

UNDERUTILIZED AND WILD INDIGENOUS FOOD PLANTS OF MAKIRA
ULAWA PROVINCE

SOLOMON ISLANDS



Belden Taki, 2010

Funded by Secretariat of the Pacific Community (SPC) Healthy Pacific Life Style Section



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EXECUTIVE SUMMARY

This project is focused on identifying and documenting edible plants that are available in the wild, not only in the forest (or jungle), but also around the homes or gardens but are not commonly used. The total number of plants identified in this report does not mean that that is all what is available in Makira Ulawa Province (MUP). The project is focusing only on identifying under utilized food plants thus other food crops that are commonly used, such as sweet potatoes, yams, Chinese cabbage, citrus fruits, and many, many others are not included in this report. A complete food composition table will be done at a later stage as another project, but as a second phase of this project, which will cover all food plants, animals, birds, and fish available in MUP.

It must also be understood that the list of food plants presented in this report is still incomplete. There are still many food plants that are not identified by this project and it is hoped that this report will be up dated in the future.

A main focus is the photography of the identified plants so that future generations can easily identify them by looking at the photographs. To make the work internationally recognized, scientific names of the plants is also a major focus.

To identify the plants, a participatory approach was used. The province was divided up into four regions, namely: West Makira, Central Makira, East Makira, and Islands (representing smaller islands). A workshop was organized and twelve village elders representing the four regions attended to assist in identifying and listing of the food plants.

This pilot research project was able to identify other ninety (90) edible plants with seventy-eight (78) under utilized edible plants existing in the wild. Out of this seventy-eight under utilized edible plants, two were identified as sources of drinking water and salt for food flavoring. Similarly the research identified 9 varieties of tuber and starch crops as sources of energy (carbohydrates), 31 varieties of leafy vegetables as sources of proteins (body building), 18 varieties of fruits and nuts as sources of vitamin and minerals (protective), and 7 varieties of edible fungus.

According to the four regional working groups, a high percentage of edible plants identified are commonly used everyday and are identified to be in abundance (Common – 68.63%, 59.61%, 61.90%, 55.26%). However it was also identified that a high percentage of the identified food plants are also not commonly used (Uncommon – 31.37%, 42.31%, 33.33%, 44.74%). It was also noted that availability of some of these plants is also very high (Plenty – 80.39%, 82.69%, 80.95%, 50%).

Readers are informed that this report is not final for the reason that some photos are still missing and will be included as photos are made available. It is anticipated that another up dated report which will include all photos would be made available soon.

Acknowledgement

The output of this project could not have been made possible without the contributions received from various individuals and groups alike. Thus it would only be wise to express my sincere gratitude for the assistances received from various actors.

Secretariat of the Pacific Community (SPC) – for their foresight in recognizing the importance of indigenous food crops with respect to human beings health and wellbeing especially in a time when lifestyle and diet behaviors of our young population are changing very rapidly giving rise to more non communicable diseases, thus made available the necessary funding to implement this project so that documentation and awareness of these nutritious food crops is done.

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Islands Region Participants – Mr. Steward Mabo, Mrs. Greda Mabo, Mrs. Rose Belden.

East Makira Region Participants – Mr. Peter Warito, Mrs. P Warito, Mrs. D Wagatora.

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1.0 Introduction

Makira Ulawa Province (MUP) is one of the nine provinces of Solomon Islands. The province consist of several inhabited islands and few smaller uninhabited islands. The main island is Makira,also known as San Cristobal, on which the provincial capital – Kirakira – is located. The other smaller inhabited islands are: Ulawa, Ugi, Santa Ana, Santa Catalina, and Anuta. The province has a total area of 3,230 km² while Makira Island itself has a land area of 3,100km²and is 140 km long and has a breath of between 12 km and 40 km (AusAID, 2006). Geographically it is located east of the country but lies between Guadalcanal and Temotu Provinces.

The people of MUP are mainly of Melanesian origin however there are also Polynesians and Micronesians. According to the 1999 population census, the population of MUP was 30,668 (SI National Statistics Office).

People of MUP, especially young generations are also affected and influenced by western cultures. This may be due to developments taking place around them especially in technology. One of the areas affected is their diet behavior. More and more young people have been affected and their diets have changed from traditional foods to more refine foods. Despite being subsistence, people are increasing their consumption of refined foods over the past years. As a result, high blood pressure and diabetes occurrence are increasing among the population.

Makira Island has been heavily logged since 1980s with more than ten logging companies operating around the island. Logging activities will certainly have a big impact on the availability of wild edible plants thus posing a big threat to future food security; this will also mean that nutritional security is also at risk as well.

This project was an initiation of the Chief Field Officer of Makira Ulawa Provincial Agriculture Extension Services (MUPAES) as a means to determine the food and nutritional securities of the province. It was funded by the Secretariat of Pacific Communities (SPC) under their Healthy Life Style - Small Grant Funding. The implementation of the project was for twelve months starting September 2009 when the fund was locally available and project to be ended by June 2010.

1.1 The purpose of the project included:

- 1) Identifying available edible plants in the wild
- 2) Developing a photo record
- 3) Documentation of the plants and photographs
- 4) Raising awareness of indigenous edible plants available in the wild and their relationship to food and nutrition security, health and bio-diversity of MUP

1.2 Background of the project

Our health is determined largely by what we eat. It is believed that garden foods or more specifically, traditional food crops, are healthier than the refined foods which are usually found or sold in the shops.

Food security can be seen as making food available to every individual. To ensure food security, food therefore must be available in any form. This can be through fresh or refined forms hence biscuits, noodles, and such forms are part of ensuring food security. However, nutritional security can be seen as availability of foods which are nutritious to satisfy the body's requirement in order for the body to stay healthy or function normally.

It is with this understanding that this project came about. The MUPAES is mandated under the national Solomon Islands Government (SIG) to ensure food security and to some extent nutrition security. With the threat of global climate changes, domesticated food crops which require a certain degree of management practices, are threatened. Therefore, edible plants in the wild must be taken into account as part of food and nutrition security.

With the effect of logging, change of diet behavior which leads to increase in Non Communicable Diseases (NCD), and global climate changes, the concept of documenting edible plants in the wild was born thus this project was initiated.

2.0 Methodology

Two participatory approaches were used to generate necessary data. Firstly a workshop was conducted at Kirakira (provincial capital) in which twelve (12) village elders from four (4) regions of the province were invited to attend. The workshop was conducted over three (3) days from which list of edible plants from the four regions were compiled. Secondly field trips were made to physically identify and photograph the plants.

While compiling regional lists, a master list was also compiled so that same plants from the four regions were not repeated hence the final list of ninety plants was obtained. Due to climate changes and deforestation caused by commercial logging activities, the project also attempted to highlight which plants are threatened. This was done by adding a column titled "Scarcity". In addition, the project also tried to identify which plants were commonly used by adding the column titled "Usage". By using this methodology, it is anticipated that those concerned with food and nutrition can be able to analyze which plants are not commonly used or becoming scarce and why this is so.

Data collection kit included a digital camera for photographing and papers and pencil for listing of plants in the field. After each field trip the photos were downloaded onto a laptop computer. In each region small teams were organized to search for the listed crops and plants for photographing.

2.1 Scope

For easy access and time constraints, the whole province was divided up into four regions, namely: East Makira, Central Makira, West Makira, and Islands. It is anticipated that by dividing the

province into these four regions, a reliable data sample representing various sub-regions of the province would be generated.

2.2 Workshop

A workshop was organized and conducted for three days. Within these three days the participants were asked to list all edible plants using their local dialect names. They were also asked to specify what part of the plant is eaten, whether the plant is commonly used or not, and whether the plant is still in abundance or not. Another task was for the participants to describe the cooking methods used for each plant and whether the plant needs some kind of processing before cooking.

In the workshop the groups were supplied with brown butcher papers and marking pens to do their work. For two days the participants worked independently in groups and on the final day each group was asked to make a presentation on what they had done. Discussions between the groups were encouraged so that plants used by all four regions can be identified.

2.3 Workshop participants

Twelve participants representing the four regions attended the workshop. The participants included seven women and five men. The participants were divided into four working groups according to the four regions.

2.4 Field photographing

Photographing of plants was done after the workshop. Photographing work started at West Makira with most of the plants identified at the workshop photographed. A small team of four people was organized to search for the plants in the forest and identify them. The aim was to start down west and move up to the east. As work on one region complete it will be shown to the next region for comparison so that photographing of the same plant would be avoided. This practice would be repeated until all four regions were covered.

The author would like to highlight here that photographing work in the other three regions was not completed due to the author transferring to Honira to take up a post in the Ministry headquarter.

3.0 Results and Discussion

A total of twelve women and men attended the workshop as shown in Figure 1 below. These men and women were grouped into four working groups according to the four regions of the province and as shown in Figures 2, 3, 4, and 5.

A master list of all edible plants (Table 1) was prepared and plants were identified according to regions so that plants used by all four regions as well as plants that were used only in certain areas are identified to avoid repetition.

According to the workshop a total of ninety-three (93) edible plants were identified. From this total, seven (7) are specific to West Makira region, eighteen (18) are specific to Central Makira region,

four are specific to the smaller islands, and ten (10) are specific to East Makira region. It was also discovered during the workshop that two plants had been used by our ancestors in the past, especially those living in the highlands, as salt and drinking water. The plant used as salt is a tree while the one for water is a vine (rope).



Figure 1. Twelve women and men selected from the four regions of the province in full concentration.

3.1 Listing of Food crops

Table 1. Master list of food crops according to regions

Scientific names	Common names	Regional names			
		West Makira	Central Makira	Islands	East Makira
<i>Pseuderanthemum whartonianum</i>		Wahere	Gohere	Gofere	Gofere
		Parako	Parako	Afenaru	Afenaru
		Ado'a	Gatega	Gatoga	Gatoga
	Loea cane	Uwe	Gue		Gue
	Bamboo	Au	Gau		Eaha
<i>Barringtonia nuts</i>	Cut nut	Aitabi	Harasimu	Fara	Harasimu
<i>Saccharum edule</i>	Pitpit	Ahorosi	Gari		Gari

		Waro rodo	Warohinou		
<i>Canarium harveyii</i>	Ngali	Ngari	Ngari	Angari (Bwagora)	Angari
		Wawao	Hungani	Fao	Hao
<i>Gnetum gnemon</i>		Su'a	Suga	Suga	Suga
	Mushroom	Karinga	Karinga	Karinga	Karinga
<i>Spondias cytherea</i>	Golden apple	Uri	Nauri	Auri	E'ri
<i>Inocarpus fagifer</i>		Otora	Mwabe	Mwabe	Mwabe
	Kakake	Bwamatawa	Aromatawa	Aroimatawa	Bwa
	Swamp Taro	Mahi	Aronisugu		Aronisugu
		Mwarake	Mararae		
<i>Polyscias fruticosa</i>		Ege	Geke	Geke	Geke
		Totohugi	Totonahuki	Totonafuki	Totonahugi
<i>Dioscorea bulbifera</i>	Potato yam (domesticated)	Ahuhu	Gogo	Gogo	Gogo
“ “	Potato yam (wild)	Ahuhu Tari	Gope	Gope	Gope
<i>Dioscorea alata</i>	Greater yam	Uhi ni wai	Mama		Amama
<i>Diplazium esculentum</i>	Sweet Fern	Anube	Gogona	Gogona	Gogona
		Rerewai	Pupuruta		Pupuruta
		Mute	Auhisimu		Mara
		Me'e	Mege		Mege
		Iwao	Bauraha		Agori
<i>Stenochlaena palustris</i>	Fern	Siaha	Aona		Ono
		Hanohano	Babaore		Babaore
<i>Cyathea hornei</i>	Giant fern	Bwaroto	Baroto		Boroto
<i>Metroxylon salomonense</i>	Sago palm	Aoo	Aoo	Aoo	A'o
		Io	Gaibao		Gaibao
		Awarasi	Warasi	Worosi	Worasi
		Deuwe	Teua		
<i>Artocarpus altilis</i>	Breadfruit	Bare'o	Parego	Parao	Parao
<i>Mangifera indica</i>	Mango (wild)	Aii	Gai	Gai	Gai
<i>Dioscorea pentaphylla</i>	Five leaflet yam	Patango	Gogo	Gogo	Gogo
	Sand paper	Kamau	Vusi	Awosi	Awosi
<i>Polyscias verticillata</i>		Bero	Pero	Pero	Pero
		Ahe ahe		Gafigawaga	Gafegafe
<i>Syzygium malaccense</i>	Malay apple	Ahi'a	Gahiga	Gafiga	Gahiga
<i>Terminalia catappa</i>	Costal almond	Arite	Arite	Arite	Arite
		Kamatai	Kama		Akama
		Waroniu			
		Aisuru	Auku	Rawarawa	Rawarawa
		Buburami	Kurame	Pupurami	Pupurami
		Sisiropu			
		Gugu			Warosuga
	Fern	Raramea	Rarame	Raramea	Rarame
<i>Ficus copiosa</i>		Rauri'i	Parako	Paraku	Paraku
	Wild ginger	Odari	Karikari		Karikari
	Wild betle nut	Tea	Takasi	Takasi	Takasi
		Dodohu'a			Boroto Ahu
		Poniu	Boniu		Boniu
		Airawa			
		Totoo			
<i>Pisonia grandis</i>	Lettuce tree	Aihuri	Tagiro	Panimarawa	Tagiro
<i>Tacca leontopetaloides</i>	Polynesian arrowroot			Toatoa	Toatoa
		Uriuri			
		Gaha			

		Kakuhi			
		Uhi rara'a			
			Ngaraote		
			Aogagi		
			Apaono		
			Aoga mamata		
			Goragora		
			Ngata		
			Marimapu		
			Aibo		
			Goru		
			Mamae		
			Kurukuru		
			Papagore		
			Mamaruga		
			Pihupihu		
			Mute		
			Waroma		
			Hira aro		
			Waro suga		
				Warofau	
				Rame	
				Aongo	
				Ririgi	
					Amaama
					Ogoga
					Amaama
					Barare
					Amama
					Topaga
					Bago Tahe
					Bago ?
					Bago ?
					Kukurope
					Gapego ioa
					Mwogasi

3.2 Regional Presentations and Edible Plants Identified

3.2.1 West Makira Region

A total of 61 plants were identified by West Makira participants. From this total thirty-three (33) can be categorized as vegetables (leafy), seventeen (17) are fruits and nuts, eleven (11), are carbohydrates (roots/tubers/starch), and one (1) edible fungus variety.

On their daily usage and scarcity, it was also discovered during the workshop that thirty-nine (63.93%) species of the plants identified are used on almost daily basis with only 23 (37.70%) species not commonly used. With a high percentage of plants commonly used, it was also good to note that 81.97% (50 species) of those identified plants are still in abundant supply with only 18.03% (11 species) in scarce supply.

The West Makira region can be said to have a high food security level and biodiversity existing in the wild. This can have a big impact on nutritional security as well. The causes of scarcity of the eleven species identified were not made known in the workshop but it could be due to the plants' adaptation capabilities in changing environments. This is because some species were not consumed on daily basis but their scarcity in the wild is still high as can be seen in Table 2 below.

Table 3 presents the cooking methods used for each plant. It must be noted here that some plants have more than one method of preparation and therefore has been included in all methods of cooking, thus the total number of plants exceeded the actual total of edible plants identified as appeared on the left of the table. Cooking methods mentioned in this research are the most common in usage. From Table 3, thirteen (13) plant species or 21.31% can be eaten using roasting method, thirty-nine (39) or 63.93% of the species can be eaten by boiling, twenty-two (22) or 44.26% of the species can be baked, nineteen (19) species which is 31.15% of the total species identified can be eaten raw, with only four (4) species or 6.56% of the total, needing some kind of processing before final cooking method is used. The most common method of food preparation in West Makira are boiling and baking. Baking method is done through the use of earth oven locally known as “UMU” or “MUMU” in other parts of Solomon Islands.

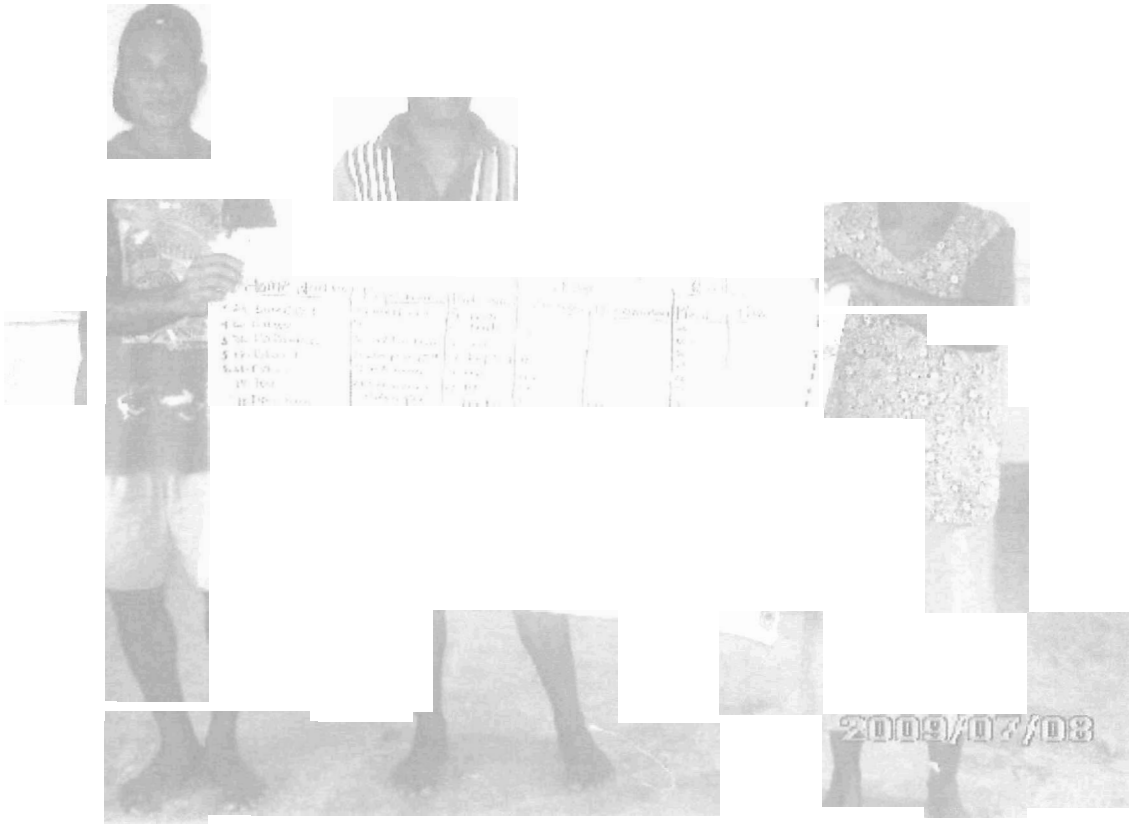


Figure 2. West Makira region participants during their group presentation in day 3.

