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IMPLEMENTATION OF SNI 6729: 2016 IN ORGANIC RICE CULTIVATION AND FINANCIAL FEASIBILITY ANALYSIS

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ABSTRACT

This can happen because only organic farmers cultivate rice organically, and only they can meet the needs of organic rice based on having an organic certificate from the LSO with the standar SNI 6729: 2016 on organic farming system.The purpose of this study is (1) describe the application of organic rice cultivation standards in the Lareh Sago Halaban sub-district (2) analyze the financial feasibility of organic rice farming in the Lareh Sago Halaban sub-district. The study was conducted in March – April 2022 at Lareh Sago Halaban sub-disctrict. The sampling technique is purposive sampling with data analysis income and business feasibility. The result of the research is that organic farmers carry out the cultivation processes in accordance with SNI 6729: 2016 concerning organic farming system, ranging from mechanical land processing, the use organic seeds, the use of fertilizers, and pest control without chemicals, to the harvesting process. But they do not carry out the post-harvest process due to limited facilities and infrastructure for rice milling and earn an income of Rp. 1.151.827/planting season with BEP obtained of Rp. 2.887,179/planting season, production 502 kg, price Rp. 3.719/kg. R/C ratio 1.57 with a again of 0.57. So organic rice farming in the Lareh Sago Halaban sub-district is feasible and the probability or profit obtained is 57%.

INTRODUCTION

The Go-Organic 2010 program has the goal of making Indonesia the largest producer of organic agriculture in the world by 2010. This program has not been achieved because there are still few products produced and of course there are still few farmers who apply organic farming systems. Based on the SPOI 2019 data that until

2010 the area of organic land in Indonesia had only reached 71.114,09 ha. While the area of agricultural land in ndonesia is 9.295.385 ha. Specifically for rice commodity, the area of organic land in 2010 was 2.970,99 ha. Rahmad (2017) states that agriculture with the application of an organic system is agriculture whose input utilizes natural materials available in nature without using chemicals. Organic farming has many advantages, both in terms of cost and product quality. The purpose of organic farming is to provide healthy food for consumption by producers and consumers.

Organic farming is one of the efforts made to maintain a safe environment and produce healthy products. Organic agriculture has a great opportunity in fulfilling food for the future, because with an organic farming system, sustainable agriculture can be created. Musriyah (2016) states that organic agriculture views nature as a whole where the components are interdependent and mutually support each other and humans are one of the components. The existence of mutual support means that the agriculture that is carried out will continue to be mutually beneficial.

Agriculture with organic systems is currently growing, this is due to the emergence of awareness of farmers and also related parties that the importance of health and environmental sustainability (Hadi et al., 2018). This situation is also supported by changes in people's consumption patterns who are increasingly aware of healthy products, this creates an opportunity to further develop organic farming systems. In line with this demand for organic rice is increasing. According to Fitriah et al (2020) stated that the consumption of organic rice increased from 2013 to 2016 by 14 million tons.

The increase in demand for organic rice will have an impact on the income of organic rice farmers. Revenue is the result obtained after going through various processes by sacrificing some of the inputs needed during the process. In organic farming, there are differences in inputs with inorganic agriculture. The costs incurred in organic farming will be lower than inorganic farming (Amelia et al., 2019). The low cost of organic farming systems from inorganic farming can result in higher production than inorganic rice. Therefore, the income of farmers will certainly be higher by implementing an organic farming system. Couple with the passage of time the demand for organic rice is increasing. This makes a great opportunity for organic rice farmes to increase their income.

In Lima Puluh Kota Regency, farmers generally choose the conventional method rather than implementing an organic farming system. The factor that causes farmers to be more inclined towards conventional agriculture than organic is because to change the perceptions and attitudes of conventional farmers purely takes a long time (Prajatino et al., 2021). Based on data from the Organic Certification Institute (LSO) of Sumatera Barat in 2021, Lima Puluh Kota Regency is one of the regencies that received organic certificates, precisely in Lareh Sago Halaban sub-district. Lareh Sago Halaban sub-district is the only sub-district that has obtained an organic certificate by implementing an organic farming system on chili commodities, cayenne pepper, leek, chayote, spinach, eggplant, cucumber, and also rice in an organic farmer group container.

