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Analysis of the Added Value of Moringa Leaves in Moringa Tea (Case Study at UD Wuna Bharakati, Lupia Village Kabangka Subdistrict, Muna Regency)

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Abstract

This research aims to identify the value added obtained from processing moringa leaves into moringa tea at UD. Wuna Bharakati, Lupia Village, Kabangka District, Muna Regency. This research was conducted from March to July 2025 using primary and secondary data types and sources. The data analysis used to determine the value added from processing moringa leaves into moringa tea employs the Hayami method of value added analysis. The results of the study indicate that the value added obtained from processing moringa leaves into moringa tea products is Rp419,360/kg, where this value consists of business profit or processing of Rp416,060 and labor remuneration of Rp3,300. The return on the largest factor of production ownership is 93.4% of the business profit, while labor income is 0.74% and contributions from other inputs are 5.7%.

Keywords: Added Value, Moringa Tea, Labor and Profit

INTRODUCTION

Indonesia is a tropical country with warm temperatures throughout the year and high rainfall (Aditya et al., 2021). Its geographical location on the equator gives Indonesia great potential in the agricultural sector due to the intensity of sunlight and availability of water that supports year-round cultivation (Sudarma, 2018). The agricultural sector itself plays an

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important role in the national economy, both as a provider of employment and as a source of food and exports, such as palm oil, rubber, coffee, and cocoa (Faisal, 2015). However, the competitiveness of Indonesian agricultural products in the global market still varies and requires innovation and added value to be more competitive (Saragih, 2013).

One agricultural commodity with great potential for development is the moringa plant (*Moringa oleifera*). Moringa is a tropical plant that is easy to cultivate, grows well in marginal land, and has high nutritional content, especially in its leaves, which are rich in protein, carbohydrates, vitamins, and minerals (Harahap & Warly, 2020). This plant can grow throughout the year without requiring special treatment, making it a potential source of food and raw material for high-value economic products (Krisnadi, 2015).

In Southeast Sulawesi, particularly among the Muna and Buton tribes, moringa leaves have long been known as a traditional food consumed daily (Jafari, 2015). One area with potential for moringa development is Lupia Village, Kabangka District, Muna Regency. The community in this village grows a lot of moringa, but its use is still limited to household consumption and the sale of raw leaves in local markets at relatively low prices. The lack of post-harvest processing means that the economic value of moringa is not yet optimal for farmers. In fact, research by Salim et al. (2024) shows that processing moringa leaves into products such as capsules and herbal tea can provide significant added value, 30.97% and 15.35% respectively.

The development of moringa-based products such as herbal tea is a potential alternative for increasing community income. A study by Saputri and Munawaroh (2025) shows that training in moringa tea processing has successfully improved the knowledge and skills of rural communities and opened up new business opportunities that contribute to local economic independence. Meanwhile, Hamdan and Fauziatunnisa (2023) emphasize that diversifying moringa products, including tea, can increase community income through strengthening the creative economy based on local resources. In line with this, Albi's (2018) research findings explain that the creative economy process based on moringa leaves involves stages of experimentation, combination, and internalization of knowledge to produce products with high economic value.

In Lupia Village itself, local economic initiatives have emerged, such as UD. Wuna Bharakati, which produces and markets moringa tea as a natural herbal product with health benefits. The existence of this business is proof that moringa processing can be developed into a competitive small industry that makes a real contribution to the village economy. However, research examining the value-added analysis of moringa leaf processing into tea in Lupia Village is still very limited.

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Previous research related to value-added analysis, such as that conducted by Rasyid (2021) on the value chain and value-added of corn commodities in Pohuwato Regency, shows that each actor in the supply chain (farmers, traders, and companies) obtains different value-added depending on processing and distribution activities. The highest value-added is obtained by actors who directly process the product. Similar results were also found in Julia's (2014) study, which analyzed the added value of cassava into cassava chips in Gowa Regency and showed an increase in economic value of up to nine times that of the raw material. Similarly, Muhammad's (2015) study on the processing of tomatoes into *Torakur* (date-flavored tomatoes) in Semarang Regency showed that agricultural product innovation through processing can generate high added value and expand the local economic value chain.

