

METT Data Sheet: Tab Island Wildlife Management Area

Part 1: Basic information about the protected area

Table 1. Protected area information

Name, organisation and contact details for person(s) conducting the assessment	Fiona Leverington, SPREP/Protected Area Solutions, Fiona@protectedareas.com.au
Person 2: Name, Organisation, Address, Email, Phone	Greg Peterson, SPREP/Protected Area Solutions, 283 Madill Road, Tandur, Q4570, Australia, gregpeterson53@hotmail.com; 0414300955
Today's Date	23/8/2016
Name (or names) of protected area	Tab Island Wildlife Management Area
Size of protected area (ha)	984
PNG Code or number	
World Database of Protected Areas site code (these codes can be found on www.unep-wcmc.org/wdpa/)	316933
What level or kind of protected area is it? (National Park, Wildlife Management Area, Sanctuary, Reserve, Locally Managed Marine Area etc)	Wildlife Management Area
IUCN Category	NA
International protected area? e.g. World Heritage or Ramsar?	NA
Country	Papua New Guinea
Province/s	Madang
District/s	Madang
Local level governments	Embenob
Ward/s	5
Nearest big town	Madang
Location of protected area (brief description)	Tab WMA is located at the edge of the Madang Lagoon and Bismarck Sea. It consists of three low-lying forested coral islands and their surrounding fringing reefs – the smaller island Mazzaz lies between Tab and Paeowai. Together they are part of the 16km long narrow barrier reef that protects Madang Lagoon.
Map references	Note that CEPA's GIS layer is incorrect as it does not include all three islands.
When was the protected area gazetted or formally established?	2006
Reference for gazettal or Memorandum of Understanding (MoU)	
Who owns the protected area? please enter Government Private Community/ customary	Customary landowners – Waefun Clan – Mizimu subclan

landowners, private, Other (name) and include Clan name(s)	
Number of households living in the protected area	None on Tab island – people live on Mazzaz and Paeowai Islands 50 households.
Population size within the protected area	130-150 migrants – only one person from the clan that owns the area lives in the WMA. The others are illegal settlers. The clan has asked the provincial government to remove them.
Who manages the protected area? (e.g. please enter government, customary landowners [add clan names] management committee [how many and what gender])	Customary landowners – Waefun Clan – Mizimu subclan; Tab WMA Management Committee (4 men, 2 women).
Total number of staff (this means anyone working on the protected area in paid jobs – whether NGOs, community, rangers or customary landowners	0
<i>Temporary paid workers</i>	0
<i>Permanent paid workers</i>	0
Annual budget (US\$) – excluding staff salary costs	0
Operational (recurrent) funds	0
Project or special funds	WWF was providing some funds and is now participating in training etc.
Reason for park establishment	'My father was a fisherman; he went to the island to get fish and my mother sold them in the market. My father told me to protect the island, so we approached Aaron Jenkins from WWF to protect it. There are spiritual areas with spirits. It is a friendly spirit who knows the people. Tab Island is everything to us, so we must protect it. Tourists are coming to see the eel gardens and barracuda – it is a 'one stop shop' for all divers.
What are the main values for which the area is designated (Fill this out after data sheet 2)	High diversity of fish and other marine life; high coral cover; island with sacred sites, lizards and megapodes.
List the primary protected area management objectives (add lines if needed after the most important objectives): <i>Management objective 1</i>	Look after the island and reefs.
<i>Management objective 2</i>	Protect the cultural traditional values.
<i>Management objective 3</i>	
Number of people involved in answering the assessment questions	4
Name/organisation/contact details of people participating the assessment (<i>Please do not insert return/enter or dot points</i>)	<i>Tamlong Tabb</i> , Chairman, Tab WMA, PO Box 1058, Madang, 72718436; <i>Paul Zabe</i> , Secretary Tab WMA, 72988845; <i>Gulid Tabb</i> , member Tab WMA; <i>Tom Tabb</i> , Tab WMA.
Customary landowners/other community; CEPA, Other national government agency; Provincial govt; local level govt; Protected area staff (anyone working on the protected area in paid jobs; NGO; Donors;; Others	Customary landowners

