Effect of Production on Income and Feasibility of Hybrid Corn Farming in Sidondo I Village, Sigi Biromaru District, Sigi Regency

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ABSTRACT

Corn is one of the crops that farmers in Indonesia widely cultivate, especially in Sidondo I Village, Sigi Biromaru District, Sigi Regency. Corn is the second most important food ingredient after rice. How much and how is the effect of hybrid corn production on the income and feasibility of hybrid corn farming in Sidondo I Village, Sigi Biromaru District. Based on the description of the discussion above, it can be concluded that: The size of the hybrid corn production greatly influences the income and feasibility of hybrid corn farming in Sidondo I Village, Sigi Biromaru District, Sigi Regency, as the average cost is IDR 4,482,814 or IDR 5,212,574, - per hectares in one growing season. With an income of Rp. 20,538,000 or Rp. 23,881,395- per hectare in one growing season, so the income of hybrid corn farmers at Rp. 4,500/kg is Rp. 16,055,186 or Rp. 18,668,821/ha. The average amount of R/C is 4.6. For each expenditure of Rp. 1.00, the revenue is Rp. 460 with a profit of Rp. 360. Thus, maize farming in Sidondo I Village, Sigi Biromaru District, Sigi Regency is feasible.

Keywords – Production; Income; Appropriateness

INTRODUCTION

Food crop agriculture consists of two major groups: rice farming and secondary crops. Rice and secondary crops have an important role in providing food. According to (Ahmadi and Rizal, 2016), secondary crops have good prospects for development because the general trend shows that household incomes in non-rice-based areas are higher, stable, and sustainable compared to those in traditional areas of rice farming. In addition, secondary crops can be used to replace rice as a food diversification activity. Developing secondary crops is also directed at strengthening food security and alleviating poverty. One of the secondary crops cultivated by farmers in Indonesia is corn. Corn is the second most important food ingredient after rice and is a source of carbohydrates other than rice. Corn is one of the staple food crops consumed by most of the population besides rice, cassava, sweet potato, tales, and sago (Ariani 2006).

National corn production increases every year, but until now, it is still unable to meet the domestic demand of around 12 million tons per year, so it still has to import in large quantities of around 1 million tons per year (Anonymous, 2018).

Corn is classified as a strategic commodity because it meets the criteria, among others, having an influence on the prices of other food commodities, having bright prospects, and having good forward and backward linkages (Anonymous, 2010).

The utilization of agricultural resources, especially hybrid maize, is one of the most important agricultural commodities and is interrelated with large industries. Besides being consumed for vegetables, corn can also be processed into various foods. In addition, dry shells are used for animal feed. This condition gives corn cultivation a very promising opportunity, both in terms of demand and selling price (Suriadikarta et al., 2004).

In general, the use of inputs for the production of corn farming in Sidondo Satu Village has not been carried out by what was recommended by field officers, in this case, PPL at the village level. The initial survey results obtained data for the area of land managed by corn farmers in Sidondo Satu Village, ranging from 65 ha. In comparison, the existing agricultural land area is 200 ha. The range of use of hybrid seeds by corn farmers in Sidondo Satu Village is around 7-10 kg/ha, while the recommended one is 15 kg/ha.

Efforts to increase farmers' income from a farm, in general, are very dependent on the number of production costs. Especially for the supply of land, seeds, fertilizers, and labor are very influential on the size of the income and income obtained by farmers/respondents from their farming results.

This study aims to determine the effect of hybrid corn production on income and the feasibility of hybrid corn farming in Sidondo Satu Village, Sigi Biromaru District. And to find out how much production, income, and feasibility of hybrid corn farming in Sidondo Satu Village, Sigi Biromaru District.

METHODOLOGY

This research was carried out in Sidondo Satu Village, Sigi Biromaru District, Sigi Regency, from the beginning of June to the end of August 2021. This location was chosen purposively with the consideration that Sidondo Satu Village is one of the centers of corn production in Sigi Biromaru District, Sigi Regency. . Determination of the sample is done by taking a simple random sample (simple random sampling), namely the number of respondents as many as 25 people from 116 hybrid corn farmers, by taking small data by the requirements for conducting research for beginners, which is needed for farmers who cultivate hybrid corn plants.

