

**ANALYSIS OF ANANAS COMOSUS L. MERR FARMING INCOME AND CONTRIBUTION TO FARMER HOUSEHOLD INCOME IN BELUK VILLAGE, BELIK SUB-DISTRICT, PEMALANG REGENCY**

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**ABSTRACT**

This study entitled "Analysis of ananas comosus l. merr Farming Income and Its Contribution to Farmer Household Income in Beluk Village, Belik District, Pemalang Regency". The results showed that: 1) The average income of Ananas Comosus L. Merr farming in Beluk Village was IDR 24,766,459.00/one season, 2) The contribution of ananas comosus l. merr farming to farm household income was 45.66%, meaning that the contribution moderate between 35-70%, 3) The feasibility of ananas comosus l. merr farming based on the R/C ratio of 4.37 > 1 means that the farming is feasible or profitable while based on the Break Even Point (BEP) analysis it meets the criteria where acceptance > BEP Price and Production > BEP Production so that ananas comosus l. merr farming is categorized as feasible or profitable. The implication of this research is that the government can conduct counseling related to the use of production factors such as the number of seeds and the use of appropriate fertilizers in accordance with standard operating procedures (SOP) regarding the cultivation of ananas comosus l. merr so that the plants are well nourished and produce quality production, farmers can make improvements ananas comosus l. merr quality by paying attention to standard operating procedures (SOP) determined to minimize the amount of low quality fruit production, and the government should give directions to ananas comosus l. merr farmers to work with breeders related to organic fertilizers in order to get more affordable prices thus minimizing production costs and providing certainty to get the fertilizer.

**Keywords:** Contribution, Feasibility, Agribusiness, Break Even Point.

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**1. Introduction**

Indonesia is referred to as an agricultural country marked by a large number of communities working in agriculture. (Tiopan et al., 2022). In addition, the high level of contribution of the agricultural sector to the economy can be exploited as one of the supporters of national economic development, i.e. expanding employment, increasing farmers' income, and increasing national income through receipt of currency.

One of the provinces in Indonesia that has a significant agricultural sector is Central Java. The agricultural industry's contribution to the Central Java Province's annual growth rate has fluctuated over the years. Based on the value of the production multiplier, the agriculture sector ranks sixth

in terms of its contribution to the economy of the Central Java Province, according to (Rafiqah, 2013). The agricultural industry, however, has the greatest value in comparison to other sectors and may thus generate the most jobs for society, according to the multiplier study of the field of employment. Hortikultura is one of the top subsectors in the agricultural industry, with a contribution of 8.79% in 2021. Even if numerous districts and cities in the Central Java province have already made a commitment to producing horticultural plants, the province has already forecasted the revival of the horticulture subsector in 2010 Central Bureau of Statistics for Central Java Province, 2021).

One of the regions in Central Java Province is the Pemalang district, where the contribution of the agriculture industry ranks first with 27,04% (Data Diolah, 2022). Kurniadi et al., (2022) highlighted that the agricultural sector in the Pemalang area has a chance to become a priority or exceptional sector based on the examination of Typology Klassen, Location Quotient (LQ), and Shift Share through overlay analysis. The horticulture subsector is one of the subsectors of the agricultural industry. Based on the examination of the Location Quotient (LQ), Risistio (2019) asserts that four subsectors horticulture, food crops, plant plants, and fishing become the exceptional producers. Honey pine fruit is one product that the horticulture industry produces.

The Beluk district has been recognized as an agricultural center for honeymoon fruits for the year 2020 in accordance with the Rules of No. 27 Year 2020. Beluk Village and Gombong Village are the two villages designated as the heart of the agricultural industry for fruit and honey nanas. On the basis of the probable existence of regions with developed ananas comosus l. merr and other processing industries, the establishment is taken into consideration.

**Table 1. Land, Productivity, and Production of Ananas Comosus L. Merr in Belik**

No.	Village	Ananas Comosus L. Merr		
		Harvest Area (Ha)	Productivity (Fruit/Ha)	Production (Fruit)
1.	Beluk	600	30.000	18.000.000
2.	Gombong	52	27.000	1.404.000
3.	Bulakan	30	27.000	810.000

Sources: Belik District Agricultural Extension Agency, 2019.