Based on these previous studies, it can be concluded that processing agricultural products into processed products has great potential in increasing added value and farmer income. However, to date, research on the analysis of the added value of moringa leaves into moringa tea in Lupia Village, Kabangka District, Muna Regency, has rarely been conducted. The novelty of this research lies in its focus on the quantitative calculation of added value in moringa tea products as a form of local economic innovation based on village resources, which is expected to become a model for the development of a creative economy for rural communities based on moringa commodities.

METHOD

This research was conducted at UD. Wuna Bharakati, Lupia Village, Kabangka District, Muna Regency, which was deliberately chosen because the community in that location works as moringa leaf processors into moringa tea. The research was conducted from March to July 2025 with the research subject being the owner of UD. Wuna Bharakati as the main actor in the moringa leaf processing industry into tea. This study used two types of data, namely primary data and secondary data.

The data analysis used to answer the research questions is value-added analysis. Value-added is the increase in the value of a commodity that has undergone processing, storage, and transportation in a production process (Waryat, et al. 2016). According to Hubeis (1997), the criteria for value-added are as follows:

- Value added is considered low if the value added ratio is <15%,
- Value added is considered moderate if the value added ratio ranges from 15-40%,
- Value added is considered high if the value added ratio is >40%.

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The procedure for calculating added value using the Hayami method can be seen in Table 1.

Table 1. Procedure for Calculating Value Added According to Hayami

	Variable	Value
I. Output, Input, and Price		
1	Production output (kg)	(1)
2	Raw materials (kg)	(2)
3	Labor (HOK)	(3)
4	Conversion factor	(4) = (1)/(2)
5	Labor coefficient (HOK)	(5) = (3)/(2)
6	Average product price (Rp/kg)	(6)
7	Average labor wage (Rp/HOK)	(7)
II. Revenue and Profit		
8	Raw material price (Rp/Kg)	(8)
9	Other input contributions (Rp/kg)	(9)
10	Product value (Rp/kg)	(10) = (4)x(6)
11	a. Value added (Rp/kg) b. Value added ratio (%)	(11a) = (10) - (9) - (8) (11b) = (11a)/(10)x100%
12	a. Direct labor compensation (Rp/kg) b. Labor share (%)	(12a) = (5) x (7) (12b) = (12a)/(11a)x100%
13	a. Profit (Rp/kg) b. Profit Margin (%)	(13a) = (11a) - (12a) (13b) = (13a)/(11a)x100%
III. Return to Owners of Production Factors		
14	Margin (Rp/Kg) a. Direct labor income (%) b. Business owner profit (%) c. Other input contributions (%)	(14) = (10) - (8) (14a) = (12a)/(14)x100% (14b) = (13a)/(14)x100% (14c) = (9)/(14)x100%

Source: Hayami, (1987)

The Hayami method of calculating value added is carried out in three stages, namely first the calculation of *output, input* and price values, second income and profits, and third the remuneration of owners of production factors. Based on Table 1, it can be seen that value added is obtained from the value of the product minus the price of raw materials and other input contributions. In addition, from the calculation of added value, the added value ratio can be

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determined by dividing the added value by the product value and multiplying it by 100%. Labor income is obtained from labor compensation divided by margin and then multiplied by 100%. Meanwhile, profit is obtained from the ratio of added value to labor compensation.

RESULTS AND DISCUSSION

Moringa Tea Production Process

The following is a diagram of the stages of processing moringa leaves into moringa tea at a moringa leaf tea business in Lupia Village, Kabangka District, Muna Regency, as shown in Figure 1.

