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INCOME FEASIBILITY ANALYSIS OF TARO FARMING ON PEATLAND IN NORTH SINGKAWANG DISTRICT

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ABSTRACT

This research was conducted in Semelagi Kecil, Setapuk Besar, and Sungai Bulan villages in Singkawang Utara sub-district, Singkawang city, West Kalimantan province in 2023, using surveys and interviews with saturation sampling of 69 taro farmers on peatlands. This study aims to analyze and feasibility of taro farming on peatlands in North Singkawang District. The method used in this research uses a quantitative descriptive approach. The analysis used to calculate the feasibility of farming is by calculating the amount of revenue, total costs, income, R/C ratio, and BEP. This study shows the results that the feasibility of taro farming carried out in North Singkawang District is feasible to cultivate with farmers' income of IDR 60,672,203 per hectare per growing season, total costs incurred 13,340,463 IDR/ha/growing season, with farmers' income of IDR 53,829,109 per hectare per growing season, R/C ratio 4.55, and BEP production of 481.60 kg, BEP revenue of IDR 2,408,012, and BEP land 0.04 hectares. There is a need to increase farmers' knowledge related to cultivation techniques, especially in the use of good and appropriate production inputs, so that the production inputs provided by farmers for taro farming are not less which can reduce production yields and not excessive which can cause waste of costs incurred.

Keywords: *break even point, cost, income, revenue, R/C ratio*

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INTRODUCTION

A business in agriculture can be sustainable if it provides benefits to its managers. The sustainability of a business can be seen in economic, social, and ecological sustainability. Economic sustainability can be seen in terms of feasibility, for example, it can generate profits or income (Molla & Nurdin, 2023). Feasibility is a state of research results, whether the business being run provides greater benefits than the total cost or initial capital used (Kasmir, 2012). Income in taro cultivation is the total revenue, where the production results are multiplied by the selling price, then reduced by the total costs incurred in one production (Zikri & Herawati, 2020). So if there are problems with costs or revenue, it will affect income which will affect the feasibility of the business. Feasibility analysis is carried out by analyzing the costs and benefits of the production of farming. Cost and benefit analysis is done by separating expenses from revenue to calculate net benefits (Astrini et al., 2018).

Taro is one of West Kalimantan's leading agricultural products. The taro plant area in Singkawang is spread in the Setapuk Besar, Semelagi Kecil, Sungai Bulan, and Singkawang Kota areas, for the land used at this time is peatland. Taro in Singkawang has a planting period of 8 months, with an average weight of one stem of 1 - 4 kilograms, with productivity reaching 25 tons per hectare. Taro plants have relevance in the utilization of the environment and greening the environment because they are able to grow on slightly watery land to dry land. Farmers in Singkawang Utara sub-district farm taro as a side business after their main business. Farmers utilize empty or unproductive peatlands to become productive and value-added land for farmers in the sub-district.

The economic value of taro plants is quite high with products that can be sold, namely tubers, fronds, and leaves (Idris et al., 2023). Currently, products made from taro raw materials are developing, such as taro chips, cakes, bread, taro flour (Effendi, 2021). The development of processed food products sourced from taro plants provides hope for farmers to be able to market their agricultural products, to various cities in Indonesia and even abroad such as Malaysia which imports types of taro and processed foods from taro from West Kalimantan, especially from Singkawang City. Taro has a great opportunity to be developed because of its diverse benefits and can be cultivated easily, so the potential of taro is quite large (Suranda, 2021).

Peat soils have an acidic pH with a pH value between 3 and 4.5. If the soil pH has reached 5, the peatland is good enough for agriculture (Agus & Subiksa, 2008). Peat soil has the characteristics of containing a lot of water and loose texture so that seasonal plants such as taro get enough water and can grow and develop well (Subekti & Wahyuni, 2015). Peaty soil is very good for taro, but before use the soil must be given lime first (Pratama & Guswandi, 2021). However, farming on peatlands has unique challenges such as poor drainage and high fire risk (Jalil et al., 2023). In addition, wetlands such as peatlands are saturated with water (Qamariyanti et al., 2023) which results in low or acidic peat soil pH. The availability of nutrients in the soil is affected by pH, so proper handling is needed to optimize the availability of nutrients for taro plants. The volume weight of peat soil is low, so the nutrient content per unit volume of peat is also lower when compared to mineral soil (Astri, 2017), so proper fertilization needs to be done to support the growth and productivity of taro plants. The above challenges do not occur on normal or dry land, so taro farming on peatland requires more production inputs such as fertilizers, medicines, and labor which will result in the use of higher production costs that will affect the feasibility of farming.

