

Name of Protected Area: Klampun 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 <i>Person 1: Name, Organisation, Address, Email, Phone</i>	James Sabi, CEPA, james.sabi.roaming@gmail.com
<i>Person 2: Name, Organisation, Address, Email, Phone</i>	Amanda Wheatley SPREP, amandaw@sprep.org. PO Box 291, Apia SAMOA; and Ann Peterson, SPREP/Protected Area Solutions, 283 Madill Road, Tandur, Q4570, Australia, a.peterson@uq.edu.au, 0414300955
Today's date	3/6/2016 (2 customary landowners); 6/6/2016 (3 participants from Barefoot Community Development Services); and 7/9/2016 (Klampun Village Committee review) (i.e. three separate meetings).
Name (or names) of protected area	Klampun Wildlife Management Area
Size of protected area (ha)	5200
PNG Code or number	
World Database of Protected Areas site code (these codes can be found on www.unep-wcmc.org/wdpa/)	377713
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	
International protected area? e.g. World Heritage or Ramsar?	
Country	Papua New Guinea
Province/s	East New Britain
District/s	Pomio
Local level governments	East Pomio (at Milim)
Ward/s	Klampun 07
Nearest big town	Kokopo
Location of protected area (brief description)	Located on the south east coast of New Britain Island, extending in a broadly east-west direction from the coast to inland areas. It shares common traditional boundaries with the inland Pomio clans of the Kol Tribe. The WMA reaches elevations around 1400m with several streams forming within the mountains areas. Klampun Village is located within the WMA on the coast.
Map references	
When was the protected area gazetted or formally established?	4/09/2003
Reference for gazettal or Memorandum of Understanding (MoU)	

Who owns the protected area? please enter Government Private Community/ customary landowners, private, Other (name) and include Clan name(s)	The Customary landowners from 10 clans, including Kair, Masra, Srip, luongan, Vgar, Sos, Pogan, Gelmon, Seer and Kaimun. Clans with user rights include the Tling, Letun and Memren clans.
Number of households living in the protected area	> 70
Population size within the protected area	> 700
Who manages the protected area? (e.g. please enter government, customary landowners [add clan names] management committee [how many and what gender])	Klampun WMA Project Committees, comprising representatives from the 10 landowning clans and the three user right clans.
Total number of staff (this means anyone working on the protected area in paid jobs – whether NGOs, community, rangers or customary landowners	0 (The WMA is operated as an on-going community self-help initiative by all the 13 clans and is fully supported by the Klampun Ward Development Committee as a Ward project under its Environment Sector).
<i>Temporary paid workers</i>	0
<i>Permanent paid workers</i>	0
Annual budget (US\$) – excluding staff salary costs	0
Operational (recurrent) funds	Variable - all community members and the 13 clans contribute cash to meet the cost of goods and services that must be purchased, with other items sourced from the natural environment.
Project or special funds	0
Reason for protected area establishment	The process was initiated by the community in the 1990s, with the help of NGOs, and the aim was to protect the customary landowners' resources from logging, especially forest and coastal areas.
What are the main values for which the area is designated (Fill this out after data sheet 2)	Protection of important species (e.g. Pomio Brown orchid), water catchment values, habitat (e.g. forest landscapes in the Nakanai Ranges that include Kauri pine forest, <i>Agathis spp</i>), sacred sites, natural resources and the customary practices of life.
List the primary protected area management objectives (add lines if needed after the most important objectives): <i>Management objective 1</i>	To defend and protect the physical, social and spiritual survival of the people, who will be ennobled through the natural environment.
<i>Management objective 2</i>	To activate and live the life that manifests the testimony of our Sulka matrilineal identity.
<i>Management objective 3</i>	To maintain self-reliant and sustainable livelihoods.
Number of people involved in answering the assessment questions	55
Name/organisation/contact details of people participating in the assessment	<i>Isidor Kaupun</i> , Klampun WMA, c/o Wide Bay Conservation Association, P.O. Box 1047, Kokopo, lkaupun18@gmail.com , 9829525/ 72236830; <i>Patrick Kaupun</i> , Klampun WMA, (as above), 72773815; <i>Simon Passingan</i> , spassingan@yahoo.com , Barefoot Community Services Ltd, P.O. Box 3381, Kokopo, 72497915; <i>Clive Passingan</i> , clivepassingan@gmail.com , Barefoot; <i>Rachel Alatam</i> rachealatam@gmail.com , Barefoot, 72634108. Later meeting included: 23 representatives of the WMA Committees, 10 representatives from the Klampun Ward Development Committees, 13 Clan leaders, 6 elders (men and women).

<p>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; External experts; Others</p>	<p>Customary landowners, NGO (Barefoot), Ward Development Committee. The community engaged in a one week review of the draft METT data (provided by the facilitators). This was organised by the Klampun War Development Committee in consultation with the whole Klampun community. The community contributed food, fuel and moral support to the representatives who attended the review over the week. The METT questions were discussed in groups, who then presented their findings, which were discussed, and then summaries were drawn for each question and the consensus view was included in the final METT data sheet, which was returned to the project facilitators. This process enabled sharing and learning through group presentations.</p>
<p>Please note if assessment was carried out in association with a particular project, on behalf of an organisation or donor</p>	<p>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.</p>

Part 2: What makes this protected area special and important?

