



Management

ANALYSIS OF PRODUCTION AND INCOME OF CASSAVA FARMING

Laode Geo ^{*1}

^{*1} Agribusiness Department, Faculty of Agriculture, Halu Oleo University, 93232 Kendari, Indonesia



Abstract

Motivation/Background: This study determining the amount of production and income of cassava farming, and level of efficiency of cassava farming in Muna Regency. The total sample was 32 farmers determined by stratified random sampling.

Method: The type of data used is primary data obtained through direct interviews with respondents of cassava farmers and secondary data from relevant agencies. Data were analyzed using income analysis and business efficiency.

Results: The results showed the average of amount of cassava farm production is 1.141 kg per farmer. The average income received by each farmers is Rp. 6,115,969.

Conclusions: The efficiency level of 6.10 which means that cassava farming is efficient and feasible to be developed.

Keywords: Production; Income; Business Efficiency; Cassava.

Cite This Article: Laode Geo. (2020). "ANALYSIS OF PRODUCTION AND INCOME OF CASSAVA FARMING." *International Journal of Research - Granthaalayah*, 8(4), 160-166. <https://doi.org/10.29121/granthaalayah.v8.i4.2020.21>.

1. Introduction

Food crops are primer needs of people food and nutrition require. One strategy to overcome food insecurity is to increase food security. Food security policy is an important agenda in economic development. The change of paradigm in economic development policy that initially started from the growth-oriented development paradigm, then development oriented towards equity, and finally the sustainable development paradigm that is more concerned with the preservation of natural resources that can overcome the problem of food insecurity. For example, rice is very risky to food security issue, so it needs efforts to develop alternative food crops such as corn, soybeans, green beans, cassava, taro, and gembili which all can be processed into various foods that have more economic value ^[1].

Province of Southeast Sulawesi is one of the 10 highest cassava development centers in Indonesia. Cassava is one of the tuber-type food plants that has the potential to be developed in Muna Regency. Processed food sourced from cassava plants is one of the staple foods which is processed

in various forms and consumed for generations by the local community. Cassava food plants which are optimally cultivated are expected to be one of the sources of increased production to fill the food needs of the community as well as a source of income for farmers. The data on the development of harvested area, production and productivity of cassava farming in Muna Regency and other Regencies/Cities in Southeast Sulawesi Province can be seen in Table 1.

Table 1: Harvest Area, Production and Productivity of Cassava Farming in Muna Regency in 2018 ^[2].

Regency	Cassava		
	Harvest Area	Production	Productivity
Buton	593.0	16,435.7	27.7
Muna	1,173.0	27,563.8	23.5
Konawe	246.3	6,184.4	25.1
Kolaka	112.1	3,629.6	32.4
South Konawe	1,315.4	22,300.6	17.0
Bombana	70.9	1,546.7	21.8
Wakatobi	2,498.9	50,978.3	20.4
North Kolaka	36.0	703.9	19.6
North Buton	150.0	5,654.8	37.7
North Konawe	129.0	3,191.7	24.7
East Kolaka	254.0	6,801.0	26.8
Konawe Island	135.2	3,230.1	23.9
West Muna	252.0	8,075.6	32.0
Centre Buton	519.0	22,195.4	42.8
South Buton	1,036.0	27,097.8	26.2
Kendari	178.0	2,969.6	16.7
Bau-Bau	83.0	1,827.6	22.0
Southeast Sulawesi	8,781.8	210,386.6	24.0

Source: The Central of Burbau Statistics 2019

Muna Regency is one of the regencies that has potential harvested area, production and productivity to be developed. Sustainability of food security policies with the availability of food through cassava farming is determined by the level of welfare of farmers which was measured by the income received. This should be the subject of government policy, due to farmers are the spearhead in providing food supplies as revealed by the Minister of National Development Planning/Head of Bappenas ^[3].

2. Materials and Methods

This research was conducted in Muna Regency, at the districts of Tongkuno and Kabawo. The location was chosen purposively with consideration of potential research locations in the development of cassava farming. The population of the study was 128 farmers, and because of the population was more than 100 so the sample was taken as much as 25 percent of the population that are 32 farmers ^[4].

The sampling method uses stratified random sampling. The type of data is primary data obtained through direct interviews using a list of questions to cassava farmers in the form of data on land area, production, price, planting period, use of farming inputs, income, and production costs. Whereas secondary data was obtained through document searches from the relevant agencies. The method used in this research is quantitative descriptive. Data analysis to determine the income and efficiency of cassava farming is analyzed using income and business efficiency analysis. Income analysis using the following formulation according to Hernanto: $I = TR - TC$, where: I: Income, TR: Total Revenue, and TC: Total Cost, while business efficiency uses ratio revenue cost (R-C ratio) ^[5].