The income feasibility analysis of taro farming on peatlands involves examining the costs, benefits, and potential profits of taro cultivation under challenging environmental conditions such as peatlands. The utilization of peatlands for agriculture has many constraints, hence the need for careful and cautious management to avoid losses and damage (Wardie, 2016). Given these complexities, it is very important to conduct a Feasibility Analysis of Taro Farming in Peatlands in North Singkawang, Singkawang City. This analysis is urgent because, although taro cultivation has great potential due to its versatility and market demand, the unique challenges of peatlands can significantly affect its economic viability. Taro has the potential to improve food security in areas with limited crop diversity. Understanding the economic viability of taro cultivation on peatlands may open up opportunities to increase food production on underutilized land. This study aims to analyze the feasibility of taro farming in this specific context, taking into account the additional costs and management practices required for peatland farming.

RESEARCH METHOD

Study Area

The research location was determined purposively, namely in three villages in North Singkawang District with the consideration that the three villages have the highest average production than other villages in North Singkawang Sub-district, Singkawang City, namely Bulan, Setapuk Besar, and

Semelagi Kecil in April-May 2023. This study employed a quantitative descriptive approach.

Population and Sample

The study population comprised 69 taro farmers in North Singkawang Sub district. Following (Arikunto, 2006), if the population is less than 100, a full population study is recommended. In other words, this study uses a census sampling technique, which is a sampling technique when all members of the population are used as samples (Sukiyono, 2018) by including all 69 farmers.

Sources and Data Collection Techniques

Data Source

Sources of data in the study are primary data and secondary data. Primary data is in the form of notes from interviews with taro farmers conducted directly in three villages in North Singkawang, and the results of field observations. Secondary data is supporting data obtained from information related to the research, such as farming feasibility books, journals related to farming feasibility, data on taro farmers in Singkawang from the north Singkawang agricultural center, and electronic media.

Data Collection Techniques

a) Observation, in this study was carried out by collecting data by making direct observations and recording the symptoms that appear on the object of research.
b) Interviews, interviews are conducted by asking questions about something related to research purposes to respondents one by one.
c) Documentation. The documentation method is a method used to trace historical data. Mostly cash records, reports, photos, and so on.

Data Analysis

Cost Analysis

Total cost is obtained by summing up fixed costs and variable costs with the formula (Suratiyah, 2006):

$$TC = FC + VC$$

Description:

TC = Total Cost of Taro Farming
FC = Fixed Cost of Taro Farming
VC = Variable Cost of Taro Farming

Revenue Analysis

Total revenue is the multiplication of the amount of production (Y) by the selling price (Py) (Manisha et al., 2023), and is expressed by the following formula (Suratiyah, 2006):

$$TR = Py \times Y$$

Note: TR = Total Revenue of Taro Farming
Py = Taro Selling Price
Y = Total Taro Production

Income Analysis

Income is the difference between revenue (TR) and total costs (TC) and is expressed by the formula (Suratiyah, 2006):

$$Pd = TR - TC$$

Note: Pd = Taro Farm Income
TR = Total Revenue of Taro Farming

Revenue Cost Ratio

The R/C ratio (Revenue Cost Ratio) is an analysis used to calculate whether or not a farm is feasible (Masitah et al., 2021). The R/C ratio can be calculated by dividing the revenue by the total cost (Suratiyah, 2006).

$$R/C = \frac{\text{Total Revenue (TR)}}{\text{Total Cost (TC)}}$$

Note:
TR = The amount of revenue earned TC = The amount of costs incurred.
There are three criteria in the calculation, namely:
1. If R / C > 1 means that the farm is profitable
2. If R / C = 1 means that the farm breaks even
3. If R / C < 1 means that the farm is at a loss

BEP (Break Event Point)

The formula for calculating the Break Event Point is Suratiyah, (2006); and (Sukiyono, et al., 2024):

$$\text{BEP Revenue (IDR)} = \frac{\text{Total Fixed Cost}}{1 - \frac{\text{Variable Cost}}{\text{Sales Value}}}$$

$$\text{BEP Production Volume(Kg)} = \frac{\text{Total Fixed Cost(IDR)}}{\text{Price}\left(\frac{\text{IDR}}{\text{Kg}}\right) - \text{Variable Cost per unit}}$$

$$\text{BEP Area(ha)} = \frac{\text{BEP Production Volume}}{\text{Land productivity}} \times \text{LandArea}$$

Framework

Additional production costs are incurred because the land used is acidic and nutrient-poor, so additional production inputs are required to provide a suitable growing environment for taro growth and development. There are two types of costs incurred by farmers in taro farming activities, namely fixed costs and variable costs. Fixed costs are costs that are not affected by the amount of output each period, which include fixed costs land and building taxes, land rent, and depreciation costs. Meanwhile, variable costs are cost whose amount depends on the amount of production, which includes the costs of using seeds, fertilizers, pesticides, and labor.

