



## Improving the Household Economy Through Value-Added Cassava Crackers in Pasi Raja District, Aceh Selatan Regency

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### ABSTRACT

Cassava (*Manihot esculenta*) is an important food commodity in Indonesia, especially in rural areas rich in natural resources, as a source of carbohydrates and raw material for various high value-added products. Small-scale household businesses in cassava processing, such as cassava cracker making, provide significant economic value, extend shelf life, and increase selling value. This research was conducted in Pante Raja and Seneubok villages, South Aceh, using the Hayami method to analyse value-added. The results show that processing cassava into cassava crackers not only increases household income but also contributes significantly to the local economy. This processing is easy to do with low capital and simple equipment, making it worth developing as a profitable business alternative.

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## **INTRODUCTION**

Cassava (*Manihot esculenta*) is one of the most potential food commodities in Indonesia, especially in rural areas. Apart from being a source of carbohydrates, cassava can also be processed into various derivative products that have high economic added value. Cassava has long been known and cultivated by the Indonesian people to meet domestic needs as a staple food. In addition, a small portion of cassava production is used as animal feed or industrial raw materials (Yunas et al., 2020). Cassava has various benefits, especially when main foodstuffs such as rice are scarce, cassava is still available and can be used as an alternative food source. Cassava is one of the important and strategic food crops because it can be used for many different products including food and feed, energy, medicine and cosmetics (Firdaus et. al, 2019).

Cassava plants have the ability to grow on land with minimal water conditions and do not require complicated planting techniques. Along with globalization and limited employment opportunities, small-scale household businesses have become an attractive business alternative. By utilizing labor from family members, relatively low capital, and simple equipment, these small industries can be run at home and easily monitored. Thus, small household enterprises not only help overcome the problem of limited employment but also increase family income and welfare (Nurul, 2017).

Cassava processing aims to extend its shelf life and increase its selling value, which is very important for small businesses run by the community (Jamaluddin et al., 2020). Processing cassava into crackers not only increases the economic value of the product itself, but also contributes significantly to the household economy, especially in rural areas. The relatively simple production process and easily available raw materials make cassava crackers a prospective business option for rural communities. However, cassava harvests often face challenges in terms of storage and distribution, which can lead to damage and decreased value (Ministry of Agriculture of the Republic of Indonesia, 2019). One solution to overcome this problem is to process cassava into processed products that are more durable and have added economic value, such as cassava crackers, which are processed on a household scale and marketed to consumers. This business not only increases the economic value of cassava, but also makes a significant contribution to the household economy (Herdiyadi et al., 2016). There are several methods to increase the added value of a product. One of the most common methods is to strengthen the role of the agro-industry (process). According to (Saragih et al. 2010), agro-industry has a very vital role by utilizing agricultural products so that they can be processed into semi-finished and finished products.

Value added reflects the rewards for labor, capital, and management (Hamidah et al., 2015). According to Intyas and Firdaus (2020), added value is the increase in value that occurs when a commodity undergoes processing, transportation, and storage in the production process through the use or provision of functional inputs. Herdiyandi et al. (2016) formulated value-added as the difference between the value of output and the value of raw materials,

namely cassava, and the contribution of other inputs. This process increases the use value of agricultural commodities, including cassava commodities processed into cassava crackers.

The cassava cracker business has great economic potential, especially in rural areas rich in natural resources. Cassava crackers not only extend the shelf life and increase the selling value of cassava, but also create business opportunities for the community, especially in rural areas. The relatively simple processing process and easily obtained raw materials make cassava crackers a prospective product to be developed. Processing cassava into crackers not only increases the added value of the raw material itself, but also contributes significantly to household income. This business is relatively easy to do with little capital, so many rural households are interested in developing it as a source of additional income

The cassava cracker household business centered in Pasie Raja Sub-district, South Aceh District, especially in Pante Raja and Seunebok Villages, has developed into a centre of community economic activity, especially in the form of cassava cracker household businesses. This activity not only produces products of high economic value, but is also a very important source of additional income, especially for mothers in the two villages. With this household business, it is expected that there will be a significant positive impact on the socio-economic conditions of the local community. The aim of this study is to see how small-scale cassava cracker production can contribute significantly to increasing household income. This small business opens up business opportunities for the community in the field of production so as to be able to produce products with high added value.

