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FILE	21.PDF (208.02K)	WORD COUNT	1860
TIME SUBMITTED	29-SEP-2020 02:11PM (UTC+0700)	CHARACTER COUNT	9394
SUBMISSION ID	1400115463		

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To cite this article: H Hatima *et al* 2020 *IOP Conf. Ser.: Earth Environ. Sci.* **492** 012118

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Analysis of corn agribusiness revenue in Bulukumba Regency

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Abstract. Corn (*Zea mays*, L) is one of the food commodities cultivated in South Sulawesi as human food and animal feed. However, in general the problem faced by farmers is the low quality of corn caused by limited capital available. This study aims to determine the level of income of corn farming in Bulukumba Regency. The research method used by survey. The selection of locations is done by "purposive sampling" (deliberate) on the basis of the consideration that the two districts have the largest level of corn production. The sampling technique used was purposive sampling with a critical value of 10% from 1,942 to obtain 95 respondents. The results showed that the total cost of corn farming per hectare per one planting season in Bulukumba Regency was an average of IDR 6,803,599 consisting of a fixed cost of IDR 124,583, - and variable costs of IDR 6,679,016, - Meanwhile, the value of revenue of IDR 12,071,579, - so that the income value of IDR 5,362,322

1. Introduction

The agricultural sector is one sector that has an important role in agricultural development in Indonesia. Agricultural development in Indonesia is seen as important from the overall development due to the large natural resource potential. One agricultural sector that has potential in regional economic development is food crops such as corn [1]. One of the commodities cultivated in South Sulawesi is corn (*Zea mays* L) is one of the agricultural commodities that has an important role, namely as food for humans and livestock.

In general the problems faced by farmers are low productivity and quality of maize caused by and limited capital available and farmer organizations that are still very weak. Low corn productivity is caused by among others farmers not yet doing rational and balanced fertilization, based on conditions of soil nutrient status. Corn farming in South Sulawesi is still largely carried out by farmers on dry land. The varieties used are mostly local varieties,



but in some areas the superior varieties of hybrids in recent years have developed rapidly. Superior varieties have high yield potential if the level of nutrient availability is sufficient, but on the contrary there will be a sharp decline in yield if nutrient availability is insufficient.

Soils in corn growing areas are generally nutrient poor or have low nutrient status, so that sufficient amounts of fertilizer are needed. Meanwhile farmers have not applied fertilizers according to the needs of the corn plants in a rational and balanced manner, not based on the condition status or potential soil nutrients. Most farmers use Urea fertilizer, or a combination of Urea, SP-36 and NPK. However, fertilization is not carried out as recommended as a result, the production achieved is low and can still be increased through improved management of plants, especially fertilization. From this study, it is expected that recommendations for specific location-specific fertilizer requirements can be determined on corn. So that corn farmers are always motivated to increase their production, one aspect that needs attention is a good way of trying farming.

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2. Materials and methods

The study was conducted in Bulukumba District, Kajang District and Ujung Loe District. Purposive location determination is done with the consideration that Kajang District and Ujung Loe District are one of the corn production areas in Bulukumba Regency. This research was conducted in August 2019.

Determination of respondents in this study using a simple random sampling method (Simple Random Sampling Method), where elements in all populations have the same opportunity to become research samples. Determination of the number of samples in this study using the Slovin formula with a critical value of 10% which is as follows:

$$\text{Slovin formula: } n = \frac{N}{1 + Ne^2}$$

e = 1 % to 10 %

N = total population

n = number of samples

$$\begin{aligned} &= \frac{1942}{1 + 1942(0,1)^2} = \frac{1942}{20,42} \\ &= 95 \text{ farmer} \end{aligned}$$

The number of samples (n) taken in the study of the analysis maize farming income in Bulukumba district were 95 people. Data collection techniques in this study sourced from primary data and secondary data. Primary data collection and secondary data. Primary data collection is done by observation, and direct interviews using a list of questions (questionnaire). Analysis of the data used is the analysis of income relating to the problem and the purpose of the study [2] income obtained from the revenue reduced by total costs, mathematically the equation can be written as follows:

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To calculate all costs used the formula:

$$\text{TC} = \text{TFC} + \text{TVC}$$

Description :

TC = Total Cost

TFC = Total Fixed Cost
 TVC = Total Variable Cost

Farm revenue (TR) is obtained by using the formula:

$$TR = P \cdot Q$$

Description :

TR = Total Return (Rp)
 P = Price (Rp/Kg)
 Q = Quantity (Kg)

Farm income is obtained using the formula:

$$\pi = TR - TC$$

π = income
 TR = Total Revenue (Rp)
 TC = Total Cost (Rp)

3. Results and discussion

3.1. Characteristics of respondents

Table 1. Characteristics of respondents by age, education, number of dependents and land area.

No	Description	Frequency (Person)	Percentage (%)
I.	Age (years)		
	- 31 – 40	16	16
	- 41 – 50	35	36
	- 51 – 60	44	46
Total		99	100
II.	Education		
	- SD	6	6
	- SMP	11	12
	- SMA	78	82
Total		95	100
III.	Number of Dependents (People)		
	- 1 – 3	31	49
	- 4 – 6	28	44
	- 7 – 10	4	6
Total		95	100
IV.	Land Area (Ha)		
	< 1.0	11	12
	1.0-1.5	54	57
	1.6- 2	30	32
Total		95	100

Based on the results of research conducted in Bulukumba Regency. Respondent characteristics can be described through several variables, including age, level of education, number of family dependents and land area in table 1. It shows the most age group is the age group of 44 people. While the least age group is 16 people. At the highest level of education, there are 78 people in high school and 6 people in the lowest elementary school level. It can be seen that the number of dependents of the respondent's family is as high as 44 people and the lowest is 19 people. Whereas farmers who have land area of at least 11 people.

3.2. Analysis of farmer business income

Revenue is the difference between revenues with the total costs incurred during one growing season. Income is income for corn farmers to meet the needs of their families. Analysis of farm income functions to measure whether farming activities are beneficial or detrimental to farmers. Therefore, the measure used to determine the amount of income received by farmers is the difference between revenue and the amount of costs incurred.

Table 2. Analysis of costs and income of corn respondent farmers in Bulukumba District per ha per planting season

Description	Average production per hectare (ton)	Unit price (IDR/kg)	Score
1. Average production receipts	3	3965	12,071,579
2. Cost			
a. Variable cost			6,679,016
b. Fixed cost			124,583
Total cost			6,709,257
3. Income			5,362,322

Based on the results of the study, the average selling price of corn at the time of the study was IDR 3,965 per kilogram, while the production of corn produced per hectare per one planting season can be known as the total income of corn farmers in the average planting season by 3 tons, so as to obtain revenue with an average value of IDR 12,071,579, - with costs incurred in the amount of IDR 6,709,257 so that an income of IDR 5,362,322.

The average income generated by farmers during the growing season is still minimum. Farmers have not yet achieved high production due to lack of fertilizers. The advice of the extension agents of the food crops and horticulture recommends fertilizing be carried out as much as 3-4 times to get maximum production results. The average production they should get every harvest season of 1 ha is 7-8 tons. However, the facts in the field of 1 ha averaged 2-3 tons. This is due to lack of capital for farmers to buy a lot of fertilizer so that they do farming according to their experience and habits.

According to Tahir [3], to be able to increase the income of corn farming, various information is needed related to factors that can affect farm income and productivity itself. Important factors in the management of production resources are natural factors (land), capital, labor, and management factors [4].

4. Conclusion

Income obtained by corn farmers in Bulukumba Regency with an average value of IDR 5,362,322 / kg / ha / planting season with an average income of IDR 12,071,579 / kg / ha / growing season

Acknowledgements

The author would like to thank the corn farmers in Takalar District, the Food Crops and Horticulture Office and the graduate school agribusiness study program at Hasanuddin University, Indonesia for their support of this work.

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