According to Shinta (2011) farm income is the multiplication between the production obtained and the selling price. Revenue in taro cultivation is the total revenue, where the production is multiplied by the selling price minus the total costs incurred in one production (Zikri & Herawati, 2020). The farm income can be analyzed for business feasibility, whether taro farming by farmers in North Singkawang District is feasible or not in terms of investment criteria such as R/C ratio, and BEP.

RESULT AND DISCUSSION

Respondent Characteristics

Most of the taro farmer respondents in Singkawang Utara sub-district were at the productive age (45%) aged 40-52 years (Table 1), indicating a high potential for productivity as this age group typically has higher work efficiency (Mahendra, 2014). In general, laborers who are of productive age have more experience and skills in agriculture than younger laborers. This experience can increase production efficiency and yields, which in turn can increase income. Productive-age workers also tend to be more energetic and have better physical endurance, which is important in heavy physical work. This can increase productivity and income potential, especially in activities that require intense physical labor.

Taro farmer respondents who have the same level of education, namely Elementary School and Junior High School as much as 39%, this shows that the quality of formal education of taro farmer respondents in North Singkawang District is still quite low. Education can influence the way each farmer thinks in

terms of decision-making. The higher the education level of agricultural labor, the higher the level of labor productivity (Oktavia et al., 2017). Labor with higher education is usually better able to understand and apply the latest technology and efficient farming methods. By adopting more efficient technologies, production yields can increase, which has a positive impact on income. Individuals with higher education levels may be more open to innovation and change. They may be more inclined to try new farming methods or adapt to market changes, which can increase productivity and income.

Table 1. Characteristics of Respondents on Taro Farming

Characteristics of Respondents	Number of Respondents	Percentage (%)
Age		
27-39	20	29
40-52	31	45
53-65	18	26
Education Level		
Elementary School	27	39
Junior High School	27	39
Senior High School	15	22
Number of Family Members		
2 – 3	18	26
4 – 5	45	65
6 – 7	6	9
Farming Experience (Years)		
3 – 4	32	47
4 – 5	34	49
≥ 7	3	4
Land Area (Ha)		
0.083 – 0.17	40	58
0.25 – 0.42	20	29
0.5 – 1	9	1

Most of the respondent farmers have a total of 4 - 5 family members with a percentage of 65%. The number of family members in this study is family members who are still dependent and still financed by respondents consisting of husband or wife, parents, and children. Family labor is the amount of potential labor available in the family (Salim et al., 2019). Families often develop specialized skills from generation to generation, such as planting, maintenance, and care techniques that can increase efficiency in managing taro crops. As family labor often does not require high salaries like seasonal workers, operational costs can be reduced. This can allow for better budget allocation for other farm inputs, such as fertilizer or seeds.

Taro farmers in North Singkawang Subdistrict have a fairly long taro farming experience, which is between 3-7 years. Farming experience affects farmers' decisions because according to (Parengkuan, 2019) experience is essentially an understanding of something by living and experiencing something that is obtained by experience and skills. So that increasing workability can be supported by high experience. farmers with more experience usually have in-depth knowledge of effective cultivation techniques for taro. They know the best ways of planting, maintaining, and harvesting taro, which can improve yield and quality. Experience allows farmers to better plan and manage risks, such as weather or market fluctuations, thereby minimizing negative impacts on income. With experience, farmers can perform various tasks more quickly and efficiently. This includes activities such as planting, maintaining, and harvesting taro, which can reduce labor costs and time required.

The taro farmers in North Singkawang primarily cultivate on peatland, a type of soil that presents both opportunities and challenges for agricultural production. Peat soil has the characteristics of containing a lot of water and a loose texture (Subekti & Wahyuni, 2015), which can benefit taro crops that thrive in moist environments. However, managing such land often requires specialized knowledge and techniques to avoid issues like nutrient depletion and the release of greenhouse gases, which can affect both crop growth and environmental sustainability.

