

# Collecting Forest Resources as Livelihood Strategies in Kampung Tambirat, Sarawak

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## ABSTRACT

A livelihood is a means of making a living, securing necessities of life such as water, shelter medicine and clothing. For communities dependent on forest resources for livelihoods, sustainability of forests are important. In Kampung Tambirat this study aims to find the income generated from forest resources particularly Nypah palm forests, the measures of conservation, challenges and type of assistance required so that the villagers engagement in the activities will flourish in the future and benefit the younger generations. It is found that there are no conservation measures for Nypah forests and seasonal floods further increases the difficulty for the villagers to sustain their livelihood activities.

Keywords: Forest resources, livelihood strategies, Nypah forests, Sarawak, sustainability

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## INTRODUCTION

Forests provide a variety of products and services. Trees provide oxygen to the environment and absorb carbon dioxide. The raw materials for wood products, paper and housing are obtained from forest. According to Tietenberg and Lewis (2015), forests provide shelter and sanctuary for wildlife and they play important role in maintaining the watersheds that supply much of our drinking water. More than 1.6 billion people worldwide depend to varying degrees, on forests for their livelihoods. About 60 million indigenous people are almost entirely dependent on forests. Some 350 million people who live within or adjacent to dense forests depend on them to a high degree for subsistence and income (World Bank, 2016). Livelihoods and management of natural resources must be adaptable to ecological and social system changes so that it would be resilient and sustainable (Allison and Horemans, 2006; Chapin et al., as cited in Abdullah, 2014). "Rural communities are dependent on forest resources which are common in Sarawak as subsistence or personal use" (Noweg & Songan, 2009, p. 35). Despite the contribution of the forest to the communities, measures of taken for conservation of resources are often minimal. Often, forest conversion into commercial agriculture caused the forest lands to lose. "Overall global forest areas registered net decrease of 1.7 % between 1990 and 2005 at an annual rate change of 0.11 percent (Tietenberg & Lewis, 2015, p. 281). For communities dependent on forest resources for livelihoods, sustainability of forests are important. In Kampung Tambirat we aim to find the income generated from forest resources, the measures of conservation challenges and types of assistance required so that the villagers' engagement in the activities will flourish in the future and benefit the younger generations.

A livelihood is a means of making a living, securing necessities of life such as water, shelter medicine and clothing. The most commonly used definition of livelihood written by Carney (as cited in Haan, 2012) "A livelihood system comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhances its capabilities and assets both now and in the future, while not undermining the natural resource base (p.347). According to (Food and Agriculture Organization, 2016) example of shocks and stresses includes earthquakes, droughts and other natural disasters; economic recession, pest and disease epidemics, wars, hungry season, death of family. These are the unpredictable events causing households to fall into poverty. "Livelihood studies were brought to the centre stage of development studies in the late 1990s and the beginning of new millennium, when the so-called Sustainable Livelihood Framework was strongly promoted by the Department for International Development (DFID), the British state development corporation agency" (Haan, 2012, p. 346).

Carney ( as cited in Scoones, 2009) , stated that livelihoods consist of 5 types of assets that are the human, social and political, financial, natural, and physical. In study conducted by Haan (2012), the natural asset however is deemed important in rural areas compared to urban areas as it is less relevant compared to shelter and salary. This is also stated by Sunderln et al. (as cited in Alinovi, D'Errico, Mane, & Romano, 2010), whereby high dependent on forest for livelihood occurs in areas of high forest cover and prevalence poverty. The priority of assets differ from those of urban and rural communities. “Livelihood strategies are the combination of activities that people choose to undertake in order to achieve their livelihood goals. They include productive activities, investment strategies and reproductive choices” (Alinovi, D'Errico, Mane, & Romano, 2010, p. 7). Access to assets, policies, institution and process in use of these assets influence people choice in livelihood strategies. Chambers and Conway (1991), suggest that there are determinants of livelihood strategy in which many are ascribed by birth such as in India if children born into a caste with assigned role a potters or shepherds or a person is socialised and apprenticed into an inherited livelihood; pastoralist or fishperson and creating new households in same occupation.

Malaysia consists of 13 states and three federal territories between two large land areas. East Malaysia which shares border with Indonesia and Brunei, is made up of two large states. Which are Sabah and Sarawak and one federal territory. “Malaysia is one of 17 countries that is “megadiverse” with at least 20% of world known animal species. Malaysia’s national forest compromised of 20.46 million ha, about 62% consisting of land area.” (Forest legality, 2010). State of Sarawak is located between latitude 0°50’ and 5°N and longitude 109° 36’ and 115° 40’E and has area of 124,449.5 sq.km. Sarawak compromises 2.5 million population out of 29.7 million of Malaysia as a whole. It has 11 divisions containing 31 districts and subdistricts (Sarawak Facts aand Figures, 2013) . Statistics by Sarawak Forestry (2010), reported that Sarawak consists of a total of 8.4 million ha of forests with a total of 33 national parks, 4 wildlife sanctuaries and 12 nature reserves. The longest river is the Batang Rajang River with a total of 174 km long while the highest peak is the Murud Mountain with height of 2422m. In this research, it was conducted in Samarahan division, at the Asajaya district. The Asajaya district holds a population of 32700 people with a total of 53 villages. Its area covers a total of 302.8 square km (Sarawak Facts and Figures, 2013).