The first statement from the first workshop: The Wildlife Management Area consists of lowland forest with pockets of montane vegetation at higher elevation. The WMA helps to uphold and maintain **cultural values** (core values) and **special species of trees** e.g. **Kauri pine**, (*Agathis* spp) which is a very tall tree (above the forest canopy), takes a long time to grow and is found only in the mountains (>1000m). Water is stored underneath the Kauri pines in the mountains and this is a **source of water (water catchment)** for the villages on the coast and it is important to protect the clean water that comes from the mountains to the villages. There are **special stone areas**, which provide habitat for animals like cassowaries and the forest wallaby. Useful for construction. There are spiritual and cultural values from the past, e.g. **sacred sites** such as **caves and Masalai places** and other places used for customary events. There is also a **special tree (kre –local name)**, which is not used – it is just left. You can't use a knife or axe as it is too tough. The WMA also helps to **promote sustainable and self-reliant livelihoods**, which are based on **traditional knowledge**, which includes gardening, housing, hunting and fishing skills and abilities, and the use of plants. There are various rules associated with these activities. Handing down of traditional knowledge to the next generations is important, including how to manage and use resources sustainably to ensure the future. Clan members are allocated gardens and do not cut the forest. **The second statement from the Village community: (1) Physical diversity of life** which forms the material values of the Sulka matrilineal inherited identity and includes plants, animal (birds, insects, butterflies and fish), landforms, mountains, caves, waterfalls, Masalai places and traditional sites etc. We fear destroying and polluting the diversity of life (this will sell our identity); **(2) Social web of life** – the physical, social and spiritual interconnections unify everything into a common life. Everything is life and life is everything through evolving processes that form into a web of natural life. The evolving processes of life enable finding each other's values and importance and understanding all the reasons why everything needs to be acknowledged and appreciated as the ultimate sources ennobling life. The social web of life is a Sulka Matrilineal inherited identity. We fear paralysing the social web of life (this will betray our identity); **(3) Spiritual order of life** – traditional and natural limitations, boundaries and control establish an orderly and well-disciplined way of life. The spiritual web of life forms into the sacredness and holiness of the Sulka Matrilineal inherited identity. We fear destroying the spiritual order of life (this will imprison our identity in hell for life); and **(4) Survival conviction of life** – includes the physical conviction (e.g. natural masalai places), the social conviction (e.g. traditional disciplinary order at the Masalai place) and spiritual conviction (e.g. traditional faith and fear at the Masalai place) form an holistic evolving survival conviction of life.

Table 2. Key values of the protected area

No.	Key values	Brief description	Note if endangered species or ecosystem (IUCN)
1	Important species	The Kauri pine (<i>Agathis spp</i>) is important and rare, being restricted to this area. There are several very special and important trees in the area e.g. Kre, Hiliep, keil, yeet, song, vagi, knitok, ktul, teglar, nguip, karkam, horkas, ngemrun, katam (only a few have been named out of many). For example, the kre is not used –it is just left as it is important. It can't be cut with knife or axe as it is too tough and too heavy to carry. There is a rare and endemic orchid (Pomio Brown).	
2	Water source / water catchment protection	Protecting the clean water that comes from the WMA mountains and feeds the rivers and creeks near the coastal villages of East Pomio Local Level Government area i.e. Maskilkie, lop, Korpun, Bain, Wawas, Teimtop, Sampun, Tagul, Setway, Klampun, Guma, Kilalum, Iwai, Mu and Millim.	
3	Habitat	The WMA contains special stones, trees and mountains, Masalai places and caves that provide homes to frogs, prawns, fish, eels, snakes, insects, butterflies birds, flying foxes, cassowary and forest wallaby, relative spirits and other created beings. Some birds, other animals and fish are infrequently seen.	
4	Sacred sites	The caves, special stones, Masalai places, traditional sites, historic sites and spiritual sites are sacred and holy as they have various physical, social and spiritual significance in the inherited identity of our matrilineal lifestyle. They form in people a practice of faith and fear in destroying life. Some of these sites are being destroyed by Christians and 'educated' people 'who do not care'.	
5	Natural resources	Trees (provide timber for building), minerals, rich fertile land, fish, herbs, fresh water, stones (useful for construction), water, and medicinal plants. There has been no research or inventory of the resources. This information is based on traditional knowledge.	
6	Customary practices of life	Boy/girl houses, tumbuan houses, burial sites, rituals, norms, belief systems, and ties of relationships which set limitations, boundaries and control over each historical age grouping. The value and importance of nature is acknowledge and appreciated as the only means of survival in all human processes of life.	

