Utilization of Non-Timber Forest Products by the Karangsari Village Communityin the Use Zone of Mount Ciremai National Park

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Abstract. Mount Ciremai National Park (TNGC) has abundant natural resource potential, including non- timber forest products. The surrounding community, especially the people of Karangsari Village, utilize these non-timber forest products to meet their daily needs. This study aims to obtain information about the potential and utilization of non-timber forest products by the community. Collecting data on the use of forest resources using interview methods and distributing questionnaires, to determine the potential of non-timber forest products with an inventory of potential exploration methods. Based on the results of the analysis of the vegetation of 24 species of non-timber forest product plants. Utilization of natural resources by the community in the form of food plants, medicinal plants and animal feed. Forest resources that are always used by the community are avocado (*Persea americana*), Jackfruit (*Artocarpus heterophyllus*), Coffee (*Coffee sp*) and Kaliandra (*Calliandra Calothyrsus*).

Keywords: Non-timber forest products; TNGC; food plants; medicinal plants.

1 Introduction

Indonesia is a country that is rich in natural resources. Forests in Indonesia have the highest biodiversity in the world, although their land area is only 1.3% of the land area on the earth's surface [1] (Forest Watch Indonesia, 2000). As stated by [2]Yuda (2009), Indonesia is one of the 7 countries that have megadiversity, tropical forests are the richest terrestrial ecosystems on earth.

Basically, the wealth of forest resources can be used to support the life of the surrounding community in a sustainable manner. Community activities around forest areas in utilizing forest resources have been carried out for generations. Community activities around forest areas in utilizing forest resources have been carried out for generations. Community attachment to natural forests can be seen from the socio- economic activities of village communities around the forest in order to meet their daily needs [3] (Lewerissa, 2015). Several studies have shown that community interaction with the forest tends to be high, marked by the number of people who fulfill their daily needs from within the forest area, such as taking firewood, farming, hunting and taking non-timber forest products [4]- [7] (Subarna, 2011; Nurraini, 2013; Sumanto, 2013). and Takandjandji, 2014). According to [8] (Rahmah et al, 2019) although the use of forest resources in the form of taking wild plants and animals within the national park area for consumption, especially production, is not supported by regulations, it cannot be denied that the practice of utilization is carried out in the community.

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Mount Ciremai National Park as one of the conservation areas in its management needs to pay attention to the use of forest resources by the people who live in and around the area. Utilization of forest resources in the form of wood, non-timber and wildlife in the national park area can have a negative impact on the balance of the national park ecosystem. The existence of data and information regarding the potential and utilization of forest resources by village communities in the utilization zone in Mount Cirema

National Park is very important to know as a material for consideration of the area management plan and will be input for managers in taking better management steps and the benefits will be felt by the community. surrounding communities, so that disturbances to the sustainability of Mount Ciremai National Park can be avoided. This study aims to determine the potential and utilization of non-timber forest products in the utilization zone in the Gunung Ciremai National Park area.

2 Methodology

The location of the research was carried out in the utilization zone of the Mount Ciremai National Park Area, Karangsari Village, Darma District, Kuningan Regency. Primary and secondary data were collected using observation methods, potential inventory, interviews, literature studies, and documentation. Research respondents are people who utilize forest resources in the utilization zone of Mount Ciremai National Park, especially the people of Karangsari Village, Darma District, Kuningan Regency. The technique of determining respondents in this study used purposive sampling by determining respondents based on the needs of the researcher and deliberately selected based on certain considerations. The criteria for the selected respondents are residents who are involved in the use of non-timber forest products in the utilization zone of Mount Ciremai National Park

Data on the utilization of forest resources were analyzed in tabulation to group each forest resource by type, benefit and amount. The data that has been collected is then analyzed descriptively. The potential of forest resources contained in the utilization zone of the national park is carried out with a potential inventory, then a vegetation analysis is carried out to determine the condition of the vegetation, determine the composition and dominance of a type of vegetation at the research location. The Important Value Index (INP) shows the importance of a plant species and its role in the community.

Important value index (INP) data processing [9] (Indrayanto, 2006):

$$\text{Density of a species} = \frac{\text{number of individuals}}{\text{sample plot area}}$$

$$\text{Relatif density} = \frac{\text{density of species}}{\text{density of all species}} \times 100\ \%$$

$$\text{Frequency of a species} = \frac{\text{number of plots found a species}}{\text{frequency of all species}}$$

$$\text{Relatif Frequenscy} = \frac{\text{Frequency of species}}{\text{Frekuensi seluruh jenis}} \times 100\ \%$$

$$\text{Dominance of a species} = \frac{\text{area of the base of species}}{\text{area of sample unit}}$$

$$\text{Relatif Dominance} = \frac{\text{Dominance of species}}{\text{Dominasi seluruh jenis}} \times 100\ \%$$

Important value index (INP) trees = KR + DR + FR

3 Result and Discussion

Based on the results of research on the village community in Karangsari, the average livelihood is as

farmers and as farm laborers. This is because the natural conditions are suitable for growing a vegetable garden. There are people who work on their own land or land owned by others to meet their needs.

