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FEASIBILITY ANALYSIS OF IMPLEMENTATION OF SNI 3144:2015 ON TEMPE PRODUCTS

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Abstract. A product must have good quality by maintaining or improving its quality to satisfy customers. Good quality tempeh products must meet the standards of SNI 314:2015. Many Tempeh Small and Medium Enterprises (SMEs) still have been unable to meet it. This study aims to determine the production process that meets the quality requirements of SNI 3144:2015 and is feasible for use as a business. The method used is to compare local tempeh SMEs with tempeh entrepreneurs certified by SNI 3144:2015, as well as laboratory testing. For business feasibility analysis, the aspects analyzed are organizational and management, market and marketing, technical, environmental, legal, and financial aspects. The study results indicate that the quality of tempeh produced by local SMEs has met four of the eight SNI 3144:2015 standards. In the technical aspect, namely the production process, it is necessary to provide wet and dry areas for the production process. Wet area for processes that use much water such as boiling, soaking, breaking soybeans, washing, separating the skin, watering with warm water, cooking, rewashing, and fermentation. Dry area for packaging and fermentation process for tempeh production. The results of the business feasibility analysis, especially in the marketing aspect, show that the best scenario for SMEs is to combine marketing of SNI tempeh products and products without SNI to reach a larger market. The financial aspect analysis shows that Tempeh SMEs with SNI are feasible to run with NVP and IRR values that meet the requirements, and the investment return period is 1 Year 6 Months 19 Days.

Keywords: Tempe; SNI; small and medium enterprises; business feasibility

I. INTRODUCTION

A product consumed by consumers must have good quality. Price and product quality have a partial and simultaneous effect on customer satisfaction.(Napitupulu, 2019). The majority of consumers want to buy products that meet standards. Adjusting the production process to applicable standards certainly requires analysis of each process. If it turns out that the process must be improved. Then, the company must make investments according to the improvements made. Related to the quality issue, the issue also occurs in the Tempe Industry. Tempe products are of good quality and meet the SNI 314:2015 standard. The quality standards are seen in Table 1. To produce quality tempe, good (quality) soybeans are also needed and to manage the manufacturing process properly and correctly.[2],(Andayani and Hambali, 2018).Small and medium enterprises (SMEs) still face many obstacles to creating tempeh products that comply with SNI. Obstacles include equipment that is still traditional, hygiene that is not yet appropriate, formulation that is not yet standard, and labeling that has not been implemented[4]. Based on these problems, it is necessary to conduct research that explains how to produce tempeh by SNI by considering the feasibility analysis of the SME business.

Table 1. SNI Quality Requirements

No.	Test criteria	Unit	Condition
1	Condition		
1.1	Texture	-	compact compact here means that when sliced, the tempeh remains intact (does not fall apart easily)
1.2	Color	-	white evenly throughout surface
1.3	Smell	-	the distinctive smell of tempeh without the smell of ammonia
2	Water content	mass fraction, %	max. 65
3	Fat content	mass fraction, %	min. 7
4	Protein content (N x 5.71)	mass fraction, %	min. 15
5	Crude fiber content	mass fraction, %	max 2.5
6	Metal contamination		
6.1	Cadmium (Cd)	mg/kg	max 0.2
6.2	Lead (Pb)	mg/kg	max 0.25
6.3	Tin (Sn)	mg/kg	max. 40
6.4	Mercury (Hg)	mg/kg	max 0.03
7	Arsenic (As) Contamination	mg/kg	max 0.25
8	Microbial contamination		
8.1	coliform	APM/g	max. 10
8.2	Salmonella sp.	-	negative/25 g

Source: Indonesian National Standards Agency

One of the companies that has issued products that comply with SNI is Rumah Tempe Indonesia (RTI). RTI is

