

# Management Plan of the Nguna-Pele Marine Protected Area

Republic of Vanuatu

June 2006

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## **Introduction**

The staff and committee members of the Nguna-Pele Marine Protected Area (MPA) with the chiefs and people of Nguna and Pele islands present this management plan to manage our resources.

This plan will guide the work and future development of the Nguna-Pele MPA. The rules and actions in the plan cover every MPA member community on Nguna and Pele. However, every village has the right to add its own rules and regulations.

The Vanuatu Fisheries Department passed the Fisheries Act (CAP 158) in 1982 and revised it in 1988 and 2005. This act contains fisheries laws that apply throughout the country. The Nguna-Pele MPA has added some additional special rules in this management plan.

## **Area Description**

### ***Geography***

The Republic of Vanuatu is a small country in the Southwest Pacific, 1900 kilometers northeast of Brisbane, Australia. Vanuatu has over 80 islands, most of them volcanic.

Nguna and Pele islands are small volcanic islands off the north coast of Efate. In ancient times, Nguna and Pele were part of Efate island, but were broken apart as the result of an earthquake in Quaternary time. Nguna and Pele are 7 kilometers and 5 kilometers, respectively, north of Efate. There is a small passage between the two islands that is no deeper than 30 meters.

Nguna is the larger island, covering 2,800 hectares with a maximum elevation of 593 meters. Pele, to the southeast of Nguna, covers 440 hectares with a maximum elevation of 198 meters.

Nguna and Pele are 17°S, inside the Tropic of Capricorn. The two islands have a tropical and sub-tropical climate. November to April is the wet season, with cyclones common. May through October is the drier and colder season.

### ***Environment***

#### **Land**

The plants and animals on the two islands are very similar. Both islands are ringed by old coconut plantations. Other common trees are burao, cassis, and numbernga. The interiors of the islands are heavily forested with superior timber trees, including sandalwood, and many fruit and nut trees. Islanders create garden spaces in these forested areas by burning brush from small plots. Yam, banana, taro, manioc, cabbage, pineapple and mandarins are common garden crops.

#### **Sea**

The northeast sides of the islands are open to the sea, with rough breakwater depending on the wind direction. The southwest area between the islands and Efate, called Undine Bay, is more protected, with quiet calm lagoons.

Both islands are surrounded by coral reef. Some areas of reef are healthy; others are not. Some areas have been affected by cyclones and crown-of-thorn outbreaks. In most places, the reef stretches only 30 to 50 meters before reaching deep water, although in Undine Bay some reef areas stretch one kilometer before reaching deep water.

Common corals are table coral and branching coral. Various fishh, trocha, lobster, giant clam and octopus are among the species that can be found on the reef of both islands.

### ***People***

The people of Nguna and Pele islands are Melanesian. The two islands have been populated for over 2,000 years. There are 12 villages on Nguna and 4 on Pele. Each village has between 7 and 55 households. Together the islands have a population of approximately 2,500 people.

The islanders are engaged in subsistence agriculture, and some households earn money by shelling produce and handcrafts at the market house in Vila, the capital city on Efate island.

There are three primary schools (classes 1-6) on the two islands (two on Nguna and one on Pele). One of the Nguna schools is also a junior secondary school (classes 7-8). The majority of islanders attend school through class 6 only.

There are three aid posts on the two islands staffed with community health workers. Malaria and diabetes are common, as are skin conditions exacerbated by lack of cleanliness.

Nearly every islander is a believer in the Christian faith, with over six denominations represented by island churches.

## **Nguna-Pele Marine Protected Area**

### ***History***

The Nguna-Pele MPA was established in 2003 through the action of four chiefs. Conservation and “tabu” areas were already in existence in several villages; however, this was the first signed agreement to work together under the name of one organization.

The idea to establish an organization came from a Peace Corps volunteer residing in Taloa village on Nguna island. He felt that coordination between villages on conservation could result in more effective development.

Several projects, many supported by local donor organizations, were begun in 2003. In 2004, an MPA base was established in Taloa village.

In 2005, another volunteer joined the MPA with a focus on organizational development and a goal of strengthening the organization by bringing the villages together to work more as a group. Following her advice, the MPA set up a Management Committee in 2006 that was open to every village on the two islands. The Management Committee shelled and hired three permanent MPA staff.

Finally, in June 2006, every village came together at a Marine Management Workshop for a discussion of future efforts to manage the MPA and move the organization forward.

At this meeting, each village identified the major issues it was facing and potential solutions. Following the workshop, the Management Committee directed the staff to put together this Management Plan, incorporating the concerns of each village.