3. Result and Discussion

3.1. Overview of Research Locations

Muna Regency is one of the centers of food crops in Southeast Sulawesi Province. Cassava farming has long been endeavored by the local community to fulfill and supply their basic needs. with soil conditions, temperature and rainfall in Muna Regency, cassava plants are quite adaptive and can grow well. Data related to the area of cassava harvest is presented in Table 2.

Table 2: Land area, heigh of region and cassava harvest area

District	Land Area (km ²)	Percent	Heigh of Region (dpl)	Harvest Area	Percent
Tongkuno	440,98	21,43	62	187	21,72
Kabawo	209,94	10,2	50	136	15,80
Muna	2057,69	100		861	100

Source: The Central of Burbau Statistics 2019

Tongkuno District has an region area of 440.98 km² or 21.43 percent of the area of Muna Regency, while Kabawo District has an region area of 209.94 km² or 10.20 percent of the area of Muna Regency. The harvest area used for cassava farming in Tongkuno District is 187 km², while Kabawo Regency is 136 km².

Table 3: Identity of Respondents by Age

Age (year)	Total (Person)	Percentage (%)
31-40	3	9
41-50	12	38
51-60	13	41
61-70	4	13
Total	32	100

Cassava Farmers in this study who had an average age of 31-40 years are three people, an average age of 41-50 years are 12 people and an average age of 51-60 years are 13 people and an average age of 61-70 are four people. In general, the age of farmers is still in their productive age in farming. With a productive age, physical constraints experienced will be minimal, so that it will affect the sustainability of cassava farming production.

Table 4: Identity of Respondents Based on Farming Experience

Farming Experience (year)	Total (Person)	Percentage (%)
< 10	8	25
10-20	19	59
> 20	5	16
Total	32	100

In running a farm, the experience factor is also very influential in achieving optimal production results. It is due to with the experience they have, the activities of cassava farming will be more effective. In this study, cassava farmers still use traditional methods that are traditionally done from generation to generation. Farming which is usually done in traditional ways has now begun to be socialized by related agencies to be abandoned, and changed to more modern farming patterns, and the application of technology which make increase in productivity. The results showed that most farmers have experienced cassava farming. They had been farming for more than 10 years and included in the medium category.

Table 5: Identity of Respondents by Land Area

Land Area (Ha)	Total	Percentage (%)
0.5-1.00	14	44
1.01-2.00	18	56
Total	32	100

Cassava farming carried out by respondents are known to have an area of 0.5-1.00 Ha were 14 people, and an area of 1.01-2.00 Ha were 18 people. Most farmers use their own land, so there is no need to pay for land rent.

3.2. Production Analysis

Production is a result of activities combining various factors of production in the form of capital, while labors, technology and managerial ability to produce benefits ^[6]. Data about cassava farming production information is very important as a basis in formulating policies. By knowing production data every season/year, there will be a trend of development or decline in the results of farming. The following presents data on the development of harvested area, production and productivity of cassava farming in Muna Regency in the last 3 years.

Table 6: Data of land area development, production and productivity cassava farming in Muda District in 2016-2018

Information	Years			Avergae	Growth
	2016	2017	2018		
Harvest Area (Ha)	861	978	1132	990,33	31,48
Production (Ton)	25533	28678	28866	27.692	13,05
Productivity (Ton/Ha)	29,66	29,32	25,50	28,16	(14,01)

Based on the data in Table 6, it can be seen that the harvested area and production have always increase over the last three years with an average harvested area was 990 Ha, an average production

27.692 tons, and average productivity was 28.16 tons/ha . Average harvested area growth was 31.48 percent, production growth 13.05 percent and productivity decreased by 14.01 percent over the past three years. With these facts, of course this has become a field phenomenon, when the socialization of food security is incessant, but the productivity of cassava farming actually decreases. Cassava farming is only one harvest per year. So the calculation of the analysis is calculated per year.

Table 7: Respondents based on average of casava farming production

District	Number or Farmers	Production
	(people)	(Kg)
Tongkuno	18	24.353
Kabawo	14	14.657
Total	32	39.010
Average		1.219

The total production of cassava farming was 32 farmers, which was 39.010 kg per harvest season, with details of 24.353 kg in Tongkuno District and 14.657 kg in Kabawo District. Average production per respondent was 1.219 kg per planting season.

