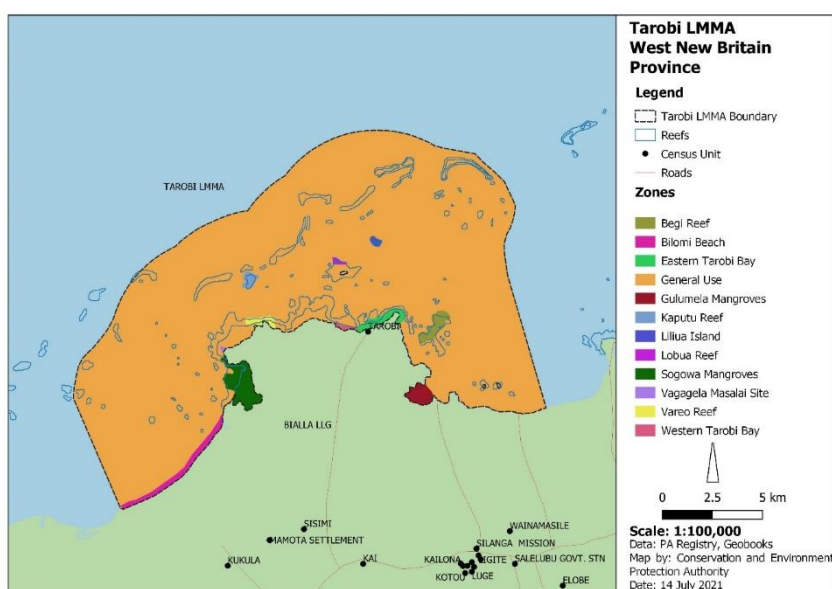
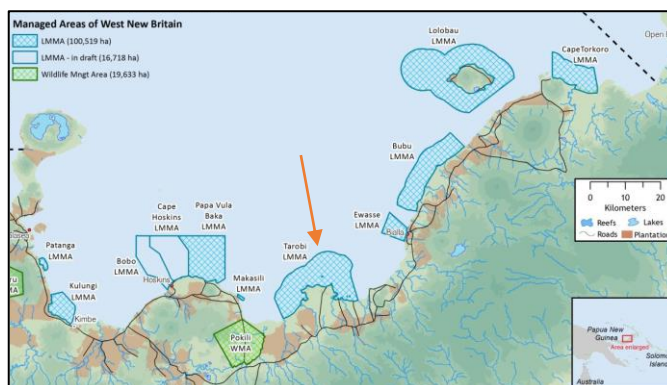


Tarobi Locally Managed Marine Area

Talasea District, West New Britain Province

Tarobi Locally Managed Marine Area (LMMA) is in the Central Nakanai Local Level Government (LLG) area in southern-central Kimbe Bay. It comprises Eastern and Western Tarobi Bays and includes five islands, four reefs, two mangrove sites, one *ples masalai* site and some beaches.



The LMMA boundaries have been mapped and there are some physical boundary markers (e.g. Bilomi River mouth to the west, Gea River mouth to the east and the Eastern and Western Tarobi Bays and reefs). There are three villages (Valako, Kololo and Kavutu). The surrounding landscape has oil palm plantations and several settlements.

Tarobi LMMA in brief

- Established:** 11/12/2007
- Size:** 197.5 km²
- Ownership:** Customary land (10 clans)
- Management:** Outdated Management Plan; Management Committee (recently selected, not functional); no work plan
- Staff/volunteer:** No staff; community looks after LMMA based on traditional knowledge and the matrilineal tenure arrangements; 2 volunteer workers
- Finance:** No budget
- Other:** No equipment and facilities, no tourism

Management objectives:

- ✓ To use our marine resources in a more sustainable way with consideration for our future generations
- ✓ To protect our culture and traditions that connect us to the marine environment
- ✓ To develop our community through the sustainable use of our LMMA and ecotourism

Our people

Customary landowners of the LMMA comprise 10 clans, including six major clans (Ugeuge, Kabulbulu, Bualali, Ailili, Gararua and Ababe) and four minor clans (Mamapa, Rosarosa, Ilaolao and Mararea. No people live within the LMMA.