Based on data from the Lima Puluh Kota Regency, BPPSDMP in 2022 in Lareh Sago Halaban Sub-district there were 191 farmer groups, but only 4 farmer groups of which implemented an organic farming system by obtaining an organic certificate from the West Sumatra LSO. The Lareh Sago Halaban sub-district has the 3rd largest rice commodity planting area after Harau and Akabiluru sub-district with an area of 5,830 hectares of planting area (BPS Kabupaten Lima Puluh Kota, 2020). When compared with the new certified organic rice planting area of 6.89 hectares, of course, very few implement organic rice farming. Whereas organic farming has a good impact because it

can realize sustainable agriculture for the future and also from various aspects which will certainly increase the income of the farmers themselves.

There are very few Lareh Sago Halaban sub-districts that apply organic farming systems. Apart from farmer groups, there are no private farmers who apply certified organic farming systems. At least farmers or farmer groups who apply organic farming systems in Lima Puluh Kota Regency, especially those in Lareh Sago Halaban sub-district who are still able to continue to survive with organic farming systems but there are no improvements or additions in implementing organic farming systems in this area. it is necessary to conduct research related to the suitability of the cultivation standards carried out and how the production costs, revenues, income, financial feasibility of organic rice farming are needed. So that the purpose of this study is (1) The form of application of organic rice cultivation standards in Lareh Sago Halaban sub-district. (2) Analyzing the financial feasibility of organic rice farming in Lareh Sago Halaban sub-district.

RESEARCH METHODS

This research was conducted in March-April 2022 at two locations, namely in Jorong Guguak, Nagari Ampalu (Sei Kolam Farmers Group) and Jorong Bulakan, Nagari Tanjuang Gadang (Tuah Sakato Farmers Group). Primary data sources were obtained by conducting interviews using questionnaires and secondary data from LSO Sumatera Barat 2021, BPS Lima Puluh Kota Regency, and BPPSDMP Lima Puluh Kota Regency.

The method used in this study is descriptive qualitative to describe the characteristics of respondents and standards for organic rice cultivation based on SNI 6729: 2016 concerning Organic Farming Systems and quantitative descriptive to analyze how income and financial feasibility of organic rice farming are.

The sampling technique used is purposive sampling (deliberately) with certain provisions based on (Sugiyono, 2011) namely those who have an organic certificate from the Organic Certification Institute. Respondents in this study are members of farmer groups who apply organic farming in their groups. The number of respondents was 10 people where 4 respondents came from the Sei Kolam Farmers Group and 6 respondents came from the Tuah Sakato Farmers Group.

Method of Collecting Data

This study uses primary data and secondary data. Primary data comes from the results of interviews and observations conducted with organic rice farmers in Lareh Sago Halaban Sub-district. Secondary data was obtained from relevant government institutions such as the BPS Lima Puluh Kota Regency, the LSO Sumatera Barat, and BPPSDMP Lima Puluh Kota Regency.

Data Analysis Method

The data analysis method used in this study is descriptive qualitative to describe how the respondent's data related to age, education level of farming experience, number of dependents, land area, land ownership status, income, and cultivation processes related to the type of seeds used, land processing methods, how to control pests, as wellas how to harvest according to SNI 6729: 2016 and quantitative descriptive which is used to find out some financial coverage consisting of income and eligibility which will be further processed with the following techniques:

Income

Income is the final result obtained by organic rice farmers after all production costs have been issued. Income can be calculated using the formula according to Suratiyah (2016) as follows:

I = S –TC

Notes : I = Income (IDR); S = Total Revenue (IDR); TC = Total Cost (IDR)