Potential non-timber forest products (NTFPs) in the Gunung Ciremai National Park utilization zone are utilized by the Karangsari Village community in the form of food plants, medicinal plants, animal feed and craft materials and other forest products that will provide added value to their lives. Non-timber forest products used by the community can be seen in Figure 1.

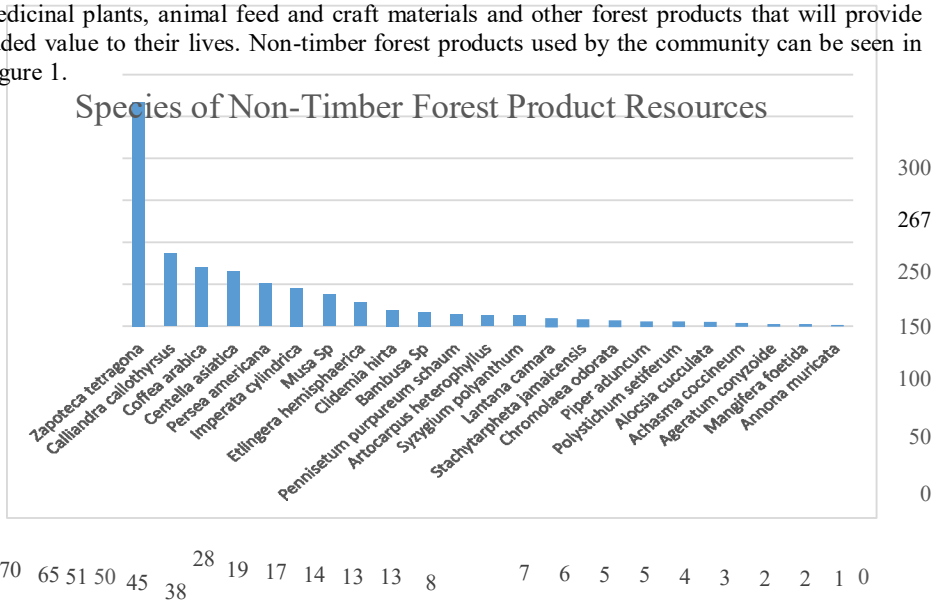

Figure 1. Species of Non-Timber Forest Product Resources

The dominant type of non-timber forest product is white calliandra (*Zapoteca tetragona*). The spread of calliandra occurs because the Mount Ciremai National Park area has completely become open land [10] (BTNGC, 2013). [11] (Hermawan et al, 2017) explained that invasive plant species such as calliandra have dominated several open areas in Bukit Barisan Selatan National Park. (Hermawan et al, 2017) also added that calliandra grows well in open areas with lots of sunlight. Utilization of non-timber forest products carried out by the community is carried out individually. This is supported by the statement of [12] Ardiansyah, (2008) which states that for the community around the forest, the existence of the forest is very meaningful for their survival, they take advantage of existing resources in the forest such as firewood, food, medicines and other forest products that are will add value to their lives. [13] Wijaksono (2013) which states that the longer a person lives and settles in an area, in general, it will have a positive influence so that awareness grows to maintain and manage the forest area.

Non-timber forest products that are often used by the people of Karangsari Village are food plants, medicinal plants, animal feed and craft materials, including avocados (*Persea americana*), coffee (*Coffee arabica*), bananas (*Musa sp*), jackfruit (*Artocarpus heterophyllus*), Salam (*Syzygium polyanthum*), Limus (*Mangifera foetida*), White Calliandra (*Zapoteca tetragona*), Red Kaliandra (*Calliandra callothyrsus*), Elephant Grass (*Pennisetum purpureum*), and for Bamboo (*Bambusa sp*) used for common interests such as for events in village and so on. These types are for personal consumption for daily life as well as for sale. The community of Mire Village, Ulubongka District, Tojo Una-Una Regency utilizes non-timber forest products in the form of candlenut, rattan and honey bees [14] (Salma et al, 2020 Based on the results of the analysis, it was found that the villagers who were respondents knew several types of wood found around the National Park. 60% of the people of Karangsari Village know the types of wood found in the utilization zone and do not use wood from the National Park area at all. From the results of interviews with the community, knowledge of these types of wood has been passed down from generation to generation. The frequency for taking wood from the National Park area is not used by the community at all.

Utilization of non-timber forest products that are often used by the community are coffee, fruits and calliandra plants for animal feed. The use of coffee is very often used by the community because in the past people who grew coffee plants in the National Park area were still managed by Perhutani. Forest products in the form of coffee have a selling value which according to the community can help the economy. For the use of medicinal plants is not often done by the community, this is because the presence of medicines from the shop causes people to rarely take plants to be used as medicine.

4 Conclusion

Found 23 types of non-timber forest products that can be used as food plants, medicinal plants, animal feed and craft materials. The people of Karangsari Village utilize non-timber forest products in the form of food plants, medicinal plants, animal feed and craft materials, including avocados (Persea americana), coffee (Coffee arabica), bananas (Musa sp), Jackfruit (Artocarpus heterophyllus), Salam (Syzygium polyanthum), Limus (Mangifera foetida), White Kaliandra (Zapoteca tetragona), Red Kaliandra (Calliandra callothyrsus), Elephant Grass (Pennisetum purpureum), and for Bamboo (Bambusa sp) are used for common interests such as for events in the village and so forth

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