

Establishing marine protected areas in
Lovongai and Murat Local Level Government
Jurisdictions, New Ireland Province, Papua
New Guinea: 2017 - 2022

LESSONS LEARNED



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Cover photograph: Fishers and outrigger canoe, Tsoi Islands, Lovongai Local Level Government. Photograph source: Elodie van Lierde, 2019.

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PROJECT STAFF: Stacy Jupiter, Adrian Tejedor, Ambroise Brenier, Prakesh Shrestha, Ranjit Topno, Robert Howard, Annisah Sapul, Conrad Yandanai, Yvonne Wong, Jonathan Booth, Elizah Nagombi, Tracy Boslogo, Uali Kula, July Kuri, Kathleen Waninara, Doreen Kilala, Oregon Bolom and Margaret Yapa.

COMMUNITY FACILITATORS AND INTERNS: Bernard Maul, Elizabeth Raimon, Grace Malisa, Glenda Fore, Junior Anson, Karl Banamu, Neva Puake, Alpha Leach, Nesodek Lakawas, Vanua Nason, Joejoe Waslie, Juliette Gillis, Kesiwagao Goi, Liam Gurumang, Nelson Sapung, Sioni Aturoro, Miriam Joseph, David Tao, and Trevor Boslogo.

NOTABLE PARTNERS: Ailan Awareness Inc., Lolieng Sustainable Programme, New Ireland Provincial Government, Conservation and Environment Protection Authority, National Oceans Office, and National Fisheries Authority.



Mananusa coastline, Murat Local Level
Government jurisdiction, New Ireland Province,
Papua New Guinea. Photograph source: Yvonne

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Fishers at dusk, Tsoilik community, Lovongai Local Level Government jurisdiction, New Ireland Province, Papua New Guinea. Photograph source, Elizah Nagombi, WCS.

Background

Flanked by the Bismarck Sea to the south and Pacific Ocean to the north, New Ireland and the adjacent island groups comprise Papua New Guinea's (PNG's) most north-easterly province (Figure 1). Located in the Coral Triangle ecoregion, the Bismarck Sea is considered one of the world's focal points for marine biodiversity, with approximately 600 species of hard coral and 3,000 species of reef fish. The people of New Ireland Province are reliant on their coastal environments for marine resources, used for protein and livelihoods. However, during recent decades, the population of the province has risen from around 118,000 people in 2002 to roughly 265,000 people in 2021, placing pressure on marine resources. More efficient fishing methods, habitat destruction and climate change are also impacting marine habitats and the people who rely on them. While efforts have been made to mitigate against these threats, such as the creation of small locally-managed marine areas (LMMAs), a larger scale approach is required.

From 2017 to 2022, efforts were made to develop a community-focused marine protected area* (MPA) in New Ireland Province to empower communities in managing their marine resources, and to safeguard biodiversity. This approach was bolstered in 2019 when the Lovongai Marine Environment Management Law was passed; although the law has not been fully implemented, it provides an opportunity for an MPA to be created at the local level government (LLG) level. From 2017 to 2018, community consultations took place in 168 communities in Kavieng District, New Ireland Province, to determine community perceived threats to local marine resources and to gauge interest in spatial marine management. The outcomes from the community engagement indicated interest in Lovongai and Murat LLGs, and further feedback from the first two Technical Working Group (TWG)[†] meetings reinforced these decisions. In 2018, it was agreed by the TWG and that two MPAs would be established in Lovongai and Murat LLGs, which will collectively cover 7,500km² of seascape. This decision was supported by the PNG Government during the 2018 World Oceans Conference in Bali, Indonesia, where the following statement was made:

"Papua New Guinea announces that, with the support of the WCS MPA Fund and Oceans 5, it will establish 7,500km² of marine protected areas in the Bismarck Sea, one of the most biologically diverse areas on earth, by 2021. This will triple MPA coverage in PNG. The proposed areas include coastal areas around Tikana and Lovongai Islands (2,500km²) and offshore areas identified as high priority marine areas for conservation in New Ireland Province (5,000 km²)."

In 2019 and 2020, the Wildlife Conservation Society (WCS) – with support from Ailan Awareness Inc.[‡] and the Lolieng Sustainable Programme[§] – continued the community awareness programme in Lovongai and Murat LLGs,^{**} respectfully, which would become the first of three phases of community engagement for MPA establishment. During the initial community engagement phase, grievance mechanisms were installed, and the free, prior and informed consent (FPIC) process was adhered to. Two further phases of community engagement were carried out from 2020 to 2022.

* A marine protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature, ecosystem services and cultural values.

† The New Ireland Province Technical Working Group (TWG) is a steering committee focused on the management of marine resources in New Ireland Province.

‡ A non-governmental organisation (NGO) that advocates reviving traditional marine management methods.

§ A community-based organisation (CBO) based in Murat LLG that focuses on marine environmental work.

** According to the 2011 National Population Census, there are 97 communities in Lovongai LLG, which have a combined population of 29,000; in Murat LLG there are 26 communities and 4,100 residents.

