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Feasibility of Banana Chips Agroindustry Business IKM Banua Pagatta in Lolu Village Sigi Biromaru District, Sigi Regency Sulawesi Tngah

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ABSTRACT

Kepok banana chip is one of the processed banana products used as daily snack, especially for the people of Sigi Regency. It has even been marketed to several areas around Sigi Regency. The banana chips business produced by IKM Banua Pagatta has started to actively manage its business again three years ago. However, how much profit and feasibility have been obtained so far and to what extent can this business return the invested capital and what products are sold in what forms generate the highest income. The purpose of this study was to determine the level of financial feasibility of the banana chip business which was carried out from November 2022 to January 2023. The selection of respondents was carried out purposively with 2 persons, namely the owner IKM Banua Pagatta business. The data analysis method used is financial feasibility analysis, with several criteria, namely: Net Present Value (NPV), Net Benefit Cost Ratio (Net B/C), Internal Rate of Return (IRR), Payback Period (PP). The results show that the Financial Feasibility of the Kepok Banana chips business of IKM Banua Pagatta used 4 calculation criteria: For production in bulk form/Kg, the NPV was Rp. 20,801,153; Net B/C of 1.22; IRR of 17.31% and PP for 2 years 2 days. As for production in the form of packaging, the NPV is 10,801,153, Net B/C is 1.10, IRR is 16.23% and PP 2 years 1 month and both of them are said to be feasible to run.

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INTRODUCTION

Central Sulawesi is one of the regions that has an agricultural sector whose development will continue to be carried out considering that Central Sulawesi is one of the areas that will be prepared to strengthen food security for the National Capital City (IKN) in East Kalimantan. This will be an opportunity for better economic growth in the future. Not only from the agricultural sector but also from the industrial sector made from agricultural products is also a driver of economic growth in Central Sulawesi (Mastura, 2020).

The agricultural sector that produces various kinds of agricultural products, both from the food crop and horticulture sector, the plantation and livestock sector, the fisheries and marine sector and the forestry sector. From these agricultural products, it is not only a food supplier but can be a producer of raw materials for industries in Central Sulawesi. The role of the agroindustry sector in the national economy is focused on the value of output multipliers, added value, labor and the relationship between sectors and their role in increasing household income (Makarawung, 2017). Furthermore, Makkarawung (2017) said that agroindustry activities in an area occur because of the support of natural resources and human resources which are quantitatively very

numerous, but in terms of quality it still needs to be improved and developed in order to produce competitive products.

Agroindustry is a business to increase the efficiency of the agricultural sector until it becomes a very productive activity through the process of agricultural modernization. Modernization in the industrial sector on a national scale can increase value-added receipts so that export revenues will be greater (Saragih and Bungaran, 2010). Agroindustry is a series of industrial activities consisting of the process of production, processing, transportation, storage, funding, marketing and distribution based on agricultural products. It can be said that agroindustry is an industry that processes agricultural products into semi-finished materials or final products involving humans, agricultural commodities, capital, technology, information and other factors. The existence of agro-industry is very important for the progress and welfare of a region. The existence of the agro-industry is able to absorb a lot of labor, increase the income of its actors, increase regional income and be able to emerge the latest innovations so as to strengthen competitiveness (Kurniati, 2015).

Agroindustry is known as an industrial activity that processes agricultural products as raw materials into final products or semi-finished goods, as well as providing equipment and services to support these activities. However, agroindustry is better known as a downstream industry that processes and produces ready-to-consume goods (Gultom and Lies Sulistyowati, 2018). Agroindustry is a part (sub-system) of Agribusiness, which is an industry that processes and transforms agricultural products into semi-finished goods or finished goods that can be directly consumed (Istiyanti et.al, 2020).

One of the agricultural products from the horticultural sector that can be used as industrial raw materials and processed into a new product, namely bananas. Bananas are a fruit that is very popular with all people, many types of bananas that we find ranging from Ambon bananas, plantains, milk bananas and kepok bananas. In addition to being consumed in fresh form, kepok bananas are also a type of banana fruit that has characteristics, namely thick skin with a not too sweet taste, dense flesh texture so that this banana is more used as a processed material, such as banana chips (Hendra (2013); Haryanto et.al (2013) and Putri (2022)).

