PROCESSING INDUSTRY INVESTMENT FEASIBILITY ANALYSIS TAPIOCA FLOUR IN ACEH BESAR DISTRICT

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ABSTRACT

The development of agro-industry still has several obstacles in its implementation. This is wrongly caused by the characteristics of agro-industry which have a relationship from upstream to downstream, there must be guaranteed production from upstream so that there will be continuity of production. In addition, human resources are not yet qualified and equipment is still relatively simple, one of which is processing cassava into tapioca flour in Aceh Besar District. The purpose of this study is to analyze the feasibility of investing in the tapioca flour industry in Aceh Besar District from a financial perspective. The feasibility analysis approach method on the financial aspect is carried out quantitatively. Analysis of the financial aspect for investment in the tapioca flour processing industry can be assessed with four criteria, namely: NPV (Net Present Value), Net Benefit/Cost (B/C), IRR (Internal Rate of Return) and Payback Period. The results of the research on the development plan for a tapioca flour processing business are profitable or feasible to run in Aceh Besar District, based on the Net Present Value (NPV) on the Discount Factor (DF) of 14% for an economic life of 15 years of Rp. 6,879,487,975, the Net B/C value is 4.66, the IRR is 88.36%, and the Pay back period (PBP) is 4 years, 9 months, which is less than the project life.

Keywords: *Cassava, Topioka Flour, Business Feasibility*

1. INTRODUCTION

Cassava is one of the agricultural commodities that has the potential to be developed in Aceh Besar District. Supported by the large area of land for development that is still available, besides that the land and climate conditions are supportive for the growth and development of cassava plants. The production of cassava in large enough quantities makes it very natural that farmers expect a high selling price. In reality, the income from planting cassava is uncertain. Prices received by farmers fluctuate easily and tend to decline. Even during the main harvest, the selling price of cassava can reach below the production price of farmers (Nazaruddin, 1993). One way to develop the development of the agricultural sector is to invest in the development of the industrial sector by starting from the processing of agricultural products into finished and semi-finished products through the development of agro-industry. So that it will create job opportunities, the welfare of business actors and encourage the economy of a region (Sjamsir, 2017). Through the development of agro-industry with technology-based and value-added insights, and being able to produce highly competitive products, so that agro-industry can become the backbone of the national economy (Rahman, 2018).

The tapioca flour industry is an industry that has good development opportunities and prospects to meet market demand. The tapioca flour industry is a downstream industry, where this industry processes cassava from farmers into tapioca flour or aci. The aim of the cassava processing industry is to create added value and increase the shelf life of a product So far, cassava products in Aceh Besar District are still limited to being sold in the form of cassava, processed into chips and made of cassava tape. The nature of cassava is easily damaged if it is not processed

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into semi-finished or finished products, so the added value created from cassava is of little value. One of the efforts to increase the added value of cassava is by processing cassava into tapioca flour. Based on existing data in Aceh Besar District, the cassava harvested area from year to year has decreased, due to several things such as reduced public interest in cassava cultivation, limited capital and low cassava selling prices. Seeing the potential and constraints in the tapioca business, an investment feasibility analysis is certainly very necessary in determining whether this business is feasible to be pursued in the future. Decisions on the feasibility of investing in tapioca flour business will be obtained from the results of qualitative and quantitative analysis.

2. LITERATURE REVIEW

Cassava (Manihot utilisima Pohl) is one of the energy-producing food products in Indonesia after rice. Cassava has many names, including cassava and cassava. Cassava plants come from Brazil. Cassava is widely planted in dry areas (Soetanto, 2001). Cassava is an important food crop commodity as a source of carbohydrate food and raw material for the food, chemical and livestock industries (Lidiasari, 2006). The morphology of cassava plants has upright stems with a height of 1.5-4.0 m, the shape of the stem is round, woody and corky while the leaves are finger-type (Rukmana, 1997). Tapioca flour is flour extracted from cassava which has similar characteristics to sago flour, so that its use can be substituted for one another. There are three types of flour made from cassava, namely cassava flour, cassava flour and tapioca flour. Of the three types of flour that is most often found and used is tapioca flour (Suprapti, 2005). Tapioca flour is often used in the food industry, for example, for making pudding, baby food, ice cream, noodle making, sausage processing, and the pharmaceutical industry. In the food industry, tapioca flour functions as a thickener (Bambang, 2013).