The majority of these farmers, around 58%, own small plots ranging between 0.083 to 0.17 hectares. This limited land ownership places significant constraints on their production potential. The area of land planted will affect the number of crops that can be planted which in turn can affect the amount of production produced (Ayu et al., 2021). Smaller land sizes restrict the number of taro plants that can be cultivated, limiting both the scale and diversity of their agricultural practices. In such confined spaces, optimizing crop density, managing soil health, and dealing with the challenges of peatland farming become critical to maximizing output.

Moreover, the small-scale nature of these farms means that farmers may struggle to achieve economies of scale, making it difficult to invest in advanced agricultural technologies or efficient farming techniques that could improve yields. The lack of land expansion also limits opportunities for crop rotation or diversification, which could enhance soil fertility and reduce pest risks. Consequently, these limitations on land size not only affect individual farm productivity but also influence the overall economic stability of taro farmers in North Singkawang. To overcome these challenges, farmers may need to adopt more intensive farming practices, improve access to agricultural support services, or explore collective farming efforts to enhance productivity.

Feasibility of Farming Business

Production yields are obtained at harvest time and measured in kg per growing season per hectare. The production yield referred to in this study is taro tuber production. Taro tuber production in three villages in North Singkawang sub-district with an average land area of 0.249 ha on peat soil with the number of seedlings planted as many as 3,237 units per farmer or 12,947 units per hectare with a planting period of 6 - 8 months had a production yield of 0.6 - 1.5 kg per tuber, while the average total production yield was 3,034 kg per farmer or 12,134 kg per hectare.

Farm receipts are the result of multiplying the production obtained by the selling price so that the size of the production and selling price affect the revenue (Irawan & Nuzuliyah, 2022). The revenue obtained by taro farmers in three sub-districts in North Singkawang was obtained from the sale of taro tubers. Production costs are the costs used during the production process. The total cost of production referred to in this study is all costs incurred in taro farming by respondent farmers in three villages in North Singkawang District. There are two costs used in the farm production process, namely fixed costs and variable costs. Fixed costs are costs that are relatively fixed in amount and continue to be incurred without being affected by the size of production. Variable costs are costs whose amount of use is influenced by the size of the scale of production, variable costs are used up in one production or one growing season.

Table 2. Average Depreciation Cost of Taro Farming Equipment

Tool Name	Initial Price (IDR/unit)	Number of Tools (Unit)	Total Value (IDR)	Economic Life (Years)	Depreciation (IDR/Growing Season)
Hoe	147,754	6.8	1,010,720	2.17	464,931
Scythe	52,899	5.5	291,325	2.23	130,529
Machete	118,986	8.4	1,007,066	2.97	338,964
Handsprayer	564,638	4.4	2,487,679	4.58	543,196
Cart	506,812	4.2	2,115,388	4.42	478,563
Total					1,956,183

Depreciation costs on taro farms in North Singkawang District using five pieces of agricultural equipment have an average of IDR 1,956,183/growing season/ha, this amount is greater than the number of depreciation costs incurred in the research of (Rosdanelly et al., 2018) which amounted to IDR 443,312/growing season/ha using eight pieces of agricultural equipment with an average land area of 0.125 ha, this is because in previous studies the purchase price of agricultural equipment was cheaper. The initial cost of farm equipment has increased along with technological advances. Economic changes that affect

the price of capital goods directly affect the calculation of depreciation. this can be overcome by choosing high-quality equipment that is designed to be durable and reliable which causes the goods to have a longer economic life so as to reduce depreciation costs.

Farmer income is one of the benchmarks obtained by farmers from farming. Income earned by farmers in the analysis of farming is a very important indicator because it is the main source in meeting the needs of farmers' lives. Farmers' welfare can increase if farmers' income is greater than the costs incurred, balanced with high production and good prices (Hernanto, 1996).

Table 3. Recapitulation of Taro Farming Income

No	Description	Value (IDR/Ha/GS)
1	Average Revenue	60,672,203
2	Average Production Cost	
	a. Variable Costs	
	- Fertilizer	8,664,058
	- Pesticide	294,715
	- Labor	2,425,507
	Sub-total	11,384,280
	b. Fixed Costs	
	- Depreciation Cost	1,956,183
	Total Cost	13,340,463
3	Average Income	47,331,740

The average revenue of taro farmers in Singkawang Utara sub-district was IDR 60,672,203 per hectare or IDR 15,168,051 per farmer. This revenue was obtained from the total sales of 12,134 kg/ha/GS multiplied by the selling price of IDR 5,000/Kg.