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the only producer in Indonesia that makes hygienic tempeh, according to SNI 3144:2015. RTI's products consist of various types according to the specified weight, including tempeh weighing 250 gr, 300 gr, 350 gr, 400 gr, and 450 gr. RTI's target market is consumers who pay attention to nutrition and hygienic tempeh production. The entire production process at RTI is very clean and hygienic; most production equipment uses stainless steel. RTI is the center of innovation in making hygienic tempeh production machines. Garut Regency is one of the areas with many tempeh craftsmen. However, the production process of these tempeh craftsmen is not like RTI. Their products have never been checked for compliance with SNI 314:2015. However, if there are improvements that change the tools or machines used by Rumah Tempe Indonesia in SMEs in Garut, this will have an impact on the amount of company expenditure that falls into the Fixed Cost category (Lestari, 2019). So, in addition to knowing the production process, we also have to conduct a feasibility analysis of the business so that tempeh products in Garut Regency can comply with SNI and are feasible to run.

In previous research, Alvina and Hamdani 2019 conducted a study comparing modern and traditional tempeh-making. The results were that traditional making was superior in sanitation, but modern making was superior in hygiene, according to SNI[4]. Laksono et al. (2019) conducted a study on the duration of tempeh boiling on quality by SNI, and the results of organoleptic tests showed that the duration of boiling and the type of packaging significantly affected several SNI quality requirements.[6]. In addition, Dewi Rahmawati also conducted a business feasibility analysis study in 2021[7]. Business feasibility analysis is also carried out in business development.[8], [9], [10], [11]. Based on several research journals, we should analyze the production process according to SNI so that it is of good quality and carries out business feasibility for the UKM. Based on this, it is necessary to conduct a study entitled "Implementation of SNI 3144:2015 in Tempe Business (Case Study of Tempe Business in Garut Regency)". This study will focus on making Tempe SMEs in Garut Regency have a quality that is by SNI and is feasible in all aspects of Business Feasibility, especially in terms of finance.

II. RESEARCH METHOD

The research location is in Garut Regency with the address Jl. Cijati Asri, Jayawaras, Tarogong Kidul District, Garut Regency, West Java Province, 44151. The research began in June 2022 to August 2022. The methodology used by the stated objectives uses the following approach. This research uses a mixed research method. This mixed method is a research method/approach that combines or associates qualitative and quantitative research forms. [12]. This approach combines the capabilities of two research approaches to enhance research results further. This method is used to complete the description of research results related to the phenomenon being studied, to refine research analysis, and to produce more facts when studying a research problem.

Secondary (qualitative) methods with low priority are built into the more dominant (quantitative) methods. Qualitative data collection is carried out to achieve the first objective, the production process according to SNI, after qualitative data collection and results, that causes investment in the costs used. Then, we do quantitative data processing to calculate business feasibility.

The population of this study is Tempe SMEs in Garut. The sample is part of the number and characteristics possessed by the population. According to Suharto from Mahi M. Hikmat, a sample is a subject of the population taken using sampling techniques. So, the sample taken is Tempe Dua Sepuh SMEs. Tempe Dua Sepuh SMEs were selected because the location of Tempe Dua Sepuh SMEs is in the Tempe center area in Garut Regency. In addition, the research will be carried out intensively to make improvements. So, the location of Tempe Dua Sepuh SMEs is a Strategic Location. However, to compare the production processes used by SMEs in the Garut Regency, it is possible that the sample will be added with 3-5 Tempe SME samples in the Garut Regency. Qualitative research is conducted by processing data from laboratory tests and proposing a production process that complies with SNI. This is done because in determining the proposed production process, thoroughness and in-depth observation are required using qualitative methods. In addition, several business feasibility studies that will be analyzed also use qualitative methods because they do not have solutions using numbers. Business feasibility studies conducted using qualitative methods are Organizational and Management Aspects, Market and Marketing Aspects, Technical Aspects, Environmental Aspects, and Legal Aspects. Research using quantitative methods is conducted to analyze the financial aspects of the company by calculating IRR, NVP, Payback period, and Break Event Point. The data collection procedure was used in interviews and observations with descriptive qualitative methods to obtain the data needed in the study. This study was conducted concerning one of the Rumah Tempe Indonesia (RTI) sources. Then, data was collected at RTI and UKM Tempe, where interviews were conducted with RTI, the production process of RTI by the Standard. Observations at RTI were also carried out by observing the production process and the tools and materials used. In addition to collecting data at RTI, researchers also collected data at UKM Tempe Dua Sepuh by observing the production process. Data collection at UKM Tempe Dua Sepuh was also carried out quantitatively to find outsources of funds, investment data, variable cost data, fixed cost data, income, and cash flow data company.

