

INCOME AND BUSINESS FEASIBILITY ANALYSIS OF TOFU AND TEMPEH AGROINDUSTRY

(A Case Study of the Micro, Small, and Medium Enterprise (MSME) CV. Sumber Hidup in Mata Air Village, Kupang Tengah Subdistrict, Kupang Regency)

By:

Babtisa Resa Baru¹, Mustafa Abdurrahma², Abraham Ruylython Illu³

^{1,2,3}Agribusiness Study Program, Faculty of Agriculture, Universitas Nusa Cendana

Email: resababtisa@gmail.com

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ABSTRACT

The study aims to analyze the income and financial feasibility of tofu agroindustry business in CV Sumber Hidup Mata Air Village, Central Kupang Regency. The sampling technique used a non-probability sampling technique, namely by using a case study technique. The data used in this study are primary and secondary data. To determine the feasibility of the tofu agroindustry business and at CV Sumber Hidup, feasibility analysis was carried out using the R/C ratio, Break Event Point (BEP), Net Present Value (NPV), Internal Rate Of Return (IRR), Net B/C Ratio, Return On Investment (ROI), and Payback Period (PP). The results of this study indicate that the income of the tofu business at CV Sumber Hidup is IDR 693,837,025/year and the CV Sumber Hidup tofu business is declared feasible with an R/C ratio value of $1.30 > 1$, Net Present Value (NPV) of IDR. 941,780. 947.98, - with $NPV > 0$ criteria, Internal Rate Of Return (IRR) of 45% with $IRR > DR$ (9%) criteria, Net B / C ratio of $1.30 > 1$, Return On Investment (ROI) of 112% high investment return rate while Payback Period (PP) 1 year 3 months.

Keywords: Financial Feasibility, MSME, tofu agro-industry

ABSTRAK

Penelitian ini bertujuan untuk menganalisis pendapatan dan kelayakan finansial usaha agroindustri tahu di CV Sumber Hidup Desa Mata Air Kabupaten Kupang Tengah. Teknik pengambilan sampel menggunakan teknik non-probability sampling yaitu dengan menggunakan teknik studi kasus. Data yang digunakan dalam penelitian ini adalah data primer dan sekunder. Untuk mengetahui kelayakan usaha agroindustri tahu dan di CV Sumber Hidup dilakukan analisis kelayakan dengan menggunakan R/C ratio, Break Event Point (BEP), Net Present Value (NPV), Internal Rate Of Return (IRR), Net B/C Ratio, Return On Investment (ROI), dan Payback Period (PP). Hasil penelitian ini menunjukkan bahwa pendapatan usaha tahu di CV Sumber Hidup sebesar Rp 693.837.025/tahun dan usaha tahu CV Sumber Hidup dinyatakan layak dengan nilai R/C ratio sebesar $1,30 > 1$, Net Present Value (NPV) sebesar Rp 941.780. 947,98,- dengan kriteria $NPV > 0$, Internal Rate Of Return (IRR) sebesar 45% dengan kriteria $IRR > DR$ (9%), Net B/C ratio sebesar $1,30 > 1$, Return On Investment (ROI) sebesar 112% dengan tingkat pengembalian investasi yang tinggi sedangkan Payback Period (PP) 1 tahun 3 bulan.

Kata kunci: Kelayakan finansial, UMKM, agroindustri tahu

INTRODUCTION

Agroindustry is an industrial activity that processes agricultural products as raw materials, produces various goods, and provides equipment and services that support the process. Viewed from the perspective of production systems, it includes tools such as tractors, fertilizers, pesticides, agricultural machinery, and other goods. Agroindustry plays a key role in driving the development of the agricultural sector to achieve agricultural development. The more advanced the agricultural sector becomes, the more it serves as a

stepping stone for national development, which in turn contributes to the growth of the agroindustry sector (Udayana, 2011).

Micro, Small, and Medium Enterprises (MSMEs) play a very important role in the Indonesian economy, especially for low-income communities (Aryadi & Hoesin, 2022). According to Law Number 20 of 2008 concerning Micro, Small, and Medium Enterprises (MSMEs), a Micro Enterprise is defined as a productive business owned by an individual or individual business entity that meets certain criteria in accordance with the provisions of the law. A Small Enterprise is an independent productive economic business run by an individual or business entity, which is not a subsidiary or branch of a medium or large enterprise, either directly or indirectly, and meets the criteria for a Small Enterprise as set forth in the regulation. Meanwhile, a Medium Enterprise is also an independent productive economic business operated by an individual or business entity, not affiliated as a subsidiary or branch of either a small or large business, either directly or indirectly, and has net assets or annual turnover in accordance with the limits set by the law.