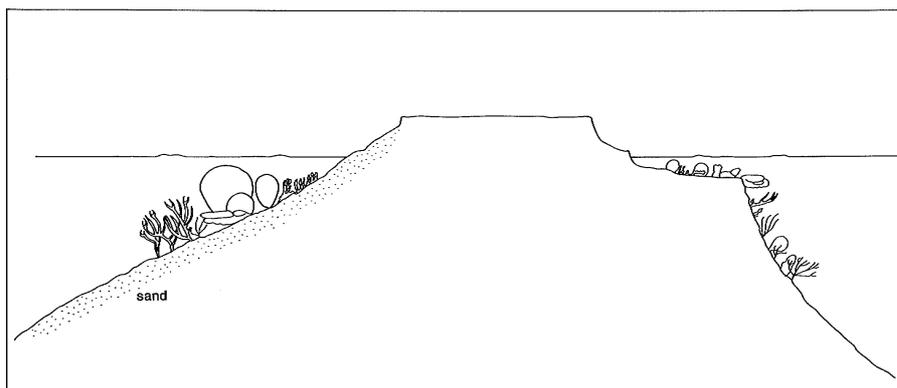
Please note if assessment was carried out in association with a particular project, on behalf of an organisation or donor.	SPREP through the PNG Protected Area Assessment Project, which is a component of the GEF Community-based Forest and Coastal Conservation and Resource Management Project in PNG.
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Part 2: What makes this protected area special and important?

The WMA is a very special place of great natural beauty with animal and fish species found nowhere else. We look after whatever resources are in the islands. Each island is unique and has different species. Tab Island has lizards - special lizards that our ancestors have been using – its skin is used to make the hand drums (kundu). There is also a crab with the face of a man. Tab Island has a very special reef area – a place where the Masalai Spirit is living. There is an inlet and when the waves hit the solid rock it blows the hair of the spirit. The spirit has his fish there and any human beings floating on the surface can be taken by the spirit. It is a secret site, where talking to the spirit can be used to kill enemies. There are very good dive sites, which have all the best elements in one place. There is a magic underwater fire tree that moves around to the sea in the night time. There is an eel garden and you can see many different coloured eels. We need to look after the resource or people will come and destroy it. The island has a pandanus forest and the underwater marine area contains fish endemic to Tab. Our duty to look after the island that has been passed down from father to son.

Table 2. Key values of the protected area

No.	Key values	Brief description	Note if endangered species or ecosystem (IUCN)
1	Fish - the diversity of fish must be protected	Fish are most important. Coral reef fish depend on reefs. In protecting fish, the food chain is looked after. It is a spawning area for fish which supplies fish for local consumption. The Northern New Guinea undercurrent passes along the edge of the island. Jenkins identified that the biodiversity of the reef fish fauna within Tab WMA is of very high global, national and local importance, with 513 species recorded.	
2	Coral reef (see schematic below)	Tab island's seaward side has shallow fringing reefs that contain some of the highest live coral cover (30%) with eel gardens (Jenkins). There is an abrupt drop off at the seaward edge (Jebb et al. 1995). The inner side of the patch reefs and lagoon islands have accreting faces and may develop Acropora thickets or large Porites coral heads in stable areas.	
3	Island fauna	Include wildfowl (megapodes), big brown monitor lizards (skins are used for kundu drums).	
4	Pandanus forest	Found mainly on Tab Island, although some trees have been cut for timber.	
5	Abundance of dolphins	Always present on the reef where there are many fish.	
6	Cultural values, stories and understanding	Most important (see above).	



Schematic of the reef and island features of Tab, Mazzaz and Paeowi islands (view looking north, with seaward edge to the right) (Jeb et al. 1995).