According to Nurmalina (2009), a business feasibility study or investment feasibility study is a review or analysis of whether an investment activity provides benefits or results when implemented. A business feasibility study is the basis for assessing whether an investment activity or a business is feasible to run. For investors, a business feasibility study can provide an overview of business prospects and how likely the level of benefits (benefits) can be received by a business so that this is the basis for making investment decisions. The project cycle is a basic series in project planning and implementation. The stages are identification, preparation, and analysis, assessment, implementation, and evaluation (Gittinger, 1986). The aspects to be assessed in this feasibility study are market, technical, management, social and financial aspects. In the context of project evaluation there are two kinds of analysis, namely financial analysis and economic analysis. Financial analysis is an analysis that looks at the project from the point of view of the parties who invest in the project or have a direct interest in the project, while economic analysis is looking at the results of the project from the point of view of the economy as a whole

Feasibility analysis is a way to analyze whether or not farming is feasible by farmers. This analysis is based on several criteria that are often used in the feasibility analysis of financial analysis, namely NPV (Net Present Value), Net Benefit/Cost (B/C) and IRR (Internal Rate of Return). A feasibility study which is also often referred to as a feasibility study is a consideration in making a decision, whether to accept or reject a planned business/project idea. The definition of feasible in a feasibility study assessment is the possibility of a business idea/project that will be implemented to provide benefits, both in the financial sense and in the sense of social benefits (Ibrahim, 2009).

3. RESEARCH METHODS
3.1. Research Time and Place

The research was conducted in Aceh Besar District, the location selection was made deliberately based on the potential in terms of the area of agricultural and food cropsproduction of

cassava produced as well as consideration of potential cassava development areas. This research starts from June to August 2022. The object of research is cassava, with the scope of the feasibility of investing in the tapioca flour processing industry. The data used in this study are secondary data in Aceh Besar District such as land area, harvested area, amount of production, productivity of cassava plants, which were obtained from the Agriculture and Plantation Office of Aceh Province and the Agriculture Service, Aceh Besar District Agriculture Office, Central Bureau of Statistics for Aceh Besar District, books, journals, articles, internet and other literature related to the topic of the research title.

3.2. Data Analysis Techinique

The feasibility analysis approach method on the technical aspect and market aspect is carried out qualitatively while the financial aspect is carried out quantitatively. Analysis of the financial aspect for investment in the tapioca flour processing industry can be assessed with four criteria, namely:

a. According to Nurmalina et al (2009)*Net Present Value*is a method used to determine the ratio of the present value of net cash inflows (proceeds) with the present value of investment expenses. To obtain the NPV value is inseparable from cash inflows and cash outflows as well as relevant interest rates. Mathematically, the NPV value can be written as follows:

$$\text{NPV} = \sum_{t=0} \frac{Bt}{(1+i)^t} - \sum_{t=0}^{n} \frac{Ct}{(1+i)^t} = \sum_{t=0}^{n} \frac{Bt - Ct}{(1+i)^t}$$

Where:

t gross social benefit of the project in year t, which consists of all types of non-financial revenues or benefits received in year t

    gross social costs in year t, all types of expenses, both capital and routine

t

    project economic life

    discount factor

Decision rule from the NPV assessment: (a) If NVP > 0 (zero), then the project is feasible (go) or acceptable to implement because it can provide benefits or benefits, (b) If NVP = 0 (zero), it means the project it returns exactly as much as the social opportunity factor capital, the project is in a break event point (BEP) position, total revenue = total expenditure, and (c) If NVP <0 (zero), then the project is not feasible because it does not produce the value of the costs issued, so the project should be rejected.

b. *Net Benefit Cost Ratio (Net B/C)*; namely the ratio between the number of positive Net Present Value (positive NPV) and Negative Net Present Value (Negative NPV). Net B/C shows an illustration of how many times the benefits will be obtained from the costs incurred (Choliq, 1999). The criteria used are if Net B/C > 1 then the business is feasible, Net B/C < 1 then the project is not feasible and Net B/C = 1, the project is feasible which means that the income derived from the business is the same as the costs incurred. issued.