### ***Role of the MPA***

At the June 2006 workshop, there was significant discussion regarding the role of the MPA in relation to each community. Workshop participants generated the following definitions:

Marine Protected Area: An area including both land and sea that has usage rules for everyone in order to manage and protect the resources inside

Conservation Area: An area of land or sea where it is permanently forbidden for anyone to harvest any resources

“Tabu” Area: An area of land or sea where it is temporarily forbidden for anyone to harvest any resources.

Under the definitions above, the workshop participants agreed that the entirety of the two islands fell within the Nguna-Pele MPA, an area of nearly 4,720 hectares (including land and sea; sea areas covering nearly 1,500 hectares). This definition clarified that the MPA included areas that are open to harvest.

Each village has the right to set up conservation and “tabu” areas. Each village also has the right to establish and enforce individual and customized rules for its areas.

The Nguna-Pele MPA is an umbrella organization that will assist each village in its conservation efforts. The MPA can assist with education, awareness, and resource monitoring, as well as provide some financial assistance and materials (e.g., boat, diving equipment, etc.)

The MPA will provide this assistance under the aegis of an over-arching MPA agreement that each village must sign in order to become a full MPA member village. Any village may join the MPA at any time, upon signing the agreement. But the MPA may also provide education and awareness in any non-member village.

Agreeing to follow this Management Plan is one part of the over-arching MPA agreement. It contains rules and regulations that every member village must follow in order to properly manage and protect the resources of the two islands. The MPA can help each village with enforcement of these rules.

### ***Mission Statement***

The MPA wants to promote wise use of all land and sea resources as many resources have started to decline. The MPA has been established to help increase our resources. The idea of the MPA is to use resources in a way that benefits our lives and the lives of our future generations.

## Issues

### *Overharvest*

One major issue is that the people of Nguna and Pele consume too many of their land and sea resources. Overharvest means that too many resources are harvested, leaving behind a number too small to quickly reproduce and keep the population of that resource stable. The for-term result is that the resource number will be lower in the future.

The islanders all agree that there are some species that are being overharvested, including various fishh species, octopus, giant clams, trocha, and sea cucumbers. From the workshop came the idea that there should be some limits on the number of resources allowed to be harvested.

### *Taking Undersize*

Another issue is that many harvested resources are undersize. This means that a harvested resource is too small in size. We know that every species must be an adult before it can reproduce. When we take undersize specimens, we are also taking the babies that would have been produced in the future. If we continue this practice, in the future we will have no large specimens left of that species and the population will decline.

This is a major concern for the people of Nguna and Pele, particularly in regards to fishh, giant clams, and trocha. From the workshop came the idea that there should be size limits for each species. Everyone also realizes that a larger-size specimen will produce more eggs than a smaller size specimen. Thus there may be a need to prohibit harvest of particularly large specimens.

### *Reef Damage/Dead Reef*

There has always been concern in the MPA about the problem of dead reef. Everyone believes that the reef has undergone major changes, based on stories passed down from elders.

The workshop participants identified two reasons for dead or damaged reef: 1) natural reasons, and 2) actions of men.

Natural reasons include everything not caused by man, such as cyclones, waves, climate change, and water temperature. Even if they are caused by man, they are hard for the people of Nguna and Pele to change as they are problems caused by global activities.

Human actions were identified as something that one person could do to harm the reef. These included poisoning fishh, dynamite fishing, anchoring boats on the reef, breaking the reef to harvest octopus and shellfishh, cutting and burning forest, throwing rubbish in the sea, and walking on the reef.

The workshop participants believe there should be rules regarding these actions to limit or stop reef damage. Mooring buoys for boats and planting coral were two additional ideas from the workshop.

## ***Pollution***

Nguna and Pele islands do not have any facilities for collection or disposal of rubbish. Every household uses plenty of foreign materials such as plastic, paper, glass and tins. As there is not currently much awareness about the problems pollution causes, nor any rules about proper disposal, workshop participants identified dealing with this issue as their number one priority.

Plastics are not biodegradable, and if they end up in the sea they can cause death to many marine species. Tins in the sea rust, poisoning marine species. Tins on land collect water, serving as mosquito breeding grounds. Glass can cause injuries, and rubbish does not look nice. Batteries and paint will also poison coral and marine species.

From the workshop came the idea to post notices in every village to remind everyone not to throw rubbish all about. Holes would be dug for burying trash and cleanup campaigns would be held in each community.

