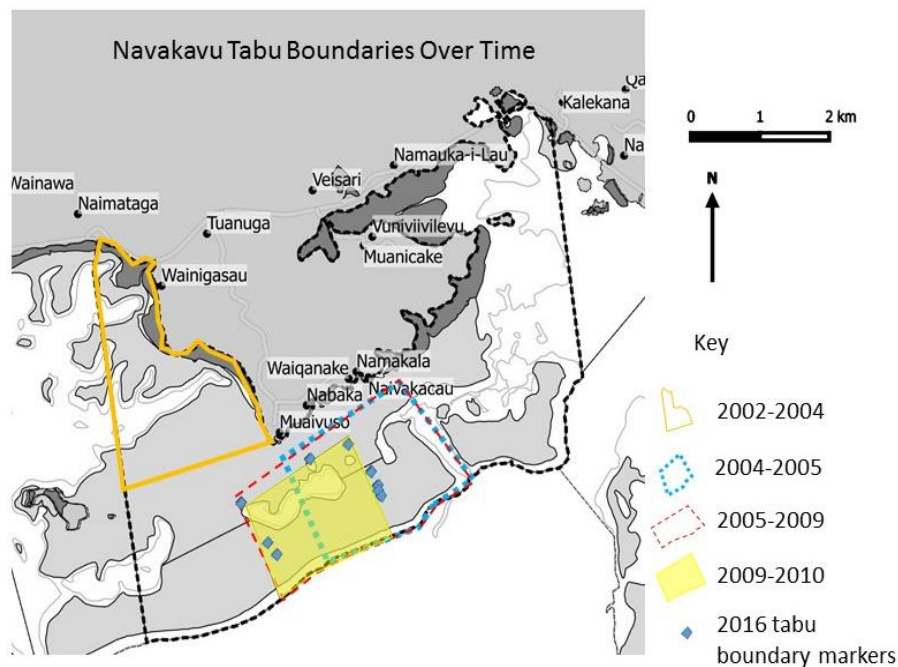
Is Your Community Inspired to Do the Same?

Here are some ways the Yavusa Navakavu have contributed to their marine managed area success.

STRATEGY 1: Choose an Ideal Tabu Location

The initial tabu was located west of the Muaivuso peninsula, primarily on a muddy tidal flat. After a two-year closure and limited noticeable success by the villagers, the tabu was shifted, in January of 2003, to the south of the iqoliqoli.

However, this new tabu was deemed too large as fishers and gleaners lacked the space to fish and glean. This resulted in a size reduction of the tabu later that year. Four years later, following continuous poaching by outsiders using the reef channel to fish, it was decided the tabu be shifted westward, away from the channel. As of 2010, it has remained in the same location where it includes several habitats such as seagrass beds, lagoons, mangroves, coral reefs, etc., is not easily accessible by poachers and does not interfere directly with sea traffic, gleaners or fishers.



“On paper I am not a fish warden, I don’t have the license from government. But I am part of this Vanua and qoliqoli and it is part of me. It is my duty as a custodian to make sure no one is breaking the law of our tabu. I check whenever I look out to sea if someone is within the tabu. If there is, I become a fish warden and check to make sure they aren’t fishing.”

Samu Yalotoge

STRATEGY 2: Establish a Qoliqoli Management Committee

Upon establishment of the first tabu in 2001, Navakavu, with the assistance of the Institute of Applied Sciences (IAS) and FLMMA established a QMC which was tasked with increasing awareness and implementing strategies for the sustainable use of marine resources within the iqoliqoli. Since its establishment, the QMC has been influential with setting up various tabu areas, demarcating, and enforcing rules set to protect the iqoliqoli. The QMC is composed of several representatives from all three villages and is the prime body that liaises between the Vanua and external bodies such as FLMMA, USP, MACBIO, Ministry of Fisheries and other stakeholders.

STRATEGY 3: Select Community Members as ‘Guardians of the Sea’

Although there are 4 certified fish wardens in Navakavu, several village members have taken it upon themselves to do the work of fish wardens. When fish wardens are not around or are not aware that there are fishers within the tabu, other villagers often request they leave the tabu area.