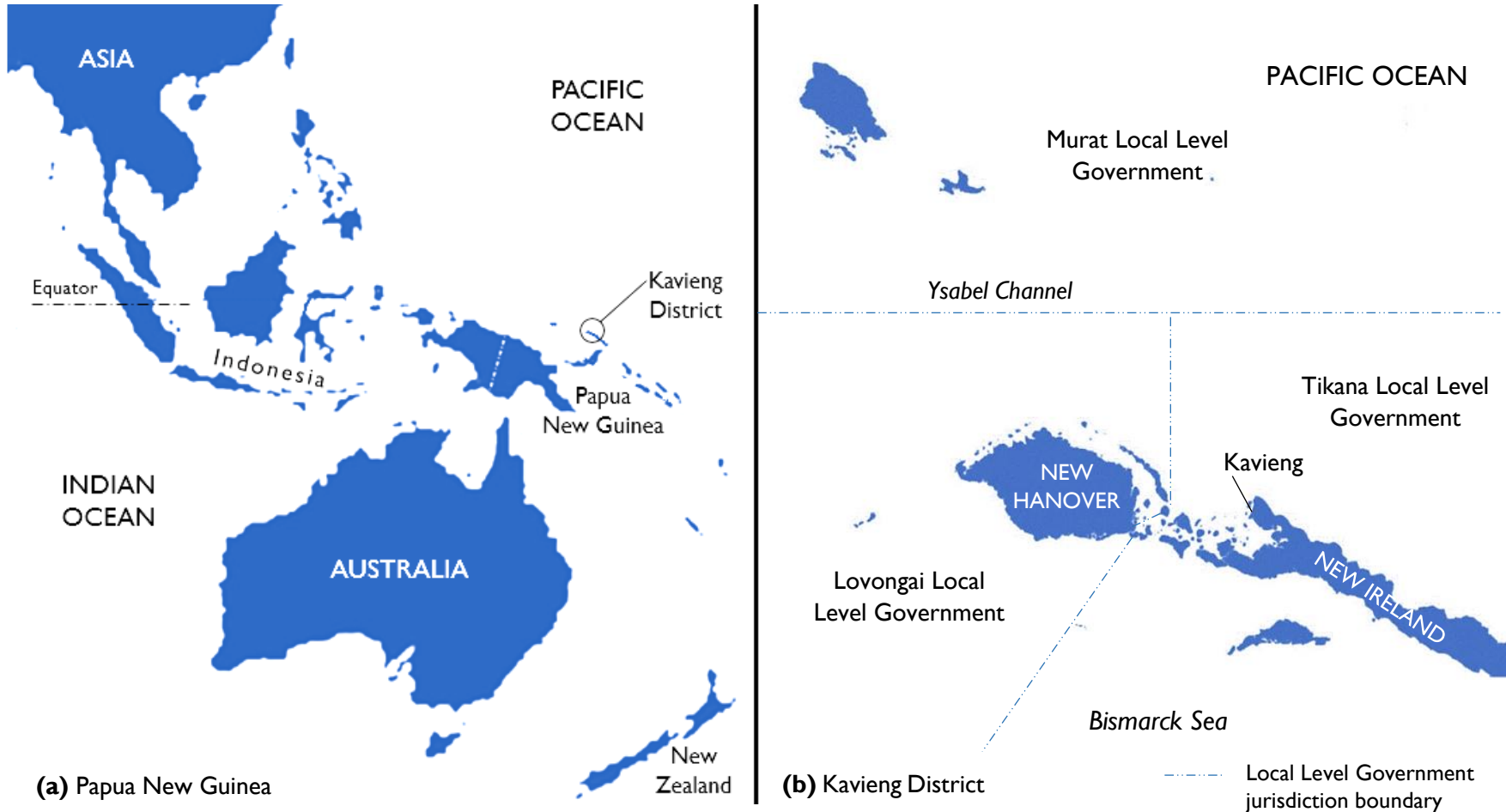


Figure 1: Located between Indonesia and Australia, Papua New Guinea comprises the eastern half of New Guinea – the world’s largest tropical island – and adjacent islands (a). The most north-easterly province of Papua New Guinea is New Ireland Province, which is divided into two districts: Kavieng District comprises the western part of New Ireland Province and Namatanai District forms the eastern half of the province. Kavieng District is further split into four Local Level Government jurisdictions (b). Since 2017, two marine protected areas have been established in Kavieng District, one located around Lovongai Local Level Government, and a second marine protected area located around Murat Local Level Government.

Coastal scene, Lovongai Local Level Government jurisdiction, New Ireland Province, Papua New Guinea. Photograph source: Elodie van Lierde.

ESTABLISHMENT PROCESS



Community engagement and free, prior and informed consent process

For an MPA to be implemented, all community members and other relevant stakeholders must give consent. Accordingly, consent from all community residents and decision-making bodies was sought before the MPA process started. Therefore, starting in 2017, WCS began the free, prior, informed consent (FPIC) process within each of the Lovongai and Murat LLG communities to gain their consent for the establishment of an LLG level MPA. FPIC is the collective right of the people to give or withhold consent and applies to all activities, projects, legislative or administrative measures, and policies that take place in or impact the land, resources, or livelihoods of customary landholders and communities.

The WCS PNG programme has developed a standardised engagement protocol which specifically outlines all steps of community engagement from entry to exit. Initial engagement at all community sites provided an inception to the project (in this case focused on marine conservation and MPAs) and provided space for participating communities to ask questions before deciding whether to grant consent. The FPIC process was aligned with international standards and guidelines, including the International Union for the Conservation of Nature (IUCN) Environmental and Social Management System. In PNG, WCS relied on existing Community Facilitators (CFs) who acted as project intermediaries and ensured that community expectations match the outcomes that the MPAs can realistically deliver. To ensure voices from a cross-section of society could be heard, residents in each community were divided into male, female and youth groups during the different consultation activities.

Outreach, education and awareness programmes

An outreach, education and awareness programme formed an integral part of the MPA development process, particularly at the community level. Typically, the education and awareness programme focused on the following topics:

- The biology and ecology of marine organisms and coastal and marine ecosystems
- The anthropogenic threats to coastal and marine resources and habitats
- The various marine management tools that can be used to manage marine resources
- The policy options available for formalising marine and coastal management approaches

To disseminate messages on these topics to community residents and other stakeholders, a range of education and awareness activities and materials were developed and used, including:

- Training modules and presentations on marine resource management, which were devised in Fiji and adapted for PNG;
- Large, coloured flipcharts featuring marine processes, the ecology of marine resources and the threats they face;
- Role play activities based on a hypothetical marine space, and with participants taking on the roles of marine managers;
- Rotational stations of interactive and kinaesthetic card-based activities, featuring fisheries resource management topics;
- Threatened species and critically endangered sawfish and rhino ray card-based activity, which also introduces the International Union for the Conservation of Nature (IUCN) Red List categories;

PROJECT IN PICTURES

Community entry and FPIC, Lovongai LLG, 2019



Threat analysis activity, Lovongai LLG, 2020

Venn diagram exercise, Lovongai LLG, 2020

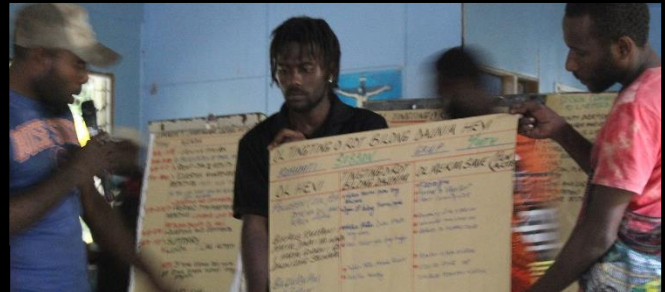


Boundary mapping by boat, Lovongai LLG, 2020



Threat risk matrix, Murat LLG, 2020

Deciding on the risk matrix, Lovongai LLG, 2020



Female focus group in Murat LLG, 2021



Male group deciding on MPA rules, Lovongai LLG, 2022

Presenting rules, Murat LLG, 2020



COMMUNITY CONSULTATIONS

PROJECT IN PICTURES

Shark and ray outreach and awareness, 2021



Conducting awareness in Murat LLG, 2019

Outreach activity in Lovongai LLG, 2020



Critically endangered species card activity, 2022

Taking part in one of the activity stations, 2020



Awareness, Lovongai LLG, 2020



Awareness for female group, Lovongai LLG, 2021

Activity station for male group, Lovongai LLG, 2019



OUTREACH, EDUCATION AND AWARENESS

- Children's activities conducted on the beach that focus on marine food webs and the life-cycles or marine fish;
- Games on marine life, including Top Trump card games that feature the marine life of PNG;
- Informative handouts and posters highlighting marine management topics;
- Videos on marine resource depletion and marine management approaches used in Oceania.

Ailan Awareness Inc. also provided an education and awareness programme that focused on the loss of culture and customs that once contributed to local-level environment and resource management in Lovongai LLG.

Many of the communities that were visited in both Lovongai and Murat LLGs requested copies of the education and awareness materials, which were subsequently used to support further marine management initiatives in the region.

Wider stakeholder engagement

In 2017, WCS and the New Ireland Provincial Government hosted a stakeholder workshop in Kavieng to initiate the marine spatial planning and management process in New Ireland Province. An outcome from the workshop was the formation of a Technical Working Group (TWG), which comprised members from national, provincial and local level governments,* Provincial Fisheries Officers (PFOs), the National Fisheries College (NFC), law and order, non-governmental organisations (NGOs), the private sector, community fisher champions and other stakeholders. The TWG acts in a supervisory role to support marine spatial planning and other marine management initiatives in New Ireland Province.

Since 2017, there has been seven TWG meetings in Kavieng; the next TWG meeting is planned for early 2023. Chaired by the New Ireland Provincial Government Director of the Economic Sector, the TWG has been pivotal in ensuring stakeholder inclusion in the MPA development process. Moreover, comments and feedback from the TWG members have been acknowledged and addressed during the MPA development process. Comprehensive minute meetings were taken and produced during each TWG meeting, which were disseminated the TWG members.† It is anticipated that the TWG will be embedded into the New Ireland Provincial Administration and become an annual or biannual meeting to steer marine management in the province, including the implementation of the two MPAs, for years to come.