**Figure 1.** Sarawak in Borneo.

Kampung Tambirat is chosen for conducting this study, and is the biggest village in the Asajaya. According to (Mohamad, 2016) the name comes from a tree which is called “Mbirat”, and a traveller named Tam arrived to reside by the Ketup River as he was in search of water. The village was established in 1918. Currently, it compromises a total of 2978 people residing at the village, a total of 1364 houses. In terms of ethnicity. Malays consist of 1730 males and

and 1204 females while the Chinese made up of 31 males and 13 females (Mohamad, 2016). There are a total of 463 households in the village with an area of 415 acres. (Asajaya district office, 2016). Kampung Tambirat has very limited access to health and safety. Villagers have to travel within 15 kilometres to reach Klinik Kesihatan Asajaya and Police Station of Asajaya. The nearest small town is Asajaya which also takes up to 16 kilometres away from the village. However, Kampung Tambirat has well access to education. There is a secondary school, Sekolah Menengah Kebangsaan Hajah Laila Taib, previously known as Sekolah Menengah Kebangsaan Asajaya (2). There are also primary schools available; Sekolah Kebangsaan Kampung Tambirat and Sekolah Jenis Kebangsaan (SJK(C)) Chung Hua, Tambirat. There is also a kindergarden caters for children’s early education, “Tabika Kemas”. In terms of business premises, there are 11 shops, 5 food stalls or ‘warung’, and 2 workshops. There are also 2 computer labs, 7 mosques, 4 “surau”, 1 hall and 1 Mini Library. The village also has road access of tarred roads with 5.5 km long and cemented road of 2.5 km long. Clean water is supplied to 485 houses and 427 houses receive 24 hours supply of electricity. Sanitation system consists of “tandas tarik” and “tandas curah”. A number of 215 houses use “tandas tarik” while 282 houses have the “tandas curah”. The main economic activities of the villagers are agriculture consisting of coconuts, oil palm, bananas and paddies followed by husbandry of cows and goats, and aquafarming. (Mohamad, 2016). Kampung Tambirat is also famous with their “gula apong” a type of palm sugar extracted from Nypah trees production, besides “Belacan”.

**Table 1.** Villagers average income according to economic activities.

<b>Economic Activities</b>	<b>Average Income (RM)</b>
Oil palm	800-1200
Coconut	500-800
Bananas	100-150
Paddy	300-500
Goats/Cows Husbandry	2000
Aquafarm	1000

Kampung Tambirat is surrounded by swampy areas. It lies along the coastal zone. There are plenty of mangrove forests along the coast. As reported by Latiff ( 2008) estimation of Nypah area in Sarawak accounts a total of 0.14 million ha. The villagers’ livelihoods are influenced by the mangrove forests. There are only a few mangrove trees at the swamp and most of the area are dominated by Nypah palm trees. *Nypah fruticans* are the only palm that grows in mangrove vegetation, best adapted to grow in mangrove coastal areas with moderate salt load (Theerawitaya, Samphimphany, Cha-um, Yamada, & Takabo, 2014). The only mangrove trees found are “pokok api-api” (*Avicennia spp*) in which there are only a few found at the area. This is due to the fact that mangrove trees as compared to Nypah needs high salinity of water to live. In study conducted by Taha, Persada, Rosli, & Ghazali (2008), a Tsunami tragedy that occurred in 2004 at Kuala Sungai Abdul, Seberang Perai Utara, Penang has been a proof on the ability of Nipah forests to withstand and crash the big waves as it reduced the result of wave impact from the incident as compared with areas surrounding it. The Nypah forests benefit the communities in terms of environment,ecology, social and economy. It provides habitat for flora and fauna as well as provide others uses to the people. According to Yusop, Hamden, & Ahmad ( 2008), the sap extracted from the trees can be processed into sugar, vinegar, water and the leaves can be used for roof thatching or for the wrapping of traditional local desserts such as *Takir* , *Cerorot*, *Ketupat* and *Tapai* . The forests are also homes for marine animas like crabs, snails or *Siput Tengku Yong* .

## **MATERIALS & METHODS**

Kg Tambirat was chosen with a population of 2978 people. A total of 10 villagers were interviewed to obtain in-depth information about their livelihood strategies based on forest resources in Kg Tambirat. The respondents also led researcher into the mangrove forests to observe the setting and what they go through to obtain the resources. Besides interviewing, researcher also became a participant observer thereby asking questions and taking notes. According to Denzin, and Lincoln, qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter meaning that qualitative researchers study things in natural settings and making sense of, or interpret phenomena in terms of what meanings people bring to them (as cited by Mc Intyre, 2005, p.209). However with only 10 respondents, they did not represent the forest gatherers of the village as a whole and it could not be generalized as compared to using qualitative method.

