

**CONTRIBUTION OF NON-TIMBER FOREST PRODUCTS (NTFPS) TO THE INCOME OF FOREST EDGE FARMERS IN COMMUNITY FORESTS (HKM) AIK BERIK VILLAGE, NORTH BATUKLIANG DISTRICT, CENTRAL LOMBOK REGENCY**

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**ABSTRACT**

The research was conducted in the Community Forest Area (HKm) of Aik Berik Village, North Batukliang Subdistrict, Central Lombok Regency, with the aim of determining the income of community forest farmers from non-timber forest products and paddy farming. Additionally, the study aimed to analyze the contribution of non-timber forest products to the income of paddy farming in the community. The objectives of this research were to identify the types of Non-Timber Forest Products (NTFPs) most utilized by Community Forest Farmers in Aik Berik Village, analyze the contribution of NTFPs to farmer income, and evaluate the constraints affecting the utilization of NTFPs in the HKm of Aik Berik Village. The research method used was descriptive with purposive sampling. The results showed that durian, banana, avocado, and taro were the most used NTFPs by farmers. The average income of farmers reached IDR 35,857,179 per year, with NTFPs contributing 70.04% to the total income. This contribution reflects the significant role of NTFPs in improving the welfare of farmers and the economic sustainability on the outskirts of forest areas. Constraints such as weather, market fluctuations, and price instability influence farmers' income in using NTFPs. This study provides important insights for the management of NTFP resources in HKm and promotes economic sustainability for communities on the forest edge.

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**INTRODUCTION**

Forestry development, as one part of national development, is directed at providing maximum benefits for the people's prosperity in a sustainable manner. For communities around and within forest areas, forests are natural resources that can provide basic community needs such as food, medicine and non-timber forest products for families. For modern society, forests have various functions, namely economic, protection and beauty (Hidayat, 2008).

Forests and the people who live around them are inseparable parts. Directly (taking forest products), or indirectly (farming) has a big impact on forest sustainability. Apart from that, forests can also provide additional income in the form of non-timber forest products, such as hunting, fishing, bee honey, jernang, rattan, gaharu, swallow's nests, and so on (Fauzi, 2008).

Non-Timber Forest Products (NTFPs) have very strategic value, NTFPs are one of the forest resources that have comparative advantages and have direct contact with communities around the forest. The diversity of types of non-timber forest products used by communities around the forest, some of which are used consumptively, makes it difficult to assess precisely the extent of the actual contribution of forest and non-timber products to people's lives. The collection of HHBK does not require complicated permits, as in the collection of timber forest products (timber), forest communities (people who live around the forest) are generally free to collect and utilize HHBK from within the forest. Communities are not prohibited from collecting and utilizing NTFPs in both production and protected forests, except in nature reserve areas and nature conservation areas (Department of Forestry 1990). Therefore, apart from being a source of foreign exchange for the country, NTFPs such as rattan, animal meat, honey, bamboo, bananas, and various kinds of plant oils, medicinal ingredients, and so on are a source of livelihood for millions of forest communities. West Nusa Tenggara Province (NTB needs assistance and research in cultivation by academics and researchers from the Center for Research and Development of Non-Wood Forest Products Technology (BPPTHHBK) as the parent agency of KHDTK and also in collaboration with Udayana University and the environmental observer Kehati Foundation, (Hariani E, et al. 2023)

Community Forestry (HKm) is a process of change that leads to wider community involvement in forest management. As a process, the HKm concept does not have a standard system or definition, but develops according to the needs, conditions of society and the socio-economic system, as well as agreements between the parties involved. Community forestry is the control and management of forest resources by local communities to meet household needs and as an integrated part of the local agricultural system (Soemarwoto, 2000).

West Nusa Tenggara (NTB) is an area that has abundant agricultural resources apart from the tourism sector, one of which is forest products which are managed jointly by the government and the community (Ansya M, et al. 2023) and are known as HKM (Community Forests) which are located in The Central Lombok Regency that has HKM is Aik Berik Village which has an area of  $\pm 4,187$  hectares, which includes HKm of 840 hectares. The total area of the village consists of 418 hectares of rice fields and 3,765 hectares of dry land. The land is for 236 hectares of people's gardens and 3,483 hectares of state forest. Most of the population work as field farmers, most of the people also depend on forest products for their living.

The research, which was conducted in Aik Berik Village, North Batukliang District, Central Lombok Regency, aims to see how much non-timber forest products contribute to community income, especially farmers who live around community forest areas.