Legal process and marine protected area formalisation

Since 2018, the WCS legal advisor, Grace Dom, has been working with the WCS Kavieng team, the Lovongai and Murat LLGs, and the village courts, peace officers, community police and other partners in each LLG, to amend the Lovongai Marine Environment Protection Law, 2019, to develop the Murat MPA LLG law, and to provide training on how to implement the laws. In addition, separate MPA management plans have been developed for each respective LLG, which will accompany each law. In mid-2022, the two LLG laws

* This includes the National Oceans Office (NOO), the Conservation and Environment Protection Authority (CEPA), the National Fisheries Authority (NFA), the Department of Provincial and Local Level Governments (DPLGA), the New Ireland Provincial Government and Administration, and the Lovongai and Murat Local Level Governments.

† Copies of the minute meetings are available from the WCS Kavieng Office in New Ireland Province.

and MPA management plans were finalised after receiving extensive reviews from the LLGs, TWG members, and other partners. It is anticipated that both MPA LLG laws and management plans will be submitted to the DPLGA in late 2022 and that the two MPAs will be formalised and declared in early 2023.

Separate training workshops and meetings were arranged for the Lovongai and Murat LLGs and respective village court magistrates, peace officers, ward councillors and village police officers. The workshops and meetings focused on the development of the MPA LLG laws and management plans. Furthermore, meetings and training workshops were developed for the New Ireland Provincial Fisheries Officers (PFOs) and also for the private sector, including mining companies, seafood product buyers, the tourism sector, and other businesses, in order to inform partners on the MPA development process and to provide an opportunity for stakeholder voices to be raised concerning the MPA boundaries, rules and penalties.

In each LLG, a Marine Environment Management and Conservation Committee (MEMCC) was established to oversee the implementation of each MPA. The MEMCCs were appointed by the LLG in each region as a requirement for each LLG law. After five years, when the MPA management plans and LLG laws are reviewed, the MEMCCs will be reappointed.

Marine protected area monitoring and evaluation

When establishing an MPA, baseline data is collected to detect how the MPA has effected the natural and human environment. In 2019, Phase I benthic, socioeconomic and fisheries data were collected. In 2021, Phase II data collection occurred, enabling temporal analysis to take place. Subsequent phases of data collection will be carried out in 2023, and every other year following the implementation of the two MPAs.

For the benthic biological data collection, life form categories for the benthos were recorded, and coral identification was carried out to genus level. For fish and sea cucumber surveys, coral reef-associated fish species and abundance were recorded to species level, and fish total lengths were recorded in centimetres. In 2021, a fish expert was not available to conduct the fish surveys in New Ireland Province. As such, sea cucumber surveys were conducted in 13 sites in Kavieng District in July and August 2020 (before the moratorium on sea cucumber harvesting was lifted in mid-August 2021) and again in October and November 2021. As a measure of sustainability of fishing pressure, the proportion of local fish catch above recommended minimum size limits was measured through locally implemented catch-per-unit-effort (CPUE) surveys at 13 sites. For the catch data, individual counts for each fish species were recorded. Fishing method used was also recorded for each trip. The reference point used to indicate sustainable harvesting was species size of maturity (SoM), defined as the size at which 50% of fish become adults.

For socioeconomic monitoring, household surveys were designed to gather information on livelihoods, material style of life, fishery resource dependence, management, and level of involvement in decision making, to understand community's resilience and adaptive capacity to ecological change. These surveys were carried out in 13 communities in Kavieng District. Key informant surveys were also conducted in each community with a small group of local key informants such as leaders and fishers, who had a better understanding of the management practices that were in place at the village and district level. The questions focused largely on assessing the effectiveness of marine management on community living standards. Key informant surveys were largely used to validate information provided through household surveys. In addition, an assessment of potential risks and mitigation measures was undertaken with the

PROJECT IN PICTURES



Fifth Technical Working Group meeting, 2020



Sixth Technical Working Group meeting, 2021



Seventh Technical Working Group meeting, 2022

TECHNICAL WORKING GROUP

PROJECT IN PICTURES



Phase II of sea cucumber monitoring, 2021



Phase I of fisheries CPUE monitoring, 2019



Phase I of socioeconomic surveys, 2019



Phase II of the benthic transect surveys, 2021



Phase II of the fisheries CPUE monitoring, 2021



Phase II of the fisheries CPUE surveys, 2021



Training workshop on CPUE monitoring, 2021



Practical training for CPUE surveys, 2021

MONITORING AND DATA COLLECTION

communities in each of the project communities, which were disaggregated by gender. For each risk, the groups discussed avoidance, mitigation measures and monitoring methods.

Development of the marine protected area management plans

In early 2022, based on the outcomes from the community consultation process in both Lovongai and Murat LLGs, two site-specific management plans were developed for each MPA. The MPA rules, regulations and penalties for each MPA – that were determined through the risk matrix activity – and also the boundaries of each MPA were included in each respective management plan.

Prior to the community consultations, WCS visited 168 communities in Kavieng District to conduct outreach and to gain an understanding of what the communities wanted in terms of marine management. Before engagement work took place, initial community entry occurred, in which community facilitators introduced WCS and the project work, through the FPIC process. Grievance mechanisms (Appendix I) were established in each community, enabling residents to report project-related grievances through the correct channels. Initial outreach and awareness was carried out in each community, focused on the ecology of marine species, the threats to marine resources, and possible management options that could be used. A threat analysis was carried out to determine the threats each community thought were harming their marine resources, which was conducted through a risk assessment exercise. Using Venn diagrams, local governance and decision-making structures were also assessed. Once community consent had been given, all the information was compiled and the planning for the Phase II consultations began.

Prior to commencing the Phase II consultations, the community-perceived threats were inserted into a risk matrix. The risk matrix provided hypothetical magnitude and frequency scores for each threat, the outcomes from which were combined to provide risk impact ratings. During the Phase II consultations, the FPIC process was conducted for village participants that did not attend the first meeting, followed by an update on the Phase I consultations. Further awareness was carried out, followed by the risk matrix activity, which was conducted with separate male, female and youth groups in each community, providing opportunities for a cross-section of society to raise their voices. The development of community-selected rules and penalties for non-compliance were discussed, agreed upon, and listed during the male, female and youth groups. Community elders and leaders – accompanied by WCS staff – also sailed to the furthest point from within their customary marine tenure, where a GPS point was taken. The GPS points around each LLG were mapped, and the furthest point from the shore was used to determine the outermost boundary of each MPA, ensuring all communities in each LLG are included within the MPA.

Following the Phase II consultations, all the risk matrix information was pooled for each LLG; the threats that received the highest risk impact rating scores were used to determine the MPA rules. The GPS points for each community were mapped for each LLG, providing the outer most boundary for each MPA. During the Phase III consultations, the community-selected MPA rules (see Appendix II) and boundaries were disseminated back to the communities in order to gain consensus and verification, through male, female and youth discussion groups. The communities were also informed about why some rules and regulations were not included in the MPA management plans (because they did not rank high in the risk matrix outcomes), and there was an update on the LLG law development progress. All feedback obtained from the Phase III consultations was used to amend and update the MPA management plans. Figure 2 depicts the final boundaries of the Lovongai MPA; Figure 3 depicts the Murat MPA boundaries.