Banua Pagatta Small and Medium Industries (IKM) is an industry engaged in the manufacture of banana chips, this business is located in Lolu Village, Sigi Biromaru District, Sigi Regency, where Banua Pagatta IKM makes kepok bananas or commonly called shoe bananas as raw materials. Every business faces different challenges and opportunities. Depending on how the business is run and can also be influenced by several factors, including: business capital factors, availability of raw materials, human resources, product quality and so on. In line with the opinion of Halid et al. (2017) that businesses will experience an unwanted obstacle in a certain period. The scale of business ownership, whether small, medium or large business scale, can be said to be successful when it has earned a decent income for its business.

The banana chips business has an opportunity to expand. Seeing the prospects of the banana chips business, it is necessary to handle it properly so that in the future it can develop and have competitiveness with similar businesses. According to Soetriono (2006), financial analysis is an analysis carried out to determine whether a project will be profitable during the life of the project by comparing costs and benefits, which are expressed in the present value to find out the feasibility or profit criteria of the project. To achieve this goal, it is necessary to conduct research to challenge the feasibility of the business from the financial aspect in order to obtain information that can be used as a reference in the sustainability of the business and how well this business can survive in uncertain conditions.

METHOD

This research was carried out at the Banua Pagatta IKM in Lolu Village, Sigi Biromaru District, Sigi Regency, Central Sulawesi Province, from November 2022 to January 2023. The determination of the location of the research and respondents was carried out by the Porposive Sampling (intentionally) with the consideration that this study is a case study. The respondents to this study were 2 people, namely the owner of the Banua Pagatta IKM and one employee of the operational department who handles the provision of raw materials and the processing process of banana chips.

Data Collection Methods

The data collection method in this study is carried out in two ways, namely primary data and secondary data, which includes primary data is carried out in two ways, namely: Interviews conducted through face-to-face and direct question and answer with respondents with questionnaire guidance tools. Documentation is carried out to obtain drawings related to the activities carried out by the company regarding production equipment materials and production processes.

Data Analysis Methods

The data analysis method used is a financial feasibility analysis with investment criteria consisting of 4 criteria: Net Present Value (NPV), Net Benefit Cost Ratio (Net B/C), Internal Rate of Return (IRR) and Payback Period (PP). According to Kadaria et al. (2000); Alfizar et al. (2017) and Sartikasari et al. (2021), The feasibility of a business financially is carried out to determine the amount of profit obtained in running a

business so that it can be measured whether or not the business is feasible to be implemented. The calculations carried out include the costs incurred and benefits in the form of profits from the sale of output for three (3) years of calculation. Analysis in the financial aspect includes cost and benefit analysis, cash flow value (Cashflow), and the calculation uses several criteria, namely:

Net Present Value (NPV)

NPV = ∑ PV Bt - ∑ PV Ct ..... (1)

Information:
Bt = Receipt (benefit) in the tth year
Ct = Cost in the tth year
With the following eligibility criteria:
NPV > 1 means that the business can be said to be feasible or profitable
NPV < 1 means that the business can be said to be unfeasible or loss-making
NPV = 0 means that the business can be said to be at the breakeven point or break even point.

Net Benefit Cost Ratio (Net B/C)

$$\text{Net B/C Ratio} = \frac{\sum \text{NPV Positif}}{\sum \text{NPV Negatif}} \text{ ..... (2)}$$

Description: Bt = Net benefit in the tth year
With business criteria:
Net B/C > 1 : Business is feasible
Net B/C < 1 : Business is not feasible

Internal Rate of Return (IRR)

$$\text{IRR} = \text{ir} + \frac{\text{NPV ir}}{\text{NPV ir} - \text{NPVit}} \text{x (ir} - \text{it)} \text{..... (3)}$$

Information:
ir = Discount rate that results in a Positive NPV
it = Discount rate that generates Negative NPV

Payback Period (PP)

$$\text{Payback Period (PP)} = \frac{\text{Jumlah Investasi}}{\text{Aliran Kas Bersih}}$$

The assessment criteria for the Payback Period are:
If the PP < maximum time, then the project proposal is accepted.
If the PP > maximum time, then the project proposal is rejected.