Table 3. Checklist of values/benefits

Not important 0; Important 1; Very important 2; Don't know DK

How important is the protected area for each of the listed values/benefits?	Score (0,1,2, DK)	Comment
1. Biodiversity – the presence of many different kinds of plants, animals and ecosystems	2	22% of the world's fish species are reported to be found in Tab WMA. However, there has been no recent fish monitoring. It is an important fish breeding area (Benson 2012).
2. Presence of rare, threatened, or endangered species (plants and animals)	2	Jenkins identified two resident endemic fish (blackstripe blenny and whitespot damselfish) and two endangered fish (humphead wrasse and giant grouper). There are two species of giant clam and the reefs are the feeding grounds for green and hawksbill turtles.
3. Ecosystems (e.g. wetlands, grasslands, coral reefs etc) that are rare because they have been cleared or destroyed in other areas	2	Pandanus forest on Tab Island; and important coral reef ecosystems. The inner lagoon is connected to open ocean by sloping channels between the three islands and there is diverse coral reefs and marine life (Jenkins 2005).
4. Protecting clean, fresh water	1	Water is underground and has to be kept clean as it is needed by the people.
5. Sustaining important species in big enough numbers that they are able to survive here	2	
6. Providing a source of employment for local communities now	0	When the WMA was first gazetted, the people were lead to believe that the WMA would provide employment, but there is still no employment.
7. Providing resources for local subsistence (food, building materials, medicines etc.)	2	Important for a range of marine resources (e.g. fish, clam shells, octopus) and timber (for building material), and lizard skins to make hand drums.
8. Providing community development opportunities through sustainable resource use	2	Resources are used for subsistence purposes, with a small amount for sale for personal benefit.
9. Religious or spiritual significance (e.g. tambu places)	2	As above.
10. Plant species of high social, cultural, or economic importance	2	Pandanus is important.
11. Animal species of high social, cultural, or economic importance	2	Monitor lizard, wildfowl, crabs, fish
12. Attractive scenery	2	There are white sandy beaches on the lagoon side of the islands. There are beautiful views from the islands and from the lagoon to the islands.

13. Tourism now	2	Many people come to the islands for recreational purposes, but little or no income is returned to the community.
14. Potential value for tourism in the future	2	There is high level interest to begin sustainable tourism that provides equitable benefits to the customary landowners.
15. Educational and/or scientific value	2	High biodiversity values and the presence of rare and threatened species provide important values for educational and scientific purposes. Some research was undertaken in the past, but there has been little recent research.
16. Maintaining culture and tradition on customary land and passing this on to future generations	2	Refer above.

Part 3: What are the threats to the protected area?

Table 4: Threats to the protected area

- H** **High** significance threats are seriously degrading values. This means they are badly damaging some value –it might be a kind of animal or plant, or your traditional gardens
- M** **Medium** threats are having some negative impact – they are damaging values but not so badly
- L** **Low** threats are present but not seriously damaging values
- 0** **N/A** where the threat is not present in the protected area or where something is happening but is not threatening the values at all

Threat type	Score (H,M,L,0)	Notes
1.1 Housing and settlement	H	Migrants are settling illegally on the islands of Mazzaz and Paeowai. There is the threat of increasing illegal settlement putting pressure on the marine resources and island resources (e.g. cutting trees).
1.1a Population increase in the protected area community	H	There is a high average annual population growth rate and additional growth as a result of migration. This put pressures on the land and sea resources.
1.2 Commercial and industrial areas	H	If the Pacific Marine Industrial Zone (PMIZ) comes it will impact significantly on the WMA ('it will kill the WMA'). The PMIZ will be built within the northern part of the Madang Lagoon (construction of a bridge has already begun) and this will be followed by up to 10 new canneries. This will have impacts on water quality, reefs, and air pollution.
1.3 Tourism and recreation infrastructure	L	
2.1 Customary land owner and community gardens and small crops	H	Settlers are clearing bush and planting gardens on the islands.
2.1a Drug cultivation	0	
2.1b Commercial plantations	0	
2.2 Wood and pulp plantations	0	
2.3 Livestock farming and grazing	0	
2.4 Marine and freshwater aquaculture	0	
3.1 Oil and gas drilling	L	There is none in Madang now, but this may come in the future and it will be a threat.
3.2 Mining and quarrying	L	Currently there is no underwater mining, but there is potential for this to come into the area.
3.3 Energy generation	0	
4.1 Roads and railroads (include road-killed animals)	0	
4.2 Utility and service lines (e.g. electricity cables, telephone lines)	0	
4.3 Shipping lanes	H	The PMIZ will result in increased shipping in the lagoon. There may be big ocean liners and this will cause problems with waste and