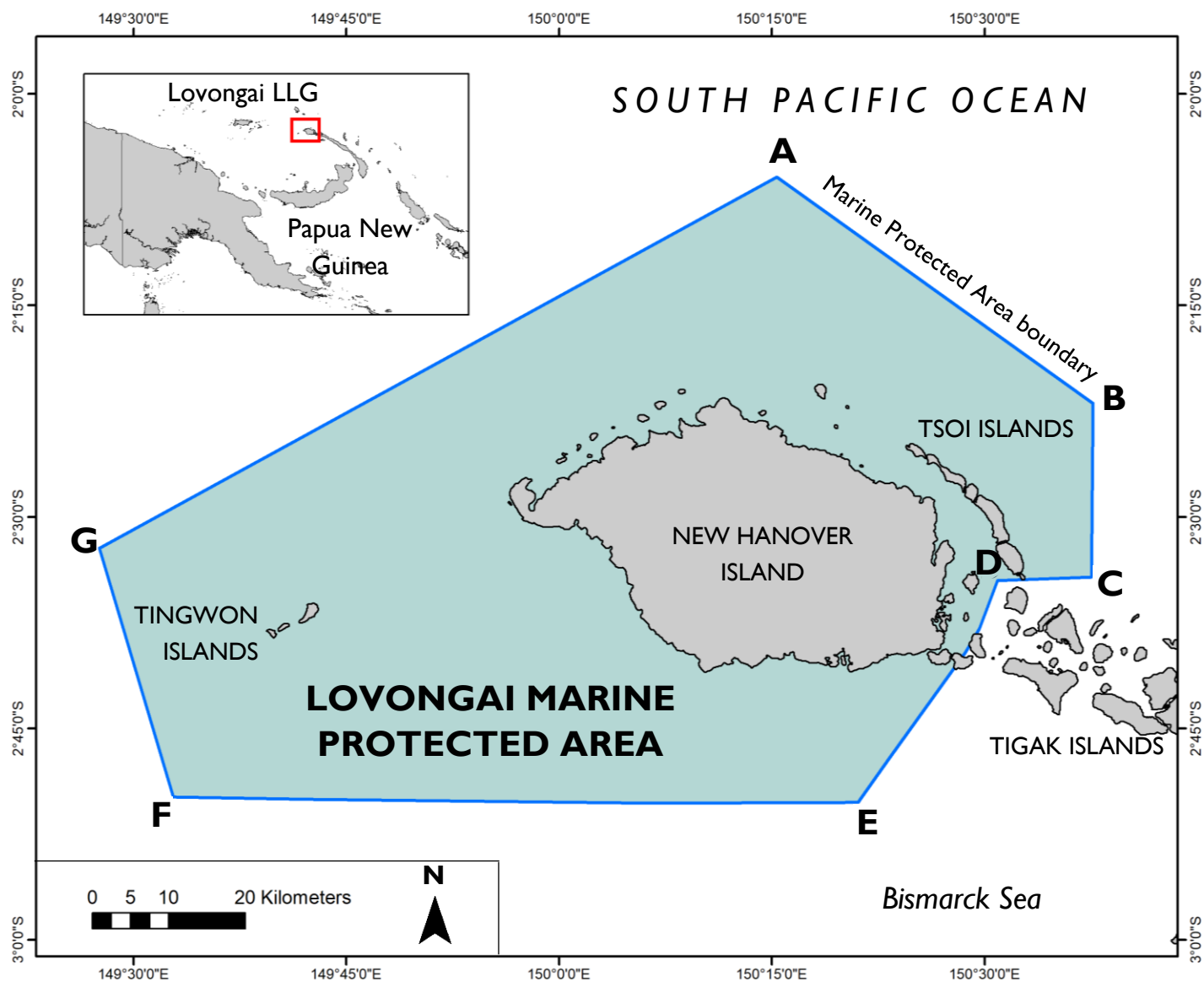


Figure 2: The Lovongai Marine Protected Area comprises 5,826 km² of coastal, inshore, and open waters in Lovongai Local Level Government Area jurisdiction, located in New Ireland Province. The location of Lovongai LLG in relation to PNG has been shown in the insert map.

DISCLAIMER: *It is important to state that the MPA demarcation is not a formal claim by the people of Lovongai LLG over the customary sea space. The boundaries are used for mapping purposes to indicate the operational jurisdiction of the Lovongai LLG Law and the Lovongai MPA Management Plan.*

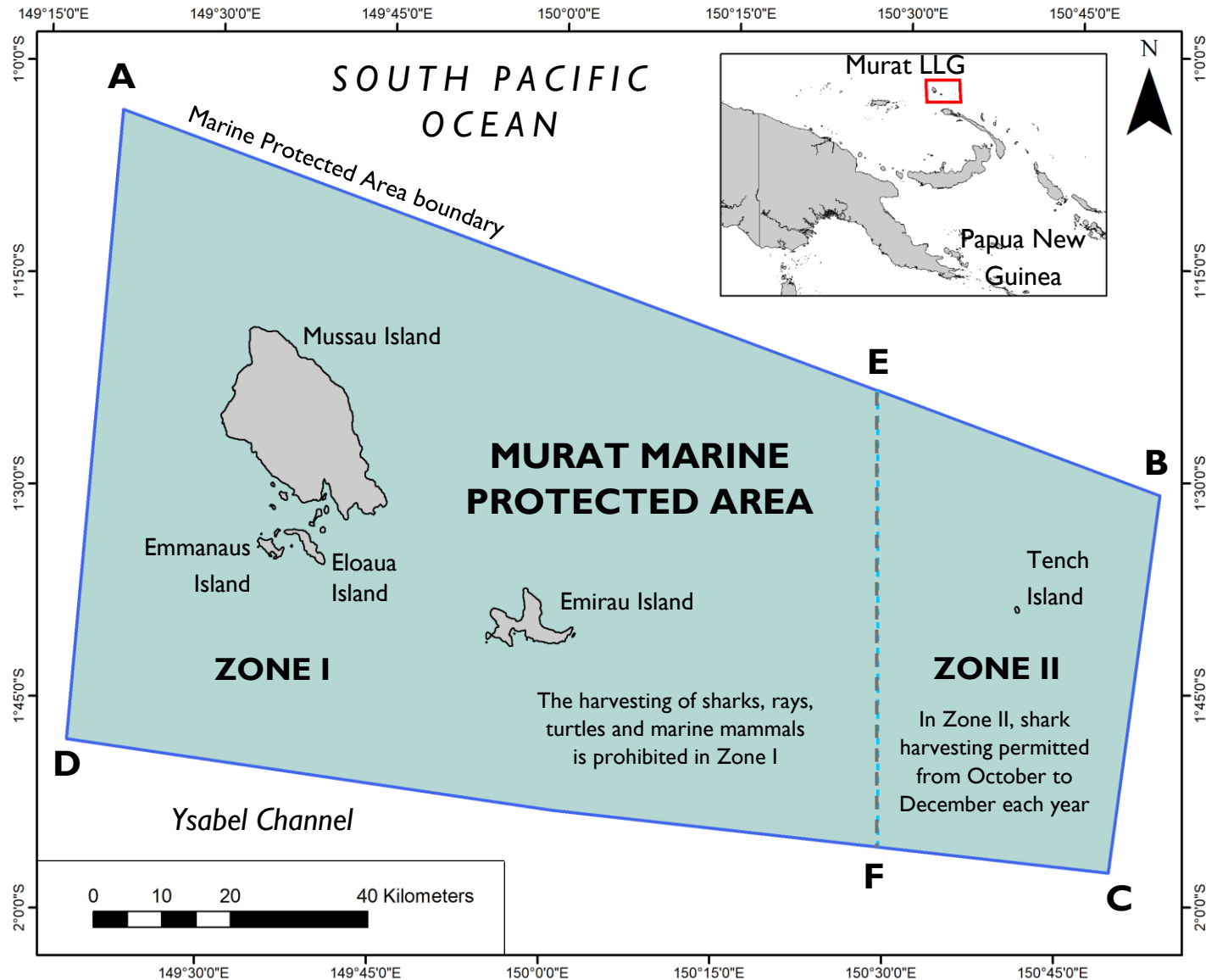


Figure 3: The Murat Marine Protected Area comprises 11,107 km² of coastal, inshore, and open waters in the Murat Local Level Government Area jurisdiction, located in New Ireland Province. The location of Murat LLG in relation to PNG has been shown in the insert map.