III. RESULTS AND DISCUSSION

Production Process According to SNI

The results of the Tempe Dua Sepuh UKM lab test are presented in Table 2.

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Table 2. Laboratory Test Results for UKM Dua Sepuh Tempe Products

No	Test Parameters	Unit	Test Results	SNI Provisions	Information
1.	Water content	%	56.91	Max 65	In accordance
2.	Fat	%	8.99	Min. 7	In accordance
3.	Protein	%	19.69	Min. 15	In accordance
4.	Crude Fiber	%	1.44	Max 2.5	In accordance

Source: Results of Laboratory Tests at Pasundan University

Based on these results, we can see that the tested Tempe complies with the 4 quality criteria of SNI 3144:2015 [13]. So, the production process carried out to obtain products that comply with SNI is as follows:

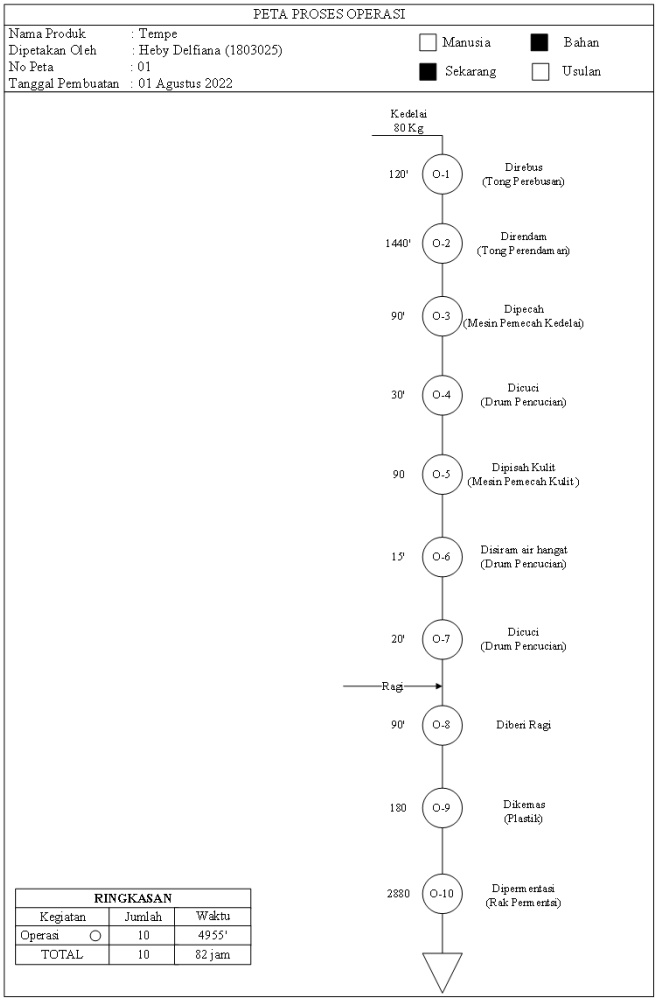

Figure 1. SNI Tempe Manufacturing Operation Process Map. Source: Results of Observation Data Processing