Table 3. Checklist of values/benefits

Not important 0; Important 1; Very important 2; Don't know DK 3

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	Important species present, including frogs, prawns, fish, eels, snakes/pythons, insects, butterflies, birds, flying foxes, wallabies, cassowaries, relative spirits, Kauri pine tree is important and rare as well as kre, hiliiep, keil, yeet, song, vagi, knitok, ktul, teglar, nguip, karkam, tlup. Horkas, ngemrun, katam (local names). Due to surrounding logging and palm plantation development, many of these species are migrating into the WMA. There has been no survey of biodiversity.
2. Presence of rare, threatened, or endangered species (plants and animals)	2	Pomio brown orchid occurs in the area. We urgently need a biodiversity assessment of the protected area for people in the WMA to seriously start taking steps to protect these species or minimize using them.
3. Ecosystems (e.g. wetlands, grasslands, coral reefs etc) that are rare because they have been cleared or destroyed in other areas	2	The surrounding area and villages are significantly affected by palm oil and logging development. Our forest ecosystem is important as it provides habitat for a range of species. The reefs adjacent to the WMA are also important.
4. Protecting clean, fresh water	2	The protected area is a source of water (water catchment), which comes from the WMA mountains to feed rivers and creeks for use in the coastal villages of Maskiklie, lop, Korpun, Bain, Wawas, Teimtop, Sampun, Tagul, Setway, Klampun, Guma, Kilalum, Iwai, Mu and Millim. Retention of the Kauri forests is important to protect the catchment and ensure future water supplies.
5. Sustaining important species in big enough numbers that they are able to survive here	DK	The community thinks that the area is big enough to sustain important species, but is unsure as there has been no survey of biodiversity.
6. Providing a source of employment for local communities	2	There is no paid employment currently, but at certain times small funds have come into the community to undertake activities. The WMA operates within the community's capacity. However, there are long-term plans to seek financial support to create employment opportunities for the community and this will strengthen and motivate people to become more concrete in their environment protection conviction and to take more ownership and responsibility in leading a self-reliant and sustainable livelihood.
7. Providing resources for local subsistence (food, building materials, medicines etc.)	2	The community's livelihoods depend on the resources from the WMA. 13 clans in the WMA have surplus land, surplus food, beautiful homes, clean fresh water, enough building materials, herbs, traditional ties – they have everything to address their subsistence lifestyle. However, they lack economic incentives to gain monetary value to cope with the rising demands for goods and services as well as minimize exhausting their subsistence use of natural resources.
8. Providing community development opportunities through sustainable resource use	2	The community's management and use of the land and resources are guided within a land use map, which identifies areas for settlement, cash cropping, gardening, hunting, fishing, and protected area zones. People work within these zones and the protected area zone is not disturbed.
9. Religious or spiritual significance (e.g. tambu places)	2	Caves, special stones, Masalai places, traditional sites, historical sites and spiritual sites are sacred and holy as they hold various physical, social and spiritual significance in the inherited identity of our matrilineal lifestyle. They form in people a practice of faith and fear in destroying life. By-laws have been developed to protect religious and spiritual sites.
10. Plant species of high social, cultural, or economic importance	2	Traditionally, all plant species in the WMA have high physical, social and spiritual importance to ensure survival. Only those plants that can be traded for money gain

		economic importance. There are several important trees (e.g. Kauri pine), plants used in herbal medicine, the Pomio Brown orchid and the special purple yam. Plants are used for subsistence purposes, medicines and rituals.
11. Animal species of high social, cultural, or economic importance	2	Traditionally, all animal species, including birds, fish, insects, flying foxes etc in the WMA have high physical, social and spiritual importance to ensure survival. Only those that can be traded for money gain their economic importance. Various animal species are used in traditional costumes, and for customary events. Wild pigs and cassowary are hunted.
12. Attractive scenery	2	There are special stones, waterfalls, very big trees (e.g. Kauri pine), Masalai places, historical sites, old burial sites, lookout viewing points, pebble beaches and coastal sites etc. They are all important due to the link to the physical, social and spiritual identity of the Sulka matrilineal identity.
13. Tourism now	0	No current tourism activities.
14. Potential value for tourism in the future	2	There are many tourism products available in the WMA (e.g. forests, views, beaches, coastline and mountains). The community is concerned with protecting and improving the quality of these tourism products before venturing into tourism activities.
15. Educational and/or scientific value	2	The study of nature and the traditional context of life are the Sulka matrilineal society's means for survival, our blood bank and toolkit. The natural world contains a wealth of holistic educational and scientific values. The community can read the cues from the natural environment (e.g. when it is time to harvest taro or collect octopus). We would like an educational and scientific study undertaken and stored for future generations.
16. Maintaining a tradition of protection by customary landowners (of places, animals, or plants) within the protected area	2	The WMA rules derive from traditional rules which protect the sacredness and holiness of a special site's (e.g. Masalai place, mountain, sacred stones, house boy etc.) physical, social and spiritual value for life survival. There is social discipline and consequences for not following the rules. There is a strong traditional knowledge base.

