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Strategy for Increasing the Economic Value of Non-Timber Forest Products (NTFPs) in the Forest Area of Batukliang Utara District, Central Lombok Regency

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Abstract: **Economically, non-timber forest product (NTFP) commodities contribute to the livelihoods of forest-adjacent communities; however, processing activities are still very limited. Therefore, it is deemed necessary to process these NTFPs into finished or semi-finished products in order to increase their economic value for the surrounding communities. This research uses a descriptive method. The units of analysis in this study are the communities living near the forest area and agro-industries that are still actively operating in Batukliang Utara District, Central Lombok Regency. The research area was determined using purposive sampling. The number of respondents was determined using quota sampling, resulting in a total of 60 respondents. Respondents were selected using simple random sampling. As for the producers/entrepreneurs involved in NTFP agro-industrial processing, respondents were determined through a census method by studying all existing NTFP agro-industries in Batukliang Utara District. The types of data used in this study are both qualitative and quantitative, with primary and secondary sources. Data collection techniques included observation, interviews, documentation, and in-depth interviews. This study aims to: (1) Identify the types of NTFPs utilized by forest-adjacent communities in Batukliang Utara District, Central Lombok Regency; (2) Analyze the increase in the economic value of NTFPs in Batukliang Utara District, Central Lombok Regency; (3) Determine priority NTFP products in Batukliang Utara District, Central Lombok Regency; and (4) Formulate effective strategies to develop NTFP agro-industries in Batukliang Utara District, Central Lombok Regency.**

Keywords: **NTFPs, Value Added, NTFP Priorities, Development Strategy.**

I. INTRODUCTION

Forests have long been utilized, among other things, as sources of various commodities (forest products) to meet human needs. Forest products refer to anything obtained (produced) from forests or forest areas, whether of plant or animal origin. Forest products can be classified into two categories: timber or major forest products, and non-timber forest products (NTFPs) or minor forest products (Satriadi *et all*, 2022).

Non-timber forest resources refer to all biological products that can be obtained and harvested from forest areas, encompassing all biological products from the forest, including various plant products (vegetative/flora)—both higher and lower plants—and various types of animals (fauna), ranging from prokaryotic organisms to fully developed eukaryotic animals (Wahyudi, 2013).

Non-timber plant commodities have long been utilized to meet the economic needs of communities living near forests. At least 24 types of commodities are managed by the community, 12 of which are considered staple plants, including fruits, vegetables, starch crops, and medicinal herbs (empon-empon group).

Economically, NTFP commodities make a significant contribution to the local economy of forest communities. However, processing activities are still rarely carried out. Therefore, it is considered necessary to process these products into finished or semi-finished goods in order to increase their economic value and generate greater benefits for forest communities (Dirawan et al., 2018, *Jurnal Hutan Tropis*, Vol. 6 No. 3).

In light of these issues, it is necessary to conduct a study entitled **"Strategy for Increasing the Economic Value of Non-Timber Forest Products (NTFPs) in the Forest Area of Batukliang Utara District, Central Lombok Regency."**.

This study aims to:(1) Identify the types of non-timber forest products (NTFPs) utilized by communities surrounding the forest in Batukliang Utara District, Central Lombok Regency;(2) Analyze the increase in the economic value of NTFPs in Batukliang Utara District, Central Lombok Regency;(3) Determine the priority NTFP products in Batukliang Utara District, Central Lombok Regency; and(4) Formulate effective strategies to develop NTFP-based agro-industries in Batukliang Utara District, Central Lombok Regency.

II. METHODS

The method used in this study is the descriptive method. The units of analysis are the communities living around the forest area and the agro-industries that are still actively operating in Batukliang Utara District, Central Lombok Regency. The research area was determined using purposive sampling. The number of respondents was determined using quota sampling, resulting in a total of 60 respondents. The selection of respondents was conducted using simple random sampling. Meanwhile, the selection of producers/business actors involved in NTFP-processing agro-industries was carried out using the census method, by examining all existing NTFP agro-industries in Batukliang Utara District.

Data Analysis

1. Identification Types of Non-Timber Forest Products (NTFPs)

To identify the types of non-timber forest products (NTFPs) cultivated by forest farmers in Batukliang Utara sub-district, Central Lombok Regency, **descriptive analysis** was used. Descriptive analysis is a method employed to analyze data by describing or illustrating the collected data as it is (Sugiyono, 2014).