Market and Marketing Aspects

The analysis results generally show that UKM Dua Sepuh does not use the STP method to determine the market for its products. They only determine the Ciawi Tali Market to carry out marketing because the Ciawi Tali Market is the Main Market in Garut Regency. According to(Adnyana, 2020), There are 3 marketing aspects in business feasibility: Segmenting, Targeting, and Positioning. However, with the development of the company's products, STP is carried out with the results of Geographic Segmentation being Garut City and Tarogong Kidul Districts and Demographic Segmentation by Age and Gender. Targeting based on segmentation is the community of Garut City District, female gender and age 17 years - 39 years. The positioning is to instill consumer views on UKM Dua Sepuh tempeh, whose quality follows SNI. Following the STP analysis conducted, the Modern market has consumers with high attention to product quality. Markets that can be targeted include Yogya supermarkets, Asia Supermarkets, Yoma Supermarkets, and many more. However, based on the results of observations, several things that must be considered to enter the market are the duration of the product so that it can last a long time. Because supermarkets tend to provide fast food and long-lasting products, companies must pay attention to this. One of them is in Asia Toserba Garut. To market products there, products must have long durability and be dry to avoid rotting because wet products must have more attention. In Yogya supermarket, tempeh has also entered supermarkets, but this tempeh comes from companies outside Garut, such as Bandung. In addition to the long-lasting quality of tempeh products, companies must also pay attention to PIRT in order to be able to enter the market.

Organizational and Management Aspects

The analysis results on the organizational and management aspects of UKM Dua Sepuh are the absence of organizational structure, financial management and company management. So, if this continues to be done, the company will lose the opportunity to develop. So, the company must first improve the organizational structure, such as having a production section of 2 people, a finance section of 1 person, and a marketing and distribution section of 1 person. So, each section with focus can do this division of work. In addition to the organizational structure, there are rules or principles in running a business that make it easier, namely improving it.company management by implementing Planning, Organizing, Actuating and Controlling[15]. In addition to organizational aspects, companies must also consider financial management so that they can separate business finances from family or personal finances to keep the business running, calculate tempeh production costs correctly, and being able to prepare Simple Financial Reports.[16]

Technical Aspects

Technical aspects are more directed towards the operations carried out by the company, such as determining the business location, business layout, selection of equipment, and technology.[17]. In the company's layout that is being run, there is no partition between the wet area and the dry area. These areas should be separated to maintain cleanliness during the production process. The wet area consists of Boiling, Soaking, Washing, and Fermentation. While the dry area consists of the Packaging and Fermentation Room. The layout of the division of wet and dry areas is explained in Figure 2.

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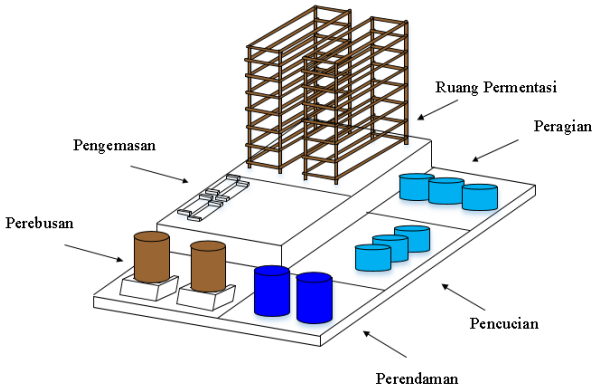

Figure 2. Three-Dimensional Layout

Generally, The tools used are boiling barrels, soaking drums, washing drums, fermentation drums, and filters. However, according to SNI, there is an additional soybean skin peeler tool to support the production process.

Environmental Aspects

The results of the Environmental Aspect analysis of the company show that no action needs to be taken because the basic ingredient for making tempeh is organic soybeans, so no serious problems will arise if the river water can flow well. However, the ministerial regulation states that there must be an Environmental Management Effort Document in Bahasa is "Dokumen Upaya Pengelolaan Lingkungan Hidup (UKL)" and Environmental Monitoring Effort in Bahasa " Upaya Pemantauan Lingkungan Hidup (UPL)", for companies that are not required to conduct AMDAL(Adnyana, 2020).

Legal Aspects

In general, from the legal aspect, the company does not complete anything related to legal matters. However, because the products to be made have SNI quality, the company should be able to complete the Household Industry Food Certification (SPP-IRT) to reach a wider market. In addition, several documents that must be completed are the Company/Individual Taxpayer Number from the local tax office, Business Domicile Certificate (SKDU), Industry Certificate (SKI), and Small Trade Business License (SIUP-KECIL).