The total cost incurred by taro farmers in North Singkawang Sub-district per hectare per growing season was IDR 13,340,463, consisting of fixed costs of IDR 1,956,183/ha/GS and variable costs of IDR 11,384,280/ha/GS. The most cost incurred is the cost of fertilizer use of 8,664,058 IDR, the most fertilizer used by taro farmers in North Singkawang is manure. This is because manure can improve the structure of peat, increase soil pH, add macro and micronutrients, and increase decomposing organisms in the soil (Najiyati et al., 2005). Then the fertilizer that is most often given is NPK fertilizer, on average given twice by respondent farmers, this is because peat soil has acidic properties and has a low content of macronutrients N, P, and K available to plants (Fitra et al., 2019). NPK fertilizer is useful for the development of leaves, stems, roots, and taro tubers, so it is necessary to add quite a lot of NPK fertilizer to peatlands to increase production.

The average income of taro farmers in Singkawang Utara sub-district is IDR 60,672,203 per hectare or IDR 15,168,051 per farmer. This income was obtained from total sales of 12,134 kg/ha/GS multiplied by the selling price of IDR 5,000/Kg. These results suggest that taro farming in North Singkawang Sub-district provides a large income, so it has the potential to be developed in addition to being a source of local food as well as to increase farmers' household income.

Taro farming income in North Singkawang Sub-district amounted to IDR 47,331,740/ha/MT and IDR 11,832,935/farmer per growing season. It can be seen that the income of taro farmers who were respondents in three villages in North Singkawang Subdistrict had a positive value so the business was profitable because the amount of revenue was greater than the total production costs incurred during the taro production process in one growing season. Farm income in North Singkawang Sub-district has a greater amount compared to literature research by (Amelia & Yumiati, 2016), where this research uses peatland and the average land area is almost the same, namely in this study 0.249 ha and in literature research 0.23 ha, but the amount of production in Amelia & Yumiati's research is higher at 14,446 kg. 446 kg but had lower revenue (IDR 43,339,115) and income (IDR 22,534,418) compared to the respondent farmers in North Singkawang, this was due to the lower selling price of production and higher costs incurred (IDR 20,804,696). With this high income taro farmers in North Singkawang sub-district can carry out sustainable farming and can invest in soil conservation and water management, which can increase productivity and resilience.

Farm Feasibility Analysis

Feasibility analysis is an activity that studies in depth about a business that will be run to determine whether or not a business is feasible (Kasmir, 2012). The financial feasibility criteria used in this study are as follows:

R/C ratio

R/C ratio analysis aims to determine whether the business is profitable or not. Factors that influence a high R/C ratio include increased yields, efficient use of inputs, reduced operating costs, increased selling prices, effective risk management, skills and knowledge, and good infrastructure and technology. adopting specific practices, such as Using appropriate fertilization based on soil analysis and crop-specific needs and Using market analysis to set competitive and profitable selling prices, can increase yields, reduce costs, increase income, and optimize the R/C ratio. The R/C ratio analysis aims to determine whether

the business is profitable or not to run. The greater the R/C ratio value, the greater the profitability of a business.

Table 4. R/C Ratio Value in Taro Farming

No	Item	Value
1	Total Cost (IDR/Ha/GS)	13,340,463.00
2	Total Revenue (IDR/Ha/GS)	60,672,203.00
3	R/C ratio (Ha/GS)	4.55

The R/C ratio value of taro farming in three villages in North Singkawang sub-district was 4.55. The R/C ratio value obtained shows that every total cost of IDR 100 spent on taro farming will generate revenue of IDR 455, with the income obtained IDR 355 per growing season. Taro farming conducted by respondent farmers in three villages in North Singkawang sub-district is profitable for farmers because the R/C ratio value > 1.

The R/C ratio value of taro farming in North Singkawang District is higher than the R/C ratio value in research by (Eliza et al., 2019), with an R/C ratio value of 2.26, but the use of seeds is more than the use of seeds in this study, namely 24,620 seeds, but the production yield (7,052.14), revenue (IDR 22,566,848), and income (IDR 12,577,122) is lower than farming in North Singkawang. This is because in the study (Eliza et al., 2019) there are various limitations experienced by farmers both from the cultivation and processing aspects, such as the limited capital owned by farmers so that the use of fertilizers is less than the recommendation.

