

Sweetpotato of the Kimaam, Irian Jaya

*Angel Manembu**

Introduction

The island of Kimaam in Irian Jaya was selected as the site for Sejati's preliminary research on traditional resource management. Kimaam Island, which is composed of swamplands, was chosen because it represents one of seven major ecosystems found in Irian Jaya. Covering almost 700,000 hectares, southern Kimaam, and neighboring Komolom Island (70,000 hectares) make up Indonesia's largest wetland reserve. The purpose of this article is to provide general information and a description of the Kimaam people's knowledge of sweetpotato farming.

Because this community resides on marshlands that are constantly affected by tide levels and where solid land is hard to find, the Kimaam people in the village of Sabon have developed a unique farming system. They possess especially intricate methods for sweetpotato farming and have developed these methods based on centuries of knowledge and experience. Their knowledge of farming methods is greatly linked to nature, such as, constellations, tidal calculations, wind direction, land fertility and natural pest control. A unique feature of their traditions that supports their farming activities is a ceremonial farming competition known as *Ndambu*.

Kimaam Island

Kimaam Island, also known as Fredrik Hendrik Island, Dolok Island, Yos Sudarso Island or Kolepom Island, is located southeast of Irian Jaya, Indonesia. Its surface area is approximately 1,146,000 hectares. As a consequence of northwestern and southeastern trade winds, Kimaam possesses a monsoon climate with distinct wet and dry seasons. The island, shaped like a saucer and surrounded by shallow water, has a very low, flat terrain.

In the rainy season, the island is inundated with water and swarms with mosquitoes. At 5:00 p.m., most of the island's inhabitants retreat behind mosquito nets. Walking outside after this time is akin to being attacked from all directions. Fortunately, outbreaks of malaria are very rare.

The island has about 11,000 inhabitants. Research was conducted in the southwestern region of Kimaam, specifically Sabon village. Comparisons were conducted with nearby Tor and Kladar villages.

* Research Coordinator, Yayasan Sejati, Jakarta, Indonesia.

Plate 1 Sweetpotato for *Ndambu* competition.

Gardens

Sabon village is located in the middle of a swamp, while Tor and Kladar are coastal villages. The farms found in Sabon are formed of island-gardens, in which the gardens are built on top of man-made islands. A unique method of sweetpotato farming using *para-para* or arbors (much like vineyards) is indigenous to Sabon, Tor and Kladar.

Gardens in Sabon can be situated in muddy areas or sandy areas. Most of the time, the local people use canoes in order to reach these gardens. At the beginning of the dry season, the people start planting in the sandy areas, while in the wet season, people plant in muddy regions. In order to plant in muddy regions, sand is required, which must be transported by canoe. According to local beliefs, this sand helps fertilize the muddy soil.

To construct gardens, during the dry season when the water has reached the lowest possible level, farmers dig one meter to the left and one meter to the right of the intended area, piling the resulting soil in the middle. As a result, a deep ditch, one to three meters wide, is formed on both sides of the area. The ditch has to be kept clean. The people are fully aware that well-kept ditches are important and related to the moisture condition of the soil.

Gardens are divided into two types; one kind is used for daily food and the other is used for competition (*Ndambu-pathe*). In both sandy and muddy areas, there are gardens used for daily food and for competition.

The Kimaam people in the village of Sabon use a rotation system whereby calculations are made for each garden plot and its use at different times. For example, there are gardens used for consumption in the dry season, gardens used for consumption in the wet season, old gardens left uncultivated in order to revitalize the soil, and reserve gardens.

During planting season for the *Ndambu* gardens, which are in muddy areas, people cover the potato heaps with specific types of grass, such as *pururu* grass or *muyagi*. They then use wooden twigs to protect the plants from animals.

When it rains during the dry season, the soil is dug up and covered with leaves so that the steam from the hot soil can escape. The soil that is dug up is then placed next to a tree, where it is covered with dry grass. If the soil is not dug up, it will be inundated by hot steam which causes spoilage of the sweetpotato. The soil is planted for two to three consecutive years, left for one to two years, and then replanted again. Every garden area has a name, and each person has more than one garden area.