The identification of NTFP types was conducted through several stages:

a. Collection of Primary and Secondary Data

Primary data was collected through direct observation in the field and interviews with forest farmers and community leaders. Meanwhile, secondary data was obtained from relevant institutional documents, such as the Forestry Office, KPH Pelangan Tastura, and previous research reports.

b. Structured Interviews and Questionnaires

Respondents were asked to complete a prepared questionnaire, and structured intervi**ews** were conducted to gather information regarding the types of NTFPs cultivated, their availability, the number of users, and selling prices.

2. Enhancement of Economic Value of Non-Timber Forest Products (NTFPs)

The method used to analyze the potential for increasing the economic value of non-timber forest products (NTFPs) is the value-added approach, which calculates changes in value during the processing of non-timber forest products. The value added can result from an increase in process value or through changes in selling price.

To determine the value added in the processing of non-timber forest products, the Hayami value-added analysis method is used.

3. Prioritization of Non-Timber Forest Products (NTFPs)

The prioritization of non-timber forest product commodities is determined using a **quantitative approach**, specifically by employing the criteria of **value added** and **profit** obtained. The value added and profit from each NTFP product are ranked, and then the products with the highest value added and profit will be selected as prioritized products or leading NTFP products. This approach aims to identify the most economically potential products to be developed into regional flagship products.

Value added is calculated as the difference between the selling price of the processed product compared to the value of its raw material, while profit is calculated as the difference between revenue and total production costs. Each value added and profit from each NTFP product is then ranked; products with the highest value added and profit are chosen as the top priority for NTFP business development.

These criteria align with the methods used by Hayami (1987) in value-added analysis and are also supported by the Profit Margin and Value-Added Analysis approach according to the Forestry Research Institute (BPK, 2015). Furthermore, Rahayu and Yustika (2009) state that the determination of NTFP priorities should not only consider production potential but also aspects of economic value added and management sustainability.

4. Agroindustry Development Strategy for Non-Timber Forest Products (NTFPs)

a. SWOT Analysis

SWOT analysis, in formulating a strategic plan or problem-solving, emphasizes the importance of both internal and external factors: **strengths, weaknesses, opportunities, and threats**. This analysis is structured based on a logical framework that can simultaneously maximize strengths and opportunities while minimizing weaknesses and threats in determining the best strategy. SWOT analysis compares internal factors (strengths and weaknesses) with external factors (opportunities and threats) to arrive at an appropriate strategic decision.

b. Strategy Analysis using IFAS and EFAS

To identify the internal and external factors of the NTFP processing production business, IFAS (Internal Factor Analysis Summary) and EFAS (External Factor Analysis Summary) methods are used to calculate the weighted scores for each internal and external factor.

Table 1. Internal Strategic Factors

Internal Strategic Factors	Weight	Rating	Weight x Rating
Strengths			
Weaknesses			
Total	1.00		

Source: Rangkuti, 2017

Table 2. Eksternal Strategic Factors

Eksternal Strategic Factors	Weight	Rating	Weight x Rating
Opportunities			
Threats			
Total	1.00		

Source: Rangkuti, 2017

Analysis at the input stage is the initial phase of formulating a business development strategy, which will be used as information input for subsequent stages. Internal analysis of the company involves formulating the company's strengths and weaknesses. External analysis involves formulating the company's opportunities and threats.

The stages in identifying internal-external environmental factors within the IFAS matrix and EFAS matrix are as follows:

a. Determine the factors that constitute strengths and weaknesses in the IFAS matrix, as well as opportunities and threats in the EFAS matrix.

b. Assign a weight to each of these factors on a scale ranging from 1.00 (most important) to 0.0 (not important). The sum of all weights must equal a total score of 1.00. To measure the influence of each variable on the company's condition, a rating value using a scale of 1, 2, 3, and 4 is applied to each strategic factor, indicating how effectively the company's current strategy addresses these strategic factors.

c. Calculate the rating for each factor by assigning a scale ranging from 4 (outstanding) to 1 (poor), based on the influence of these factors on the company's specific condition.

d. Multiply the weight in column 2 by the rating in column 3 to obtain the weighted score in column 4. The result is a weighted score for each factor, with values varying from 4.0 (outstanding) to 1.0 (poor). Sum the weighted scores (in column 4) to obtain the total weighted score. This total value indicates how a particular company reacts to its internal-external strategic factors.

c. SWOT Matrix

According to Rangkuti (2017), the tool used to compile a company's strategic factors is the SWOT matrix. This matrix can clearly illustrate how the external opportunities and threats faced by a company can be aligned with its internal strengths and weaknesses. This matrix can generate four sets of possible strategic alternatives.