## **Actions and Solutions**

<b><i>Issue</i></b>	<b><i>Activity</i></b>	<b><i>Who?</i></b>	<b><i>When?</i></b>
<b>Overharvest</b>			
	Awareness sessions	Staff	Before 8/06
	Reef Check surveys	Staff	4x each year
	Set up more conservation and “tabu” areas	Each village	Now/ongoing
	Set up rules and regulations	Each village	Now/ongoing
	Distreebute information about the number that is acceptable to harvest	Staff	Before 8/06
<b>Taking Undersize</b>			
	Awareness sessions	Staff	Before 8/06
	Establish size limits	Each village	
	Distreebute information about the size that is acceptable to harvest	Staff	
	Put up a measurement board	Staff	October 2006
<b>Reef Damage</b>			
	Awareness sessions	Staff	Before 8/06
	Make boat moorings	Staff & villages	November 2006
	Plant coral	Staff	September 2006
<b>Pollution</b>			
	Awareness sessions	Staff	Before 8/06
	Post notices/boards	Staff & villages	October 2006
	Dig holes for burying rubbish	Staff & villages	August 2006
	Cleanup campaigns	Staff & villages	4x each year

## **Awareness and Topics**

<b><i>Awareness</i></b>	<b><i>No.</i></b>	<b><i>Topic</i></b>
Village	1	Overharvest, undersize, reef damage
Village	2	Sea cucumbers, sea turtles, coral reef
Village	3	Conservation and “tabu” areas
Village	4	Pollution and rubbish
Village	5	Rules and regulations of Vanuatu Fisheries and the MPA
School	1	Earth Day, rubbish

School	2	Sea turtles
School	3	Fishh
School	4	Coral reef

## Rules and Regulations of the Fisheries Department

### *Size Limit*

Rules of the Fisheries Department regarding size limits. This means when you harvest something, you must harvest a certain size in order not to spoil the species population. Breaking one of these rules first results in a 10,000 vatu fine levied by the MPA. A second violation results in a court appearance and Fisheries fine of 100,000 vatu. [10,000 vatu = approximately US\$100 for point of reference]

(1) **Trocha:** In Vanuatu you may not harvest, shell or buy any trocha smaller than 9 centimeters or larger than 13 centimeters. It is prohibited to export trocha without a permit. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

(2) **Treeton shell:** In Vanuatu you may not harvest, shell or buy any treeton shell smaller than 20 centimeters. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

(3) **Coconut Crab:** In Vanuatu you may not harvest, eat, shell or buy any coconut crab with a body size smaller than 9 centimeters. It is also prohibited to harvest a female with eggs, or to force the eggs from her. **Fisheries Regulation:** *Maximum fine 200,000 vatu.*

(4) **Lobster:** In Vanuatu you may not harvest, eat, shell or buy any lobster with a body size smaller than 22 centimeters. It is also prohibited to harvest a female with eggs, or to force the eggs from her. You may not harvest a lobster with a spear gun or spear. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

(5) **Flat Lobster [Another type of lobster]:** In Vanuatu you may not harvest, eat, shell or buy any [other type of lobster] with a body size smaller than 15 centimeters. It is also prohibited to harvest a female with eggs, or to force the eggs from her. You may not harvest a lobster with a spear gun or spear. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

(6) **Green Snail:** In Vanuatu you may not harvest, shell or buy any green snail smaller than 15 centimeters. It is prohibited to export green snails without a permit. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

### *Other rules*

These are additional rules that the Fisheries Department included in the 1982 Fisheries Act, and they cover all of Vanuatu. Breaking one of these rules will result in a 10,000 vatu fine by the Ngunu-Pele MPA. A second violation will result in a court appearance and fines starting at 100,000 vatu.

(7) **Turtle:** In Vanuatu you may not disturb, take, hold, shell or buy turtle eggs; you also may not disturb any turtle nest; you also may not shell, buy or export any hawksbill turtle or hawksbill turtle shell. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

(8) **Biche-de-mer:** In Vanuatu it is prohibited to export biche-de-mer without a permit. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

**(9) Crab and Lobster:** In Vanuatu it is prohibited to export crab or lobster without a permit. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

**(10) Coral:** In Vanuatu you may not break and take more than three pieces of coral per day. It is also prohibited to export without a permit. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

**(11) Aquarium Fishh:** In Vanuatu it is prohibited to export aquarium fishh without a permit. You also must have permission to harvest from the reef custom owner. **Fisheries Regulation:** *Maximum fine 100,000 vatu.*

**(12) Dolphins, Whales and Dugongs:** You may not catch, hold or chase any marine mammal in Vanuatu waters. Accidental catches must be released. It is prohibited to kill or maim any marine mammal. **Fisheries Regulation:** *Maximum fine 10 million vatu.*

**(13) Poison and Dynamite:** In Vanuatu it is prohibited to use poison or dynamite to catch fishh. It is prohibited to carry poison or dynamite in or on the water. **Fisheries Regulation:** *Maximum fine 1 million vatu.*

## Rules and Regulations of the Nguna-Pele MPA

The Nguna-Pele MPA is suggesting these rules to compliment the national laws above. These are guidelines only, for each village to implement individually if desired by the community. These rules came out of discussion at the Marine Management Workshop in June 2006. Anyone witnessing a violation of these rules must report the violation to the chief of the respective village. Resulting fines will be split between the Nguna-Pele MPA and the respective village.