Farming Eligibility

The feasibility of organic rice farming was calculated using BEP analysis. BEP is calculated according to Suratiyah (2016) using the following formula:

a. BEP Reception

BEP Receipt $=\frac{FC}{1-\frac{VC}{S}}$

Notes : FC = Fixed Cost (IDR); VC = Variable Cost (IDR); S = Revenue (IDR)

b. BEP Production

Production BEP $=\frac{FC}{P-AVC}$

Notes : FC = Fixed Cost (Rp); AVC = Variable Cost/Units (Rp); P = Product Price(Rp/Kg)

c. BEP Price

BEP Price $=\frac{TC}{Y}$

Notes : TC = Total Cost (Rp); Y = Total Production (Kg)

R/C Ratio

R/C ratio =S/TC (Suratiyah, 2016)

Notes : S= Total Revenue (Rp); TC= Total Cost (Rp)

Profit Rate/Profitability

Profitability/income level formula according to (Antika, et.al., 2014) is as follows:

Profitability/Profit = $\frac{Income}{Production\ Cost}$ x 100%

RESULTS AND DISCUSSION

Overview of Research Area

The research was conducted in two locations, namely in Jorong Guguak, Nagari Ampalu, namely the Sei Kolam Farmer's Group and the Tuah Sakato Farmer's Group in Jorong Bulakan, Nagari Tanjuang Gadang. The location of this study was chosen because the farmer groups in accordance with the research criteria, namely organic rice cultivation were found in these two locations. Nagari Ampalu is the furthest village from the sub-district capital with a distance of 18 km and from the district capital with a distance of 37 km with rice fields located between the ends of the hills. Meanwhile, Nagari Tanjuang Gadang has a distance of 8 km to the sub-district capital and 10 km to the district capital, with rice fields located between hills and rocks.

Characteristics of Respondents

The characteristics obtained from this study are age, education level, farming experience, number of dependents, land ownership status, land area, and income, where the number of respondents is 10 people.

Farmer's Age

Characteristics rice farmer age in the Lareh Sago Halaban is presented in Table 1.

Table 1. Rice Farmer Age in the Lareh Sago Halaban

Age (year)	Total (person)	Percentage (%)
40 – 50	4	40%
51 – 60	3	30%
61 – 70	3	30%
Total	10	100%

Source: Primary Data Analysis, 2022

The range of organic farmers is mostly at the age of 40-50 years with a percentage of 40%. This is in accordance with what was stated by Manyamsari & Mujiburrahmad (2014); Sukmaningrum & Imron (2017) that the productive age group is 15-64 years old because they are able to produce goods or services, whereas if they are over 64 years old, they are classified as unproductive age.

Level of Education

Characteristics rice farmer level of education in the Lareh Sago Halaban is presented in Table 2.

Table 2. Rice Farmer Level of Education in the Lareh Sago Halaban

Level of Education	Total (person)	Percentage (%)
Graduated Elementary School	6	60%
Graduated Junior High School	0	0%
Graduated Senior High School	4	40%
Total	10	100%

Source: Primary Data Analysis, 2022

Education of organic farmers is still relatively low because it is dominated by the last education of elementary school as much as 60% of the total respondents. The level of education which is generally low is one of the causes of the slow absorption of technological innovation (Hamid, 2016). However, the fact is that in the field, farmers who have low education will be able to accept new technology fairly quickly because of the support and guidance from extension workers as well as from other farmers with higher education.

Farming Experience

Characteristics rice farmer farming experience in the Lareh Sago Halaban is presented in Table 3. The long experience of organic farming has been carried out for >5 years, both farmers started an organic farming system because of the entry of extension workers to their place. The experience of this farmer is quite long because he

has done approximately 15 planting seasons so that their production is getting better day by day. This makes organic rice farmers more effective and efficient in the implementation of cultivation, as stated by Cepriadi & Yulida (2012); Zahraturrahmi et al (2017) that experience will affect the success of the business being run.

