

Living by Utilizing Various Modified Natural Resources in the Solomon Islands

1. Introduction

In addition to subsistence activities such as farming, fishing and gathering food from forests, in recent years the residents of the Solomon Islands have been making their livelihoods by obtaining cash through activities such as selling marine resources and crops and working for logging companies. This article will explain the details of usages of various natural resources (both from land and sea) and ingenious ideas for conserving the environment. Then, based on those details and ideas, the features of *Satoyama*-like landscapes in the Solomon Islands and a direction that should be taken in order to sustain modified nature will be discussed.

2. Summary of Research

The Solomon Islands consist of 6 relatively large islands and more than 900 small islands. The population is approximately 410,000 people (from the 1999 census) with 90% ethnically Melanesians and the remainder Micronesians, Polynesians, etc. In total, 88% of the land is customary land belonging to clans. Furthermore, about 80% is forested. (FAO 2007.)

Information gathering was carried out mainly by interviews in a village named Olive on New Georgia Island of the Western Province from

October 30th to November 6th. (The researchers stayed in the village for 3 days, from November 1st thru 3rd.) As well as the research in the village, further information was collected from members of the Western Province parliament, Forestry Ministry officials (at the province office), and NGO personnel who work locally in the conservation and social development sectors.

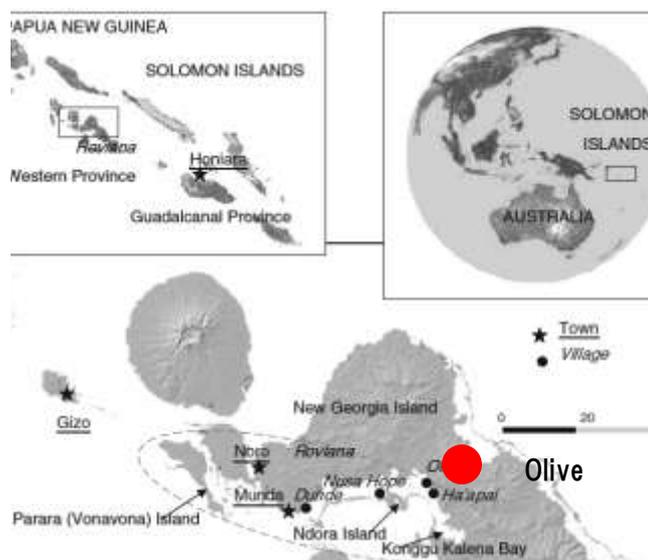


Diagram 1. Research area

3. Landscapes and Various Usages of Land and Sea Resources

The residents use the lands on New Georgia Island (main island) and on barrier islands located off the coast of the mainland. They believe that vegetation and soil in each type of island are different.

The following is a summary of usages of land and natural resources on the mainland, the barrier islands and in the sea.

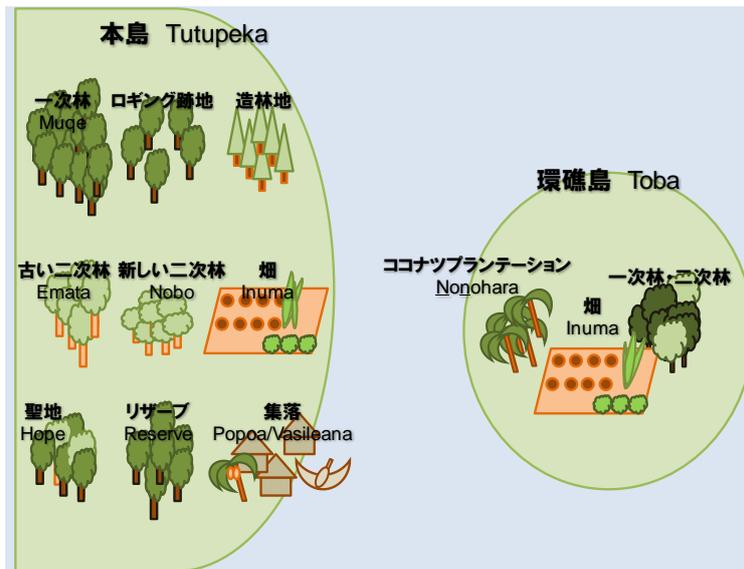


Diagram 2. Classification of land use in Olive

3.1 Main Island

(1) Settlement

Most useful plants in the settlement are either domesticated or semi-domesticated, many of which the residents recognise as useful for food, luxuries, tool materials, ornamental materials, shading materials, etc. The most abundant of all are betel nuts (*Areca catechu*), coconuts (*Cocos nucifera*), a domesticated species of *Barringtonia edulis*, which yields edible nuts, and sago palms (*Metroxylon* spp.) which are used as material for roofs and walls.

