Covid 19 Pandemic Impact Analysis on Family Income of Vegetable Farmer

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Abstract

Vegetable plants when viewed in terms of the economy is well-developed or cultivated due to the increasing demand, with simple technology, a fairly short lifespan between 3-4 weeks can be harvested, and the market continues to be wide open. Looking at the current situation, researchers want to do more in the influence of pandemic covid 19 on the income of vegetable farmers at the village Way Mhorock Jayapura City. Primary Data is used with in-depth interviews to farmers. With the number of samples of the 16 heads of family Farmers Research site was held in the village Way Mhorock Kota Jayapura which took place in June-July year 2020. Data analysis method is the analysis of earnings R/C Ratio analysis, analysis of B/C ratio (Benefit and Cost Ratio and analysis of BEP (Break Even Point). The results showed that the average profit gained by farmers from vegetable farming is IDR 11,168,267,-every month. Based on the profit and expense incurred, the value of B/C ratio of the total cost obtained by the farmer farmers is 2.47, so in other words B/C > 0 This means that the farming of vegetables in this village can provide benefits or beneficial and worthy to continue even in situations pandemic Covid today. The strategy is an opportunity so that the farmer managed to remain strong in the face of Covid 19 namely: continue to work hard, farmers still pay attention to the protocol health in farming. Both hand wash and wear masks. The average age of farmers is the age of productive, so with this age then a fairly strong and tough age against the corona virus. There is always an adequate supply of manure for daily use, so if there is a large social restriction, it is not an obstacle because of the availability of the manure. Farmers continue to provide good service, to customers and buyers with attention to the quality of vegetables purchased by consumers. The location is very close to the resident settlements, it is the strength for farmers in farming.

Keywords

Income, Vegetable Farmer and Strategy.

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Background

The agricultural sector plays a strategic role that contributes both to the national economy and the fulfillment of people's basic needs. Agriculture is one of the sectors that dominate Indonesia's gross domestic product (GDP) structure by the business field. The structure of the agricultural sector was 13.45% or second-highest after the industrial sector of 19.62% in the third quarter of 2019. The growth of the agricultural sector was 3.08 from the previous year (year-on-year/yoy). However, the growth decreased from the third quarter of 2019 to 3.66%. The Central Bureau of Statistics said there was a phenomenon of decreased food production due to the dry season. As a result, food crops in the third quarter of 2019 grew negatively by 4.81%. This decreased from 5.13% in the second quarter of 2019 and 3.08% in the third quarter of 2018. While horticultural crops grow 5.07% and plantation crops 4.98%, it is not a big deal because the agricultural sector still contributes a considerable GDP.

Amid a very stressful situation all over the world including Indonesia namely COVID 19, this agricultural sector cannot be underestimated, because it is directly related to the basic needs of mankind. Furthermore, the most important thing in this situation is the guarantee of food access that is easy to obtain at a reasonable or normal price for the whole community. The spread of Covid-19 is very dangerous and has a wide impact on various sectors, ranging from tourism to trade, but not the agricultural sector. Thus, the agricultural sector is a safeguard and has opportunities in the face of the Covid-19 outbreak. The agricultural sector has economic value that can make Indonesia survive the threat of global crises, including the crisis caused by the current corona outbreak. This is because the agricultural sector is always a daily necessity, and the workmanship is not too difficult that it only takes planting time for 3 months. Current conditions as momentum to boost agricultural production such as fruit and vegetables as well as plantation commodities to dampen imports.

Research Objectives

1. To analyze the vegetable farming (mustard and kale) in Way Mhorock Village Jayapura city in providing a decent income for farmers amid the COVID-19 pandemic.
2. To analyze the efficiency of vegetable farming (mustard and kale) in Way Mhorock Village Jayapura City.
3. To know the strategy of vegetable farmers in the face of the COVID-19 pandemic in Way Mhorock Village Jayapura City.
The Foundation of Theory

1. Income Theory

Farmer's income is the difference between income and all costs, in other words, income includes gross income and total revenue and net income, gross income or total receipt is the overall production value of agricultural commodities before deducting production costs. (Uterus, 2007).