Taboo indicators and garden land mines

There are several signs or signals used to prevent people from stealing from or vandalizing another person's garden. A sign called *Bwe*, made from crossed pieces of wood, indicates that walking on the garden is forbidden. It is the local community's belief that violating this sign will cause them to be bitten by a snake. This rule does not apply to the owner or the garden caretaker. The owners of the gardens also install land mines or *Dakarwu* within the garden. These are made from sharp twigs (*Te*) and fish bones (*Nagaramamu*). The intention, of course, is to injure trespassers or thieves. However, this booby trap is also a practical means for identifying the perpetrator. If a garden contains these traps, the owner places a warning signal at the garden entrance in the form of grass bound together and placed on a piece of wood.

Astronomy

The community of Sabon, and the Kimaam people in general, use the movement of constellations as a guide in their gardening practices. For example, movement of the Cross constellation (*keyer*) predicts the first rainfall of the wet season. Thus, the gardeners must prepare their gardens for the first planting in the wet season. Conversely, when it returns to its original position, it predicts the beginning of the dry season. The *Kurwan* constellation moves from east to west. When it reaches the west it indicates floods, high tides and heavy rainfall. The local communities thus have indicators of when to protect their crops from floods, as well as when to collect firewood or materials needed for their roofs.

Seasons and their relationship to sweetpotato growth

During the dry season, dry grass is placed on top of the potato to prevent the potato from drying up. Meanwhile, during the wet season, the plants are covered with bark from the Bus tree (*wewu*). The tree bark is used, according to the local people, to prevent the soil from becoming too soft because of excessive rain. In the wet season, soil in this region coalesces like glue and covers the potato.

From January until June, which is the wet season, people plant in their mud gardens and prepare new land by lifting soil from the surrounding ditches. This soil, which is eroded top soil resulting from water run-off, is a natural form of fertilizer.

Between August and December, until the beginning of rainy season, people cultivate other gardens further away. There are two main explanations for this. First, the more distant gardens usually possess a reliable water source during the dry season. Second, rain often causes difficulty in transportation, so it is to their advantage to cultivate the closer gardens during the wet season.



Plate 2 Gardens in muddy area for *Ndambu* competition.

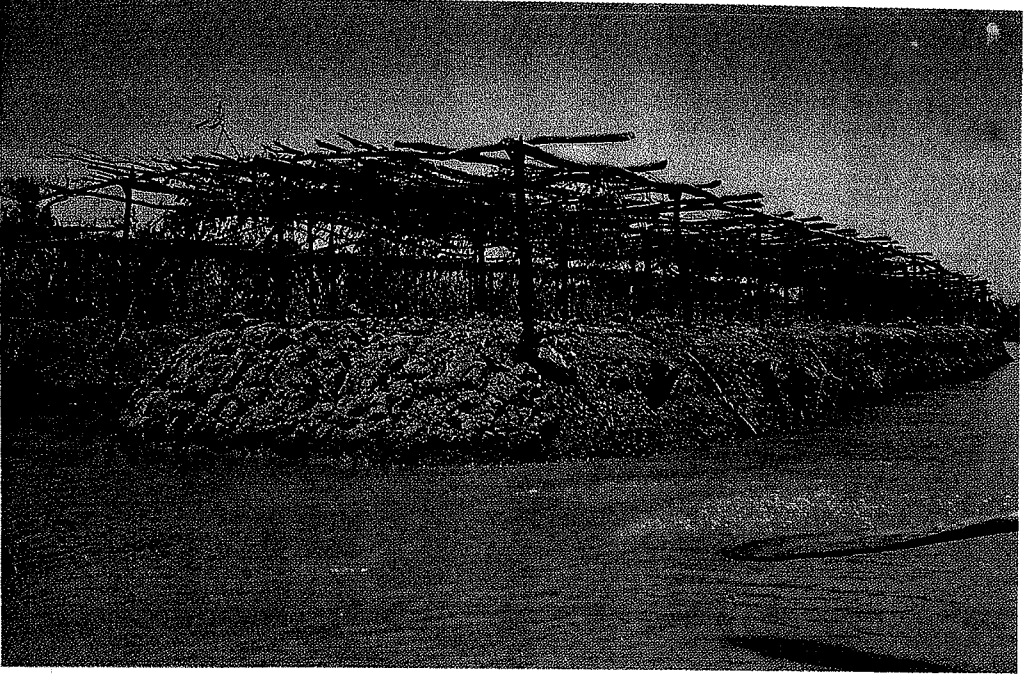


Plate 3 Gardens in sandy area for daily consumption.



The Kimaam use different types of soil: there is soil that is used in dry season and soil used in wet season. They also use sand, called *ciwawuna*, which functions as fertilizer, especially for the large *Ndambu* sweetpotatoes.