Based on the background above, a problem formulation is prepared as follows:

1. What non-timber forest products (NTFPs) are most widely used by farmers in the community forest (HKm) of Aik Berik village.
2. How big is the contribution of Non-Timber Forest Products (NTFPs) in the Community Forest (HKm) of Aik Berik Village to the Income of Regional Farmers?
3. What obstacles affect farmers' income in utilizing NTFPs in the Community Forest (HKm) of Aik Berik Village.

This research aims to find out the types of non-timber forest products (NTFPs) that are most widely used by farmers and to find out the contribution of non-timber forest products (HHBK) in community forests (HKm) and to find out the obstacles that influence farmers' income in utilizing NTFPs in forests. Community (HKm) of Aik Berik Village.

The expected benefit of this research is to provide an overview of the contribution of Non-Timber Forest Products (NTFPs) to farmers' income in Aik Berik village, North Batukliang subdistrict, Central Lombok district and as a reference for future research.

## METHOD

The research conducted focuses on descriptive methods, where the aim is to understand the value of one or more independent variables without making comparisons or relationships with other variables. Sugiyono (2017) explains that this approach aims to study variables independently, in contrast to experimental or correlational research which involves interdependent variables.

The data in this research was collected through survey techniques, as described by Nazir (1988), which involved direct questions and answers between researchers and respondents. The

research location is in North Batukliang District, Central Lombok Regency, which has several HKm (Community Forests) in various villages. From these locations, HKm Rimba Lestari Aik Berik Village was chosen as the focus of the study, considering the number of groups and the higher intensity of use of HHBK (Non-Timber Forest Products).

This research uses a combination of primary and secondary data. Primary data was collected through structured interviews with Trigona bee cultivating farmers and key informants, as well as using questionnaires. Meanwhile, secondary data was obtained from literature studies which included relevant literature, articles, journals, books and previous research.

The data collected includes farmer characteristics, such as age, education, land area, land status, and experience in HKm, as well as data related to production input prices. To calculate the contribution of NTFPs, several analytical methods are used as described by Ratningsih (2006), including calculating income from various NTFP sources such as durian, taro, bananas and avocados, as well as income from farming. The contribution of NTFPs to farmers' total income is calculated to understand the economic impact of using these NTFPs.

## **RESULTS AND DISCUSSION**

### **a. Cost and Income Analysis of Non-Timber Forest Products (NTFPs)**

#### **Variable Costs**

Non-fixed costs are costs whose nature can change or are not static (Ramdiawan, et al. 2023). Variable costs are costs whose amounts change proportionally based on the production process, where variable costs in the production of non-timber forest products (NTFPs) consist of labor costs, equipment for harvesting and non-tax state revenues (PNBP). The variable costs incurred by farmers are the average labor wages, namely Rp. 255,111/year, the average cost of production facilities is Rp. 113,889/year and PNBP fees of Rp. 229,647/Year. For the total average variable costs within one year, it is IDR. 598,647.

#### **Fixed cost**

Fixed costs are costs that are static or do not change like the tools used (Ramdiawan, et al. 2023). The fixed costs used for NTFP production consist of equipment depreciation. Where the fixed costs in NTFP production are depreciation of equipment with an average fixed cost of IDR. 72,505,-per year. The tools used during production are sickles, machetes and baskets.

#### **Total NTFP Production Costs**

Total costs are all costs used in the production process, onIn this research, the total costs come from fixed costs and variable costs. The total cost of producing NTFPs is obtained from the sum of fixed costs plus variable costs, based on the calculation results, the total cost is Rp. 671,152,- Per year.

#### **Production of Non-Timber Forest Products (NTFPs)**

The NTFP production referred to in this research is the total amount of NTFP production produced by farmers in the HKm of Aik Berik village, namely Durian, Banana, Avocado and Taro. The average production and total revenue from NTFP production in one year is IDR. 25,785,222,-.

#### **NTFP Production Income in HKm Aik Berik Village**

Total income is the difference between the total income obtained and the reduction in the total production costs of NTFPs for farmers in HKm in Aik Berik Village so that they get a net profit. The following is the total value of NTFP production income for 45 respondents:

$$\begin{aligned} \text{Net profit} &= \text{Total Production Results} - \text{Total Production Costs} \\ &= \text{Rp. 25,785,222} - \text{Rp. 671.152} \\ &= \text{Rp.25,114,070,.} \end{aligned}$$

The total income of NTFP farmers is IDR 25,114,070 per year, which is obtained from the difference between total NTFP receipts and total production costs.