Table 3. SWOT Matrix

IFAS / EFAS	STRENGTHS (S) Determine 5-10 internal strength factors	WEAKNESSES (W) Determine 5-10 internal weaknesses factors
OPPORTUNITIES (O) Determine 5-10 eksternal opportunity factors	STRATEGI S-O Creating a strategy that uses strengths to capitalize on opportunities.	STRATEGI W-O Creating a strategy that uses weaknesses to capitalize on opportunities.
THREATS (T) Determine 5-10 factors of external threats	STRATEGI ST Creating a strategy that uses strengths to avoid threats.	STRATEGI WT Creating a strategy that minimizes weaknesses to avoid threats.

Source: Rangkuti, 2017

The explanations for each strategic formulation above are as follows:

a. **S-O Strategy (Strengths-Opportunities)**: This strategy is formulated based on the company's approach of utilizing all its strengths to seize and maximize opportunities.

b. **S-T Strategy (Strengths-Threats)**: This strategy involves using the company's existing strengths to overcome threats.

c. **W-O Strategy (Weaknesses-Opportunities)**: This strategy is established by leveraging existing opportunities while minimizing existing weaknesses.

d. **W-T Strategy (Weaknesses-Threats)**: This strategy is based on defensive actions, aiming to minimize existing weaknesses and avoid threats.

d. AHP (*Analytical Hierarchy Process*)

Analytical Hierarchy Process (AHP) uses a hierarchical model consisting of objectives, criteria, several sub-criteria, and alternatives for each problem or decision. AHP is a multi-criteria decision-making technique where quantitative and qualitative factors are combined, allowing for the prioritization, ranking, and evaluation of alternatives. To properly understand a decision-making problem, it is necessary to illustrate a decision tree for the problem to be solved. The decision tree must be adapted to the context of the problem at hand. AHP processing uses the Web AHP Calculator.

III. RESULT

A. Types of Non-Timber Forest Products (NTFPs) in Batukliang Utara District, Central Lombok Regency

The types of non-timber forest products (NTFPs) cultivated by farmers around the forest area in Batukliang Utara are diverse, including fruit groups, medicinal plants, and spice plants. Among these, fruit-based NTFPs are the most commonly found. For more detailed information about the types of NTFPs cultivated, refer to Table 1 below:

Tabel 4. Types of NTFPs Utilized in Batukliang Utara District in 2024

No	Name of NTPs	Availability (available/not available)	Price (Rp)	Number of Users (People)	Percentage (%)
1	Durian	Available	16.000	60	100
2	Jackfruit	Available	4.483	60	100
3	Bamboo	Available	3.000	60	100
4	Taro	Available	5.383	60	100
5	Cassava	Available	1.000	50	83
6	Avocado	Available	15.000	40	66,7
7	Candle Nut	Available	5.000	10	16,7
8	Banana	Available	3.000	55	91,7
9	Ginger	Available	9.000	5	8,33
10	Coffee	Available	90.000	10	16,7

Source: Primer Data Processed (2024)

From Table 4, it can be seen that there are a total of 10 dominant types of Non-Timber Forest Products (NTFPs) utilized by respondent farmers in Batukliang Utara Sub-district, Central Lombok Regency, namely Durian, Jackfruit, Bamboo, Taro, Cassava, Avocado, Candlenut, Banana, Ginger, and Coffee.

B. Increasing the Economic Value of Non-Timber Forest Products (NTFPs)

1. **Analysis of the Added Value of Banana Non-Timber Forest Products (NTFPs)**

Quantity and Value of Production Costs

Tabel 5. Quantity and Value of Production Costs per Process and per 1 Kilogram of Raw Materials for Banana Chip Agroindustry in Batukliang Utara District in 2024.