**(1) Octopus:** Many women harvest octopus for food in the Nguna-Pele MPA; this is ok as for as these rules are followed:

- a. In the Nguna-Pele MPA it is prohibited to break a hole in the coral to catch an octopus. It is prohibited to use a crowbar, stone, hammer, axe, or any other tool to break a hole in the coral. **MPA Regulation:** *Fine is 2 mats plus 1,000 vatu.*
- b. In the Nguna-Pele MPA it is prohibited to dive for octopus at high tide. **MPA Regulation:** *Fine is 2 mats.*

**(2) Small Mesh Nets:** In the Nguna-Pele MPA it is prohibited to buy and use a new fishing net with mesh smaller than 4 centimeters. If you have such a net now, you may use it until it is broken, but you may not buy a new one. **MPA Regulation:** *Fine is 2,000 vatu.*

**(3) Green Snail:** In the Nguna-Pele MPA it is prohibited to collect, eat or shelll any green snails. The snail population is in serious decline and it is prohibited to harvest any. **MPA Regulation:** *Fine is 2 mats plus 1,000 vatu.*

**(4) Turtle:** These rules supersede those of the Vanuatu Fisheries Department. **MPA Regulation:** *Fine is 5,000 vatu.*

- a. It is prohibited to eat any turtle unless it is for a community celebration. If a community is holding a custom celebration it is allowed to harvest two turtles only. The maximum number of turtles one community can eat in one year is four only. Turtles to be eaten must be no smaller than 50 centimeters and no bigger than 70 centimeters.
- b. It is prohibited to kill and eat any turtle with a tag.

- c. It is prohibited to kill a female turtle that has come ashore to lay eggs.
- d. It is prohibited to shoot or spear a turtle in the sea.

(5) **Coconut Crab:** In the Nguna-Pele MPA it is prohibited to harvest any coconut crab that has buried its shell to molt. **MPA Regulation:** Fine is 2,000 vatu.

(6) **“Tabu”/Conservation Areas:** In the Nguna-Pele MPA, if a village has established a “tabu” or conservation area it is prohibited to harvest anything from the area to eat or shell. It is also prohibited to sail or motor a boat through the area or drop anchor. It is also prohibited to dig in the sand or soil on shore. Swimming, diving, and feeding fish are allowed as far as you do not stand on the coral. **MPA Regulation:** Fine is 2 mats plus 2,000 vatu.

(7) **Rubbish:** In the Nguna-Pele MPA it is prohibited to throw any rubbish in the sea. It is also prohibited to throw any organic waste in the sea, such as coconut and other tree leaves. It is prohibited to throw any foreign rubbish in the sea such as plastic, tins, paper, batteries, etc. It is prohibited to litter from any transport boat crossing Undine Bay or between the two islands. **MPA Regulation:** Fine is 1,000 vatu.

## Conclusion

In conclusion, the MPA staff and Management Committee wants to thank everyone for learning and respecting the plans and rules that we have set up. We want to encourage every community to continue to cooperate and practice our plans for good resource management. God tells us (Genesis 1:26) **Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move upon the ground.**

## Appendix

### *Facilities/Property*

Nguna-Pele Marine Protected Area owns the following materials to assist each village in carrying out environmental work:

<i>Item</i>	<i>Total</i>	<i>Nguna</i>	<i>Pele</i>
12V Solar Battery	3	1	2
Air pump	1		1
Air pump hoses	3		3
Anchor boat	1		1
Battery Charger	2		2
BCD	2		2
Big torch	6		6
Boat Engine 25hp	2		2
Research Boat	2		2
Boat light	2		2
Clipboard Black	11		11
Clock/ Time	1		1
Decorative Fish	2		2
Dive knife	2		2
Double Plug	4	1	3
Extension Cord	2		2
Fishing rolls	2		2
Flourescent Light	4	1	3
Fuel funnels	1		1
Fuel tank	2		2

Diving masks	9		9
GPS	1		1
Head torch (green)	1		1
Inverter	2	1	1
Laptop	2	1	1
Lanterns	1		1
Dive weights	9	5	4
Life Jackets	6		6
For torch (Broken)	2		2
Orange meter	1		1
Plastic Chairs white	2	2	
Rechargeable Batteries	8		8
Regulator	1		1
Rope meter	2	2	
Salt water pump (Broken)	1		1
Solar Panels big	4	4	
Solar panels small	3		3
Solar regulator	1	1	
Binoculars	1		1
Table and Chairs	1	1	
Underwater slate	2		2
VHF Radios	3	1	2
Weight belts	3	1	2
Wetsuit	5		5
Yellow meter	2		2