2. Understanding Farming

Farming is a place or part of the surface of the earth where agricultural activities are organized by a particular farmer whether he is an owner or a paid person. Farming is a set of natural resources located in the place that are necessary for the production process such as land, water, improvement of the land, sunlight, buildings established on the land, labor, capital, and management of farming (Suparmi, 1986).

Data Analysis Method

The analysis used in this study is an analysis using a descriptive approach. Namely, activities that include data collection to test hypotheses or answer questions concerning the current state of the subject matter of a study.

To find out the income of vegetable farming, income analysis is done with the formula:

1) Gross Income

\[ TR = Q \times P \]

Where:
- TR: income received from the proceeds of sales (Rp)
- Q: total production (kg)
- P: Price of vegetables (Rp)

2) Net Income

Net income is gross income (the amount of production multiplied by the prevailing price) received by farmers from the sale of vegetables is reduced by the cost of production in the form of labor, harvest wages, fertilizer purchases, and pesticides issued during the production process.

\[ \pi = TR - TC \]
3) **Total Cost**

Total cost (TC) i.e. costs incurred for the production process consisting of fixed cost (FC) and unstable cost (VC). A fixed fee is a small fee that does not depend on the small amount of production, such as rent or land interest in the form of money. Fixed costs are large costs directly related to the amount of production, such as spending on seeds, fertilizers and so on.

Formula: \( TC = TFC + TVC \)

Where:
- TC: Total cost
- TFC: Total fixed cost
- TVC: Total fixed cost

4) **R/C Ratio Analysis**

Or Return and Cost ratio (R/C ratio) is a comparison between the output value to the input value or the comparison between the receipt and expenditure of the farm. To find out the R/C ratio value is calculated by using the formula:

\[
\text{R/C Ratio} = \frac{\text{Number of receipts}}{\text{Total cost}}
\]

If:
- R/C Ratio > 1 = profitable farming
- R/C Ratio < 1 = farm loss
- R/C Ratio = 1 = break-even farming

5) **Benefit and Cost Ratio (B/C Ratio)**

Is the level of profit or income earned by the total cost incurred. Basically, a business is said to be viable and provides positive benefits to a business if the value of a B/C ratio is greater than zero (0) and the greater a B/C Ratio the greater the positive benefit that will be received in such a business (Rihardi, 2003):
B/C Ratio analysis can be calculated with the formula:

\[ \text{B/C Ratio} = \frac{\text{Profit}}{\text{Total production costs}} \]

6) **Break-even Point Analysis**

Or Break Event Point (BEP) is a way to know the minimum seller limit so that a company does not suffer losses but has not earned a profit or profit equal to zero. Mathematically break event point (BEP) analysis can be calculated by the formula (Rochaeni in Zulfahmi, 2011) as follows:

\[ \text{BEP Sale Price} = \frac{\text{Total cost}}{\text{Total production}} \]

**Research Results**

1. **Vegetable Farming Income**

The acceptance of this vegetable farming is the value of products obtained from the sale of vegetables. Based on the processed data in the field of average receiving obtained farmers is IDR 15,750,000/month/farmer and for the selling price specified for each vegetable kale, and mustard is the same as IDR 4,000 / pack. And it directly purchased consumers (customers) in the gardens. For the calculation of production in not calculated per kg but with a per-tie count. For more details, the receipt of the proceeds from the sale of kale and mustard vegetables can be seen in the table.

