

Conference Paper

Analysis of Added Value and Business Feasibility in Terms of The Economic Aspect of Processing Temurui Leaf Chips (*Murraya koenigii*) Nusa Village, Lhoknga District

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ABSTRACT

Temurui or *Murraya koenigii*, often also called curry leaves or koja greetings, is widely available in Aceh Province which is known in the Acehese local language "Temurui leaves". Temurui plants are widely planted in the yards of Acehese people's homes as ornamental plants, and the majority of Acehese people use these plants as ornamental plants. Acehese specialties, such as chicken catching and curry spices. So far, temurui leaves are only used for personal consumption, the rest are sold at a relatively low relevance price of IDR. 10,000 per Kg which causes this temurui leaf to be wasted so much just. Based on the analysis of the added value and business feasibility in terms of the economic aspect of processing temurui leaf chips (*Murraya koenigii*) in the home industry of Oen Temurui, Nusa Village, the added value of processing temurui leaves into temurui leaf chips is IDR 108,200/Kg or 54.1 percent. Economic feasibility analysis using the R/C ratio yielded 1.6 results, where the R/C value > 1 so that this business was feasible and profitable.

Keywords: Temurui leaf chips, added value, business feasibility

Introduction

Aceh Province is one of the islands that has abundant natural resources, both biological natural resources and non-biological natural resources, one of which is the temurui plant (*Murraya koenigii*). Temurui or *Murraya koenigii*, often also called curry leaves or koja greetings, is widely available in Aceh Province which is known in the Acehese regional language "Temurui leaves" (Fajriani et al., 2018). The temurui plant is widely planted in the yards of the Acehese people as ornamental plants and used as a kitchen spice, herbal medicine in alternative medicine for stomach pain, dizziness, itchy skin (Rosa et al., 2020). This plant is used as a spice for typical Acehese dishes, such as chicken and curry spices because it has a delicious and distinctive aroma. So far, temurui leaves are only used for personal consumption the rest are sold at a relatively low relevant price of IDR. 10.000 per kg of fresh temurui leaves sold by farmers to the Lambaro market. The demand for temurui leaves is still relatively low because there is no processing that utilizes temurui leaves as raw materials so that temurui leaves require processing.

Agroindustry can provide added value because of processing activities, able to increase the income of agribusiness actors, able to encourage the emergence of other industries (Soekartawi, 2000). Nusa Village is one of the villages in Lhoknga District, Aceh Besar District, Aceh Province which is a tourist village formed by the initiation of intelligent thinkers who rose up by exploring and utilizing local potential in Nusa Village, such as Mrs. Nurhayati, the owner of the temurui leaf processing business. by the typical Nusa Village on a household scale. Home industry Oen temurui is a business founded by Mrs. Nurhayati since 2021 with the aim of making temurui leaves as souvenirs from Nusa Village for the world (from Nusa to kata), so that everyone can enjoy chips made from Aceh leaves. This home industry processes fresh temurui leaves into chips which are packaged in a standing pouch weighing 200 grams.

How to cite:

Baru, A. P. Br., Zakiah, & Usman, M. (2023). Analysis of added value and business feasibility in terms of the economic aspect of processing temurui leaf chips (*Murraya koenigii*) Nusa Village, Lhoknga District. *Seminar Nasional Agroteknologi 2022*. NST Proceedings. pages 50-55. doi: 10.11594/nstp.2023.3111

Home industry of Oen Temurui has not paid attention to the financial system that only records simply. This will be very beneficial for the owner in allocating capital and expenditure in detail so that the added value for processing temurui leaf chips is not. The existence of the temurui leaf chips agroindustry in Aceh Besar only opens another one, while the abundant raw materials in Nusa Village raises the question of whether the lack of temurui processing agro-industry is due to the added value and profit gained from temurui leaf chips producers or caused by other factors.

Material and Methods

In this study, the method used to determine the research area is a case study, namely research on the status of the research subject concerning a specific or typical phase of the overall personality. Data collection was taken intentionally, Nusa Village was chosen as the location for the study because in Nusa Village there is the only industry that processes temurui leaves in Aceh to make temurui leaf chips into souvenirs typical of Nusa Village whereas, in Aceh, temurui leaves are commonly found but not sold and only used as a complement to cooking spices. Analysis of the data used in this study is the analysis of added value using the Hayami method.