$$Net\ B/C\ Ratio = \frac{\sum PVnetBenefitpositif}{\sum PVnetBenefitnegatif} \dots. (\text{Choliq, 1999})$$

c. *Internal Rate of Return (IRR)*; IRR is a value for knowing the percentage of profits from a project each year and IRR is also a measure of the project's ability to repay loan interest (Choliq, 1999). If the IRR is greater than the bank's interest, then the business is worth pursuing.

$$IRR = \text{i} + \frac{\text{NPV}_1}{(\text{NPV}_1 - \text{NPV}_2)} x\ (i_{2} - i_{1)} \dots. (\text{Choliq, 1999})$$

Information:

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i1=discount rate that produces NPV1'
i2=discount rate that produces NPV2'

d. *Payback period analysis*is a certain time period of money indicating the cumulative cash inflow equals the investment in the form of present value. In other words, to find out how long the business can return the investment. Payback period analysis is calculated by calculating the time required when the total cash inflow equals the total cash outflow. From the results of this analysis, the alternative that will be chosen is an alternative with a shorter payback period. The use of this analysis is only recommended to obtain additional information to measure how quickly the return on capital invested (Choliq, 1999).

$$Pay\ Back\ Period = \frac{\sum_{i=1}^{n} \bar{I}_i - \sum_{i=1}^{n} \overline{B}_{icp-1}}{\overline{B}_p}$$

Note: Tp-1 = Year before Pay Back Period
I = Number of investments that have been discounted
Bicp-1 = Amount of benefit that has been discounted before pay back period
Bp = Total benefit in the Pay Back Period

*Switching Value Analysis,*Switching value analysis is used to pay attention to the impact of changes in a variable on the results of the feasibility analysis. The aim is to determine the effect of the results of the feasibility analysis if there is a change in the calculation of costs and benefits. Switching value analysis is carried out for uncertainty by changing several variables that play an important role in the results of business analysis which have an impact on the results of NPV, IRR, Net B/C.

4. RESULTS AND DISCUSSION
4.1. General Description of the Region
Aceh Besar District is located on the lines 5.05° - 5.75° North Latitude and 94.99° - 95.93° East Longitude. To the north it is bordered by the Malacca Strait and Banda Aceh City, to the south by Aceh Jaya Regency, to the east by Pidie Regency, and to the west by the Indonesian Ocean. The area of Aceh Besar District is 2,903.50 km2, most of its territory is on the mainland and a small part is on the islands. About 10% of villages in Aceh Besar District are coastal villages. Aceh Besar District consists of 23 Districts, 68 Mukim, and 604 Gampong/Villages. The distance between sub-district centers and district centers varies greatly. Lhoong District is the most distant area, which is 106 km from the center of the district capital (the capital is located in Kota Jantho District).

4.2. Financial Feasibility of Topioka Flour Processing Business
When viewed from the economic and social aspects, kethe existence of this business does not have a negative impact on the surrounding community, even though this business uses machines that cause noise in the production process to its finishing but the production process is not carried out at night, it even has a positive impact because the presence of this business opens up jobs for the surrounding community most of whom are unemployed. The positive impact can also be directly felt by farmers who are in the factory location and its surroundings because this company works together in terms of the supply of cassava raw materials so that the business has a good bond with the farmers. The form of processing business cooperation with farmers is when the supply of cassava to be processed has run out, the company contacts farmers by telephone to prepare cassava ready for transportation. as well as required with a direct payment system when the cassava has been received. This processing business has provided an example and model for farmers in increasing the added value of cassava so that it will provide greater profits for farmers.

The investment cost for a cassava flour processing business in the form of an investment for the purchase of 2,400 m2 of land is Rp. 1,200,000,000, the building costs Rp. 4,680,000,000, the cost of purchasing a vehicle is Rp. 320,000,000, as well as equipment purchase costs of Rp. 294,475,000 and the total investment cost required for the cassava flour processing business is Rp. 5,294,475,000.