RESULTS AND DISCUSSION

Production Process

Production is a process in which some goods and services called inputs are converted into other goods and services called outputs. The types of activities that occur in the production process include changes in form, place and time, and the use of production products (Marliyah, 2022).

The process of making banana chips goes through several stages starting from the preparation of raw materials, peeling and slicing, frying process, oil draining process, cooling process, process of providing flavor/seasoning variants and finally the packaging process. In the production process, production costs are used which consist of variable costs, depreciation costs of production tools and fixed costs in which there are labor costs, investment/capital costs, and other costs.

The results of research on the Banua Pagatta IKM banana chip business in the last three years have produced/processed 598 bunches of kepok bananas with production in bulk form of 4,800/kg and packaged into several packages consisting of 100 gram packaging, 100 gram foil packaging and 500 gram packaging as many as 32,080 packages with a total receipt of Rp.337,575,500 or an average Rp. 112,525,167/year, but if the production of Banua Pagatta IKM banana chips is only sold in bulk (kg), revenue of Rp. 327,360,000 is obtained with an average of Rp. 109,120,000/year. The recapitulation of revenues, investment costs, variable costs and fixed costs can be seen in Tables 1 and 2 below:

Table 1. Revenue, Investment Costs, Fixed Costs and Variable Costs of SMEs Banua Pagatta, Production in Packaging for three years

It	Description	Sum
	Acceptance	
A	- Total Admissions	**337.575.500**

	- Average	**112.525.167**
B	Investment Costs	**94.000.000**
C	Fixed fees	
	- Total	**115.483.698**
	- Average	**38.494.566**
D	Variable Costs	
	- Total	**96.008.575**
	- Average	**32.002.858**

Source : Primary Data After Processing, 2023

Table 2. Revenue, Investment Costs, Fixed Costs and Variable Costs of SMEs Banua Pagatta, Production in Bulk (kg) for three year

It	Description	Sum
	Acceptance	
A	- Total Admissions	**327.360.000**
	- Average	**109.120.00**
B	Investment Costs	**94.000.000**
C	Fixed fees	
	- Total	**115.483.698**
	- Average	**38.494.566**
D	Variable Costs	
	- Total	**73.256.100**
	- Average	**24.418.700**

Source : Primary Data After Processing, 2023

The results of the calculation of production, costs and receipts of the Banua Pagatta IKM banana chips business with two types of sales models, namely sold in the form of packaging with several sizes and sold in bulk (kilos), it turns out that there is a difference in receipt. Products sold in packaged form receive a receipt of Rp 337.575.500 for 3 years of production or average IDR 112,525,167/year. Meanwhile, products sold in bulk (kilos) received a revenue of IDR 327,360,000/3 years or IDR 109,120,000/year. This difference is influenced by the variation in the price of the product charged differently depending on the size of the packaging, while if it is sold in bulk there is no price variation.

Financial Analysis

Financial feasibility analysis is carried out to determine whether an investment is feasible or not measured in terms of finance. The analysis is carried out by paying attention to all forms of cash inflows and outflows so that it can facilitate the calculation. The results of the calculation of financial feasibility with using 4 infestation criteria can be seen in the following Table 3:

Table 3. Results of Financial Analysis of Banana Chips Business of Banua Pagatta IKM at an interest rate of 10 %

It	Financial Analysis Criteria	Packaging	Bulk (Kg)
1	NPV	10.195.172	20.801.153
2	Net B/C	1,10	1,22
3	IRR (%)	16,23	17,31
4	PP (Yr)	2,10	2,02

Source : Primary Data After Processing, 2023

The results of the study show that the Banua Pagatta IKM banana chips business during the three-year calculation period can be said to be NPV (discount factor 10%) produced from production in the form of packaging which is Rp. 10,195,172, while the NPV produced in bulk form (kg) is Rp. 20,801,153. This can be said to have a positive value because cash inflows are still greater than cash outflows (revenues are greater than costs incurred) (Zailan, 2017).

