Farming and Saving the Peatlands

By Sutiawati and Alfeus Kripinus





It was three o'clock in the morning. The air was still cold, but the women in the village of Tanjung Baik Budi were already busy. Siti was one of those women. She had a long list full of activities for the day. Her pandan plants had grown up to two meters. Those pandans must be cut for the material of making wickerwork crafts, her main livelihood.

"Not to mention taking care of my five children, waking them up, telling them to take a bath, preparing breakfast and asking them to go to school," said Siti. Three of Siti's children were still in school. Siti's first child was a man in his 30s who's already married. Her second child was 17 years old and just graduated from high school.



Tanjung Baik Budi is one of the villages in Ketapang Regency, West Kalimantan Province. Most people live from farming. Its total population is approximately 700 families, including 200 families who live as fishermen. However, in addition to farming, most of the people there also weave pandans, especially the women. Farming is done in the morning until late afternoon while weaving is done in the evening. So in the morning they go to the field, and in the evening they weave in their houses.

Rice farming in this area is unique, unlike the common paddy fields which are often found in Java Island, or elsewhere. The agricultural lands here are peatlands. Peatlands are different from the usual agricultural lands. They are different from rivers, although there are also still water throughout the year. When Siti goes to the field for farming, she never uses brightly colored pants or bottom garments. Neither do other farmers in the village, not only because the garments will be dipped in the peat water, but also because the peat water is dark like concentrated tea water and muddy. Bright clothings will be easily soiled and difficult to wash due to the mud that sticks.

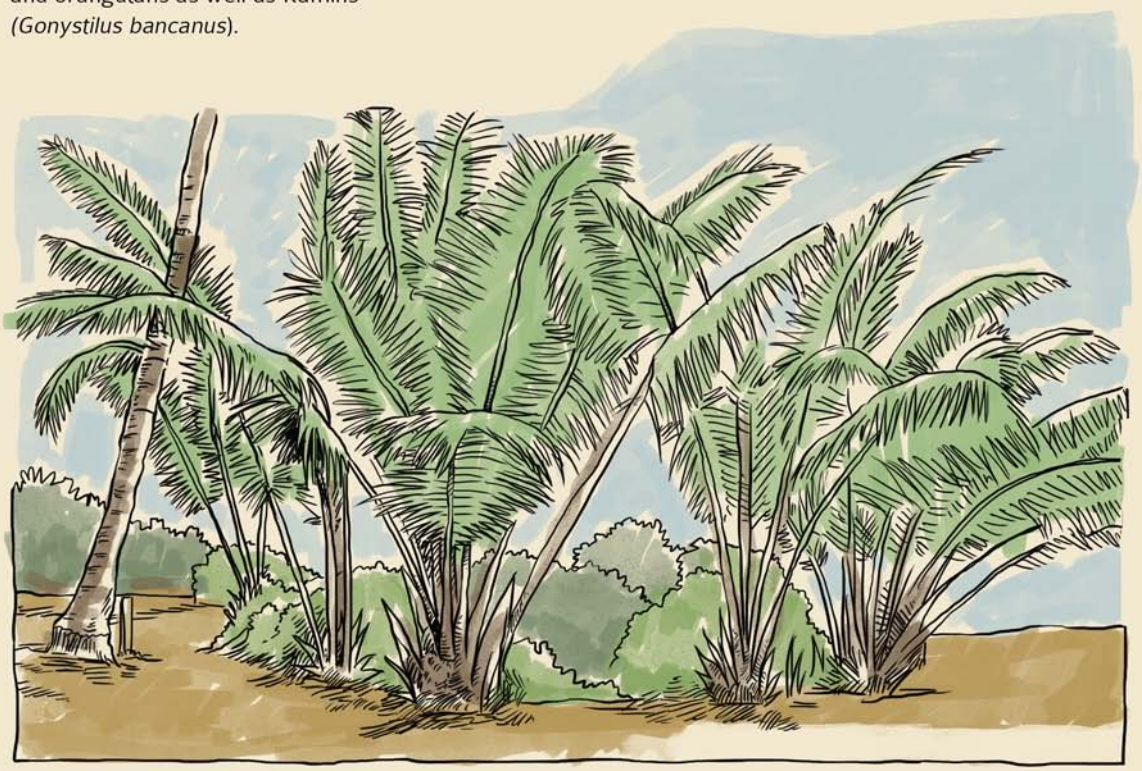
The types of plants in peatlands are also different from those found in the garden. One of the characteristic plants of peat lands is Nipa palm, which looks like a palm tree, but its leaves are wider and grow in a wide distance from the base of the stem. Nipa palms grow floating in water. The tree can move along with the water and its direction of flow. The roots which are only embedded in the mud, and not sticking to ground in the bottom allow them to easily shift from one place to another. Nipa palm has many benefits. The leaves can be used as roof material, and the ribs of the leaves can be used to make brooms.