Threat type	Score (H,M,L,0)	Notes
		damage to the reef. Anchoring from large and small boats may be a problem.
4.4 Flight paths	L	We are very close to the airport, and there is a testing ground for small planes etc. There is potential for an air crash and fuel dumps within the WMA.
5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	H	This is mainly undertaken by the illegal settlers.
5.2 Gathering terrestrial plants or plant products (non-timber)	M	Pandanus is taken for flooring and trees have been removed from all islands.
5.3a Logging and wood harvesting for local/customary use	M	Timber has a traditional use for firewood and is also taken by other islanders. There is evidence of recent cutting of big trees in Tab. The stumps indicated that the trees appeared to be the last big trees on the island.
5.3b Logging and wood harvesting – commercial logging	0	
5.4a Fishing, killing and harvesting aquatic resources for local/customary use	H	This is believed to be largely the result of taking by the settlers. (Note: when the assessors were snorkelling on Tab Island there was no evidence of any big fish or molluscs). In the beginning of the WMA there was a campaign to stop the use of dynamite and poison rope. However, recently the workshop participants saw a woman using the poison rope. Poachers can use all kinds of fishing methods and it is difficult to stop them. Jenkins et al. (2005) monitored fish numbers in the early 2000s and noted that fish numbers had not increased following protection. Tab is also not visible from Siar Village and this makes enforcement difficult. The coastal communities depend on fishing for their livelihoods.
5.4b Fishing, killing and harvesting aquatic resources for commercial use	H	There are impacts from both local fishing and the use of big nets from the Tuna company, with boats coming close to the island.
6.1 Recreational activities and tourism	M	Many tourists come to the islands, especially Tab. The divers are usually organised and they have moorings. However, there was evidence of damage to the coral reefs adjacent to the sandy beach on Tab Island, where boats pull up. However, it is difficult to know whether this was from recreational or local subsistence use.
6.2 War, civil unrest and military exercises	0	
6.3 Research, education and other work-related activities in protected areas	L	
6.4 Activities of protected area managers (e.g. construction or vehicle use)	0	
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	H	“Anything left on the island will be stolen”.
7.1 Fire and fire suppression (including arson)	0	
7.2 Dams, hydrological modification and water management/use	0	
7.3a Increased fragmentation within protected area	0	
7.3b Isolation from other natural habitat (e.g. deforestation)	0	
7.3c Other ‘edge effects’ on park values	H	Ballast water from big ships will affect the marine ecosystem and there are other impacts from the tuna cannery.
7.3d Loss of keystone species (e.g. top predators, pollinators etc.)	L	The loss of keystone species is not known as there have been no recent surveys. However, fish that were seen by one of the