Net Benefit Cost Ratio is a comparison between positive NPV and negative NPV. The results of the calculation of the Net B/C of the Banua Pagatta IKM Banana Chips business in the production in the form of packaging obtained a B/C of 1.10 or B/C > 1 which means that for every Rp.1,000,-cost incurred a benefit of Rp 1,100, this can be said that Banua Pagatta IKM earns a profit of Rp 1,100 for every Rp 1,000 expensed. Meanwhile, for the production in bulk form (Kg), a Net B/C of 1.22 or a B/C of > 1 is obtained, meaning that for every Rp.1,000 of costs incurred, a benefit of Rp.2,200 is obtained. The results of the calculation of the Net B/C of the Banua Pagatta IKM banana chip business from production in the form of packaging and production in bulk form (Kg) both can be said to be feasible to run

Based on the results of financial analysis calculations using criteria IRR (Internal Rate of Return) with the calculation of production in the form of packaging obtained an IRR of 16.23% while the calculation of production in bulk (Kg) obtained an IRR of 17.31%. This means that the percentage of return on investment is still greater than the bank interest rate, which is 5.0% (the current Bank Indonesia interest rate).

Payback Period (PP) It is a determination of the period of return on investment made by a business. In this study, the assessment criteria used Payback Period in the Banua Pagatta IKM banana chips business by calculating production in the form of packaging, the payback time is obtained for 2 years and 1 month, and when calculating production in bulk form (Kilograms), the payback time is obtained for 2 years and 2 days (2 years). This shows that Banua Pagatta SMEs in sales per package and per kilogram each have different investment return periods, but the investment return period of both is still smaller than the maximum time limit for calculating the Banua Pagatta IKM banana chip business, which is 3 years. The results of the study also show that the payback time is faster if the production is sold in bulk (Kg) than in the form of packaging, where the difference in return time is 28 days.

Of the two Banua Pagatta IKM banana chip business productions, both sold in packaged form and sold in bulk form in the calculation of financial feasibility with the criteria of NPV, Nat B/C, IRR and PP as seen in Table 3 above, both are said to be financially feasible, which provides the greatest profit is if the production is sold in bulk/kg, When compared to production sold in packaging form, this is because in bulk form there is no cost for packaging materials (low variable cost), while production sold in packaging form must allocate costs for the purchase of packaging materials. But when viewed in terms of production continuity, the sales level in the form of packaging is still higher when compared to the sales level in bulk form. So both forms of Banua Vagatta banana chip production sales each have advantages and disadvantages, depending on the decision of the business owner in analyzing the market.

When compared to the results of research from Maulizar et.al (2020), in terms of financial aspects, where the chocolate banana chip business is sold at a price of around Rp 15,000-18,000. In terms of business feasibility analysis, the chocolate banana chips business is worth running. This is due to the NPV>0 value, which is 4,547.23, the IRR>MARR value, which is 15.21%>13.74% and the return on capital faster than the 5-year projection, which is 4.90 years. Both are feasible to run but the profits obtained by Banua Pagatta SMEs are much greater and the return on capital is faster, which is only approximately 2 years.

CONCLUSION

By using 4 criteria for assessing the financial feasibility analysis of the Banua Pagatta IKM banana chips business located in Lolu Village, Sigi Biromaru District, Sigi Regency, it can be concluded as follows: For production in the form of bulk/kg, the value of NPV (Net Present Value) amounting to Rp. 20,801,153, Net B/C (Net Benefit Cost Ratio) by 1.22, IRR (Internal Rate of Return) by 17.31% and PP (Payback Period) for 2 years 2 days. As for the calculation of production in the form of packaging, the value of NPV (Net Present Value) amounting to Rp. 10,195,172, Net B/C (Net Benefit Cost Ratio) by 1.10, IRR (Internal Rate of Return) by 16.23% and PP (Payback Period) 2 years 1 month. Of the two banana chip business productions, Banua Pagatta IKM is either sold in packaging form or sold in bulk form with the calculation of financial feasibility, both are said to be financially feasible.

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