Table 2. List of identified edible plants for West Makira (Arosi)

Scientific names	Makira names	Parts eaten	Usage		Scarcity	
			Common	Uncommon	Plenty	Scarce
<i>Pseuderanthemum whartonianum</i>	Wahere	Leaf	√		√	
	Parako	Leaf		√	√	
	Ado'a	Fruit	√		√	
	Uwe	Young stem/leaves		√	√	
	Au	Young suckers		√	√	
<i>Barringtonia nuts</i>	Aitabi	Fruit	√		√	
<i>Saccharum edule</i>	Ahorosi	Flower		√		√
	Waro rodo	Liquid (water)		√		√
<i>Canarium harveyii</i>	Ngari	Fruit	√		√	
	Wawao	Leaf		√	√	
<i>Gnetum gnemon</i>	Su'a	Leaf/fruit	√			√
	Karinga	Whole plant	√		√	
<i>Spondias cytherea</i>	Uri	Fruit	√		√	
<i>Inocarpus fagifer</i>	Otora	Fruit	√		√	
	Bwamatawa	Leaf, tuber	√		√	
	Mahi	Leaf/tuber	√		√	
	Mwarake	Leaf	√		√	
<i>Polyscias fruticosa</i>	Ege	Leaf	√		√	
	Totohugi	Flower	√		√	
<i>Dioscorea bulbifera</i>	Ahuhu	Tuber	√		√	
“ “	Ahuhu Tari	Tuber		√	√	
<i>Dioscorea alata</i>	Uhi ni wai	Tuber	√			√
<i>Diplazium esculentum</i>	Anube	Leaf	√		√	
	Rerewai	Leaf	√		√	

	Mute	Tuber		√		√
	Me'e	Tuber		√		√
	Iwao	Leaf	√		√	
<i>Stenochlaena palustris</i>	Siaha	Leaf	√		√	
	Hanohano	Leaf		√	√	
<i>Cyathea hornei</i>	Bwaroto	Leaf	√		√	
<i>Metroxylon salomonense</i>	Aoo	Pith /starch	√		√	
	Io	Tuber	√		√	
	Awarasi	Fruit		√	√	
	Deuwe	Leaf		√	√	
<i>Artocarpus altilis</i>	Bare'o	Leaf		√	√	
<i>Mangifera indica</i>	Aii	Fruit	√		√	
<i>Dioscorea pentaphylla</i>	Patango	Tuber	√		√	
	Kamau	Leaf	√		√	
<i>Polyscias verticillata</i>	Bero	Leaf	√		√	
	Ahe ahe	Fruit	√		√	
<i>Syzygium malaccense</i>	Ahi'a	Fruit	√		√	
<i>Terminalia catappa</i>	Arite	Fruit	√		√	
	Kamatai	Fruit	√		√	
	Waroniu	Fruit		√		√
	Aisuru	Leaf	√		√	
	Buburami	Fruit		√		√
	Sisiropu	Fruit	√		√	
	Gugu	Fruit	√		√	
	Ramea	Leaf		√	√	
<i>Ficus copiosa</i>	Rauri'i	Leaf/fruit	√		√	
	Odari	Fruit	√		√	
	Tea	Young leaves/stem		√	√	

	Dodohu'a	Leaf/pith	√ (leaf)	√ (pith)	√	
	Poniu	Leaf	√			√
	Airawa	Fruit		√		√
	Totoo	Young stem		√	√	
<i>Pisonia grandis</i>	Aihuri	Leaf	√		√	
	Uriuri	Leaf		√	√	
	Gaha	Leaf		√	√	
	Kakuhi	Leaf		√	√	
	Uhi rara'a	Tuber	√			√

Table 3. Methods of cooking for each plant for West Makira region

Scientific name	Regional name	Methods of preparations used				
		Roast	Boil	Bake	Raw	Processing
	Wahere		√	√		
	Parako		√	√		
	Ado'a				√	
	Uwe	√				
	Au	√	√			
	Aitabi				√	
	Ahorosi	√	√	√		
	Waro rodo				√ (drinking)	
	Ngari				√	
	Wawao		√			
	Su'a		√			
	Karinga	√	√			
	Uri				√	
	Otora	√	√	√		

	Bwamatawa		√	√		
	Mahi		√	√		√
	Mwarake		√			
	Ege		√			
	Totohugi		√			√
	Ahuhu		√	√		
	Ahuhu Tari			√		√
	Uhi ni wai	√		√		
	Anube		√	√		
	Rerewai		√	√		
	Mute	√	√	√		
	Me'e	√	√	√	√	
	Iwao		√	√		
	Siaha		√			
	Hanohano		√			
	Bwaroto		√	√		
	Aoo			√		√
	Io					
	Awarasi				√	
	Deuwe		√	√		
	Bare'o		√	√		
	Aii				√	
	Patango	√	√	√		
	Kamau			√		
	Bero		√	√		
	Ahe ahe				√	
	Ahi'a				√	
	Arite				√	

	Kamatai				√	
	Waroniu				√	
	Aisuru		√	√		
	Buburami				√	
	Sisiropu				√	
	Gugu	√				
	Raramea		√			
	Rauri'i		√	√		
	Odari				√	
	Tea	√	√		√	
	Dodohu'a		√	√		
	Poniu		√	√		
	Airawa	√			√	
	Totoo				√	
	Aihuri		√	√		
	Uriuri		√			
	Gaha		√			
	Kakuhi		√			
	Uhi rara'a	√	√	√		

3.2.2 Central Makira Region

A total of 52 plants were identified by Central Makira participants. From this total twenty-two (22) can be categorized as vegetables (leafy), thirteen (13) are fruits and nuts, nine (9) are carbohydrates (roots/tubers/starch), and seven (7) edible fungus variety.

On their daily usage and scarcity, it was also discovered during the workshop that thirty-one (59.61%) species of the plants identified are used on almost daily basis with only 22 (42.31%) species not commonly used. With a high percentage of plants commonly used, it was also good to note that 82.69% (43 species) of those identified plants are still in abundant supply with only 17.65% (9 species) in scarce supply.

The Central Makira region can be said to have a high food security level and biodiversity existing in the wild. This can have a big impact on nutritional security as well. The causes of scarcity of the nine species identified were not made known in the workshop but it could be due to the plants' adaptation capabilities in changing environments. This is because some species were not consumed on daily basis but their scarcity in the wild is still high as can be seen in Table 4 below.

Table 5 presents the cooking methods used for each plant. It must be noted here that some plants have more than one method of preparation and therefore has been included in all methods of cooking, thus the total number of plants exceeded the actual total of edible plants identified as appeared on the left of the table. Cooking methods mentioned in this research are the most common in usage. From Table 5, nine (9) plant species or 17.31% can be eaten using roasting method, thirty-six (36) or 69.23% of the species can be eaten by boiling, fourteen (14) species which is 26.92% of the total species identified can be eaten by baking, eleven (11) species or 21.15% of the total plant species identified can be eaten raw, and three (3) or 5.77% need some kind of processing before final cooking method is used. The most common method of food preparation in Central Makira are boiling and baking. Baking method is done through the use of earth oven locally known as “UMU” or “MUMU” in other parts of Solomon Islands.



Figure 3. Central Makira region participants making their presentation in day 3.

Table 4. List of identified edible plants for Central Makira (Bauro)

Scientific names	Regional names	Parts eaten	Usage		Scarcity	
			Common	Uncommon	Plenty	Scarce
	Ngari	Fruit	√		√	
	Ngaraote	Fruit		√		√
	Kama	Fruit		√	√	
	Boniu	Leaf	√		√	
	Apaono	Leaf		√	√	
	Aoga mamata	Leaf (cured)		√	√	
	Karinga Aoo	Whole plant	√		√	
	Karinga Gamagama	Whole plant	√			√
	Karinga Anorahu	Whole plant	√			√
	Karinga Auwanatehe	Whole plant	√			√
	Karinga Tagaihuna	Whole plant	√			√
	Karinga Boragara	Whole plant	√			√
	Karinga Pau	Whole plant	√			√
	Nauri	Fruit	√		√	
	Gahiga	Fruit	√		√	
	Goragora	Liquid (as salt)		√		√
	Ngata	Fruit		√	√	
	Baroto	Leaf	√		√	
	Gogona	Leaf	√		√	
	Pupuruta	Leaf	√		√	
	Vusi	Leaf	√		√	
	Aibo	Leaf	√		√	
	Babaore	Leaf	√		√	

	Geke	Leaf	√		√	
	Aona	Leaf		√	√	
	Bauraha	Leaf	√		√	
	Auku	Leaf		√	√	
	Aogagi	Leaf		√	√	
	Parako	Leaf, fruit	√ (leaf)	√ (fruit)	√	
	Marimapu	Leaf		√	√	
	Goru	Leaf	√		√	
	Mamae	Leaf	√		√	
	Kurukuru	Leaf		√	√	
	Papagore	Leaf	√		√	
	Mamaruga	Leaf	√		√	
	Pihupihu	Leaf	√		√	
	Auhisimu	Tuber (yam)		√	√	
	Mege	Tuber (yam)		√	√	
	Mute	Tuber (yam)		√	√	
	Gope Mahai	Tuber (yam)		√	√	
	Gope	Tuber (yam)		√	√	
	Gogo	Tuber (yam)			√	
	Mama	Tuber (yam)		√	√	
	Waroma	Fruit	√		√	
	Suga	Fruit	√		√	
	Mabe	Fruit	√		√	
	Harasimu	Fruit	√		√	
	A'oo	Pith		√	√	
	Hira aro	Tuber		√		√
	Warohinu	Liquid (drinking water)		√	√	

	Waro suga	Fruit	√		√	
	Gaii	Fruit	√		√	

Table 5. Methods of cooking for each plant for Central Makira region

Scientific name	Regional name	Methods of preparations used				
		Roast	Boil	Bake	Raw	Processing
	Ngari				√	
	Ngaraote				√	
	Kama				√	
	Boniu		√	√		
	Apaono		√	√		
	Aoga mamata	√				
	Karinga Aoo		√			
	Karinga Gamagama		√			
	Karinga Anorahu		√			
	Karinga Auwanatehe		√			
	Karinga Tagaihuna		√			
	Karinga Boragara		√			
	Karinga Pau		√			
	Nauri				√	
	Gahiga				√	
	Goragora				√	
	Ngata				√	
	Baroto		√			
	Gogona		√			
	Pupuruta		√			

	Vusi		√	√		
	Aibo		√	√		
	Babaore		√	√		
	Geke		√			
	Aona		√			
	Bauraha		√	√		
	Auku		√	√		
	Aogagi		√	√		
	Parako		√	√		
	Marimapu		√	√		
	Goru		√			
	Mamae		√			
	Kurukuru		√			
	Papagore		√			
	Mamaruga		√			
	Pihupihu		√			
	Auhisimu	√	√	√		
	Mege	√	√			
	Mute	√	√			
	Gope Mahai			√	√	√
	Gope	√	√			
	Gogo	√	√			
	Mama	√	√			
	Waroma			√		√
	Suga		√			
	Mabe		√			
	Harasimu				√	
	A'oo			√		√

	Hira aro	√				
	Warohinu				√	
	Waro suga	√				
	Gaii				√	

3.2.3 Islands Region

A total of 21 plants were identified by Islands region participants. From the total of twenty-one (21), 11 species can be categorized as vegetables (leafy), 8 species are fruits and nuts, and 3 species are carbohydrates (roots/tubers/starch).

On their daily usage and scarcity, it was also discovered during the workshop that thirteen (61.90%) species of the plants identified are used on almost daily basis while seven (33.33%) species not commonly used. With a high percentage of plants commonly used, it was also good to note that 80.95% (17 species) of those identified plants are still in abundant supply with only 14.28% (3 species) in scarce supply.

The Islands region can be said to have a high food security level existing in the wild because 80.95% of the plant species exist in abundance (Plenty) as compared to 14.28% in scarce situation, although biodiversity might be limited due to limited land mass. This can have a big impact on nutritional security as well. The causes of scarcity of the nine species identified were not made known in the workshop but it could be due to the plants' adaptation capabilities in changing environments. This is because some species were not consumed on daily basis but their scarcity in the wild is still high as can be seen in Table 6 below.

Table 7 presents the cooking methods used for each plant. It must be noted here that some plants have more than one method of preparation and therefore has been included in all methods of cooking, thus the total number of plants exceeded the actual total of edible plants identified as appeared on the left of the table. Cooking methods mentioned in this research are the most common in usage. From Table 7, unlike other regions, there were no plants listed under cooking method of roasting, fifteen (15) or 71.43% of the species can be eaten by boiling, thirteen (13) species which is 61.90% of the total species identified can be eaten by baking, four (4) species or 19.05% of the total plant species identified can be eaten raw, with only one (1) or 4.76% needing some kind of processing before final cooking method is used. The most common methods of food preparation on Santa Ana Island are boiling and baking. Baking method is done through the use of earth oven locally known as "UMU" or "MUMU" in other parts of Solomon Islands.

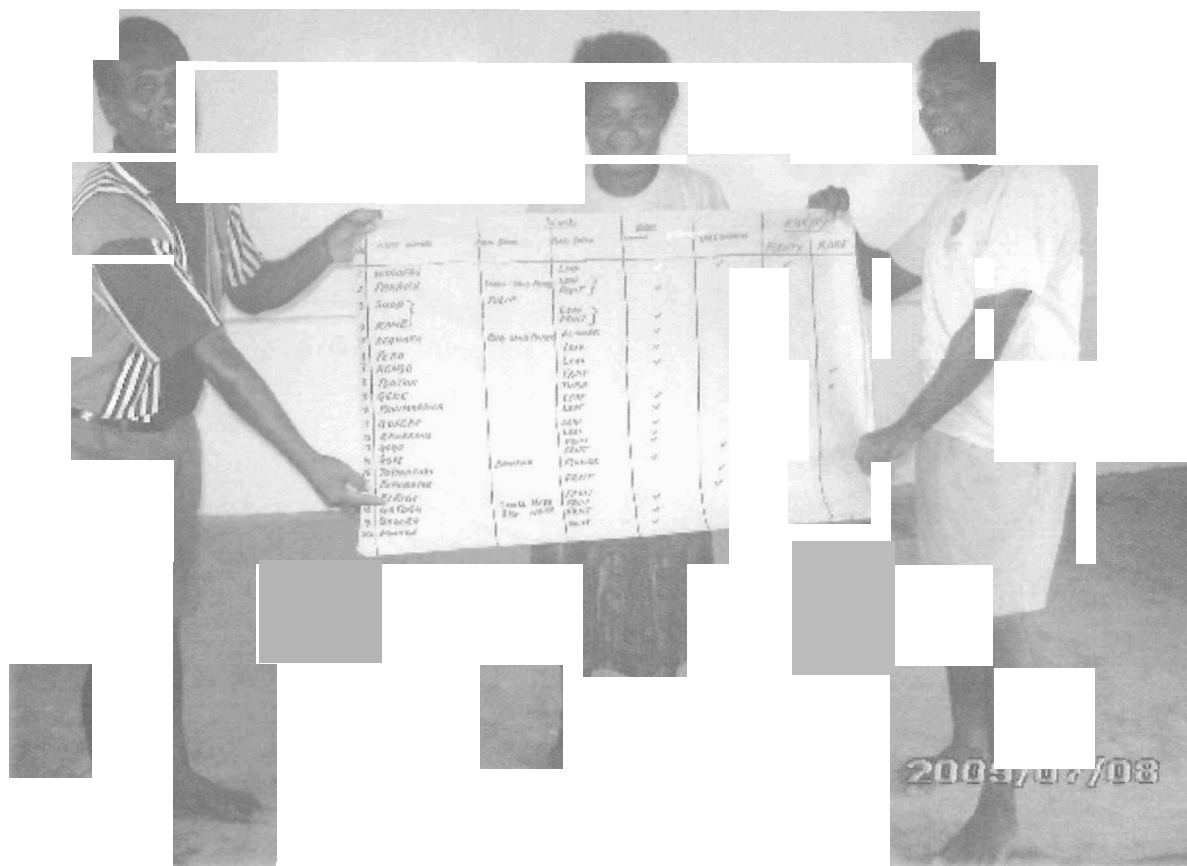


Figure 4. Islands region participant (center) making their presentation, assisted by participants from West Makira (left) and East Makira (right). Other group members were not able to attend the presentation.