Data analysis to determine farmers' income from hybrid corn farming used the following formula:

$\pi = TR-TC$

$TR = Y.Py$

$TC = FC + VC$

Information:

π = Farming income or profit (Rp)
TR = Total Revenue (total revenue) (Rp)
TC = Total Cost (total cost) (Rp)
Y = Production gained (kg)
Py = Production price (Rp)
FC = Fixed costs (Rp)
VC = Variable costs (Rp)

To find out the feasibility of hybrid corn, the Revenue Cost Ratio (R/C) formula is used, namely:

R/C = TR/TC

Provided that:

R/C = 1, then the farm is not profitable or not losing (input)
R/C < 1, it means that the farm is not feasible to run
R/C > 1, it means that the farm is feasible (profitable)

RESULTS AND DISCUSSION

Respondent Identity

The number of respondents in this study was 25 farmers from a total population of 150 people with a land area of 0.5-1 hectares while the average area of land owned by respondent farmers was 0.9 hectares, can be seen in Table 1 below:

Table 1. Land area of respondent farmers in Sidondo Satu Village

Land area (hectare)	Respondent (person)	%
0,5-0,9	7	0,28
1	18	0,72
Amount	**25**	**100**

Data after processing 2021

Respondent's Age

Age is one of the factors that affect the success in carrying out an activity and will also affect the physical ability to work and the way of thinking in farming. This can be understood because work as a farmer relies more on physical work. The age of the respondent farmers varied from the young 31 years old to 64 years old. Thus, some of the respondents are of productive age. This is the opinion of Anjayani and Haryanto (2009), who state that the productive age population is the population aged 15 to 64. From the age of 35 to 64, respondents tend to be more receptive to innovations that will have an impact on increasing their income.

Table 2. Age of respondents in hybrid corn farming in Sidondo Satu Village

Age (Year)	Amount (person)	%
31-40	11	44
41-50	4	16
51-60	6	24
> 60	4	16
Amount	**25**	**100**

Data after processing 2021

Respondent's Education

The level of education affects a person's activities in running his business. Education has an important role for respondents in adopting technology and management skills to improve their business. The level of education in this study was measured based on the level of formal education the respondents had achieved. The education level of the respondents is generally elementary school (SD) graduates, as many as nine respondents or 26 percent, while the others are junior high school graduates (SLTP), as many as 11 respondents or 29 percent, and high school graduates (SLTA) as many as 11 respondents or 39 percent as shown in table 3 below:

Table 3. Education of Respondents in Hybrid Corn Farming in Sidondo Satu Village

Education	Amount	%
SD	9	28
JUNIOR HIGH SCHOOL	6	32
SENIOR HIGH SCHOOL	10	40
Amount	**25**	**100**

Data after processing 2018

Respondent's Family Dependent

One of the motivations that make someone try to come from the family environment. Someone will try to meet the needs of life for themselves and their families. The dependents, in this case, are family members or relatives who live in the same house and depend on them for their daily needs. The number of dependents of the respondent's family is 1-3 people, namely 17 people or 68 percent, 4-5 people as many as eight people or 32 percent. This can be seen in Table 4 below:

Table 4. Family dependents of hybrid corn farming respondents in Sidondo Satu village

Dependent (person)	Amount (person)	%
1-3	17	68
4-5	8	32
Amount	**25**	**100**

Data after processing 2021

Respondent's Business Experience

The experience of respondents in hybrid corn farming in Sidondo Satu Village is between 1-10 years, namely as many as 21 people, 82.5 percent, 11-20 as many as four people, 33.3 percent, 21-30 as many as three people, namely 12.5 percent, and 31-40 as many as four people 16.7 percent. Thus, most respondents have sufficient farming experience in implementing hybrid corn farming. However, it is still necessary to provide counseling about hybrid corn farming so that hybrid corn farming can achieve the desired level of efficiency and that the income of hybrid corn farmers can increase.