History, culture and traditions

*'The marine tenure system here is predominantly **matrilineal** and includes territorial and resource (fish, shellfish, seaweed and other marine resources) rights over reefs and seas which are controlled communally at the clan level. Access is through the mother's lineage so that a man has primary rights over his mother's property, and these rights pass to his sisters' eldest daughter, ...but her brother is the primary person who speaks on her behalf on land and other resource matters'.*

Traditional rules

*'There are also traditions like '**Merarobo**' which is a tabu on fishing, collecting shells etc. at a certain reef or site to honour the death of a community member. These Merarobo can be in place from one to three years and are opened for access after traditional feast ceremonies. This helps the conservation area but is done using the marine tenureship and is observed by all clans.*

In the Management Plan there are No Take Zones, No Go Zones (Preservation Zones), Conservation Zones, Habitat Protection Zones and specific sites - spawning aggregation and sea turtle nesting sites. Everyone including settlers are guided by the permitted and not permitted access rules for each site in the LMMA. These arrangements are captured in the Management Plan which also sets out fines for breaking the laws. Fines vary differently for the same offence depending on whether the person is a customary landowner, outside community person with customary rights and outsiders with no customary rights.

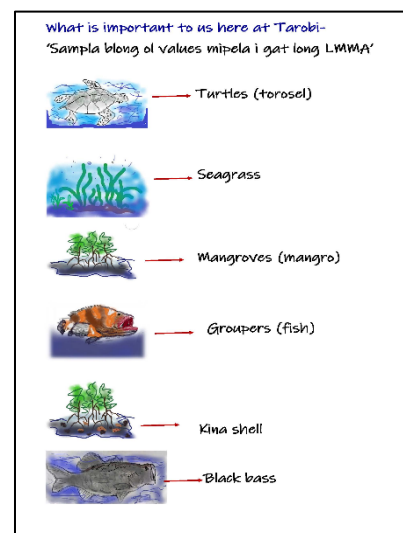
Participants' perspective on what they like about Tarobi LMMA

*'Tarobi LMMA is **rich in marine resources**. We have too many and invite all to come and see! Our marine resources are still intact. Our mangroves have overgrown into mangrove forest. The sea grass area has extended. We have turtle nesting sites, fish spawning sites, a coral network including the 'K1 crater reef', and we are the only place with two varieties of anemones, one from the coral reef and one in the seagrass because we don't eat them like people do in other sites. Our area is away from the main road and being remote, not many people access the area to remove and destroy our marine resources'.*

There are five islands. Liliua Island - where the forest is intact - provides a roosting area for pigeons and other sea birds. The islands have pristine beaches and provide important nesting area for turtles and are known to be a breeding and feeding area for dugong and dolphins as well as spawning aggregation sites for fish species. The islands provide beautiful scenic views. The coral reefs also provide scenic views for diving and snorkelling.

A major reason for the LMMA [is] to keep providing local needs like protein, materials for houses, and goods that can be sold to earn some cash...The economic importance includes beche-de-mer, trochus shell, fish (e.g. black bass, grouper, marlin and mullet) ... Commercial products include beche-de-mer and trochus and on a family scale include fish like rabbit fish, reef fish, mullet, sea shells, kina shells, kina shell lime, shell money from the mangroves. So the LMMA resources provide for food security and there is medicinal use of sea grass (helps asthma).

It also provides cultural connections that maintain local relationships to their marine tenure (matrilineal)... Culturally [important species include] dugongs, giant clam and those that are associated with their clans (taboo to eat, kill or chase such) ... Many are also afraid of masalai in the sites...There are mainly spriritual (masalai and tambu) areas which can be temporary or permanent. The permanent sites are mainly reefs, parts of the mangrove and ends of the islands. The temporary ones are mainly for traditional uses and when there is death.



