Analysis Of Investment Feasibility In Coconut Business Program And Its Derivative Products
(In BUM Gading Mas Village, Teluk Pambang

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Abstract. Coconut plants are one of the plantation commodities that have long been known and play a very important role in people's lives. The operation of this coconut business will help the regional economic turnover and in turn regional income and farming communities will also be lifted. The purpose of this study is to conduct a feasibility analysis of the coconut business program. The methodology used is the collection of primary and secondary data to coconut-producing areas. Feasibility analysis includes aspects of market and marketing feasibility, financial aspects. One alternative to increase the added value and efficiency of the community coconut plantation business is to develop a coconut processing business, namely the establishment of an integrated small capacity coconut factory. Small capacity integrated coconut industry has the potential to be developed in coconut plantations with a processing capacity of 500,000 coconuts / month. The establishment of a coconut business with a capacity of 500 tons / month requires investment capital and working capital of IDR 236,739,000. Then the NPV calculation result based on net cash flow in the projected cash flow of the coconut business program with a discount factor (DF) of 20%, resulting in a total of IDR 3,061,215,320,-. The current bank interest rate is 5.75% per annum (SBI in 2023). The payback period (PBP) of the coconut business program of 500,000 coconuts/month is achieved over a period of 3 year. The PI (Profitability Index) value obtained from the establishment of this coconut business program is 13.92. Break Even Point (BEP) value of 30 tons per month. From the results of the investment feasibility analysis above, it is projected that this business activity is feasible to be implemented.

Keywords: Investment Feasibility, Coconut, BUMD Village.

1 Introduction

Rural areas play an important role in national development, not only because most Indonesians live in rural areas, but rural areas contribute greatly in creating national stability. According to Siddik (2015) The position of the village is very strategic to build a country because the village is the spearhead in identifying problems and community needs at the grassroots level to planning and realization, it can be said that the purpose of statehood is at the village level.

In encouraging development at the village level, the government gives authority to village governments to manage their areas independently, one of which is through economic institutions at the village level, namely Village-Owned Enterprises (Budiono, 2015). The purpose of Village BUM is to improve and strengthen the village economy. BUM Desa has a function as a

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commercial institution for Independent Village Development through the Management of Village-Owned Enterprises (BUM Desa) through the offering of local resources aimed at seeking profits and social institutions through contributions to the provision of social services that favor the interests of the community (Alkadafi, 2014).
Teluk Pambang Village is one of the 9 (nine) villages in Bantan District. Currently, Teluk Pambang Village has formed a Village-Owned Enterprise (BUM Des) called "BUM Desa Gading Mas" which was obtained through deliberations carried out by the village government with the local community. From the results of the interview with the Director of BUM Desa explained that, Teluk Pambang Village can be said to be one of the coconut producing villages, so it has the potential to establish a coconut business and its derivative products. Coconut plants are one of the plantation commodities that have long been known and play an important role in people's lives. When viewed from an economic aspect, this plant has a high economic value, each part of this commodity can produce various products that have selling value. The business opportunities generated by this commodity are quite a lot, ranging from stems, leaves, coir, shells, water and meat all have promising business values. Some of the final products of coconut husk that are planned for development are mattresses, carpets, ropes, nets, foot mats and coconut husk fibers. Indonesia's coconut production in 2022 is estimated at 2.86 million tons. Production has increased over the next five years with an estimated production of 2.87 million tons in 2026. Indonesia, known as the world's largest coconut producer with an area of 3.8 million hectares, is still far behind Sri Lanka and India in terms of coir utilization. While Indonesia is only able to contribute about 10 percent to the world's coconut coir needs, which amounts to 500 tons per year (Ministry of Trade of the Republic of Indonesia, 2022).

Research conducted by Qomaruddin &; Wardana et al, (2021) which analyzed investment feasibility with an approach to Financial aspects and Management aspects in the laying hen program at BUM Bumi Makmur Village, in Dolokgede Village, the results of financial aspect analysis show that this business is feasible to run and develop. This is because the NPV value is greater than zero, the net BCR value is greater than one, the IRR value is greater than the specified discount rate, and the PP is before the project ends. The results of marketing analysis show that the laying hen farming business in BUM Desa is still feasible to run and develop. Meanwhile, the study on the Identification of BUMDES Business Feasibility in Social and Economic Aspects conducted by Hartini (2018) concluded that Mekar Sari Mandiri BUMDes in Mekar Sari Village, Kepahiang Regency from the results of business feasibility assessments, especially in social and economic aspects, have a positive and direct impact on the local village government and especially for the community around BUMDes.

In order to support the development of this potential coconut business, a feasibility study is needed that can be utilized by various parties, such as banks, investors and local and central governments in implementing the development of this coconut processing business. This research is reviewed from various aspects, including market and marketing aspects, as well as financial aspects intended to meet these needs.