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	Building materials for housing purposes are harvested from secondary regrowth forest (e.g. small trees re-growing in the gardening zone) and are in high demand and this is turning the secondary forest into grassland. With the present population boom, this harvesting of regrowth is becoming a very serious threat to the cash cropping and gardening zones and to the regeneration of forest.
1.1a Population increase in the protected area community	M	Population increase places greater pressure on the WMA's resources (e.g. more land for gardens, timber to build houses and land for more settlements) and this creates social disorder and unrest. However, because of the population increase, the 13 clans are engaged in awareness raising about the implications of population growth and its future consequences. Now the people are more responsible and there is better resource use planning and management to avoid future problems.

Threat type	Score (H,M,L,0)	Notes
1.2 Commercial and industrial areas	0	The 13 clans are firmly against commercial and industrial activities in the WMA. By-laws are in place to prevent activities that are too destructive and negatively impact on the physical, social and spiritual life of the people.
1.3 Tourism and recreation infrastructure	0	There are plans in place for guest house facilities and tourism products are being discussed. There are by-laws protecting the values of the WMA (i.e. in relation to tourism activities).
2.1 Customary land owner and community gardens and small crops	M	As the population grows more gardens are needed for food and also for 'custom work' (including ceremonies) and this places pressure on the resources. It was predicted that with this population increase, the carrying capacity of the settlement, cash cropping and gardening zones, will be used up in 10 years' time from now.
2.1a Drug cultivation	L	Drugs are not cultivated but are taken into the protected area which causes damage as a result of the access routes. This problem has been identified and awareness conducted. By-laws are in place to help stop this import of drugs into the community.
2.1b Commercial plantations	L	While there are no plantations within the WMA, their impacts have the potential to affect the WMA.
2.2 Wood and pulp plantations	L	While there are no plantations within the WMA, their impacts have the potential to affect the WMA.
2.3 Livestock farming and grazing	0	
2.4 Marine and freshwater aquaculture	0	
3.1 Oil and gas drilling	0	
3.2 Mining and quarrying	0	
3.3 Energy generation	0	
4.1 Roads and railroads (include road-killed animals)	0	A road runs through the village and is used to extract gravel from the Klampun River.
4.2 Utility and service lines (e.g. electricity cables, telephone lines)	0	
4.3 Shipping lanes	0	These may pose a future threat. However, presently there are only three powered out-board motor dinghies that are frequently in the WMA coastal waters. No impacts have been recorded.
4.4 Flight paths	L	Small aircraft and helicopters fly over. Impact unknown but there is potential for impact.
5.1 Hunting, killing and collecting terrestrial animals (including killing of animals as a result of human/wildlife conflict)	0	Hunting takes place, but is governed by traditional rules and the impact is low. There are allocated places for hunting and restrictions on the number that can be killed.
5.2 Gathering terrestrial plants or plant products (non-timber)	L	Gathering takes place, but it is not a threat.
5.3a Logging and wood harvesting for local/customary use	L	Selected mature trees located in the cash crop and gardening zones are harvested to build community houses to promote the community's housing scheme initiative. The aim is to reduce the continuous harvesting of forest regrowth in the cash crop and gardening zones (which is resulting in the transition to grassland). The community housing scheme means that the committee allocates set trees of the right size to be harvested.
5.3b Logging and wood harvesting – commercial logging	0	The community has taken a firm stand against commercial logging.
5.4a Fishing, killing and harvesting aquatic resources for local/customary use	0	Gathering takes place on an 'enough is enough' basis and the customary landowners do not believe this is causing any threats. Local fishing, torch diving and fishing nets are limited and controlled under the by-laws of the WMA.
5.4b Fishing, killing and harvesting aquatic resources for commercial use	0	The community has taken a firm stand against commercial fishing within its waters. This is also covered under the WMA's by-laws. The people are encouraged to fish on an 'enough is enough' basis for family consumption and for sale to earn family income.
6.1 Recreational activities and tourism	0	There are plans in place for tourism initiatives. However, WMA by-laws are in place to regulate this in the WMA.
6.2 War, civil unrest and military exercises	0	