According to a report from the Beluk Village Hall in 2019, 72% of households in Beluk village included primary welfare. In addition, based on preliminary surveys, there are still some problems such as the price of ananas comosus l. merrs that dropped as a result of the COVID-19 pandemic and the attack of diseases on pines so that production is not optimal. Therefore, it is necessary to conduct research on the aspects of income, contribution, and feasibility of the business of honeymoon plant in the Beluk Village.

## **2. Literature Review**

## 2.1 Farm Business Income Theory

Income is the difference between total receipts and production costs. Income or gain is an opportunity to obtain the results of any effort done either directly or indirectly (Sunarminto, 2015). According to Soekartawi (2019) income is all receipts minus all costs spent in production that can be formulated as follows:

$$CI = TR - TC \quad (1)$$

$$TR = P \times Q \quad (2)$$

$$TC = FC + VC \quad (3)$$

Information:

CI = Current Income

TR = Total Revenue

TC = Total Cost

P = Price

Q = Quantity

FC = Fixed Cost

VC = Variable Cost

This theory can be applied to the business of now one of the fruits of honey. Therefore, Soekartawi (2019) explains that the income of the business plant honey is the difference obtained from the calculation of the acceptance with the expenditure issued to obtain the output of production with a high selling value so that it will get the income that can maximize the factor of production especially labor because it is very influential in the business of the household farm.

## 2.2 Contribution of current business income to household income

According to the Economic Dictionary, a contribution is something given together with another party for the puIDRose of certain costs or losses or jointly (Tri, 2009). According to the Indonesian Great Dictionary (KBBI), the contribution is meant as a contribution or part. It can be explained that the contribution of farm enteIDRrise income to farm household income is the size of the donation or part of the income from farm enteIDRrises to the household incomes. Therefore, Suratayah (2006) formulated the calculation of contributions as follows:

$$Contribution = \frac{Farm\ Income}{Total\ Household\ Income} \times 100\% \quad (4)$$

Shinta (2001) divides the criteria for the contribution of business income to household income today:

- If the contribution of honey ananas comosus l. merr farming business income to farm household income is <35%, the value of the contribution is said to be low.

- If the contribution of honey fruit farming income to farm household income is 35-70%, then the contribution value is said to be moderate.
- If the contribution of honey ananas comosus l. merr farming business income to farm household income is > 70%, then the value contribution is said to be high.

### 2.3 Farming Feasibility

The feasibility of farming is the efficiency of the use of costs and the total comparison of costs incurred with revenue generated (Suratiyah, 2006). According to Soekartawi (2019) there are several calculations that can be used to measure farm income, namely the R/C ratio, BEP, NPV, and IRR. According to Saeri (2018) the R/C ratio and BEP analysis are used to measure the feasibility of farming with seasonal crops while the NPV and IRR analysis are used to measure the feasibility of farming with annual crops. Therefore, because ananas comosus l. merr plants are plants that produce once a year or annual crops, the analysis used is the R/C ratio and BEP as follows:

#### 2.3.1 R/C Ratio

According to Soekartawi (2019) whether farming is feasible or not will be determined by the size of the costs required to achieve these results. Generally, the feasibility of farming is determined by calculating the cost ratio, namely the ratio between the results of operations and the total cost of production, so that the calculation is called the R/C ratio analysis. Systematically it can be formulated as follows:

$$\frac{R}{C} = \frac{P_Q \cdot Q}{(TFC + TVC)} \quad (5)$$

Information:

R = Revenue

C = Cost

PQ = Price of Quantities

TVC = Total Variable Cost

TFC = Total Fixed Cost

The criteria for the R/C ratio include:

- R/C ratio > 1 means farming is profitable
- R/C ratio = 1 then farming is balanced
- R/C ratio < 1 means farming is a loss

#### 2.3.2 Break Even Point (BEP)

According to Saeri (2018) the Break Even Point (BEP) analysis has several benefits, namely, as a planning tool for profit, as a tool for providing information about the number of product sales and opportunities for profit, as a tool for evaluating profits as a whole, and as a tool for make reports in graphical form that are more practical and easy to understand.