Table 1. Business Capital for Topioka Flour Processing Business Plan in Aceh Besar District

No	Equipment	The amount		Unit price	Amount (IDR)
1	Building	1,560	M2	3,000,000	4,680,000,000
2	Car	1	units	270,000,000	270,000,000
3	Motorcycle	2	units	25,000,000	50,000,000
4	Doping Machine	1	units	3,625,000	3,625,000
5	Driving Machine	1	units	50,000,000	50,000,000
6	Grate Machine	1	units	80,000,000	80,000,000
7	Smoothing Machine	1	units	20,000,000	20,000,000
8	Penepung Machine	1	units	45,000,000	45,000,000
9	Filter	1	units	25,000,000	25,000,000
10	Bamboo Tampah	60	units	35,000	2,100,000
11	Sewing machine	2	units	2,800,000	5,600,000
12	Water pump	4	units	720,000	2,880,000
13	Water Reservoir	4	units	7,500,000	30,000,000
14	Starch Reservoir	6	units	4,000,000	24,000,000
15	Paring Knife	5	units	50,000	250,000
16	Pushcart	4	units	625,000	2,500,000
17	Scales	1	units	1,500,000	1,500,000
18	Starch shovel	4	units	130,000	520,000
19	Tarpaulin	6	units	250,000	1,500,000
	Total				**5,294,475,000**

Source: Primary Data (Processed), 2022

The variable cost of tapioca flour processing business is Rp. 1,284,360,000 per year, with the largest cost being for the purchase of raw materials (cassava) in one year with a total of 60,000 kg/month at a cassava price of Rp. 1,600 / kg. According to Soekartawi (1994), variable costs are costs that are directly related to the raw materials used and the variable inputs used. Based on the details of the fixed costs used for the cassava flour processing business, the total fixed costs incurred by the company in one year amount to Rp. 369,678,000, fixed costs obtained from factory overhead costs.

Table 2. Fixed Costs and Variable Costs of the Topioka Flour Processing Plan in Aceh Besar District

No	Description	Monthly (Rp)	per year (Rp)
1	Fixed cost	30,806,500	369,678,000
2	Operating costs	107,030,000	1,284,360,000
3	Labor costs	21,520,000	258,240,000
	Total	159,356,500	1,912,278,000

Source: Primary Data (Processed), 2022

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The feasibility analysis of tapioca flour processing refers to prices valid in 2022, in the calculation it is assumed that the purchase price of cassava at the farmer level is Rp. 1,600 per kilogram and the selling price of tapioca flour products at the time of the study was an average of Rp. 17,000 per kilogram. The costs incurred for investing in tapioca flour processing with a production capacity of 60,000 kg per month (physical investment costs and working capital) assuming an economic life of 15 years is Rp. 1,290,000,000, - in this analysis also calculates the cost of reinvestment in the 10th year of Rp. 3,070,795,500,-. While operational costs for the construction of tapioca starch processing are the overall costs used in the production process (economic life of 15 years), consisting of operational costs and taxes. The total operational cost is estimated at Rp. 1,284,360,000, - while the operational costs per year are Rp. 107,030,000. Production is the output produced by tapioca flour processing during its economic life. Meanwhile, the production value produced by tapioca flour processing is production multiplied by the prevailing selling price. Estimated production of 15,000 kg per month or 180,000 kg per year, with a factory production value of Rp. 255,000,000 per month or an average of Rp. 3,060,000,000. The gross benefit of tapioca flour processing is the same as the amount and production value of tapioca flour processing, assuming the price of processed tapioca flour products is Rp. 17,000 per kg. Meanwhile, net income is gross benefit minus the total costs incurred (investment and operational costs). The amount of net factory revenue is estimated at Rp. 15.046,045,950,- (for 15 years) or an average of Rp. 940,377,872.

Financial analysis is an analysis in which the project is seen from the aspect of the business or person who invests in the project. The financial analysis aims to test the feasibility of the project being undertaken using the investment criteria of NPV, NBCR, IRR. Based on the results of the financial analysis, the development of a tapioca flour processing business is quite feasible, because NPV > 0, NBCR > 1, IRR > prevailing interest rate, and PBP occurs during the factory's economic life.