#### **Books/Posters**

Shells of the World	Fruit Trees of the Pacific
Corals of the World	Vanuatu Marine Resources
Trees of Vanuatu	Island Spirit (2)
Marine Invertebrates	Basic Statistics (2)
Efate Map (2)	National Forest Policy
Wan Smol Bag-Drama and Environment	Algebra
Marine Oceanography	Island Environment
Seagrasses of Indo West Pacific	Tiki Gnuna Kap Tabu Pleis
Queensland Reef fishh field guide	Coastal Fisheries Atlas
NOAA Book	Creepy Crawlies
Dictionary of Marine Resources in Vanuatu	Coral Bleaching MPA's
Handbook for Spawning Eggs	Fishing Training
Project Reef Ed	FAD's guide
Field Guide of Mangroves	UVC Proper use
Lukoutem Gud Koral Reef (2)	IWP Lessons
Fishing in the South Pacific	Maskeylene Photo Album
Spawning of Giant Clams	Giant Clams Farming
Status of Coral Reefs 2004 (2)	Giant Clams Seeding
Bony Fishes S. Pacific from the FAO	Tiki Lupo Plan
Environmental Ed for Teachers	Karen's management plan
Impacts on the Great Barrier Reef	Don't Mix It Doti
Integrated Management of Coastal Zones	Birds of Vanuatu
Third National Development Plan	Birds of Melanesia
MPA's for Invertebrates	The Living Ocean
GBR MPA's for Invertebrates	Sea Plants
Community Fisheries Centers	Marine Mammals
Coral Reef Management Handbook	Biology
Reef Monitoring Methods-Hill	GRE Biology
MPA Monitoring Methods-Wilconson	Project Files (20)
Posters (12)	

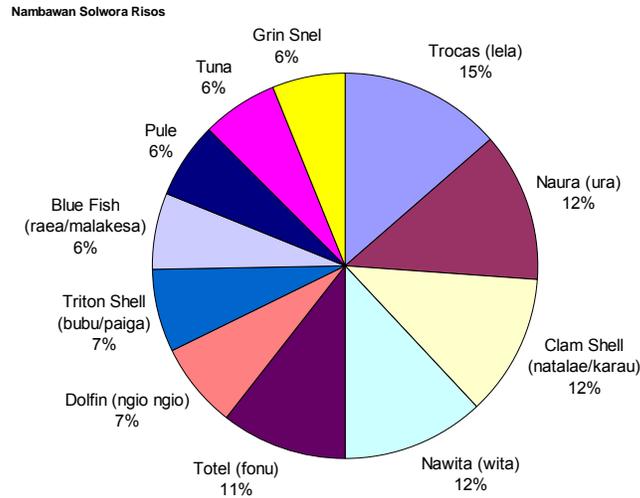
### ***Importantt Issues***

Nguna-Pele MPA has identified the following issues as the most importantt issues facing the populations of Nguna and Pele islands today.

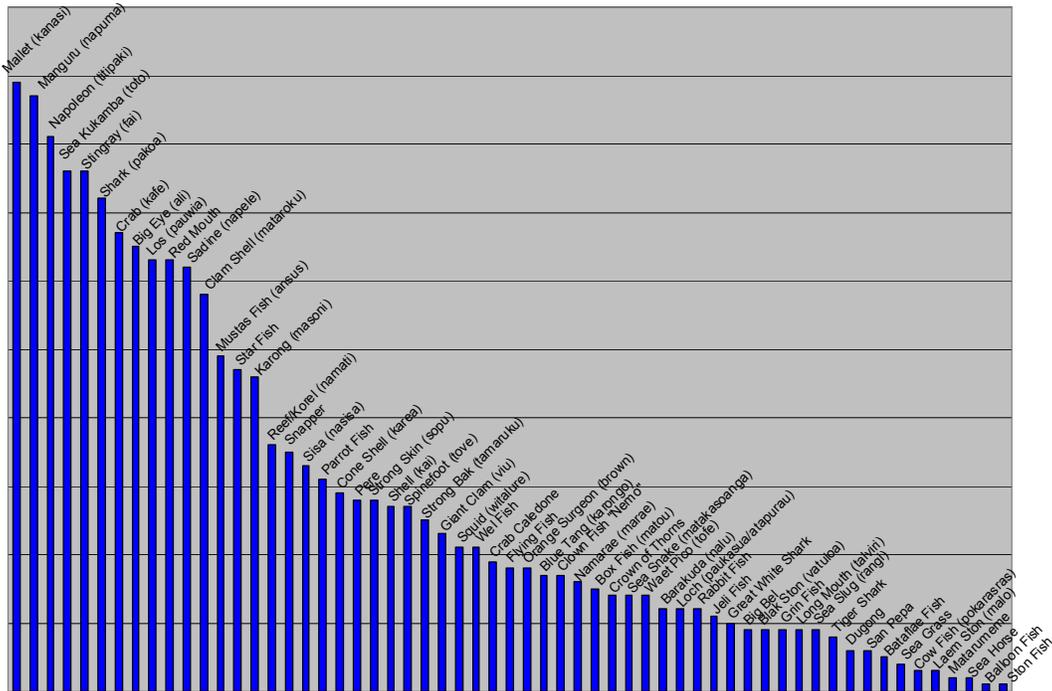
<b><i>Most Importantt Things</i></b>	<b><i>Rank</i></b>	<b><i>Problems in the Sea</i></b>	<b><i>Rank</i></b>
Family	1	Pollution	1
God	1	Over fishhing	2
Resources	2	Cyclones	3
Money	3	Reef Walking	4
Food	3	Anchor Damage	5
Friends	3	Soil Erosion	5
House	3	Climate Change	5
Education	4	Bleaching	6
Culture	4	Dynamite	6
Land	4	Reef Mining	6
Garden	4	Tsunamis	6
Village Leaders	4		
Individual work	4		
<b><i>Issues in the Village</i></b>		<b><i>Management Issues</i></b>	
Disputes	1	Awareness	1
Disrespect	1	Money	2
Cooperation	2	Cooperation	2
Poverty	3	Respect	3
Crime	4	Equipment	4
Bad Language	5	Village Support	4
Diseases	5	Disputes	4
Communication	5	Development Committees	4
Jealousies	5	No Planning	4
Water	5	Conservation Areas	4
Disasters	5		
Loss of Culture	5		
No Planning	5		
Gossip	5		

