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Feasibility Analysis of Kasoami's Business in The Home Industry in Wundumbatu Sub-District, Poasia Sub-District Kendari City

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ABSTRACT

Kasoami is cassava root half processed by steaming treatment. Kasoami has functional and economic value. This study aims to determine the feasibility of the cassava business with the method used the Benefit Cost Ratio of the cassava processing business and Net Present Value, Internal Rate of Return, Payback Period, and Break Event Point for the cassava business. The analysis results of the B/C Ratio value of the cassava business are 1.91, which means that the cassava business is feasible to develop because it has a B/C Ratio value ≥ 1. The NPV value analysis is Rp. 109,430,115. The NPV value is greater than zero, so based on the NPV criteria, the kasoami business is feasible. The IRR value of the kasoami business is 22.9%, and the IRR value is greater than the discount rate used, which is 6%. So, the development of the Kasoami business deserves to be developed. The Payback Period (PBP) value for the development of the kasoami business is 0.5 years (6 months). This value indicates that all investment costs invested in the cassava processing business development plan will be returned in the 6th-month maximum. BEP (Break Event Point) is a state of not making a profit but also not suffering from a loss. The calculation results for cassava production BEP is 1,569 kg, and the BEP cassava price is IDR 8,368/kg. The five investment feasibility criteria make the development of the Kasoami business feasible to run financially.

Keywords: *Kasoami, Cassava, Steaming, Functional, Economical.*

I. INTRODUCTION

Indonesia is an agricultural country, so the agricultural sector has a massive role in the country's economic growth with agro-industry or agriculture-based industries, which are one of the pillars of accelerating economic development. Anggraini et al. (2023); Fauzan et al. (2023); Susanto, Y. (2023) states that agro-industry is an industrial activity that utilizes the results of agricultural commodities as raw materials that can be processed into products that have added value and have more benefits than the results of previous agricultural commodities. On the other hand, for the people of Indonesia, the tropical climate provides help for the cultivation and development of cassava (Manihot esculenta CRANTZ.) in the pillar of food security, so cassava is known as an essential food ingredient. Apart from being used as a food ingredient, cassava is an industrial raw material in food and non-food industries (Amin, 2018).

Cassava is Indonesia's third food crop commodity after rice and corn, as well as the cheapest and most readily available source of food calories. Cassava in Indonesia is mainly used for food (58%), industrial raw materials (28%), exports in the form of cassava (8%), and feed (2%) (Amin, 2018). Cassava productivity in 2015 was around 229.51 quintals/Ha, and cassava production in 2015 was around 21,801,415 tons with a harvested area of 949,916 Ha (BPS., 2023).

Cassava processing aims to increase the durability of cassava so that it is suitable for consumption and utilizes cassava to obtain high selling/economic value in the market (Valentina, 2009). Processing cassava into several processed products is an effort to support food security and diversification programs. It is a solution to the problem of dependence and scarcity of one staple food. Processing cassava into flour is a strategic and economical step for developing cassava into various processed products. As a food ingredient, consumption of cassava and its processed

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products is relatively low. It is related to the limited and traditional touch of technology in cassava processing. Various processed cassava such as boiled cassava, kaopi, tiwul, gatot, dumplings, tuli-tuli, dance, and others (each region has its unique name) are often considered to have low prestige. One kilo of cassava root flour can supply calories ranging from 1,998 to 3,588 kcal (Amin. 2018).

Increasing the added value of cassava is currently being developed by cassava farmers in the Wundumbatu sub-district, Poasia sub-district, and Kendari city through the manufacture of cassava. Kasoami is a typical food with functional and economic value, which is quite prospective in the future to be developed. It is one of the alternative solutions for sources of health and income for consumers and entrepreneurs in the typical Kasoami food industry. Moreover, the potency that consumes cassava is not only the people of Southeast Sulawesi; even foreign citizens (foreign tourists) also enjoy it. The people of Southeast Sulawesi and people from Southeast Sulawesi in the archipelago consume cassava mostly with fish so that protein and fat deficiencies from cassava can be overcome.