Table 6. List of identified edible plants for Islands region (Santa Ana)

Scientific names	Regional names	Parts eaten	Usage		Scarcity	
			Common	Uncommon	Plenty	Scarce
	Warofau	Leaf		√	√	
	Paraku	Leaf, Fruit	√		√	
	Suga	Leaf, Fruit	√		√	
	Rame	Flower, Leaf	√		√	
	Afanaru	Leaf	√		√	

	Pero	Leaf	√		√	
	Aongo	Fruit	√		√	
	Toatoa	Tuber		√		√
	Geke	Leaf	√		√	
	Panimarawa	Leaf	√			
	Gofere	Leaf	√			
	Rawarawa	Leaf	√		√	
	Gogo	Aerial tuber		√		√
	Gope	Aerial tuber		√		√
	Totonafuki	Flower		√	√	
	Pupurame	Fruit		√	√	
	Ririgi	Fruit		√	√	
	Gatoga	Fruit	√		√	
	Bwagora	Fruit	√		√	
	Mwabwe	Fruit	√		√	

Table 7. Methods of cooking for each plant for Islands region (Santa Ana)

Scientific name	Regional name	Methods of preparations used				
		Roast	Boil	Bake	Raw	Processing
	Warofau		√	√		
	Paraku		√	√		
	Suga		√			
	Rame		√	√		
	Afanaru		√	√		
	Pero		√			
	Aongo		√	√		
	Toatoa			√		√

	Geke		√	√		
	Panimarawa		√	√		
	Gofere		√	√		
	Rawarawa		√	√		
	Gogo		√	√		
	Gope		√	√		
	Totonafuki		√			
	Pupurame				√	
	Ririgi				√	
	Gatoga				√	
	Bwagora				√	
	Mwabwe		√	√		

3.2.4 East Makira Region

A total of 38 plant species were identified by East Makira participants. From this total, eighteen (18) can be categorized as vegetables (leafy), ten (10) are fruits and nuts, twelve (12), are carbohydrates (roots/tubers/starch).

On their daily usage and scarcity, it was also discovered during the workshop that twenty-one (55.26%) species of the plants identified are used on almost daily basis with almost another half 17 plants - 44.74%) of the plants not commonly used. Similarly, it was noted that 50% (19 species) of those identified plants are in abundant supply with another 50% (19 species) in scarce supply.

The East Makira region can be said to have a low food security status and biodiversity existing in the wild. This will have a big impact on both food and nutritional security. The causes of scarcity of the other 19 species identified were not made known in the workshop but it could be due to the plants' adaptation capabilities in changing environments. This is because some species were not consumed on daily basis but their scarcity in the wild is still high as can be seen in Table 8 below.

Table 9 presents the cooking methods used for each plant. It must be noted here that some plants have more than one method of preparation and therefore has been included in all methods of cooking, thus the total number of plants exceeded the actual total of edible plants identified as appeared on the left of the table. Cooking methods mentioned in this research are the most common in usage. From Table 9, three (3) plant species or 7.89% can be eaten using roast method, twenty-nine (29) or 76.31% of the species can be eaten by boiling, four (4) or 10.52% of the species can be

baked, seven (7) species which is 18.42% of the total species identified can be eaten raw, with only five (5) species or 13.15% of the total, needing some kind of processing before final cooking method is used. The most common method of food preparation in East Makira are boiling, raw, and baking. Baking method is done through the use of earth oven locally known as “UMU” or “MUMU” in other parts of Solomon Islands.

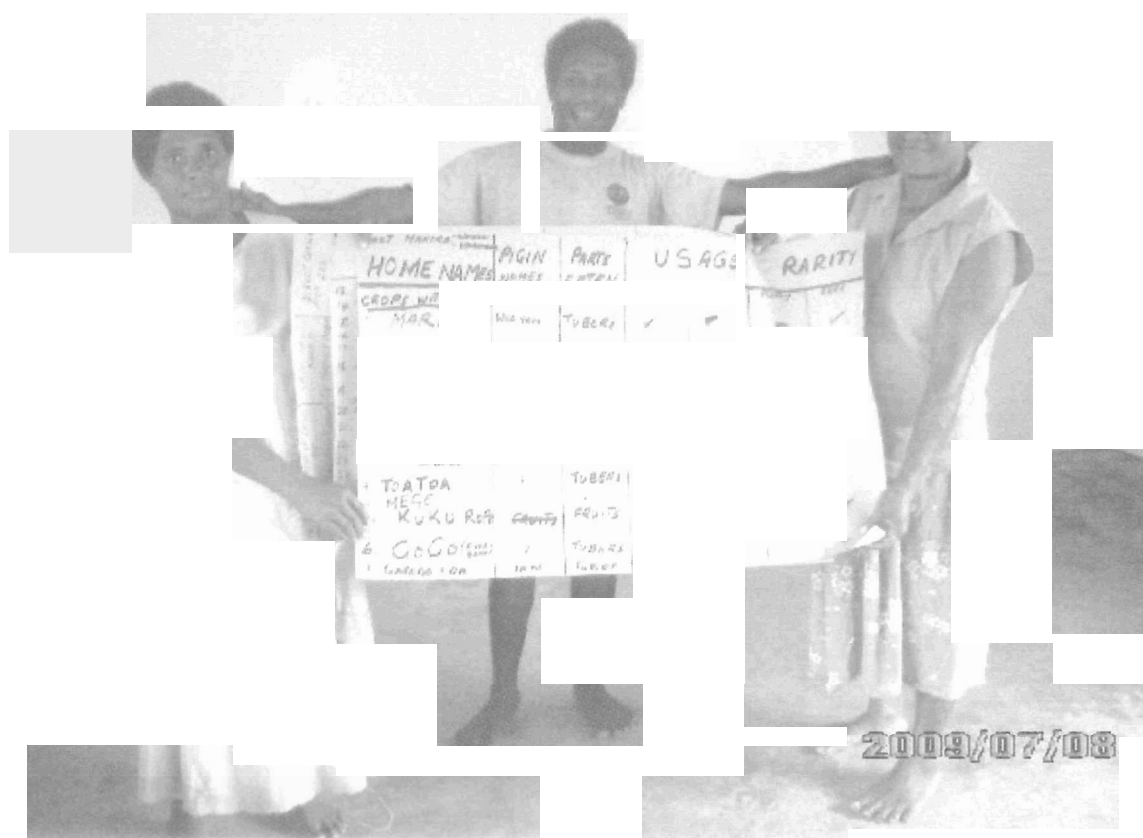


Figure 5. East Makira region participants making their presentation on day 3 of the workshop

Table 8. List of identified edible plants for East Makira region (Star Harbor/Wainoni)

Scientific name	Regional name	Parts eaten	Usage		Scarcity	
			Common	Uncommon	Plenty	Rare
	Mara	Tuber	√			√
	Amaama Ogoga	Tuber	√			√

	Amaama Barare	Tuber	√			√
	Amama Topaga	Tuber	√			√
	Bago Tahe	Tuber		√		√
	Bago ?	Tuber		√		√
	Bago ?	Tuber		√		√
	Totatoa	Tuber		√		√
	Mege	Tuber		√		√
	Kukurope	Fruit		√		√
	Gogo	Aerial Tuber		√		√
	Gapego ioa	Tuber		√		√
	Aao	Pith		√	√	
	Tagiro	Leaf	√			√
	Gesuru/Rawarawa	Leaf	√			√
	Afenaru	Leaf	√		√	
	Awosi	Leaf	√		√	
	Oono	Leaf		√	√	
	Agori	Leaf	√			√
	Mwogasi	Leaf	√			√
	Geke/Pero	Leaf	√		√	
	Gogona	Leaf	√		√	
	Pupuruta	Leaf	√		√	
	Akama	Fruit	√			√
	Paraku	Leaf, Fruit		√	√	
	Boroto	Leaf, pith		√	√	
	Gofere	Leaf	√		√	
	Karikari	Fruit	√		√	
	Takasi	Growing point		√	√	
	Harasimu	Fruit	√			√

	Suga	Fruit, Leaf	√		√	
	Hisina Parao	Leaf		√	√	
	Babaore	Leaf		√	√	
	Gari	Flower		√	√	
	Onggo	Fruit	√		√	
	Angari Ute	Fruit		√		√
	Mwabwe	Fruit	√		√	
	Gahiga	Fruit	√		√	

Table 9. Methods of cooking for each plant for East Makira region (Star Harbor/Wainoni)

Scientific name	Regional name	Methods of preparations used				
		Roast	Boil	Bake	Raw	Processing
	Mara		√			
	Amaama Ogoga		√			
	Amaama Barare		√			
	Amama Topaga		√			
	Bago Tahe	√	√			√
	Bago ?	√	√			√
	Bago ?	√	√			√
	Totatoa			√		√
	Mege		√			
	Kukurope		√			
	Gogo		√			
	Gapego ioa		√			
	Aao			√		√
	Tagiro		√			
	Gesuru/Rawarawa		√			

	Afenaru		√			
	Awosi		√	√		
	Oono		√			
	Agori		√			
	Mwogasi		√			
	Geke/Pero		√			
	Gogona		√			
	Pupuruta		√			
	Akama				√	
	Paraku		√			
	Boroto		√			
	Gofere		√			
	Karikari				√	
	Takasi				√	
	Harasimu				√	
	Suga				√	
	Hisina Parao		√			
	Babaore		√			
	Gari		√			
	Onggo		√	√		
	Angari Ute				√	
	Mwabwe		√			
	Gahiga				√	

3.3 Plants identified and photographed

Photographing and physical identification of all food plants is not completed at this stage. The pictures included in the report were taken at West Makira. Central Makira, Santa Ana, and East Makira regions are still to be completed. However, most of the plants identified and photographed at West Makira can also be included in the other three regions. In this case, photographs taken at each region will be shown to participants of each region for identification purposes so that only plants

that are not being photographed will be identified and photographed to avoid too many duplication of work.

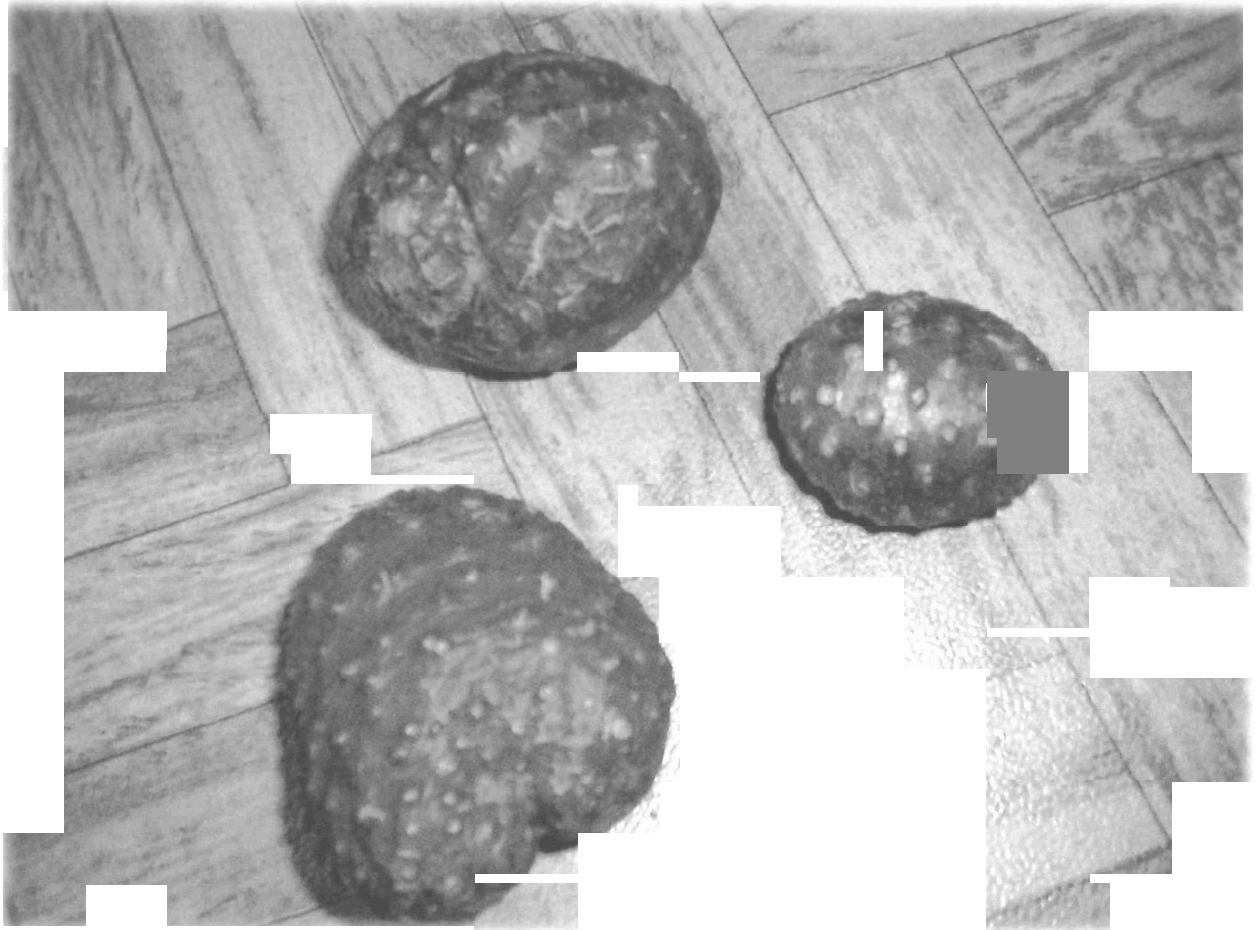
Classification of plants is also not completed. Plants which are commonly grown around the villages and gardens have been classified however, there are several species in the wild that are or may be not in the books as yet, these needs to be identified and added to the global listing of plants. To do this needs an expert who can be able to identify and classify the plants.

3.3.1 Roots, Tubers, and Starch

Scientific Name: *Dioscorea bulbifera*

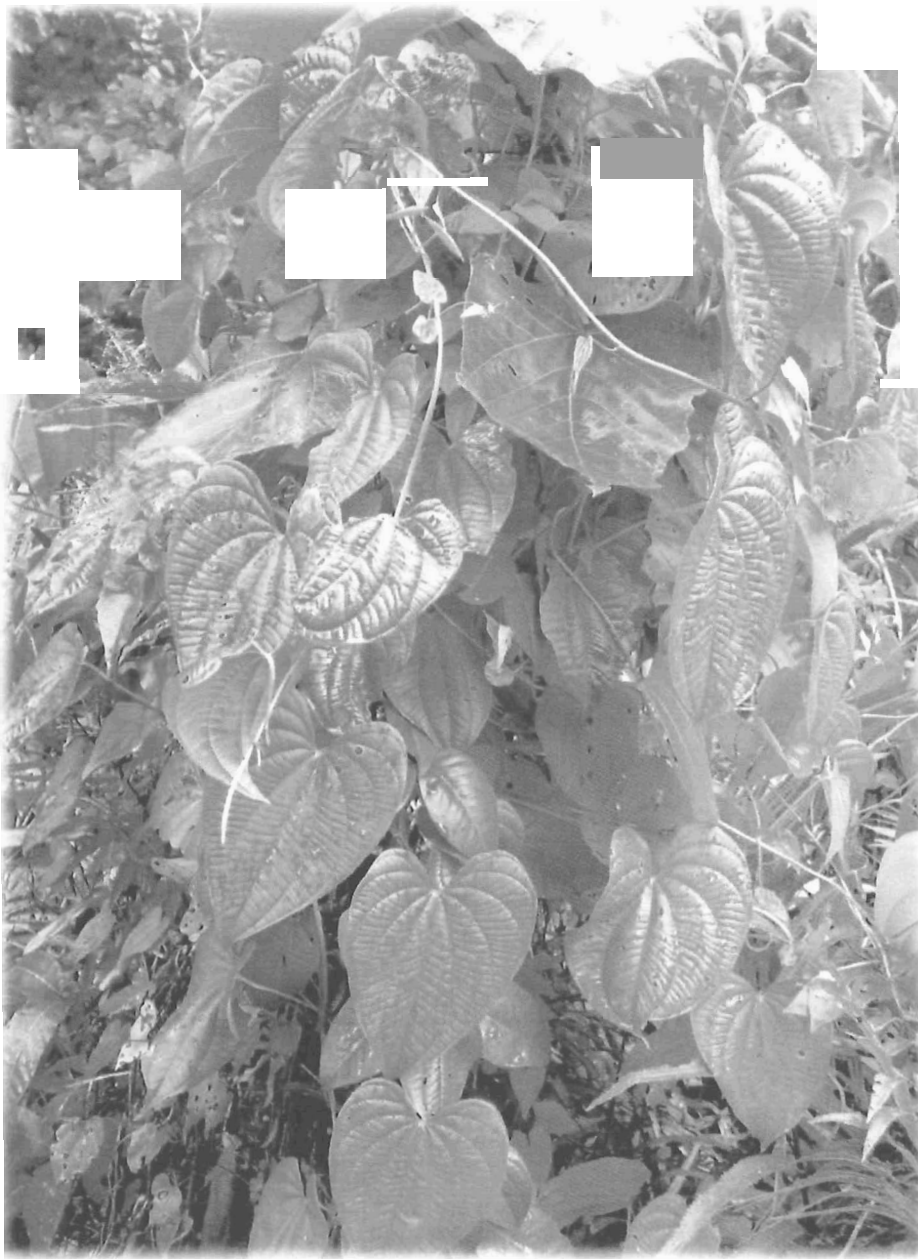
Makira Names: Ahuhu Tari, Gope

Common Names: Potato yam (wild)



a) Aerial tubers of *Dioscorea bulbifera*

Comments: *Dioscorea bulbifera* have two varieties of which, one has been domesticated while the other (picture) has never been domesticated due to its bitter taste. The two varieties look much the same except for the tubers. The tuber of the domesticated variety has a more smooth surface with a greyish looking color. The wild variety however can still be eaten but must go through some kind of processing to remove its bitterness.



b) Leaves of wild *Dioscorea bulbifera*

Scientific Name: *Metroxylon salomonense*

Makira Names: Ao, Aoo, A'o

Common Names: Sago palm



Comments: The palm is very common and is used extensively for house construction. The pith (soft part in the middle of the trunk) is the part used for extracting starch. The pith have to be scooped out and either beaten or grated. The grated pith is then soaked in water and squeezed into another container where it should be left for the starch to settle at the bottom (over night). The water is removed and starch is dried in the sun before use. Dried starch can be stored for a long period of time. Normally used only when there are no other food sources available.