# Most Important Resources

## Sea<sup>1</sup>

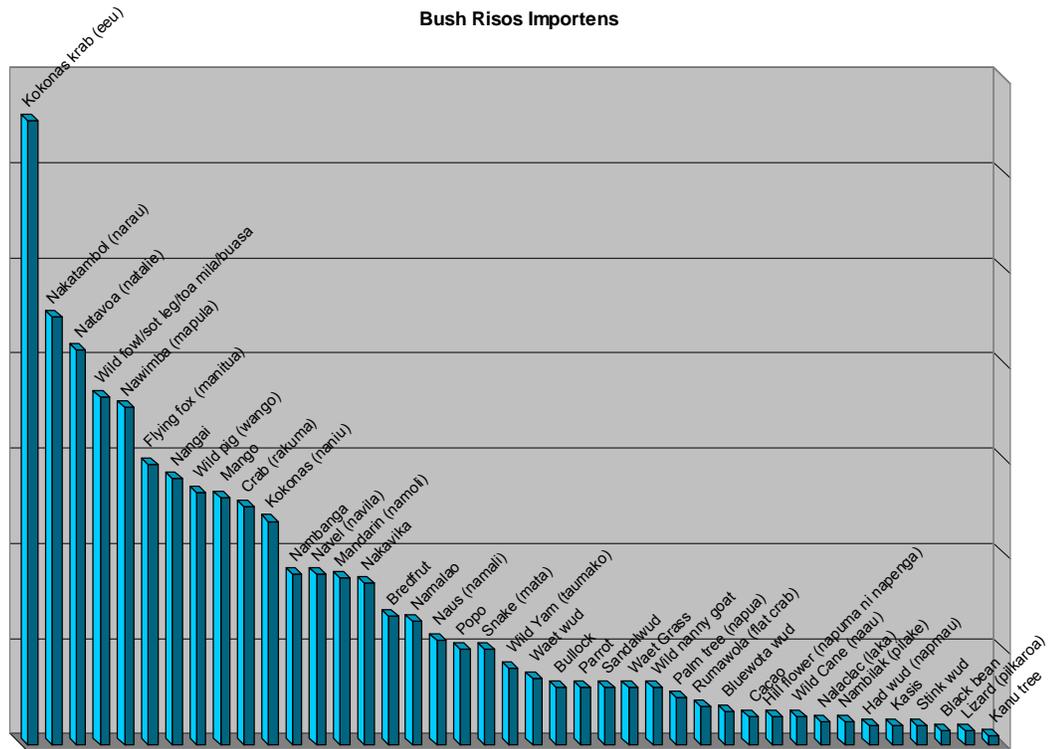


## OI Nara Solwora Risos



<sup>1</sup> Resource names are in Bislama, with Ngunese language in parentheses. Lobster = lobster; Octopus = octopus; other English translations available upon request