Actually the peat area in the village is very important. Tanjung Baik Budi village along with six other villages such as Kuala Tolak, Sungai Putri, Sungai Awan, Ulak Medang, Tanjung Pasar, Pelang-Pematang Gadung dan Sungai Besar has a peatland area of 70,000 hectares, which becomes the buffer zone, part of of the Gunung Palung National Park (TNGP). The depth of peat in Sungai Putri is known to reach 15 meters. Peat forest ecosystem acts as a buffer for the waters in the surrounding area as well as a habitat for endangered species such as proboscis monkeys and orangutans as well as Ramins *(Gonystilus bancanus)*.

The peat area is a critical habitat for orangutans. They do not just wander around in the mountains of TNGP. On certain times, they forage in the valleys which are the peat areas. The population of orangutan in this area is not known with certainty. In the area of TNGP the remaining population is estimated to be around 2,000. These orangutans are probably the ones which undertake the "journey" to the peatlands. In August 2011 the people of Tanjung Baik Budi Village captured an orangutan because it was entering and disrupting the people's garden. The orangutan was released a week later.

Farming in the peatlands requires a special skill and is full of risks. At first, rice seedlings must be cultivated by sowing rice seeds on a patch of land on a higher ground which is not flooded.

For each hectare of land at least 20 kilograms of rice seeds are required. When the seeds have grown to a height of around 15 cm, reaching an age of 2 to 3 months, only then the seedlings are ready to be transferred to the peatlands so that they are resistant to the water.





The planting is usually done in July. When the plants are grown but there is too much water which is drowning the plants for up to a week, the plants will definitely rot. This usually happens during the rainy season at the end of the year.

There are also many pests attacking the rice plants, such as rats, crabs, and mini crabs which often like to cut the stems of rice plants. When minicrabs attack the paddy field, the farmers will definitely experience crop failure in February.

Planting is a family activity. There is usually a division of roles between men and women in farming. The women usually grow and plant rice seedlings, and also clear the grass.

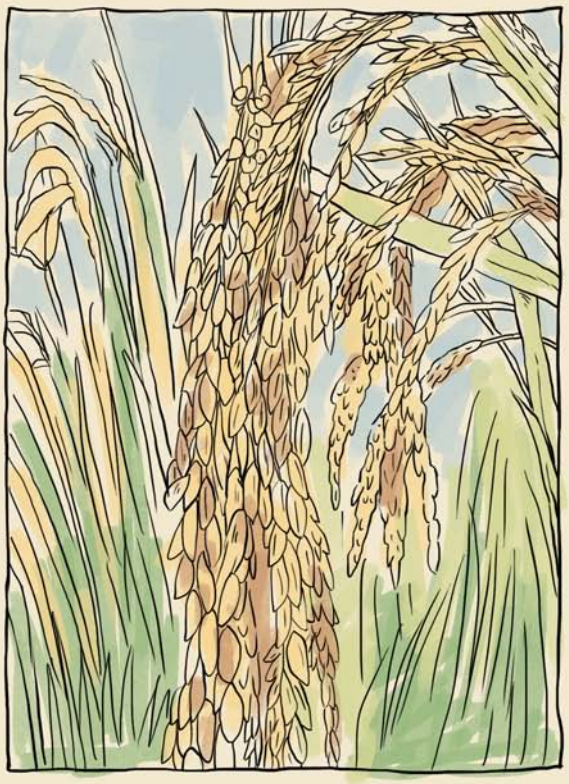
Meanwhile the men prepare the land, began slashing land *(nyaka')* or cultivate the land using a buffalo or a cow. The men also assist during planting. On the other hand the harvesting is done together by both.