DISCLAIMER: *It is important to state that the MPA demarcation is not a formal claim by the people of Murat LLG over the customary sea space. The boundaries are used for mapping purposes to indicate the operational jurisdiction of the Murat LLG Law and the Murat MPA Management Plan.*



LESSONS LEARNED

Kone coastline, Lovongai Local Level Government jurisdiction, New Ireland Province, Papua New Guinea. Photograph source: Yvonne Wong, WCS.

Activity specific lessons learned

Lessons learned from the MPA development process in Lovongai and Murat Local Level Government MPAs.

ACTIVITY	DETAILS	LESSONS LEARNED
Community engagement and free, prior and informed consent process		
Undertaking comprehensive community consultations to gauge interest and support for biodiversity conservation and marine resource management through the FPIC process	<p>In 2017, 168 communities were visited in Kavieng District to discuss the status of their marine resources, the threats to their resources, and management options to address the threats. Following the consultations, and with feedback from the TWG members, it was decided that spatial management was the best option to address the threats and that two community-based MPAs should be located in Lovongai and Murat LLGs.</p> <p>In total, 87 communities were consulted in Lovongai LLG and 26 communities consulted in Murat LLG</p>	<p>For any marine management measure to be successful, residents must want to manage their resources and also identify the suitable management approach. Extensive community engagement, coupled with outreach, education and awareness, should then follow, with ample opportunities for residents to decide on the management process and regulations.</p> <p>The process can take several years to ensure community voices are heard</p>
Put in place appropriate mechanisms for stakeholders to voice grievances relating to the project	Grievance mechanisms (see Appendix I) were developed and installed in all visited communities in which the MPAs were established. The mechanism provides individuals or groups the process and contacts for lodging a formal complaint	Residents used letters or made office visits to voice any concerns, indicating that the approach was too formal for the communities. Regular community visits provide a more appropriate method for communities to voice concerns directly to the MPA practitioners and facilitators.
Comprehensive record keeping and reporting on the consultation process	Three phases of extensive community consultations took place. Phase I focused on evaluating threats and identifying local governance structures, Phase II focused on determining the rules, penalties and boundaries of the two MPAs, and Phase III focused on gaining consensus for the MPA rules, penalties and boundaries. During each phase a database of notes including community feedback on the specifics of the MPA rules and boundaries was created for each community. The data was then summarised in a report to outline the consultation process, notably documenting the FPIC process.	<p>Communities should be responsible for the development of the MPA rules, regulations and penalties, and the setting of the MPA boundaries. Using a threat analysis and risk matrix can assist community residents in developing MPA rules in a systematic and objective manner.</p> <p>The collection and maintenance of the FPIC process and the consultations proved critical to tracking feedback from the communities, including how decisions were made and rules approved. The community consultations' raw database and report provide evidence that can be shared with the communities, government departments, other stakeholders and donors that the process was community led and consent was given by the people to create the two MPAs.</p>

Outreach, education and awareness programmes

<p>Production and dissemination of environmental- and marine resource management awareness materials for the consultations</p>	<p>An array of education and outreach materials were developed and used at the community level, including presentations, card games, activity stations, interactive exercises, posters and handouts. These materials dealt with themes ranging from general marine ecology to fisheries and MPA management.</p>	<p>Direct meetings with communities on fisheries and MPA management would not have been successful without first starting with and regularly undertaking sessions on environmental awareness. Key to this is using a range of methods to get messages across to a range of people (such as different resources and methods for adults compared to children). The teams found hands-on, interactive outreach and education materials, as well as storytelling, were the most useful techniques to disseminate marine management messages, rather than written materials, such as handouts and posters.</p>
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Wider stakeholder engagement

<p>Establishment of a Technical Working Group (TWG) to oversee the MPA consultation and establishment process</p>	<p>A provincial TWG was formed, comprising government, education, law and order, private sector, NGO and community representatives. The TWG met seven times from 2017 to 2022 and steered the direction of MPA establishment process. The TWG developed and agreed on roadmap for MPA establishment (with a strong focus on community engagement). The TWG also agreed on the MPA rules and boundaries, and on the language used for legal regulations and the sharing of lessons learned.</p> <p>During the fourth TWG, terms of references (ToR) for the TWG members were developed and implemented during subsequent meetings</p> <p>Meeting minutes for each of the seven TWG meetings were developed and shared with all TWG members. The meeting minutes included details on the agreement of the roadmap, the nature of the MPA management rules, boundaries and governance structure, agreement on the language used for legal regulations, and any lessons learned</p>	<p>The formation of a TWG was key to the creation of the two MPAs. This ensured the process was not a WCS project, but rather part of the province's conservation work plan and objectives. Key to this was having the TWG group chaired by the Director of the Economic Sector in New Ireland Provincial Government. The TWG has been well-attended during the past five years, and has steered the development of the two MPAs, which includes providing agreement on the locations of the two MPAs, as well as their rules, penalties, boundaries and legal formalisation. Having such a group ensures major decisions are agreed upon by a range of key stakeholders, such as the roadmap to MPA establishment and MPA boundaries and rules, and ensures the process of MPA creation reaches a wider audience. The group also helped fast track the amendments to the LLG Marine Environmental Law and thus a wider audience was aware of this law and the changes being made.</p> <p>As with the community consultations noted above, a record of the discussions and decisions made during these meetings were made through comprehensive meeting minutes. Sharing such minutes with the TWG members and other partners was also important to ensure they captured what was discussed and to make sure no members were misrepresented. The record of each meeting also enables all suggestions raised to be readdressed during subsequent meetings.</p>
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Legal process and marine protected area formalisation		
Develop submission for official declaration of the New Ireland Province MPAs	Through consultations with the legal advisor and stakeholders, MPA management plans were developed. Decisions were also made to use LLG laws (under the Organic Law for Provincial and Local Level Governments, 1998, which is recognised by the PNG Constitution) until the Protected Areas Bill is passed by the PNG Parliament	A legal advisor is necessary for the development of the laws and for reviewing the MPA management plans. Time is required to develop the legal documents. Moreover, time is required for stakeholders to review and edit the documents. Involving stakeholders at the national, provincial, district, local and ward levels, including government, is crucial for ensuring the MPA management plans and laws are inclusive and accepted by all stakeholders
Legal options for MPA establishment documented and presented to stakeholders. MPA gazettal papers submitted to the government	Through consultations with the TWG, LLGs and other stakeholders, it was decided to use LLG laws to formalise the two MPAs. Grace Dom, the legal advisor, presented the plan to use LLG laws to the TWG, LLGs and other stakeholders for feedback and agreement. LLG laws, LLG cover letters and MPA management plans have been produced and finalised. The documents will be presented to the LLGs, Marine Environment Management and Conservation Committees (MEMCCs) and the Department of Provincial and Local Level Governments (DPLGA) in October 2022.	MPA management plans and LLG laws were presented to stakeholders during LLG, MEMCC and TWG meetings, and also submitted to stakeholders through email. Stakeholder feedback was used to update the management plans and laws. It is vital to obtain stakeholder agreement and consensus on the final MPA laws and management plans before they are submitted to the relevant government departments. Without continuous stakeholder engagement and agreement, there will be a lack of inclusion in the decision-making process among stakeholders, which will likely lead to objections.
Provide training for MPA managers (at the national, provincial, LLG and community level) in MPA establishment and management, including village court magistrates, provincial government officers and peace officers	Marine Environment Management and Conservation Committees (MEMCCs) were established in each LLG to oversee the implementation of the MPA management plans and laws. The MEMCC comprised LLG and ward-level officials, women and youth representatives, NGO representatives, church leaders and other key stakeholders. The MEMCCs received training in how to implement the LLG law and management plan and in MPA establishment and management techniques. The legal advisor, Grace Dom, provided training on the enforcement of the MPA management rules to village court magistrates, provincial fisheries officers, peace officers and other partners.	It is necessary for the MEMCCs to be appointed by the LLG, and receive legal training on LLG law and MPA management plan implementation. If not, the LLG may not take the MEMCC seriously or indeed the MPA, leading to a lack of support from the government and thus the failure of the MPA.