Threat type	Score (H,M,L,0)	Notes
		participants as a small boy are still there, although in smaller numbers.
8.1 Pest plants	0	
8.1a Pest animals	L	Crown of thorns starfish is present on the reefs (although only a few have been seen).
8.1b Diseases such as fungus or viruses that make native plants or animals sick	L	
8.2 Introduced genetic material (e.g. genetically modified organisms)	0	
9.1 Household sewage and urban waste water	H	The illegal settlers have overwater toilets and the effluent and other waste directly enters the marine environment.
9.1a Sewage and waste water from protected area facilities	0	
9.2 Industrial, mining and military effluents	H	The tuna cannery effluent is killing the reefs.
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	0	
9.4 Garbage and solid waste	H	Rubbish is thrown into the marine environment from the illegal island settlements.
9.5 Air-borne pollutants	L	Bad odours from the tuna cannery can reach the WMA if the wind blows into the area.
9.6 Excess energy (e.g. heat pollution, lights etc.)	0	
10.1 Volcanoes	L	When the volcanoes erupt, dust comes to the island and it may impact on the reef.
10.2 Earthquakes/Tsunamis	L	These may cause some impacts, although the last earthquake was in 1971.
10.3 Avalanches/Landslides	0	
10.4 Erosion and siltation/deposition (e.g. shoreline or riverbed changes)	0	There is only some natural movement of sand.
11.1 Habitat shifting and alteration	H	Huge waves have destroyed the coral reefs and they are replaced by algae and seaweed.
11.2 Droughts	H	We have observed changing patterns in the weather, especially changes to the wet season (which may be much drier).
11.3 Temperature extremes	H	We experience both higher and lower temperatures.
11.4 Storms and flooding	H	Storms are destroying the reefs as the waves are much stronger.
11.5 Coral bleaching	H	The impact is less on Tab, but bleaching does occur in Madang Lagoon as a whole.
11.6 Intrusion by saltwater into gardens etc.	0	
11.7 Sea level rise	H	We observe a rise in the sea level and it is causing some coastal erosion.
Other (please explain)		
12.1 Loss of cultural links, traditional knowledge and/or management practices	M	Cultural practices must be passed from father to son. We observe that there has been some loss of traditional knowledge and management skills.
12.2 Natural deterioration of important cultural site values	H	One of the sacred sites on the island is being affected by waves. The spray, big waves and salt are killing plants. Some will recover when the rain comes.
12.3 Destruction of cultural heritage buildings, gardens, sites etc.	H	New settlers are destroying some of our cultural sites.
Other (please explain)		

Table 5. Worst threats and ways forward

Threat No.	Threat (Most significant first)	Threat number or name (copy no. from Table 4)	Nature of the threat, impact and how to reduce the impact.
1	Settlers on the islands	1.1, 1.1a, 5.1, 9.4	Settlers have illegally constructed houses on Mazzaz and Paeowai Islands. Population numbers are increasing (settlers and customary landowners). This increases the loss of resources, results in rubbish and human waste, and damages our cultural sites. We need to enforce the WMA laws identified in the Management Plan. The councillors and Local Level Government should check, monitor and enforce the laws. We believe the settlers should be evicted and sent back to their own lands. An eviction notice was issued by the provincial government but nothing has resulted.
2	Climate change (habitat shifting, sea level rise, coral bleaching, drought, temperature extremes, storms)	11.1,11.2,11.3,11.4,11.5,11.7	Impacts of storms, high tides, coral bleaching and sea level rise.
3	Tourism/ recreation impact	6.1	Because of the beauty and location everyone (e.g. people from town area) wants to visit Tab WMA to fish and picnic. The biggest threats are from human use, including spear guns, fishing nets, boat anchorage, cutting of trees. We need to introduce a fee to reduce numbers and get some money back to assist with management. We also need to update the Management Plan to have relevant laws that can be enforced.
4	Industrial pollution and development	9.2, 1.2, 4.3	Meet with the relevant stakeholders and develop more effective laws to minimise the impact of waste. 'The responsibility lies with the environment department. They gazetted us and then they are allowing the industries to kill us'.

Part 4: What is the management like in the protected area?