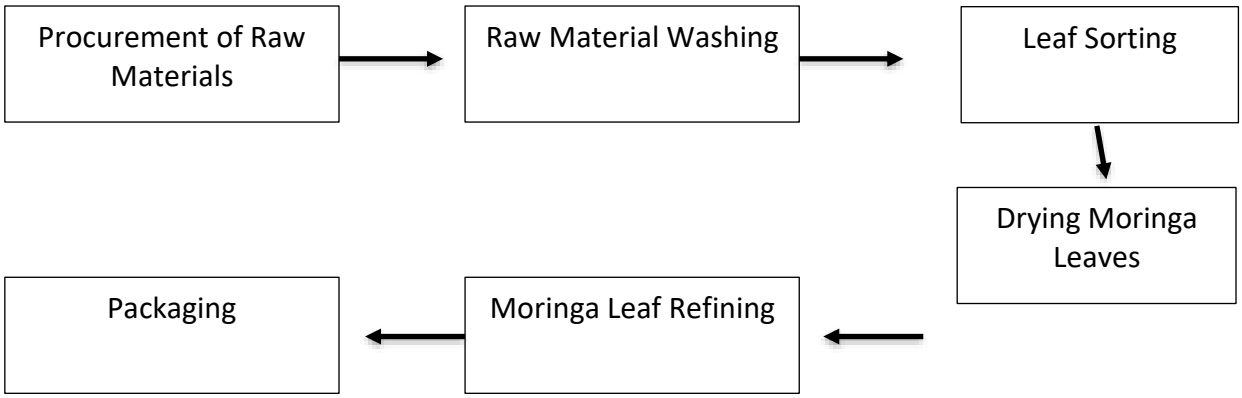


Figure 1. Moringa Leaf Tea Processing Scheme

The availability of raw materials is one of the important aspects in the production process that supports the smooth running and sustainability of production and business. Producers must be able to provide quality raw materials for their business so as to create good products and further increase consumer interest in purchasing. Optimal raw material quality and availability will contribute to successful production. (Nasution, M. N. 2005)

The results of the study show that the main raw material used in the processing of moringa leaves into moringa tea in Lupia Village, Kabangka District, Muna Regency ( ) is moringa leaves. To meet the raw material needs of UD. Wuna Bharakati ( ), the business owner purchases moringa leaves from traders in Lupia Village, Kabangka District, Muna Regency. The raw material costs for UD. Wuna Bharakati are expenses incurred by the business owner. The results of the study show that the raw material costs incurred by the owner of UD. Wuna Bharakati are IDR 5,000/kg of moringa leaves. Production activities are carried out 3 times a month with the aim of ensuring that the products marketed are always fresh so that product quality can be

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maintained until they reach consumers. The amount of raw materials used by UD. Wuna Bharakati in one month is 45 kg of moringa leaves, with 15 kg of moringa leaves used per production run. The amount of raw material costs incurred by the owner of UD. Wuna Bharakati depends on the amount of raw materials used. The monthly expenses incurred by the business owner are IDR 225,000, with an average raw material cost of IDR 75,000 per production run.

Number and Wages of Workers

UD. Wuna Bharakati, which processes moringa leaves into moringa tea, has 1 employee. The worker does not carry out production activities every day in a month. Production activities at UD. Wuna Bharakati are carried out 3 times a month with a working hour range of 8 hours per production process. The results of the study show that the range of working hours in a month at UD. Wuna Bharakati is 24 hours or 3 HOK with a wage of Rp 50,000 per production process, as shown in Table 2.

Table 2. Use of Working Hours per Production Stage

Activity	Workers (People)	Working Days (Days)	Working Hours (Hours)
Raw material washing	1	1	0.14
Sorting moringa leaves	1	1	0.29
Drying of moringa leaves	1	1	0.73
Moringa leaf grinding	1	1	0.17
Packaging	1	1	0.14
Total	5	5	1.3

Source: Primary data processed, 2025

Table 2 shows that in the process of producing moringa leaves into moringa tea at UD. Wuna Bharakati, one worker is employed and it takes 8 hours for each production frequency. Based on the data obtained, the use of labor at UD. Wuna Bharakati in one month of production can be seen in Table 3.

Table 3. Working Hours of Workers at UD. Wuna Bharakati in Lupia Village in One Month

	Value/Number
Number of Workers (People)	1
Work Frequency (Production/Month)	3
Total Working Hours	24

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HOK	3.9

Source: Primary data processed, 2025

Based on Table 3, the processing of moringa leaves into moringa tea in Lupia Village, Kabangka District, Muna Regency employs 1 worker. The worker processes moringa tea through 3 production processes, each taking 8 hours. This study shows that the range of working hours in one month is 24 hours, with a worker's wage of Rp50,000/HOK.