According to Rangkuti (2005) BEP analysis is an analysis used to determine the relationship between fixed costs, variable costs, income levels, and operational levels. Usually BEP analysis uses curves to provide information regarding the relationship between costs and

revenues so that it can show the profits and losses generated in certain production. Darwis (2017) explains that BEP can be divided into two, namely:

#### 2.3.2.1 BEP of Price (IDR)

Shows the total product receipts by the product quantity when it is in a breakeven condition.

$$BEP \text{ Rupiah} = \frac{FC}{1 - \frac{VC}{TR}} \quad (6)$$

Information:

BEP = Break Even Point

Q = Quantities

FC = Fixed Cost

VC = Variable Cost

According to Saeri (2018) there are several conditions that must be considered to determine whether or not a farming business is feasible if Total Acceptance > BEP of Price.

#### 2.3.2.2 BEP of Production (Unit)

Shows the minimum production that must be achieved in farming activities so as not to suffer losses.

$$BEP \text{ Production} = \frac{FC}{P - VC} \quad (7)$$

Information:

BEP = Break Even Point

P = Price

FC = Fixed Cost

VC = Variable Cost

According to Saeri (2018) there are several conditions that must be considered to determine whether or not a farming business is feasible if Production > BEP of Production.

### 3. Research Methodology

This research is a descriptive quantitative research. The location is in Beluk Village, Belik District, Pemalang Regency. In this study, the population studied was 648 respondents from ananas comosus l. merr farmers in Beluk Village. Sampling was determined using Isaac and Michael (in Ruane, 2021) with an error rate of 10% so that 61 samples were taken from 648 respondents from ananas comosus l. merr farmers. The sampling technique uses puIDRosive sampling. The data source is primary data obtained from interviews with ananas comosus l. merr fruit farmer respondents in Beluk Village and secondary data as support is taken from books taken from the General Soedirman University library, relevant journals, and other documents.

### 4. Results

#### 4.1 Analysis of Ananas Comosus L. Merr Fruit Farming Income

Revenue and production costs of ananas comosus l. merr in one season are the most on a land area of 1.00-1.99 ha with an average income of IDR 81,064,397.00 while the least is on a land area of 0.20-0.29 ha with the average income is IDR 11,581,766.00. Therefore, the larger the land area of the ananas comosus l. merr farmer respondents, the greater the use of planted seeds so that the production costs incurred are greater but the amount of production produced is greater and revenue increases so that income will also increase.

Table 2. Distribution of Average Income of Ananas Comosus L. Merr Respondents in Beluk Village in 2023.

No.	Land Area (Ha)	Average of Revenue (IDR)	Average Cost of Production (IDR)	Average Income of Ananas Comosus L. Merr Farming Business (IDR)
1.	0,20-0,29	15.629.688	4.047.922	11.581.766
2.	0,30-0,39	24.022.222	5.695.584	18.326.683
3.	0,40-0,49	27.050.000	7.156.476	19.893.524
4.	0,50-0,59	40.554.167	8.233.049	32.321.118
5.	1,00-1,99	111.092.857	30.028.460	81.064.397
	Average	32.913.115	8.175.837	24.766.459

Note: Range from 0.6-0.9 ha no respondents  
Source: Primary Data Processed, 2023

#### 4.2 *Analysis of the Revenue Contribution of Ananas comosus l. merr Fruit Farming to Farmer Household Income*

The income contribution of ananas comosus l. merr farming respondents in Beluk Village was in the low category <35%, there were around 21 farmer respondents, in the medium category, between 35-70%, around 38 farmer respondents, and in the high category >70%, around 2 farmer respondents. The low contribution occurs because most of the ananas comosus l. merr farmer respondents have a relatively small land area. In addition, ananas comosus l. merr farming income and farm household income also affect the category of contribution that is calculated. Overall, the contribution of ananas comosus l. merr farming income to farming households in Beluk Village is 45.66%. The value of this contribution is in the medium category, namely the contribution of ananas comosus l. merr farming business income to farm household income in Beluk Village between 35-75%.

Table 3. Data on the Contribution of Ananas comosus l. merr Respondents' Income to Farmer Household Income in Beluk Village (Per Hectare)

No.	Land Area (Ha)	Total (Respondent)		
		Low (<35%)	Currently (35-70%)	High (>70%)
1.	0,20-0,29	17	15	0
2.	0,30-0,39	2	7	0
3.	0,40-0,49	0	1	0
4.	0,50-0,59	2	9	1
5.	1,00-1,99	0	6	1
Total		21	38	2

