



FEASIBILITY ANALYSIS OF RED CHILI FARMING IN SIDODADI RAMUNIA, BERINGIN SUB-DISTRICT

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Abstract

Farming is a science that studies how a person coordinates and cultivates production factors in the form of land and the natural surroundings as capital so that they can provide the best possible benefits. Farming feasibility analysis is a study to observe and analyze the feasibility of a business, which observes several parameters about whether or not a business is feasible. The business can be said to be feasible if the profits obtained can cover all the costs used in the form of direct and indirect costs. This study aims to analyze the feasibility level of red chili farming in Sidodadi Ramunia Village, Beringin Sub-District, Deli Serdang District, North Sumatera. The method used in this research is the method of sampling, interviews and questionnaires, data from parties or related agencies that have the authority to collect data related to the object of research. The results showed that based on the value of the Benefit Cost Ratio (B/C Ratio) this business was not feasible because it did not provide benefits to the red chili farmers in Sidodadi Ramunia Village, while based on the value of the Revenue Cost Ratio (R/CRatio) red chili farming was feasible. to be cultivated because the revenue received is greater than the total costs incurred by the red chili farmers in Sidodadi Ramunia Village.

Keywords: Feasibility Analysis, Farming, Red Chili, Sidodadi Ramunia Village

A. Introduction

Indonesia is also called an agrarian country where an agrarian country focuses more on community activities in agriculture, agriculture in Indonesia is supported by the government's role in realizing resilient agriculture as a contributor to the country's foreign exchange (Ministry of Agriculture, 2021). Agriculture plays an important role in all sectors of economic activity in Indonesia, this can be proven from the large number of people in Indonesia who work as farmers. The profession as a farmer is not only a contributor to foreign exchange for the country, but also a source of household income for farmers in Indonesia (Saifullah, 2018).

Sustainable agriculture is one of the main concepts of agricultural activities currently being promoted by the Indonesian government, the low willingness of farmers to pay for environmental improvement services is an indicator that the concept of sustainable agriculture is still very difficult to realize by traditional farmers in Indonesia (Pirngadi R S, 2019)

Farming science is a science that studies how someone coordinates and exploits production factors in the form of land and the natural surroundings as capital so as to provide the best possible benefits. Thus, it must begin with planning to determine and coordinate the use of production factors in the future efficiently so that maximum income can be obtained (Suratiah K, 2015).

Farming feasibility analysis is a study to observe and analyze the feasibility of a business by observing several parameters about whether or not a business is feasible. The business can be said to be feasible if the profits obtained can cover all the costs used, both direct and indirect costs. Financially, business feasibility can be analyzed using several indicators or analytical tools, namely by using the main opportunity point (Break Event Point), Revenue Cost Ratio (R/C ratio), Benefit Cost Ratio (B/C ratio), Payback period, etc. (Prajnanta, F in Walidi, 2017).

Red chili is one of the important horticultural commodities in Indonesia, based on data from Central Of Statistic Agency (2020) in Indonesia chili production increased in 2020 compared to 2019 of 183.96 thousand tons and the household sector was the largest chili consumer with a percentage of 90.64% of total chili consumption. Most people in Indonesia use red chili as a food additive such as sauce, chili sauce and chili powder (Sukapiring et al., 2022). Almost all foods use red chili as a food additive. Red chili also if cultivated with the aim of business value can penetrate the market easily,

this is because all elements of society need this plant for household consumption (Prayitno, et al 2013).

Besides that, cultural factors are very influential on red chili plants as well as the process of chili seed development is very helpful in increasing the percentage of red chili power, especially in seeds and number of leaves when compared to immersion control (Alqamari et al., 2021). Fertilizers and types of red chili varieties are important factors in the analysis of the income of red chili farmers, in research (Alqamari et al., 2016) stated that the use of fertilizers containing K_2SO_4 with the TM 999 variety had a significant effect on plant height, amount of chlorophyll, flower age, the number of flowers, the percentage of flower fall and the number of red fruits.

Beringin Sub-District is one of the largest red chili producing districts in Deli Serdang District and Sidodadi Ramunia Village is one of the largest red chili producing villages in the Deli Serdang District, North Sumatera, with a planting area of 46 hectares and an average production of 8 tons/ha (Central Of Statistic Agency, 2021). From the explanation above, the purpose of this research is to analyze the feasibility level of red chili farming in Sidodadi Ramunia Village, Banyan Sub-District, Deli Serdang District, North Sumatera.

B. Method

This research done at Sidodadi Ramunia Village, Banyan Sub-District, Deli Serdang District. The reason the researcher chose Sidodadi Ramunia Village as the research location for red chili is because Sidodadi Rumunia Village is the largest red chili producing village in Deli Serdang District.