Financial Aspects

The financial aspect is calculated in 2 ways, namely, the financial aspect for the company if it implements a hybrid of regular products and SNI production and the calculation of the financial aspect if the company only implements SNI products. Calculations on the financial aspect are carried out to determine the feasibility of the investment, such as research[11]. So, all financial aspects are calculated, such as Break Even Point, B/C Ratio, Payback period, Net Value Preset and Internal Rate of Return[18], [19], [20]

Fixed Cost Data

Fixed costs are costs whose size does not depend on the size of production, so the amount of production produced does not affect changes in these costs.

(1) Fixed Cost Data (Fixed Cost Hybrid)

Hybrid fixed cost data is calculated based on the company's needs in producing a mix of SNI and non-SNI products.

Table 3. Hybrid Product Fixed Cost Data

No	Description	Price	Amount	Day	Month
1.	UN	Rp. 2,500,000	1 year	Rp. 6,944	Rp. 208,333
2.	Equipment depreciation	Rp. 518,000	1 month	Rp. 17,266	Rp. 518,000
	Amount			**Rp. 24,210**	**Rp. 726,333**

Source: Primary Data Processing Results

Based on the total amount, the Fixed Cost for Hybrid implementation is Rp. 726,333 / month.

(2) Fixed Cost Data (Fixed Cost SNI)

The difference in costs for implementing Hybrid and SNI lies in the additional tools needed to run the company and produce SNI products.

Table 4. Fixed Cost Data for SNI Products

No	Description	Price	Amount	Day	Month
1.	UN	Rp. 2,500,000	1 year	Rp. 6,944	Rp. 208,333
2.	Equipment depreciation	Rp. 612,000	1 month	Rp. 20,400	Rp. 612,000
	Amount			Rp. 27,344	Rp. 820,333

Source: Primary Data Processing Results

Based on Table 4. the addition, the fixed cost to implement the NSi product is Rp. 820,000.

Variable Cost Data

Variable costs are costs incurred that affect the size of the production level. These costs include Soybeans, Yeast, Banana Leaves, Labor, and Firewood. For the use of variable costs in tempeh production for one month.

(1) Variable Cost Data (Variable Cost Hybrid)

Hybrid Variable cost data is not very different from SNI Products; the only difference lies in the number of leaves used.

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Table 5.Variable Cost Data for Hybrid Products

No	Description	Price	Amount	Day	Month
1.	Soybeans	Rp. 12,500	80 Kg/day	Rp. 1,000,000	Rp. 30,000,000
2.	Yeast	Rp. 5,000	Day	Rp. 5,000	Rp. 150,000
3.	Plastic	Rp. 60,000	Day	Rp. 60,000	Rp. 1,800,000
4.	Leaf	Rp. 20,000	Day	Rp. 20,000	Rp. 600,000
5.	Fuel	Rp. 16,000	Day	Rp. 16,000	Rp. 480,000
6.	Electricity	Rp. 3,000	Day	Rp. 3,000	Rp. 90,000
7.	Worker's Wages	Rp. 265,000	Heart	Rp. 265,000	Rp. 7,950,000
	Amount			**Rp. 1,369,000**	**Rp. 41,070,000**

Source: Primary Data Processing Results

(2) Variable Cost Data (Variable Cost SNI)

The costs incurred in the SNI production process are not much different from the variable costs when the company implements a hybrid system. The difference lies only in the number of leaves purchased and the addition of labeling to SNI products.