Table 3. Rice Farmer Farming Experience in the Lareh Sago Halaban

Farming Experience	Total (person)	Percentage (%)
1 - 5 years	0	0%
5 - 10 years	10	100%
Total	10	100%

Source: Primary Data Analysis, 2022

Number of Dependents

Characteristics rice farmer number of dependents in the Lareh Sago Halaban is presented in Table 4.

Table 4. Rice Farmer Number of Dependents in the Lareh Sago Halaban

Number of Dependents	Total (person)	Percentage (%)
1 person	0	0%
2 persons	5	50%
3 persons	1	10%
4 persons	4	40%
Total	10	100%

Source: Primary Data Analysis, 2022

The number of dependents of organic farmers is dominated by 5 farmers with 2 dependents with a percentage of 50%, then 4 farmers have 4 dependents, and 1 farmers has 3 dependents. The number of dependents in a farming family will effect their income. The dependents of respondent farmers generally only consist of 2 people, namely husband and wife, this includes productive dependents because they can help each other in their work.

Land Ownership Status and Land Area

Characteristics rice farmer land ownership status in the Lareh Sago Halaban is presented in Table 5.

Table 5. Rice Farmer Land Ownership Status in the Lareh Sago Halaban

Land Ownership Status	Total (person)	Percentage (%)
Self-owned Land	4	40%
Rent/Profit Sharing	6	60%
Total	10	100%

Source: Primary Data Analysis, 2022

The status of land ownership as much as 60% of organic farmers is land for rent/profit sharing and 40% is own land. The income from different land ownership status is also different. It is also stated by Rahmayani (2020) that the income of farmers with own land status is greater than tenant farmers/profit sharing because farmers with

leased land ownership/profit sharing status have to pay rent or share the harvest obtained with the land owner.

Land Area and Income

Land area respondent farmers average is 0,2 ha. Organic rice farmers in this research area generally have a total income of Rp. 500.000 – Rp. 1.000.000/month which comes from agriculture.

Organic Rice Cultivation

The cultivation process with the organic system has standards that have been regulated and determined by the relevant institutions, the following is the suitability of the respondent farmer's cultivation process with SNI 6729: 2016 concerning Organic Farming Systems by looking at the following attributes:

Table 6. Conformity of Application of Cultivation Standards with SNI 6729: 2016

No	Standard (SNI 6729: 2016)	Application(%)
1.	Land Preparation	
	- No straw burning process	100%
2.	Seed	
	- Organic seeds (organic rice derivatives)	100%
3.	Contaminant Prevention	
	- Filtration pool	100%
4.	Pest Management	
	- Selection of the appropriate variety	100%
	- Mechanical tillage	100%
	- Use of trap plants	90%
	- Conservation and utilization of natural enemies	100%
	- Vegetable pesticides	60%
	- Cattle grazing according to commodity	30%

Source: Primary Data Analysis, 2022

Based on the table below, it can be seen in generalapplication in the field that farmers have carried out the cultivation process in accordance with the standard, namely SNI 6729: 2016, which has not yet reached 100% application, namely the use of trapping plants, the use of vegetable pesticides, and livestock grazing according to commodities. This does not affect the organic status of the products produced because those that are not applied or that have not been applied are included in the process of managing Plant Pest Organisms, not raw materials or other inorganic inputs.

The following can be seen in a more detailed explanation of the attributes studied:

Land Preparation

Based on SNI 6729: 2016 concerning Organic Farming Systems, there is no burning of straw residues in paddy fields that are cultivated with organic farming systems. There are no organic rice farmers in the Lareh Sago Halaban Sub-district doing the burning process. Farmers also don't buy fertilizers on the market, they

process their own fertilizers for use, namely compost. In line with the statement of Nofrianil & Ibnusina (2021); Hartatik et al (2015) that the addition of plant nutrients can take advantage of available local resources such as livestock waste processed into organic fertilizer.