Table 3. Investment Criteria for Development of Tapioca Flour Processing Business in Aceh Besar District

No	Criteria	Unit	Mark
1	NPV	IDR/age of project	6,879,487,975
2	IRR (%)	%	88.36
3	Net B/C	Ratio	5,33
4	PBP	Year	4.66
			4 Years 9 Months

Source: Primary Data (processed), 2022

The Net Present Value (NPV) is calculated as the difference between the present value of the benefits (revenue) to be received minus the present value of the costs (cost) incurred over the life of the project. Based on the calculation results on the Discount Factor (DF) of 14% for an economic life of 15 years, the NPV value is Rp. 6,879,487,975, - means that the tapioca flour processing business development plan is profitable. Net Benefit Cost Ratio (NBCR) is a comparative value between positive present value and negative present value. Based on calculations at a DF of 14% for a plant age of 15 years, the NBCR for the development of a tapioca flour processing business is 5.33. This means that the development of a tapioca flour processing business is quite feasible.

Internal Rate of Return (IRR) is the interest rate (discount rate) that equates the present value, the amount of benefits with the present value of the total costs. Based on the results of the calculation for 15 years of business, the tapioca flour processing business IRR value of 88.36 was obtained. This means that the tapioca flour processing business is quite feasible because the IRR value is greater than the prevailing bank interest rate. Pay back period (PBP) to determine the time

required when the total cash inflow equals the total cash outflow. From the results of the payback period analysis, the alternative to be chosen is an alternative with a shorter payback period. This analysis is only to obtain additional information to measure how quickly the investment returns.

Sensitivity analysis is used to see the level of sensitivity of the tapioca flour processing business to changes in conditions beyond the assumptions made at the time the tapioca flour processing business plan was planned. The sensitivity analysis was carried out on two indicators, namely if there is an increase in operational costs of 20%, a decrease in production prices of 20%. While the 20% increase in production costs was carried out in anticipation that some components of tools or spare parts for the tapioca flour processing business must be purchased from outside by 30% and locally by 70%, a reduction in production prices of 20% is a level of tolerance that is considered reasonable due to non-factorial factors. technical issues that may occur in the field. On the indicator of rising production costs, a sensitivity analysis is carried out with the assumption that there will be an increase in production costs of 20%. All production cost variables are projected to increase except for the cost of purchasing cassava. An exception was made because the price of cassava has a correlation with increases and decreases in the selling price of processed cassava. The results of the sensitivity analysis for an increase in production costs of 20% are presented in Table 4.

Table 4. Analysis of Investment Criteria 20% Increase in Production Costs Tapioca Flour Processing Business Capacity of 2,500 kg per day

No	Criteria	Unit	Mark
1	NPV	IDR/age of project	5,831,686,625
2	IRR (%)	%	76,661
3	Net B/C	Ratio	4.52
4	PBP	Year	5,36
			5 Years 4 Months

Source: Primary Data (processed), 2022

Based on the results of the sensitivity analysis, it can be seen that if there is an increase in production costs of 20%, the tapioca flour processing business can still be tolerated and still provides benefits and is feasible to implement. This can be seen through a positive NPV, IRR below the cost of capital and a B/C ratio that is smaller than the B/C ratio and return on investment capital in the 5th year and the 4th month. Sensitivity analysis with the assumption of a 20 percent reduction in production prices. The price reduction will have an impact on the purchase price of raw materials and auxiliary material costs in the production process as well as revenue from the sale of tapioca flour. The results of the sensitivity analysis for a 20% reduction in production prices are presented in Table 5.

Table 5. Analysis of Investment Criteria for a 20% Production Price Decrease in a Tapioca Flour Processing Business with a Capacity of 2,500 kg per day

No	Criteria	Unit	Mark
1	NPV	IDR/age of project	4,265,801,428
2	IRR (%)	%	56,745
3	Net B/C	Ratio	3,31
4	PBP	Year	7,81
			7 Years 11 Months

Source: Primary Data (processed), 2022

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From the results of the analysis carried out if there is a decrease in production prices of 20%, the tapioca flour processing business is still feasible to carry out based on the investment criteria used. This indicates that a price reduction at a tolerance level of 20% can still provide greater net benefits than sacrifices and not disrupt tapioca flour processing business activities. However, this price reduction will have an impact on a longer rate of return (PP). Based on the sensitivity analysis, a tapioca flour processing business with a capacity of 2,500 kg per day is feasible to continue.

