



Income Analysis of Local Corn Farming (*Zea mays* L) in Tapenpah Village North Central Timor Regency

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Abstract

This study aims to : 1) To determine the level of income of corn farming in the village of Tapenpah. 2) To determine the relative profitability of corn farming in Tapenpah Village . This study uses income analysis tools and R/C Ratio. From the results of research it can be known that the total income of the farmers of corn in the village Tapenpah amounting to Rp 72,932,416 , 00 with an average of Rp 1,072,535.00. Based on these results, the relative advantage of corn farming in the village of Tapenpah can be profitable with an R/C ratio of 1.82.

Keywords: *local corn, income analysis, production*

A. Background

One of the sub-districts in North Central Timor Regency that produces corn is Insana District. The level of corn production in Insana District in the last three years has fluctuated. Year 2018 production of corn in the sub-district Insana back to experience an increase in line with the increased area of land that use by community sub-district Insana to produce crops of corn in the region are. Where in the year 2016 with a broad area of 2,320 hectares can produce corn as much as 4.696 and productivity as much as 2.60 Kw / Ha. Year 2017 with a broad area of 2,418 hectares can produce corn as much as 4.473 tons and productivity as much as 2.13 Kw / ha and in the year 2018 with a broad area of 2,734 can produce corn as much as 4.844 and productivity as much as 2.01 Kw/Ha. Corn Productivity most much happened in the year 2016 with productivity as much as 2,60 Kw/ha (BPP district of Insana, 2019). Based on development of harvested area data, production and productivity of corn plants in North Central Timor Regency in the last three years, Tapenpah Village is one of the major corn producing areas among other villages in Insana District .Tapenpah Village is one of the local producer of corn which is quite large among the villages of the other in the District Insana . In the year 2016 widely harvested crop of corn in the village of Tapenpah of 58 hectares with the results of the production of as much as 116 tons at the level of productivity of 2 tons / ha, in the year 2017 area harvest 91 hectares with the results of the production of as many as 168, 35 tons on the level of productivity of 1.85 tonnes / ha and in the year 2018 area harvested crop of corn amounted to 83 ha with the results of the production of as much as 174.3 tons in the level of productivity of 2.1 tons / ha (Programa Penyuluhan Pertanian TTU , 2015).

Tapenpah village has the potential for corn commodity, so the development of this crop farming needs to be improved, among others, by utilizing its resources to make farming more efficient. Most of the people in Tapenpah Village work as farmers. One of agricultural commodities in the village Tapenpah is local Corn .based in Neonbeni et al., (2019), local Corn in the Tapenpah village consists of two kinds of local white corn (*penamutim'asa*) and local corn yellow (*penamolom'asa*). Between the two local corn farmers usually cultivate it in the same way as corn farmers in general. The production processes carried out by corn farmers in Tapenpah Village include input and output processes, where the input process includes land, labor in the family, depreciation of tools, self-produced seeds, natural fertilizers. While the output process includes the capital, personnel working outside the family, seeds, fertilizer, the process of processing the land until after harvest. Local corn plants in this area are harvested in the form of dry corn to meet the household needs of farmers as a substitute for rice, local corn is also harvested in fresh form (cobs) to be consumed as fruit and vegetables, and some are harvested as stems and leaves for feed needs. Livestock. Local corn that is harvested is not only for direct consumption but there are also those who sell the corn products. However, more farmers sell local White corn compared to Yellow local corn because there is more demand for local white corn than yellow local corn so the selling price of local White corn is higher than local yellow corn.

B. Methodology

1. Research Design

This research was conducted in Tapenpah Village, Insana District, North Central Timor Regency, because Tapenpah Village is one of the local white corn producing villages in Insana District . This research was carried out by puppies for 3 months from March to June 2019 .

2. Participants/Respondents/Population and Sample

The population of this research is farmers in Tapenpah Village who cultivate local white corn as many as 82 farmers. The sampling technique used simple random sampling with a sample size of 68 respondents.

3. Technique of Data Collection

The data collection was performed by observation and interview questionnaire .

4. Technique of Data Analysis

Data analysis using income analysis and R/C ratio. Data obtained from the study were analyzed using descriptive analysis and quantitative analysis to determine net income with the following formula:

$$\pi = TR - TC \text{ (oekartawi, 1995)}$$

Where:

π = income Profit

TR = Total Revenue

TC = Total Cost

$$\text{The R/C ratio formula } R/C = \frac{TR}{TC} = \frac{P \times Q}{TFC + TVC}$$

C. Findings and Discussion

1. Analysis of Corn farm income

Income farming is the difference between revenues and all expenses incurred. The results of the analysis of production, cost and acceptance of local corn farming in the village of Tapenpah are as follows.

a. Corn Production

The variation of local corn production by respondent farmers can be seen in the following Table 1.