Harvesting in peatlands is also different, they do not use a grain thresher machine, but they use their feet. First the paddies are dried, and then to separate the rice from the stalks, they trample on them using their feet so that the grains fall off the stalks. Usually this takes quite some time, because it can't be done all at once. The farmers usually do it at night and if it is not finished they will continue the next night. It takes about two weeks for each one hectare of rice land.



Siti is not a rich farmer. Her paddy field is only one hectare. The average paddy field area of each farmer in Tanjung Baik Budi Village is only about one half to one hectare. If the harvest is good, in one hectare they can harvest up to 1000 gantangs. One gantang is equal to2 kilograms which means about 2 tons of rice per hectare.

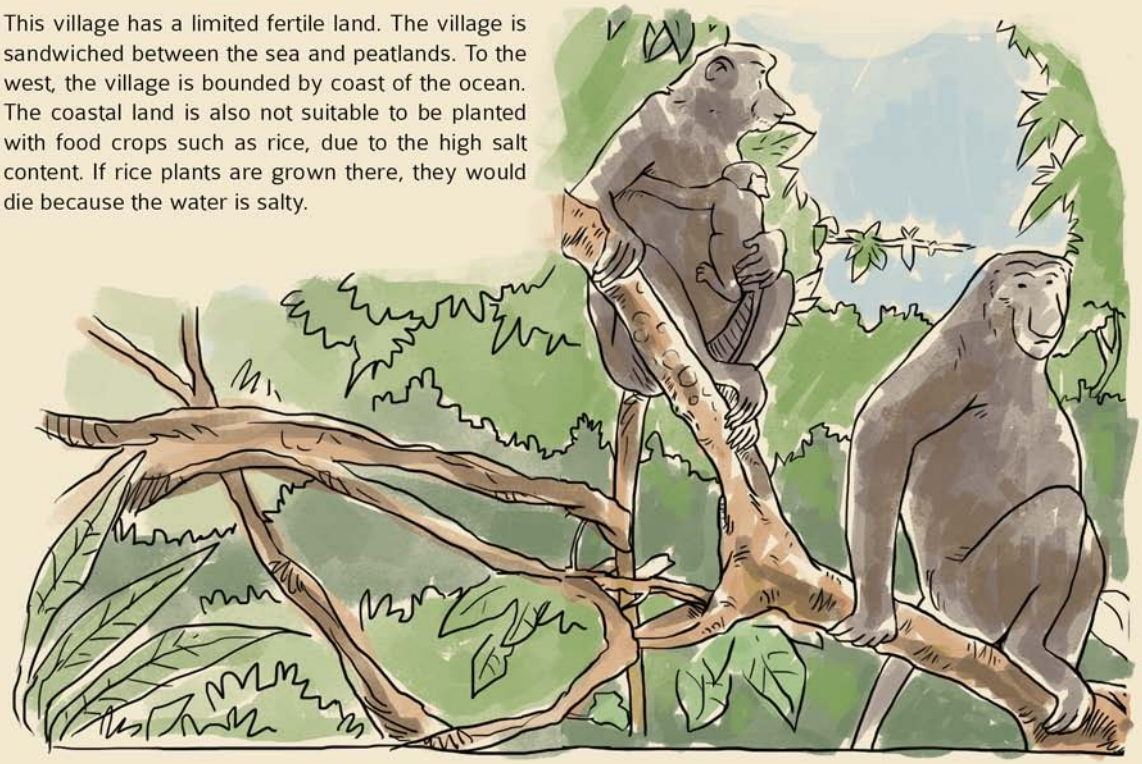
The varieties of rice planted in peatlands are diverse. "There are paddy varieties such as *Seratus Hari* paddy, *serang* paddy which is red in color, *seliung, pelita*, glutinous rice and others. There are 10 varieties of swamp rice which are still planted," Siti recalled. Harvesting on peatland can be done twice, but the second harvest usually shrinks down to half because grains come from the old stem of the first harvest, which is left behind to grow wildly after the first harvest was done.



However for Siti family, the harvest is still not sufficient. She still has to buy more than half of her rice from the rice sellers. The food shortage problem is not only experienced by Siti family alone, but also the the other families. That's why since 1999 the area has received subsidized rice from the *Raskin* program.