Table 1. Added value calculation of Hayami method

no	Variabel	Formula
Output,input, price		
1	Output(kg)	(1)
2	Input of main raw material (kg)	(2)
3	Input of labor HKP)	(3)
4	Conversion faktor	(4) = (1)/(2)
5	Labour faktor	(5) = (3)/(2)
6	Price of output (IDR/pcs)	(6)
7	Average wage labour kerja (IDR/HKP)	(7)
Income and profit, IDR/kg		
8	Cost of main raw material (IDR/Kg)	(8)
9	Cost of other input (IDR/Kg)	(9)
10	Value of output (IDR/Kg)	(10) = (4) x (6)
11.a	Added value (IDR)	(11a) = (10) – (9) – (8)
B	Ratio of added value to total value %	(11b) = (11a/10) x 100%
12.a	Labour opportunity cost (IDR/Kg)	(12a) = (5) x (7)
b	Labour as share of added value %	(12b) = (12a/11a) x 100 %
13.a	Profit (IDR)	(13a) = (11a) – (12a)
b	Profit as share of output value %	(13b) = (13a/11a) x 100%
Remuneration for production factors		
14	Margin(IDR/Kg)	(14) = (10) – (8)
14a	Labour income (%)	(14a) = (12a/14) x 100%
14b	Share of other input (%)	(14b) = (9/14) x 100%
14c	Institution profit (%)	(14c) = (13a/14) x 100%

Results and Discussion

Description of research location

Nusa Village is one of the tourist villages in Lhoknga District, Aceh Besar Regency with a high initiative to build the village into an independent village, the people of Nusa Village have started since the post-tsunami with various strategies and approaches. In early 2006 Nusa Village began to be creative with waste materials produced as handicrafts with economic and aesthetic value for their consumption and sale or market. The desire to optimize the local potential in Nusa Village began to be discussed with

various parties in Nusa Village. Nusa Village is managed by the Nusa Tourism Institute (LPN). Community-Based Tourism (CBT) is a concept that is applied and developed in Nusa Village. The purpose of the organization carrying out this joint initiative is to improve the community's economy by not destroying the ecological order of the rural areas in Nusa Village.

However, the concept of a tourism village is still something new for the community and some even think that this is like a dream that will not be implemented, and many questions whether this program can bring tourists. The long process passed in packaging CBT has led to this joint initiative movement to join one institution, namely the Nusa Tourism Institute (LPN) in 2015. Various approaches and strategies are continuously conceptualized and implemented. Destinations or tourist attractions continue to be addressed, human resource development to ensure the implementation of tourism management with the CBT concept is also continuously implemented. The self-help group carried out by women and the younger generation of Nusa Village has succeeded in attracting 7,000 local and foreign tourists from 2015-2017 as many as 7.000 people with various tour packages.

In 2019, Nusa Village already has 42 homestays which are residents' houses that are arranged and managed by LPN. Taking turns receiving guests who come to visit Nusa Village is a management model applied in the development of community-based tourism. Nusa is a village that has the potential for various tours, such as natural tourism that is served by mountains, rivers, and rice fields that can be directly enjoyed by local tourists and foreign tourists. Nusa Village not only offers natural, artistic, and cultural tourism, Nusa festivals, but Nusa Village has culinary tours that make foreign tourists able to taste Acehnese specialties such as Aceh coffee, Aceh noodles, caught chicken, Pliek'U curry, fish curry rice fields, tamarind shrimp, wood fish, timphan, pulot, temurui leaf chips, and various types of Acehnese food can all be served by the people of Nusa Village. Everything can be a package at the Desa homestay, according to the wishes of Nusa Village visitors. The packages offered by Nusa Tourism Village are Camping, traditional games, cooking classes, garbage handicrafts, traveling around the village, hiking, along the river by boat and others.

Characteristics of home industry oen temurui

The existence of waste creation activities carried out in Nusa Village has a good impact on the people of Nusa Village, because it is not only a tourist village but also can generate additional income for those who have their own creative products such as Mrs. Nurhayati who is the head of the Tourism Institute. Nusa (LPN) and the owner of Oen temurui chips or temurui leaf chips. Initially, the temurui leaf chips were not a product of Nur, but a product produced by her friend at LPN. Temurui leaf chips were sold when there was a Bazar in Nusa Village in 2019 and turned out to be much liked by tourists. However, the weakness of the temurui leaf chips product at that time was only when the bazar was implemented even though this product had the opportunity to be developed.