CV. Sumber Hidup is one of the MSME actors engaged in soybean processing into ready-to-eat products. This business is located in Mata Air Village, Kupang Tengah Subdistrict, Kupang Regency. The products produced by CV. Sumber Hidup are tofu and tempeh. In this case study, tofu is selected as the object of research, considering that it has a very large market share and is favored by many groups of people. Tofu is one type of food that is rich in protein and beneficial for meeting the body's nutritional needs. The protein content in 100 grams of tofu is 7.8%. This high protein content makes tofu one of the alternative sources to fulfill everyone's protein needs (Baskara, 2024).

Tofu is a traditional processed food favored by many due to its delicious taste, economical price, and accessibility. Along with population growth, such conditions have caused the demand for tofu and tempeh to continue increasing. The high demand for tofu has encouraged many people to start producing it.

However, CV. Sumber Hidup faces several issues. The first is in the preparation of the main raw material, soybeans, which are imported and often experience quality degradation due to delayed deliveries. Additionally, there is the issue of price fluctuations in soybeans, which tend to increase every year. This situation affects the increase in production costs and a decrease in the business's income level. Moreover, the variation in product types being processed also leads to differences in cost allocation and income.

RESEARCH METHOD METHODOLOGY

Time and Location of the Research

This research was conducted at CV. Sumber Hidup, located in Mata Air Village, Kupang Tengah Subdistrict, Kupang Regency, using a case study strategy. The study was carried out over a period of two months, from January to February 2025.

Type and Source of Research Data

This research uses a quantitative approach with a case study strategy, and the data sources used include both primary and secondary data. Primary data refers to data obtained directly by the researcher without intermediaries. Secondary data refers to data collected from literature such as academic journals and publications.

Data Collection Techniques

To obtain data as the foundation for the research, four data collection techniques were employed:

1. Interviews
2. Observations
3. Questionnaires
4. Documentation

Sampling Technique

The sampling technique used in this research is based on non-probability sampling, specifically using a case study technique.

Data Analysis Methods

A. Income Analysis

1. Production Costs

According to Wijayanto (2021), total cost (TC) refers to the overall costs of a business, including the cost of purchasing raw materials, packaging materials, and auxiliary materials. The formula is as follows:

$$\text{Total Cost} = \text{Total Fixed Cost} + \text{Total Variable Cost}$$

2. Revenue

Total business revenue is calculated using the formula according to Sukirno (2002) as cited in Margi & Balkis (2016), as follows:

$$\text{Total Revenue} = \text{Quantity (kg)} \times \text{Price (IDR)}$$

3. Income

$$\text{Income} = \text{Total Revenue} - \text{Total Cost}$$

B. Business Feasibility Analysis

1. R/C Ratio

The R/C ratio is the comparison between total revenue and the total costs incurred. The R/C formula can be expressed as follows (Soekartawi, 2006):

$$\text{R/C ratio} = \frac{TR \text{ (total revenue)}}{TC \text{ (total cost)}}$$

R/C Ratio Criteria:

If $R/C > 1$, the business is feasible to run.

If $R/C = 1$, the business is at the break-even point.

If $R/C < 1$, the business is not feasible to run.

2. Net Present Value (NPV)

The formula for calculating NPV (Rahmadini et al., 2024) is as follows:

$$NPV = \sum_{t=1}^n \frac{B_t - C_t}{(1+i)^t}$$

Explanation of Terms:

B_t = Gross social benefit of the project in year (t)

C_t = Gross social cost of the project in year (t)

n = Economic life of the project

i = Social opportunity cost

NPV Criteria:

If $NPV > 0$, the investment is considered feasible

If $NPV < 0$, the investment is considered not feasible

If $NPV = 0$, the investment is at the break-even point

3. IRR (Internal Rate of Return)

The formula for calculating IRR (Ummi et al., 2024) is as follows:

$$IRR = i_1 \left[\frac{NPV_1}{NPV_1 + NPV_2} \right] \times (i_2 - i_1)$$

Explanation of Terms:

i_1 : Interest rate that results in a positive NPV

i_2 : Interest rate that results in a negative NPV

NPV_1 : NPV at discount factor 1

NPV₂: NPV at discount factor 2

IRR Criteria:

If IRR > interest rate, the business is feasible

If IRR < interest rate, the business is not feasible

If IRR = interest rate, the business is at the break-even point

4. Net B/C ratio

The formula for calculating B/C (Rahmadini *et al.*, 2024) is as follows::

$$\text{Net B/C} = \frac{\sum_{t=1}^n \frac{B_t - C_t}{(1+i)^t}}{\sum_{t=1}^n \frac{B_t - C_t}{(1+i)^t}}$$

Explanation of Terms:

Net B/Ca: Net Benefit-Cost Ratio

Bt: Benefit in year *t*

Ct: Cost in year *t*

i: Interest rate

t: Time period in years, where $t = 0, 1, \dots, n$

B/C Ratio Criteria can be classified into three categories:

If B/C > 1, the business is considered feasible (benefits are greater than costs)

If B/C < 1, the business is considered not feasible (benefits are less than costs)

If B/C = 1, the project's benefits are equal to its costs

5. *Return on Investment (ROI)*

Return on Investment (ROI), also known as Return on Assets, is a measure of a company's ability to generate profit from its operations. ROI is calculated using the formula (Ahssyar *et al.*, 2020) as follows:

Return On Investment, yang juga dikenal sebagai Return On Assets, merupakan ukuran kemampuan perusahaan untuk menghasilkan laba dari operasinya. ROI dihitung dengan menggunakan rumus (Ahssyar *et al.*, 2020) sebagai berikut:

$$\text{ROI} = \frac{\text{Total benefit} - \text{Initial investment}}{\text{Initial investment}} \times 100\%$$

6. *PP (Payback Periode)*

The Payback Period (PP) method is used to determine the length of time required to recover the amount of capital invested, based on the cash inflow generated from the investment. The Payback Period can be calculated using the following formula (Ahssyar *et al.*, 2020):

$$\text{PP} = \frac{\text{Initial investment}}{\text{Cash inflow}}$$

RESULTS AND DISCUSSION

CV. Sumber Hidup is a business focused on processing soybeans into finished products, namely tofu and tempeh. This business was founded by Mr. Drs. Nurwiyanto and has obtained a Medium Trading Business License (SIUP-K), as well as permits from the Investment and One-Stop Integrated Services Office (DPM-PTSP) and the Food and Drug Supervisory Agency (BPOM).

In this study, the object of analysis is the tofu product, considering its wide market share and popularity across various consumer groups. In 2024, CV. Sumber Hidup frequently experienced fluctuations in tofu production, ranging from 40 to 70 trays per day. The total tofu production during 2024 was 19,489 trays, with a selling price of IDR 150,000 per tray.

Production Cost

Production cost refers to the total expenses incurred by a company in transforming raw materials into finished goods that have market value. Production costs include depreciation of machinery and equipment,

raw material costs, auxiliary material costs, and employee wages—both direct and indirect—that are related to the production process. Production costs consist of investment costs, fixed costs, and variable costs.

A. Investment Costs

Investment cost is the total expenditure required by CV. Sumber Hidup when running its tofu production business. The total investment cost for the tofu business at CV. Sumber Hidup is IDR 881.601.000, consisting of initial capital IDR 500.000.000, rental cost: IDR 37.000.000, and equipment purchase cost: IDR 344.601.000

B. Fixed Costs

Fixed costs are the expenses incurred during the production process that do not change, even with changes in production volume. Fixed costs in tofu production at CV. Sumber Hidup include equipment depreciation, electricity costs, and tax expenses. The total fixed cost incurred in tofu production is IDR 29.428.975, consisting of equipment depreciation: IDR 25.108.975, electricity: IDR 1.320.000, and taxes: IDR 3.000.000.

C. Variable Costs

Variable costs are the expenses incurred during the production process that fluctuate based on changes in production volume.

Table 1. Variable Cost of Tofu Production

No	Cost Componen	Amount (IDR)
1	Raw materials	1.604.900.000
2	Auxiliary/material support costs	198.000.000
3	Labor wages	381.600.000
4	Fuel and water	21.984.000
5	Transportation costs	28.800.000
6	Maintenance costs	9.500.000.
Total		2.244.784.000

Source: processed primary data, 2024

The table above shows that the total variable costs incurred in the production of tofu at CV. Sumber Hidup in 2024 amounted to IDR 2,244,784,000. The purchase of raw materials, namely soybeans, represents the largest variable cost in the tofu production process.

D. Total Cost

The total production cost of tofu at CV. Sumber Hidup in 2024 was IDR 2.276.238.300. This total cost is the sum of variable costs amounting to IDR 2.244.784.000 and fixed costs for tofu production amounting to IDR 29.428.975.

Production and Revenue

Revenue in a business refers to the total amount of money received by the producer or business operator from production activities over a specific period. Total revenue is obtained by multiplying the quantity of tofu produced by its selling price. In 2024, tofu production at CV. Sumber Hidup totaled 19.787 trays, with a selling price of IDR 150.000 per tray. The total revenue from the tofu business in 2024 amounted to IDR 2.968.050.000.

Income

Income is the result of revenue minus total production costs. The greater the income generated, the greater the company's ability to cover all expenses and operational activities (Normansyah et al., 2014). In 2024, CV. Sumber Hidup's total revenue was IDR 2.968.050.000, and total costs amounted to IDR 2.274.212.975, resulting in a net income of IDR 693.837.025 for the year 2024.