Table 1. Local corn production in Tapenpah Village, 2019

Variation of production(Kg)	Amount(Person)	Percentage(%)
300-400	23	33.82
450 -550	36	52.9 5
600 - 700	6	8.82
750 - 800	3	4.41
Total	68	100

Source: Processed Primary Data, 2019.

The table above shows that the respondent farmers' corn production ranges from 300 kg - 800 kg of local corn. Of the 68 respondents farmers, who obtain corn range between 300 kg- 4 00 kg is 23 (33.82%) persons, corn production range between 450 kg - 550 kg is 36 (52.95 %) persons, corn production range between 600 kg - 7 00 kg is 6 (8.82%) people and the range between 750 kg - 800 kg is 3 (4.41%). While the total production of corn by the respondent farmers was 33,050 kg with an average of 486,029 kg.

b. Revenue

Revenue is the multiplication of corn production and the selling price of corn per kg. Based on the results of the calculation of the production analysis of corn cultivated by farmers in the Village of Tapenpah in one planting season, it shows the variation in income as follows.

Table 2. Corn farming Revenue in Tapenpah Village, 2019

Revenues Variation(Rp.)	Amount(person)	Percentage(%)
1,260,000- 1,715,000	13	19.11
1,750,000 - 2,245,000	17	25
2,250,000 - 2,700,000	2 5	36.7 8
2,870,000 - 3 .900.000	1 3	19.11
Total	68	100

Source: Primary data sources processed (2019).

Table 2. shows that the total income of the corn farmers in Tapenpah Village ranges from Rp. 1,260,000.00 - Rp. 3,900,000.00. Of the 68 farmer respondents, revenues in local corn farming between Rp. 1,260,000.00 - Rp. 1 .715. 000 , 00 is 13 (19.11%) people, the range of income from corn farming is between Rp. 1,750,000.00 - Rp. 2,245. 000 , 00 is 17 (25%) of people, the range of the corn farm receipts between Rp. 2.250.000,00- Rp. 2 .700.000,00 was 25 (36.78 %) votes, and corn farm receipts range between Rp. 2.870.000, 00 - Rp. 3.900.000,00 is 13 (19.11 %) people.

Based on the results of the calculation of corn production cultivated by farmers in Tapenpah Village, the total production in one planting season is 33,050 kg with selling prices ranging from Rp. 3,500 to Rp. 7000, - / kg at the farm level. Based on the calculation results, the total revenue of corn farming was Rp. . 161 737 500 , - and the average is Rp.2.378,647.

c. Production Costs

Total costs are the total costs incurred to carry out the production process. Total costs are the sum of fixed costs and variable costs.

Tabel 3. Corn production costs in Tapenpah Village

Cost Variation(Rp.)	Aamount(Person)	Percentage(%)
860,750 - 1,112,000	17	25
1,181,167 - 1,296,859	17	25
1,303,452 - 1,459,357	16	23.5 3
1,494,048 - 2,057,357	18	26.47
Total	68	100

Source: Processed Primary Data 2019

The data above shows that the total production costs of the respondent farmers ranged from Rp. 860,750 to Rp. 2,057,357. Of the 68 respondent farmers, the production costs incurred in local corn farming ranged from Rp. 860,750, 00 - Rp. 1.112.000,00 are 17(25%) people, the production costs incurred in local corn farming are around Rp. 1,118,067 – Rp. 1,296,857 are 17 (25%) people, the production costs incurred in local corn farming are around Rp. 1,303,452 – Rp. 1,459,357 were 16 (23.53 %) people, and the production costs incurred in local corn farming ranged from Rp. 1,494,048 - Rp. 2,057,357 is 18 (26.47%) people. Meanwhile, the total cost of production of corn for the respondent farmers was Rp. 88,805,083, with an average of Rp. 1,305,957 .

The production costs incurred for corn cultivation by the respondent farmers consist of:

a. Fixed costs of corn farming.