Threat type	Score (H,M,L,0)	Notes
6.3 Research, education and other work-related activities in protected areas	0	Research and education activities are a future possibility. There are by-laws in place that regulate all sectors including education, law and order, culture, environment, primary industries and social development. All related personnel are required to abide by the community by-laws and activity objectives to enable the achievement of WMA's objectives.
6.4 Activities of protected area managers (e.g. construction or vehicle use)	0	As above.
6.5 Deliberate vandalism, destructive activities or threats to protected area staff and visitors	0	As above.
7.1 Fire and fire suppression (including arson)	0	There is a low risk from slash and burn gardening. However, the by-laws are designed to prevent this risk.
7.2 Dams, hydrological modification and water management/use	0	
7.3a Increased fragmentation within protected area	L	This is a future possibility due to population growth. Presently all people are working within the cash crop and gardening zones, which are regulated by the by-laws. Plans are in place to cater for any issues and a dispute committee is ensuring order. However, gardening expansion as the community grows may cause an increase in fragmentation. There is also potential impact from expanding settlements and road construction.
7.3b Isolation from other natural habitat (e.g. deforestation)	M	The coastal area has oil palm on both sides and this reduces the connections to other areas.
7.3c Other 'edge effects' on park values	H	Areas around the protected area are planned for logging and oil palm development in the future. There are by-laws in place to prevent developers from impact on the WMA, but this is still considered a significant threat. Global warming effects are also a great threat.
7.3d Loss of keystone species (e.g. top predators, pollinators etc.)	H	According to local observation and experience there is a loss of important species. There is an urgent need to study and ascertain the facts on how the loss of keystone species affects the biodiversity of the WMA.
8.1 Pest plants	H	Gardening plants are escaping up through the park and are also introduced by logging. This is based on local observation and experience. There is an urgent need to engage in research to better understand how pest plants affect the biodiversity of the WMA.
8.1a Pest animals	H	This is most likely to be happening according to local observation and experience. There is an urgent need to study and ascertain the facts on how pest animals affect the biodiversity of the WMA.
8.1b Diseases such as fungus or viruses that make native plants or animals sick	H	There are sick banana and mango trees and cocoa plants (Kokopo borer). There is an urgent need to study and better understand how any diseases within the WMA are affecting the biodiversity.
8.2 Introduced genetic material (e.g. genetically modified organisms)	0	Cocoa is a genetically modified crop. The impacts are unknown and require further research.
9.1 Household sewage and urban waste water	0	The local by-laws control this effluent.
9.1a Sewage and waste water from protected area facilities	0	The by-laws help to regulate and prevent effluent affecting the WMA values.
9.2 Industrial, mining and military effluents	0	The community has taken a firm stand against commercial activities.
9.3 Agricultural and forestry effluents (e.g. excess fertilizers or pesticides)	H	The present threat is from neighbouring logging and palm oil development. There is an urgent need to effectively monitor how the biodiversity of the WMA is affected by this
9.4 Garbage and solid waste	L	The by-laws help to reduce the impact of garbage and solid waste.
9.5 Air-borne pollutants	H	The use of pesticides, herbicides and fertilizers, as well as genetically modified products in the neighbouring logging and palm oil development villages create the possibility for air-borne pollutants to impact on the physical, social and spiritual wellbeing of the community. There is need for research to provide advice to the landowners on how to take precautions to ensure the welfare and wellbeing of the landowners in the WMA.

Threat type	Score (H,M,L,0)	Notes
9.6 Excess energy (e.g. heat pollution, lights etc.)	0	
10.1 Volcanoes	0	
10.2 Earthquakes/Tsunamis	H	The landowners are well informed about the possibility and possible causes of earthquakes/tsunamis, their impacts and how to manage and adapt. The landowners are carrying out activities in the WMA to prevent impacts e.g. tree planting along coast line.
10.3 Avalanches/Landslides	H	The landowners are well informed about the possibility and possible causes of avalanches/ landslides and are well aware of how to manage in such situations. They are carrying out activities in the WMA to prevent impacts e.g. tree planting along the mountain sides, cliffs and rugged areas and implementing buffer zone by-laws.
10.4 Erosion and siltation/ deposition (e.g. shoreline or riverbed changes)	H	The present threat is the spread effects from the neighbouring logging and palm oil development communities. Sediment is entering from the Setway River (due to upstream logging and oil palm) and impacts on waterways and marine resources There is an urgent need to effectively monitor how our biodiversity in the WMA will affected by erosion, siltation and deposition.
11.1 Habitat shifting and alteration	L	
11.2 Droughts	H	The landowners understand how drought will affect them and the WMA and are carrying out activities in the WMA to prevent these impacts e.g. tree planting, no gardening along rivers and creeks and not using fire to remove vegetation.
11.3 Temperature extremes	H	As above.
11.4 Storms and flooding	H	Strong winds and high seas occur during the south-easterly winds and monsoon periods. Various activities are being conducted (as above), and including reviving customary ways to communicate with storm and flood Gods.
11.5 Coral bleaching	0	
11.6 Intrusion by saltwater into gardens etc.	0	
11.7 Sea level rise	H	Remedial actions include prevention of removal of trees along the shoreline and replanting vegetation along the coastline.
Other (please explain)	H	Seasonality, fruiting and harvesting seasons have changed. The seasons are now unpredictable and as a result the community is struggling to manage these changes and to develop a new 'seasonal calendar' to promote a continuing subsistence way of life.
12.1 Loss of cultural links, traditional knowledge and/or management practices	H	The community has an action plan in place to activate the work of their matrilineal identity. Cultural by-laws have been developed to defend and protect our matrilineal identity.
12.2 Natural deterioration of important cultural site values	H	The community has an action plan in place to protect cultural sites and values.
12.3 Destruction of cultural heritage buildings, gardens, sites etc.	H	An action plan is in place to prevent the destruction of cultural heritage. Cultural by-laws have been developed to defend and protect our matrilineal identity.
Other (please explain)	H	First, men continue to hijack women's matrilineal land rights through all development forms and this presently poses a great threat to matrilineal identity as well as the WMA. The community has an action plan in place to prevent the loss of women's' matrilineal land rights and cultural bi-laws have been developed to defend and protect women's inherited matrilineal identity. Second, development pressure from logging, oil palm and land development by the government and outsiders.