Scientific Name: *Cyrtosperma merkusii*

Makira Names: Bwamatawa, Aroimatawa, Aromatawa, Bwa

Common Names: Kakake, Giant Swamp Taro

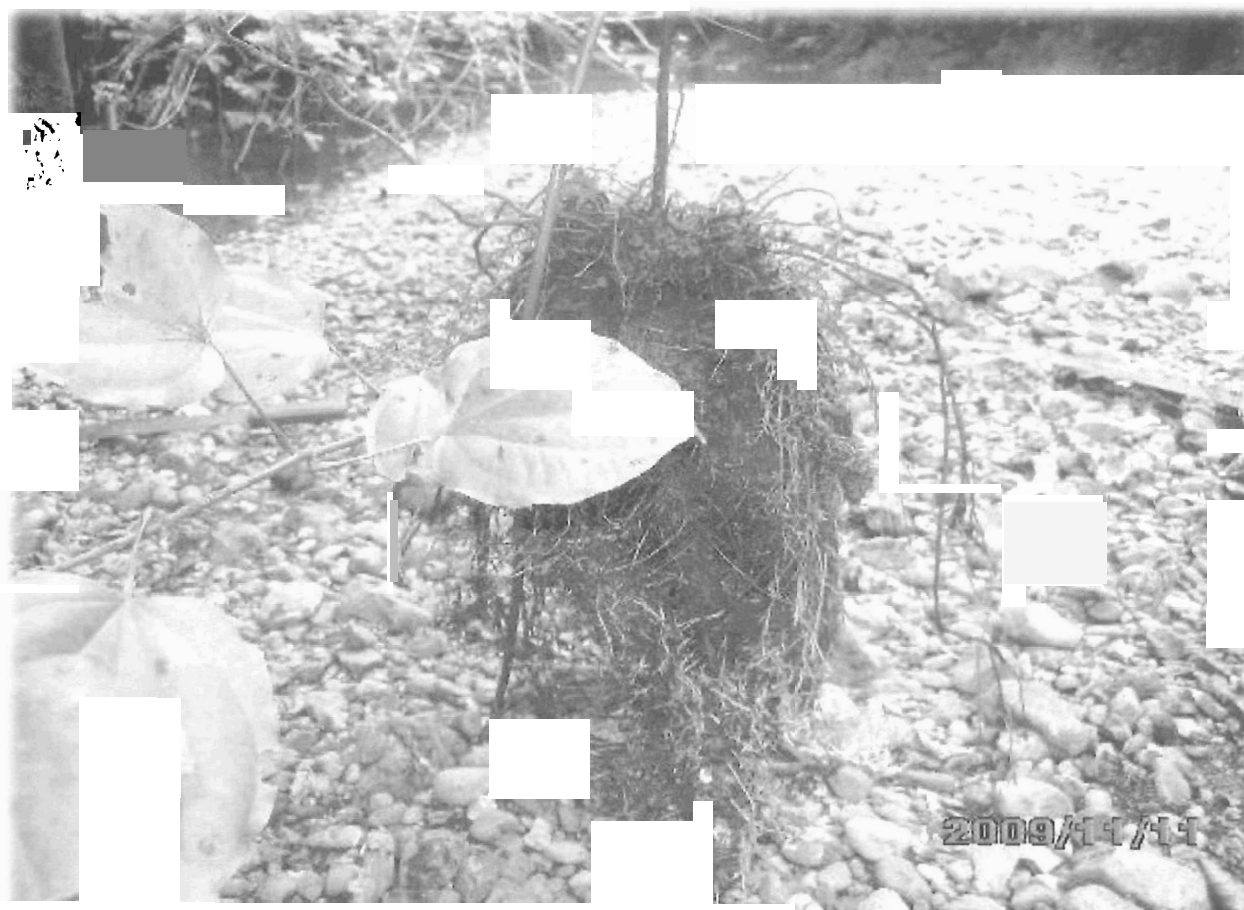


Comments: *Cyrtosperma merkusii* or kakake grows in swampy areas. The corm can be used as source of energy while the young leaves can be used as vegetable. This food plant has a high status in the culture of Makira Ulawa Province people. It is normally used during feastings and marriage ceremonies. In East Makira region, it is used on daily basis while not so in the other regions of the Makira Ulawa province. This food source is usually left untouched until emergency situations where other common food sources run out of supply.

Scientific Name:

Makira Names: Mute, Auhisimu, Mara

Common Names: Wild Yam



a) Cluster of tubers and leaves

Comments: This is a wild yam species and grows only in the forest (primary) under dense canopy of forest trees. Grows mainly on hillsides. The leaves and vine does not look like those of common yams. Vine is green when young but turns brown (like dead twigs) when mature making it difficult to locate from ground view. Hunters normally use this yam and they locate it by looking for the leaves up high amongst leaves from other plants.

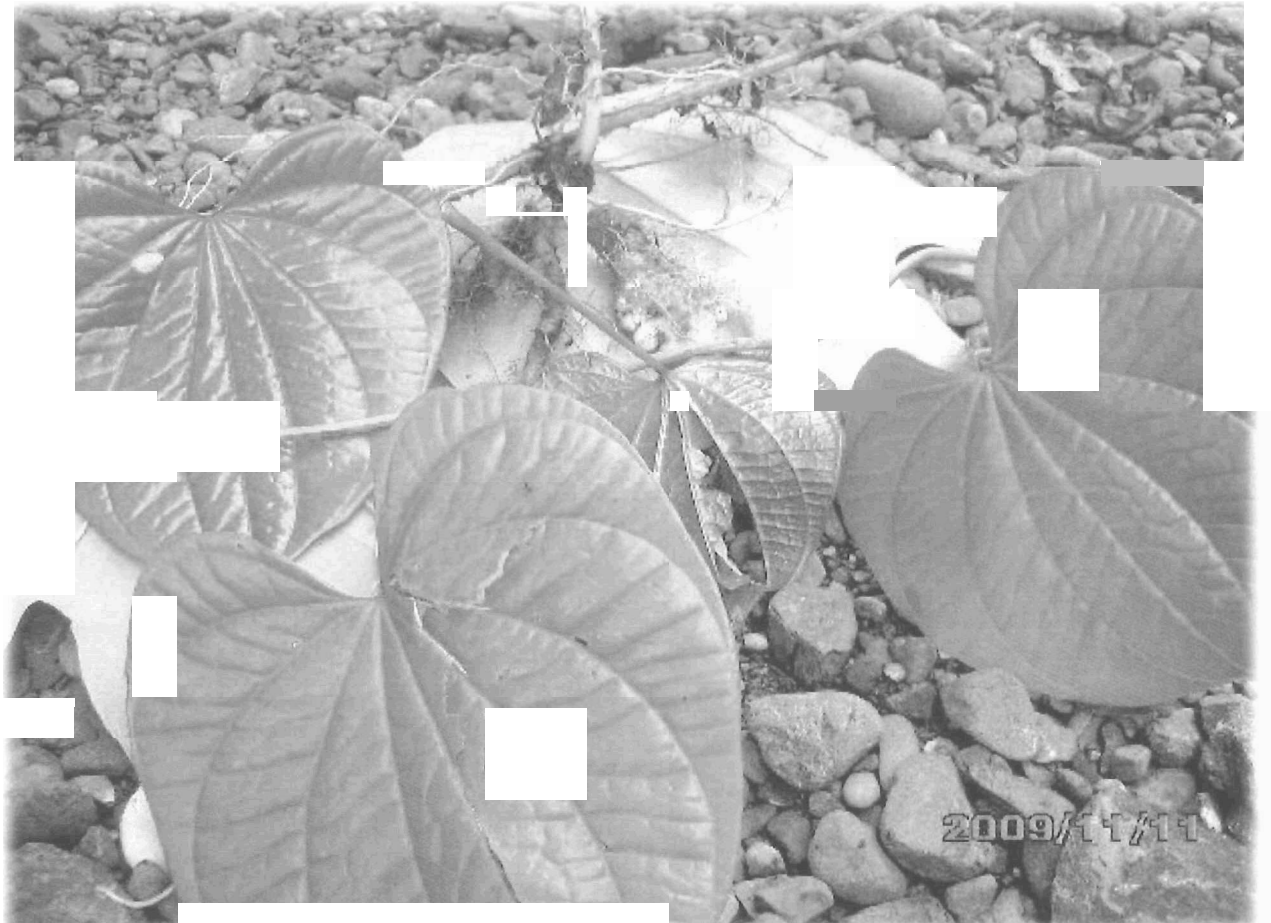


b) Individual tubers

Scientific Name:

Makira Names: Me'e, Mege

Common Names: Wild Yam

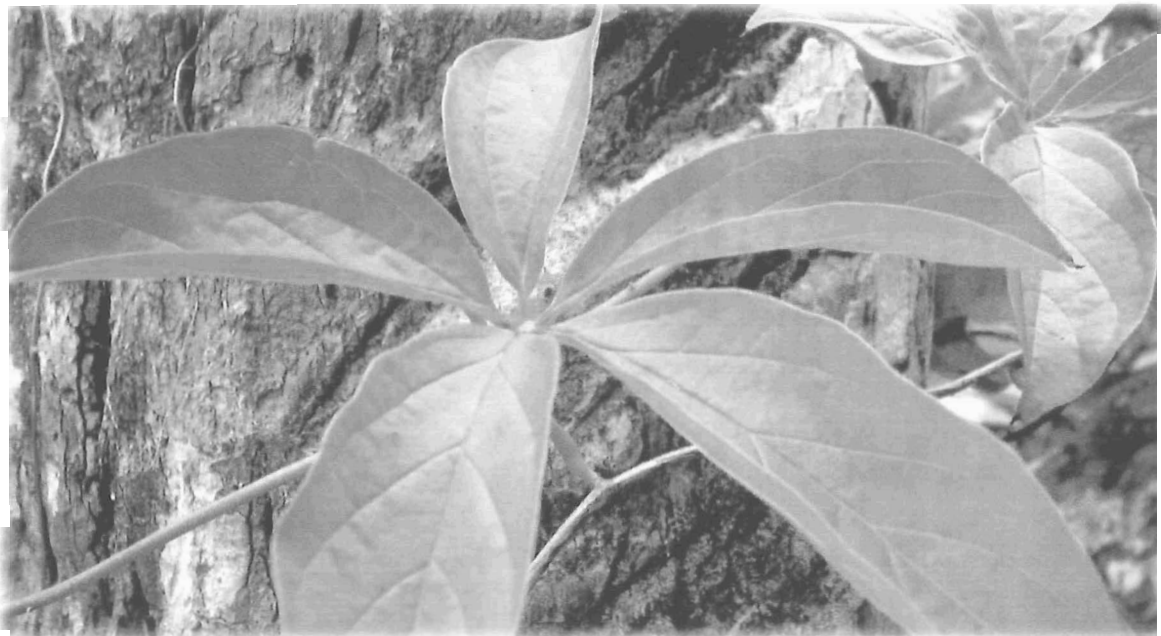


Comments: This is another wild yam species which also grows in the forest. The leaves look similar to those of *Dioscorea bulbifera*. The vine of this yam species is similar to those of other common yams (*Dioscorea esculenta* (Loureiro) Burkill) having thorns. The fruiting habit is similar to sweet potato (*Ipomoea batatas* (Linnaeus) Lam) where tubers are produced at leaf nodes however, tubers are often found laying on the ground surface instead of below the soil surface. Tubers are produced on vines that run along on the soil surface at certain intervals along the vine unlike other yams that produce tubers only at the planting point. The tubers can be eaten either raw, roast, boil or bake. This yam is usually used by hunters.

Scientific Name: *Dioscorea pentaphylla*

Makira Names: Patango, Gogo

Common Names: Five leaf yam



Comments: This yam variety exists both as domesticated and in the wild. In food gardens it is normally grown with other types of yams. The leaf form (five leaflets) is its' main distinctive feature.

Scientific Name: *Tacca leontopetaloides*

Makira Names: Toa toa

Common Names: Polynesian Arrow Root

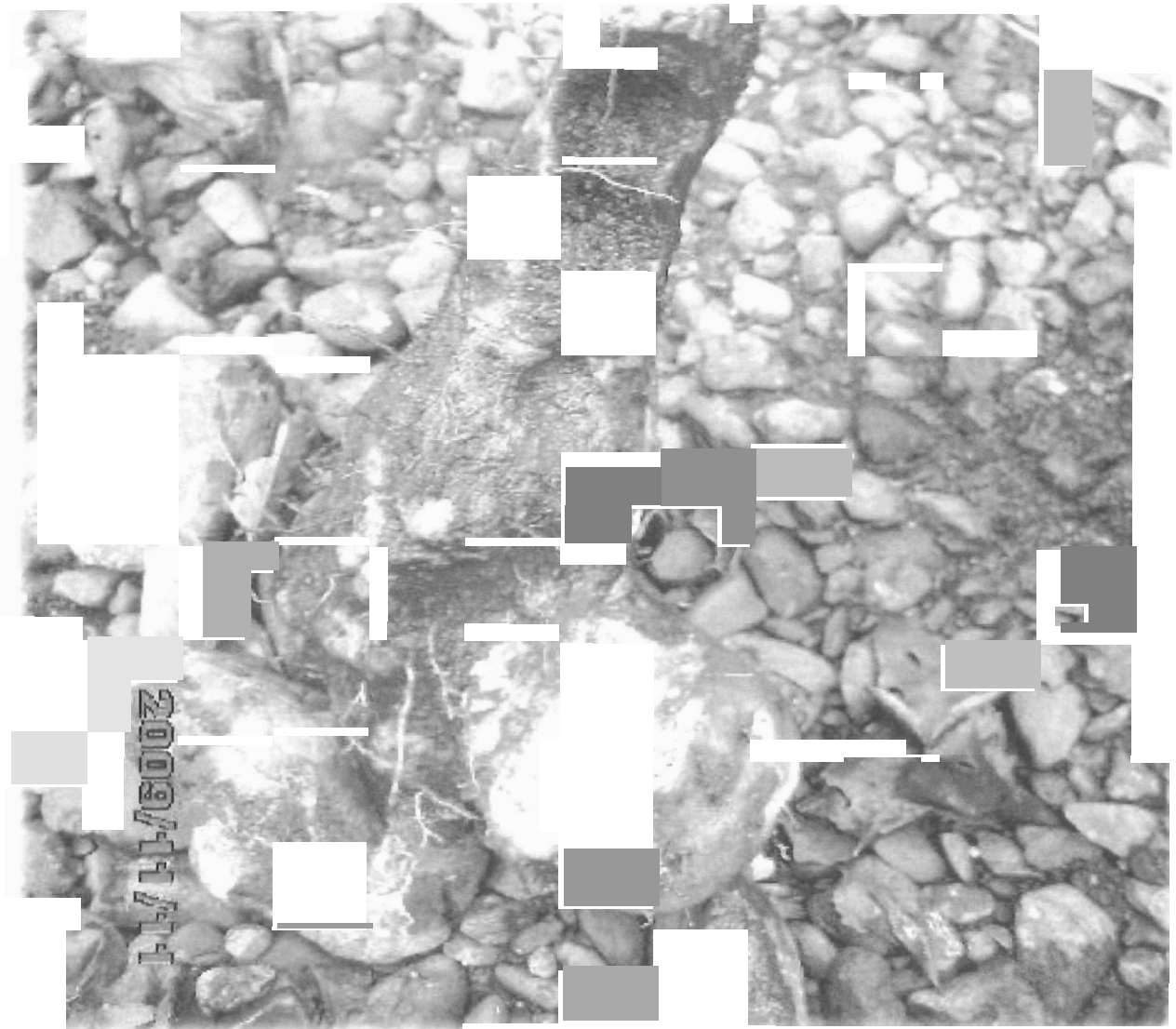


Comments: This plant only exists in the wild growing mainly along the coastlines. It is used mainly by people on small islands. The corm is used and must go through processing before it can be cooked by baking. The plant is used only in times of real food shortage.

Scientific Name:

Makira Names: Uhini wai, Mama, Amama

Common Names: Wild Yam



a) Tuber

Comments: According to its name, this yam variety grows mainly along river banks on aluvial soils. The tuber can grow up to a length of 0.50-1 meter. The leaves are green on the surface and purplish on the underside (more obvious on young leaves). The vine is green with four corners. This is also a wild yam species.



b) Leaves

Scientific Name:

Makira Names: Uhi rara'a,

Common Names: Wild yam



Comments: Another wild yam variety which normally grows on hills where soil is more or less dry. It also grows in the forest but not under heavily dense canopy like the others. The vine has a lot of spikes while the leaves are green. Older vines tend to turn blackish in color. This yam is not commonly used but only when the situation requires despite its tastiness.