Kasoami as a functional food (Amin, et al., 2020; Amin, et al., 2021 and Amin., 2022). Cassava also has the advantage that everything contained in cassava can be used as a processed food ingredient, such as snacks (Rukmana & Yuniarsih, 2001). Sulaiman (2018) stated that the cassava cracker agro-industry has an added value of Rp. 5,232.18 per kilogram of processed cassava, with a value-added ratio to an output value of 23.76%. This value is included in the range or business range that provides moderate added value. Sunarya (2021) also stated that making similar crackers is feasible to be used as an alternative for household-scale businesses. With that in mind, this research wants to analyze the feasibility of the cassava business in the home industry in Wundumbatu Village, Poasia District, Kendari City. The research objectives were to find out: 1) Benefit Cost Ratio in the cassava processing business; 2) the Net Present Value, Internal Rate of Return, Payback Period, and Break Event Point The cashew processing business is feasible to run financially.

II. RESEARCH METHODS

This research was carried out by the people's cassava garden at Perumnas Poasia, Wundumbatu Village, Poasia District, Kendari City, in August - September 2022. The research is part of the 2022 MBKM assignment research with the title Study of Chemical Composition and Secondary Metabolites of Kasoami as a Functional Food to Prevent Diabetes.

Retrieval of data using the interview method. The type of data collected is in the form of primary data. Primary data includes cassava processing activities into Kasoami. Observations and measurement concepts include:

a. Respondent's identity consists of name, age, gender, education, and experience managing cassava to become kasoami.
b. Description of cassava processing business into kasoami. The raw material in the cassava production process is fresh cassava that has been selected. The processing of cassava begins with peeling the cassava skin, washing it clean, and draining it. After draining until dry, then grated cassava. After grating, the grated cassava is wrapped in a cloth and then pressed so that the cassava water does not drip and is aerated. The result of mashing grated cassava is called kaopi. Pressing or squeezing water aims to reduce the water content, HCN, and odorous substances to speed up drying (Amin, 2018). Kaopi that has been loosened and then steamed. Steaming with a tumpeng press made from raw coconut, embroidered in a cone. Kasoami products are sold in various places, especially the Andonohu Poasia market, Kendari City, using plastic bags.
c. The cost of processing cassava into cassava, namely the expenses incurred to process cassava into cassava, can be measured in units (Rp).
d. Fixed costs are costs used by cassava producers at the start of carrying out cassava processing activities to become cassava until it reaches the target economic age of the business, including the cost of purchasing equipment and depreciation costs, with a relative price range according to the actual price.
e. Variable costs are costs to support the processing of cassava into cassava, including the purchase of raw materials in the form of cassava and supporting materials in the form of labor, plastic packaging, electricity, and PDAM.
f. Revenue, namely the total production value during processing cassava into cassava, is measured in units of rupiah (Rp)
g. Income is money received by someone from the company in the form of salary, wages, rent, interest, profit, etc.
h. The relative profit is the net profit received by the kasoami entrepreneurs.

This study uses several data analysis tools to answer each objective aspect of financial feasibility, including (Kasmir & Jakfar, 2017; Rasyid et al., 2020):

a. Benefit and Cost Ratio (B/C Ratio).

The B/C Ratio is the activity ratio of the total present value of investment spending over the life of the investment. Formula B/C:

b. Net Present Value (NPV)

NPV is considered as the present value obtained from the difference between the benefits and costs with particular interest; the NPV formula:

Information:

At = inflow of cash in the month t
K = discount factor
N = last period of expected cash flow

c. Internal Rate of Return (IRR)

IRR measures the rate of return on internal results. The IRR formula is as follows:

Information:
NPV1 = Net present at Value 1
NPV2 = Net gift at Value 2
i2 = Interest rate 1 (the discount rate that produces NPV1)
i1 = Interest rate 2 (the discount rate that produces NPV2)

d. Payback Period (PBP).