“When they first shifted the tabu to where it is now, there were pegs to mark the boundary. After a few years, the pegs got washed away because of bad weather. People were confused and didn’t know if the tabu was still on or if the tabu had been lifted. Now that the pegs are up again, it serves as a reminder that the tabu is on and reminds us why we protect our qoliqoli”

~ Losalini Balawa (Fisherwoman, Women’s Committee, Waiqanake Village)

STRATEGY 4: Raise Awareness on where NOT to Fish

To provide a clear boundary on where fishers are not permitted to fish or glean, and to serve as a reminder for the people on its purpose, the QMC, in March 2016, set out to mark out the boundaries of their tabu. To keep costs as low as possible, available surrounding resources were used. Mangrove sticks measuring 2 m in length were used as pegs, and recyclable material such as reflector vests, and flour sacks were used as flags. Mangrove sticks were chosen to be used as pegs because they have been said to last at least 2-3 years depending on the conditions when used to make fish traps. Upon further investigation, interviewees claimed that demarcating the tabu was a good idea as they now understood exactly where the border was. This makes the identification of whether someone is in or outside the tabu from land easier.

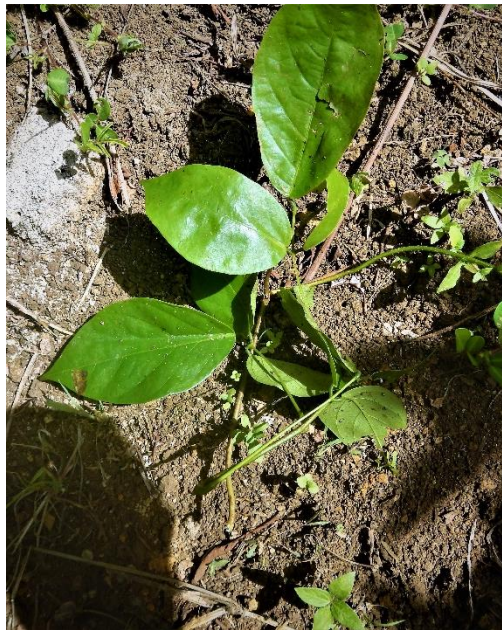


**MACBIO assisted the QMC with the placement of mangrove pegs to act as tabu boundary markers
QMC members' trialed different available plastic marine debris to make the mangrove pegs more visible.**

STRATEGY 5: Ban Fishing Practices Extremely Harmful to the Marine Environment

Prior to the development of the management plan and QMC, the live rock and aquarium fish trade were extensive, supposedly resulting in the degradation of the health of the iqoliqoli. The trade of live fish and rock are now banned within it. As a result, the abundances of aquarium fish have supposedly increased.

The use of dynamite and fish poisons such as the duva (derris root), were previously a common fishing practice within the Navakavu qoliqoli up to the early 80's and 90's. Both methods are very destructive. Not only do they destroy target fish but also everything living within the surrounding environment. Although restrictions on accessing dynamite have lessened, duva was and still is, commonly found along the shoreline of Navakavu. Convincing fishers not to use duva then became one of the prime tasks of the QMC and IAS. Today, dynamite use within the Navakavu qoliqoli waters has been completely extinguished and the use of duva is not tolerated.



“When I was young, there were still a few people who used dynamite to fish, it was very destructive, and killed everything, even the things you don’t eat. Thankfully no one here does that any more. Same thing for duva”

~ Sireli Caginidaveta (Fisherman, Muaivuso Village)

STRATEGY 6: Observe the Success of your Qoliqoli

Perhaps one of the main signs of the iqoliqoli recovering, is the return of various species, some not seen since 1953. Reappearing species include a variety of gastropods such as cowries and razor clams, sea hares and the collector sea urchin. A variety of fish, including mullet, rabbitfish and damsel fish are reported to be more common now, as opposed to the years prior to the first tabu. The most infamous example of a returning species in the qoliqoli Navakavu is the *Calappa calappa*, a species of armored crab, which has not been seen since before the 1953 earthquake and tsunami which triggered off of Suva.