2 Research Methods

This research was conducted using quantitative descriptive method which was carried out by calculating parameters related to financing aspects and market and marketing aspects approach. The review of financial aspects is intended to determine the investment plan through the calculation of expected costs and benefits, by comparing expenses and income, such as the

availability of funds, capital costs, the ability of the business to repay the funds within a predetermined time and assess whether the business will be able to continue.
In conducting financial studies, these investment criteria are calculated based on data components such as the following:
The financial aspects that need to be studied include:

1. Need for funds and sources
2. Cash flow
3. Estimated profit and loss, and
4. Business plan investment appraisal.

While the research variables used in determining this feasibility analysis are the amount of income and costs incurred in operating this activity. The feasibility of business development is calculated using the following investment criteria.

1. *Net Present Value* (NPV)

   In general, this NPV criterion says that the project will be feasible if the NPV value > 0. Conversely, if a project has an NPV of < 0, it will not be selected because the project is not feasible to run.

$$\text{NPV} = \sum_{t=0}^{n} \frac{(C)^t}{(1+i)^t} - \sum_{t=0}^{n} \frac{(CO)^t}{(1+i)^t} \quad (1)$$

2. *Payback Period* (PP) Method

   Payback period analysis basically aims to find out how long (period) investment will be developed when the condition of return principal (break event point) occurs.

$$k_{(PBP)} = \sum_{t=0}^{K} CF_t \geq 0 \quad (2)$$

3. Profitability Index (PI) Method

   The Profitability Index is a method for calculating the ratio between the future value of net cash flows and the current value of an investment. So the profitability index can be calculated by comparing the Present Value (PV) of Cash Out with PV of Cash Out.
   Formula:
   PI = PV Cash In : PV Cash Out
   Judging Criteria:
   — if PI > 1, then the proposed business plan is said to be profitable;
   — if PI < 1, then the proposed business plan is not profitable

4. *Break Even Point* (BEP)

   Break Even Point (BEP) is a situation that shows Total Revenue equals Total Cost. Total Revenue is the number of units of goods sold multiplied by the unit price of goods, while total cost is the sum of fixed costs and variable costs.
   The BEP formula is as follows:
   BEP = Fixed Cost : (Selling Price per Unit – Variable Cost Average)

5. Market and Marketing Aspects

   Feasibility studies in this aspect are seen in terms of: market demand, market offerings, price and competition and market opportunities.

3 Result and Discussion

3.1 Investment Feasibility Study with Market and Marketing Aspects Approach at BUM Gading Mas Village, Teluk Pambang Village

a. Market Demand

Traditionally, coconut coir fiber is usually used as raw material for making household tools such as brooms, doormats, hemp rope and so on. But with the development of technology, coconut coir can be processed into a variety of finished and semi-finished products that have a high selling value. These products include: Coir Fiber, Cocopeat, Cocoir Powder, Cocomesh, Cocopot, Cocosheet, Coco Fiber Board (CFB) and Cococoir. These products can then be used as raw materials for various industrial sectors including carpet industry, vehicle dashboards, mattresses, pillows, hardboards, paper, textiles and so on (Indahyani, 2011).

Apart from being an industrial raw material, Coconut Coir Fiber derivatives are also used as organic agricultural planting media. The world's demand for sustainable products is currently increasing, which can be a market opportunity for Coconut Coir Fiber-based products. As the world's largest coconut producing country, Indonesia should have the potential to produce and export coconut derivative products such as Cocofibre, Cocopeat and Cococoir.

b. Market Offerings

World imports of Coconut Coir Fiber products over the past 10 years have shown an increasing trend reaching 5.95% per year. On average, the world imports Coconut Coir Fiber amounting to USD 520.18 million per year. However, in 2021, world imports of coir fiber experienced a significant increase of 24.63% YoY, from USD 576.99 Million in 2020 to USD 719.13 Million. This achievement is the highest import record in the last decade. The People's Republic of China (PRC), the United States (US) and the United Kingdom are the world's main imports with a cumulative share reaching 55.66% of the world's total coir fiber imports in 2021. In addition to these two countries, several other import countries also experienced a significant increase in imports in 2021.

c. Price

Based on a case study conducted in Teluk Pambang Village, at the producer level the price of coconut coir ranges from Rp500 - Rp600 per kg. while the price at the buyer level ranges from Rp. 900 – Rp. 1,200 per kg and depends on the quality of the coir produced. While on the supply side, the world's largest exports for coconut husk fiber products are India and Sri Lanka. The two countries exported coir fiber products on Monday at USD 436.34 million (45.43% share) and USD 230.19 million (23.97% share) respectively in 2021. While Indonesia's exports are ranked 11th with a share of 1.05% of total global coir fiber exports. Although Indonesia's export share is still relatively small, the trend and growth show positive performance.

d. Competition and market opportunities

From the aspect of similar business competition, coconut coir fiber in Indonesia is faced with several competing countries that are more technologically advanced in producing coconut husk fiber, so that it has superior quality. Due to the tendency of world demand for coir fiber to increase and Indonesia's contribution is relatively small, so Indonesia has a great opportunity to enter the global market with the quality of coir fiber with comparative advantages.