The payback period determines when the capital we use can be returned. Payback Period Formula:

Information:
b = value on investment
c = Cumulative cash inflow in month t
d = cumulative amount of cash inflow in month t + 1
t = The last year where cash inflow has not covered the investment value

e. Break Event Points (BEP)

Break Even Point in this study consists of three types: production BEP, revenue BEP, and price BEP. Production BEP shows the total output of how many businesses can break even. The price BEP offers at what selling price the company reaches the breakeven point.

III. RESULTS AND DISCUSSION

3.1 Cost analysis of cassava processing business

3.1.1 Fixed costs

According to Mulyadi (2009), fixed costs are costs in a specific activity volume. Meanwhile, according to Carter (2009), fixed costs are costs that do not change when business activity increases and decreases. Fixed costs calculated in cassava processing include depreciation of gas cylinders, grater machines, boilers, and stoves. The fixed costs of the cassava processing business are presented in the following table:

Table 1. Fixed costs of cassava processing business

No.	Description	Amount	Unit	Price	Total Price Per Month	Total Per Year
	shrinkage					
1	Gas cylinders	1	Unit	15.000	15.000	180.000
2	Gathering Machine	1	Unit	12.000	12.000	144.000
3	Cormorant	1	Unit	5.000	5.000	60.000
4	Stove	1	Unit	10.000	10.000	120.000
					42.000	504.000

The table above shows that the total fixed costs of the cassava processing business are IDR 42,000/month and IDR 504,000/year. The highest selected cost component is gas cylinder depreciation of Rp.180,000/year, followed by more significant machine depreciation of Rp.144,000/year. The lowest fixed cost component is boiler depreciation of 60,000/year.

3.1.2 Variable costs

According to Mulyadi (2009), variable costs are costs that change in proportion to changes in the volume of activity. Meanwhile, according to Garrison (2006), variable costs (variable costs) vary in proportion to changes in activity levels. The variable costs of the cassava processing business are presented in the following table:

No.	Description	Amount	Unit	Price	Total Price Per Month	Total Per Year
1	Cassava	250	Kg	5.000	1.250.000	15.000.000
2	Labor	1	Person	500.000	500.000	6.000.000
3	Packaging Plastic	1	Unit	150.000	150.000	1.800.000
4	Electricity	1	Unit	100.000	100.000	1.200.000
5	PDAM	1	Unit	50.000	50.000	600.000
					2.050.000	24.600.000

The table above shows that the total variable costs of the cassava processing business are IDR 2,050,000/month and 24,600,000/year. The highest variable cost component is cassava raw material at IDR 15,000,000/year, followed by labor at IDR 6,000,000/year, while the lowest variable cost component is PDAM of 600,000/year

3.2 Production, price, acceptance, and B/C ratio of cassava processing business

According to Suratiyah (2006), in general, the calculation of total revenue (Total Revenue/TR) is the multiplication of the amount of production (Y) and the selling price (Py). Revenue from the cassava processing business, namely the cassava production produced multiplied by the cassava selling price. Furthermore, the BCR

(Benefit Cost Ratio) is used to find out the comparison between the present value of benefits and the value of current costs at the prevailing interest rate. The importance of Benefit Cost Ratio is a comparison of income and expenses. Production, prices, and receipts, B/C Ratio cassava processing business is presented in the following table:

Table 3. Production, price, revenue, and B/C ratio of cassava processing business.

No.	Description	Unit	Amount
1	Production/month	Piece	250
2	Production/year	Piece	3.000
3	Price	Rp	16.000
4	Reception	Rp	48.000.000
5	Cost	Rp	25.104.000
B/C			1,91

The data in the table above shows that cassava production is 250 pieces/month and 3,000 pieces/year, and cashew processing business revenue is Rp.48,000,000/year with a total cost of Rp.25,104,000/year. The B/C Ratio value of the cassava processing business is 1.91, which means that the cassava processing business is feasible to develop because it has a B/C Ratio value of ≥ 1

3.3 Investment costs, fixed costs, variable costs, total costs, and cashew processing business revenue

Analysis of investment costs, fixed costs, variable costs, total costs, and cashew processing business revenues is presented in the following table:

Table 4. Investment In Cassava Processing Business

No.	Investment	Still	Variable	Total	Total sales
0	10.000.000	-	-	(10.000.000)	
1		504.000	24.600.000	25.104.000	48.000.000
2		504.000	24.600.000	25.104.000	48.000.000
3		504.000	24.600.000	25.104.000	48.000.000
4		504.000	24.600.000	25.104.000	48.000.000
5		504.000	24.600.000	25.104.000	48.000.000
6		504.000	24.600.000	25.104.000	48.000.000
7		504.000	24.600.000	25.104.000	48.000.000
8		504.000	24.600.000	25.104.000	48.000.000
9		504.000	24.600.000	25.104.000	48.000.000
10		504.000	24.600.000	25.104.000	48.000.000

The table above shows that the investment cost incurred to fund the cassava processing business is IDR 10,000,000. The investment value is still relatively low because the cassava processing business is still classified as a micro business.

3.4. NPV, IRR, Payback Period, and BEP of Cassava Processing Business.

Net present Value (NPV) is the current value of all cash flows from now until the end of the project. The project is accepted if the NPV > 0 or The largest NPV, Internal Rate of Return (IRR), is used to calculate income interest rates (Winantara et al., 2014). The payback Period (PBP) is the initial cost recovery period. The faster the return, the more attractive the alternative is compared to other options (Rachadian et al., 2013).

The breakeven point is a situation where the company does not experience profits and also does not experience losses, meaning that all costs can be covered with sales income (Harahap, 2007).

Table 5. Analyse NPV, IRR, payback period, and BEP of cassava processing business.

Year	Total cost	Total Admissions	Net income	DF 14%	Present Value
0	10.000.000	-	(10.000.000)	1.000	(10.000.000)
1	25.104.000,00	48.000.000	22.896.000	0.8772	20.084.371
2	25.104.000,00	48.000.000	22.896.000	0.7695	17.618.472
3	25.104.000,00	48.000.000	22.896.000	0.675	15.454.800
4	25.104.000,00	48.000.000	22.896.000	0.5921	13.556.772
5	25.104.000,00	48.000.000	22.896.000	0.5194	11.892.182
6	25.104.000,00	48.000.000	22.896.000	0.4556	10.431.418
7	25.104.000,00	48.000.000	22.896.000	0.3996	9.149.242
8	25.104.000,00	48.000.000	22.896.000	0.3506	8.027.338
9	25.104.000,00	48.000.000	22.896.000	0.3075	7.040.520
10	25.104.000,00	48.000.000	22.896.000	0.2697	6.175.051
NPV					109.430.115
IRR					22.9%
Payback Period					0.50
BEP Production and Price					1.569 Kg and Rp. 8.368

Based on the financial feasibility analysis, an NPV value of IDR 109,430,115 was obtained. The NPV value is greater than zero, so based on the NPV criteria, the cassava processing business is feasible. The IRR value of the cassava processing business is 22.9%, which is greater than the discount rate used, which is 6%. So the development of the cassava processing business is feasible to be developed. The Payback Period (PBP) value for the development of the cassava processing business is 0.5 years (6 months). This value indicates that all investment costs invested in the cassava processing business development plan will be returned in the sixth-month maximum. BEP (Break Event Point) is a state

of not making a profit but also not suffering from a loss. Based on the calculation results, the BEP for cassava production was 1,569 kg, and the BEP for cassava price was Rp.8,368/kg.

IV. CONCLUSION

Based on the results of the analysis of the feasibility of the cassava business in the home industry in the Wundumbatu sub-district, Poasia sub-district, Kendari city, it can be concluded as follows:

1. The value of the Benefit Cost Ratio (B/C ratio) is 1.91, or the value of the B/C ratio≥ 1
2. Present Net Value (NPV) of IDR 109,430,115 or an NPV value greater than zero,
3. The Internal Rate of Return (IRR) is 22.9%, or the IRR is greater than the discount rate used, which is 6%.
4. The Payback Period (PBP) value is 0.5 years.
5. Break Event Point (BEP) of 1,569 Kg and BEP for cassava prices of IDR 8,368/kg.

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