The population of red chili farmers in Sidodadi Ramunia Village is 105 farmers. The sampling method in this study was carried out with a sampling technique with certain considerations or certain criteria known as purposive sampling technique (Sujarweni VW. 2015). Determination of the number of samples in this study using the slovin formula, where the allowance is set at 10%. The results of the slovin formulation equation, the number of samples in this study was 51 red chili farmers. The sample is part of the number of characteristics possessed by the population. Sugiyono (2013) states that if the population is not possible to study everything in the population, due to limited funds, manpower, and time so researchers can use samples taken from the population.

There are two data in this study, namely primary data and secondary data. Primary data from interviews and questionnaires distributed by researchers to red chili farmers were used as research samples at Sidodadi Ramunia Village. Secondary data is data obtained by researchers from related parties or agencies that have the authority to collect data related to the object of research (Sugiono, 2015). Primary data is a data source that directly provides data to data collectors while secondary data is a data source that does not directly provide data to data collectors, for example through other people or through documents.

The model used in this study uses a revenue analysis model approach and income analysis with the following equation:

According to Suratiyah (2011), farm income is the total amount of production in kilograms (Kg) multiplied by the unit price of the product in rupiah per kilogram (Rp/Kg). Meanwhile, according to Supartama et al., (2013) the amount of revenue from production depends on the number of goods that can be produced and the selling price obtained. Sharfina et al., (2015) Soybean farming revenue is obtained from the result of multiplying the amount of soybean production with the prevailing soybean price in the study area. The model used in analyzing the acceptance of red chili farmers at Sidodadi Rumunia Village is:

$$TR = Q \times P$$

Description:

TR = Total Revenue from red chili farming activities

Q = Total Production of red chili produced

P = Selling price of red chili/kg

Income greatly affects the continuity of a business, the greater the income obtained, the greater the ability of a business to finance all expenses and activities to be carried out (Humaerah et al., 2014). According to Sharfina et al., (2015) farm income is the difference between revenue and all costs. According to Bayu et al., (2016) soybean farming income is the difference between soybean farming revenues and costs incurred during the period of one growing season. The models used in analyzing the income of red chili farmers at Sidodadi Ramunia Village are:

$$I = TR - TC$$

Description:

I = Income

TR = Total Revenue

TC = Total Cost

In addition to analyzing the level of acceptance and income of red chili farmers, this study also analyzes the feasibility level of red chili farming at Sidodadi Ramunia Village, Beringin Sub-District, Deli Serdang District using the Benefit Cost Ratio (B/C Ratio) model approach. The benefit cost ratio of Suratiyah (2011). Ratnawati et al., (2019) analysis of the economic feasibility of soybean farming also describes the efficiency obtained by red chili farmers in the Mekar Subur farmer group, Maparah Village, Panjalu Sub-District, Ciamis District. Profit and cost ratio analysis (B/C Ratio) is a comparison between the level of profit obtained with the total costs incurred. To analyze the feasibility level of red chili farming in Sidodadi Ramunia Village using the following equation:

$$R/C = \frac{\text{Total Revenue}}{\text{Total Cost}}$$

With the decision criteria :

If $R/C > 1$, So the red chili farming business is feasible to work on

If $R/C = 1$, So the red chili farming business is at the break-even point

If $R/C < 1$, So the red chili farming business is not worth working on

C. Results and Discussion

1. Fixed Cost Analysis (fixed cost)

Fixed costs are costs that do not change production and continue to be issued without considering the size of the production produced and the amount of costs does not depend on the size of the production costs obtained. The fixed costs incurred in this study for one growing season per hectare only include the depreciation value of the equipment, as shown in the table below:

Table 1. Depreciation value of tools in red chili farming activities/ 1 time of harvest

Tools	Number Of Units	Price (Rp)	Cost Of Depreciation (Rp)
Hoe	6	480,000	80,000
Sickle	4	180,000	30,000
Wheelbarrow	3	1,200,000	200,000
Cheers	5	210,000	36,600
Bucket	6	180,000	30,000
Sprayer	2	960,000	160,000

Total Depreciation Cost (Rp)	536,000
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Fixed costs incurred for red chili farming activities in Sidodadi Ramunia Village, Beringin District with a land area of 1 ha/year include the cost of purchasing 6 units of hoes at a cost of Rp. 480,000, the purchase of 4 units of sickles with a total cost of Rp. 180,000, the purchase of 3 units of wheelbarrows with a total cost of Rp. 1,200,000, the purchase of 5 units of cheers, with a total cost of Rp. 210,000, the purchase of a buckets of fruit, with a total cost of Rp. 180,000 and the purchase of 2 units of Sprayers with a total cost of Rp. 960,000, where the fixed costs incurred above are for farming activities for one year, so the total depreciation cost is Rp. 536.000/planting season.

