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Tapping of Resin Sap and Economic Benefits for the Community of Manggroholo Village, in Saifi District, South Sorong

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Abstract

Agathis is also named as a resin belonged to the family of Araucariaceae immature Agathis tree titled cone, as the adult stands become rounder and irregular. Manggroholo village forest area of South Sorong District in Saifi District is an area of customary forest which is quite overgrown with Agarhis trees (Agthis labilardieri) naturally producing the stiflingly hot resin and has prospective economic value. The activities of tapping and collecting resin executed by the community is one of the primary activities for the community in supporting the family socio-economy. The activity and collection of *Kopal* resin (as the community called with *Kopal*) has long been carried out by the community in Manggrohol Village as a basic livelihood and all of the workforces come from family members. Therefore, the purpose of this study was to find out the tapping activities of resin and the value of its economic benefits for the community of Manggroholo Village, Saifi District, South Sorong Regency. The method used was descriptive and/or survey techniques for the Head of the Family who worked as harvest collection resin, while observations were done directly on community activities related to the tapping of resin accompanied by interviews. The determined sample around 10% of the total number of 123 Heads of Family (KK) represented the respondents about 12 KKs who worked as resin collectors. The results of this study showed the process of harvesting the resin until today that most people still use the traditional mode such harming the resin trees by using machetes /axes, the type of resin that is often used by the lokal community is white resin from agtahis labilardieri trees and red resin from vatica sp trees. The economic value of people's income from harvesting the resin ranged from Rp. 825,.000 to 1,375,000 in one time activity of harvesting (taking). Meanwhile, the total income of the respondents reached Rp. 12,632,000, - per tapping activity, where the average respondent's income reached Rp. 1,052,000 in one activity of tapping.

Keywords: *Tapping resin, value of the economic benefits, indigenous, forests*

INTRODUCTION

One of the sources of non-timber forest products in the form of sap comes from Agathis wood. To consider its abundant potential in Indonesia, resin sap is used as one of the sources of forest products enabling to provide production of both wood and non-timber forest products. From this Agathis tree, it is produced high quality sap known as resin sap. The Agathis tree is often called resin which is a family of Araucariaceae. The Agathis tree is characterized by a large trunk and the branching is slightly flat, there are not a few trunks under the title, 'The young tree is usually cone-titled' only when the adult stands become more rounded or irregular. In Indonesia, the spread of Agathis tree species

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is very broad covering several large islands such as Sumatra, Kalimantan, Sulawesi, Maluku and West Papua. Some of the most important types according to natural spread patterns include Agathis alba from Sumatra and Maluku, Agathis Bornensis from Kalimantan, Agathis Hauri from Sulawesi, Agathis Philippines from Sulawesi, and Agathis Labillardieri from Papua.

Agathis trees or also called resin are usually used its wood because it has a high enough selling value, especially used for carpentry. Powder and plywood belong to the durable group IV and durable III with a weight of about 0.49 wood. The name risen itself is taken because the tree produces *Kopal* (named sap) or what we commonly call "amber". The sap is commonly used for paint, spiritus varnish, plastic, textile coating sizing materials, water proofing materials in printed ink, etc. (Purwanti. dan Hayati, 2009).

Agathis produces resins of high economic value. The sap can be used as a material of spiritus paint, sizitrg material, water-proofing, printing ink, varnish, electrical insulation, matches, plitur material, lern, leather industry, *batik* industry as a wax mixture, paper industry (filler material in paper making needs 0.5% of 2000 tons), soap industry as a 5-10%, patching '*papa'* joints in making boat and most importantly *Kopal* resin used for sea or soil cable wrapping.

Manggroholo village forest area of south Sorong, Saifi district which is a customary forest area is quite overgrown with Agarhis trees (Agthis labilardieri) naturally resulting in stiflingly resin and has prospective economic value. Tapping and collecting resin activities carried out by the community are one of the main activities for the community in supporting the socio-economic community around the forest. Socio-economic aspects around the forest such as the number of family members who use non-timber forest products in the sense of resin sap, the age of resin collecting communities, the level of education income earned during collecting, long settled, having forest land and the experience of taking or tapping resin which is directly controlled can affect the pattern and system of water use. the forest is in the form of resin. Activities and collection of resin sap (known as Kopal by the local community) has long been conducted by the community in Manggroholo village in Saifi district, South Sorong Regency. Even some communities have made this resin harvested farming activity as a basic livelihood and its labor comes from family members.