Table 6. Management effectiveness scores, comments, next steps

Issue	Score (0,1,2,3, NA)	Comment	Next steps
1a. Legal status	3	Formally gazetted in 2006.	
1b. Legal status			
2a. Protected area regulations	2	Zoning in the WMA controls where and when people can fish and there are traditional rules about how to fish (e.g. no dynamite or poison rope). However, new settlers and some customary landowners do not implement the rules.	Regulations must be enforced by all stakeholders and this requires investment in relevant equipment.
2b. Protected area regulations			
3. Law enforcement	1	It is difficult to enforce the law without a boat and the necessary capacity and skills. People come at night to steal fish and other resources and it is difficult to stop them.	Regulations must be enforced by all stakeholders. Training (e.g. from the Local Level Government) s needed to build capacity in the customary landowners to enable them to better manage their resources.
4. Protected area objectives	2	There is a Management Committee and they try to manage according to their Management Plan, but there are no resources. People live on the mainland and are too far from their WMA to manage it fully.	There needs to be cooperation among all the stakeholders – local community, fishers, local level government and the Madang Lagoon Association. We need to consider having a consolidated office for the whole Madang Lagoon Association with patrols coordinated across the WMAs and Lagoon.
5. Protected area design	3	The size of the WMA has been increased beyond the original boundary to include the surrounding reefs.	
6. Protected area boundaries	2	The boundaries are not marked and the CEPA maps appear to be inaccurate.	Need to promote awareness of the boundaries and rules among the surrounding communities. We need support for travel to and within the WMA.
7. Management plan	1	The Management Plan was prepared in 2002.	Resources are needed for implementation and also review and updating of the Plan.
7a. Planning process	1	The customary landowners have input into management planning.	Seek resources to assist the landowners to review the Management Plan.
7b. Planning process	0	There has been no regular review of the plan. The original plan remains in place, although with little implementation.	Seek assistance to establish a review of the Management Plan.
7c. Planning process	1	Monitoring results have influenced management in the past. There is currently no monitoring being undertaken.	

Issue	Score (0,1,2,3, NA)	Comment	Next steps
8. Regular work plan	0		Financial assistance is needed to develop and fund a regular work plan.
9. Resource inventory	2	A resource inventory was completed, but it is now out of date.	Monitoring of the current situation is needed to update the existing information e.g. on species presence and abundance.
10. Protection systems	0		A boat and patrols are critical to improve management outcomes.
11. Research and monitoring	0	The committee did some monitoring of fish stocks and seagrass using transects across the reefs. Research programs were active but have all ceased. All the equipment and information was taken by the researchers.	The community has the skills (e.g. certified divers and monitoring skills) to continue the transect-monitoring program, but there is no equipment. Volunteers could assist with this.
12. Resource management	0	Very few activities are being undertaken.	Work collaboratively with the Madang Lagoon Association to establish a coordinated resource management program.
13a. Staff numbers	0	No people are employed to work in the WMA.	
13b. Other people working on the protected area	2	The Management Committee used to meet monthly but now does not meet formally. People individually take responsibility. Most of the committee members have gone away.	We would improve our outcomes if more people were active in the WMA.
14. Training and skills	2	There has been training of the community through WWF especially and other research programs	
15. Current budget	0		
16. Security of budget	0		
17. Management of budget	NA		
18. Equipment	0	No equipment except a few snorkels, garden tools and transect lines (personal equipment).	Equipment is needed to gather data and improve enforcement.
19. Maintenance of equipment	NA		
20. Education and awareness	0	No programs are in place. In the past, we worked with the primary school and it was very successful.	Greater effort is needed to improve educational awareness. This may be done with the ward councils.
21. Planning for land use or marine activities	0	Local people as resource owners are left out of consultations in relation to big development projects.	Consultation processes need to include customary landowners and relevant matters must be taken to court.
22. State and commercial neighbours	0	There is little consultation with State and commercial interests e.g. the PMIZ did not contact our WMA. We held a meeting and protested against the project to the provincial government. However, the PMIZ project plan has been agreed to anyway.	Improve consultation with state and commercial neighbours to ensure that the interests of the WMA are included in decision making.

Issue	Score (0,1,2,3, NA)	Comment	Next steps
23. Indigenous people/ Customary landowners	3	The WMA is managed and owned by the customary land owners and they are involved in decision making.	Reconvene relevant management planning processes.
24a. Impact on communities	0	There is little communication and trust between the customary landowners and other stakeholders including CEPA.	Clear guidelines are needed to improve communication among stakeholders.
24b. Impact on communities	0	There are not current programs to improve landowners' welfare.	
24c. Impact on communities	1	The customary landowners support the WMA.	
25. Economic benefit	1	Potential economic benefits are recognised (e.g. tourism and fishing).	Ecotourism development is needed. It must be properly organised tourism so that the locals can benefit equitably.
26. Monitoring and evaluation	0		
27. Visitor facilities	0		
28. Commercial tourism operators	2	There is some talk between the WMA and tourism operators.	
29. Fees	0	Fines theoretically could be applied, but there is no equipment or mechanism to undertake this.	
30. Condition of values	1	Some values are being severely degraded (e.g. reefs, loss of fish, island vegetation).	
30a. Condition of values	1	Formal monitoring has been conducted in the past.	
30b. Condition of values	0	There are no specific management plans to address the threats to the WMA.	
30c. Condition of values	0	There are no routine management activities.	