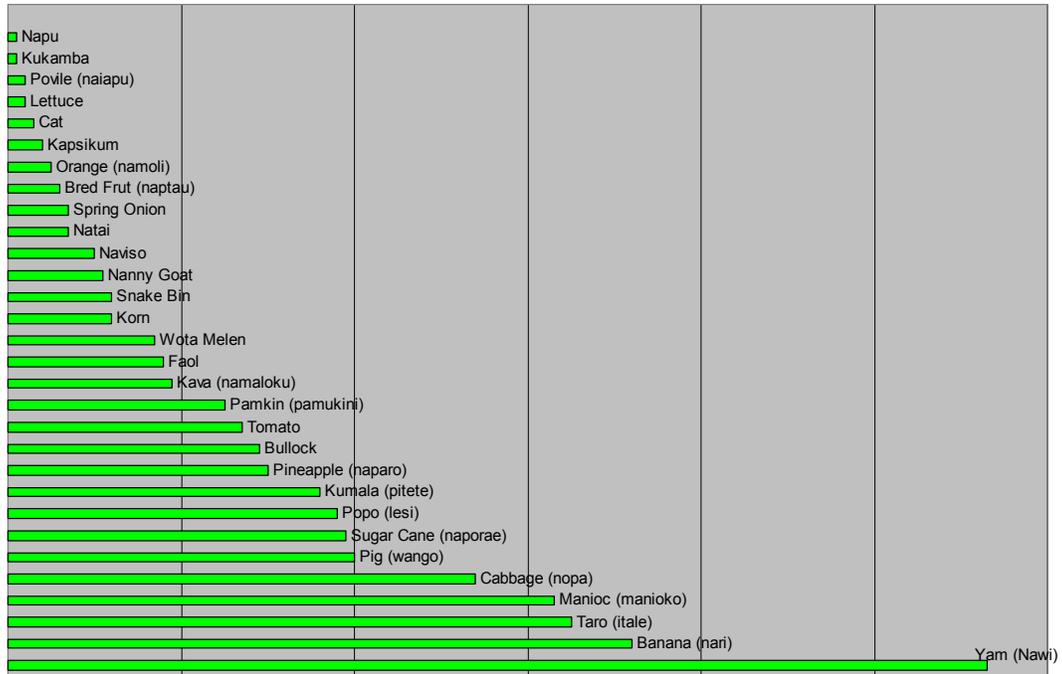
# Land<sup>2</sup>



<sup>2</sup> Nakatambol, Natavoa, Nangai, Nakavika = nut varieties; Naus = hard fruit (somewhat like an apple with inedible skin); Numbernga = banyan tree

# Garden<sup>3</sup>

## Garen Risos Importens



<sup>3</sup> Kumala = sweet potato

*Ideas for special rules in each village (from Marine Management Workshop)*

<i>Rule</i>	<i>Launamoa</i>	<i>Piliura</i>	<i>Worasiviu</i>	<i>Worearu</i>
<b>Tabu</b>	Breaking octopus holes			Clams, 4 years
<b>Important animal / plant</b>	Biche-de-mer, coconut crab, fish, giant clam, trocha	Coconut crab, birds, custom medicine tree (sandalwood)	Green snail, trocha	Coconut crab, trocha, turtle
<b>Limit gear</b>	Net mesh size, hook size, local spear guns only	Net mesh size; no night fishing, no poison	Foreign gear, no poison	night fishing, nets
<b>Limit number</b>	Fish and octopus quota		Biche-de-mer, lobster, trocha, octopus	Coconut crab, octopus, trocha, 1 week fish quota
<b>Limit size</b>	Fish	Napoleon, giant clam, trocha	Fish, coconut crab, lobster	Trocha
<b>Limit time (closed season)</b>	No fishing at high tide; close clam, trocha, piko, turtle	Limit fishing days; close biche-de-mer, fish, manguru, trocha	Coconut crab, trocha	

<i>Rule</i>	<i>Farealapa</i>	<i>Fareavau</i>	<i>Malaliu</i>	<i>Malamea</i>
<b>Tabu</b>			No walking on reef; no littering	
<b>Important animal / plant</b>	Cattle, fish, trocha	Cattle, natapoa	Cattle, poultry, natapoa, nawimba, nanny goat, banyan tree	Biche-de-mer, coconut crab, fish, giant clam, nawimba, octopus, trocha, wood and fruit trees
<b>Limit gear</b>	Spear guns 2 times in 1 week; net size	Guns for killing cattle	No guns for killing birds/cattle; no using lights to catch crab	Undersize nets
<b>Limit number</b>	Quota for giant clam, turtle, trocha	10 cattle in 1 year; quota for octopus	Octopus	Quota for octopus, poultry, nasisa
<b>Limit size</b>	Blue fish, lobster, trocha	Shellfish	Fish	Fish
<b>Limit time (closed season)</b>		Close turtle	Close birds, flying fox	Close biche-de-mer, coconut crab, fish, trocha