Based on the description, there are sustainability issues about the tapping activities of resin sap and the value of its economic benefits for the community of Manggroholo village, the district of Saifi, South Sorong Regency. From the interview with one of the villager in Saifi district namely, the head of the village, that the problem in the research is that the community does not know the technique of the pattern of tapping resin in a modern way and still within the traditional mode and the people of Saifi village do not know generally the value of the benefits of resin obtained by each wiretap marketed on resin store. Hence, the researchers are expected to be able to think about solutions that how to use resin tapping activities by the community of Manggroholo villange in Saifi district and the value of resin economic benefits produced by the village community in harvesting resin sap?

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RESEARCH METHODOLOGY

The study was conducted in South Sorong Regency, specially in Manggroholo village as an indigenous forest of Saifi district ttribe for 3 months, during August and October 2020. The equipment and materials used included map of the general picture of the research location which served as a place to take research sample data. Camera as research documentation, *'Infokus'* for percentage results, writing stationery notes, maps for participants, writing stationery to record data or information. Quisioner included an interview sheet.

The steps consisted of several steps of activities including the preparation of research implementation activities and research implementation methods used.

The preparatory stage began to find partners at the location of activities in this case the tribal community in Manggroholo village of Saifi district of South Sorong regency of West Papua Province.

The activity was carried out for 3 months running. The method used was the descriptive method. Meanwhile, the survey technique to the Head of the Family (KK) and direct observation of the activities to the Saifi village community as a maggroholo village customary forest related to the tapping of resin sap utilized and accompanied by interviews guided by the questionnaires listed previously. To get detailed research data, it was determined a sample of 10% of the number of 123 KKs amounted of 12 KKs who worked as resin sap seekers in Manggrohoro Village, particularly in the customary forest of the village of Saifi district of South Sorong Regency which was certainly based on the consideration of the community often used forest products in the form of resin as one of the family economic resources other than the activities of farming and concocting.

The data collected in this study included primary and sub-principal (secondary) data. The primary data obtained from the interview is free to be active to the indigenous villages of the Manggroholo tribe of Saifi District who utilized forest products in the form of resin sap collected. Secondary data is obtained from the results of similar research and institutions related to this study.

The research procedures conducted in this study were:

1. Direct observation to find out the activities of the indigenous community of the Manggroholo tribe in taking, tapping and collecting resin sap.
2. Interviewing directly the manggroholo tribal community by staying guided by questionnaires provided related to activities about tapping resin and the value of economic benefits for the local community, namely saifi village.
3. Collecting primary and secondary data: Primary data included the tapping activities of resin from various types of resin and socio-economic factors of communities which included age, education level, work experience, number of experiences of taking resin sap, family income, and also the data covered the general state of the research site.
4. Data Analysis

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The economic value of resin rubber utilized by the community was calculated based on the local market price approach using the formula (Nurfitriani 2001) dan (Purwanti dan Hayati, 201 9) NMED:(DxH (Rp/bulan)

Where:

NMED: Value of Resin Economic Benefits

D: The amount of Resin acquired and sold (kg)

H: Selling price (Rp/kg)

RESULTS AND DISCUSSION

Manggroholo Village is administratively included in the area of Saifi District of South Sorong Regency with an area of 1,695 Ha with territorial boundaries as follows: The North borders Kwowok village, South area borders with Sira village, East area with Komanggaret village, West area with Mlaswat village which can be seen in the figure provided in the following.