Note: Range from 0.6-0.9 ha no respondents

Source: Primary Data Processed, 2023

#### 4.3 Analysis of the Feasibility of Ananas comosus l. merr Fruit Farming

Feasibility of ananas comosus l. merr fruit respondents is explained to show that the respondent is running efficiently. In this study, efficiency can be seen based on the following R/C ratio and Break Even Point (BEP) values:

##### 4.3.1 R/C Ratio

The feasibility of ananas comosus l. merr farming in Beluk Village per hectare has an R/C ratio of  $> 1$ , meaning that the ananas comosus l. merr farming run by the respondent is feasible or profitable. of the various land areas that are declared feasible or profitable, the R/C ratio is greatest on a land area of 0.50-0.59 ha compared to the others even though they are equally feasible or profitable. this happens because ananas comosus l. merr cultivation is still not optimal where the amount of ananas comosus l. merr fruit production with the smallest size, namely grade C, is still produced a lot. Overall, the feasibility of ananas comosus l. merr farming in Beluk Village is 4.04. If the value of the R/C ratio is  $4.04 > 1$ , it means that every cost incurred by the ananas comosus l. merr farming business in Beluk Village will generate revenue of 4.04, which means that the farming business can be said to be feasible or profitable. Therefore, it can be concluded that the feasibility of ananas comosus l. merr farming in Beluk Village, both per hectare and as a whole, is feasible or profitable.

Table 4. Feasibility Average Distribution of Ananas comosus l. merr Fruit Farming in Beluk Village Based on R/C Ratio Analysis (Per Hectare)

No.	Land Area (Ha)	Average of Revenue (IDR)	Average Cost of Production (IDR)	Average of R/C Ratio (%)
1.	0,20-0,29	15.629.688	4.047.922	3,90
2.	0,30-0,39	24.022.222	5.695.584	4,22
3.	0,40-0,49	27.050.000	7.156.476	3,78
4.	0,50-0,59	40.554.167	8.233.049	4,99
5.	1,00-1,99	111.092.857	30.028.460	3,76

Note: Range from 0.6-0.9 ha no respondents

Source: Primary Data Processed, 2023



#### 4.3.2 Break Even Point (BEP)

Shows the right time to find out the breakeven point in running the respondent so that he does not experience losses or profits. BEP is divided into 2 types, namely Price BEP and Production BEP as follows:

##### 4.3.2.1 BEP of Price

The average respondent's acceptance of ananas comosus l. merr in Beluk Village is the largest on a land area of 1.00-1.99 ha of IDR 111,092,857.00/Ha/one season with a BEP price of IDR 430,395.00. From these various land areas it can be said that the average income > the average BEP rupiah so that the ananas comosus l. merr farming business in Beluk Village that is being carried out is feasible or profitable. Overall, the feasibility of ananas comosus l. merr farming in Beluk Village based on the BEP analysis costs IDR 14,587,917.00 with a total revenue of IDR 2,018,850,000. Acceptance value > price BEP value means that ananas comosus l. merr farming in Beluk Village is feasible or profitable.

Table 5. Feasibility Average Distribution of Ananas comosus l. merr Fruit Farming in Beluk Village Based on Price BEP Analysis (Per Hectare)

No.	Land Area (Ha)	Average of Revenue (IDR)	Average BEP of Price (IDR)
1.	0,20-0,29	15.629.688	228.744
2.	0,30-0,39	24.022.222	192.924
3.	0,40-0,49	27.050.000	166.668
4.	0,50-0,59	40.554.167	200.219
5.	1,00-1,99	111.092.857	430.395

Note: Range from 0.6-0.9 ha no respondents

Source: Primary Data Processed, 2023

##### 4.3.2.2 BEP of Production

The average production and average BEP production of ananas comosus l. merr, the most land area is 1.00-1.99 ha. The larger the land area, the more production and the income received increases so that the farming business that is run is feasible or profitable. Therefore, from these various land areas it can be said that the average production > the average BEP production so that the ananas comosus l. merr farming in Beluk Village that is being carried out is feasible or profitable. Overall, the feasibility of ananas comosus l. merr farming in Beluk Village based on BEP production analysis is 10,406 fruit with a total production of 1,110,900. Production value > production BEP means that ananas comosus l. merr farming in Beluk Village can be said to be feasible or profitable.