<table>
<thead>
<tr>
<th>No</th>
<th>Vegetable</th>
<th>Price (Rp)</th>
<th>Revenue</th>
<th>Profit/ month / Farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kale and Mustard</td>
<td>IDR 4,581,733.00</td>
<td>IDR 15,750,000.00</td>
<td>IDR 11,168,267.00</td>
</tr>
</tbody>
</table>

Data Source: processed 2020

The average profit earned by farmers from vegetable farming is IDR 11,168,267,-/month/farmer. The income of this vegetable farming has been sufficient because the income earned has been more than enough to pay for the entire cost of the means of production including all other components of the cost – other costs in the consumption of stair home. Vegetable farming according to the authors and supported data and analysis is deserved to be said to be successful because of the acceptance earned. The analysis of vegetable farming income in The Village Way Mhorock be seen in the table below.
Average Income (profit) of Vegetable Farming
In Mhorock Way Village

<table>
<thead>
<tr>
<th>No</th>
<th>Vegetable</th>
<th>Price (Rp)</th>
<th>Production (wrap)</th>
<th>Reception / month / Farmer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kale</td>
<td>4.000</td>
<td>2.130</td>
<td>IDR 8.250.000</td>
</tr>
<tr>
<td>2</td>
<td>Mustard</td>
<td>4.000</td>
<td>1.875</td>
<td>IDR 7.500.000</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.005</td>
<td></td>
<td>IDR 15.750.000</td>
</tr>
</tbody>
</table>

Data Source: processed 2020

2. R/C Ratio Analysis

The relative profit of this vegetable farming can be calculated using the R/C ratio analysis. The R/C ratio is the comparison between receipt and production cost. The ratio analysis in this study is distinguished into two parts, namely the R/C ratio of cash cost and R/C ratio for the total cost. Analysis of the R/C ratio of vegetable farming in Way Mhorock Village can be seen in the following table.

Analysis of the R/C Ratio of Vegetable Farming
In Mhorock Way Village

<table>
<thead>
<tr>
<th>NO</th>
<th>Uraian</th>
<th>Nilai (Rp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Revenue</td>
<td>IDR 15.750.000,00</td>
</tr>
<tr>
<td>2</td>
<td>Cost</td>
<td>IDR 4.581.733,00</td>
</tr>
<tr>
<td></td>
<td>R/C Ratio Atas Biaya Total</td>
<td>3,50</td>
</tr>
</tbody>
</table>

Data Source: processed 2020

Based on the table can be seen that the R/C ratio value of the total cost is 3.50. This means that every IDR 1.000,- the cost incurred by vegetable farmers in running a vegetable farm in Way Mhorock Village will provide acceptance of 3.50.

Cost Ratio Analysis (B/C Ratio) The comparison between income earned and the costs incurred in running a vegetable farm is an analysis used to see the level of income value earned from each rupiah incurred. The B/C ratio used in this analysis includes the B/C ratio for cash costs and the B/C ratio value of the total cost. The ratio component of profit to cost in vegetable farming can be seen in the table below:

Analysis of the Total Cost (B/C Ratio) of Vegetable Farming
In Mhorock Way Village

<table>
<thead>
<tr>
<th>NO</th>
<th>Description</th>
<th>Nilai (Rp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Income (profit)</td>
<td>IDR 11.168.267,00</td>
</tr>
<tr>
<td>2</td>
<td>Total cost</td>
<td>IDR 4.581.733,00</td>
</tr>
<tr>
<td></td>
<td>B / C Ratio of Total Cost</td>
<td>2,47</td>
</tr>
</tbody>
</table>
The B/C ratio is the comparison between profit and production cost. Based on the profit and cost incurred, the B/C ratio value of the total cost earned is 2.47. This indicates that with a B/C ratio of 2.47 means for each additional total cost of IDR 1,000, then the vegetable farming of Way Mhorock Village will get a profit or income of IDR 2,470. For the calculation of the B/C Ratio, by Rahardi and Hartono's theory that a business is said to be feasible and provides benefits if the value of B/C is greater than zero (B/C > 0). The greater the value of B/C, the greater the value of the benefits that will be obtained from the business. From the calculation of the value of the B/C ratio of vegetable farming in Way Mhorock Village, in other words, B/C > 0 this means that vegetable farming in this Distrik can provide benefits or profitable and worth continuing.