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Table 6. SNI Variable Cost Data

No	Description	Price	Amount	Day	Month
1.	Soybeans	Rp. 12,500	80 Kg/day	Rp. 1,000,000	Rp. 30,000,000
2.	Yeast	Rp. 5,000	day	Rp. 5,000	Rp. 150,000
3.	Plastic	Rp. 60,000	day	Rp. 60,000	Rp. 1,800,000
4.	Leaf	Rp. 150,000	day	Rp. 150,000	Rp. 4,500,000
5.	Fuel	Rp. 16,000	day	Rp. 16,000	Rp. 480,000
6.	Electricity	Rp. 3,000	day	Rp. 3,000	Rp. 90,000
7.	Worker's Wages	Rp. 265,000	day	Rp. 265,000	Rp. 7,950,000
8.	Label	Rp. 45,000	day	Rp. 45,000	Rp. 1,350,000
	Amount			**Rp. 1,499,000**	**Rp. 46,320,000**

Source: Primary Data Processing Results

Production Result Details

From 80 kg of soybeans sold, the following is a breakdown of the income from Hybrid and SNI products.

Table 7. Details of Production Results

No	Description	Price	Amount	Day	Month
1.	Tempeh Book	Rp. 1,500	260	Rp. 390,000	Rp. 11,700,000
2.	Tempeh 2000	Rp. 2,000	40	Rp. 80,000	Rp. 2,400,000
3.	Tempeh 3500	Rp. 3,500	30	Rp. 105,000	Rp. 3,150,000
4.	Tempeh 4000	Rp. 4,000	120	Rp. 480,000	Rp. 14,400,000
5.	Tempeh 5000 (SNI)	Rp. 5,000	30	Rp. 150,000	Rp. 4,500,000
6.	Jumbo Tempeh	Rp. 10,000	55	Rp. 550,000	Rp. 16,500,000
	Amount			**Rp. 1,755,000**	**Rp. 52,650,000**

Source: Primary Data Processing Results

UKM Dua Sepuh's income with the Hybrid system has a gross income of Rp. 1,755,000/day and Rp. 52,650,000/ month.

Table 8. Details of SNI Production Results

No	Description	Price	Amount	Day	Month
1.	Tempeh 350 (SNI)	Rp. 5,000	310	Rp1,550,000	Rp. 46,500,000
	Amount			**Rp1,550,000**	**Rp. 46,500,000**

Source: Primary Data Processing Results

Production that only carries out production processes following SNI only sells SNI products at IDR 5,000 and a quantity of 310 in a day gets a result of IDR 46,500,000/month.

Break Event Point Financial Analysis

Break Event Point financial analysis is carried out to determine the break-even point that the company must achieve in units or price units.

(1) Break Event PointHybrid

BEP is the break-even point of a business. From the BEP value, it can be seen at what level of production calculation and price a business does not make a profit and does not experience a loss.

Table 9. Calculation of BEP for Hybrid Products

Types of Tempeh	Total Products	Total cost	Selling price	BEP Unit	BEP Price
Tempeh Book	7800	Rp. 7,084,068	Rp. 1,500	4723	Rp. 908
Tempeh 2000	1200	Rp. 2,724,641	Rp. 2,000	1362	Rp. 2,271
Tempeh 3500	900	Rp. 2,452,177	Rp. 3,500	701	Rp. 2,725
Tempeh 4000	3600	Rp. 11,443,494	Rp. 4,000	2861	Rp. 3,179
Tempeh 5000 (SNI)	900	Rp. 3,106,091	Rp. 5,000	621	Rp. 3,451
Jumbo Tempeh	1650	Rp. 14,985,528	Rp10,000	1499	Rp. 9,082
Amount	**16050**	**Rp. 41,796,000**	**26000**	**11766**	**Rp. 21,615**

Source: Primary Data Processing Results

BEP Unit in Table 9. is the minimum production capacity limit produced by the company in 1 month. Tempe Products: several types of tempe have a BEP Price smaller than the Sales Price, meaning that the BEP is appropriate. However, Tempe Product 2000 has a BEP Price value of Rp. 2271 with sales of Rp. 2000, greater than the total product, meaning that the BEP is not appropriate

(2) Break Event Pointt SNI

Table 10. Calculation of BEP for SNI Products

Types of Tempeh	Total Products	Total cost	Selling price	BEP Unit	BEP Price
Tempeh 380 gr (SNI)	9300	Rp. 47,140,333	Rp. 5,000	9428	Rp. 5,069
Amount	**9300**	**Rp. 47,140,333**	**Rp. 5,000**	**9428,0666**	**Rp. 5,069**

Source: Primary Data Processing Results

BEP Price for SNI Tempe is Rp. 5069, which is sold at Rp. 5000, meaning the selling price is smaller than the specified BEP Price. So, the company is likely to experience losses. If we want to reach the break-even point on SNI products, then the company must increase production capacity by 128 products. This additional capacity will cause additional costs, as in the table.