Marine protected area monitoring and evaluation

<p>Undertake baseline and evaluation biological surveys, with outcomes reported to communities and partners</p>	<p>Two waves of benthic monitoring took place in five communities in 2019 and 2021. Fish surveys were only carried out in 2019; no fish expert could complete the fish surveys in 2021. As such, two phases of sea cucumber monitoring surveys took place in 13 communities in 2020 and 2021. A report on the benthic and sea cucumber assessments was produced. Community-specific posters on the first wave a benthic data collection were developed and distributed, which included advice on marine management</p>	<p>Baseline surveys provide data on the state of coral reef and other benthic environments prior to the implementation of the management initiative; subsequent surveys can be compared to the baseline surveys to see if coral cover and other environmental variables have changed since management began. It is important to ensure that fish and benthic experts are present in the country prior to conducting the surveys. Sea cucumber surveys were carried out as an alternative to the benthic surveys. Monitoring information should be provided to stakeholders, partners and communities to report on how the management initiative is impacting the environment and whether the management needs to be amended. For communities, the monitoring outcomes need to be presented in a simple manner, using visual materials (which are not text based) or through storytelling, song and dance.</p>
<p>Implement baseline and evaluation socioeconomic monitoring, with outcomes reported to communities and partners</p>	<p>Two waves of household socioeconomic monitoring took place in 13 LMMA communities in 2019 and 2021. Key informant surveys were conducted in 2019. A report on the socioeconomic results was produced. Community-specific posters on the first wave a socioeconomic data collection were developed and distributed, which included advice on marine management</p>	<p>Baseline socioeconomic surveys provide data on how local residents rely on the marine environment prior to the implementation of the management initiative; subsequent surveys can be compared to the baseline data to indicate if human well-being has improved or deteriorated since management began, and also to provide a temporal assessment on how the marine management initiative is impacting people. Data collectors should be trained in data collection, including ethics review training. The survey forms should be submitted for Institutional Review and approved before being used. All data collection should be conducted through the FPIC process, and consent should be granted by the participants prior to beginning the data collection. Data should be anonymised. Monitoring information should be provided to stakeholders, partners and communities to report on how the management initiative is impacting the human well-being and livelihoods and whether the management needs to be amended. For communities, the monitoring outcomes need to be presented in a simple manner, using visual materials (which are not text based) or through storytelling and song.</p>

<p>Implement baseline and evaluation catch per unit effort (CPUE) monitoring, with outcomes reported to communities and partners</p>	<p>Two waves of fisheries CPUE monitoring took place in 13 LMMA communities in 2019 and 2021. A report on the CPUE results was produced. Community-specific posters on the CPUE data collection were developed and distributed, which included advice on fisheries management</p>	<p>Baseline fisheries CPUE surveys provide data on the state of small-scale fisheries prior to the implementation of the management initiative; subsequent surveys can be compared to the baseline data to indicate if local fisheries have become more sustainable since management began, and also to provide a temporal assessment on how the marine management initiative is impacting people.</p> <p>Ideally, two weeks should be spent in each community to collect sufficient CPUE data. The data collectors need training on fish identification and on how to collect the effort data. Many fishers depart and return during the night time, which can disrupt sleeping patterns. It is not advisable to pay fishers that take part in the surveys, which could lead to biased data collection.</p> <p>Monitoring information should be provided to stakeholders, partners and communities to report on how the management initiative is impacting local fisheries and livelihoods and whether the management is successful or needs to be amended. For communities, the monitoring outcomes need to be presented in a simple manner, using visual materials (which are not text based) or through storytelling, song, and dance.</p>
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General Lessons Learned

The following points outline key lessons learned during the establishment of the two MPAs in New Ireland Province and other activities carried out during the Blue Action Fund project. Although this is not an exhaustive list, it contains major themes and recommendations that may be of assistance to marine managers and community resource owners, especially when establishing and implementing future spatial marine management initiatives in PNG.

Purpose, support and funding:

A clear understanding of the purpose for establishing an MPA or marine management initiative needs to be known, which may include biodiversity protection, fisheries management or improving local climate change resilience. Whether the MPA is a government, community or external group decision – or an objective for an international NGO – the justification for such an undertaking needs to be clear and with sufficient external support and prolonged financing to ensure the long-term lifespan of the management area.

Location and developing clear objectives:

A wealth of marine and coastal habitats are located around the shores of PNG, most of which support small-scale fisheries and are important sites for cultural and customary practices. When establishing an MPA, consideration should be given to how the management initiative will benefit marine biodiversity, while also sustainably increasing local fish yields and enabling traditional practices to continue.

Engagement and education:

An extensive community engagement programme should be undertaken in all communities located within the proposed marine management area, and to all marine practitioners and the village courts. The engagement programme should be coupled with a tailored education and awareness strategy to inform community residents about marine management and enforcement options, as well as the direct and indirect benefits and constraints of MPA implementation. Efforts should also be made to ensure local expectations are not raised, such as not promising overnight change, rapid community development or an influx of money.

Community engagement protocol:

All community engagement should be conducted through the free, prior and informed consent (FPIC) process. Appropriate grievance mechanisms should be in place to allow communities to report any complaints or disservices encountered during the development and implementation phases of the MPA or other marine management initiative.

Stakeholder consultation:

Technical working groups and management committees, comprising representatives from national, provincial and local level governments, including the fisheries and environment sectors, as well as education institutes, the private sector, law and order, local NGOs, community representatives, and other stakeholders, should be established with regular meetings to provide consensus on the development and implementation processes required for establishing an MPA or other marine management initiative.

Involvement and ownership:

Community residents – and especially local fishers – should be involved with the development of the marine management rules and penalties and the setting of the MPA boundaries; such an approach can provide communities with a sense of ownership and local pride for the marine management initiative.

Rules, regulations, penalties and boundaries:

Proposed marine management boundaries, rules and penalties should be agreed upon – or receive majority consensus support – by the members of the stakeholder working groups and management committees and through the community consultation process. Zones for specific marine management purposes should also be agreed upon prior to implementing an MPA or other marine management initiative.