3.3.2 Leafy Vegetables

Scientific Name: *Pisonia grandis*

Makira Names: Aihuri, Panimarawa, Tagiro

Common Names: Lettuce Tree

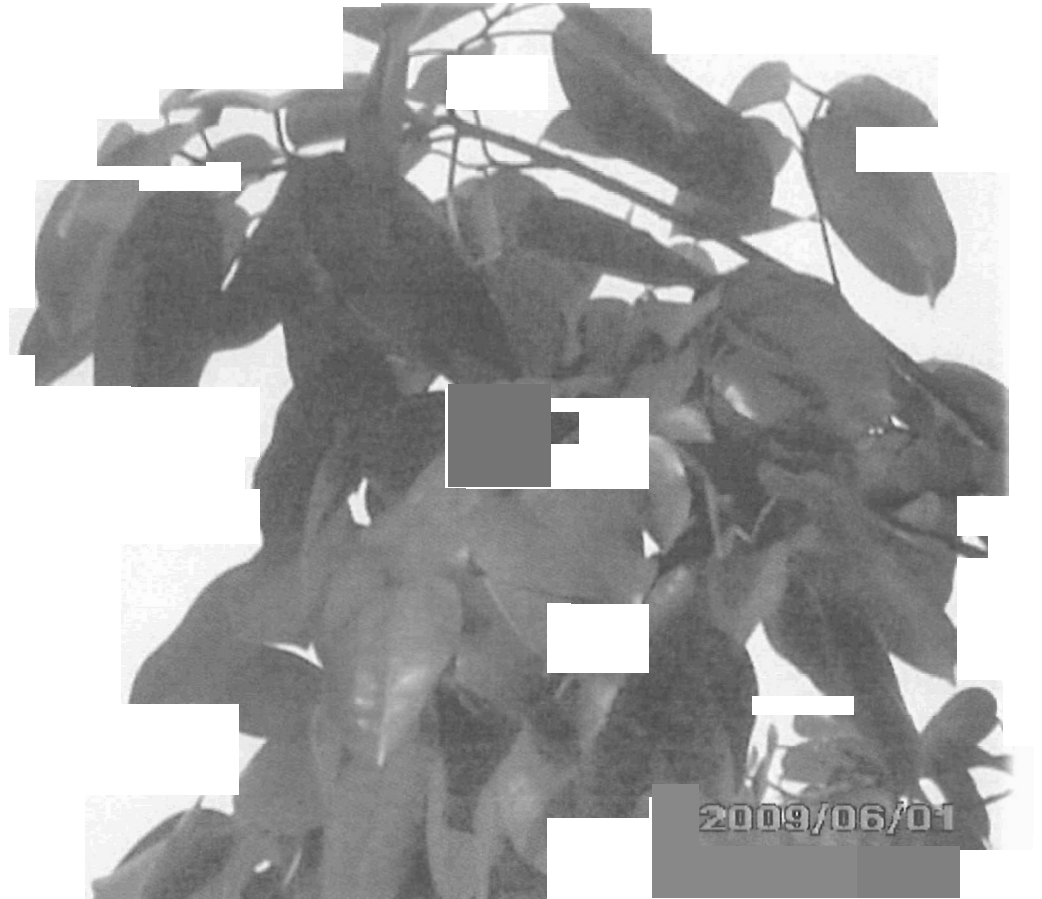


Comments: This plant is widely used around the whole province. It can be propagated through vegetative (cuttings) method. It grows mainly along coastlines where it is sandier. It can grow up to 20 meters in height. The plant can also tolerate salinity.

Scientific Name:

Makira Names: Aisuru, Auku, Rawarawa

Common Names:



Comments: The plant is a family of the great banyan tree. The young leaves are used. The plant also have a characteristic of leaf shedding and it is when new leaves grow (flush) that people harvest the young leaves for eating. A characteristic to distinguish this plant from the banyan tree is that its leaves are much bigger than that of the banyan tree.

Scientific Name: *Diplazium esculentum*

Makira Names: Anube, Gogona

Common Names: Sweet Fern, Kasume

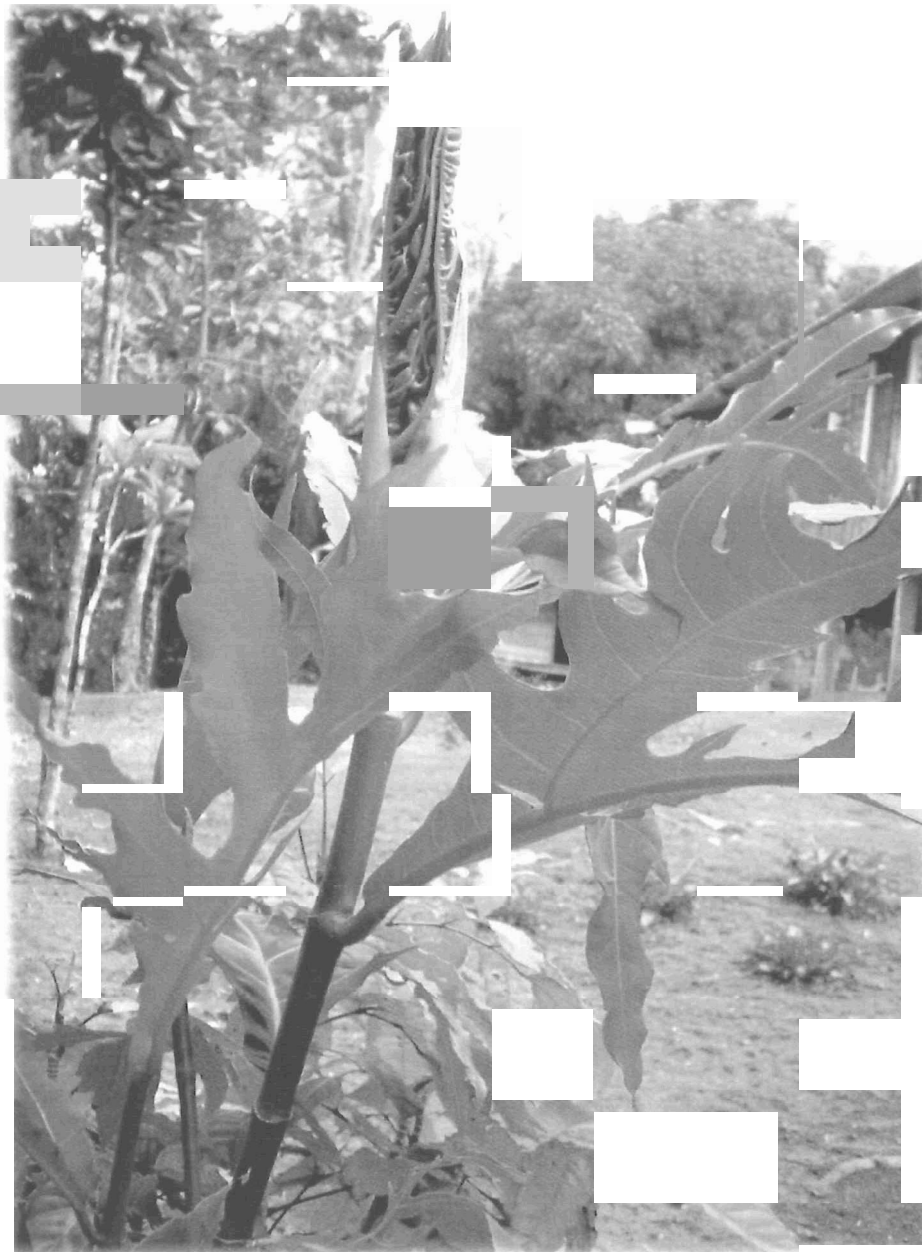


Comments: A very popular vegetable not only on Makira Ulawa Province but through out the country. The fern grows well on swampy lands or water logged lands however, it can also grow on dry land but near rivers or streams where the soil is moister. This plant can be farmed and is a potential crop for farming in rural areas. It is also a very popular vegetable at urban markets.

Scientific Name: *Artocarpus altilis*

Makira Names: Bare'o, Parao, Parego

Common Names: Breadfruit



Comments: *Artocarpus altilis* fruits are a common dish around the province but not the leaves. Young leaves are commonly used for medicinal purposes only in Makira Ulawa Province. However, young leaves are also a good source of green vegetable.

Scientific Name: *Polyscias scutellaria* (Burm.f.) Fosb

Makira Names: Bero, Pero

Common Names:



Comments: A very delicious vegetable for the people of MUP. The plant is also very popular for lactating mothers. It is believed that the plant has properties that improved the blood and milk production after a mother gives birth. It is usual to see newly give birth mothers fed with this vegetable. The plant is normally grown as hedges around buildings and used as vegetable when the need arise, especially when there is limited time available to look for other vegetables.

Scientific Name: *Cyrtosperma merkusii*

Makira Names: Bwamatawa, Aroimatawa, Aromatwa, Bwa

Common Names: Kakake, Giant Swamp Taro



Comments: Apart from the corm, the young leaves are also very good for vegetable.

Scientific Name: *Cyathea hornei*

Makira Names: Bwaroto, Boroto, Baroto

Common Names: Giant fern



Comment: This is one of the edible giant ferns in MUP. It grows in the forest usually under tree canopies. The stem is blackish in color when mature and is hard.

Scientific Name:

Makira Names: Deuwe, Teua

Common Names:



Comment: A family of *Polyscias fruticosa* but grows in the wild usually on the hills where the soil is dry. It has a bitter taste but is not poisonous. Does not need any processing but after boiling, water can be discarded before any other ingredients can be added due to its sour taste.

Scientific Name:

Makira Names: Dodohu'a, Boroto ahu

Common Names: Silver fern

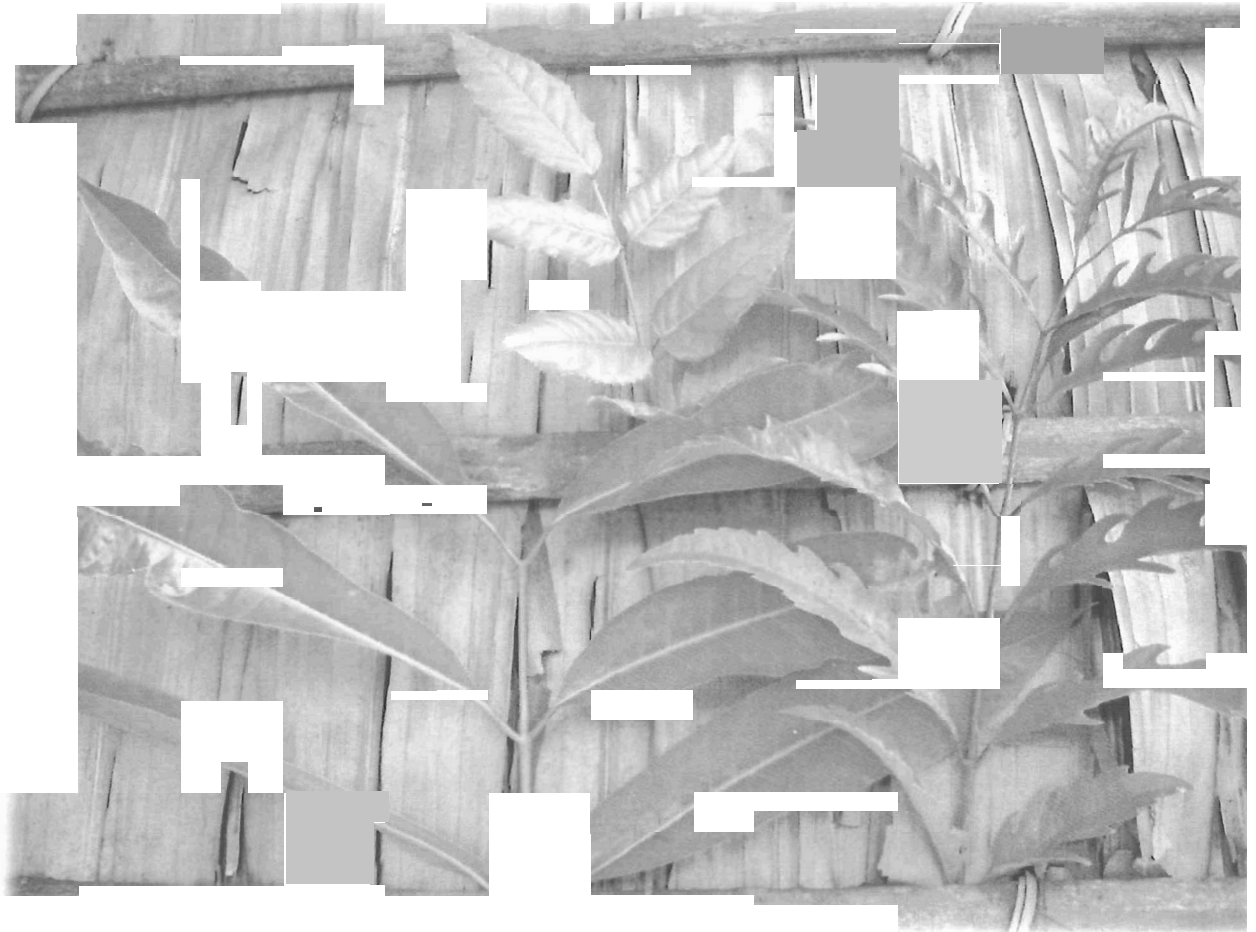


Comment: Another giant fern. Its distinctive feature is its silver hairs along the base of the frond. The leaves as well as the soft part in the stem can be eaten. The pith can be boiled before eating. The plant grows up in the mountains under tree canopies.

Scientific Name: *Polyscias fruticosa*

Makira Names: Ege, Geke

Common Names:



Comment: Another delicacy of the MUP people. Have the same values as that of *Polyscias scutellaria* (Burm.f.) Fosb. It is commonly grown as ornamental plant around the homes.

Scientific Name:

Makira Names: Gaha,

Common Names:



Comment: Young leaves can be used as vegetables. It is a tree crop which grows in the wild. It has a distinctive brown stem and has a white milky sap. The stem wood is soft.

Scientific Name:

Makira Names: Hanohano, Babaore

Common Names:



Comment: The plant grows mainly along river banks in clusters. It is a perennial plant. The young leaves are used as vegetable. The leaves can cause irritation inside the throat if not properly cooked. It is advisable to discard the water after boiling before final cooking.

Scientific Name:

Makira Names: Iwao, Bauraha, Agori

Common Names:



Comments: This plant usually grows in the forest along rivers and streams. It is a tree and can grow very large. The wood is hard and normally people cut the tree down before harvesting if the tree is too big for climbing. The young leaves used for eating are brownish in color.

Scientific Name:

Makira Names: Kakuhi,

Common Names:



Comments: This is another tree that can be used as a vegetable. The young leaves are harvested and cooked. The plant have a thick bark that can also be used for basket waving while the Polynesians use the bark for tapa cloth making. It grows mainly on previously gardened lands but can also be found in primary forests.

Scientific Name: *Ficus wassa*

Makira Names: Kamau, Awosi, Vusi

Common Names: Sand paper cabbage



Comments: A cousin of *Ficus copiosa* but has bigger leaves and can grow bigger than *Ficus copiosa*. It mainly grows along river banks and streams or under heavy shade where soil moisture content is high unlike *Ficus copiosa* which can grow on soils which are much drier than river flood plains. It is commonly called sand paper cabbage because of the roughage of the leaf surface more like a sand paper. This is a potential cabbage for farming.

Scientific Name:

Makira Names: Parako, Afenaru

Common Names:



Comments: The plant is very similar to *Ficus wassa* with the leaf surface also having roughage except the leaves are much broader than that of *Ficus wassa*. It can also grow on drier soils just like *Ficus copiosa*. The plant is also commonly used as a source of steel wool to clean pots and other kitchen utensils. It is not commonly used and the plant is still in abundant supply.

Scientific Name:

Makira Names: Poniu, Boniu

Common Names:



Comments: This plant grows mainly on drier soils on the hills. The plant does not grow big but can grow up to a height of 10 meters. The edible young leaves have a distinctive reddish-brown color.

Scientific Name:

Makira Names: Ramea, Rame

Common Names: Sour fern



Comments: This is another fern family but have a sour taste. This fern grows mainly under coconut plantations but also grows as undergrowth in secondary bush and in some situations in primary bush where the undergrowth is not so heavy with other grasses and shrubs.

Scientific Name: *Ficus copiosa*

Makira Names: Rauri'i, Parako, Paraku

Common Names: Small sand paper cabbage



Comments: There are several varieties of *Ficus copiosa* which are all edible. This plant grows on drier soils on hills. The plant also produces fruits which are also good for eating.

Scientific Name: *Diplazium pro. fern*

Makira Names: Rerewai, Pupuruta

Common Names: Fern



Comments: This fern also grows on river soils and streams, especially where the soil has a high moisture and humus content. The fern is not so commonly used, may be because of its scarcity.

Scientific Name: *Stenochlaena palustris*

Makira Names: Siaha, Aona, Ono

Common Names: Red fern, Climbing fern



Comments: Unlike other fern which grows without depending on other plants, this fern has a creeping vine which enables it to climb on trees or other plants. The young fronds has a distinctive reddish color while the older leaves are green and very hardy.