5. CONCLUSIONS AND SUGGESTIONS

5.1. CONCLUSION

Based on the results of the research conducted, it can be concluded that the Net Present Value (NPV) at the Discount Factor (DF) is 14% during the economic life of 15 years, amounting to Rp. 6,879,487,975, the Net B/C value is 4.66, the IRR is 88.36%, and the payback period is 4 years, 9 months. This means that the tapioca flour processing business development plan is profitable or feasible to run in Aceh Besar District.

5.2. SUGGESTIONS

Based on the results of the conclusions outlined, the suggestions that can be conveyed are expected to stakeholders to be able to realize the construction of a Flour Processing FactoryTopioka in Aceh Besar District, so that it can open business fields and improve the welfare of cassava farmers.

REFERENCES

Amilia. W, Choiro. M. 2017. Business Feasibility and Competitiveness Studies in the Tapioca Flour Industry in Pogalan District, Trenggalek Regency. JSEP Vol. 10. No. 2. Pgs 51-57.

Andrizal. 2003. Potential, Challenges and Constraints for Development of Cassava Agro-industry and Required Industrial Trade Policies. Empowerment of Cassava Agribusiness Supports Food Security. Research Institute for Legumes and Tubers.http://medpub.litbang.pertanian.go.id/index.php/wartazoa/article/viewFile/915/924

Central Bureau of Statistics (BPS). 2021. Aceh in Numbers. Banda Aceh.

Central Bureau of Statistics (BPS). 2021. Aceh Besar in Numbers. Jantho.

Agricultural Research and Development Agency. 2011. Cassava Processing Innovation Increases Income and Food Diversification. Agro Innovation. Jakarta.

Bambang. H, Dinah. K. 2013. Cassava (first edition). PT. Adisakti Trident. Jakarta

Choliq. A, Wirasasmita. R.A. Hasan. S. 1999. Project Evaluation (An Introduction). Print 1. Pioneer Jaya. Bandung.

Djafar. TF, Rahayu. S. 2003. Cassava and its Processes. Canisius Publishers. Yogyakarta

Gittinger. J P. 1986. Economic Analysis of Agricultural Projects. UI-Press-John Hopkins. Jakarta

Gray. C, Sabur. LK, Simanjuntak. P, Maspaitella, PF L. 1997. Introduction to Project Evaluation. PT Gramedia Pustaka Utama. Jakarta

Husnan, S. Suwarsono, M. 2000. Project Feasibility Study. YKPN UPP AMP Publisher. Yogyakarta.

Abraham. Y. 1998. Business Feasibility Study. PT. Rineka Cipta. Jakarta

Abraham. Y. 2009. Business Feasibility Study. PT. Rineka Cipta. Jakarta.

Kadariah. Carlina. L, Gray. C. 1978. Introduction to Project Evaluation. Faculty of Economics, University of Indonesia, Jakarta.

Kardashian, Karlina. L, Gray. C. 1999. Introduction to Project Evaluation Revised Edition. Publishing Institute, Faculty of Economics, University of Indonesia. Jakarta.

Karama, S. 2003. Potential, Challenges and Constraints of Cassava in Supporting Food Security. Directorate General of Food Crop Production. Poor.

Kurniawan. A, Rochdiani. D, Judge. D L. 2019. Cost Analysis, Acceptance and R/C of Tapioca Flour Agroindustry (Case Study on Tapioca Flour Agroindustry in Bojongasih Village, Bojongasih District, Tasikmalaya Regency). Journal of Agroinfo Galuh Volume 6, Number 2. Pages 357-366.

Koswara. S. 2009. Cassava Processing Technology (Theory and Practice). http://tekpan.unimus.ac.id [accessed 18 April 2021]

Lidiasari. E. 2006. The Effect of Differences in Drying Temperature of Cassava Tapai Flour on the Physical and Chemical Quality Produced. Journal of Indonesian Agricultural Sciences Vol. 8. No. 2. Pgs 141-146.