## LITERATURE REVIEW

Cassava (*Manihot esculenta*) is an important food crop in many tropical countries. It is high in carbohydrates, particularly starch, which makes it a valuable food source. Cassava also has potential as a raw material in various industries such as food, animal feed and fuel. Increasing production and developing new varieties with high starch content and low cyanide acid (HCN) are the main focus of recent research (Heldiyanti. 2023).

Cassava processing includes various technologies to increase the added value and quality of the final product. Some common processed cassava products are cassava, tapioca, onggok, modified starch, and dextrin (Wiraputra et al. 2023). These processing technologies aim to improve product quality, extend shelf life, and increase its selling value. Recent research shows that the development of more sophisticated processing technologies can help overcome the problem of dependence on traditional raw materials and improve industry efficiency (Wiraputra et al. 2023).

The added value of cassava can be increased through various processing processes that produce products with better quality and higher competitiveness in the market. Processed cassava products that have high added value can

contribute to increasing the income of business actors and supporting food security (Wiraputra et al. 2023). Recent research has shown that the use of modern technologies in cassava processing can help achieve greater added value and meet increasingly diverse consumer needs.

Processing cassava into cassava crackers is one form of processing that is widely practiced in Indonesia. This process involves several stages such as peeling, slicing, drying, moulding, steaming, and frying. The resulting cassava crackers have a crunchy texture and savoury taste that is loved by many people. In addition to its popularity as a snack food, cassava crackers also have significant economic benefits. Processing cassava into cassava crackers can increase the added value of the product, create jobs, and increase the income of small businesses in rural areas. Technological innovations in cassava cracker processing can improve production efficiency and product quality, with the use of automatic peeling machines and continuous fryers that help increase productivity and produce high-quality cassava crackers (Wiraputra et al. 2023, Rukmana and Yuniarsih. 2021, Suhardi. 2006).

## **METHODOLOGY**

This research was conducted in two villages in Pasie Raja Sub-district, South Aceh District, namely Pante Raja Village and Seneubok Village. These two villages were chosen because they are the centre of the cassava cracker home industry, where there are many cassava cracker producers. This makes the location an appropriate place for research.

The data collection method used was in-depth interviews with cassava cracker business owners. To analyse the value-added of cassava commodities, the Hayami method was used. This method is often used to calculate added value in agro-industrial processing, as suggested by several studies on the added value of cassava.

Variables related to value-added analysis include the conversion factor, which is the number of processed cassava products produced from one kilogram of raw materials; the labour coefficient, which shows the amount of direct labor required to process one unit of input; and the product value of cassava, which shows the value of output produced from one unit of input. The value of inputs here includes everything used in the production process other than raw materials and labor (Hayami, 1987). The Hayami method calculates value added by comparing the price of inputs used and outputs produced. The calculation of added value using the Hayami method was also carried out by (Bagio et al. 2021; Kasimin et al. 2021; Yusdiana et al. 2022) who calculated the added value of Arabica coffee and the added value of Plik U.

## **RESULTS AND DISCUSSION**

### **Respondent Characteristics**

The characteristics of the respondents reflect the state of the respondents in this study. These characteristics affect the individual's ability to think and

make decisions in the yam cracker business that is run, so as to produce satisfactory results.

Table1. Respondent Characteristics of Sweet Potato Crackers in the Research Area, 2024

No	Description	Total	Percentage (%)
A	Age (Thn)		
1	< 30	0	-
2	30-50	6	60,00
3	>50	4	40,00
Total		10	100,00
B	Gender		
1	Male	2	20,00
2	Female	8	80,00
Total		10	100,00
C	Education Level		
1	SD	7	70,00
2	SMP	1	10,00
3	HIGH SCHOOL	2	20,00
4	S1	0	-
Total		10	100,00
D	Experience		
1	< 4	0	-
2	4 - 7	6	60,00
3	> 8	4	40,00
Total		10	100,00
E	Number of Dependents		
1	< 2	0	-
2	2 - 4	7	70,00
3	> 5	3	30,00
Total		10	100,00

Source: Primary Data (processed), 2024

The work ability of individuals is strongly influenced by their age. Craftsmen who are young and healthy generally have greater physical strength and are more energetic in carrying out their business activities compared to those who are older. Based on Table 1, the average age of yam cracker artisans is 30-40 years. Respondents of this study are in the productive age range, which is between 15 to 64 years (Central Bureau of Statistics, 2023).