Table 5. Worst threats and ways forward

Threat No.	Threat (Most significant first)	Threat number or name (copy from Table 4)	Please explain the nature of the threat and what impact it is causing.
1.	Loss of culture or an "Identity Crisis"	12.1	The Sulka's inherited matrilineal identity, which is written in their blood (and governs all aspects of the people's life) is being abandoned and people are now adopting a new foreign way of life. The new lifestyle is price tagged with monetary demand and this poses the greatest threat to the WMA.
2.	Population growth	1.1a	There is an increase in the community's population and outsiders are also coming into the area as a result of development. There are increasing pregnancies and outside influences. This population growth is exhausting the carrying capacity of the land and resources resulting in land disputes, social unrest and disorder in the communities. The population demand for the use of land and resources to make gardens, build houses, start new settlements and earn an income to meet the high and rising costs for goods and services is posing a great threat to the WMA. We need to encourage the youth to stay in the community by providing employment and economic incentives.
3.	Climate change and global warming (drought, extreme weather)	11.1,11.2,11.3,11.4,11.7	Droughts are more severe affecting food security. There are more extreme weather events resulting in small scale wild fires which damage forests and resources. The local seasonal calendar has changed and this is affecting flowering, harvesting, hunting and fishing. There are signs of coral bleaching and sea level rise. The sea water is turning a bit sour and there are new infectious diseases being experienced in the community. It is changing our ways of living and poses a great threat to the WMA. It is something we can't control.
4.	Commercial and industrial development (e.g. from logging, oil palm)	2.1b, 2.2	The area is covered in small Sustainable Agricultural Business Leases. Groups associated with the Ili-Wawas Logging and Agriculture integrated project (i.e. a combined logging and agricultural project which seeks to bring economic development to Pomio district by connecting existing logging roads to the national road network around the provincial capital), are putting pressure on the WMA and the Clans to change their boundary (i.e. to enable logging and plantations). The WMA was not demarcated in the approved logging integrated project and the fear is that clans within the WMA may be enticed by corrupt commercial companies. They may compare outcomes and see that the conservation project (i.e. the MWA) is not bringing enough benefits to the landowners compared to the possible income from logging and palm oil development. We need to employ people from the community to work in the WMA and earn something from the protected area. Economic incentives that encourage the protected area should be identified and established.

Table 6. Management effectiveness scores, comments, next steps

Issue	Score (0,1,2,3)	Comment	Next steps
1a. Legal status	3	Legally gazetted WMA. However, the WMA was not demarcated in the Ili-Wawas logging and agriculture integrated project and this poses a threat to the WMA.	Klampun WMA must be demarcated in the Ili-Wawas project to gain legal recognition and thus be respected as land that does not fall within the legal premises of the Integrated project.
1b. Legal status			
2a. Protected area regulations	2	Klampun WMA is regulated by its by-laws and is implementing its land use map and related zoning plan. The WMA relies on its traditional planning and management skills in its operations within the WMA. There is however, a lack of knowledge and skills and funding.	The WMA needs two volunteers to be based in the WMA to blend traditional management with advanced management skills through training, up-skilling, mentoring and advice to local community people. This must be funded adequately to strengthen and motivate the implementation of the by-laws.
2b. Protected area regulations			
3. Law enforcement	2	Law enforcement is partly the responsibility of the Ward Committee members. However, there is a lack of knowledge, skills and money to motivate the law enforcers and to improve law enforcement outcomes.	Training is needed in relation to legal rights, including enforcement and to do this there must be increased funding.
4. Protected area objectives	2	Objectives are in place and the WMA currently is managed with the available resources and capacity, but beyond that gaps exist. NGOs work with the community, who generally understand the objectives and try to comply with them.	We need to manage resources sustainably and make some changes e.g. housing built from selected secondary timber and built to last for decades. We need a healthy village and good housing, landscaping and beautification, health and sanitation and cultural festival initiatives.
5. Protected area design	2	The people from Klampun WMA have land outside the WMA boundary which is not protected. The WMA boundary was rushed and should have extended to the adjoining province boundaries.	Investigate the possibility of extending the WMA to cover the area originally proposed (i.e. to expand towards Lakiri and Ora Villages in Central Inland Pomio). The clans have given their consent for this extension.
6. Protected area boundaries	2	Boundaries are demarcated (along the Klampun Ward Boundary), known and generally agreed. However, some landowning clans within the WMA own land that extends into neighbouring wards and these are not included in the existing WMA.	Begin negotiations to confirm the possible extensions of the WMA boundary.
7. Management plan	2	There is a written management plan that is traditionally oriented and implemented to ensure the continuation of subsistence lifestyles. Implementation by the customary landowners is limited by lack of resources and capacity.	Traditional management is used but we need capacity building and funding for new methods such as land-use planning and management. This could be achieved with the presence of two volunteers who would help to train customary landowners.