When tourists or guests come to Nusa Village, Nurhayati's is the one who will welcome and receive guests. The tourists asked about the temurui leaf chips because they were curious about the taste and wanted to taste it, but the product was not available because Ibu Nurhayati's friend only produced it when ordered, so the guests had to bear the disappointment. Until over time, Mrs. Nurhayati felt sorry for the guests who came to the Nusa Tourism Institute basecamp because there really was no food or products that could be served to guests. Mrs. Nurhayati took the initiative to try to fry the temurui leaves which were filled with spices that she prepared herself, then served the temurui leaf chips as an appetizer at the basecamp. However, when tourists are going home, they ask to buy the product, even though Nurhayati's initial intention was to only fry a few chips specifically to entertain guests. Furthermore, Mrs. Nurhayati tried to ask her friend to produce temurui leaf chips again because every guest who came next wanted to try the chips, and guests who had tasted the chips also wanted to order again.

Added value of temurui leaf chips

Calculation of added value based on chip production data, period January to February, 2022 with a total production of 10 times production in one month. For one production process, the raw material for temurui leaves is 2.5 kg. The output produced is in the form of temurui leaf chips which are ready to be marketed. At one time the production process of temurui leaf chips produced as much as 5 kg of temurui

leaf chips. The raw material used to produce temurui leaf chips is temurui leaf with good quality. The selection of raw materials is due to the availability of raw material for temurui leaves, so that the production of temurui leaf chips is guaranteed to be sustainable. The process of calculating the added value of processing temurui leaves into temurui leaf chips can be seen in table 2.

Table 2. Added value of temurui leaf chips processing

no	Variabel	Value
Output,input, price		
1	Output(kg)	5
2	Input of main raw material (kg)	2,5
3	Input of labor HKP)	1
4	Conversion faktor	2
5	Labour faktor	0,4
6	Price of output (IDR/pcs)	100.000
7	Average wage labour kerja (IDR/HKP)	70.000
Income and profit, IDR/kg		
8	Cost of main raw material (IDR/Kg)	10.000
9	Cost of other input (IDR/Kg)	81.800
10	Value of output (IDR/Kg)	200.000
11.a	Added value (IDR)	108.200
B	Ratio of added value to total value %	54,1
12.a	Labour opportunity cost (IDR/Kg)	28.000
b	Labour as shareof added value %	25,88
13.a	Profit (IDR)	80.200
b	Profit as share of output value %	74,1
Remuneration for production factors		
14	Margin(IDR/Kg)	190.000
14a	Labour income (%)	14,74
14b	Share of other input (%)	43,05
14c	Institution profit (%)	42,21

Source: Primary Data Analyzed, 2022

Based on the calculation of added value in table 2, it can be explained that the production (output) in one production of temurui leaf chips at the home industry of Oen Temurui produces chips of 5 Kg with the use of temurui leaf raw materials (input) of 2.5 Kg. The conversion factor obtained is 2, which means that in the processing 1 Kg of temurui can produce 2 Kg of temurui leaf chips. The labor required in one production process of temurui leaf chips is 1 HKP, thus to process 1 Kg of temurui leaves into temurui leaf chips requires a workforce of 0.4 HKP/Kg. The output price/product of temurui leaf chips is IDR. 20,000/Pcs (200gr) so that per kilogram it is IDR. 100,000/Kg. The wage received by workers per production is IDR. 70,000/HKP.

The added value obtained from processing temurui leaves into temurui leaf chips is IDR.108.200/Kg. Added value is obtained through reducing the value of output with the cost of raw materials and other input contributions. Then the added value ratio of temurui leaf chips is 54.1%, which means 54.1% of temurui leaf products is the added value obtained from the processing of temurui leaf chips into temurui leaf chips. The labor income obtained from processing temurui leaves into temurui leaf chips is IDR. 28.000/Kg, with a percentage of added value which is 25.88%. profit rate of 74.1%.

The business of processing temurui leaves into temurui leaf chips at the Oen Temurui Home Industry belongs to the category of high added value (ratio of more than 40 percent). According to Hayami (1987), value added category is determined by the result criteria, namely the ratio of less than

15 percent means low added value, the value of the ratio ranges from 15-40 percent including moderate added value and a ratio value of more than 40 percent means high added value.

From the calculation of table 2, the margin value is IDR. 190,000/Kg, the margin value is obtained from the output value minus the price of raw materials. Labor income to margin is 14.74%. The contribution of other inputs is obtained through a comparison between the contribution of other inputs to the margin so that a value of 43.05% is obtained and the percentage of profit to the margin is 42.21%. This study is in line with the statement of (Sudiyono, 2004), which says that value-added occurs because of the processing, transportation, and provision of functional inputs on a commodity. The results of the added value analysis are the amount of added value, the ratio of added value, margin, and remuneration to the owners of the factors of production. The amount of added value is influenced by technical and non-technical factors.