Other Input Contributions

Other input contributions in this study include auxiliary material costs, which are costs outside the main raw material costs that contribute to the creation of a good product, in this case moringa tea, effective and efficient equipment depreciation costs that can support smooth production activities, thereby increasing production output and profits from the processing of moringa leaves into moringa tea at UD. Wuna Bharakati, as well as equipment costs, which are costs incurred by the owner of UD. Wuna Bharakati outside of raw material costs, labor wages, and other input contributions related to the production process. For more details, see the following table;

Table 4. Auxiliary Material Costs Used by UD. Wuna Bharakati in Lupia Village, Kabangka District, Muna Regency

Auxiliary Materials	Unit	Quantity	Price (Rp)	Value of Goods (Rp)
Tea bags and boxes	Box	3	112,500	337,500
Total				337,500

Source: Primary data processed, 2025

Table 4 shows that UD. Wuna Bharakati uses tea bags as auxiliary materials to hold the moringa tea. Based on the research results, the tea bags used are purchased in units of 500 bags and can be used for one production process, so that the total auxiliary materials for bags and tea bags in one month or three production processes is 1,500 bags with a total cost of 337,500.

Table 5. Detailed Costs of Equipment Use and Depreciation in One Month at UD. Wuna Bharakati in Lupia Village, Kabangka District, Muna Regency

Type	Quantity	Price/Unit (Rp)	Total Cost (IDR)	Economic Life (Years)	Depreciation (IDR)
Oven	1	2,000,000	2,000,000	10	200,000
Hose	1	80,000	80,000	3	26,667

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Press Machine	1	500,000	500,000	10	50,000
Plastic basket	2	50,000	100,000	1	100,000
Water Pump	1	350,000	350,000	3	116,667
Blender	1	500,000	500,000	5	100,000
Jar	2	25,000	50,000	5	10,000
Bowl	2	20,000	40,000	5	8,000
Hair Dryer	1	150,000	150,000	3	50,000
Sealer	1	150,000	150,000	5	30,000
Scales	1	100,000	100,000	4	25,000
Total					716,333

Source: Primary data processed, 2025

Based on Table 5, the types and amounts of depreciation costs used for one month of moringa leaf tea production in Lupia Village, Kabangka District, Muna Regency can be seen. The total depreciation cost is IDR 716,333. The largest costs after depreciation are for the purchase of ovens, water pumps, press machines, blenders, and baskets. Baskets are one of the largest costs because their economic life is only 1 year, so the depreciation cost is quite large, while the purchase price for 1 basket is Rp. 50,000 per piece. Details of other fixed costs are presented in the appendix data. The amount of depreciation depends on the purchase price of the equipment used and the economic life of the equipment.

Table 6. Use of Equipment Costs for Processing Moringa Leaves into Moringa Tea at UD. Wuna Bharakati

Cost Component	Monthly Expenditure (Rp)
Transport	30
Electricity	50,000
Plastic products	20,000
Total Cost	100,000

Source: Primary data processed, 2025

Based on Table 6, the transportation costs incurred in a month are IDR 30,000, which are used for the purchase and delivery of raw materials to the business location. Electricity costs are used to power the moringa tea machine during the grinding and baking processes, amounting to Rp50,000, and product plastic costs are expenses incurred for the purchase of plastic at a price of Rp20,000. The total equipment costs incurred by UD. Wuna Bharakati are Rp100,000.

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Production and Product Price

The product produced after the production process at UD. Wuna Bharakati is moringa tea, which is measured in boxes. The results of the study show that to meet consumer demand, UD. Wuna Bharakati carries out production activities 3 times a month for 3 working days. The business of processing moringa leaves into moringa tea uses 15 kg of raw materials and produces 500 boxes of moringa tea per production, but this amount can increase according to consumer demand. Details of the use of raw materials, product quantity, selling price, and revenue from moringa tea at UD. Wuna Bharakati can be seen in Table 7.