The majority of yam cracker artisans in the study area are women, 80%, indicating that yam cracker production is more suited to the skills and time schedules of women who are at home, especially for housewives. In addition,

women's involvement in this business reflects their efforts to help increase family income.

Education plays an important role in influencing a person's ability to make decisions and run a business. In addition, education is also a major factor that supports an individual's ability to accept new things, such as innovations, the use of new technologies, and the latest information on market developments and prices. According to (Soekartawi, 1994), education is an important means of increasing knowledge about new agricultural technologies. The average level of education in the study area is at least elementary school (SD), and the highest is senior high school (SMK/SMA).

Business experience is one of the factors that can affect a person's ability to allocate production factors. Craftsmen who have longer experience in working tend to be more skilful in running their business, because cassava into yam crackers, more experienced craftsmen will also be more mature in making decisions. The average experience in processing cassava into yam crackers is 4 - 7 years, the more experience in doing business for the perpetrators the better the business planning they run. The number of dependents in the family also affects income and expenses. The more family members who are dependents, the greater the cost burden that must be borne by farmers in terms of family consumption. On average, the number of dependents ranges from 2 to 4 people, which means that in running the business, they can be assisted by labour from family members.

### Value Added of Cassava

The added value of processing cassava into cassava crackers is the increase in economic value obtained through various processing stages, such as peeling, washing, cutting, steaming, drying, and packaging. Each of these stages increases the value of cassava, both in terms of flavour, texture, durability, and appearance of the final product. Processing cassava into cassava crackers not only increases the economic value of the commodity, but also has a positive social and economic impact on the local community. In line with Sipayung et al. (2020), processing cassava into cassava cracker raw materials provides a significant increase in value, both in terms of income and production efficiency. This process shows that processing cassava into cassava chips can be a profitable business alternative for local communities.

Table 2. Value added of Sweet Potato Crackers in the Study Area, 2024

No	Description	Conversion Rate	Total Value
	Output, Input, Price		
1	Ouput /Total	A	17,00
2	Input Cassava (Kg)	B	25,00
3	Labor Input (Rp/HOK)	C	2,00
4	Conversion Factor	$D=A/B (17/25)$	0,68

No	Description	Conversion Rate	Total
5	Labor Coefficient	$E=C/D (2/0.7)$	2,94
6	Output Price (Rp/Kg)	F	20.000,00
7	Labor Wage (Rp/HOK)	$G=50000/25$	2.000,00
	Profit Receipt (Rp/Kg)		
8	Raw Price/Kg	H	2.500,00
9	Other Input Price	I	937,00
10	Output / Processed	$J=D \times F (0.68 \times 20,000)$	13.600,00
11	a. Value Added (Rp)	$K=J-H-I (13,600-2,500-1,873)$	10.163,00
	b. Value-added Ratio	$L\%=(K/J) \times 100$	74,73
12	a. Labor Income	$M=E \times G (2.9 \times 1.600)$	5.882,35
	b. Labor Share (%)	$N=(M/K) \times 100\% =$	57,88
13	a. Profit (IDR/Kg)	$O=K-M (9,227-4,705.9)$	4.280,65
	b. Profit Rate (%)	$P\%=(O/J) \times 100\%$	31,48
	Factor of Production Owner's Remuneration		
14	Margin (Rp/Kg)	$Q=J-H (13,600-2,500)$	11.100,00
	a. Labor (%)	$R\%=(M/Q) \times 100$	52,99
	b. Capital (%)	$S\%=(I/Q)$	8,44
	c. Profit (%)	$T\%=(O/Q)100\%$	38,56
			100,00

Source: Primary Data (processed), 2024

Processing cassava into cassava crackers produces a significant margin of Rp 11,100 per kilogram. This margin is the difference between the output value (selling price of cassava crackers) and the cost of raw materials and other inputs used in the production process. This high margin indicates that the processing process is very efficient and able to generate large profits for business actors. This efficiency in cassava processing not only increases the economic value of the cassava itself, but also contributes to increasing the income of local communities. In line with Firnanda and Tamami (2021), found that processing cassava into processed products provides significant margins and high production efficiency. The high margin indicates that the production costs incurred are relatively low compared to the selling value of the final product, making cassava cracker processing an attractive and profitable alternative for craftsmen, especially in rural areas.