Pruning methods

Sweetpotatoes for the *Ndambu* competition must be selected when they are still very small. One method which enables the potatoes to grow to extraordinary size is pruning. This is done by selecting the biggest possible main root and pruning the smaller roots, as well as other plants around it. The growth of the plant must be carefully monitored so that it is not disrupted by other potato buds. Usually, from one sweetpotato stalk, there will only be one or two buds that are appropriate for *Ndambu*.

Pest control

Sweetpotato pests are usually birds (*bugha*), a type of small, black insect, and worms (*kowu*). To eradicate pests, the people usually chew on galingale, then, spit the juices onto the plants, and rub the pulp on the stalks. The galingale is also planted all around the garden for further protection.

Women's role

Women also own sweetpotato gardens which have either been inherited from their family or been given to them by their husbands. For instance, a man will claim: "This garden belongs to Mrs. A.", meaning that this garden was possibly planted by her, her husband, children, or siblings, and maintained and harvested by Mrs. A. If the garden is owned by a woman, harvesting the garden by anyone requires permission from the woman. Even her husband must ask for permission to ensure that the woman knows the reason the crop was taken and to safeguard the crop from being given to another woman. In this society, sweetpotatoes are status symbols; thus, a man, in order to woo a woman or to make himself more desirable to her, often gives her a sweetpotato. Women also own their own *Ndambu* gardens and produce gigantic sweetpotatoes. However, the largest sweetpotatoes are still owned by men. Local lore has it that to win the last *Ndambu* competition, a man stole a large sweetpotato grown by his aunt and claimed it as his own.

Natural resource knowledge

Local people are extremely knowledgeable about their environment. They are capable of drawing a map indicating the land they use for various purposes. They are aware of territorial borders of other villages. During research on Kimaam Island, a simple map of community land use was drawn up by the people themselves.

The people of Sabon, Kladar, and Tor know every place, ditch, well, and garden, and the names given to them by the people. Each village inhabitant knows the type of fish that can be found in the streams or swamps during wet season. They are extremely familiar with where they can gather fruit, or other household needs, and know their seasons and the proper time to gather them, as calculated by tidal levels and the weather.

These traditional communities are also familiar with medicinal plants that grow in the surrounding forest. Every animal has a name and the people know when and where they can be found in nature.

The traditional communities on Kimaam recognize at least 147 plant species for every day use, even if they are not put to use. They know of at least 144 varieties of sweetpotato. They are also familiar with at least 66 species of marine life.

Ndambu ceremony

Every man would like to be known as *Aganungga Kwanji*, or an excellent gardener. This title is an extremely prestigious one in this community. For a young man, the title provides great status with which he can attract many females. To marry a man with this status ensures the availability of food.

This ceremony, which is watched by many villagers, can be conducted twice a week during harvesting seasons and is held in the middle of the village. The *Ndambu* ceremony is a competition between two groups within the traditional community. These groups are usually formed according to blood lines and are called *Ndambu Yuwaka*. The members of each group share experiences and tips about gardening among themselves. According to custom, it is the elders of the village who are to teach and advise the best methods for producing the largest sweetpotatoes.

A customary part of this ceremony is when the two groups make fun of and criticize their opponents' gardening methods. For example, they might insult one another about their garden's lack of cleanliness, their lack of hard work, or their inability to grow large sweetpotatoes. To an outsider, this part of the ceremony seems more like a heated debate that could eventually result in fighting, but it is all done in a good, competitive spirit. An integral part of *Ndambu* is the actual measurement and size comparisons of their sweetpotatoes. The largest sweetpotato ever grown in this area had a circumference of 1.96 meters and required six people to carry it. The existence of this competition has helped ensure the continued practice of traditional gardening methods. Because of the *Ndambu* competition, the people maintain the enthusiasm and motivation needed to work hard in order to produce the best from their gardens.

Conclusion

This study has indicated that a traditional sweetpotato farming system is still active on Kimaam, due to a supportive culture as well as profound traditional knowledge. The *Ndambu* festival has created the spirit and excitement of competitive farming. Astronomy, knowledge of soil and environment, and taboos have made the traditional community in this swamp environment capable of sustaining life in a way that could not be easily duplicated by others.

The question is: how much longer will this system prevail with so many influences coming in from the outside and the multitude of developmental projects being planned, with little regard for the Kimaam people's situation and potential? The next question is, what can we do?

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