Table 7. Amount of Raw Materials, Number of Products, Selling Price, and Revenue from Moringa Tea Products in One Month at UD. Wuna Bharakati in Lupia Village, Kabangka District, Muna Regency

Production Frequency	Raw Material Quantity (Kg)	Number of Products (kg)	Price (IDR/kg)	Revenue (IDR/Month)
1	15	10	300,000	3,000,000
2	15	10	300,000	3,000,000
3	15	10	300,000	3,000,000
Total	45	30		9,000,000

Source: Primary data processed, 2025

Table 7 shows the process of producing moringa tea using 15 kg of moringa leaves as raw material in one month, yielding 10 kg of moringa tea or the equivalent of 500 boxes per production process. The price per box of moringa tea is Rp 6,000. The production process is carried out over 3 working days with an average production frequency of 3 times. The research results show that the price of moringa tea at UD. Wuna Bharakati is IDR 300,000/kg with a total of 1,500 boxes of moringa tea produced in one month, resulting in a total revenue of IDR 9,000,000/month.

Value Added Analysis

Value added analysis is used to determine the amount of value added in the processing of moringa leaves into moringa tea, where moringa leaf tea is made in the form of tea bags. The value added for one production process of moringa leaves into moringa tea at UD. Wuna Bharakati is as follows, according to the Hayami model:

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Table 8. Value Added Analysis of Moringa Leaf Tea Bags at UD. Wuna Bharakati

No	Variable		Value
I. Output, Input, and Price			Tea Bags
1	Production output (kg/production)	(1)	10
2	Raw materials (kg/production)	(2)	15
3	Labor (HOK)	(3)	1
4	Conversion factor	(4)= (1)/(2)	1.5
5	Labor coefficient (HOK)	(5) = (3)/(2)	0.066
6	Average product price (Rp/kg)	(6)	300,000
7	Average labor wage (Rp/HOK)	(7)	50,000
II. Revenue and Profit			
8	Raw material price (Rp/Kg)	(8)	5,000
9	Other input contributions (Rp/kg)	(9)	25,640
10	Product value (Rp/kg)	(10) = (4) x (6)	450,000
11	a. Value added (Rp/kg) b. Value added ratio (%)	(11a) = (10) - (9) - (8) (11b) = (11a)/(10) x 100%	419,360 93.19
12	a. Direct labor compensation (Rp/kg) b. Labor share (%)	(12a) = (5) x (7) (12b) = (12a)/(11a) x 100%	3,300 0.78
13	a. Profit (Rp/kg) b. Profit margin (%)	(13a) = (11a) - (12a) (13b) = (13a) / (11a) x 100%	416,060 99.2
III. Return to Owners of Production Factors			
14	Margin (Rp/Kg) a. Direct labor income (%) b. Contribution of other inputs (%) c. Business owner profit (%)	(14) = (10) - (8) (14a) = (12a)/(14) x 100% (14b) = (9)/(14) x 100% (14c) = (13a)/(14) x 100%	445,000 0.74 5.7 93.4%

Source: Primary data processed, 2025

Based on Table 8 regarding the value-added analysis studied in this research, it can be explained as follows;

1. The output or production result for one production process of moringa leaf tea is 10 kg with the use of 15 kg of input or main raw materials. The raw material used is moringa leaves, measured in kilograms, while after being processed into moringa leaf tea bags, it is measured per box, namely 500 boxes for one production process. Each box of moringa leaf tea contains 15 tea bags with a weight of 1.5 grams per box.