2. Variable Cost Analysis (variable cost)

Variable costs are company costs that change and are not fixed in proportion to production output. Variable costs increase or decrease depending on the volume of production. The amount of production costs incurred during one growing season per hectare of red chilies in Sidodadi Ramunia village are as follows:

Table 2. Table of variable costs of red chili farming activities/1 time of planting season

Number	Description	Total Cost (Rp)
1	Production Facilities	
	Seed	1.380.000
	NPK Fertilizer	1.565.000
	Manure	4,929.000
	Furadan	200.000
	TSP Fertilizer	310.000
	Pesticide	9.150.000
	Dolomite Lime	805.000
	String of raffia	350.000
2	Labor	37.341.000
	Total Variable Cost	RP. 54.650.000

From the table above, it is known that the variable costs incurred by red chili farmers at Sidodadi Ramunia Village in one planting season per hectare include the cost of seeds of Rp.1,380,000, the cost of NPK fertilizer of Rp. 1.565.000, the cost of manure is Rp. 4,929.000, furadan costs Rp.200,000, TSP fertilizer costs Rp. 310,000, pesticides Rp. 9,150,000, dolomite lime Rp. 805,000 and 350,000 string of raffia while the labor costs incurred in one planting season per hectare are Rp. 37,341,000. The total

expenditure of red chili farmers for variable costs in Sidodadi Rumunia Village is Rp. 54.650.00/Ha/one planting season.

3. Income Analysis

The analysis of red chili farming activities in Sidodadi Ramunia Village, Beringin Sub-District, Deli Serdang District can be seen in the table below:

Table 3. Income Analysis of Red Chili Farmers

Number	Description	Average value (Rp)
1	Total Revenue (TR) = P.Q	
	a. Production (Q) (Kg/Ha)	4.997
	b. Production Average Cost (P) (Kg)	19.765
	Total Revenue	98.765.705
2	A. Variable Cost (VC)	54.650.000
	B. Fixed Cost (FC)	268.300
3	Total Cost (TC)	
	a. Variable Cost (VC)	54.650.000
	b. Fixed Cost (FC)	268.300
	Total Cost	54.918.300
	Income = TR – TC	43.847.405

From table 3, it can be seen that the average amount of red chili farming production in one growing season is 4,997 kg/ha and the average selling price of chili farmers is Rp. 19,765/kg, then the total revenue from red chili farming is Rp. 98,765,705/Ha, where:

$$\begin{aligned} \text{TR} &= \text{Production (Q)} \times \text{Price (P)} \\ &= 4.997 \text{ kg} \times \text{Rp. } 19.765 \\ &= \text{Rp. } 98.765.705 \end{aligned}$$

Income is the result obtained from the work done. The income in this study is the total income of red chili farmers in terms of per hectare. Income is obtained from the reduction of Total Revenue (TR) with Total Cost (TC) where Total Revenue is Rp. 98,765,705 and total cost is Rp. 54,918,300 where:

$$\begin{aligned} I &= \text{TR} - \text{TC} \\ &= \text{Rp. } 98.765.705 - \text{Rp. } 54.918.300 \\ &= \text{Rp. } 43.847.405 \end{aligned}$$

Based on the above formula, it can be seen that the net income received by red chili farmers in Sidodadi Ramunia Village, Banyan District, Deli Serdang District is Rp. 43,847,405/Ha.

4. Benefit Cost Ratio (B/C Ratio)

From the data analysis, it can be stated that the comparison of income and costs incurred in red chili farming activities in Sidodadi Ramunia Village can be seen in the analysis below:

$$B/C = \frac{Income}{Total Cost}$$

$$B/C = \frac{43.847.405}{54.918.300}$$

$$B/C = 0,79$$

From the results of the above formula, obtained B/C of 0.79, so that red chili farming is included in the decision criteria $B/C < 1$, namely this business is not feasible because it does not provide benefits to red chili farmers in Sidodadi Ramunia Village.

5. Revenue Cost Ratio (R/C Ratio)

Revenue Cost Ratio (R/C) is the number of ratios used to determine the relative benefits obtained in a project. Basically, a project is said to be feasible if the R/C value of a project is greater than 1. The value of the Revenue Cost Ratio (R/C) can be seen in the analysis below:

$$R/C = \frac{Total Revenue}{Total Cost}$$

$$R/C = \frac{98.765.705}{54.918.300}$$

$$R/C = 1,79$$

Based on the results of the above formula, the average number of R/C is 1.79, which means that according to the R/C criteria > 1 , the business of red chili farming is feasible because the results received are greater than the total costs incurred. by red chili farmers in Sidodadi Ramunia Village.

D. Conclusion

From the results of the analysis it can be concluded that the total revenue (TR) is Rp.98,765,705 and the total cost (TC) is Rp. 54,918,300, the net income received by

farmers in one planting season is Rp. 43,847,405. The value of the Benefit Cost Ratio (B/C Ratio) is 0.79 which means that the business of red chili farming is included in the decision criteria $B/C > 1$, that is, this business is not feasible because it does not provide benefits to red chili farmers in Sidodadi Ramunia Village, while the value of the Revenue Cost Ratio (R/C Ratio) is 1.79, which means that according to the R/C criteria > 1 , the red chili farming business is feasible because the results received are greater than the total costs incurred. by red chili farmers in Sidodadi Ramunia Village.

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