Basically, a commodity will produce added value to the processed product due to the addition of functional inputs required by the commodity, the amount of which is influenced by two factors, namely technical factors, and market factors. Technical factors include the application of technology, product quality, production capacity, accompanying inputs, and quantity of raw materials. And market factors consist of raw material prices, output selling prices, other input values, and labor wages (Soekartawi, 1999). From the added value, it means that the temurui leaf chips agroindustry has succeeded in transforming temurui leaves into temurui leaf chips so that they have more value than the temurui leaves themselves. The number of products produced by the temurui leaf chips agroindustry, each of its productions, has been able to meet the demands of consumers. Temurui leaf chips are indeed a product that can be said to be cheap but with good quality it will provide more value for its enthusiasts and extensive marketing will make temurui leaf products more widely known to people. The continuous improvement of the quality of temurui leaf chips will provide more added value and marketing development of temurui leaf chips is needed to meet consumer demand.

Temurui leaf chips processing

The temurui leaves chosen to make chips are temurui leaves that are not too old and not too young. The choice of this type of leaf has an effect on the taste of the temurui leaf chips, so that the taste of the chips is not bitter. Previously, temurui leaves that had met the standards were picked from the temurui stems by hand. The temurui leaves that have been picked are washed with water until they are clean of dirt. Temui leaves that have been washed and then drained the water to dry. Next made the seasoning to be mixed with rice flour. The seasoning consists of garlic, candlenut, salt, white pepper, crushed using a mortar. After the spices are smooth, the spices are put into the rice flour and given enough water. Followed by the process of frying the chips by dipping the drained temurui leaves into the rice flour mixture and then putting it into the frying pan when the oil is hot.

Frying is done to get a hard and crunchy texture. In the frying process stirred slowly until cooked. The ripeness of the chips is indicated by the changing color of the temurui leaves to dark green. The cooked chips are left alone and drained to reduce the oil content. The drained chips are then cooled in a large bucket. The chilled temurui leaf chips are packaged in a 200 grams label. Packaging is done so that the crispness of the chips can be maintained and lasts a long time. The process of processing temurui leaves into temurui leaf chips in the home industry of Oen Temurui has good potential to continue to be developed because it provides added value and high profits. This of course cannot be separated from the support of the availability of raw materials.

Feasibility

R/C ratio analysis is a calculation tool used in determining business feasibility. R/C is the ratio between revenue and costs. This temurui leaf processing business is feasible if the Net R/C > 1, however, if the R/C = 1 then the business is at the breakeven point (Break Event Point), whereas if the R/C < 1 proves that the business is not feasible to operate. The results of the feasibility analysis of processing temurui leaves into temurui leaf chips in this industry are as follows:

$$R/C \text{ ratio} = \frac{\text{Total income from temurui leaf chips processing business}}{\text{Total cost of the temurui leaf chips processing business}} \quad (1)$$

$$\begin{aligned}
 &= \frac{5.000.000}{3.023.194} \\
 &= 1,65
 \end{aligned}$$

The value of 1.6 is obtained from the receipt of IDR. 5,000,000 divided by the total production cost of IDR. 3,023,194, with a result of 1.6. This means that every 1 IDR. the costs incurred in this processing business can provide an income of IDR. 1.6 which means that the home industry of Oen Temurui is an efficient business. The value of $R/C = 1.6$ explains that the business of processing temurui leaves into temurui leaf chips in the home industry of Oen Temurui in Nusa Village, Lhoknga District is feasible because the R/C value is greater than 1. temurui leaves are efficient and have the potential to be developed.

The high value of the R/C ratio is caused by the production obtained and commodity prices which greatly affect the income of entrepreneurs. Efficient is meant in business is the existence of cost suppression or cost efficiency which can reduce the number of production costs and increase income. Kadarsan, (Soekartawi, 2006) states that the R/C ratio can be used to measure the relative profit level of an activity or business, meaning that from the ratio figure, it can be known whether a business is profitable or not.

Conclusion

Based on the above discussion, it can be concluded that the processing of temurui leaf chips at the home industry of Oen Temurui in Nusa Village, Lhoknga District can provide positive added value, where temurui leaf chips are a derivative product of temurui leaves and processing of temurui leaf chips is easy because the ratio value is 1, 65, so that the $R/C \text{ ratio} > 1$ means that the business is feasible and developed because it is profitable.

Acknowledgment

This work was supervised by Ms. Zakiah and Mr. Mustafa as my supervisors. Therefore, we are grateful for the support of this research.

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