The share of labor to the margin in the cassava cracker business reached 53.0%. This means that more than half of the value-added generated from the production process is used to pay for labor. This finding confirms the importance of cassava crackers in creating jobs and increasing income for local

communities. Cassava cracker businesses not only offer significant employment opportunities but also contribute substantially to the well-being of the individuals involved. With better incomes, individual welfare improves, which in turn strengthens the local economy. This increase in labor income is one of the crucial aspects in empowering communities and reducing poverty levels in rural areas.

According to Sipayung et al. (2020), cassava processing provides significant added value in terms of income and production efficiency, indicating the importance of increasing labor income in strengthening the local economy. Research by Sari et al. (2019) found that cassava processing had a positive impact on community income, demonstrating the relevance of various forms of cassava processing to the local economy. Firnanda and Tamami (2021) confirmed that cassava processing increases the economic value of the final product and has a positive impact on labor income and welfare.

The share of capital to margin in the cassava cracker business is 8.4%. This percentage includes other costs required in the production process, in addition to raw materials and labour. The low percentage of capital indicates that the cassava cracker business does not require a large capital investment. This condition makes the business more accessible to small business actors, who may have limited capital resources. Sipayung et al. (2020) stated that low capital requirements allow many small business actors to engage in the industry, thereby increasing the economic involvement of local communities. Sari et al. (2019), that various forms of cassava processing, including cassava crackers, can be accessed by communities with limited capital but still provide significant added value. Firnanda and Tamami (2021) that cassava processing increases the economic value of the final product and shows high efficiency in the use of capital, as well as great potential for small business development.

The share of profit to margin in the cassava cracker business is 38.6%. This means that almost 40% of the value added generated is net profit for the business owner. This high level of profit indicates that cassava cracker processing is very profitable and worthy of further development. Sipayung et al. (2020) showed that cassava processing provides significant added value, with almost 40% of the added value is net profit for business owners. Sari et al. (2019) found that cassava processing increased the income of local communities. Firnanda and Tamami (2021) showed that cassava processing increased economic value and profits significantly, making the business attractive to small business owners.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the discussion above, it can be concluded that processing cassava into cassava crackers provides significant added value with a margin of Rp 11,100 per kilogram, increases income and production efficiency, and creates jobs for local communities. The added value of almost 40% is the net profit for the business owner, making this business very profitable. Low-capital cassava processing is accessible to small businesses and has a positive impact on the

local economy. The high profitability and low capital requirements make this enterprise worthy of further development.

Recommendations for developing a cassava cracker business include product diversification with various flavours and shapes, and ensuring product quality through hygienic processes and quality raw materials. Use modern technology for production efficiency and utilize online marketing to expand reach. In addition, use attractive packaging, improve branding, and collaborate with other MSMEs to expand product marketing distribution.

### FURTHER RESEARCH

This research still has limitations so further research is still being carried out on this topic.