Issue	Score (0,1,2,3)	Comment	Next steps
7a. Planning process	1	Developed by the people through a process of discussion, then actions are prioritised, and strategies developed within set time frames.	Volunteers are needed to help plan the WMA and train the customary landowners to improve their skills and abilities in relation to modern planning techniques.
7b. Planning process	1	The plan is reviewed, but not regularly. Review is undertaken, as required. However, people evaluate the work being done and strive to improve their outcomes.	Assistance is needed with plan review and related training to enable the community to undertake these tasks in the future.
7c. Planning process	1	Research and lessons learnt are shared with the community and then planning is revised.	Need funding to research traditional planning processes, develop case studies and lessons learnt and add value by improving their quality to meet current planning standards.
8. Regular work plan	2	Every week, the community implements actions from the work plan, both inside and outside the protected area. Immediate needs and arising issues are addressed to ensure that immediate needs are met and pressing issues are solved. This is done on a daily basis.	Increase funding to enhance capacity and the ability to implement the work plan actions.
9. Resource inventory	2	Traditional knowledge is well known. The people are well informed about the physical, social and spiritual values of the natural environment where they live, grow, multiply and die. The community has developed a WMA value map which guided them in the development of their land use map. There has been no recent formal resource inventory.	Scientific data is needed to compliment traditional knowledge. There is also a need for research into local knowledge, which is based on the traditional, natural physical, social and spiritual contexts of life.
10. Protection systems	1	The WMA has by-law enforcers and rangers who frequently move in and around the cash cropping and gardening zone. However, areas further inland are unknown and uncontrolled due to lack of motivation and camping equipment. The full extent of uncontrolled access is unknown.	Community rangers need supplies and equipment as the area is cold, rugged and very remote. They also need an incentive (e.g. to be employed in the WMA).
11. Research and monitoring	1	Currently we are monitoring the boundary and external influences such as logging. There has also been some research on the landowners' conservation conviction, community engagement processes and monitoring mechanisms. There is no research being undertaken or monitoring of biodiversity.	Scientific inventory and monitoring are needed.

Issue	Score (0,1,2,3)	Comment	Next steps
12. Resource management	2	The WMA has a land-use plan that is based on the values map, e.g. gardening, cash cropping and fisheries are well managed and sustainable. Implementation ensures by-laws protecting Masalai places, old settlements, traditional sites; river/creek/ mountain buffer zones are respected. There are outside pressures from major developments.	Modern resource management skills are needed to blend with traditional management skills to competently manage the WMA.
13a. Staff numbers	0		Since the WMA is a registered entity, there is a great need to employ full time staff to manage the people's WMA and ensure the people's environmental conviction is defended, protected and materialized.
13b. Other people working on the protected area	3	Community or clan landowners are involved. It is compulsory for individual members of all the 13 clans in the WMA to participate cooperatively with each other to ensure WMA work is fulfilled for the collective benefit of all. People meet and talk about issues and come to a common consensus about solutions, timeframes and implementation.	Incentives are needed to maintain the community's involvement and support and to motivate them to continue their team work in the WMA.
14. Training and skills	2	Have skills from traditional knowledge to manage the protected area but not formal/western skills.	Training in scientific methods is needed and should complement traditional knowledge.
15. Current budget	1	Many things can be done without funding, but additional funds would complement current actions. Currently the community members contribute money or fundraise in the community to raise the money required for certain activities e.g. to buy concrete for landscaping and beautification.	Identify more opportunities to raise funds or access other funds. Need funding to add value or complement community self-help initiatives that aim to address needs, minimize issues and enhance self-reliance and sustainable livelihoods.
16. Security of budget	0	There is no secure budget.	
17. Management of budget	2	Community contributions and money raised through fundraising are reported back to the whole community. The activity plans determine how much money is to be spent, and it is then presented to community for approval and implementation. A financial report is provided to the community whenever money is spent.	Staff/volunteers are needed to identify sources of funding and the assist with financial management, reporting and acquittals to funders. This will then enable the community to take ownership of the WMA's management.
18. Equipment	0	The WMA does not have equipment. We currently use Wide Bay Conservation's facilities but have to pay for this equipment/facilities (e.g. printing, photocopying, transport, food and accommodation in Kokopo) from the funds we raise, or we undertake training activities for Wide Bay Conservation, and instead of being paid we are able to use their facilities (e.g. printing, computers etc).	Need to establish an office at Klampun that is well-equipped with office equipment, stationary and power and employ full-time staff to run and manage the office. We also need a GPS, field equipment – tents, raincoats for boundary monitoring; or access to free facilities or our own equipment.

