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ANALYSIS OF POTENTIAL AND PROSPECTS OF PATCHOULI BUSINESS DEVELOPMENT IN ACEH UTARA DISTRICT, INDONESIA

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Banda Aceh, Indonesia*E-mail: nuruliadimitha@gmail.com**ABSTRACT**

Indonesian patchouli oil products are able to dominate the patchouli oil market share in the world up to 80-90%. Therefore, patchouli commodity needs to be developed in areas that have the potential and prospects for patchouli plantations to support economic growth. The Future Market Sights (2+018) states that the patchouli oil market, globally, is expected to grow at a CAGR of 2.8% in terms of revenue in the coming years. Revenue generated from the global patchouli oil market is projected to reach US \$ 86.6 million by 2028. The research was conducted in Aceh Utara District, which is one of the administrative districts in Aceh Province. This research was conducted since November 2019 until November 2020. The object of research is patchouli farming and patchouli oil refining. The scope of this research is limited to the potential and prospects of patchouli farming development in Aceh Utara Regency because the area is one of the patchouli producers in Aceh Province. The research method and data collection used in patchouli farming and patchouli oil refining are census methods. The hypothesis was tested using financial analysis to determine the prospects for the development of patchouli oil farming and refining in Aceh Utara District, whether it is feasible to develop or not. The methods used to see the feasibility of patchouli oil refining are NPV, IRR, Net B / C, and Payback Period. Judging from the financial aspect using financial feasibility analysis tools, the NPV value is Rp. 673,215,682, IRR of 43.15%, Net B / C of 182.37, and Pay Back Period (PBP) can be returned in the second year of the first month. With all of the aspects considered to have met the eligibility criteria, the patchouli oil refining business in Aceh Utara District is feasible to develop financially.

KEY WORDS

Patchouli, development prospects, financial feasibility, farming.

Patchouli is a plantation commodity that produces patchouli oil and is an export commodity in Indonesia. Based on the Ministry of Trade (2014), Indonesian patchouli oil products can be predominant in the world market of patchouli oil trade share of up to 80 - 90%. Therefore, patchouli commodity needs to be developed in areas that have the potential and prospects for patchouli plantations to support economic growth.

Developing patchouli as a leading commodity is in line with the Phase-3 National Long-Term Development Plan (RPJPN) (2015-2019) which states that the agricultural sector is still an important sector in national economic development. The strategic role of the agricultural sector is illustrated in the contribution of the agricultural sector in providing food and industrial raw materials, contributing to GDP, earning foreign exchange, absorbing labour, the main source of rural household income, providing feedstuff and bioenergy, and playing a role in reducing gas emissions. greenhouse (Ministry of Agriculture, 2015). In this case, patchouli as an export commodity contributes to GDP and a source of foreign exchange.

Aceh Bappeda in the 2016 Action Plan Roadmap stated that Aceh patchouli (NA), Pogostemon cablin Benth, is the world's best patchouli that can produce patchouli crude oil with a Patchouli Alcohol (PA) content above 30%. In Indonesia, patchouli is the main producer of essential oils which are imported to numerous countries such as France, Singapore, the United States, England, Germany, India, Spain and the Netherlands, for various purposes such as cosmetics, perfume, soap, medicines and other industries.

Indonesia is a supplier of 90% of the world's patchouli oil demand and 70% of it comes from Aceh.

The Central Bureau of Statistics (2016) shows that Aceh's patchouli area experienced a negative trend from 2014-2016. In the last 5 years, people's patchouli plantation area has decreased significantly; this is not in line with the government's commitment to make patchouli a leading export commodity and is not in line with world market trends which are estimated to increase from 2018-2028.

Figure 1 – Plant Patchouli Plantation Area in Aceh Province (BPS, 2018)
Source: The Statistic Centre of Aceh, 2018

The Future Market Sights (2018) website states that the patchouli oil market, globally, is expected to grow at a CAGR of 2.8% in terms of revenue in the coming years. Revenue generated from the global patchouli oil market is projected to reach US \$ 86.6 million in 2028. Thus, the production and area of patchouli land in Aceh should be in a positive trend.

According to the 2018 Central Bureau of Statistics, the area of patchouli commodity land in North Aceh in 2017 was 19 hectares which were smallholder plantations, consisting of 10 hectares of immature plants and 9 hectares of productive crops. The amount of patchouli production is 1 ton / year with a productivity of 87kg / ha / year. When compared to land area in Aceh Province, the patchouli area in Aceh Utara District is only 0.9% of the entire area in Aceh Province.