Representation:

All decision-making activities conducted at the community-level – and with other stakeholders – should include opportunities for both women and men to voice their concerns, opinions and interests. Youth representatives should also be included in all decision-making activities, especially at the community level. Similarly, when collecting socioeconomic or fisheries data for monitoring purposes, emphasis should be placed on collecting disaggregated data from a broad spectrum of society, including women and youth.

Governance structure:

A defined and responsible governance body should be established – which is built on existing traditional governance structures – for managing the implementation phase of the MPA. The governing body should comprise key representatives appointed from the area that is to be managed or protected. An example could be a Marine Environment Management and Conservation Committee (MEMCC), which is a requirement for establishing an LLG marine management law.

Policy options:

Situation analyses and legal reviews of potential policy and legislation options should be conducted before the MPA design and development phases, allowing the most suitable legal mechanism to be utilised in order to formalise and enforce the proposed MPA or spatial marine management initiative.

Management plan:

A management plan should be developed for the MPA rules and regulations. The plan should include: (i) instructions and guidelines for MPA management; (ii) work plans for activity implementation; (iii) the roles and responsibilities for the governing body and other stakeholders; (iv) options for fund raising; and (v) timelines for reviewing the monitoring plan. The MEMCC or governing body is responsible for overseeing the implementation of the management plan. The management plan should also be linked to local Ward Development Committee (WDC) plans. Management plans need to be accessible and understandable to all stakeholders. When comprehensive plans are required, efforts must be made to ensure simplified versions of the plan are available to stakeholders where literacy may be low. In addition, workshops with communities detailing the plans should be undertaken, and not simply disseminating hard copies.

Enforcement and compliance:

Surveillance plans should be developed to ensure the MPA rules and regulations are adhered to. The surveillance plans should be linked to the local village court system, and village court magistrates and

peace officers should receive training on how to enforce the MPA rules and ensure MPA rule-breakers are appropriately penalised. All MPA offenses should be documented for future reference and to assist with adaptive management.

Monitoring and evaluation:

A biological, socioeconomic and fisheries monitoring programme should be implemented following the enactment of the MPA, with outcomes compared to baseline data collected before the MPA was established. The monitoring plan should also include assessments of how coastal residents perceive the benefits of their MPA. The outcomes from the monitoring programme should provide a basis for local adaptive management.

Monitoring teams:

Capacity building and appropriate training should be provided to all biological, socioeconomic and fisheries monitoring personnel. Resources and funding should be sourced and allocated to monitoring staff, enabling a robust and feasible monitoring regime to be developed and implemented.

Adaptive management:

The outcomes from the monitoring and enforcement programmes should be assessed every five years or so by the MPA governing body and other stakeholders. The outcomes, together with feedback from local communities and other stakeholders, can be used for adaptive management, enabling the MPA management plan to be reviewed and adjusted accordingly.

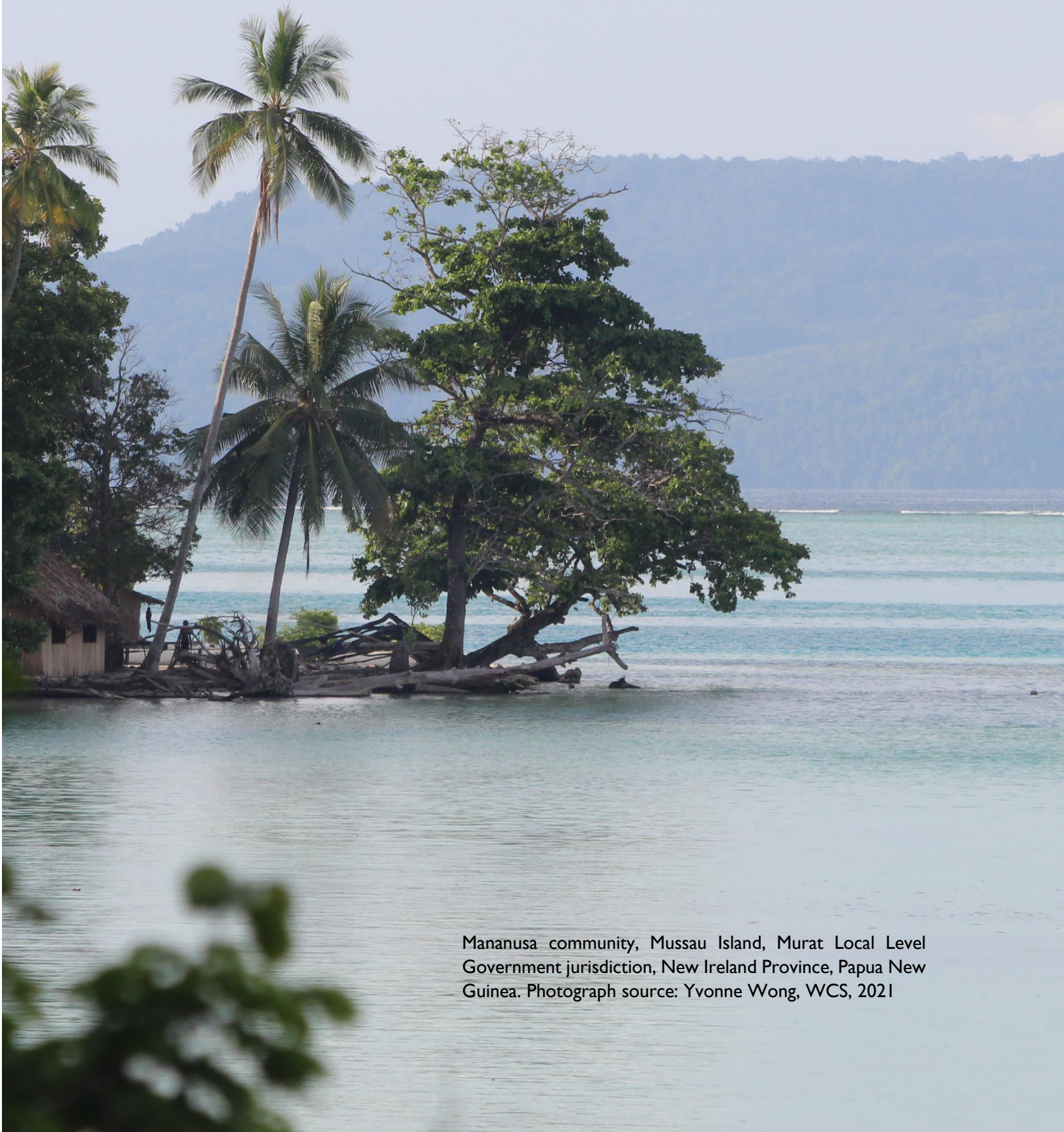
Communications:

Information concerning the MPA, including the rules, penalties, boundaries, and outcomes from the monitoring and surveillance programmes, should be disseminated back to the communities and publicised through relevant media channels, which may include posters, handouts, pamphlets, radio broadcasts, social media posts, newspaper articles and academic journal entries.

Helping others:

Lessons learned reports should be produced concerning the development and implementation challenges and successes encountered during the MPA process, and shared with all stakeholders to assist future marine practitioners in PNG.