Issue	Score (0,1,2,3)	Comment	Next steps
19. Maintenance of equipment	NA		
20. Education and awareness	2	Implementation Plan has an education plan for the village. The community's needs and arising issues determine the priority educational/ awareness programs needed in the community. Many stakeholders conduct educational awareness at the wrong time, wrong place and with the wrong people.	All stakeholders must align their priorities to enable the achievement of WMA objectives and should organise around the community's priorities to provide the right complementary services at the right time, right place and with the right community. Increased knowledge of facilitators would have positive flow on effects into the community.
21. Planning for land use or marine activities	2	There is a Land use plan for the protected area (and fishing buffer zones), but the neighbouring land may not have a land use plan. Neighbouring communities are experiencing the negative impacts of not having a land-use plan. We are often invited to share our land-use planning experiences and help in solving land issues. This builds understanding, respect and support systems with other communities who then respect our WMA.	We need funding to strengthen public relations and working with other stakeholders.
22. State and commercial neighbours	2	The conservation approach of the WMA has been heavily criticized as non-economic, providing no benefits or infrastructure, a waste of time, and has been said to "fool people". The WMA has coped with these criticisms and built working relationship with our commercial neighbours, e.g. selling fresh food, vegetables, fish, pork etc. to the logging camps. Have regular contact with the commercial companies (logging and oil palm) and assisting them by liaising with other communities has built respect, which means that the companies respect the protected area, and the other communities have become interested in establishing protected areas.	We need to establish self-help sustainability projects that promote self-reliance as well as create job opportunities and cash income to motivate people and create a wave of influence for protecting the environment and promoting sustainable development.
23. Indigenous people/ Customary landowners	3	There are 10 landowning clans and three clans with user rights on the land. Environmental protection is not an introduced idea. It is a traditional conviction that has been passed down from generation to generation. All the above clans agree and made commitments to walk their ancestral pathway in caring, respecting and living in harmony with nature.	Need to conduct a genealogy study and declare traditional titles to the 10 landowning clans to ensure order for the present and future generations.
24a. Impact on communities	1	There is open communication and trust.	
24b. Impact on communities	1	There are several programs to improve the landowners' welfare.	
24c. Impact on communities	1	The customary landowners actively support the WMA.	

Issue	Score (0,1,2,3)	Comment	Next steps
25. Economic benefit	0	Only benefit from conservation area is customary value, but no economic values. For example, the 13 clans benefit directly through the customary value of their natural environment. The economic value can be measured through earning income from selling beetle nut, wild protein, fish and garden food to the logging and palm oil development camps.	The community needs to initiate projects that give more economic power to the people to minimize their dependence on natural resources e.g. promoting tourism through building eco-tourism facilities.
26. Monitoring and evaluation	1	Reflection is undertaken regularly by the local community as a normal practice (e.g. after daily work evaluation of weaknesses and strengths is undertaken in story form) and we review and identify the lessons learnt so that improvements can be made.	Training is needed to incorporate modern monitoring and evaluation skills with traditional skills, as well as research into traditional monitoring and evaluation skills.
27. Visitor facilities	0	No facilities are currently available, although we accommodate visitors in our own homes and maintain village health and hygiene and landscaping programs. The WMA has plans in relation to visitor facilities and has demarcated land for that purpose.	Funding is needed to establish visitor facilities in the community.
28. Commercial tourism operators	NA		Tourism activities and products should be encouraged and promoted.
29. Fees	1	There are no entry fees, but we have fines in place if the rules or by-laws are breached.	
30. Condition of values	3	The community believes that the condition of the values in the WMA are intact and undisturbed.	
30a. Condition of values	1	Based on landowners regular non-scientific assessment.	
30b. Condition of values	1	There are several programs to address threats to the WMA. The housing scheme is in place to manage timber harvesting for house building and thus reduce the loss of trees. Landscaping and beautification are in place to strengthen the environment conviction and health of the community. Sanitation promotes environmental health and the cultural show/festival promotes cultural diversity.	
30c. Condition of values	1	Every week activities are undertaken as part of community wide 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
Important species	G	D	Change of climate (changing fruiting) and strong winds are damaging the Kauri pine and causing them to fall down. We need to collect seeds and replant to maintain the trees. We need to study the Kauri pine as it is not re-growing as seedlings under the existing pine trees, as it did in the past. We used to have mass fruiting and all birds would come, but this does not happen.
Water source / water catchment protection	G	D	The size of the river is decreasing in the dry season and becoming drier. There are floods in the wet season, but we are unsure of the cause. We need to study this to know if it is due to climate change. Water quality has decreased a bit due to oil palm development on the lowlands.
Habitat	VG	S	Some birds and other animals and fish can be spotted only 'once in a while'. We need to study these species to find out the causes of their decline.
Sacred sites	VG	S	Some sites are being destroyed by Christians, educated people and other individuals who do not care.
Natural resources	VG	S	There has been no inventory of natural resources, or any research. All information is based on local knowledge. However, the livelihoods of the people are very good and stable.
Customary practices of life	VG	S	Research is needed into the traditional and natural context of life.

Table 8. Recommendations and ways forward

1.	2.	3.
We would really like assistance to protect and capture (document) the traditional knowledge and skills.	Develop self-reliance through sustainable livelihood projects.	Integrate traditional knowledge systems with the results of scientific knowledge to advance management outcomes.

References

Tammisoto, T. 2015. Strengthening the State: Logging and neoliberal politics in East New Britain, Papua New Guinea. Available at: https://www.academia.edu/265850/Strengthening_the_State_Logging_and_neoliberal_politics_in_East_New_Britain_Papua_New_Guinea.