(2) Agricultural Fields

For the residents in this area, shifting cultivation is the main means of making a living. There is no particular season for preparation of agricultural fields, because neither temperature nor rainfall varies throughout the year. Main crops are sweet potatoes and cassavas. Other than potatoes, vegetables such as aibika (*Hibiscus manihot*), ornamental/ritual plants such as *Cordilyne terminalis*, and plants such as coleus, which deter pest animals, are grown.

In the main island, cultivation periods are from 2-3 years, and fallow periods are about 30 years. As each plot of land is used as a cultivation field in turn, cultivation fields, forests with various fallow periods, and other vegetation types spread like a mosaic from the settlement towards the inland area.

(3) Modified Forests (*Nobo*)

Modified forests which have been abandoned after shifting cultivation are called *Nobo*, where the residents gather medicinal plants such as *mikania cordata* and milkwood pines (*Alstonia scholaris*), trees for lumber such as *Commersonia bartamia* and materials to secure rafters and roofs

such as rattan (*Calamus* spp.), etc.

(4) Ancestors' Modified Forests/Sacred Areas

In order to differentiate from *Nobo*, more than several decades-old (sometimes more than one hundred year-old) very old modified forests are called *Emata*, which were deforested and then abandoned before the current residents were born. Some gigantic trees such as Canarium, from which the residents harvest edible fruits and resin for wax, are the indicator for the residents to know whether the forests were once modified by humans. Many of those forest areas that the ancestors used to inhabit or use for rituals are now “sacred precincts (*Hope*),” where entry and felling are often prohibited.



Photo 1: A sacred forest. “TABU” (“taboo “in Pidgin) is painted on trees to inform logging companies that the area is sacred.

(5) Unmodified Forest

Unmodified forests are called *Muge*, where trees (*Gmelina molluccana*) are sometimes collected for canoe-making. These trees are ideal for material for canoes because the trunks are light, grow straight, and have high water repellency. This makes it hard to find these trees and there are rules as to how to utilize them, which will be explained later. Also, these forests are often used for wild boar hunting.

Among the vast forests that the residents classify as *Muge*, some evidence of modification by humans can be found. (Bayliss-Smith et al. 2003) Therefore, *Muge* are not totally unmodified, but partially contain human-modified parts where the ancestors once lived, and also they include forests in which the current residents have intervened.

(6) Reserves

There are two forests called “*Reserves*” near Olive. They are nature reserves established by local leaders in the 1970s when the current settlement was built. Although logging by foreign companies and agricultural cultivation are both prohibited there, the residents are allowed to cut down trees for their own survival and to take non-wooden materials such as *Parinari glaberrima*, the fruits of which are used as adhesives to fill holes in canoes. Vegetation in *Reserves* is different from both unmodified and modified forests described above, as the residents have been utilizing useful trees continuously.

3.2. Barrier islands

The barrier islands' soil and vegetation are different from the main island's. While the main island's agricultural fields are managed by a shifting cultivation system with a short cultivating period and a long fallow period, the barrier islands' fields are cultivated almost all the time. According to Furusawa and Ohtusuka (2009), the average period of continuous cultivation is 29 years on the average, and the fallow period is 9 years.

As the barrier islands' agricultural productivity is much higher than the main island's, the barrier islands are intended to be used differently from the main island so that the residents can still successfully retain their subsistence economy even when a new development such as growing a cash crop on the main island fails and they cannot earn enough cash.



Photo 2: An agricultural field on a barrier island, with bushes and short trees in its environs. No evidence of cutting big trees is seen because of continuous cultivation.

3.3. Sea

In the following description, only lagoons, shallow sea, mangroves and marine protected area will be discussed.