Empress. CND, Lestari. DAH, Kashmir. E. 2013. Added Value and Feasibility of Small and Medium Scale Businesses Processing Cassava (Onggok) Solid Waste in Pekalongan District, East Lampung Regency. JIIA, VOLUME 1, No. 4. Pgs 284-290

Miftah. H, Syarbaini. A. 2014. Model of Increasing Cassava Farmers' Income Through Cluster Patterns in the Development of Mocaf Flour Industry in Sukabumi Regency, West Java Province. Journal of Agriculture ISSN 2087-4936 Volume 5 Number 2. Pages 104-115

Mardliyah. A, Supriyadi. 2018. Financial Feasibility of Processing Cassava into Instant Tiwul in Wonosari Village, Pekalongan District, East Lampung Regency. Journal of Applied Agricultural Research Vol. 18. No. 1. Pgs 1-6

Muhadi, 2017. Study of Potential Development Strategy for the People's Tapioca Flour Industry (ITTARA) in East Lampung Regency. Journal of Industrial Technology & Agricultural Products Vol. 22 No. 1. Pgs 52–62.

Nazaruddin. 1993. Agricultural Export Commodities. Self-help Spreader. Jakarta.

Nurmalina. R, Sarianti. T, Karyadi. A. 2009. Business Feasibility Study. Bogor: IPB Press.

Priyanto, Duwi. SPSS Handbook: Data Analysis, Data Processing and Completion of Statistical Cases. Yogyakarta: Mediakom. 2016.

Rahman, S. 2018. Building Agriculture and Food to Realize Food Sovereignty. CV. Main Buddha. Macassar.

Rinardi, H. 2001. Cassava Politics in the Colonial Age. Indonesian Society Aware of History (Messiass). Semarang.

Rukmana, R. 1997. Cassava, Cultivation and Post Harvest. Canisius. Yogyakarta.

Setyono, A. 1991. Study of Development of Cassava Agroindustry in Kejobong District, Purbalingga. Food Crops Research Institute. Sukamandi.

Sugiyono. 2018. Quantitative, Qualitative and R&D Research Methods. CV. Alphabet. Bandung.

Suismono. 2003. Business prospects for agro-industry and cassava agribusiness. Rice Research Institute. Poor.

Soetanto. 2001. Cassava Processing. Wiyata Library and Media Center. Jakarta.

Soekartawi. 1995. Farming Analysis. University of Indonesia (UI-Press). Jakarta.

Suprapti, M L. 2005. Food Processing Technology: Candied Dried Cashews. Yogyakarta: Kanisius.

Suprapti, L. 2009. Tapioca Flour. Canisius. Yogyakarta.

Sjamsir, Z. 2017. Agricultural Development in the Swirl of Local Wisdom. CV. Legal Media. Macassar.

Ushada. M, 2019. Study of Digital Ergonomic Potential to Support Food Agro-Industry Work Systems. Journal of Indonesian Agricultural Technology and Industry, Vol. 11, no. 01. Pg 6-10.

Winarno. 2004. Food Chemistry and Nutrition. PT. Main Library Gramedia. Jakarta

PROCESSING INDUSTRY INVESTMENT FEASIBILITY ANALYSIS TAPIOCA FLOUR IN ACEH BESAR DISTRICT

Hasnawi, Ahmad Humam Hamid, Fajri

Zein. M, Nuryati, Fitriani. 2020. Analysis of Added Value and Feasibility of a Vegan Cilok Business Using Natural Dyes. Journal of Agro-Industry Technology Vol. 7 No. 1. Pgs 70-80.

Zairina. W, Chumaidiyah. E, Aurachman. R, 2015. Feasibility Analysis of Tapioca Flour Business Investment PT. Biofuel Bigcassava Hidayah Based on Market, Technical, Environmental and Financial Aspects for Markets in the City of Bandung. e-Proceedings of Engineering: Vol. 2, No. 1. ISSN : 2355-9365. Pgs 841–852.