Key Values, Condition and Trend

Value	Condition	Trend	Description
Mangroves/ wetland (systems)	Very good	↔	Important habitat for marine species, especially fish; plant materials 'help pregnant mothers'; and assists in regulating water quality. Area expanding. Some illegal use/harvesting
Sea grass (system)	Very good	↑	Important habitat for marine species, especially dugong and turtles; medicinal value in treating diabetes; expanding.
Coral systems (corals and reefs)	Very good	↑	Inshore fringing and offshore reefs (' <i>One Kina Reef is an extinct/dormant volcanic crater. Many significant sites relate to this</i>) and islands. Diverse species including fish (clown fish, sandy bass), turtles, anenome, giant clam shells and beche-de-mer.
Turtle nesting	Good	↔	Nesting area for leatherback turtles. Some impact on nest sites from rising sea levels.
Cultural sites and traditions	Very good	↔	Cultural traditions and practices are important, including <i>passing of local knowledge on season, patterns, catch in the absences of modern tech and gear...locals reflect in their languages of names of marine resources and those that are associated to their clan stories like dugongs, giant clams and reef areas...., but the young people are not very interested in pasin kastom.</i>

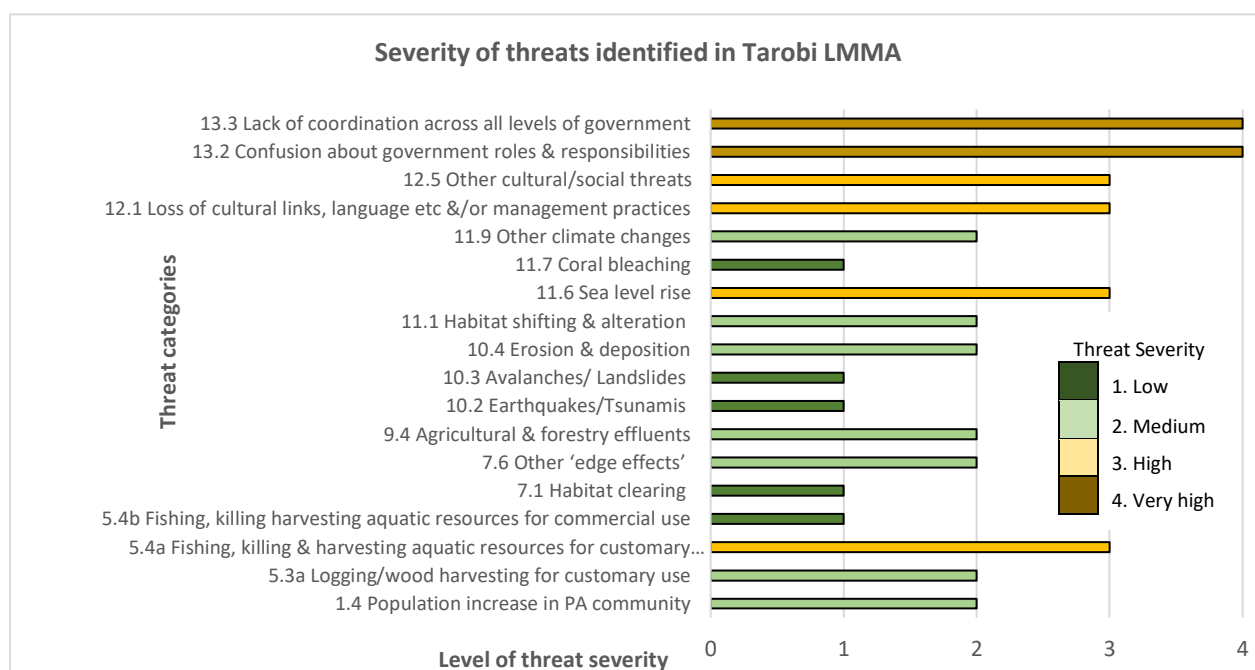
Benefits and negatives related to Tarobi LMMA

The community identified some benefits and negative impacts due to establishing Tarobi LMMA.