Moreover, according to Siti, peatlands are not fertile soil for rice cultivation due to the high acidity of the soil in the area. That's why not all peatlands are able to be planted with rice. However seasonal crops such as fruits, mangoes, rambutans, and also coconuts flourish in the area.

This village has a limited fertile land. The village is sandwiched between the sea and peatlands. To the west, the village is bounded by coast of the ocean. The coastal land is also not suitable to be planted with food crops such as rice, due to the high salt content. If rice plants are grown there, they would die because the water is salty.





Living side by side with peatlands and the coast makes the cultivation areas of the people there are very limited. This limited area means that the women have to look for an extra income through making wicker crafts from Pandan leaves. About 80 percent of the villagers work doubles as farmers and pandan leaves weavers like Siti. During the day they are busy in the field, and in the evening they are also busy at home weaving the pandan leaves into woven mats, baskets, bags, and tissue boxes, or whatever forms that are ordered by the customer.

Pandanus plants grow on peatlands, coastal lands, also on the house yards of the people. Pandan trees do not have trunks and the leaves are lush, with a length of about two meters. There are thorns on the center and also on the left and right sides of the leaves. The people there cultivate pandan by planting the saplings. If sapling grows well, it can be harvested at an age of three months.

They can harvest pandan every week. Men usually help search the materials for making wicker crafts. The wickerwork skills are taught for generations, as well as between friends. Actually it is not hard to do wickerwork. The tools needed are also simple. All you need are pandan leaves, a jangatan, a knife, and bamboo. *Jangatan* is a kind of ruler tool to measure the size of pandan leaves to be used, but it can also be used as a knife to clean the pandan thorns. Before weaving, the thorns must be removed from the pandan leaves, and the size must be measured in accordance with the desired width and length using *jangatan*.

The woven mats produced are varied. There is a type of mats called songket, which is the mats that have colorful motifs. There are also regular pandan mats with a plain color. Besides the color, the mats are also available in different sizes. The shape, the price and the level of difficulty in making them will affect the selling price of the products.







It's not hard to sell these wickerwork products because in their village there some collectors who are ready to take the products from each house of the craftsman. In Siti's village there are at least 20 collectors. All of them are men. Usually the payment is made three days after the products are taken. How much is Siti's income from this wickerwork?

"I can get Rp 800,000 per month. I usually work from 7 pm until 10 pm," she said. Siti prefers to weave songket mats. "The price is more expensive than regular mats," she said. Songket price is higher than the regular mats because of the higher level of difficulty in making them compared to the regular mats. The mats with a regular motif with the size of one square meter is only Rp 7,000, while the price of mats with songket motif can reach Rp 10,000.

But her income from the sale of woven crafts cannot provide the family need. This has made the people of Tanjung Baik Budi Village know Dian Tama Foundation, a Non Governmental Organization which is based in Pontianak. The organization shares the knowledge and appropriate technology in the development of handicrafts with local materials, such as pandan leaves. Dian Tama Foundation modified the products so the pandan leaves can be made into interesting products that have a higher selling power.

Dian Tama Foundation is backed by the head of Tanjung Baik Budi Village to form groups which consist of men and women. Each group has 15 members. In the group they discuss and learn how to find solutions to overcome the problem of limited agricultural land. One of the results of the discussion is the use of local potential for agricultural development such as the use of husks char for growing crops in polybags.

The groups that were enthusiastic to develop the cultivation of vegetables in polybags were Tunas Baru and Harapan Baru groups. Tunas Baru has 10 women members, while Tunas Harapan has 12 women members. Both were formed in February 2009. These groups were backed by the head of the village. "The village actually has a lot of potentials. What is missing is the management. Human resources are needed to manage them. The formation of the group was done so that people can share their stories and solve the problems that they have," said Amir Suhaidah, the head of Tanjung Baik Budi Village during the inauguration of the group in the village office .

Once the group is formed, its members began to regularly conduct meetings. One of the meetings was done to develop learning programs that are needed.

At the meeting held in the Bahagia sub-village a list of the learning programs needed was made which the production of the husks char, coconut shell charcoal burning, composting, cultivation with polybags, and cultivation of rubber. They also included the program of weaving of pandan leaves into various forms such as handbags, purses, tissue boxes and slippers.

The cultivation of vegetables in polybags appealed to the women because vegetables are the daily needs of the family, while the prices of vegetables there are pretty expensive. They learned to plant a variety of vegetables such as peppers, eggplants, tomatoes and more. The polybags were lined up in front ot their homes.