3.2 Investment Feasibility Study with Financial Aspect Approach at BUM Gading Mas Village, Teluk Pambang Village

The review of financial aspects is intended to determine the investment plan through the calculation of expected costs and benefits, by comparing expenses and income, such as the availability of funds, capital costs, the ability of the business to repay the funds within a predetermined time and assess whether the business will be able to continue. The purpose of analyzing financial aspects is to determine the estimated funding and cash flow of the business plan, so that it can be known whether or not a Village BUM business unit is feasible to run. Financial aspects that need to be studied include:

1. Funds and Sources of Funds

   In starting a business / business requires funds for investment costs. This cost is needed to build/establish a business, for example: land acquisition, buildings, machinery, equipment, installation costs, business feasibility study costs, permit management, and others. Goods and everything obtained at this cost of investment is called fixed property. In addition, working capital is also needed to finance business activities after the business plan is ready to run. In this case, BUMDesa Gading Mas Desa Teluk Pambang estimates the investment funds and working capital needed to make a coconut business can be seen in table.1 below.

Table 1. Investment Fund and Working Capital of BUMDesa Coconut Business Unit "Gading Mas"In Teluk Pambang Village

No.	Capital Classification	Source and Amount of Funds			Amount
		Village Government	District Government	Government Provision	
A.	Investment				
	Land and Building (Ward)			30.000.000	30.000.000
	Equipment		99.243.000		99.243.000
	Materials, Installation & Transportation	73.000.000			73.000.000
	Office supplies	11.200.000			11.200.000
	Other fees	12.100.000			12.100.000
B.	Working Capital				
	ATK	750.000			750.000
	Manager Incentives	6.000.000			6.000.000
	Repair Cost	4.500.000			4.500.000
	TOTAL MODAL				**236.793.000**

Source: Processed Data, 2023

From the table.1 above, it can be explained that the working capital in the form of investment and working capital needed by BUMDesa Gading Mas Teluk Pambang Village amounted to Rp236,739,000,-.

2. Cash Flow

Cash basically consists of 2 (two) kinds of events, namely cash inflows and cash outflows. The cash inflow section records all money receipts derived from transaction results, for example: cash sales of goods, rental money received, receipts of savings and loan installments, working capital loans to other parties, interest receipts on money deposits from banks, and so on. While the cash outflow section records all expenditures of money used to: pay employees, procure raw materials, buy fuel, pay taxes, pay bank interest, increase investment, and so on.

For the preparation of cash flow estimates in the coconut business at BUMDesa Gading Mas Teluk Pambang Village can be seen in the following Table.2

Table 2 Coconut Business Unit "Gading Mas" In Teluk Pambang Village Table 2. Estimated Cash Flow of BUMDesa

No.	Description	Year To				
		1	2	3	4	5
1.	Cash inflow (A)	750.000.000	762.100.000	774.200.000	786.300.000	798.400.000
2.	Cash outflow (B)	11.250.000	11.250.000	11.250.000	11.250.000	11.250.000
3.	Net Cash Flow (A-B)	738.750.000	750.850.000	762.950.000	775.050.000	787.150.000

Source: Processed Data, 2023

Table 2 above shows each source and use of cash for operational activities in the coconut business unit of Gading Mas Village BUMdesa in Teluk Pambang Village during the 5 years the business has been running.

3. Estimated Profit and Loss

Table 3. Projected Profit and Loss of BUMDesa Coconut Business Unit "Gading Mas" In Teluk Pambang Village

No.	Description	Year To				
		1	2	3	4	5
A.	Sales	750.000.000	762.100.000	774.200.000	786.300.000	798.400.000
B.	Cost of Goods Produced	-	-	-	-	-
C.	Gross Profit (A-B)	750.000.000	762.100.000	774.200.000	786.300.000	798.400.000
D.	Cost Expenses	31.250.000	31.250.000	31.250.000	31.250.000	31.250.000
E.	Operating Profit (C-D)	718.750.000	730.850.000	742.950.000	783.175.000	767.150.000
F.	Rate	-	-	-	-	-
G.	Profit before Tax (E-F)	718.750.000	730.850.000	742.950.000	783.175.000	767.150.000
H.	Tax	-	-	-	-	-
I.	Net Profit (G-H)	718.750.000	730.850.000	742.950.000	783.175.000	767.150.000

Source: Processed Data, 2023

From table 3 above, it shows the projected net profit obtained by BUMDesa Gading Mas increasing every year. So it can be concluded that this coconut business unit has a great opportunity to run.