Table 5. Experience of respondents in hybrid corn farming in Sidondo Satu village

Experience (Year)	Amount (person)	%
1-5	10	40
6-10	8	32
11-23	7	28
Amount	**25**	**100**

Data after processing 2021

Hybrid Corn Farming Analysis

Fixed cost

Fixed costs calculated in this study include land tax costs. The amount of fixed costs incurred by each respondent is different. The calculation results show that the fixed cost of corn farming in Sidondo Satu Village, Sigi Biromaru District is Rp. 58,567- per hectare in one growing season.

The land tax expense incurred by corn farmers in this study was an average of Rp 67,739- per hectare in one growing season. The variable costs calculated in this study include seeds, organic fertilizers, urea fertilizers, NPK fertilizers, pesticides, and labor costs. The calculation results show that the average variable cost incurred by corn farmers in Sidondo Satu Village is IDR 4,728,000 per hectare in one growing season.

Total cost

The total costs calculated in this study include fixed costs plus variable costs. The calculation results show that the average fixed cost is IDR 58,567. In contrast, the average variable cost is IDR 4,728,000, so the production cost of hybrid corn farming in Sidondo Satu Village is IDR 8,615,739, or the unit hectare cost that must be spent for hybrid corn farming is IDR 10,018,301.16 as shown in table 6 below:

Table 6. Fixed costs and variable costs of hybrid maize farming in Sidondo Satu village

Description	Fee type	Amount (Rp)	Total	%
Fixed cost	Land tax	67,739	67,739	0,14

Variable cost	Seeds	246,000	4,728,000	99,86
	Fertilizer	420,000		
	Pesticides	242,000		
	Labor	3,820,000		
	Total production cost		4,795,739	100

Data after processing 2021

Table 6 that the production costs in hybrid corn farming in Sidondo Satu village, the use of variable costs is very large, namely 99.86%, compared to fixed costs. This occurs because the depreciation costs of equipment which have been included as fixed costs, become variable costs. After all, the facility's production or equipment, starting from land clearing and planting to harvesting costs, are prepared by the labor used, calculated in the HOK.

Income Analysis

Revenue is the difference between revenue and total costs incurred, while revenue is the result of multiplying the selling price of corn with the amount of corn produced. Based on the results of the research, the selling price of corn at the time of the study was IDR 4,500 per kilogram, while the average corn production produced in one growing season was 4,564 or 5,307 kilograms per hectare in one growing season, so that an income of IDR 20,538,000 or 23,881,395 was obtained, per hectare in one growing season with a total cost of Rp. 4,482,814 - or Rp. 5,212.574. per hectare in one growing season so that an average income of Rp. 16,055,186 or 18,668,821,- per hectare in one growing season is obtained.

Table 7. Analysis of Production and Income of Hybrid Corn Farming in Sidondo Satu Village

Uraian	Score (Rp)/0,9	Score (Rp)/ha
A. Reception		
a. Production result 4,564 Kg		
b. Selling Price Rp 4,500		
Amount (a x b)	**20,538,000**	**23,881,395**
B. Production cost		
a. Fixed cost		
Land tax	58,567	68,101
Amount	**58,567**	**68,101**
b. Variable Cost		
a Seed	246,000	286,047
b Fertilizer	420,000	488,372
c Pesticide	242,000	281,395
d Labor	3,820,000	4,441,860
Amount	**4,728,000**	**5,497,674**
Income	**16,055,186**	**18,668,821**
R/C	**4.6**	**5.4**

CONCLUSION

This study concludes that the size of the hybrid corn production greatly influences the income and feasibility of hybrid corn farming in Sidondo Satu Village, Sigi Biromaru District. And the average amount of R/C on corn farming in Sidondo Satu Village, Sigi Biromaru District, Sigi Regency is 4.6. For every expense of Rp. 1.00, maize farmers will receive an income of Rp. Four hundred sixty so that maize farmers earn Rp. 360. Thus, corn farming in Sidondo Satu Village, Sigi Biromaru District, Sigi Regency is feasible.

SUGGESTION

It is recommended that corn farming activities in Sidondo Satu Village, Sigi Biromaru District, and Sigi Regency are maintained or continued, and the volume of business is increased because the business carried out can provide benefits.

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