Patchouli plantations in North Aceh only have developed in the last few years. Therefore, the potential analysis must be analysed as a basis and consideration in the commitment to intensively develop patchouli in Aceh Province.

MATERIALS AND METHODS OF RESEARCH

The research was conducted in North Aceh District, which is one of the administrative districts in the Aceh Province. The object of research is patchouli oil refining. The scope of this research is limited to the potential and prospects of patchouli farming development in North Aceh Regency because the area is one of the patchouli producers in Aceh Province.

The data collected in this study consisted of primary data and secondary data. Primary data were obtained from observations in the field and interviews with respondents using a list of questions or questionnaire. The Interviews are conducted directly by researchers to respondents or samples. Secondary data were obtained from agencies related to this research as well as literature and related books.

The method of research and data collection used in patchouli farming and patchouli oil refining is a census method, namely by using all members of the population. Since the

population is small (limited), it is not possible to use samples (Sugiyono, 2008), namely the patchouli oil refining business of 2 respondents.

The hypothesis was tested using financial analysis to determine the prospects for the development of patchouli oil farming and refining in Aceh Utara District, whether it is feasible to develop or not. The methods used to see the feasibility of patchouli oil refining are NPV, IRR, Net B / C, and Payback Period.

RESULTS AND DISCUSSION

The financial aspect is required to target the amount spent in the business establishment process as well as the processes that will be carried out later. This aspect explains the need for funds to be used for working capital and sources of funds obtained. Analysis of the financial aspects of this patchouli oil refining business includes:

The flow of expenditures represents all costs incurred by the company in the construction and operation of the patchouli oil refining business. The costs incurred are investment costs and operational costs.

Investment costs are costs incurred before the project produces. The cost in question is the cost of buying goods and services needed to build a business so that the business can produce products.

Operational costs are all costs incurred during the production process. The details of the operational costs incurred by the Patchouli Oil Refining Business can be seen in Table 1:

Table 1 – Flow of Patchouli Oil Refining Business Expenses

Year To	Type of Costs		
	Investment Costs (Rp/Year)	Operational Costs (Rp/Year)	Total Costs (Rp/Year)
0	37.345.000	-	37.345.000
1	-	530.200.000	530.200.000
2	-	554.300.000	554.300.000
3	-	578.400.000	578.400.000
4	-	626.600.000	626.600.000
5	-	91.784.000	91.784.000
6	-	102.810.000	102.810.000
7	-	114.432.000	114.432.000
8	-	131.716.000	131.716.000
9	-	165.211.200	165.211.200
Total Expenditure (Rp)		2.895.453.200	2.932.798.200

Source: Data processed Year (2020).

The flow of revenue is the difference between the value of production sold and the costs incurred in selling products within a certain period of time. The revenue stream includes the amount of production, the selling price of the product, the production value and the income which will be used as a reference in seeing the level of acceptance of a business.

Table 2 – Total Production, Selling Price and Production Value of Patchouli Oil Refining Business

Year To	Total Production (L/Year)	Price (Rp/L)	Total Production Value (Rp/Year)
0	-	-	-
1	2.100	450.000	945.000.000
2	2.700	550.000	1.485.000.000
3	3.000	600.000	1.800.000.000
4	3.350	750.000	2.512.500.000
5	3.950	750.000	2.962.500.000
6	4.300	750.000	3.225.000.000
7	5.000	750.000	3.750.000.000
8	5.450	750.000	4.087.500.000
9	6.250	750.000	4.687.500.000
Total	36.100		25.455.000.000

Source: Data processed Year (2020).

Production is an activity carried out to add value to an item. The selling price of a product is the price set by the company in determining the value of the product. The production value is the gross income from the multiplication of the amount of production and the product price in effect at the time of the research. The details of the amount of production, selling price and production value of the Patchouli Oil Refining Business products can be seen in Table 2.

Based on the table above, the total production of Patchouli Oil Refinery in Aceh Utara District is increasing every year, with the product price at the time of the research being Rp. 750,000 / liter so that the total production value also increases every year. With a total production amount of 36,100 liters / year, the total production value generated by the Patchouli Oil Refining Business for 10 years of production is Rp. 25,455,000,000.