## RESULTS AND DISCUSSION

A total of 10 respondents were interviewed to determine their livelihood strategies based on forest resources. Five respondents interviewed are aged between 40-50 years old, four people are between 60-70 years old while the oldest respondent is respondent 1, which is 78 years old. All of them are of Malay ethnicity and are Muslims. They are all married with children and they did not receive high education. The oldest respondent, that is respondent 1 who lives through Japanese and communist occupation had to leave school at 8 years old due to war. Ever since, he started tapping Nipah trees in front of his home helping his father and continue with the job until he got married and has children. The other respondents also left school at primary level and secondary level, the highest qualification are only up to Form 5. Due to limitations in education, they resort to small scale farming for own consumption or for sale, fishing and collect forest resources. Respondent 7 has a small scale family coconut farm for own consumption and for sale if there is demand from nearby locals. Chickens, ducks and goats are also herded for subsistence. However, respondent 4 also owns a small shop in the village besides owning small scale oil palm and coconut plantations and forest resources. Respondent 10 has vegetable and paddy farm for his family use. Fish and other seafood from the nearby river and swamp are also collected.

**Table 2.** Respondents' income.

<b>Respondents</b>	<b>Monthly Cash Income</b>	<b>Non Cash Income</b>
Respondent 1	2000	Chicken, fish, crab
Respondent 2	2500	Fish
Respondent 3	800	Ducks, goats, chickens
Respondent 4	4000	None
Respondent 5	1500	Chillies, crabs
Respondent 6	1500	None
Respondent 7	2000 inclusive of welfare assistance (KWAPM) of rm300 per month	Chicken and coconut
Respondent 8	1000	<i>Pucuk bandung</i> (Tapioca shoots)
Respondent 9	1500	Crabs and <i>tengkuyong sedut</i> (snail)
Respondent 10	1500	Paddy and vegetables

Most of the respondents resort to collect forest resources due to encouragement from family members and is inherited from generations to generations. The respondents also have other options as labourers in oil palm plantation or in construction site but they feel that collecting forest resources is worth the time and the income generated. The forest resources come from the mangrove forests at the coastal area surrounding the village. The lowlands forest are mostly destroyed for agriculture and for other developments. It is not in abundance as compared to the mangroves. Respondent 1, is the only respondent who collected bamboo which is rare and hard to be found in the village for use of tool to catch fish. All of the respondents are very dependent on the Nipah trees which grow in abundance at the mangrove swamp. The products include sugar palm, palm salt, vinegar, *air sadap* (drinks) and the leaves are used for roof thatching. The sap is tapped and collected in a bamboo before dawn. And then the Nypah sap collected is cooked for 6-7 hours in a big pot until it turns brownish. 200 Nypah fruits can produce about 10-15 kg of palm sugar. Wholesale

prices range from Rm2.80-Rm3.50 per kilogram. The drinks; *air sadap* is cooked until boils and is left to cool. It is sold at RM4.00 per 1.5 litre. They built a small hut in the middle of forest for the purpose of processing the sap.



**Figure 2.** Nipah sap is cooked using firewood.

The wholesaler will come and collect the processed sap from the producer to be marketed inside the Asajaya district , Kota Samarahan or Kuching. The demand for the product is high especially the palm sugar .There are also other animals that are caught for own consumption that are crab, fish and *tengkuyong sedut* that are found in the mangrove forest. Other forest resources collected include bamboo as a tool to catch fish and *pucuk bandung* or tapioca shoots which grows wildly as a source of food. During forest collection, the respondents face many challenges from wild animals such as monkeys and rats which interfere during collection of sap. There were also cases where two of the villagers were injured when collecting the sap after being attacked by crocodiles. As safety measures, the villagers are advised not to go into the forest during the high tide. Flood also occurs during the monsoon season and this prevents them from going into the forest. The nypah trees also face diseases from pests long time ago causing the leaves to become yellowish and infertile but it no longer occurs in the present. The Nypah trees however decline as years passed due to development of the villages such as road, water canal and so on. The people who engage in the forest resources also decline as only the old folks know and interested to collect Nypah sap and the demand for the Nypah based products is very high. There is a need for the authorities to provide assistance in terms of the tools and appliances in processing. Respondent 8, have yet to have a hut to process the sap and still cooks it at home as he could not afford to build one. The Sarawak Forestry (2016), stated that protected forest is divided into 2, Totally Protected Forest Area (TPA) and Permanent Forest Estate (PFE). Under PFE forest is protected but the resources can still be obtained by people but under TPA the forest is fully conserved and is prohibited from taking any of the resources. So far, there has yet to be any conservation for Nypah forests.

## CONCLUSION

In conclusion, there is a need to conserve the forests for the sake of the villagers who choose it as their main livelihood strategy. The respective agencies or institutions should come to the villages and find appropriate ways to not let the forest diminish as years passed by. Appropriate assistances should be considered to help the villagers in processing the forest resources ; in this case the Nypah sap. The appliances, the raw materials to cook the product and a small hut to process it in the forest requires a huge amount of capital. If the forests are protected under PFE, besides it being protected, the resources can still be collected.

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