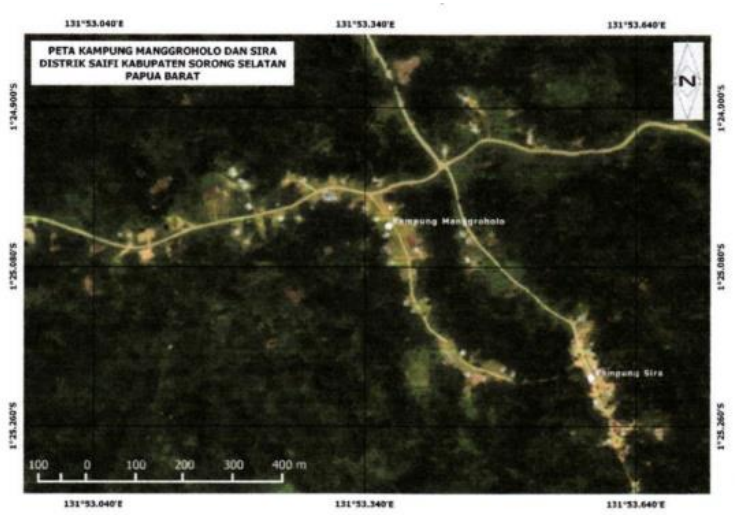

Figure 1. Research Location

Based on the results of research, that the community in Manggroholo village of Saifi district who stay and live around forest areas generally carry out the activities to use forest resources as family economic resources. The majority of activities include farming, hunting, beating the sago and tapping resin sap. The activity of tapping resin for the community in Manggroholo village is one of the additional activities of the community in an effort to increase the family economy. Resin sap is produced from agtahis trees which grow naturally in forest areas. Based on the results of observations, the Agathis tree is quite a lot of 'nunbuh' in the forest area of Manggroholo village.

The Activities Of Tapping Resin Sap By The Village Community Of Manggroholo In Distrik Saifi.

The important equipment used to tap resin sap is commonly made from natural materials of the indigenous manggroholo tribe which is a product of forest such as rattan and palm tree parts.

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The uses and each type of tapping equipment are as follows:

1. Machetes and blade knife that serve to be made a notch of holes suction or tap scrape and take the results of resin and open / renew the wound tap (huring).

Figure 2. Tap Equipments

2. The resin container obtained is a cone-shaped container with a diameter of 25 cm and a height of 30 cm made of bark or selinder-shaped craft made of woven trees from bark and rattan that are traditionally woven.

Figure 3. Container Reseptacle

3. Climbing ropes are made of woven leather rotan atau small diameter rattan rods that are about 3-4 meters long. The tool is used to massage and support as well as hold the body of a forest farmer who is tapping when it comes the moments to tap and renew the hole in the upper trunk of the lead.
4. The transport basket is a resin sap place shaped like a long round basket and woven from bamboo and betel nut trees and equipped with a rope made of bark so that the cage can be carried like a backpack. This tool can contain about 40 - 50 kg of amber can be seen in figure 4 below.

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Figure 4. Handler basket

Wiretapping Activities And Processes

The process of harvesting the sap of Agatis trees or resin sap until now most of the indigenous villagers of the manggroholo tribe still use the traditional way of injuring resin trees by using machetes / axes.

After the bark is wounded, the resin tree is cleaned so that around the satlap hole that will be made slashed alat of dirt that will probably contaminate the sap that comes out. After cleaning the skin of the stem then done tapping that is by making a wound / hole on the skin of the stem, after the bark is injured rnaka will come out the resin and getah is let flow and collect in the pit until it dries. When resin sap dries then it is harvested and collected according to procedures carried out by forest farmers.

The harvesting time of resin sap is usually about two weeks to a month after wiretapping is made. The way of harvesting or collecting sap from the pit is to remove / scrape the resin from the pit using a sadap knife. Thus, it can be carried into a container of resin rubber. After all the sap in the pit is collected in the resin container, the pit is cleaned from the remnants of the drying rubber and then it is released to the novelty of the sadap wound. After the all resin in one tree harvested is accomodated in a container of resin, then it put in a 'turtuk' basket which is then transported to the place of collection.

Figure 5. Harvested white resin sap

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Types of resin which are frequently used by the community of Mangroholo village of Saifi district are white resin from Agtahis Labilardieri tree and red resin from Vatica sp tree. The collection of resin by the community is still done simply and traditionally, namely by tapping the bark, the sap is left for up to 2-3 months. The resin is stored for sale and some are used as a substitute for kerosene for lighting.

The Value of Resin''s Economic Benefits Generated by the Community in Manggroholo Village

The activities of taking non-timber forest products in the form of resin sap by the community in Mangroholo village of Saifi district are enough to provide additional sedition or catchment for the community. In calculating the direct value, a direct approach is carried out based on the price of resin in the market. The results of this study showed that, resin sap produced by the indigenous people of manggroholo village through the activities of the greeter can provide direct benefits (tangible), meaning that the resin sap obtained directly sold to buyers in the location. The economic value of cat's eye resin obtained by community respondents is seen in table 3 below.