Scientific Name:

Makira Names: U'ri u'ri

Common Names:

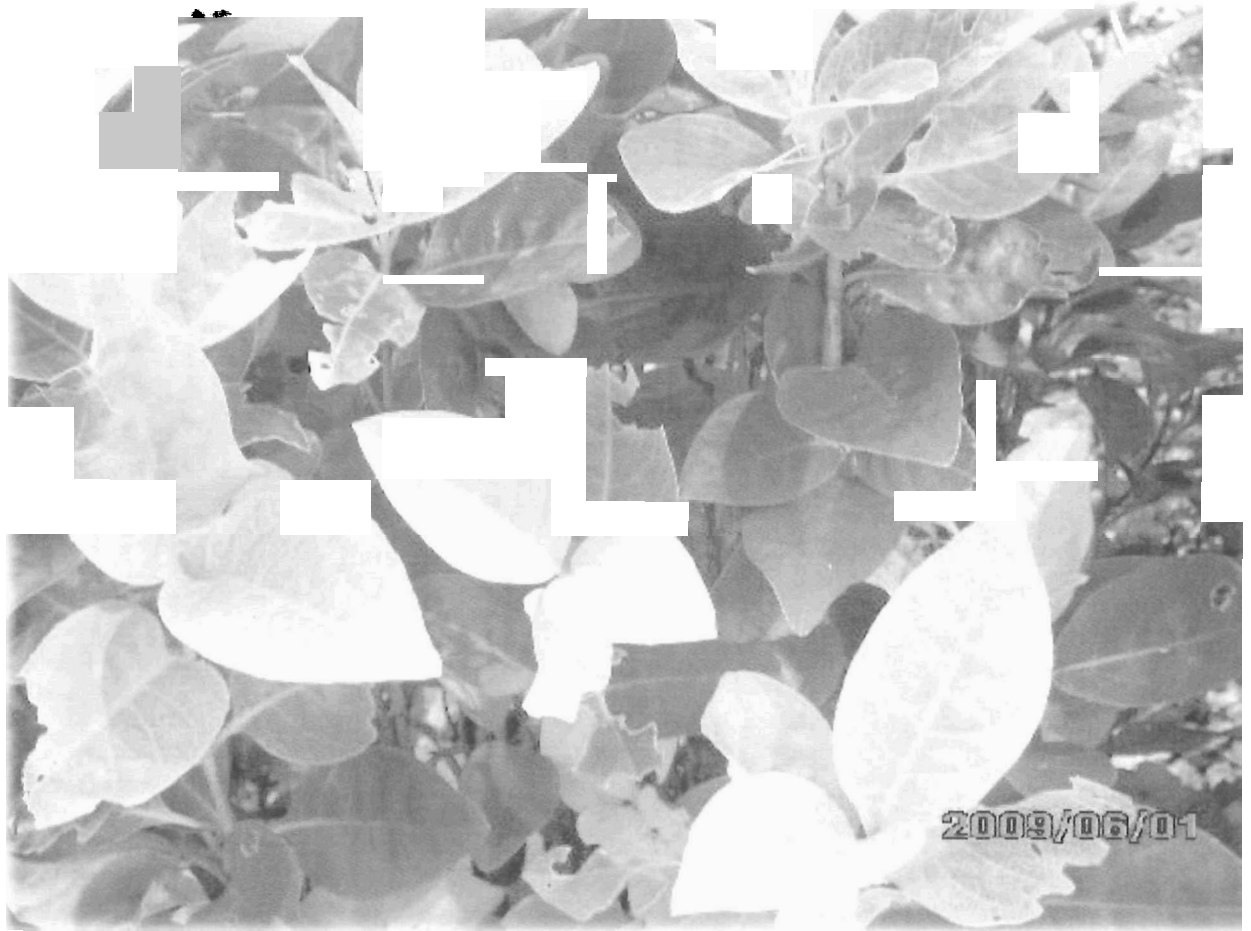


Comments: This tree grows mainly on recently gardened lands. It has a dark bark and soft wood. It can grow up to 15 meters in height but seldomly grows into a high tree. The young leaves can be used as vegetable. The leaves have soft hairs similar to pumpkin leaves hence some people prefer to call it pumpkin tree. At some locations, the presence of the tree is becoming scarce.

Scientific Name: *Pseuderanthemum whartonianum*

Makira Names: Wahere, Gofere, Gohere

Common Names: Ofenga

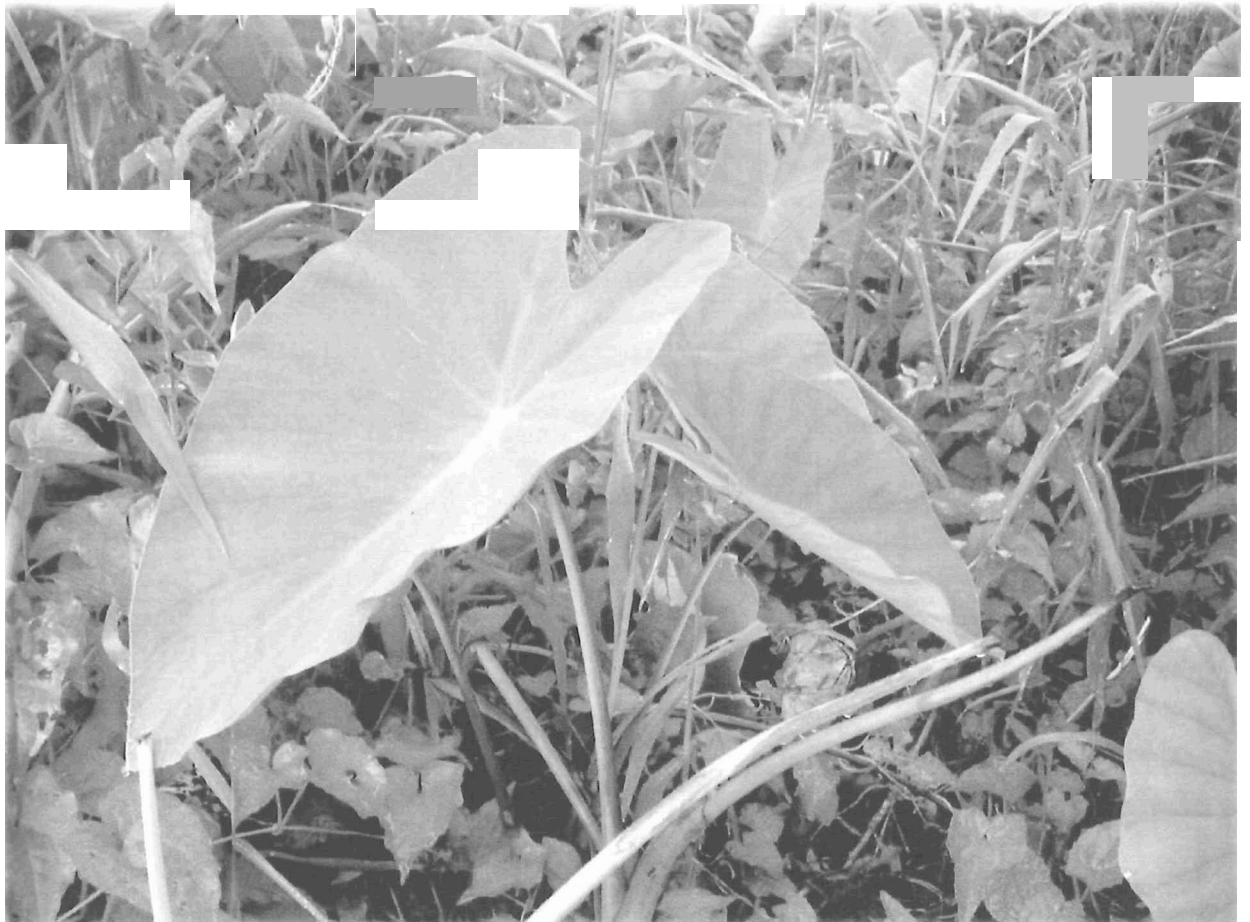


Comments: *Pseuderanthemum whartonianum* have several varieties growing in Makira Province. The colored variety (pictured) is normally grown around the homes as ornamentals. Another 3 varieties have green color. One can also be domesticated and is usually planted on gardens or beside the homes while the other two are growing in the wild.

Scientific Name: *Cyrtosperma merkusii*

Makira Names: Mahi, Aronisugu

Common Names: Swamp Taro



Comments: There are 3 varieties of *Cyrtosperma merkusii*. One (pictured) has reddish petiole, the other has white petiole, and the third have blackish leaf petiole. The variety with the red petiole is more commonly used. All 3 varieties contain chemicals called oxalates but the red petiole variety has low oxalate contents. The corm is also good for eating.

3.3.3 Other Vegetables

Scientific Name: *Saccharum edule*

Makira Names: Ahorosi, Gari

Common Names: Pitpit



Comments: Pitpit (*Saccharum edule*) has been a part of traditional cropping system but now has declined with only very few farmers continuing to grow it. The plant is very similar to sugar cane but have a much stronger stem than sugar cane. The unopened flower at the top is eaten as vegetable. When it is ready, the top of the plant enlarges and number of leaves may also decline.

Scientific Name:

Makira Names: Au, Gau, Eaha

Common Names: Bamboo



Comments: Bamboo is not a common dish amongst Makira Ulawa Provincial populace. Consumption of bamboo must have been introduced by Asian loggers operating in the Province. The green variety with large stem is the edible one. There are also other several species of the green bamboo variety which are growing in the wild around the province of Makira.

Scientific Name: *Areca macrocalyx* Zipp. ex Blume

Makira Names: Tea, Takasi

Common Names: Wild betelnut, Bekoto



Comments: This is not a common dish amongst families but it is often eaten by hunters who are really hungry. The unopened leaves enclosed at the top of the plant can be eaten raw however; Asian loggers introduced the method of boiling and roasting. This palm is used for house construction. The stem is split up into smaller sizes and used for sewing of sago palm leaves. The fruit can also be substituted for betel nut with betel nut chewers. Grows in the forest under heavy shade.

Scientific Name:

Makira Names: Totoo

Common Names:



Comments: The plant is not commonly consumed but with children it is used for chewing. The young stem at the top, when still green, can be chewed. It grows in the jungle and can grow very big.

Scientific Name:

Makira Names: Totohugi, Totonafuki, Totonahuki

Common Names: Banana flower



Comments: Use of banana flower (bell) was recently introduced into the diet of Makira people. The best species to use is the *Musa* spp. since there is low sap content which must be removed. Women use salt water to wash the chopped up pieces to remove the sticky sap liquid.

Scientific Name:

Makira Names: Uwe, Gue

Common Names: Lawyer cane, Bush cane

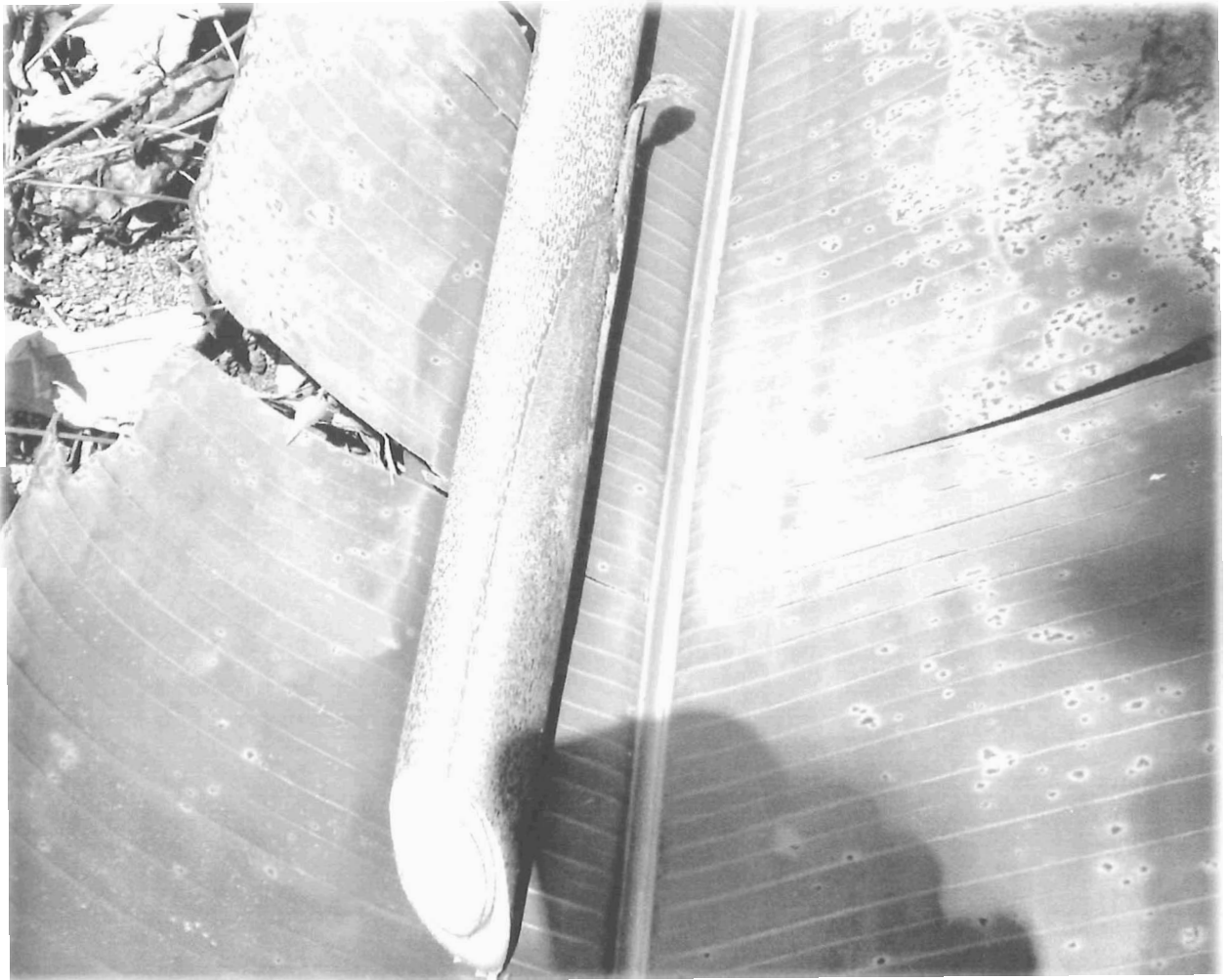


Comments: Lawyer cane is only used in house construction however the use of as food was introduced by the Asian loggers. The unopened leaves at the top of the vines are used as food. It can be roasted over fire before eating. This cane grows in the jungle.

Scientific Name:

Makira Names: Wawao, Hungani, Fao, Hao

Common Names:



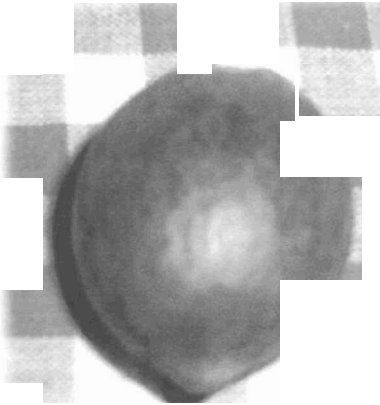
Comments: This plant is mainly used for covering of earth ovens during baking however its use as food was introduced by some Asian loggers. The young leaves enclosed in the pseudostem are taken and sliced up and then boiled or fried before eating.

3.3.4 Fruits and Nuts

Scientific Name: *Canarium salomonense* B.L.Burt

Makira Names: Adoa, Ghatoga, Ghatega

Common Names: Ngali nut

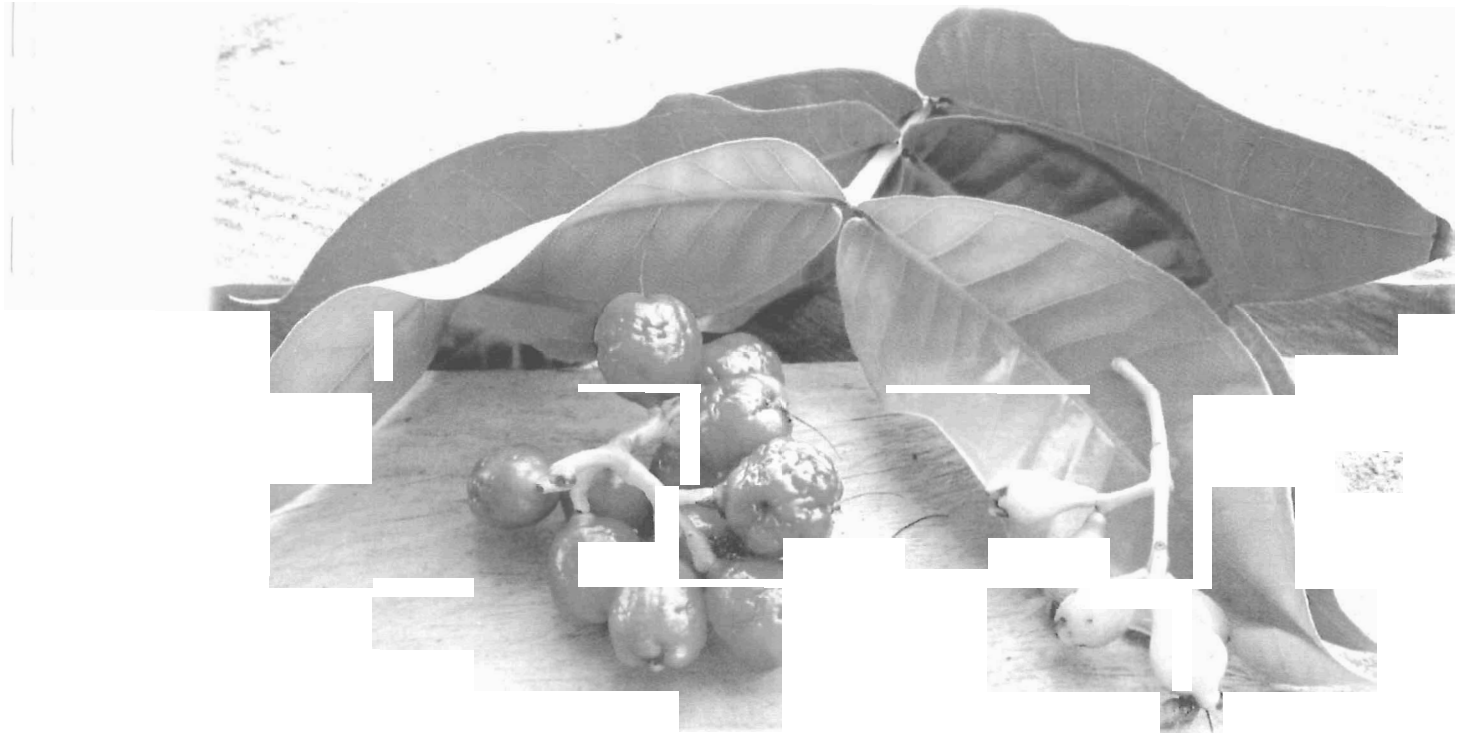


Comments: *Canarium salomonense* is a common snack amongst Makira children. The tree can grow up to a height of 20 meters and grows in the jungle. However it can be easily grown around the villages. The trees have distinct white and dark patches around the stem.