Land cultivation also uses a mechanical process, namely by using a tractor. Mechanical land cultivation is carried out to completely reverse the soil with the aim that plant remains or plant roots that are still left behind from previous plants that have been attacked by pests are expected to no longer have the potential to infect new plants planted.

Seed

The seeds used by organic farmers are seeds that are in accordance with SNI 6729: 2016 namely organic seeds obtained from the previous harvest of organic rice cultivation. Organic farmers do seed selection by using a solution of salt water and eggs. This seed selection is carried out with the aim of getting seeds that are pithy and have good quality. This is in accordance with the statement Sutaryat & Purwasasmita (2014) in their book also said that seed selection using a salt water solution with eggs will get higher quality seeds. The selected seeds were cleaned using clean water. This is so that no more salt solution is left on the seeds. Seed cleaning is done to avoid salt poisoning (sanitation) in the seeds.

Contaminant Prevention

Prevention of contaminants carried out by organic farmers has been carried out in accordance with SNI 6729: 2016 namely by making a filtration pond in each water source by including water hyacinth as a filter plant and tilapia and carp, this is in accordance with the statement of Sutandi et al (2021) the function of water hyacinth roots is not only to bind mud in the water, but also to absorb heavy metal pollutants in the water. Water hyacinth plants grow very quickly so they need to be considered periodically so that the filtration pond is not filled with water hyacinth. Setting the water hyacinth population is so that the fish in the pond can still breathe oxygen to the surface of the water.

Management of Plant Pest Organisms

Based on SNI 6729: 2016 that is by prioritizing preventive measures over control measures. Organic farmers have taken preventive measures in advance by selecting the appropriate variety, mechanically tilling the soil, using trap plants, and utilizing natural enemies. The situation in the field, after taking preventive measures there are still pests that attack then farmers take control measures using vegetable pesticides made from paitan or soursop leaves. However, due to the location of the land in the hills, there are pig and deer pests that cannot be controlled by farmers. The mechanical weed control and the last way is by doing flame weeding. The flame weeding method is a method of direct heating of weeds that are still growing in the field, to destroy the growth of weeds that are difficult to control. This method is used as the last solution because the impact will affect the life of soil microorganisms.

Harvest and Post Harvest

Organic rice harvest is not much different from the harvest done by inorganic/conventional farmers. The difference lies only in the equipment and machines

used, for example post-harvest such as milling. The rice milling used is rice milling that does not grind inorganic/conventional rice because it will affect the rice produced into inorganic rice.

The suitability of the application of cultivation standards with SNI 6729: 2016 will have an influence on the feasibility of the farming carried out. Because the production results are produced based on the standard process that has been regulated, it will affect the quality of the product, the costs incurred, as well as the legality of certified organic products on the market. The following is a feasibility analysis obtained by organic rice farmers:

Income Analysis and Feasibility of Organic Rice Farming

Farming income is obtained after farmers incur production costs incurred during the production process. Production costs in this farm consist of variable costs and fixed costs. Variable costs consist of costs of production facilities, labor costs, and rental costs, while fixed costs only come from equipment depreciation costs. The following can be seen in the recapitulation of the average cost of organic rice farming in Lareh Sago Halaban Sub-district.

Table 7. Average Cost of Organic Rice Farming Recapitulation in Lareh Sago Halaban Sub-district

Organic Rice Farming Cost Recapitulation	
Variable cost	
Average cost of production facilities	Rp. 89.100
Average cabor cost	Rp. 932.150
Average rental cost	Rp. 908.740
Total variable cost	Rp. 1.929.990
Fixed cost	
Equipment depreciation cost	Rp. 71.183
Total fixed cost	Rp. 71.183
Total Cost of Farming	Rp.2.001.173