Table 1. Economic Value of Resin rubber produced by the community of Manggroholo village

Respondent	The yield of Damar obtained and sold (kg/month)	Selling Price (Rp/kg)	Value of Resin (Rp/Sadap)
n	*D*	*H*	*NED*
1	4	275.000	1.100.000
2	3	275.000	825.000
3	4	275.000	1.100.000
4	4	275.000	1.100.000
5	5	275.000	1.375.000
6	4	275.000	1.100.000
7	3	275.000	825.000
8	4	275.000	1.100.000
9	4	275.000	1.100.000
10	3	275.000	825.000
11	4	275.000	1.100.000
12	4	275.000	1.100.000
Total	47	-	12.632.000
Average	3.92	-	1.052.666

Source: Processed data 2020

The results of the study showed that the amount of resin obtained reached 47 kg with an average in a respondent of 3.92 kg. Public income from once taking resin sap ranges from Rp. 825,000 to 1,375,000. The total income of the respondents reached Rp. 12,632,000, - per tapping activity, where the average respondent's income reached Rp.

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1,052,000 per tapping activity. The level of community dependence on the utilization of resin forest products in Mangroholo village of Saifi district is very dependent on the activities of working and season. As in the literature according to Agustina (2011), if the contribution of the value of the interconnector to respondents is 40-75% to the total income then it can be concluded that the respondent has an interest or dependence which is very dependent on the forest area.

In conducting the tapping of the resin sap, there is no written agreement between fellow citizens that is if the citizens have tapped one resin tree, and other residents will not release wiretaps or collect the results of resin on the tree. However, it depends on o a period of one month, the results of the sdapan are not taken by the eavesdropping, then the resin will become public. This shows the existence of a community and mutual respect for the rights of every citizen that is done and agreed instinctively. The most important thing and it should be noted is that in harvesting this darnar the people of Mangroholo Village do not recognize the felling of trees. The forest area in Mangroholo Village is quite rich in forest resources which are a source of social economy for family life / community.

The results showed that the community's use of forest products in the form of resin sap traditionally and mostly the commercial means that it is used for sale or commercializing. Resin tapping activities are carried out by the community once a week, from every notch of the wire can be obtained resin as much as 3- 5 kg of resin. The resin is then handled to the handlers such as merchants collecting and or exchanged for their basic needs such as rice, sugar, cooking, oil and other goods.

People's income from non-timber forest products is not too large, it is due to the difficult marketing process resulting from all families also utilizing the same forest products. In addition, there are several types of non-timber forest products that are very economically valuable such as agarwood, but this forest products are already very rare. From the results of interviews and filling in custody, it can be concluded that the distribution of public income can be categorized into three parts, namely low income (< Rp. 1,000,000), moderate income (Rp. 1,000,000 - 2,000,000) and income (> Rp. 2,000,000)

CONCLUSION

The conclusions of this study are:

1. The activities of tapping forest resin sap by indigenous community of manggroholo tribe in Saifi district, South Sorong Regency, includes the process of tapping resin which is cleaning of bark, making eavesdropping wounds, holes in the bark of agathis tree trunks, making tap pathways, after the bark is tapped the sap will come out, and the sap is allowed to flow and collect in the pit until it dries. After the resin sap dries, then the resin is harvested / collected.
2. The value of resin economic produced by the community in Manggroholo village, Saifi District, from the results of tapping resin sap reached Rp. 12,632,000, - per one tapping, where the average income of respondents reached Rp. 1,052,000 per one

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tapping. Where the total resin collected as much as 47 kg with an average per respondent of 3.92 kg. Public income from once taking resin sap ranges from Rp. 825,000 - Rp. 1,375,000.

3. Socio-economic factors of the indigenous peoples of the manggroholo tribe which include the age of farmers collecting resin sap, the level of education of indigenous peoples, the number of dependents in the family and income is determined from the business pattern of utilization of resin by the local community. The income of the people of Mangroholo villaage from tapping white resin sap is said to be quite good, namely the average largest percentage of income ranges from Rp. 1,000,000 - Rp. 2,000,000, - per one tapping which is 58.33% (7 KK).

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