Scientific Name:

Makira Names: Ahe ahe, Ghafigawaga, Ghafegafe

Common Names:



Comments: The plant grows along the coastline mainly on rocky outcrops but sometimes can be seen growing on sandy soils. The fruits look similar to those of *Syzygium malaccense* while the leaves resemble those of wax apple except that the leaves are much larger and longer. The tree does not grow really big and can grow to a height of about 10 meters.

Scientific Name: *Syzygium malaccense*

Makira Names: Ahia, Ghafiga, Ghahiga

Common Names: Bush apple, Malay Apple



Comments: A very popular fruit in Makira and the plant is in abundance. Normally grows under coconut plantations and can be easily propagated. Other introduced varieties can also be found around the provinces which were usually planted beside homes.

Scientific Name: *Mangifera altissima* Blanco

Makira Names: Aii, Ghai

Common Names: Wild mango

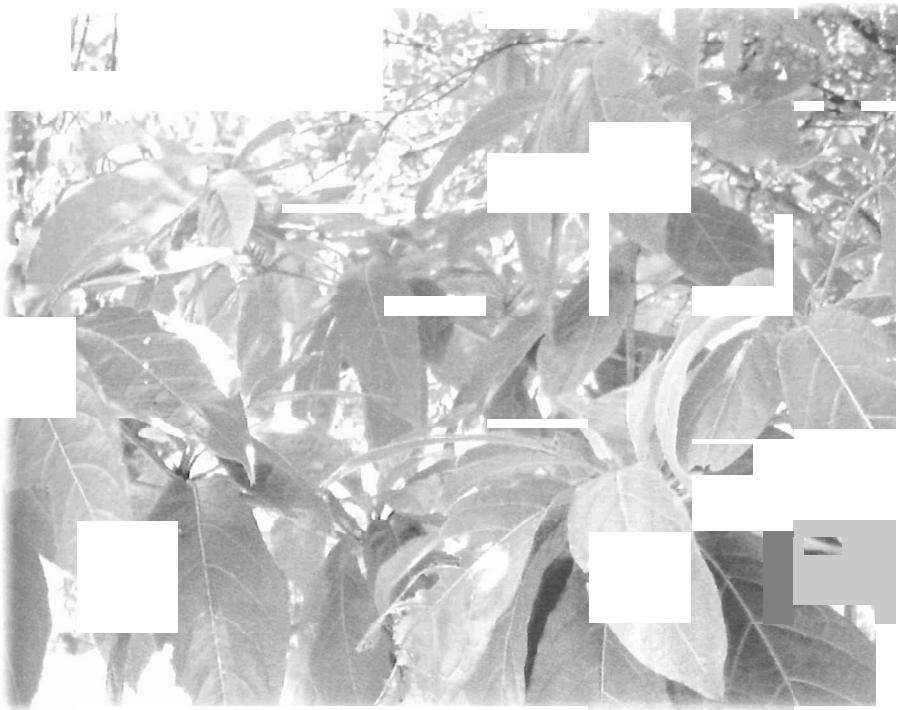
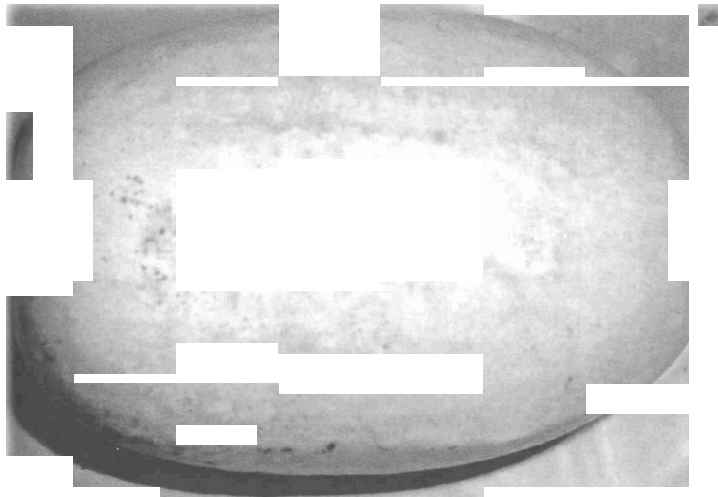


Comments: This is a wild species of *Mangifera indica*. The fruit is grayish-green and smaller than the domesticated species and the taste is much stronger than the domesticated species.

Scientific Name:

Makira Names: Airawa

Common Names:



Comments: This tree can grow up to 20 meters in height and comes into production seasonally. The tree has a hard wood. The tree produces fruits which are green in color and oblong in shape (see above photo). Inside the fruit is a soft flesh similar to that of avocado fruit and beneath the flesh is a hard shell nut with a kernel inside it. The fruit flesh can be eaten either raw or roasted. The taste is much better when roasted. The kernel can also be eaten but has to be roasted.

Scientific Name: *Barringtonia nuts*

Makira Names: Aitabi, Hara, Fara

Common Names: Cut nut (wild)

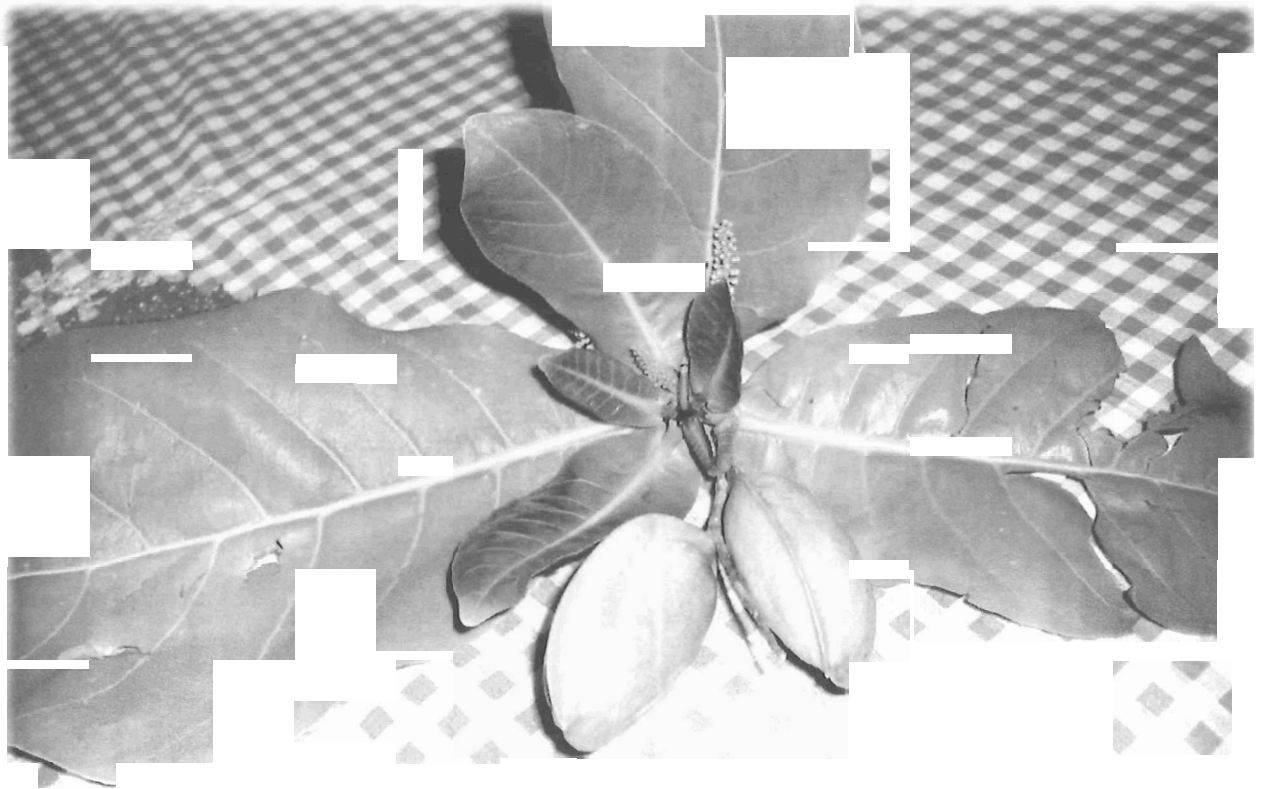


Comments: *Barringtonia nuts* grow naturally and are in bountiful supply in Makira Province. There are several wild varieties existing in the province which are also edible. The variety shown in the picture above was found up in the mountains.

Scientific Name: *Terminalia catappa*

Makira Names: Arite, Alite

Common Names: Alite, Costal almond



Comments: *Terminalia catappa* normally grows along the coastlines however, due to seed dispersion by bats and flying foxes some can be seen growing up in the mountains. There are 3 varieties: Two looked very much alike (pictured) but the difference can be seen by the size of the kernel. The third variety does not grow along shorelines but up on clay soils. The leaves look reddish in color and hairy and the fruit has red color and bigger with hard shell.

Scientific Name:

Makira Names: Awarasi, Warasi, Worosi, Worasi

Common Names:

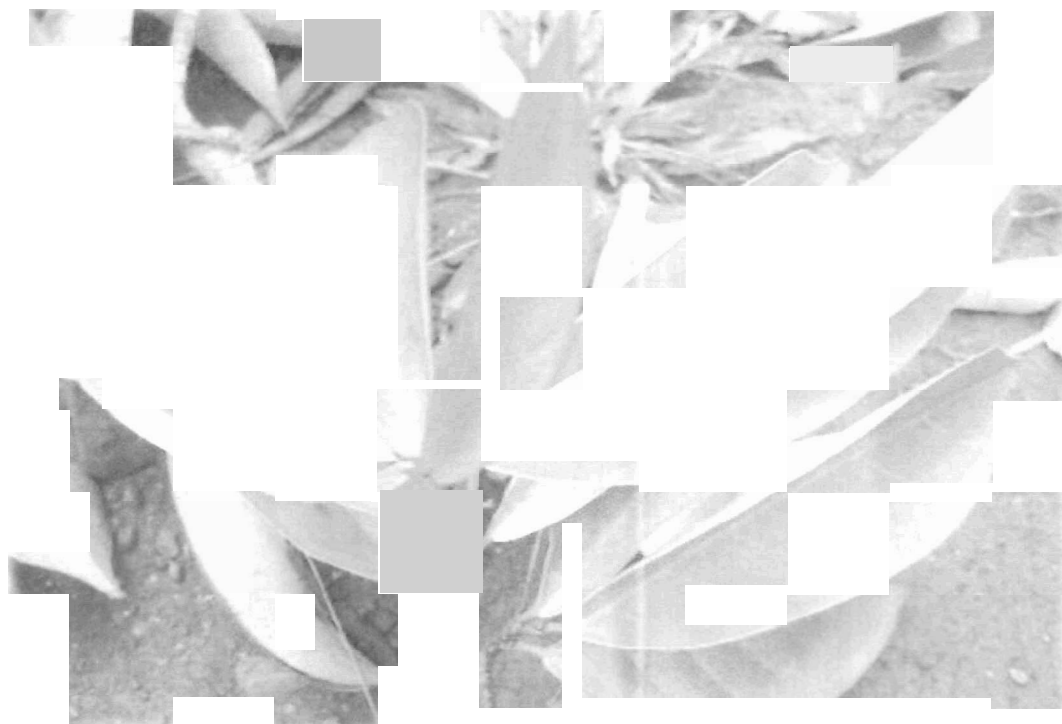
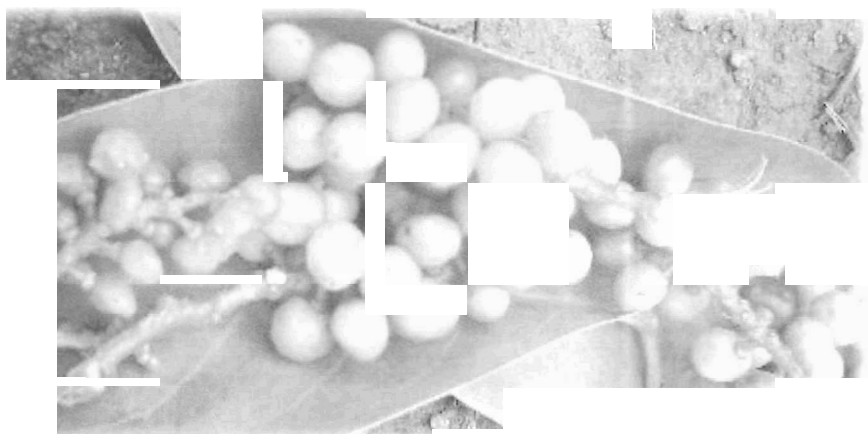


Comments: This tree grows up in the mountains and can grow to a height of around 15-20 meters. The tree has a greyish stem and contains chemical properties that can burn the skin or cause irritation. The tree must be climbed in order to harvest the fruits. The fruits look similar to that of cashew nut. When young the fruits are green in color but turns yellow when mature. It is believed that when eating the fruit, do not let the juice from the fruit run down the chin because it can cause sore on the skin. The fruit is very tasty despite its chemical properties.

Scientific Name:

Makira Names: Buburami, Kurame, Pupurami

Common Names:

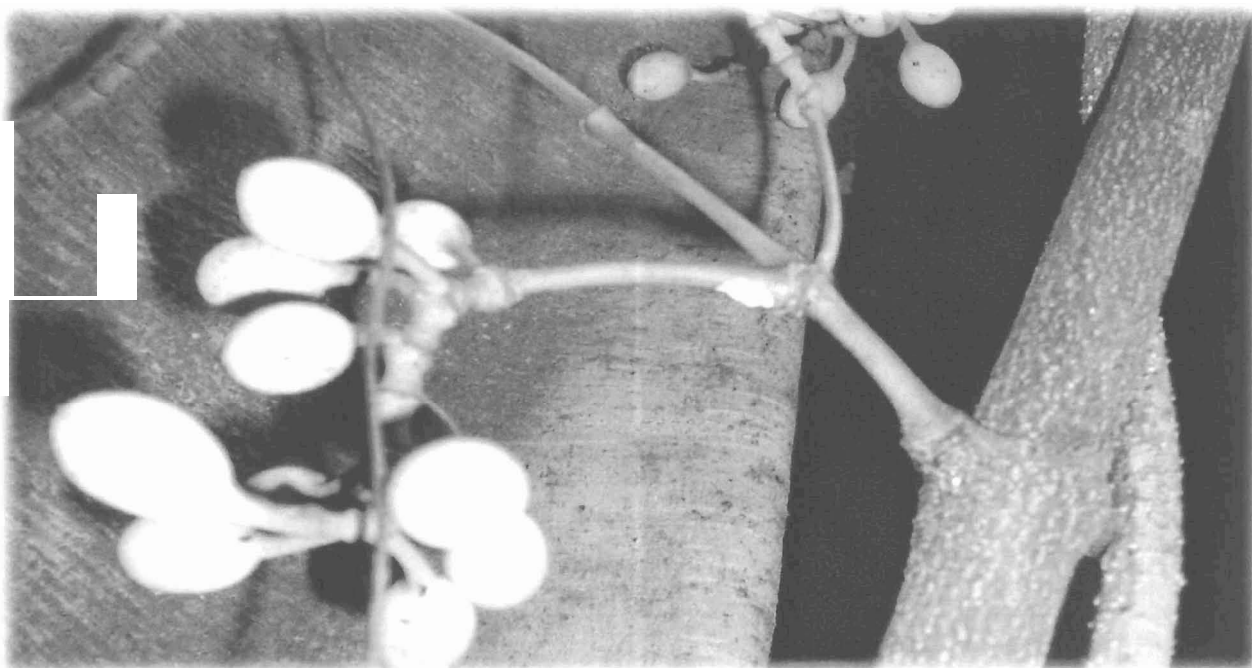


Comments: This tree grows on soils that are stony or sandy loams. The tree has cherries similar to those of *Flacourtia inermis* Roxb or jam tree as it is known in Makira Province however the size of the cherries are smaller than the cherries of *Flacourtia inermis* Roxb. The cherries have green colors when young but turn red then blackish as they mature. The juice from the cherries also is purple in color which can stain clothing.