Source: Primary Data Analysis, 2022

Based on Table above, it can be seen that the total cost of organic rice farming is Rp. 2.001.173 with an average land area of 0.2 ha. As for the research conducted by Gufron (2019) where the total cost of organic rice production is Rp. 11.042.735/ha, where converted to an area of 0,2 ha, the total cost is Rp. 2.208.547/0,2 ha. This shows that in organic rice cultivation the costs incurred are not much different because in general the types of materials and tools used are the same. As for the cost of production facilities incurred by farmers in the research area is only for seeds and burlap sacks, while for other production input costs such as compost, POC, and vegetable pesticides, there is no cost. The labor costs found in the respondent organic farmers are workers with a non-fixed daily wage system, because the workers do not always work every day with the respondent farmers. The biggest labor cost is during the harvesting process, this happens because the harvest labor wage system comes from 15% – 16% of every 100 kg of harvest. The rental costs incurred by organic rice farmers come from tractor rentals, loss of machinery rentals, rice pump rental, as well as land rent. Fixed costs derived from depreciation of equipment consist of hoes, sickles, machetes, sparyer, carts, mats, and tarpaulins assuming the economic life of all equipment is 5 years. The costs incurred in organic rice farming are relatively lower

than cultivation with inorganic/conventional systems, as Amelia et al (2019); Nurhidayat et al (2022); Anggita & Suprehatin (2020) the costs incurred in organic farming will be lower than inorganic farming

All costs incurred by farmers in the production process produce output in the form of Harvest Dry Grain. The following shows the average production and income of organic rice farmers in Lareh Sago Halaban Sub-district.

Table 8. Average Amount of Production and Revenue Obtained by Certified Organic Farmers in Lareh Sago Halaban Sub-district

Farmers Name	Land area (Ha)	Production (Kg)	Selling Price (Rp/Kg)	Revenue (Rp)
Respondent 1	0,2	400	5.500	2.200.000
Respondent 2	0,6	1.400	6.000	8.400.000
Respondent 3	0,1	130	6.000	780.000
Respondent 4	0,4	700	6.000	4.200.000
Respondent 5	0,1	450	5.800	2.610.000
Respondent 6	0,08	300	5.800	1.740.000
Respondent 7	0,2	500	5.800	2.900.000
Respondent 8	0,2	500	5.800	2.900.000
Respondent 9	0,2	500	5.800	2.900.000
Respondent 10	0,2	500	5.800	2.900.000
Amount		5.380		31.530.000
Average		538		3.153.000

Source: Primary Data Analysis, 2022

Based on Table above, it can be seen that the average organic rice production in Lareh Sago Halaban is Rp. 538 kg. The selling price of organic rice at the research site starts from Rp. 5.500 – Rp. 6.000 per kg so that organic farmers receive an income of Rp. 3.153.000/ planting season or 4 months. The production of respondent 2 and the production of respondent 4 is quite different from the land area which is not much different. This situation occurred due to a decrease in the production of Respondent 4 due to snails and pigs. Sulistiono (2012) also said that snail pests can reduce tillers in rice, so that production decreases.

The price of organic rice is actually more expensive than the price of conventional rice, but in this research area this does not apply because there are no production facilities in the form of rice milling. This situation makes farmers only sell GKP, while if farmers force to grind organic rice in conventional rice milling, the farmers will lose. This loss is caused because the first 2 sacks of milling will be classified as conventional rice. therefore, farmers prefer to sell only GKP instead of selling rice.

The income of organic rice farmers in Lareh Sago Halaban Sub-district is obtained from the calculation of income analysis as follows:

$$I = S - TC$$
$$= \text{Rp. } 3.153.000 - \text{Rp. } 2.001.173$$
$$= \text{Rp. } 1.151.827$$

The income earned is Rp. 1.151.827 after issuing production costs of Rp. 2.001.173. This income is obtained after completing the production process for 1 period of the growing season where one period is for 4 months. This organic rice farmer also earns income from side jobs that are done after completing his farming activities such as raising livestock, farming, and trading. This is in accordance with the opinion of Sholeh et al (2021); Citra et al (2020) that a side job will be carried out by someone if

the basic income is insufficient or there is time after the main work is completed. The amount of income from side work is not calculated and discussed because it is not included in the discussion of the research title.