Business Feasibility Analysis

Financial feasibility analysis aims to assess the viability of a business from a financial perspective. In analyzing the financial feasibility of the tofu business at CV. Sumber Hidup, six criteria are used: R/C Ratio, Net Present Value (NPV), Internal Rate of Return (IRR), Net B/C Ratio, Payback Period (PP), and Return on Investment (ROI). The feasibility indicators for the tofu business at CV. Sumber Hidup can be seen in the table below.

Table 2. Feasibility Assessment Indicators for the Tofu Business CV. Sumber Hidup.

Analysis Technique	Value	Criteria
<i>R/C Ratio</i>	1,30	>1, Feasible
<i>NPV</i>	IDR941.780.947,98,	>0, Feasible
<i>IRR</i>	45%	>9%, Feasible
<i>Net B/C Ratio</i>	1,30	>1, Feasible
<i>ROI</i>	112%	Feasible
<i>Payback Periode</i>	1 year 3 month	Feasible

Source: processed primary data, 2024

Based on Table 2, it can be seen that the feasibility assessment indicators for the tofu business of CV. Sumber Hidup in Mata Air Village, Kupang Regency—namely the R/C ratio, Net Present Value (NPV), Internal Rate of Return (IRR), Net B/C ratio, Payback Period (PP), and Return on Investment (ROI)—are as follows:

1. R/C Ratio

The R/C ratio is one of the most commonly used criteria in business feasibility analysis. It represents the ratio between the total revenue earned by the tofu business and the total costs incurred in the production process. From the table of feasibility indicators, the R/C ratio is 1.30, meaning that for every IDR 1 spent by CV. Sumber Hidup in tofu production, a return of IDR 1.30 is generated. Therefore, the tofu business is considered feasible for development.

2. Net Present Value (NPV)

Based on the feasibility analysis using a discount rate of 9%, the calculated NPV is IDR 941,780,947.98. This indicates that the net benefit of the tofu business at CV. Sumber Hidup is IDR 941,780,947.98 over a period of 4 years. Since the NPV is positive (>0), this means the tofu business is feasible for development.

3. Internal Rate of Return (IRR)

The Internal Rate of Return (IRR) is used to determine the internal profitability of an investment by comparing two interest rates. The two rates used were 9% and 13%. The results show that the IRR for CV. Sumber Hidup's tofu business is 45%, indicating that the return is significantly higher than the benchmark rate of 9%. Since $IRR > 9\%$, the tofu business is considered feasible for development.

4. Net B/C Ratio

Based on the results of the feasibility analysis, the Net B/C ratio is 1.30. This means that for every IDR 1 of investment, a net benefit of IDR 1.30 is obtained. As the Net B/C ratio is greater than 1, this indicates that the tofu business at CV. Sumber Hidup is feasible for development.

5. Payback Period (PP)

The Payback Period is the length of time required to recover the capital invested in a business. Based on the analysis, the payback period is 1 year and 3 months. This means that the investment in the tofu business can be recovered within 1 year and 3 months.

6. Return on Investment (ROI)

ROI is a measure used to evaluate the efficiency of an investment. It calculates how much return is earned compared to the investment cost. Based on the analysis, the ROI is 112%. This shows that the tofu business at CV. Sumber Hidup has an efficiency level of 112% in utilizing the invested capital.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the results of the income and financial feasibility analysis of the tofu business at CV. Sumber Hidup in Mata Air Village, Kupang Tengah Subdistrict, the total production cost was IDR 2.274.212.975. This total was obtained from the sum of fixed and variable costs for tofu production. The total tofu production in 2024 was 19.787 trays, with a selling price of IDR 150.000 per tray, resulting in an annual revenue of IDR 2.968.050.000. To determine the net income of the tofu business, the total revenue is subtracted by the total cost, yielding an income of IDR 693.837.025. The financial feasibility analysis used six assessment criteria: R/C Ratio, Net Present Value (NPV), Internal Rate of Return (IRR), Net B/C Ratio, Payback Period (PP), and Return on Investment (ROI). The results obtained were as follows; NPV: IDR 941,780,947.98, IRR: 45%, Net B/C Ratio: 1.30, R/C Ratio: 1.30, ROI: 112%, and Payback Period (PP): 1 year and 3 months. Several factors influencing the high income and tofu production include the quality of soybeans and good processing management, starting from soaking, grinding, coagulating, and pressing, all the way to marketing. The marketing strategy of the tofu business involves direct distribution to markets and the company already has regular customers.

Recomendation

For the owner of the tofu business at CV. Sumber Hidup, it is important to pay more attention to business administration in the future. This includes creating better bookkeeping systems, so that all expenses incurred during the tofu production process, the quantity of products produced, and business revenues can be properly recorded. Such records can serve as a reference for evaluating the future prospects of the business.

The local government should also provide greater support to small businesses like tofu production enterprises by offering guidance and management training. This support is crucial, as the presence of small businesses makes a significant contribution to the regional economy and helps create employment opportunities for the local community.

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