3.3. Analysis of Cassava Farming Income

To find out the income of cassava farming, revenue and production costs was analyzed first and that can be seen in detail in the following table:

Table 8: Data of revenue and producon cost cassava farming

Respondents	Production	Price	Revenue	Cost
	(Kg)	(Rp)	(Rp)	(Rp)
1	1.380	6000	8,280,000	885,000
2	2.551	6000	15,305,000	5,183,000
3	793	6000	4,760,000	766,000
4	896	6000	5,375,000	828,000
5	1.043	6000	6,260,000	728,000
6	868	6000	5,210,000	865,000
7	1.291	6000	7,748,000	1,001,666
8	2.707	6000	16,242,500	2,920,500
9	810	6000	4,860,000	885,000
10	1.961	6000	11,764,000	1,828,666
11	770	6000	4,620,000	820,000
12	903	6000	5,420,000	978,000
13	1.163	6000	6,975,000	1,087,500
14	1.670	6000	10,020,000	1,745,000
15	1.253	6000	7,520,000	887,000
16	1.276	6000	7,655,000	1,025,000
17	2.221	6000	13,325,000	1,410,000

18	797	6000	4,780,000	745,000
19	877	6000	5,260,000	668,000
20	1.156	6000	6,935,000	1,085,000
21	1.126	6000	6,755,000	1,380,000
22	1.308	6000	7,850,000	989,500
23	1.665	6000	9,987,000	1,545,666
24	692	6000	4,152,000	620,000
25	763	6000	4,575,000	1,014,000
26	684	6000	4,105,000	696,000
27	692	6000	4,150,000	618,000
28	1.612	6000	9,670,000	675,000
29	1.094	6000	6,565,000	1,289,000
30	692	6000	4,150,000	625,000
31	893	6000	5,360,000	982,000
32	1.405	6000	8,428,000	1,575,000
Total	39.010		234,061,500	38,350,498
Average	1.219		7,314,422	1,198,453

The total revenue received by all respondents in the cassava farming every year was Rp. 234,061,500 per harvest season. The average revenue received by each respondent every year was Rp. 7,314,422 per harvest season. The total cost that must be spent by respondents in the cultivation of cassava each year was Rp. 38,350,498 per harvest season, while the average cost incurred by each respondent each year was Rp. 1,198,453 per harvest season. Based on field facts, all cassava yields are sold in the form of commodities without any processing in the form of products ready for consumption so that the income are received very little. The local people in the study area has not been able to process cassava in the form of processed which has added value so that it can contribute to increasing income.

3.4. Analysis of Revenue and Business Efficiency

Table 9: Analysis result of revenue and business efficiency cassava farming

	Revenue (Rp)	Cost (Rp)	Income (Rp)	R-C Ratio
Total	234,061,500	38,350,498	195,711,002	6.10
Average	7,314,422	1,198,453	6,115,969	6.10

The income received by all respondents in each year was Rp. 195,711,002, while the average income received by each respondent farmer in each planting season was Rp. 6,115,969, while the results of the analysis of business efficiency using the R-C ratio was obtained results of 6.10, this implies that cassava farming is quite efficient and profitable to continue to be endeavored.

4. Conclusion

The production average of cassava farming was 1.141 kg. The total income received by farmers amounted to Rp. 195,711,002, and the average of income was received by each farmer was Rp.

6,115,969, while the level of business efficiency was 6.10, which means that cassava farming is efficient and feasible to be developed.

Acknowledgements

Author would acknowledge to Muna Regency Government and all cassava farmers who has helped this research.

References

- [1] Geo, L. and Muthalib AA. Kajian Ekonomi Tentang Produk Unggulan Strategis Non Beras dalam Percepatan dan Perluasan Pembangunan Tanaman Pangan Di Provinsi Sulawesi Tenggara. Hasil Penelitian MP3EI. 2015, Universitas Halu Oleo. Kendari.
- [2] The Central of Burbau Statistics. Southeast Sulawesi on Number. Kendari. Sulawesi Tenggara; 2019.
- [3] Geo, L. 2015. Keragaman Peoduk Tanaman Pangan Antar Wilayah Di Peovinsi Sulawesi Tenggara. Kendari. 2015.
- [4] Arikunto S. Prosedur Penelitian suatu Pendekatan Praktik. Rineka Cipta. Jakarta; 2006.
- [5] Hernanto F. Ilmu Usahatani. Penebar Swadaya. Jakarta; 2006.
- [6] Welang, FR., Joachim, NKD. and Martha, MS. Analisis usahatani padi sawah berdasarkan musim panen di Kelurahan Taratara Satu Kecamatan Tomohon Barat Kota Tomohon. Agri-socio Ekonomi, 2016, 107-124.

*Corresponding author.

E-mail address: geolaode@yahoo.co.id