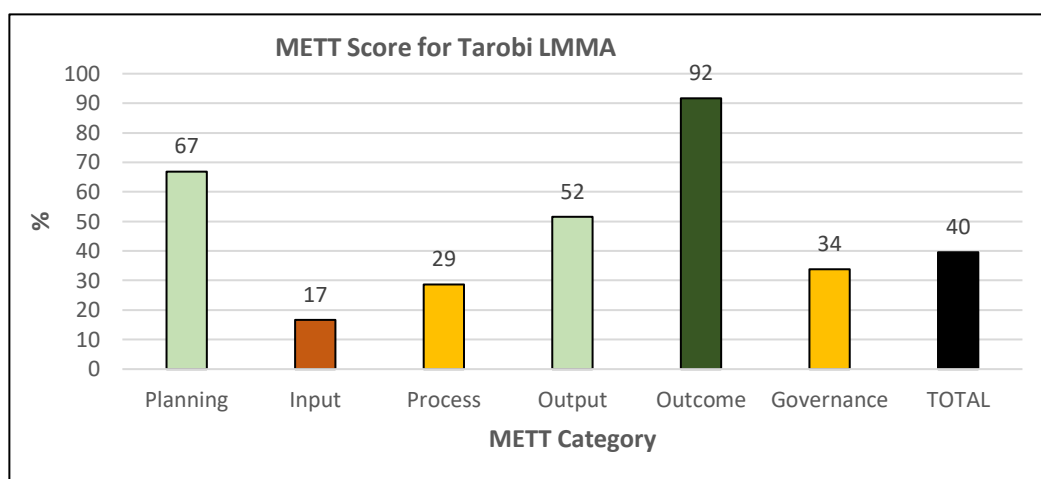
Benefits	<p>Easier to catch fish – more fish due to the spill over effects and the reef has rehabilitated. This is due to zoning and banning of destructive fishing methods (poison roots) and expansion in mangrove areas.</p> <p>Less impact from rising sea level due to rehabilitation of mangrove forest. The LMMA '<i>helps control the rise in sea level rise and other climate change impacts</i>'.</p> <p>Increase in seagrass area and increase in marine resources in the mangrove area e.g. crabs and shellfish.</p> <p>Return of the culturally recognised dugong, which are a <i>source of protein and are associated with many cultural stories</i> in Tarobi. Dugong were over-hunted (for meat). National Fisheries Authority imposed a total ban on harvesting dugong and locals have pledged to stop hunting dugongs.</p> <p>Increase in Kina shells (Makiri) for household consumption, market (cash) and for lime. The meat is collected both for consumption and for sale at informal markets, while the shell is processed into lime (eaten with betel nut) for home consumption and sale at informal markets. Although widely available, there was a decline however the LMMA has restored this through the care of the mangrove systems.</p> <p>There are more and bigger sea cucumbers available for harvest during season openings and this enables the community to make a little more money.</p>
Negative impacts	<p>Reduced and limited accessibility to resources by local owners. The frequency and freedom to use and harvest in the area is limited now and at times monitored.</p> <p>Disputes/conflicts arising amongst clans and families over-use and access rights to zones and sites. Also resulting in illegal take of resources.</p>

Threats to Tarobi LMMA’s values

Description	Extent, Severity and Impacts
Population increase in the LMMA community and nearby areas	People are becoming careless, and are returning to old practices of over-fishing, illegal fishing etc. We need our management plan and the committee to be resourced.
Lack of coordination across all levels of government and confusion about roles and responsibilities	We need the provincial government/LLG to work with us to review the management plan, have it finalised, endorsed and included in the Ward 8, Central Nakanai LLG Development Plan to gain access to funding and support.
Climate change -sea level rise	High tide mark has extended and is causing an extension of seagrass area and affecting turtle nesting sites.
Fishing and harvesting of aquatic species by all groups	Some marine resources are harvested for household use e.g. fish, seaweed, squid/octopus, crab (saltwater and mangrove), prawns, lobster, turtle, crocodile, Bislama, trochus shell and dugong. <i>This is due to lack of awareness and blatant disregard for the rules.</i>
Other severe threats	Loss of cultural links, language and practices