Table 11. BEP Calculation Cost Difference

Types of Tempeh	Production Capacity	Total cost	BEP Price	BEP Unit	Total cost	Cost Difference
Tempeh 380 gr (SNI)	9300	Rp47,140,333	Rp5,069	9428	Rp47,789,146	Rp. 648,813

Source: Primary Data Processing Results

There is an additional cost of Rp. 648,813 to reach the break-even point. However, in addition to the additional costs, the company also needs to consider the number of markets to be targeted with units that must sell as many as 9428 products in 1 month or 315 products in 1 day. So, in addition to increasing production capacity, the company can increase prices by increasing the desired margin.

Financial Analysis Benefit Cost Ratio

Financial analysis Benefit cost ratio is done to get a comparison between benefits or income and costs or expenses. The calculation is done by dividing income by company expenses.

(1) Benefit Cost RatioHybrid

Benefit Cost RatioFor hybrid or mixed products, this is done by dividing income by expenses with the following results:

B/CR <1 = not eligible
B/CR >1 = eligible
B/CR =1 = eligible

Table 12. Calculation of hybrid Benefit Cost Ratio

Table 12. Calculation of hybrid Benefit Cost Ratio

No	information	Day	Month
1.	Income	Rp. 1,755,000	Rp. 52,650,000
2.	expenditure	Rp. 1,393,200	Rp. 41,796,000
	B/C Ratio	**1.26**	**1.26**

Source: Primary Data Processing Results

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So, based on the B/C results, the value is 1.26, where the provision is > 1, the company's B/C feasibility analysis is feasible.

(2) Benefit Cost RatioSNI

The B/C value for SNI products < 1 means that the B/C analysis carried out is not suitable for implementation.

Table 4.12 Calculation of Hybrid Benefit Cost Ratio

Table 4.12 Calculation of Hybrid Benefit Cost Ratio

No	Information	Day	Month
1.	Income	Rp1,550,000	Rp. 46,500,000
2.	Expenditure	Rp1,571,344	Rp. 47,140,000
B/C Ratio		**0.98**	**0.98**

Source: Primary Data Processing Results

Financial Analysis Payback Period

The payback period is a calculation that determines the return on capital made based on the profits obtained. The total investment made to improve the company's facilities is Rp. 120,815,000. to obtain the specified funds, the company can make a loan with the following cash flow:

Table 13. Income and expenditure data

No	Description	Price	Amount	Day	Month
1.	Tempeh Book	Rp. 1,500	260	Rp. 390,000	Rp. 11,700,000
2.	Tempeh 2000	Rp. 2,000	40	Rp. 80,000	Rp. 2,400,000
3.	Tempeh 3500	Rp. 3,500	30	Rp. 105,000	Rp. 3,150,000
4.	Tempeh 4000	Rp. 4,000	120	Rp. 480,000	Rp. 14,400,000
5.	Tempeh 5000 (SNI)	Rp. 6,717	30	Rp. 201,510	Rp. 6,045,300
6.	Jumbo Tempeh	Rp10,000	55	Rp. 550,000	Rp. 16,500,000
Income				**Rp1,806,510**	**Rp. 54,195,300**
Expenditure				**Rp. 1,442,330**	**Rp. 43,269,898**
Amount				**Rp. 364,180**	**Rp. 10,925,402**

Source: Primary Data Processing Results

So, the investment calculation is as in table 13.