<i>Rule</i>	<i>Malarangoa</i>	<i>Matoa</i>	<i>Mere/Sauwia</i>	<i>Nekapa</i>
<b>Tabu</b>			No breaking the reef	
<b>Important animal / plant</b>	Pig, poultry	Napoleon, manguru, natavoa	Coconut crab, natapoa, natangura, nanny goat, wild cane	Dugong (attract tourists)
<b>Limit gear</b>	Spears, line fishing	Net size; use local gear; no night netting; 3 spear guns only	No nets, slingshots	3" nets
<b>Limit number</b>	Shell, fish, crab	Big eye, blue fish, karong, lobster, octopus	Logging; quotas for nawimba, flying fox, octopus	
<b>Limit size</b>	Coconut crab, lobster	Coconut crab, green snail, lobster	Crab, lobster	Coconut crab
<b>Limit time (closed season)</b>	Close shellfish	Coconut crab, green snail, lobster	Limit reef walking time; close reef walking, fish coconut crab	

<i>Rule</i>	<i>Unakap</i>	<i>Utanlangi</i>	<i>Rewoka</i>	<i>Woralapa</i>
<b>Tabu</b>		No cutting down fruit trees		No littering
<b>Important animal / plant</b>	Biche-de-mer, triton shell, coconut crab, green snail, giant clam, lobster, trocha	Trocha, triton shell, green snail, giant clam, fish, coconut crab, rakuma, octopus, coral reef, biche-de-mer, lobster, banyan, natapoa, nakatambol, nangai, wild cane, melek tree, namariu	Pig	Fish, shellfish, sandalwood
<b>Limit gear</b>	Foreign gears, crowbar, small nets, underage/night diving; no nets for night; no small fish hooks; round sardine nets only	No night nets, crowbars; chainsaws must have forestry permit; no digging coconut crabs; no bamboo/wire fishing poles	Nets	Undersize nets, spear fishing
<b>Limit number</b>	Biche-de-mer, blue fish, triton shells, octopus, trocha	Quota based on family need; must have approval before cutting trees	Giant clam	Quota based on family need
<b>Limit size</b>	Blue fish, green snail, manguru, lobster, trocha, piko	Follow Fisheries rules / trocha, crab, giant clam, lobster, fish, triton shell	Big eye fish	Clam, fish, lobster, shell fish, trocha, octopus
<b>Limit time (closed season)</b>	Close coconut crab, biche-de-mer, green snail, lobster/flat lobster, trocha	Close trocha		

*Ideas for special actions in each village (from Marine Management Workshop)*

<i>Action</i>	<i>Launamoa</i>	<i>Piliura</i>	<i>Worasiviu</i>	<i>Worearu</i>
<b>Mark tabu areas</b>			Floats, posters	Floats, rope, posters
<b>Hold awareness sessions</b>	Reef health		√	√
<b>Monitor</b>	Reef Check	Reef Check		√
<b>Resolve/reconcile disputes</b>			√	√
<b>Form environment/conservation committees</b>	√	√		
<b>Establish rules</b>			Reef use	
<b>Coral mariculture (plant coral)</b>	√			

<i>Action</i>	<i>Farealapa</i>	<i>Fareavau</i>	<i>Malaliu</i>	<i>Malamea</i>
<b>Establish tabu/conservation areas</b>	√	√	Set-up sea area; limit areas for pigs/cattle/dogs	√
<b>Hold awareness sessions</b>	√		Reef	
<b>Resolve/reconcile disputes</b>			√	
<b>Boat mooring</b>			No anchors on reef	
<b>Clean-up campaigns</b>			Batteries	

<i>Action</i>	<i>Malarangoa</i>	<i>Matoa</i>	<i>Mere/Sauwia</i>	<i>Nekapa</i>
<b>Establish tabu/conservation areas</b>	√	√	Re-zone village, fence yards	√
<b>Hold awareness sessions</b>		Awarenesses: local fishing gear, overfishing, family planning; signs & notices	Reef	Awarenesses, posters, chiefs workshop
<b>Monitor</b>			Reef Check	
<b>Establish rules</b>		√		
<b>Coral mariculture</b>			√	
<b>Clean-up campaigns</b>			Youth clean-up; make place for rubbish	
<b>Plant sea grass</b>			√	

<i>Action</i>	<i>Rewoka</i>	<i>Unakap</i>	<i>Utanlangi</i>	<i>Woralapa</i>
<b>Establish tabu/conservation areas</b>	√	Floats	√	√
<b>Hold awareness sessions</b>		√	Reef	Posters, workshop
<b>Resolve/reconcile disputes</b>		Nakamal meetings to discuss	Respect other villages' tabus	√
<b>Boat mooring</b>		√		
<b>Clean-up campaigns</b>				Rubbish
<b>Crown of Thorns clean-up</b>				√
<b>Promote garden work</b>			√	