Planting in polybags uses soil and husks char as the growing media.

Its composition includes, a third of husk chars, a third part of compost, and a third part of soil. They also make their own compost from organic waste which is used as an organic fertilizer. One of the compost materials is banana stems. Usually banana stems are not recommended for composting because of high water content. However within the group it is chosen to be the material for compost.

First, the banana stems are cut into slices and dried. Once dried, they are mixed with rice husks char and manure. For each banana stem that is finely chopped, it is mixed by two buckets of husks char and two buckets of manure, cow or chicken dung may be used. After that a bucket of water is added to the mixture then covered it with a plastic sheet. The mixture is left to sit for two months. Three times a week, the members of the group take turns watering the pile of compost with a bit of water. Compost is usually used for planting in polybags, but it also can be used for planting in the open land. For half a hectare of land the compost is needed two times.







The cultivation in polybags was first practiced in 2009. The group members grow onions, eggplants, chili peppers, tomatoes, cucumbers, calabashes, and pumpkins. The benefits of vegetable cultivation is felt by the mothers. They can save on food expenditures by 20 percent or about Rp 10,000 to Rp 15,000 per day. The polybags used can also be used multiple times. "They are not replaced until they are broken," said Siti.

At first it did not run smoothly. Each member of the group gets 10 polybags. For the first three tries they planted with polybags, and plants died. Fourth attempt was successful. The vegetables cultivation does need more attention, especially during the dry season because they need to water the plants in the morning and afternoon.

They also learned how to prepare a planting medium that can neutralize the acidity by using husks char. The basic ingredient of char comes from the waste of rice crops which is usually thrown away. The husks are burnt using a burning equipment with chimney so that the husks are not burned into ashes, but into charcoal which is black in color retaining its shape before it is being burned. The chimney can only be used for three times burning. During the burning process, the husks must be stirred so that it is evenly burned producing a good quality charcoal.

Their wickerwork skills also improved shortly after a routine training was done. The weavers are now able to create more diverse products. The wicker products are also finer and neater. Now they not only make the mats, but also bags, sandals, purses, tissues and others. They are also skilled in combining motifs and materials from the previous two songket colors, white and blue into more than two colors.

Most interestingly, they can now combine pandan leaves with other materials such as fabrics, leather, rattan, bamboo and ribbons.

"Their income is slowly getting better, from Rp500,000 previously to Rp800,000 now," said Pipin, a mentor from Dian Tama Foundation. They also receive orders from outside their village.

The development of agriculture in limited farmland using polybags, as well as pandan leaves weaving skills are very useful for the people of Tanjung Baik Budi Village. They are not only able to improve the economy of the family but also manage the natural resources properly, without damaging nature. Hopefully, the women can really benefit from what they are doing today, and continue to develop.



Sutiawati

The young sun eager to shine from Ketapang
Sutiawati or Tia, a young woman in her 20s is from Ketapang, West Kalimantan. Graduated from Al-Hau State Islamic Institute (STAIN) Ketapang, Tia joined Dian Tama, an organization in Ketapang regency working on resource utilization of peat swamp. Tia, along with her friends, around ten women in the age range of 30 -50 years in a group do composting, produce husk and coconut shell charcoal and wickers. Additionally, Tia also teaches hydroponic planting at schools.

Tia felt, her diverse activities are very beneficial for her life. In addition to improving the quality of herself, Tia can develop the potential of the group, as community representatives in conserving forests sustainably because the products they made have added economic value.

Tia looks forward to continue to shine and be useful to others. Being a native of Ketapang encouraged her to have a motto of "Definitely Can" in carrying out her various activities..

Alfeus Kripinus

He is called as Pipin. He comes from Pontianak, West Kalimantan. Currently, Pipin is active in Dian Tama Foundation, as community facilitator for women's group in the District of North Matan Hilir, Ketapang Regency to manage natural resources. Various activities he implemented are organic farming and wickers from pandanus.

Not limited to facilitation alone, Pipin also help to open up opportunities/marketing channels for the products. The love to his family and wicker products makes him weaved a sleeping basket for his own baby. His motto is, "Keep on Learning from experience or Working while Learning" and also "Please others even by doing the slightest thing".