APPENDIX



Mananusa community, Mussau Island, Murat Local Level
Government jurisdiction, New Ireland Province, Papua New
Guinea. Photograph source: Yvonne Wong, WCS, 2021

Appendix I: Grievance mechanism

WILDLIFE CONSERVATION SOCIETY



SCALING UP MARINE PROTECTED AREAS IN MELANESIA FOR BIODIVERSITY CONSERVATION, FOOD SECURITY AND LIVELIHOODS



A BLUE ACTION FUND PROJECT

PROTOCOL FOR FILING A COMPLAINT

The Wildlife Conservation Society (WCS) is a not for profit organisation and a public charity. WCS has been registered in Papua New Guinea since 1970s and we operate with a mission across Melanesia. We strive to ensure that ecosystems and species are managed sustainably for enduring livelihoods and conservation.

WCS staff abides by a Code of Conduct with high levels of standards for integrity, transparency and accountability. WCS recognises that conservation projects occur within the real world and that unintended and undesired outcomes can happen. Under these circumstances, WCS has a mechanism to acknowledge, address and resolve all complaints that may arise under this project through the actions of WCS staff or the actions of our partners.

Complaints can be reported verbally to a local WCS staff or partner staff member or by phone or email to the following Papua New Guinea or WCS Melanesia staff:

- **Ambroise Brenier**, WCS Papua New Guinea Director: (+675) 5323494; abrenier@wcs.org
- **Stacy Jupiter**, WCS Melanesia Director: (+679) 3315174; sjupiter@wcs.org
- **Robert Howard**, WCS Regional Project Coordinator, (+679) 3315174, rhoward@wcs.org

By mail to the following addresses:

- **WCS New Ireland Office** PO Box 95 Kavieng New Ireland Province
- **WCS PNG Office** PO Box 277 Goroka Eastern Highlands Province
- **WCS Melanesia Regional Office**, 11 Ma'afu Street, Suva, FIJI
- For complaints related to infringements of human rights (i.e., the taking of rights, land, resources, and property, or where someone is physically harmed or killed), report to the WCS Social Safeguards Management Team by email at humanrights@wcs.org
- An optional grievance submission form can be obtained by contacting the local WCS office or by sending an email to humanrights@wcs.org

Please include the following information with each complaint:

1. Name(s), affiliation(s), address(es) and other contact information of the complainant(s) and/or their representative(s);
 - a. Representatives must identify the person(s) on whose behalf the grievance is made and provide evidence of their authority to represent such person(s); or
 - b. Whether the complainants choose to keep their identities confidential. Note, however, that anonymous grievances may limit WCS's ability to properly investigate and respond to the grievance.
2. A description of the specific facts, circumstances and events giving rise to the grievance: location, date, time, names and descriptions of individuals involved, statements made including exact quotes where possible, actions observed or witnessed, and names or descriptions of any witnesses. The more specific and detailed information provided in support of the grievance, the more thoroughly and effectively the grievance can be investigated and addressed.
3. An explanation of the harm suffered and how the rights of an individual or community were violated. The complainant may refer to codes of conduct, standards, policies or other frameworks (such as the FPIC process) pertinent to the case and, where applicable, should describe any efforts to resolve the grievance through other available redress mechanisms.
4. A description of the relief requested, where relevant or appropriate.

WCS will contact the complainant within **5** working days to acknowledge receipt of the complaint. A review plan will be developed for resolution of each reviewed complaint. WCS will issue a report with findings and remedial actions taken to resolve the issue to the complainant, other stakeholders involved, and all requesters.

Appendix II: Lovongai and Murat Marine Protected Area management rules

The final rules for the Lovongai MPA, which were listed in the Lovongai MPA Management Plan, are:

- Prohibition on the use of gillnets that have a mesh size of 3 inches or less within the boundaries of the Lovongai MPA
- No night or torch fishing (from sunset to sunrise) within the boundaries of the Lovongai MPA.
 - EXCEPTION: Night fishing may occur during specified open seasons or certain occasions as agreed upon by the MEMCC
- The disposal of locally-discarded plastics, glass, metals and other non-biodegradable waste onto the beach (defined as below the mean high tide mark) or in the sea is prohibited within the Lovongai MPA boundary
- Do not harvest critically endangered sawfish or rhino rays within the boundaries of the Lovongai MPA, including sawfish or rhino ray fins and other body parts for more details on sawfish and rhino rays)
- It is prohibited to harvest dugongs, including dugong meat and juveniles, within the Lovongai LLG Marine Protected Area
- It is prohibited to harvest any species of dolphin or whale (collectively known as cetaceans), as well as whale meat and blubber, within the Lovongai MPA

The rules that are listed in the Murat MPA Management Plan are:

- Prohibition on the use of gillnets that have a mesh size of 3 inches or less within the boundaries of the Murat MPA
- No night or torch fishing (from sunset to sunrise) within the boundaries of the Murat MPA.
 - EXCEPTION: Night fishing may occur during specified open seasons or certain occasions as agreed upon by the Marine Environment Management Committee (MEMC)
- The disposal of locally-discarded plastics, glass, metals and other non-biodegradable waste onto the beach (defined as below the mean high tide mark) or in the sea is prohibited within the Murat MPA boundary
- Do not harvest critically endangered sawfish or rhino rays within the boundaries of the Murat MPA, including sawfish or rhino ray fins and other body parts
- Do not harvest any sharks and rays within the Murat MPA boundary
 - EXCEPTION: Certain shark species may be harvested around Tench Island (Zone II) from October to December each year.
- It is prohibited to harvest any species of turtle, as well as turtle eggs, meat and shells, within the Murat MPA
- It is prohibited to harvest dugongs, including dugong meat and juveniles, within the Murat LLG MPA
- It is prohibited to harvest any species of dolphin or whale (collectively known as cetaceans), as well as whale meat and blubber, within the Murat MPA

Appendix III: Lovongai and Murat Marine Protected Area management penalties

The penalties for non-compliance, which are listed in the management plans for both the Lovongai and Murat MPAs, have been presented below.

The penalties that were agreed upon by the communities – during the Phase III community consultations – for breaching both the Lovongai and Murat Marine Protected Area management rules. The penalties vary according to number of times an offence has been committed. Penalties for corporations and businesses have also been presented in the table.

The MEMCC and LLG will determine the nature of the first- and second-time offences when an MPA management rules has been broken. Third-time offenders and corporations will be directed to the village or district courts, respectfully.

OFFENCE	PENALTY
First-time offence	Community work, recommended by the MEMCC and LLG
Second-time offence	Spot fine, recommended by the MEMCC, not exceeding 200 for a young adult (aged 18 to 25) or 300 kina for an adult
Third-time offence	Referral to the Village Courts
Corporations	Referral to the District Court

Appendix IV: List of acronyms

CEPA	Conservation and Environment Protection Authority
CF	Community facilitator
CPUE	Catch-per-unit-effort
DPLGA	Department of Provincial and Local-level Governments
FPIC	Free, prior and informed consent
GPS	Geographical positioning system
IUCN	International Union for the Conservation of Nature
LLG	Local level government
LMMA	Locally-managed marine area
MEMCC	Marine Environment Management and Conservation Committee
MEMC	Marine Environment Management Committee
MPA	Marine protected area
NFA	National Fisheries Authority
NFC	National Fisheries College
NGO	Non-governmental organisation
NOO	National Oceans Office
PFO	Provincial Fisheries Office
PNG	Papua New Guinea
SoM	Size of maturity
ToR	Terms of reference
TWG	Technical Working Group
WCS	Wildlife Conservation Society
WDC	Ward Development Committee

Seabirds feeding off Tench Island, Murat Local Level Government jurisdiction, New Ireland Province, Papua New Guinea. Photograph source: Yvonne Wong, WCS.