Part 5: Condition and trends of protected area values

Table 7. Values, condition and trend

Key value (from Table 2)	Condition Score (VG, G, F, P, DK)	Trend Score (I, S, D, DK)	Information source and justification for Assessment and HOW the condition can be IMPROVED
Fish diversity	Fair	D	Had increased when the WMA was made, now going down. There is overfishing, wrong methods - the diversity of fish must be protected
Coral reefs	Fair	S	Needs action to increase
Island plants and animals (pandanus forest, wildfowl [megapode], brown monitors)	Good	S	Tab Island has a pandanus forest, but much vegetation has been cleared on the islands which are settled. There was evidence of pandanus trees being cut on Tab Island (for firewood and building). The damage was considered minimal and could be recovered, with effective monitoring. A comparison of 2009 and 2012 imagery showed a change from an intact canopy to several large gaps in the canopy presumably as a result of clearing (for firewood and building material).
Abundance of dolphins and some dugong	Good	S	Dolphins were always present on the reef. As there has been no monitoring their status is unknown. It is thought that some get killed in fishing nets. Dugong are still present.
Culture of the community	Fair	S	Currently most people from outside have no respect for our culture. They don't care. Maybe we need to do more awareness raising with people. There are outside influences that affect our culture. The local language (Tok Place) is declining and most people speak in Tok Pisin. However, the traditional culture is still strong.

Table 8. Recommendations and ways forward

1.	2.	3.
Reinstate and reactivate the management committee – get it working again with work plans. Work in cooperation with community and with neighbours to enforce our laws.	Get support from the government and stakeholders to implement monitoring and resource management. Need signed document of support from the government. Need local level government to act to remove the illegal settlers.	We need some small amount of funding from CEPA directly to the WMA. Without this they cannot do much – this is the stumbling block. We can reactivate ourselves and try to stand up, but we will fall down. This can promote conservation and promote tourism.

Table 9. Strengths and challenges (facilitator/recorder synthesis)

	Strengths	Challenges
1	Tab WMA was established at the request of the community and there are still people dedicated to its conservation. There is a zoning plan and when first implemented there was a marked improvement in the fish catch.	There is a settlement of 130-150 people on one of the islands of Mazzaz and Paeowai. The migrants are from outside the area and they do not understand the culture. This settlement has disturbed the island, polluted the water with rubbish and human waste and over-harvesting of marine resources. This is a major source of problems for the WMA and it appears difficult to evict or better manage these settlements.
2	The area has very high diversity (on a global scale) and values, as surveyed in the early 2000s by WWF, Wetlands International and others.	Industrial development is expanding within the Madang Lagoon and the communities believe that this will 'kill us' and be highly detrimental to the WMAs values. There are challenges with the existing tuna cannery including smell and water pollution which kills the reef and its marine species. Effective effluent control is needed, but there appears to be little action from the government.
3	The customary landowners are supportive of the WMA.	Trees in the core of Tab Island have been cut down recently, and the lack of life on the patch reef in the lagoon side of the island was notable. Action is needed to retain the remaining values of the area.
4	Customs remain strong, although they are under increasing threat.	

Resources

Tab Island Management Plan

Jenkins, A. on behalf of Riwo and Siar Villages, Madang Lagoon and Madang Province, PNG and Wetlands International.

Jebb MHP & Lowry JK (1995). Natural history of Madang Lagoon with an appendix of collecting localities. In JK Lowry (ed).

The Amphipoda (Crustacea) of Madang Lagoon, Papua New Guinea, Part 1. Records of the Australian Museum, Supplement 22, 1-24.