Break Even Point (BEP)

Break Even Point (BEP) is the point at which total revenue equals total costs, so there is no profit or loss. Understanding how changes in certain factors can affect the BEP of taro farming is essential for planning and decision-making. For example, an increase in land area. An increase in land area may require additional fixed costs such as land rental, infrastructure development, or new equipment. If fixed costs increase, the BEP will increase as the total amount of fixed costs is greater which must be covered before making a profit. Variable costs such as fertilizers, pesticides, and labor will increase as the land area increases. Despite the increase in variable costs, an increase in land area can lead to an increase in total revenue if yields also increase, which can change the BEP significantly.

Table 5. BEP Value in Taro Farming

No	Item	Value
1	Production (Kg)	481.60
2	Revenue (IDR)	2,408,012.00
3	Land (Ha)	0.04

Based on the analysis in Table 5. the Break-Even Point (BEP) values for production, revenue, and land area were examined to evaluate the economic feasibility of taro farming in three villages in the North Singkawang Sub-district during one growing season. In line with research (Masitah et al., 2021) BEP farming is used to analyze the projected yields that must be generated from farming so as to produce a break-even point or return of capital. The average taro production among the respondent farmers was 12,134 kg/ha per growing season (GS), generating an average revenue of IDR 60,672,203 and utilizing an average land area of 0.249 hectares. These values significantly exceed the BEP, indicating that taro farming in this region is not only viable but also profitable.

The fact that production and revenue surpass the BEP highlights that farmers are able to cover all production costs and generate substantial income even with small landholdings. Specifically, the average land size of 0.249 hectares—which is relatively small in agricultural terms—does not hinder profitability. This suggests that, under current farming practices, taro cultivation is highly efficient. Farmers can achieve optimal yields and revenues despite the constraints of limited land, likely due to favorable environmental conditions, effective farming techniques, or well-managed input costs.

The profitability of taro farming, despite small land sizes, presents significant potential for further development in North Singkawang. Given that the farming practices in the region are already profitable, there is an opportunity to expand taro farming as a key source of local food security and household income generation. The perspective of sustainable agriculture needs to be pursued considering Indonesia's huge population while natural resources are very limited (Lagiman, 2020). By increasing awareness among local farmers about these findings, there is potential to encourage the expansion of taro cultivation. Through targeted socialization efforts, local agricultural authorities and stakeholders could provide training on improved farming techniques, introduce high-yield taro varieties, and explore cooperative or market access strategies that further enhance productivity and profitability.

Additionally, given that taro is not only a traditional local food crop but also a marketable commodity, its cultivation could help diversify the region's agricultural output. By tapping into the local and regional demand for taro, farmers could capitalize on both subsistence and commercial opportunities. The increased income potential would contribute to improving household economic

resilience, particularly in rural areas where alternative income sources may be limited.

CONCLUSION AND SUGGESTION

Conclusion

Based on the results of research and discussion that have been conducted on 69 respondent farmers in three villages in North Singkawang District, the results obtained from the analysis show the average income of taro farming in North Singkawang amounted to IDR 47,331,740/ha/GS, with an R/C ratio of 4.55 which shows that taro farming by respondent farmers in North Singkawang District is feasible, and the BEP value of production obtained is 481.60 kg, BEP revenue of IDR 2,408,012, and BEP land of 0.04 hectares where this value is smaller than the total value of production, revenue, and land area of respondent farmers in taro farming in North Singkawanng. This shows that taro farming is profitable and feasible for sustainable cultivation.

Suggestion

1. Farmers should use taro varieties that are specifically designed to grow in peat soil and have high yields and disease resistance. and it is hoped that farmers can produce and market processed taro products, such as taro flour or taro-based snacks, to increase added value.
2. There is a need to increase farmers' knowledge related to cultivation techniques, especially in the use of good and appropriate production inputs, so that the production inputs provided by farmers for taro farming are not lacking which can reduce production yields and not excessive which can cause waste of costs incurred.
3. It is hoped that there will be socialization of farmers around the research location about the development of taro farming which has the potential to be developed in addition to being a source of local food as well as to increase farmers' household income. It is expected that there will be socialization to farmers around the research location about technological innovations in taro farming. Such as the Smart Irrigation System, which uses weather data and soil sensors to optimize water use. And Alternative Cultivation Methods of Vertical Farming and Hydroponics, the application of vertical farming or hydroponic methods for taro cultivation aims for space efficiency, water use, and yield potential in a more intensive cultivation system.

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