Profit is the total net income received by the company. The profit in question is the difference between the total revenue and the total production costs that have been incurred during the production process which is calculated in rupiah per year (Rp / year). The amount of profit received by the Patchouli Oil Refining Business can be seen in Table 3 below:

Table 3 – Flow of Profits from Patchouli Oil Refining Business

Year	Revenue (Rp/yr)	Type of Costs	Profit (Rp/Yr)
		Expenditure (Rp/yr)	
0	-	37.345.000	- 37.345.000
1	945.000.000	530.200.000	414.800.000
2	1.485.000.000	554.300.000	930.700.000
3	1.800.000.000	578.400.000	1.221.600.000
4	2.512.500.000	626.600.000	1.885.900.000
5	2.962.500.000	91.784.000	2.870.716.000
6	3.225.000.000	102.810.000	3.122.190.000
7	3.750.000.000	114.432.000	3.635.568.000
8	4.087.500.000	131.716.000	3.955.784.000
9	4.687.500.000	165.211.200	4.522.288.800
Total	25.455.000.000	2.932.798.200	22.522.201.800

Source: Data processed Year (2020).

Based on the table above, in year 0 the Patchouli Oil Refining Business did not get any profit because in that year the Business was not yet in production. The total revenue for 10 years of production is Rp. 25,455,000,000. The costs incurred in year 0 are investment costs. Costs incurred in year 1 to year 9 have benefited, but the benefits earned each year vary because the operational costs incurred are only according to business needs. The total production cost incurred during the 10 years of production is Rp. 2,932,798,200 and the total profit earned by the company during 5 years of production is Rp. 22,522,201,800.

Investment criteria are a measure of whether a business is feasible or not to run. The investment criteria used in calculating the feasibility of Patchouli Oil Refining Business are NPV, Net B / C, IRR, and PBP. Details of the calculation results of investment criteria can be seen in appendix and attachment 17. While the value of investment criteria can be seen in table 4 below:

Table 4 – Eligibility Criteria for Patchouli Distillation in North Aceh District

No	Eligibility Criteria	Value
1	NPV	Rp.6.773.215.682
2	Net B/C	182,37
3	IRR	43,15%
4	PBP	2,1

Source: Data processed Year (2020).

From the results of data processing that has been carried out, the value of the feasibility of the patchouli refining business in North Aceh Regency is obtained and is explained as follows.

A business is assessed if the NPV is more than zero (positive NPV), this means that the net income (benefit) of a business is greater than the total cost incurred. Table 4 shows

that the NPV value at the 15% interest rate is Rp. 6,773,215,682 / year, which means that the NPV value is positive or greater than zero. This shows that the net revenue for patchouli farming is greater than the total costs incurred, so that from the NPV it can be said that the patchouli oil refining business in Aceh Utara District is profitable and feasible to develop because the NPV value is > 0 .

IRR is a calculation criterion to determine the percentage of profit from a business. In the IRR analysis, a project is classified as feasible to develop or made profitable if the IRR value is greater than the specified interest rate. Table 4 shows the amount of the IRR value at an interest rate of 15% for patchouli oil refining business is 43.15%, which means the IRR value greater than the specified interest rate. This shows that the value oil refining business in Aceh Utara District is profitable and feasible to develop. This value means that the patchouli oil refining business will provide a return of the invested capital of 43.15% during the economic life.

Net B / C is the ability to generate profit per unit value of investment. The calculation result for the patchouli oil refining business in Aceh Utara Regency at an interest rate of 15% is 182.37 which indicate that every additional cost of Rp. 1, it will get a profit of Rp. 182.37. Based on the eligibility criteria for Net B / C > 1 , the patchouli oil refining business in Aceh Utara Regency is feasible to develop.

Pay Back Period (PBP) is the time period needed to cover the invested capital. Based on the feasibility calculation, it was found that in the second year of the first month on the third day of the invested capital could be returned, this shows that the patchouli oil refinery business can be developed.

CONCLUSION

Patchouli farming in Aceh Utara Regency has good potential to be developed, this is appropriate when viewed from a financial aspect by using a financial feasibility analysis tool, the NPV value is Rp.6,773,215,682, IRR of 43.15%, Net B / C of 182 , 37, and the Pay Back Period (PBP) can be returned in the second year of the first month on the third day. With all the aspects considered to have met the eligibility criteria, the patchouli oil refining business in Aceh Utara District is feasible to develop financially.

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