Table 13. Payback Period calculation

Year	Investment	Income	Payment	Remaining income	remaining debt
1	-Rp120,815,000	Rp. 131,104,824	Rp. 52,704,000	Rp. 78,400,824	-Rp 42,414,176
2		Rp. 131,104,824	Rp. 52,704,000	Rp. 78,400,824	Rp. 35,986,648
3		Rp. 131,104,824	Rp. 52,704,000	Rp. 78,400,824	Rp. 114,387,472
4		Rp. 131,104,824	Rp. 52,704,000	Rp. 78,400,824	Rp. 192,788,296
5		Rp. 131,104,824	Rp. 52,704,000	Rp. 78,400,824	Rp. 271,189,120

Source: Primary Data Processing Results

Based on the cash flow in Table 13, the refund can be made within the time presented in Table 14, during 1 Year, 6 Months, 15 Days, or 19 Months.

Table 14.. Refund Time

Year	Month	Day
1	6.49	15

Source: Primary Data Processing Results

Financial Analysis Net Value Present (NVP)

To calculate investment, we must first determine the company's cash flow and profit and loss, as presented in Table 15.

Table 15. net income data

No	Information	Day	Month
1.	Income	Rp1,806,510	Rp. 54,195,300
2.	Expenditure	Rp. 1,442,330	Rp. 43,269,898
Net income		**Rp. 364,180**	**Rp. 10,925,402**

Source: Primary Data Processing Results

Thus, the NVP value for investments made with an interest rate of 10% is presented in Table 16.

Table 16. NVP calculation

year	cash flow	Present value
0	-Rp 120,815,000	-Rp 120,815,000
1	Rp. 78,400,824	Rp. 71,273,476
2	Rp. 78,400,824	Rp. 64,794,069
3	Rp. 78,400,824	Rp. 58,903,699
4	Rp. 78,400,824	Rp. 53,548,818
5	Rp. 78,400,824	Rp. 48,680,743
	NVP	**Rp. 176,385,806**

Source: Primary Data Processing Results

NVP is feasible if the NVP value based on the calculation is > 0 in Table 16. The NVP is 176,385,806 > 0. So, the investment is feasible to be made.

Internal Rate of Return (IRR) Financial Analysis

IRR is calculated to determine the interest rate that equates the present value with the expected cash flow. The initial interest rate determined is 10%.

Table 17. IRR calculation

year	cash flow	Present value
0	-Rp 120,815,000	-Rp 120,815,000
1	Rp. 78,400,824	Rp. 71,273,476
2	Rp. 78,400,824	Rp. 64,794,069
3	Rp. 78,400,824	Rp. 58,903,699
4	Rp. 78,400,824	Rp. 53,548,818
5	Rp. 78,400,824	Rp. 48,680,743
	IRR	**58%**

Source: Primary Data Processing Results

Based on the results of table 17. The IRR value is 58% >10%, so the company's investment is feasible.

IV.KESIMPULAN

After conducting an analysis of the production process and all aspects of the feasibility analysis. The conclusions obtained from the research are: The proposed Tempe production process that complies with SNI must implement good management, especially regarding cleanliness. Tempe products sold for Rp. 5,000 by the company turned out to have the same quality as SNI. So, the production process used can follow the company in producing the tempe. The tempe production process that complies with SNI begins with boiling for 2 hours to soften the soybeans. soaking for 2 days, then broken for 180 minutes. The soybeans are then washed for 30 minutes and separated from the skin so that the fermented soybeans are denser for 40 minutes. The soybeans are doused with warm boiling water for 15 minutes and washed again to be given yeast. Fermentation is carried out in a wet state for 120 minutes, after which the water from the fermentation is discarded, and the soybeans are ready to be packaged. Packaging takes 180 minutes. After all, the

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packaging is complete. The last process is to ferment for 2 days to be marketed. Feasibility analysis of the business is carried out on all aspects, starting from the marketing, organizational, management, technical, Environmental, Legal, and financial aspects. In general, the results of the financial aspect are that the company is feasible to run and make investments with the results of the NVP being 176,385,806> 0. So, the investment is feasible to be made. The IRR value is 58%> 10%, so the company's investment is feasible to be made. The return period for the investment amount is 1 Year, 6 Months 15 Days.

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