3. Break-Even Point Analysis Analysis (BEP)

Analysis of Break-Even Point (BEP) In determining the break-even point (BEP) of production need to know the total production cost and total receipt while to determine the minimum price that must be determined farmers required the total cost and selling price of vegetables both for kale and mustard related to the same selling price.

Break-even point (BEP) is a condition that describes the business results obtained equal to the capital issued (Cahyono in Zefnila, 2006). The condition or in the circumstances of the business does not experience any profit and loss.

a. Break-Even Point Production (Unit) BEP production is describing the minimal production that must be produced in the head lettuce farming so as not to suffer losses. Before searching for the BEP value, a calculation of the AVC value is performed as follows:

\[
\text{AVC} = \text{TVC} = \text{IDR} 2,028,000 = \text{IDR} 507/\text{tie} \\
Q 4,005 \\
\text{BEP (unit)} = \text{TFC} = \text{IDR} 2,553,733 \\
\text{P} – \text{AVC IDR} 4,000 – \text{IDR} 505/\text{tie} \\
= 731 \text{ ties}
\]

Based on the calculation of BEP unit, showing that the value of BEP unit from vegetable sales is 731 ikat means that vegetable farming will get break-even point. Thus, farmers have not lost or profited when producing 731 vegetables.
b. Break Even Point Rupiah (IDR) BEP rupiah (IDR) represents the lowest receiving value of the sale of products that must be produced in the farm so as not to suffer losses. A comparison of the results of the sale of the resulting product is necessary to calculate the BEP each based on its sales.

\[
\text{BEP} = \text{TFC} \\
1 - \left( \frac{\text{AVC}}{\text{P}} \right) \\
= \text{IDR} 2,553,733 \\
1 - \left( \frac{\text{IDR 507}}{\text{IDR 4,000}} \right) \\
= \text{IDR} 2,553,733 \\
1 - (0,13) \\
= \text{IDR} 2,553,733 \\
0,87 \\
= \text{IDR} 2,935,325
\]

Based on the calculation of BEP rupiah, shows that the value of BEP rupiah from the sale of vegetables is IDR 2,935,325 means vegetable farming is breaking even. Thus, vegetable farmers in Way Mhorock Village have not lost or profited.

**Conclusions and Suggestions**

The average profit earned by farmers from vegetable farming is kale and mustard is IDR 11,168,267,-/month/farmer. The income of this vegetable farming has been sufficient because the income earned has been more than enough to pay for the entire cost of the means of production including all other components of the cost – other costs in the consumption of stair home. Based on the profit and cost incurred, the B/C ratio value of the total cost earned by vegetable farmers is 2.47. This indicates that with a B/C ratio of 2.47 means that for each increase in the total cost of IDR 1000,-, then the vegetable farming of Way Mhorock Village will benefit or income of IDR 2,470 then, in other words, B/C > 0 this means that vegetable farming in this village can provide benefits or benefits and is worth continuing. Strategies and opportunities so that farmers succeed back strong in the face of COVID 19 are: Continue to work hard, Farmers keep an eye on health protocols in trying to farm. Both wash your hands and wear masks. The average age of farmers is the productive age, so this age is quite strong and resilient against the coronavirus. There is always a sufficient supply of manure for daily purposes, so that in the event of PSBB then it is not an obstacle because of the availability of manure. Farmers continue to provide good service, to customers and buyers by paying attention to the quality of vegetables that consumers buy. The location is very close to the settlement, so it is a strength for farmers in doing farming.
The results showed that the Coronavirus pandemic can be resolved by vegetable farmers in Way Mhorock Village in meeting the needs of families but there needs to be a policy from the government to maintain purchasing power and maintain the survival of vegetable farmers in the face of COVID-19 that occurs in Jayapura city in the future. Encouraging local governments to carry out functions as food stabilization, economy and survival of vegetable farmers.

References

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