Table 6. Feasibility Average Distribution of Ananas comosus L. merr Fruit Farming in Beluk Village Based on Production BEP Analysis (Per Hectare)

No.	Land Area (Ha)	Average of Production (Fruit)	Average BEP of Production (Fruit)
1.	0,20-0,29	8.588	164
2.	0,30-0,39	13.478	136
3.	0,40-0,49	15.300	119
4.	0,50-0,59	22.958	140
5.	1,00-1,99	60.571	313

Note: Range from 0.6-0.9 ha no respondents

Source: Primary Data Processed, 2023

## 5. Discussion

### 5.1 Analysis of Ananas Comosus L. Merr Fruit Farming Income

The results of the research and discussion regarding the income of ananas comosus l. merr respondents in Beluk Village are in line with the hypotheses that have been determined. Soekartawi (2019) states that the larger the area of farming land, the greater the opportunity to get production and income. In addition, research by Alitawan et al. (2017), (Saputra et al. (2018), and Pradnyawati et al. (2021) found that together the area of land, production costs, and the amount of production affect income, meaning that the larger the land area, the greater the need for crops to be planted so that the amount of production will be higher, which in turn will increase income.

### 5.2 Analysis Of The Revenue Contribution Of Ananas Comosus L. Merr Fruit Farming To Farmer Household Income

The results of the research and discussion regarding the contribution of respondents' ananas comosus l. merr fruit income to farm household income are in accordance with the specified hypothesis. This condition is also in line with the research of Lestari (2017) and Aurora et al. (2020) that the contribution of respondents' income to farm household income is between 35-70%, which means moderate. This condition is also in line with Mandang et al. (2020) states that a narrow land area generates little income so that the contribution is low.

### 5.3 Analysis of the Feasibility Of Ananas Comosus L. Merr Fruit Farming

Feasibility of ananas comosus l. merr fruit respondents is explained to show that the respondent is running efficiently. In this study, efficiency can be seen based on the following R/C ratio and Break Even Point (BEP) values:

#### 5.3.1 R/C Ratio

The results of the research and discussion regarding the feasibility of ananas comosus l. merr respondents in Beluk Village are in accordance with the specified hypothesis. This condition is in line with the research of Woentina (2015)) and Alfian et al. (2022) that the R/C ratio with criteria  $> 1$  means it is feasible or profitable. This condition is also in line with the research of Tanjung et al. (2022) which states that a smaller land area has an R/C ratio value compared to a large land area even though both are feasible or profitable. This happens because the

cultivation carried out by farming is still not optimal both in terms of the use of seeds, fertilizers, spacing, and harvesting.

### 5.3.2 Break Even Point (BEP)

The results of the research and discussion regarding the feasibility of ananas comosus l. merr respondents in Beluk Village are in accordance with the specified hypothesis. The BEP analysis, both price and production, is in accordance with the criteria where Revenue > Price and Production BEP > Production BEP so that it can be said that ananas comosus l. merr respondents are in the feasible or profitable category. This condition is in line with Suratiah (2006) namely whether or not a farming business is efficient can be seen from its land area, if the larger the land area, the greater the amount of production and the income received will increase. However, there are still a number of things that are not in accordance with the set ideal rules, such as the excessive use of seeds and the use of fertilizers which are still below the ideal regulatory standards.

## 6. Conclusion

The average income of honey ananas comosus l. merr farming in Beluk Village is IDR 24,766,459.00/one season. Respondents' income from honey ananas comosus l. merr farmers is the smallest with a land area of 0.20-0.29 ha and the largest income is with a land area of 1.00-1.99 ha. However, the use of production factors is not in accordance with the SOP in cultivating honey ananas comosus l. merr.

The contribution of ananas comosus l. merr fruit respondents to the household income of farmers in Beluk Village varies per hectare. There were around 21 farmer respondents giving a low contribution, 38 farmer respondents giving a moderate contribution, and 2 farmer respondents giving a high contribution. Overall, the contribution of honey ananas comosus l. merr farming business income to farm household income is between 35-70%. The low contribution occurs because the land area owned is relatively narrow so that the income received is small.

The feasibility of honey ananas comosus l. merr fruit respondents in Beluk Village used the R/C Ratio and Break Even Point (BEP) analysis which concluded that the honey ananas comosus l. merr farming business being carried out was feasible or profitable. Although the farming of each honey ananas comosus l. merr farmer respondent is feasible or profitable, the production factors used are not in accordance with the SOP such as the use of seeds and fertilizers so that the resulting production is less than optimal.

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