### REFERENCES

- Badan Pusat Statistik (BPS). (2023). *Aceh dalam angka*. Provinsi Aceh. Banda Aceh.
- Bagio, B., Kembaren, E. T., & Manyamsari, I. (2021). Analisis nilai tambah biji kopi arabika premium bersertifikat organik dan biji kopi arabika premium tanpa sertifikat organik di Aceh Tengah. *JASc (Journal of Agribusiness Sciences)*, 04(02), 94-99.
- Bungaran, S., Palupi, P. S., Jaya, U., & Dabukke, F. B. M. (2010). *Suara Agribisnis: Kumpulan Pemikiran Bungaran Saragih*. PT Permata Wacana Lestari, Jakarta.
- Dilana, I. A., Nurmalina, R., & Rifin, A. (2013). Pemasaran dan nilai tambah kakao di Kabupaten Madiun, Jawa Timur. In *Simposium Nasional Ekonomi Kakao* (pp. 204-213).
- Firnanda, F. A., & Tamami, N. D. B. (2021). Analisis nilai tambah ubi kayu sebagai bahan baku keripik di UD. Sinar Gemilang Desa Bobol Kecamatan Sekar Kabupaten Bojonegoro. *AGRISCIENCE*, 2(2), 255-265.
- Hamidah, M., Yusra, A. H. A., & Sudrajat, J. (2015). Analisis nilai tambah agroindustri kerupuk ubi di Kota Pontianak. *Jurnal Social Economic of Agriculture*, 4(2), 60-73.
- Hayami, Y., Kawagoe, T., Morooka, Y., & Siregar, M. (1987). *Agricultural marketing and processing in upland Java: A perspective from a Sunda Village* (Issue 8).
- Herdiyandi, R. Y., & Muhammad, N. Y. (2016). Analisis nilai tambah dan agro industry tepung tapioka di Desa Negara Tengah Kecamatan Cinema Kabupaten Tasikmalaya. *Jurnal Ilmiah Mahasiswa Agroinfo Galuh*, 2(2).
- Heldiyanti, R. (2023). Karakteristik ubi kayu hasil pemuliaan sebagai sumber pangan masa depan. *Jurnal Teknologi Pangan*, 4(1), 1-8.
- Intyas, C. A., & Firdaus, M. (2020). Analisis nilai tambah usaha kerupuk ikan cumi di Desa Weru Kecamatan Paciran Kabupaten Lamongan. *Journal of Fisheries and Marine Research*, 4(2).
- Kasimin, S., Bagio, B., & Manyamsari, I. (2021). Peningkatan daya saing kopi arabika melalui nilai tambah dan kerjasama stakeholder di Aceh. *JASc (Journal of Agribusiness Sciences)*, 5(1), 25-32.

- Kementerian Pertanian Republik Indonesia. (2019). *Laporan Tahunan Statistik Pertanian 2019*. Pusat Data dan Informasi Pertanian, Jakarta.
- Rukmana, A., & Yuniarsih, S. (2001). Olahan ubi kayu. *Jurnal Teknologi Pangan*.
- Sari, A. S., Fauzia, L., & Emalisa, L. (2015). Analisis nilai tambah pengolahan ubi kayu menjadi tape ubi (Studi Kasus: Kelurahan Baru Ladang Bambu, Kecamatan Medan Tuntungan, Kota Medan). *Journal of Agriculture and Agribusiness Socioeconomics*, 4(12).
- Sharma, K. D., Pathania, M. S., & Lal, H. (2010). Value chain analysis and financial viability of agro-processing industries in Himachal Pradesh. 23, 515-522.
- Sipayung, M. L., & Ginting, R. A. (2020). Analisis nilai tambah pengolahan ubi kayu (Manihot Utilissima): (Studi Kasus Desa Deli Tua Kecamatan Namorambe Kabupaten Deli Serdang). *Jurnal Agrilink*, 2(2), 62-70. <https://doi.org/10.36985/agrilink.v9i2.429>
- Soekartawi. (1994). *Pendidikan sebagai sarana meningkatkan pengetahuan teknologi pertanian*. Penerbit Buku Ilmiah, Jakarta.
- Soekartawi. (2002). *Analisis usahatani*. UI-Press.
- Suhardi, A. (2006). Mutu kerupuk dengan campuran tepung tapioka. *Jurnal Teknologi Pangan*.
- Wiraputra, D., Abdullah, K., & Daniro, M. (2023). Pengembangan produk berbasis ubi kayu dalam industri pangan. *Jurnal Teknologi Pangan*, 4(1), 1-8.
- Yusdiana, Y., Pratiwi, H., & Ulya, Z. (2022). Analisis nilai tambah industri rumah tangga minyak kelapa tradisional (minyak plik u) di Kecamatan Jangka Kabupaten Bireuen. *JASc (Journal of Agribusiness Sciences)*, 6(1), 36-42.