No			Per Production Process		per 1 kilogram of raw materials
	Type of Cost	Unit	Amount	Value (Rp/PP)	Value (Rp/BB)
1.	Raw Material (Pisang)	Kg	14	420.000	30.000,00
2.	Other Input Costs				
	a. Cooking Oil	Liter	4,8	68,500	4,893
	b. Food Coloring	Liter	1	18.000,00	1.285,714
	c.Sweetener	gram	11	220.000,00	15.714,286
	d.Packaging	Sheet	54	118.000	8.428,571
	e.Tool Depreciation	Rp		16.165,00	1.154,64
	Total Biaya Input Lain			372.233,50	26.588,11
3.	Labor				
	a. Labor in the family	HKO	1,24	16.120,00	1.151,43
	b. Non-family labor	HKO	0,5	6.500,00	464,29
	Total Labor	HKO	1,74	22.620,00	1.615,71
	Total Cost	Rp		814.853,50	58.203,82

Source: Primer Data Processed (2024)

Based on the table, it is shown that the average production cost of banana chip agroindustry in Batukliang Utara District is IDR 814,853.5 per production process (pp), with the cost breakdown as follows: raw material cost of IDR 420,000 (51.5%) per process, other input costs amounting to IDR 372,233.5 (45.6%) per process, and labor cost of IDR 19,630 (2.4%) per process. The average cost for producing banana chips using 1 kilogram of raw material is IDR 58,203.82 per kilogram (kg), with the following breakdown: banana raw material cost of IDR 30,000 (51.5%) per kg, other input costs of IDR 26,588.11 (45.6%) per kg, and labor cost of IDR 1,402.14 (2.4%) per kg.

Analysis of the Added Value of Banana Agroindustry in Batukliang Utara District in 2024

In this study, added value analysis is used to compare the change in value of non-timber forest products (NTFPs) when processed into finished products. The profit from banana chip agroindustry is IDR 41,796.18 per kilogram of raw material, obtained from the added value minus labor compensation, with a profit rate of 96% of the production value. The return to the owners of production factors, or the profit margin from the banana chip agroindustry, amounts to IDR 70,000 per kilogram of raw material. This value is derived from the difference between the production value and the raw material cost. From this profit margin, the percentage allocated to labor income is 2%, meaning that 2% of the profit is spent on labor costs. The compensation to the owners of other production inputs is 38%, indicating that for every IDR 100 of profit, IDR 38 is allocated to other input contributions. The return to the owner of the agroindustry is 60%, meaning that for every IDR 100 of profit, a net profit of IDR 60 goes to the owner of the banana chip agroindustry.

The added value of the banana chip agroindustry in Batukliang Utara District has provided significant benefits to business actors, with an added value per production process of IDR 607,766.46 per process and IDR 43,411.89 per kilogram of raw material. If calculated based on a production frequency of 20 times per year, the total added value would be IDR 12,155,329.2 per process and IDR 868,237.8 per kilogram of raw banana material annually.

By engaging in this processing activity or agroindustry, the community can improve their standard of living and that of those around them. With an added value of IDR 607,766.46 per production process and IDR 43,411.89 per kilogram of raw material, and a profit of IDR 41,796.18 per kilogram per production cycle, when multiplied by the average amount of raw material used per process, the resulting total profit is IDR 585,146.52. According to the study, the number of people engaged in banana processing in Batukliang Utara District has decreased over the years due to the high cost of raw materials and the tendency of local forest communities to seek immediate income from direct sales rather than going through a complex and labor-intensive production process.

This finding is in line with the research by Mahmuda (2022) in the Jurnal Pengabdian Masyarakat Sabangka, which examined the diversification of processed bananas as an effort to improve the community's economy in Liabuku Village, Baubau City. In that study, the community was trained to process bananas into products with higher selling value, such as "pisang lumer" (melted banana fritters) and banana spring rolls ("lumpia pisang"). Mahmuda stated that the diversification of banana-based processed products directly contributed to increasing family income and creating new business opportunities at the household level

The economic value change of the banana NTFP commodity in Batukliang Utara District is quite significant. At the time of the study, the price of bananas reached IDR 3,000 per bunch, with an average weight of about 100 grams per bunch, translating to a price of IDR 30,000 per kilogram. With the profit from banana chips amounting to IDR 41,796.18 per kilogram, there is a significant increase in the economic value of the banana NTFP commodity—an increase of IDR 11,796.18. The calculation of added value for banana chip processing in Batukliang Utara District in 2024 is presented in Table 6 below.