Protected Area Management Effectiveness – Summary of Results



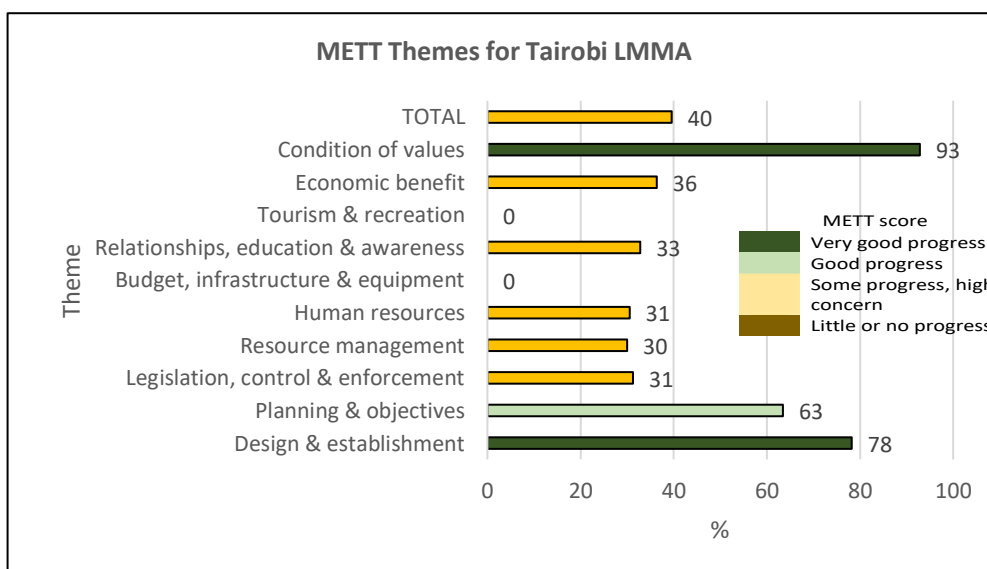
Evaluation – key findings

Element of evaluation	Result
Planning	PA is recognised under the Bialla LLG Marine Environment Law 2004 Management plan (although outdated) partially implemented and with a schedule for review Has agreed management objectives that address ecosystem and species needs Outside planning frameworks take little account of PA (e.g. expanding oil palm, settlement and illegal fishing) PA boundaries and design are satisfactory No work plan
Inputs	Poor information about the PA (no recent surveys), reliant on traditional knowledge No staff , although a few people undertake important management activities (e.g. monitoring of turtle nesting sites) Good traditional knowledge about the PA No budget or budget security; no equipment and facilities No support from CEPA, provincial government, LLG, District or NGOs
Process	Some customary laws for managing sea use and activities e.g. traditional Merarobu Boundaries are mapped (GIS) and most landowners and outside residents are aware of the boundaries, however only some respect the boundary; LLG/Districts aware of boundaries Management committee has new members and have only meet twice Limited equipment (there was a boat, but it was not maintained) No law enforcement ; protection systems are partially effective in controlling access by outsiders The working environment is generally safe No research/survey work or monitoring . Some ad hoc resource management takes place Some initial discussion about likely impacts of climate change; no specific policies on carbon management and storage Broad understanding of ecosystem services Limited and irregular education and awareness training No contact/cooperation with adjacent government/commercial users, tourist operators Fees can be collected (but not currently) Customary landowners have limited input into management discussions (contribute through their clans and zone meetings); people with user 'rights' have input mainly at village meetings or ward days and through matrilineal ties Some management of turtles (on an ad hoc basis), but no routine management; no specific management programs to retain cultural values

Element of evaluation	Result
Governance	<p>Rule of law: Some rules are defined/documented, but there are gaps; little coordination between Mgmt. Committee and others involved in legal matters; no prosecutions due to recency of Mgmt. Committee; unequal treatment under the law – <i>‘there is the wantok system’... ‘people are involved in breaching of the rules...and get away with it’</i></p> <p>Respect of rights: Most user rights are clearly defined and most people in PA are aware of their user/access rights</p> <p>Full and effective participation: There are clear decision-making structures in relation to the Management Committee and PA decision making and these are widely known; few women or young people are involved in decision making and have little influence</p> <p>Transparency and accountability: Little reporting of threats to PA – <i>‘often people who witness the crime are also involved and hence they do not report these incidents’</i></p> <p>Dispute resolution: Processes are documented and known; these processes are only suitable for some PA disputes; up to 30% of disputes are resolved</p> <p>Benefit sharing: No benefit sharing arrangements; inequitable sharing of benefits; no improvement in livelihoods over past 5 years</p>
Outputs	<p>No communication with CEPA, provincial government, LLG (Central Nakanai), district representatives or NGOs; Ward councillor is a non-active member of the Mgmt. Committee</p> <p>Some programs to improve community welfare, while conserving the PA resources</p> <p>Limited support for the PA – <i>‘level of support has dropped since LMMA has dropped down, many community members are involved in destroying the resources’</i></p> <p>Some benefits to community from the PA, but limited access to markets and poor transport</p> <p>Minimal management of threats</p> <p>Connectivity is important and is a main reason for establishing Tarobi LMMA within Kimbe Bay</p>
Outcomes	<p>Most natural values are in a good condition and the status of key species and habitats is stable</p> <p>Cultural values are predominantly intact</p>