### **b. Analysis of Costs and Income of Rice Farming in Aik Berik Village**

#### **Variable Costs**

Variable costs are costs whose amount changes proportionally based on the production process, where variable costs in rice farming consist of input costs and HOK. The costs of inputs are the costs of seeds, fertilizer and medicines. Meanwhile, HOK costs consist of planting costs,

maintenance, fertilization and harvesting. The total variable costs of rice farming are Rp. 1,293,222,- Per year which consists of costs for production facilities and labor

#### **Fixed cost**

Fixed costs are costs that are still incurred by farmers during the production process and do not change depending on the size of production, where fixed costs in rice farming consist of equipment depreciation and land tax costs. The total fixed costs for rice farming are IDR. 58,669,- per year which consists of equipment depreciation costs and land tax costs.

#### **Total production costs for rice farming**

Total costs are the sum of variable costs and fixed costs during the rice farming production process. The average total cost of farming production is variable costs plus fixed costs, resulting in Rp. 1,351,891,- per year.

#### **Rice Farming Business Production**

The production of this farming is rice in weight units, namely (Kg). The average production, selling price and total income from rice farming for farmers in Aik Berik Village, North Batukliang District, Central Lombok Regency which comes from rice farming is IDR 12,095,000.

#### **Rice Farming Income**

Total income is the difference between the total income obtained by farmers and the total production costs of farming. The total rice farming income of farmers in Aik Berik village, North Batukliang District, Central Lombok Regency is IDR 10,743,109,- which is obtained from the difference between the total annual rice farming income and the total annual farming costs.

#### **c. Contribution NTFP Income Against Farmers' Farming Income in HKm Aik Berik Village**

The income contribution referred to in this research is the contribution of NTFPs in HKm to farmers' income from rice farming. The contribution of NTFP income to shows that the average income of farmers in Aik Berik village is as follows:

According to Ratnaningsih (2006). To calculate contributions use the formula

Contribution = (PNTFP production/Rice Farming Income) x 100%.

Contribution = (Rp25,114,070 / 35,857,179) x 100 %

= 0,7004 x 100%

=70.04 %

Rp. 35,857,179,- per year. The contribution of NTFP income in HKm to rice farming income is IDR 25,114,070 per year or 70.04%. Based on these results, it shows that farmers' income from Non-Timber Forest Products (NTFPs) in Community Forests (HKm) is significantly higher than rice farming income.

#### **d. Constraints Constraints in Utilizing NTFPs in HKm**

Several obstacles faced in utilizing NTFPs in HKm, namely:

##### **Weather**

Erratic weather greatly affects the production of Non-Timber Forest Products (NTFPs) such as bananas, durian, avocado and taro. Weather constraints, such as changes in rain patterns, extreme temperatures, and other weather phenomena, often have a negative impact on NTFP crops. For example, unexpected rain or prolonged drought can disrupt plant growth, reduce water availability, and hinder the pollination process. This has happened in the Lombok area, especially in Aik Berik village, in recent years, resulting in a decline in the production of fruits such as bananas, durian and avocados which are very dependent on stable and regular weather conditions.

##### **Sale**

Sales of Non-Timber Forest Products (NTFPs), such as bananas, often face challenges due to seasonal demand. Products such as bananas tend to see a surge in demand during wedding and traditional event seasons, but sales can drop significantly outside these periods. This creates uncertainty in finding consistent buyers, creating challenges in maintaining the livelihoods of NTFP farmers. Therefore, better marketing strategies and product diversification may be needed to overcome these seasonal fluctuations and help NTFP farmers sell their products more effectively throughout the year.

##### **Price**

Prices of Non-Timber Forest Products (NTFPs), such as taro and bananas, often experience significant fluctuations, sometimes expensive and sometimes cheap, which is a challenge for farmers. Factors such as market supply, harvest season, and changes in demand can cause sharp price variations. For example, during the abundant harvest season, NTFP prices can drop drastically due to excess supplies. However, in periods when supply decreases or demand increases, prices can skyrocket. Price fluctuations like this can affect farmers' overall income and welfare. Therefore, risk management strategies, including good storage and product diversification, can help farmers overcome price uncertainty and maintain their economic stability.

### CONCLUSION

The types of non-timber forest products (NTFPs) that are most widely used by HKm farmers in Aik Berik Village are Durian, Banana, Avocado and Taro. The average income of farmers from 45 respondents reached IDR 35,857,179 per year. It is known that the contribution of NTFPs to HKm is IDR 25,114,070 or 70.04% of farmers' total income per year. These results show that NTFPs from within HKm have a significant role in increasing farmers' income and can be considered a positive indication of the economic sustainability and welfare of communities on the edge of forest areas. The obstacles that influence the production of HKm farmers in Aik Berik Village in utilizing NTFPs are weather, sales and prices.

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