Table 6. Added Value Analysis of the Banana Chip Agroindustry in Batukliang Utara District in 2024

No.	Variable	Formula	Value
1.	Output, Input and Price		
a.	Production (Pcs/PP)	A	140
b.	Raw Material (Kg/PP)	B	14
c.	Labor (HKO/PP)	C	1,74
d.	Conversion factor	M= A/B	10
e.	Labor coefficient (HKO/BB)	N=C/B	0,12
f.	Output Price (Rp/kg)	D	10.000
g.	Average Wage of Labor (Rp/HKO)	E	13.000
2.	Revenue and Profits		
h.	Raw Material Prices (Rp/BB)	F	30.000
i.	Other Input Contributions (Rp/BB)	G	26.588,11
j.	Productions Value (Rp/BB)	K=M*D	100.000
k1.	Added Value (Rp/BB)	L=K-F-G	43.411,89
k2.	Value Added Ratio (%)	H=(L/K)*100%	43%
i1.	Labor Rewards (Rp/kg)	P= N x E	1.615,7
i2.	Labor share ratio (%)	Q= (P/L)*100%	4%
m1.	Profit (Rp/BB)	R= L-P	41.796,18
m2.	Profit Level(%)	I = (R/L)*100%	96%
3.	Remuneration for Owners of Production Factors		
n.	Profit Margin (Rp/BB)	S= K-F	70.000
n2.	Labor Income (%)	T= (P/S)*100%	2%
n3.	Other Input Contributions (%)	U= (G/S)*100%	38%
o.	Profit from Production Activities (%)	V= (R/S)*100%	60%

Source: Primer Data Processed (2024)

2. Added Value Analysis of Coffee Non-Timber Forest Products (NTFPs)

Quantity and Value of Production Costs

It is known that the average production cost incurred by the coffee agroindustry in Batukliang Utara District is IDR 1,986,560 per production process (pp), with the following cost breakdown: raw material cost (coffee beans) of IDR 900,000 (45.3%) per process, other input costs of IDR 1,069,000 (53.8%) per process, and labor cost of IDR 17,560 (0.9%) per process. Meanwhile, the average production cost per kilogram of raw material is IDR 198,656 per kilogram (kg), consisting of raw material cost of IDR 90,000 (45.3%) per kg, other input costs of IDR 106,900 (53.8%) per kg, and labor cost of IDR 1,756 per kg. The detailed breakdown of coffee agroindustry production costs is presented in Table 4 below :

Tabel 7. Quantity and Value of Production Costs per Process and per 1 Kilogram of Raw Materials for Coffee Agroindustry in Batukliang Utara District in 2024.

No	Types of Cost	Unit	Per production process		per 1 kilogram of raw materials
			Amount	Value (Rp/PP)	Value (Rp/BB)
1.	Raw material (coffee beans)	Kg	10	900.000	90.000
2.	Other Input Costs				
	a. Plastic packaging	Sheet	54	1.048.000	104.800
	b. Packaging stickers	Sheet	7,5	21.000	2.100
	Total Costs of Other Inputs			1.069.000,00	106.900
3.	Labor				
	a. Labor in the family	HKO	0,97	12.610,00	1.261,00
	b.Non-family Labor	HKO	0,33	4.950,00	495,00
	Total Labor	HKO	1,3	17.560,00	1.756,00
	Total Costs	Rp		1.986.560	198.656

Source: Primer Data Processed (2024)

Added Value Analysis of the Coffee Agroindustry in Batukliang Utara District in 2024

The added value analysis in this study is used to compare the change in the economic value of coffee as a non-timber forest product (NTFP) when processed into a finished product. It measures how much the economic value changes between selling raw coffee and processing it into a finished product. The results of the added value calculation for processed coffee in Batukliang Utara District in 2024 are presented in Table 5 below:

Table 8. Added Value Analysis of the Coffee Agroindustry in Batukliang Utara District in 2024