“One day one of the boys that went fishing came running to me with the crab in his hand, he didn’t know what it was, I didn’t know what it was. We asked some of the village elders and they told us that the last time the burebure matatolu was caught was before the Tsunami in 1953. Now we can catch them again regularly. This tells us our tabu is working’


~ Asakaia Balawa (Mata ni Vanua, President QMC, Waiqanake)

23.01.2009 09:15 Age: 6 yrs
Category: IAS News
By: Randy Thaman & Teddy Fong

The Return of Burebure Matatolu (*Calappa calappa*) to Navakavu

Article to be published in *Mai Life* (Feb 2009 issue) under **Island life**

Island Life is a monthly *Mai-Life* column by Dr. Randy Thaman, Professor of Pacific Islands Biogeography at USP and Teddy Fong of the Ecosian Society, in which they attempt to bring to life and put a human face on distinctive groups of island plants and animals, all of which have names, histories, relations, functions or accustomed roles to play in the environment. Some are seen by some Pacific societies to have souls or spiritual importance. Unfortunately, in our rush



Asakaia Balawa with both

A story by USP highlighting the return of species to Navakavu, such as the armored crab was published in MAI Life Magazine in February 2009.

““Before the tabu, I would hardly catch mullet, now I can see several schools of mullet a day, same thing for other fish species”

~ Samu Yalotoge Fisherman, QMC Committee, Muaivuso)

STRATEGY 7: Don't Forget your Roots

Several mataqali (clans) have continued to build traditional reed fish traps which are by some considered more sustainable as opposed to modern fishing gear. Many villagers of Navakavu believe that traditional methods are more environmentally friendly than modern commercial methods, however point out that such traditional fishing techniques are being forgotten. Similarly, in the traditional vocabulary, primarily the names of fish in the local dialect is being forgotten. As a result, the village elders together with the QMC, aim to conduct regular activities with village children to educate them on the various traditional fishing methods and fish names.



Ba ni Ika, Traditional Fish traps made out of Mangrove sticks and special reeds. During outgoing tide fish is channeled along the walls of the Ba ni Ika and funneled into collection pens

“The little ones are the future custodians of our qoliqoli, we need to teach them from an early age the traditional names and methods of fishing, so that our culture is not lost. It will also help them understand why we must protect and manage our qoliqoli.”

~ Asakaia Balawa (Mata ni Vanua, President QMC, Waiqanake)

STRATEGY 8: Never Forget your Children. They Will Inherit What You Leave Behind

In an attempt to ensure sustainability in relation to their tabu, the QMC have this year proposed to raise awareness in the community school in Waiqanake. Regular discussions about Navakavu's tabu and marine life will hopefully trigger more questions for greater understanding (questions such as, what is in the ocean, what needs safeguarding and how villagers can make a conscious effort to better manage these assets without overexploitation?).



Students of Waiqanake Primary School and The Early Learning Centre gather in the Muaivuso village hall for an ocean awareness day.

Final Thoughts

Through visiting the community of Navakavu regularly over the course of several months, and by participating in formal events such as meetings, workshops as well as social events, the people of Navakavu helped in identifying various points which they regard as either success stories or challenges.

The success stories identified in this guide are key achievements which Navakavu can and should take pride in. Through the multipliers like the provincial Conservation Officer, these success stories can be communicated to other villages within the Rewa Province and beyond and work as motivational factors for others. Similarly, the challenges that the people of Navakavu identified could be used to help identify known and unknown challenges other communities face.



References

- O'Garra, T. (2007). Estimating the total Economic Value of the Navakavu LMMA (Locally Managed Marine Area), in Viti Levu Island (Fiji). *CRISP Report*.
- Thaman, R., Fong, T., & Balawa, A. (2008). Biodiversity and Ethnobiobiodiversity of Finfishes of Vanua Navakavu, Viti Levu, Fiji Islands. *CRISP Technical Report*.
- von Beukering, P., Sherl, L., Sultania, E., Leisher, C., & Fong, P. (2007). Case study 1: Yavusa Navakavu Locally Managed Marine Area (Fiji). *Natures Investment Bank*.



Marine and Coastal Biodiversity Management
in Pacific Island Countries



www.macbio-pacific.info