(1) Lagoons and Shallow Seas

Lagoons consist of coral reefs (*Sagauru*), vegetating areas (*Kulikuliana*), sandy ground (*Onone*), and mudflats (*Nelaka*) and the residents make use out of each area to earn a living. For example, deep water in a coral reef is a place for fishing, and shallow water is for catching smaller fish so that they can be used as bait. Also, nassa mud snails. (*Nassarius* spp.) are gathered in the sandy ground areas.

(2) Mangroves

Mangroves, locally known as *Petupetua* and growing where land and sea meet, provide hunting grounds for shellfish and crabs, which are not only for the residents' own consumption but also used to exchange for cash. The residents are very wary of logging companies' activities. For example, they protested and forced a company's operation to halt when an inflow of red soil contributed to a decrease in population of shellfish and crabs.



Photo 3: (Left) Group fishing with nets.#1 (Right) A woman diving alone to collect nassa mud snails.

(4) Marine Protected Area (MPA)

The local NGO planned to set up an MPA at a coral reef area in a lagoon. As well as being a place for the residents to catch small fish, the reef is a spawning ground and a habitat for juvenile fish. Therefore, it is a very important area for protecting the fish population. The fishing ban should not seriously affect the residents' lives, but it should have a significant but positive effect on the fish. In exchange for setting up the MPA, the NGO built a medical clinic for the residents as a part of development aid. According to a follow-up research, marine ecologists reported that the ecosystem had improved. (Aswani et al 2007)

4. Traditional Rules for Conservation

The residents participate in managing the *Reserves* and MPA, described above. However, they observe traditional rules for conservation as well.

One example of such rules concerns the use of a scarce tree, the white beech (*Gmelina moluccana*). When a person knows that a new canoe will need to be made in future, he has to find a young white beech and make a mark on it to inform the other residents of its future use. Then, when it is time for canoe-making, he has to ask for the village chief's permission. If he breaks this rule, he must pay compensation to the chief and the village.

There is also a rule for gathering sago palm leaves which are essential material for roofs and walls of traditional houses. As it takes a very long time for a sago palm to re-grow once the trunk is cut down, the rule says that the trunk should be untouched and only leaves can be cut off. It also says that they should leave 4 leaves untouched because the tree will die if all the leaves were cut off. Compensation must be paid for breaking this rule.



Photo 4 and 5: (Left) Carving a canoe out of a large white beech trunk. An outboard motor can be attached to this type of canoe. (Right) Leaves have been removed from the sago palm, but 4 are left untouched.

7. Conclusion

The landscape of agricultural villages in the Solomon Islands is made up of settlements along the coastlines surrounded by what resembles a mosaic of human-modified forests and *Reserves* on the land. The marine environment is comprised of shallow lagoons and barrier islands farther offshore. Compared to *Satoyama* in Japan, there are relatively less modifications by humans. Also, agricultural fields are not kept tidied on a permanent basis. After forest is transformed into a crop field, the field turns back into forest again in time. Therefore, each forest is unique and made up of many diverse species. As each forest has different flora and fauna, the residents use each for a different purpose.

In recent years, with the influence of the market economy, commercial logging has been carried out widely, and industrial forestation is being performed where such logging has been implemented. At the sea, there is an increase in scale of marine product gathering for cash, which is seriously affecting the marine ecosystem. The continuity of such a trend could destroy the residents' livelihood, triggering a decrease in the number and variety of species.

Generally, Pacific Islands governments are not very keen on projects aimed at conservation of nature, partly because the government revenues depend largely on the utilization of natural resources such as lumber and fishing. What is more, even if a government tries to take action on conservation, it is difficult to achieve a successful outcome because most of the territories consist of customary lands in which protected areas cannot be set up without the residents' consent.

The residents in the Solomon Islands, whose livelihoods have been heavily reliant on farming and fishing, have no choice but to continue making a living out of natural resources.

Even for the sake of conserving natural resources in the Solomon Islands, it is virtually impossible to persuade people to leave unmodified forests untouched or to make all the coral reefs protected. Even if such ideas were accepted, it is unlikely that the agreements would become permanent. Therefore, for the residents' lives and traditional culture, also for the variety of local species, it is important to stop large-scale changes such as deforestation and industrial forestation, and also to provide support for the use of *Reserves* and modified forests.

Reference

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