No.	Variable	Formula	Value
1.	Output, Input and Price		
a.	Production (Pcs/PP)	A	83
b.	Raw Material (Kg/PP)	B	10
c.	Labor (HKO/PP)	C	1,3
d.	Conversion Factor	M= A/B	8,3
e.	labor coefficient (HKO/PP)	N=C/B	0,13
f.	Output Price (Rp/kg)	D	415.000
g.	Average Wage of Labor (Rp/HKO)	E	20.000
2.	Revenue and Profits		
h.	Raw Material Prices (Rp/PP)	F	900.000
i.	Other Input Contributions (Rp/PP)	G	1.069.000
j.	Productions Value (Rp/PP)	K=M*D	3.444.500
k1.	Added Value (Rp/PP)	L=K-F-G	1.475.500
k2.	Value Added Ratio (%)	H=(L/K)*100%	42,8%
i1.	Labor Rewards (Rp/kg)	P= N x E	2.600
i2.	labor share ratio (%)	Q= (P/L)*100%	0,2%
m1.	Profit (Rp/PP)	R= L-P	1.475.900
m2.	Profit Level (%)	I = (R/L)*100%	99,8%
3.	Remuneration for Owners of Production Factors		
n.	Profit Margin (Rp/PP)	S= K-F	2.544.500
n2.	Labor Income (%)	T= (P/S)*100%	0,1%
n3.	Other Input Contributions (%)	U= (G/S)*100%	42%
o.	Profit from Production Activities (%)	V= (R/S)*100%	57,9%

Source: Primer Data Processed (2024)

The profit from the coffee processing agroindustry amounts to IDR 1,475,900 per kilogram of raw material, which is derived from the added value minus labor compensation, with a profit margin of 99.8% of the production value. The return to the owners of production factors—the profit margin from the coffee agroindustry—is IDR 2,544,500 per production process. This figure is obtained from the difference between the production value and the cost of raw

materials. From this profit margin, the percentage allocated to labor income is 0.1%, meaning that 0.1% of the profit is spent on labor costs. The share allocated to other input contributions is 42%, indicating that for every IDR 100 of profit, IDR 42 is allocated to other inputs in a single production process. Meanwhile, the return to the owner of the coffee processing agroindustry is 57.9%, meaning that for every IDR 100 of profit, a net profit of IDR 57.9 goes to the business owner.

The added value of the coffee agroindustry in Batukliang Utara District has provided significant benefits to entrepreneurs, with an added value of IDR 1,475,500 per production process and IDR 147,550 per kilogram of raw material. If the agroindustry operates at a production frequency of four times per month, the total added value reaches IDR 5,902,000 per month per process, and IDR 590,200 per month per kilogram of raw coffee beans. With a profit of IDR 147,590 per kilogram in one production process, and assuming an average use of 10 kilograms of raw material per cycle, the total profit reaches IDR 1,475,900.

This result is consistent with the research by Nurhasanah et al. (2023) presented at the National Seminar on Sustainable Agriculture at Mataram University, which concluded that the application of simple technology in the people's coffee agroindustry in East Lombok successfully increased value added and expanded the market. Training for farmers on packaging, local branding, and business management played a significant role in achieving this value added

Based on the study, the coffee-processing agroindustries in Batukliang Utara District are run by groups that already have relatively advanced production equipment, including roasting machines, moisture meters, wet and dry hullers, and sorting machines.

The economic value transformation of coffee as an NTFP (Non-Timber Forest Product) in Batukliang Utara District is considered significant. At the time of the study, the price of raw coffee beans per kilogram was IDR 90,000. In a single processing cycle, coffee processors used 10 kilograms of raw material. If sold unprocessed, the coffee is priced at IDR 90,000 per kilogram, whereas after processing into coffee powder, the price reaches IDR 147,550 per kilogram—resulting in a value increase of IDR 57,550.

C. Priority of Non-Timber Forest Products (NTFPs)

The processing of banana and coffee Non-Timber Forest Products (NTFPs) into finished products has proven to generate a significantly higher economic value compared to selling them in raw or unprocessed form. In this study, the selection of NTFP products as priority commodities was based on the criteria of added value and profit per kilogram of NTFPs used by processing business actors in Batukliang Utara District.