Fixed costs are costs that are relatively constant in number and continues issued even though its production a lot or a little. So the amount of fixed costs is independent the size of the production obtained. Fixed cost is whose total is fixed in the volume change range certain activities (Santoso, 2010). Based on the results of research conducted on corn farmers in the village of Tapenpah, the total fixed costs of the respondent farmers ranged from Rp. 321,167.00 to Rp. 821,631.00 and the average yield incurred by farmers for corn farming in Tapenpah village was Rp. 501,545.00 of the total costs incurred Rp. 34,105,083.00. These costs consist of machete depreciation with an average of Rp. 71,90,31, depreciation of *tofa* with an average of Rp. 53,068.63.00, hoe depreciation with an average of Rp. 76,742.82, crowbar depreciation with an average of Rp. 76,373.00 on average, tarpaulin depreciation with an average of Rp. 211,660.00 and land tax with an average of Rp. 11.790.44.

b. Variable costs of corn farming

Variable cost is the cost of the consumables used in the one -time process of production which consists of the cost of personnel working for the processing of land , planting , weeding , harvesting and post- harvest. Based on the results of the study were conducted in farmers' corn in the village Tapenpah, the total cost of variable farmer respondents ranged between Rp 415,000.00 up to Rp 1.195.000, 00. The average cost of a variable that is issued in one time production amounting to Rp 804.411,76. With a total cost of variable amounted to Rp 54.700.000,00. Cost of production that consists of the cost of personnel working with average Rp 755.808,82 and the cost of sacks with an average of Rp 48.602,94.

d. Corn Farming Income

According to Soekartawi (1995), income is the difference between total receipts with total costs. The size of the reception apart influenced by the high and low yield production and costs are also affected by the applied production process in a farm run by the farmer. The greater the difference in total value revenue compared to total costs incurred during the process production then the greater the level income received. To see the results of the analysis. Corn farm incomes obtained from the difference between revenue and costs incurred corn comprising d ari fixed costs and costs variable.

Table 4. Corn Farm Income in Tapenpah Village

Income variations (Rp.)	Amount(person)	Percentage(%)
203,333 - 644,286	17	25
688,500 - 1,079,762	17	25
1,092,643 - 1,447,667	17	25
1,452,917 - 2.1 12,476	17	25
Total	68	100

Source: Processed Primary Data, 2019

Table 4.shows that the total income of the respondent farmers ranges from Rp.203,333.00 - Rp.2.1 12,476.00 out of 68 respondent farmers, income in local corn farming ranges from Rp.203,333 to Rp. 644,286.00 is 17 (25%) people, income in local corn farming ranges from Rp.688,500.00 to Rp.1,079,762.00 is 17 (25%) people, income in local corn farming ranges from Rp. 1,092,643.00 - Rp.1,447,667.00 is 17 (25%) people, and income in local corn farming ranges from Rp.1,452,917.00 - Rp.2.1 12,476.00 is 17 (25%) people.

Based on the calculation results obtained from the total receipt of Rp. 161,737,500.00 with an average of Rp. 2,378,492.00 while the total cost was Rp. 88,805,083.00 with an average of Rp. 1,205,196,078 , - 1,305,957.00 . From the results of these calculations it can be seen that the total income of corn farmers in Tapenpah village is Rp. 72,932,416.00 with an average of Rp.1,072,535.00.This result is supported by Abdul and Sudin(2017) research; Purwanto and Muis (2015).

2. R/C ratio

R/C ratio is business efficiency, which is a measure of the ratio between revenue and total costs. Based on farming activities, there are several criteria that show that the business is profitable, loses or breaks even. If the research results say that the value of the R/C Ratio is less than 1, the business is losing and it is recommended not to continue. If the R/C ratio is equal to 1, the business is neither profitable nor loss (break even). Conversely, if the R/C value is more than 1, the business is profitable. The higher the R/C ratio, the more profitable the business is. More details can be seen in table 5.

Table. 5. R/C Ratio of corn farming in the Tapenpah Village

No.	Total revenue (Rp.)	Total cost (Rp.)	R/C Ratio
Total	161,737,500	88,805,053	
Average	2,378,492	1,305,957	1,82

Source: Primary data source (2019)

Based on this table, to calculate the R/C ratio, a formula is used

$$\begin{aligned}
 R/C &= \frac{TR}{TC} = \frac{PxQ}{TFC+TVC} \\
 &= \frac{Rp.5.043/kg \times 3.207 \text{ kg}}{Rp 34.105 + Rp 54.700} \\
 &= \frac{161.737.500}{88.805} \\
 \frac{TR}{TC} &= 1,82 \\
 \text{Profit} &= 1,82 - 1 \\
 &= 0.82
 \end{aligned}$$

So each expenditure is Rp. 1 will produce 1.82 with a difference of 0.82, this means that the income of local corn farming in the village of Tapenpah is profitable and feasible to continue.

3. Conclusion

From the results of this study it can be seen that the total income of corn farmers in the village of Tapenpah is Rp. 72,932,416.00 with an average of Rp. 1,072,535.00. Based on these results, the relative advantage of corn farming in the village of Tapenpah can be profitable with an R/C ratio of 1.82.in line with the Karbajua and Hutapea(2017) research.

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