Scientific Name:

Makira Names: Gugu, Warosuga

Common Names:

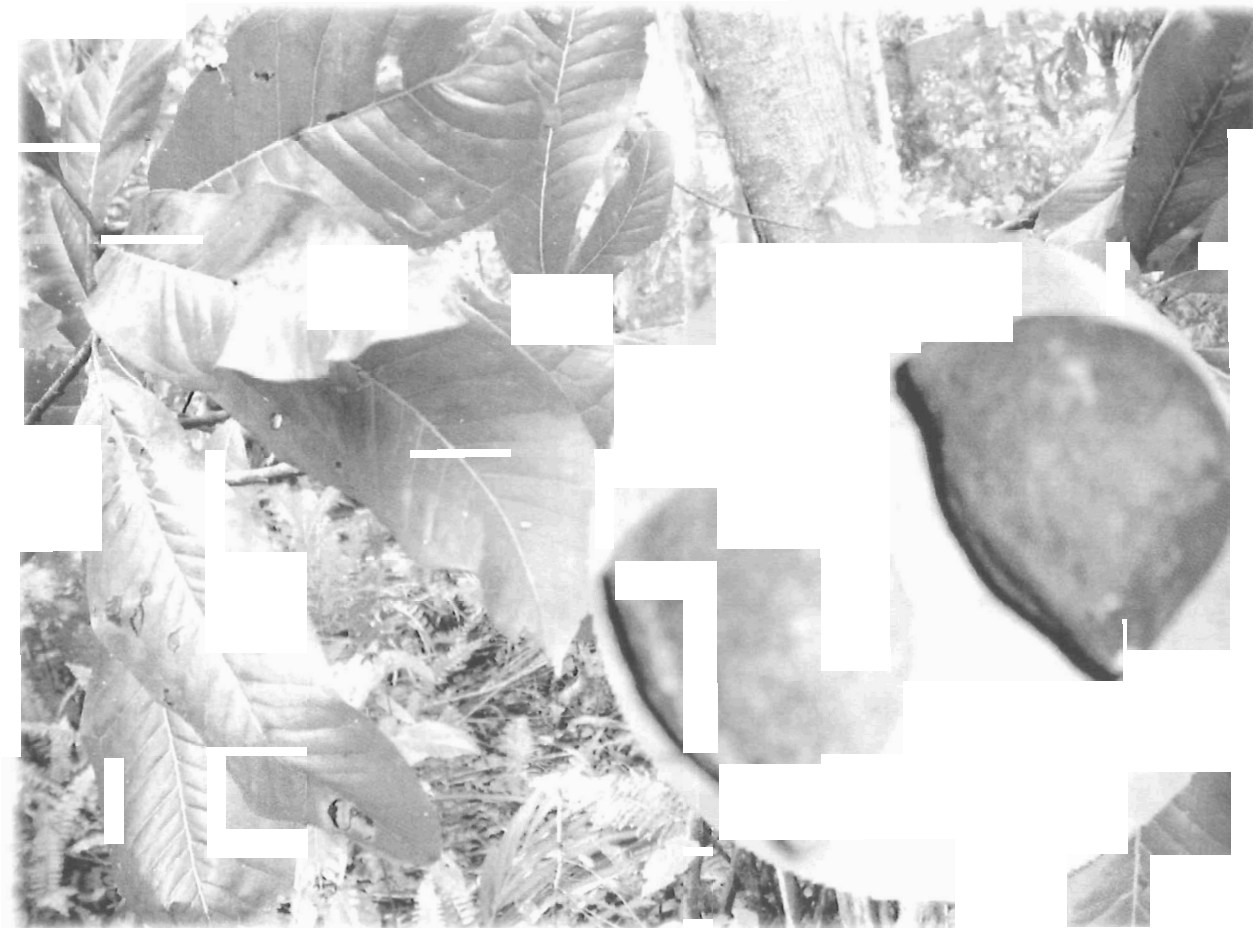


Comments: This is a rope which grows in the jungle under shades of big trees. The fruit is very similar to the fruits of *Gnetum gnemon* (suga, su'a). Fruits are often eaten after they fall from the plant. Fruits are roasted before eating.

Scientific Name:

Makira Names: Kamatai, Kama, Akama

Common Names:

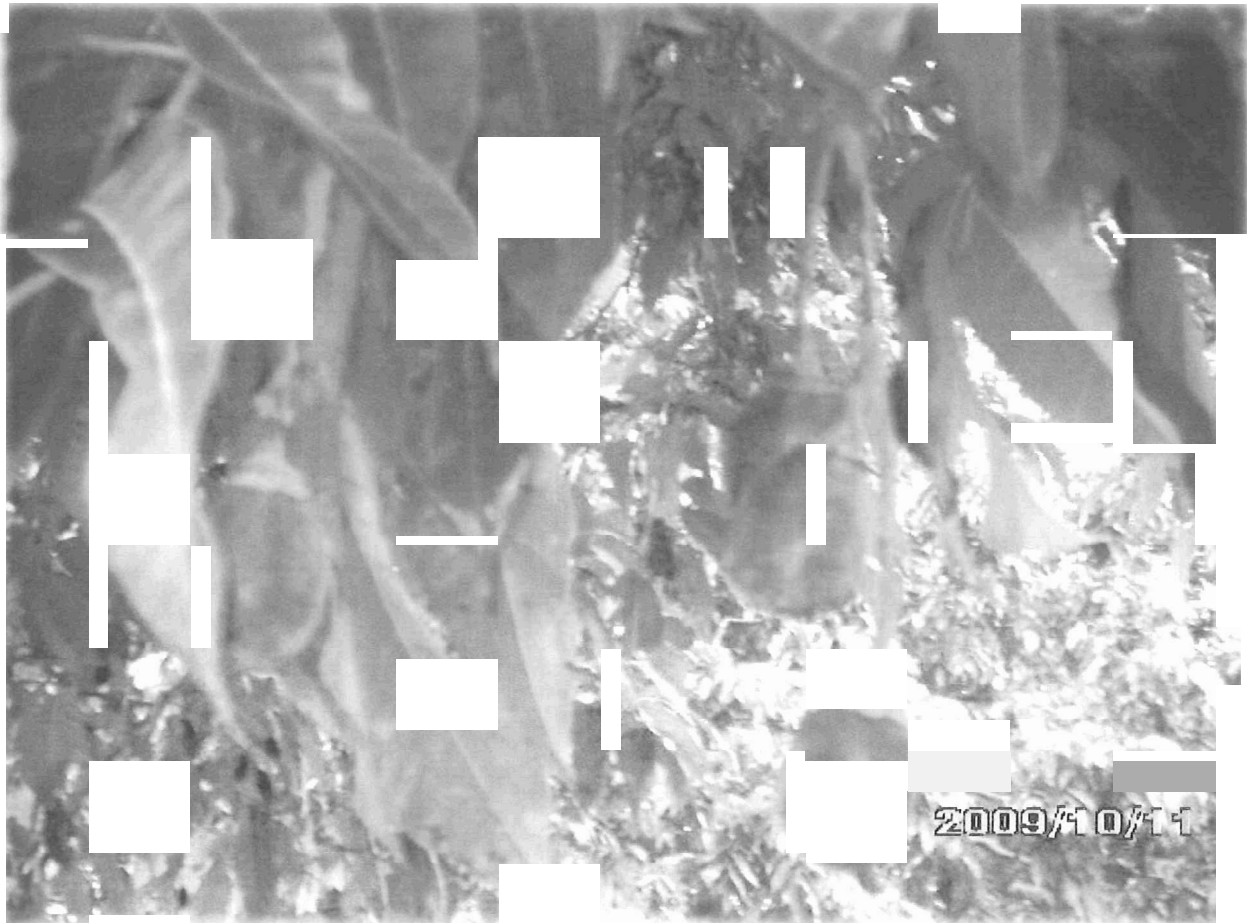


Comments: This is a medium growing tree but can reach a height of around 15 meters. The stem is brown in color (picture) and the leaves are long. The trees sometimes produce lateral roots above the ground level. The fruit (nut – picture) also has a brownish color. The nut can be eaten raw but must be cracked with stone or hard stick.

Scientific Name: *Canarium indicum* L

Makira Names: Ngari, Angari

Common Names: Nut, Ngali nut



Comments: *Canarium indicum* L or ngali nut as it is known in the Solomons is a common snack in the villages. In Makira Province, apart from its usage as a snack, it is commonly used with pudding making. Pudding can be made from cassava, taro, yam, giant swamp taro (kakake) or other root crops which can then be mixed with ngali nut to give the pudding more flavor.

Scientific Name: *Hornstedtia scottiana* (F.Muell) Retz

Makira Names: Odari (rakaraka), Karikari

Common Names:

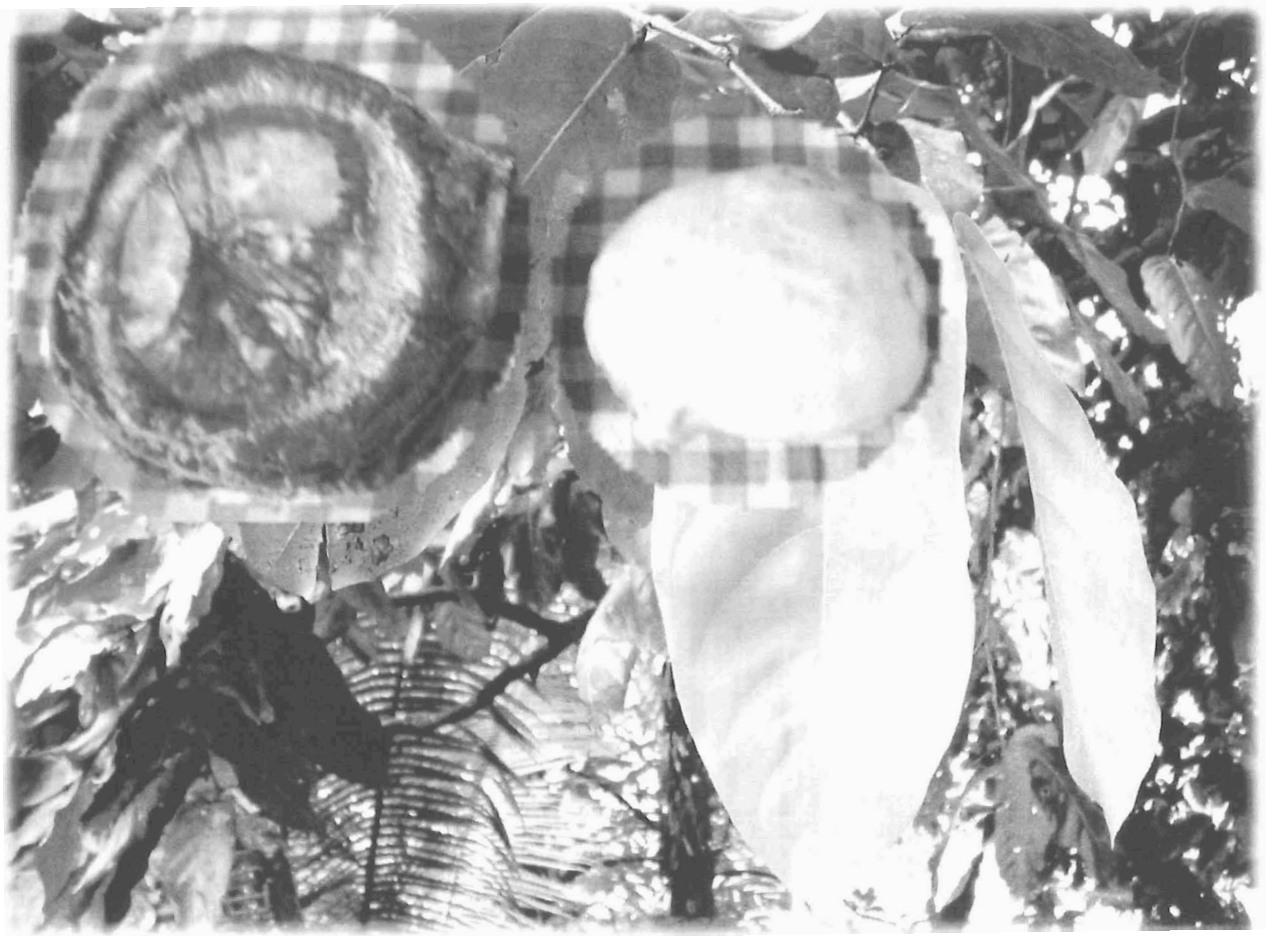


Comments: This wild ginger variety has fruits which are reddish in color at the bottom. The fruits contain capsules which have tiny black seeds in them. The seeds have sweet pulp around them which gives a sweet taste however; the seed itself does not have good taste if chewed. Just a caution, too much eating of this can cause constipation.

Scientific Name: *Inocarpus fagifer*

Makira Names: Otora, Mwabe

Common Names: Ailali, Airari



Comments: This plant grows mainly on swampy areas on lime or coral soils. The fruit is seasonal and on some small islands, it can be the main source of food when its bearing season comes. The tree is not normally domesticated but is in bountiful supply in the wild.

Scientific Name: *Passiflora foetida* L.

Makira Names: Sisi rop (sweet rope)

Common Names: Passion flower



Comments: This vine usually grows up after an area has been brushed and burned. The flower resembles that of granadilla and passionfruit. It is a small creeping plant and has small fruits that are enclosed in a frilly covering. The fruit is green when not mature but turns yellow when it becomes mature. It is only used as a snack especially amongst children.

Scientific Name: *Gnetum gnemon*

Makira Names: Su'a, Suga

Common Names:

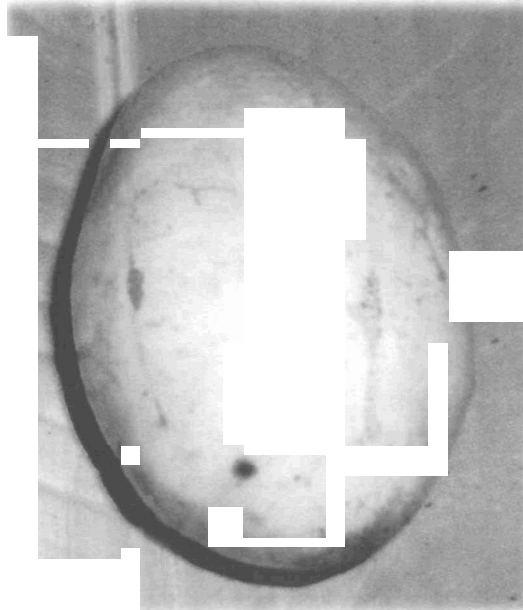


Comments: There are two varieties of *Gnetum gnemon*. One only produces flowers which never produce fruits and the other can produce fruits. Both varieties are edible. The flowers can also be harvested. The leaves can also be eaten as leafy vegetable. It likes growing on stony soils.

Scientific Name: *Spondias cytherea* (wild sp.)

Makira Names: Uri, Nauri, Auri, E'ri

Common Names: Golden apple, Inkori, Muli



Comments: This plant can grow up to around 20 meters in height. The leaves are much bigger and pointed than the domesticated variety but look very much alike. The fruit is green when not mature and turns yellowish when mature (ripe). The taste is not as sweet as the domesticated variety. Some people use lime to remove the strong taste.

Scientific Name:

Makira Names: Waroniu,

Common Names:



Comments: This is a rope (vine) with woody stem. Its normally seen growing on alluvial soils on river flooded plains. The plant trails up on big trees. The fruits (nuts) are green when in immature stage but turns yellow when it is fully matured. The fruit may contain up to 3 capsules. When mature the capsules have shells that are black in color and contain the kernel which is white in color much like that of the *Barringtonia* nuts. Capsules are almost round in shape.

3.3.5 Other Useful Plants

Scientific Name:

Makira Names: Karingani hugi

Common Names: Mushroom



Comments: There are several varieties of edible mushrooms found in the province. One variety grows on sago palms and maybe the same variety (pictured) also grows on bananas. There are other varieties that grow on trees and one on dead leaves on the ground. Variety that grows on sago palms is the most commonly used.

Scientific Name:

Makira Names: Warorodo, Warohinou

Common Names: Drinking rope



Comments: This rope has the ability to store water in its body. Where there is no water around just look for this rope. It grows in the forest and usually winds its way up on big trees. The inside looks reddish in color with the grains more obvious. The stem is rough and brown with white colors. The stem can reach a diameter of up to 10 centimeters. It does not grow in clusters but as single plant.

3.4 Teams of experts for identifying edible plants in the forest

In each region a team was set up to assist workshop participants in identifying the listed plants. Those in the team were selected due to their huge knowledge of traditional food crops including where these plants normally grow, how to identify them from a distance, and how they taste.

3.4.1 West Makira Team



Figure 6. Team members: (L-R) Ramo Christoper, Fox Taro, George Edei

4.0 Conclusions and Recommendations

Makira Ulawa Province has a bio-diversity of edible plants existing in the wild although bio-diversity for each region varies. Non Communicable Diseases and nutritional deficiencies amongst the population of MUP should not be a big concern as there is diversity of fruits and vegetables available locally that does not require money to get. However the scarcity of some of the identified edible plants is of concern because if nothing is done to preserve them, the species will eventually disappear thus lessening further the bio-diversity.

As far as food security is concerned, according to the research, the province has an average of 73.90% food security or availability (Plenty) and only 24.98% insecurity or unavailability (Rare).

Some recommendations to ensure increase food and nutritional security are listed below:

- Discourage logging activities in the province to ensure plants and plant habitats are protected to enhance growing environment.
- Educate and create more awareness on Non Communicable Diseases amongst the population and how traditional crops can overcome these problems.

- Educate and create more awareness on the nutritional values of traditional crops as compared to their close substitutes or competitors (i.e. introduced crops and refined foods in shops).
- Educate village people on the economic benefits of using or eating traditional crops.
- Educate city or urban dwellers on the value of traditional crops.
- Create more awareness on the socio-economic impact of using traditional crops.
- Increase awareness of the changing healthy lifestyle and the consequences of the change.

4.1 Future Works

This work is far from complete therefore more work is needed to fully complete this research. Future works include:

- Completion of plant identification and photographing work at the three remaining regions.
- Completion of plant classification.
- Identification of additional edible plants.
- Sample collection for laboratory nutrient analysis.
- Publication of a book.

5.0 References

Bruce. R. F. 2007 (electronic copy, PDF format), Food Plants of the Solomon Islands, A compendium; Learn and Grow - Helping the Hungry Feed Themselves. Privately published; pp 7, 16, 22, 24, 29, 34, 37, 76, 83, 94, 98, 100, 102, 114, 123, 132, 172, 174, 176, 203, 232, 250, 255, 263-264, 276, 313, 360, 390.

Australia Government, AusAID, 2006 (electronic copy, PDF format), Solomon Islands Smallholder Agriculture Study, Vol. 4, Provincial Reports, pp 67, 68.