Table 9. Jumlah Nilai Tambah dan Keuntungan HHBK Pisang dan Kopi di Kecamatan Batukliang Utara Tahun 2024

Types of NTPs	Added Value (Rp/kg)	Profit (Rp/Kg)
Banana	43.412	41.796
Coffee	147.550	147.590

Source: Primer Data Processed (2024)

Table 9 shows that the added value per kilogram for banana-based products is IDR 43,412, with a profit of IDR 41,796 per kilogram of raw banana used. Coffee products, on the other hand, generate an added value of IDR 147,550 per kilogram of raw coffee used and a profit of IDR 147,590. Based on these criteria, coffee NTFPs are ranked as the first priority, while banana NTFPs are ranked as the second priority.

This finding aligns with research by Destiana Adinda Putri et al. (2024), which showed that the application of post-harvest technology, such as roasting tools and coffee husk dryers, can increase selling value and strengthen the economic independence of rural communities. Furthermore, a study by Yulianita (2021), which analyzed processed bananas in Gunungkidul, also supports this finding, where products like banana chips ("keripik") and dried banana ("sale pisang") provided a value added of up to 45% from the fresh raw material price. Although the value added of bananas in Batukliang Utara is not as high as coffee, the potential for developing processed products remains wide open, especially if supported by product innovation and marketing.

Moreover, these results are reinforced by the findings of Adhi Nugroho and M. Rizki (2020), who emphasized the importance of mapping potential and selecting value-added-based Non-Timber Forest Products (NTFPs) within a small business cluster approach. Based on this data and comparison, it can be concluded that coffee is the most potential NTFP product to be developed in Batukliang Utara Sub-district, with banana as the second priority. The selection of these value-added-based NTFP products is expected to improve the welfare of communities around the forest and support sustainable local economic development.

D. Development Strategy for Non-Timber Forest Product (NTFP) Agroindustry in Batukliang Utara District

1. Development Strategy for Banana NTFP Agroindustry

Based on the analysis using IFAS, EFAS, and SWOT matrix, it is known that the banana chip agroindustry is positioned in quadrant IV, meaning that the banana chip agroindustry is in a defensive or survival position. The development strategy alternative for the banana agroindustry in Batukliang Utara District, Central Lombok Regency, is the WT (Weakness–Threats) strategy, aimed at minimizing internal weaknesses and avoiding existing external threats. The strategies to be implemented are as follows:

a. Develop new, more innovative and attractive products by optimizing the use of raw materials and minimizing production cost efficiency.

b. Identify competitors' strategies.

c. Develop more effective marketing strategies by optimizing the use of promotional media and exploring alternative, more innovative marketing approaches.

d. Seek business partners who have substantial capital resources and valid business permits.

e. Conduct regular evaluations of banana chip products, market conditions, and consumer trends.

AHP Analysis (*Analytical Hierarchy Prosess)*

The determination of strategy priorities among several alternative strategies aims to analyze which strategies should be prioritized first in the development of the banana agroindustry in Batukliang Utara District, Central Lombok Regency. This prioritization is not intended to dismiss other strategies but to focus on the strategies that need to be implemented first by the banana agroindustry entrepreneurs in Batukliang Utara.

Table 10. Priority Development Strategies for the Banana Agroindustry in Batukliang Utara District, Central Lombok Regency

Strategy (WT)	Weight	Ranking
- Develop new, more innovative and attractive products by optimizing the use of raw materials and minimizing production cost efficiency	0,194	3
- Identify competitors' strategies	0,226	2
- Develop more effective marketing strategies by optimizing the use of promotional media and exploring alternative, more innovative marketing approaches	0,073	5
- Seek business partners who have substantial capital resources and valid business permits	0,179	4
- Conduct regular evaluations of banana chip products, market conditions, and consumer trends	0,328	1
CR	**0,014**	

Source: Primer Data Processed (2025)

Based on the approach using the AHP method, the priority order of strategies that can be implemented by banana chip agroindustry entrepreneurs in Batukliang Utara District is as follows:

1. Conduct regular evaluations of banana chip products, market conditions, and consumer trends
2. Identify competitors' strategies

3. Develop new, more innovative and attractive products by optimizing the use of raw materials and minimizing production cost efficiency
4. Seek business partners who have substantial capital resources and valid business permits
5. Develop more effective marketing strategies by optimizing the use of promotional media and exploring alternative, more innovative marketing approaches.