METT Themes

An alternative way to think about Tarobi LMMA’s management effectiveness is to examine specific themes. In an overall sense the LMMA’s condition of its natural and cultural values demonstrates very good progress, as are matters related to its design and establishment. Planning and objectives show good progress, mainly because the PA has a management plan and newly established management committee. However, **most themes demonstrate some progress, but high concern** e.g. provision of economic benefits, education/ awareness raising, human resources and capacity, resource management, enforcement and control. Two areas (tourism and budget, infrastructure and equipment) demonstrate little or no progress. **Overall there has been some progress, but there is high concern for the future of the PA.**



Strengths, Challenges and Ways Forward

Strengths	<ul style="list-style-type: none"> • Formally established as an LMMA (under Bialla LLG laws) with management plan (although outdated); agreed objectives, various zones/use types, fines to enhance compliance • Good awareness by community of LMMA rules/zones and values • Management strategies (e.g. bans on turtle harvesting, dugong hunting) have resulted in increased species numbers and larger species (over the last nine years) • Key values are in a very good condition, in part due to the establishment of no take zones (and other zones) and the customary practice of "Merarobu" (closure period, up to 3 years to honour a death) (Note: some decline in dugong numbers and reef bleaching)
Challenges	<ul style="list-style-type: none"> • LMMA needs to transition to the Central Nakanai LLG to ensure more effective management • Funding is needed to: review and update the Management Plan; implement training programs and skills development/capacity building (monitoring, surveillance, enforcement, finance, leadership, awareness raising) • Negotiating and receiving support from industry (oil palm and logging) whose effluents impact on the waterways that lead into the LMMA • Plan implementation, enforcement, monitoring and administration with limited funds/capacity • Preventing illegal entry and the take of resources due to limited equipment and logistics • Getting support from all levels of government to provide support and funding
Ways forward	<ul style="list-style-type: none"> • Planning <ul style="list-style-type: none"> – Formally gazette LMMA under Central Nakanai LLG regulations – Review and develop an updated Management Plan, including revised objectives and clear definition of user/access rights – Improve communication with outside planning frameworks that have the potential to impact on the PA (e.g. LLG and province and commercial land users) – Expand the LMMA to include terrestrial environments (consider <i>'starting with a buffer'</i>) • Budget <ul style="list-style-type: none"> – Seek funding for projects that will improve community sustainability and management e.g. <i>work with the LLG to incorporate the plan into the 5-year development plans</i> – Identify and purchase essential equipment for management (e.g. boat and motor, drone) • Employ and train rangers to work with the community to enhance sustainability outcomes and management effectiveness. Involve community in PA work (e.g. members from each clan); <i>provide incentives (buai, tea or cash)</i> • Law enforcement and protection systems need to be agreed, clearly defined and equitably enforced • Education, research and monitoring <ul style="list-style-type: none"> – Enhance information on the PA's resources (natural and cultural) (e.g. mangroves, seagrass, turtles and other marine species and habitats) to assist in improving management – Develop a community-based monitoring program • Enhanced linkages and communication with all levels of government and neighbouring land users and settlements • Improve governance including: <ul style="list-style-type: none"> – more equitable inclusion of women and youth in decision making – clear documentation of rules, roles and responsibilities – development of benefit sharing arrangements – dispute resolution processes and equity • Awareness raising and capacity building <ul style="list-style-type: none"> – Incorporate into school programs; community within PA and outside (e.g. mangroves and their importance <i>-need to be made aware not to illegally use/harvest mangroves; general user/access rights clearly explained; include in women's groups</i> • Sustainability projects and tourism <ul style="list-style-type: none"> – There is potential for nature based and ecotourism activities in the LMMA. Dive tourism has high potential and could be explored – Facilitate the sustainable production and sale of local products