4. Business Plan Investment Appraisal
   a. Pay Back Period (PBP) Method

      Pay Back Period is a period needed to recoup investment expenses using cash flow. Investment proposals can be accepted if the Pay Back Period is shorter than the maximum Pay Back received.

      Pay Back Period = (Initial Investment Value : Net Cash Inflow) x 1 year

= (Rp236.793.000,- : Rp750.000.000,-) x 1
= 0,3

b. *Net Present Value (NPV)* Method

The Net Present Value method is used to determine present value by calculating the difference between investment costs and net cash receipts. Meanwhile, to calculate the present value, it is necessary to determine the prevailing interest rate. Bank interest rate of 5.75% per annum (SBI in 2023). Based on these data, the Net Present Value can be calculated as follows:

Table 4. Calculation of Net Present Value of Net Cash Flow of Coconut Business Unit BUMDesa "Gading Mas" in Teluk Pambang Village

Year to (A)	Description (B)	Cash Flow (C)	Discount Rate 5,75% (D)	Present Value (C x D)
0	Initial Investment			-236.793.000
1.	Net Cash Flow Year to -1	738.750.000	0,9524	703.585.500
2.	Net Cash Flow Year to -2	750.850.000	0,9070	681.020.950
3.	Net Cash Flow Year to -3	762.950.000	0,8638	659.036.210
4.	Net Cash Flow Year to -4	775.050.000	0,8227	637.633.635
5.	Net Cash Flow Year to -5	787.150.000	0,7835	616.732.025
Total Present Value (1)				3.298.008.320
Initial Investment (2)				236.793.000
Net Present Value (1-2)				3.061.215.320

Sumber: Data Olahan, 2023

Based on the calculation of Net Present Value above, it can be concluded that the coconut business plan at BUMDesa Gading Mas Teluk Pambang Village is feasible, because the Net Present Value is equal to Rp3,061,215,320. Means Net Present Value > 0 (Positive value).

c. *Profitability Indeks (PI)* Method

This method is used to find out whether the business unit being run is getting for or not. The PI assessment criteria are, If PI > 1 then the business plan proposal is profitable, while if PI < 1 then the business plan proposal is not profitable.

Profitability Indeks (PI) = PV cash in : PV cash out
= 3.298.008.320 : 236.793.000
= 13,92

Coconut business activities and derivative products at BUM Desa "Gading Mas" if carried out will get profit / profit, because PI = 13.92. Means PI > 1. So the proposed business plan is said to be profitable.

d. *Break Even Point (BEP)*

The business unit will be said to be at breakeven if the situation shows that total revenue equals total costs.

Break Even Point (BEP) = Fixed Cost : (Selling Price per Unit – Average Variable Cost)
= Rp15.000 : (1.500 – 1.000)
= 30 tons per month.

The meaning of the calculation results is, to achieve BEP or break-even point, coconuts in BUMDesa Gading Mas must be sold to consumers on average 30 tons per month,

with a record of a fixed number of coconuts of 500,000 coconuts per month or equivalent to 500 tons per month.

4. Conclusion

The management of Village-Owned Enterprises (BUMDes) is carried out by the Village Government together with the community. Management that involves the community directly is expected to be able to boost the economy by empowering the community. Community involvement starts from the beginning of establishment to the management of the institution. The coconut business development plan and its derivative products of 500,000 grains/month will be managed by the Director of BUMDesa Gading Mas Teluk Pambang and assisted by 1 Treasurer and 4 members.

Coir Processing Business Program is a business that has the potential to be developed, with a very abundant source of coconut husk raw materials, which is around 500,000 grains / month. The establishment of a coconut business with a capacity of 500 tons / month requires investment capital and working capital of IDR 236,739,000. Then the NPV calculation result based on net cash flow in the projected cash flow of the coconut business program resulting in a total of IDR 3,061,215,320,-. The current bank interest rate is 5.75%. The payback period (PBP) of the coconut business program of 500,000 coconuts/month is achieved over a period of 3 year. The PI (Profitability Index) value obtained from the establishment of this coconut business program is 13.92. Break Even Point (BEP) value of 30 tons per month.

Limitations This study emphasizes more on the feasibility analysis of business development using financial criteria. It would be better if the research is continued with an analysis of the impact of business on the economy of rural communities. So that it can describe the benefits for the economy of the surrounding community.

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