2. Development Strategy for Coffee NTFP Agroindustry

Based on the analysis using IFAS, EFAS, and the SWOT matrix, it is known that the coffee agroindustry in Batukliang Utara District is positioned in Quadrant I, which means the agroindustry is in a growth position. Therefore, the development strategy alternative for the coffee agroindustry in Batukliang Utara District, Central Lombok Regency, is the SO (Strength–Opportunities) strategy, which is to:

a. Utilize high product quality as the main appeal to expand market share
b. Leverage expertise and technology to increase production efficiency and create product innovations to respond to coffee market growth
c. Strengthen branding and positive reputation by establishing partnerships and collaborations with other parties to enhance market competitiveness and expand market reach
d. Optimize government support to further develop the coffee business.

AHP Analysis (*Analytical Hierarchy Process)*

The determination of strategic priorities among several alternative strategies aims to analyze which strategy should be prioritized first in the development of the coffee agroindustry in Batukliang Utara District, Central Lombok Regency. The AHP analysis is used to determine the priority strategies for coffee agroindustry development in Batukliang Utara District based on several criteria by conducting a pairwise comparison analysis of alternative SO (Strength–Opportunities) strategies derived from the SWOT analysis. Further details are presented in Table 8 below:

Table 11. Priority Strategies for the Development of the Coffee Agroindustry in Batukliang Utara District, Central Lombok Regency

Strategy (SO)	Weight	Ranking
- Utilize high product quality as the main appeal to expand market share	0,415	1
- Leverage expertise and technology to increase production efficiency and create product innovations to respond to coffee market growth	0,293	2
- Strengthen branding and positive reputation by establishing partnerships and collaborations with other parties to enhance market competitiveness and expand market reach	0,107	4
- Optimize government support to further develop the coffee business	0,185	3
CR	**0,026**	

Source: Primer Data Processed (2025)

Based on the AHP (Analytical Hierarchy Process) approach, the priority order of strategies that can be implemented by coffee agroindustry entrepreneurs in Batukliang Utara District is as follows:

1. Utilize high product quality as the main appeal to expand market share
2. Leverage expertise and technology to increase production efficiency and create product innovations to respond to coffee market growth
3. Optimize government support to further develop the coffee business
4. Strengthen branding and positive reputation by establishing partnerships and collaborations with other parties to enhance market competitiveness and expand market reach.

IV. CONCLUSION

Based on the analysis and discussion, several conclusions can be drawn as follows:

1. The dominant types of Non-Timber Forest Products (NTFPs) utilized/cultivated by communities around the forest in Batukliang Utara Sub-district consist of 10 types: Durian, Jackfruit, Bamboo, Taro, Cassava, Avocado, Candlenut, Banana, Ginger, and Coffee.
2. Based on the value-added analysis conducted, the economic value of banana and coffee NTFPs significantly increases when processed, compared to being sold directly or in raw form. The average value added obtained by banana agro-industry producers in Batukliang Utara District, Central Lombok Regency is IDR 607,766.46 per production process and IDR 43,411.89 per kilogram of raw material. Meanwhile, the average value added of the coffee agro-industry in Batukliang Utara District is IDR 1,475,500 per production process and IDR 147,550 per kilogram of raw material used.
3. The prioritized NTFP products to be developed, based on the criteria of value added and production profit obtained, are: 1) Coffee, and 2) Banana.
4. The priority strategies that can be implemented by agro-industries in Batukliang Utara District, Central Lombok Regency, are as follows:

a. For the banana agro-industry with a WT (Weaknesses–Threats) strategy alternative, the priority strategies are as follows: 1) Conduct regular evaluations of banana chip products, market conditions, and consumer trends, 2) Identify competitors' strategies, 3) Develop new, more innovative and attractive products by optimizing the use of raw materials and minimizing production costs, 4) Seek business partners with substantial capital and official business licenses, and 5) Develop more effective marketing strategies by optimizing the use of promotional media and exploring other, more innovative marketing alternatives

b. For the coffee agro-industry with an SO (Strengths–Opportunities) strategy alternative, the priority strategies that can be implemented are: 1) Using high product quality as the main attraction to expand market share, 2) Utilizing expertise and technology to improve production efficiency and create product innovations to meet the growing coffee market, 3) Optimizing government support to develop the coffee business, and 4) Strengthening the brand and positive reputation by establishing partnerships and collaborations with other parties to enhance competitiveness and expand market reach.

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