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2. The labor force calculated in this study is the labor force involved in the business of processing moringa leaves into moringa tea. The UD. Wuna Bharakati business in Lupia Village, Kabangka District, Muna Regency, employs 1 worker with a range of 1 working day per month with an average of 1 production run.
3. The conversion factor is the value obtained from the ratio between the amount of production (10 kg) and the amount of raw materials used in one production process (15 kg). The value of the conversion factor affects the value of the product. The calculation results show that the conversion factor value for the moringa leaf processing business into moringa tea is 1.5, meaning that every 1 kg of moringa leaf raw material processed will produce 1.5 kg of moringa tea.
4. The labor coefficient is the value obtained from the ratio between the number of man-days (1 HOK) and the amount of raw material processed (15 kg). The results show that the labor coefficient for processing moringa leaves into moringa tea is 0.066, meaning that to process 1 kg of moringa leaf raw material, 0.066 HOK of labor is required. Thus, if UD. Wuna Bharakati processes 15 kg of moringa leaf raw material, it will require 1 HOK of labor.
5. The average price of moringa tea is IDR 300,000/kg, with an average labor cost incurred by the owner of UD. Wuna Bharakati of IDR 50,000 per production process. The average product price will determine the amount of added value of the product as well as the profit earned by the entrepreneur. The average product price will also indirectly affect labor compensation. The raw material processed by UD. Wuna Bharakati is fresh moringa leaves obtained from traders in Lupia Village and its surroundings at an average price of IDR 5,000/kg.
6. Other *input* contributions are the ratio between the total costs incurred for the purchase of other raw materials and the main raw materials used. The cost components included in other *input* contributions at UD. Wuna Bharakati are auxiliary material costs (Rp112,500), equipment depreciation costs (Rp238,777), and equipment costs (Rp33,333). The total cost of other *input* contributions is IDR 384,610 per production process, while the main raw material used is 15 kg. Based on this comparison, the value of other *input* contributions is IDR 25,640/kg.
7. The product value is the value obtained from multiplying the conversion factor (1.5) by the average product price (Rp300,000). Multiplying these two values results in a product value of Rp450,000/kg of raw material. The size of the product value is determined by the size of the conversion factor.

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8. The added value of processing moringa leaves into moringa tea obtained from the calculation is IDR 419,360/kg of moringa raw material. The value obtained from the calculation is the gross added value, meaning that it is not the final value that will be received by the business owner because it includes labor costs. The value-added ratio is the value obtained from comparing the added value obtained with the product value, then multiplied by 100%, resulting in 93.19%. This means that for every Rp1,000 of moringa tea product value, there will be an added value of Rp931. Based on the Hubeis criteria test, the value added ratio of processing moringa leaves into moringa tea at UD. Wuna Bharakati meets the criteria for high value added because it has a percentage value of > 40%.
9. Labor compensation is the result of multiplying the labor coefficient and average labor wage by a value of Rp3,300/kg of moringa leaf raw material. This means that 1 kg of raw material requires Rp3,300 in labor compensation. Meanwhile, the labor portion is the ratio between labor compensation and the value-added , which is 0.78%. This means that for every Rp10,000 in value-added income, Rp78 will be allocated to labor.
10. Profit is the value obtained from the difference between added value and labor compensation, which is Rp416,060. Meanwhile, the profit margin is obtained from comparing the amount of profit with added value, then multiplied by 100%, resulting in 99.2%. This means that for every Rp10,000 of added value obtained, a profit of Rp9,920 is earned.
11. The return to owners of production factors consists of a margin, which is the difference between the value of the product and the price of raw materials, amounting to Rp445,000. Direct labor income is the ratio of labor compensation to margin, amounting to 0.74%. Business profit is 93.4% of the ratio between profit and margin. Meanwhile, other *input* contributions are 5.7% of the ratio between other *input* contributions and margin.

CONCLUSION

Based on the description of the results and discussion, it can be concluded that the added value obtained from processing moringa leaves into moringa tea at the UD. Wuna Bharakati home business is Rp419,360/kg of raw materials and is classified as high added value because it has a percentage value of >40%, namely 93.19%. The added value obtained in one month is IDR 1,258,080. The added value obtained can be enjoyed by the business owner at 93.4% and the workforce at 0.74%.

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It is recommended that moringa tea entrepreneurs in Lupia Village develop product variations such as ginger, lemongrass, or local spice blend tea bags to increase added value and attract a wider range of consumers. In the future, there needs to be cooperation between entrepreneurs and the village government to encourage community participation as independent moringa tea producers through the establishment of local business units. Additionally, future researchers are encouraged to conduct value-added analysis using methods other than the Hayami method to gain new insights and findings that can enrich studies on the development of moringa leaf products.

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