Feasibility analysis in this study used BEP analysis, R/C ratio and profitability. The following is an analysis of the feasibility of organic rice farming in Lareh Sago Halaban sub-district

Table 9. Financial Feasibility Analysis of Organic Rice

No	Analysis Tools	Analysis Results	It Means
1.	Break Event Points		
	a. BEP Reception	Rp. 2.887.179	Worthy
	b. BEP Production	502 kg	Worthy
	c. BEP Price	Rp. 3.719/kg	Worthy
2.	R/C ratio	1.57	Worthy
3.	Profitability	57%	Worthy

Source: Primary Data Analysis, 2022

Based on the table above, it can be seen that the results of the BEP analysis of revenues that have been obtained by certified organic rice farming are at the break-even point if the revenue received is Rp. 2.887.179 /planting season. The revenue obtained from the research results is Rp. 3.153.000 then organic rice farming in Lareh Sago Halaban sub-district is feasible because it exceeds the BEP analysis results obtained.

BEP production that has been obtained, certified organic rice farming is at the break-even point if the total production is 502 kg/planting season. The results of the study obtained that the production of organic rice farming in the Lareh Sago Halaban sub-district was 538 kg, so this farming was feasible because the results obtained were greater than the results of the BEP production analysis.

BEP analysis of the prices above, obtained a selling price of 3,719/kg. The results obtained by farmers selling Harvested Dry Grain in the range of Rp. 5.500/kg – Rp. 6.000/kg then, judging from the results of the BEP the price of farming is feasible because the price received by large farmers from the BEP analysis is the price obtained. Farming will be unfeasible if it is received below the calculated BEP while the price is determined by the market prevailing at the time of harvest, sometimes farmers get a high price or a low price depending on the availability of the product on the market at that time.

The income obtained by certified organic rice farmers must not be less than the calculated BEP of income as well as the amount of production. Farming will be unfeasible if it is received below the calculated BEP while the price is determined by the market prevailing at the time of harvest, sometimes farmers get a high price or a low price depending on the availability of the product on the market at that time.

Revenue will increase if the production obtained is higher. Production can be increased by good management during cultivation. Good management can start from perfect soil preparation so that all pest nesting sites are no longer available, selecting the right seeds, and giving the recommended dose of fertilizer. The recommendation for giving compost derived from animal manure is as much as 5-10 tons / ha, while what was found during the research was none of them were in accordance with the recommended dose of fertilization, on average all respondent farmers were still less than the specified dose. Pest control is also very important to obtain good production

results. During the research, 50% of the respondent farmers were faced with plant pests such as pigs and deer due to the location of the land in the hills. In the future, farmers should make traps for these types of pests so that rice is not disturbed, at least make a fence around the land so that these pests cannot enter the land, and the area of land will also effect income, as according to Suratiyah (2006) stated that the production and income to be obtained will be greater if the area of land used is wider.

R/C ratio analysis is an analysis that states the feasibility of a business to generate profits, break even, or lose. Certified organic rice farming can be said to be feasible and provide benefits if the results of the R/C ratio > 1. The greater the results of the R/C ratio means the greater the profits obtained by the farming.

Based on the results of the calculation of the R/C ratio obtained by 1.57, it means that from every Rp. 1 spent, a profit of 0.57 is obtained. The result of the analysis > 1 means that certified organic rice farming is feasible to operate with a profit of 0.57. The results obtained from the R/C ratio obtained in organic rice farming are triggered because the inputs used do not cost much, because they utilize materials that exist in nature to carry out the cultivation process. Cultivation inputs such as compost, farmers make their own from the cow dung they manage, for vegetable pesticides they make from paitan and soursop leaves which also costs nothing. Farmers also use eco enzymes that they make themselves. However, when compared with the research conducted by Rahmad (2017) with a land area 0,4 ha, the feasibility of organic rice farming in the R/C ratio at 5,54. If it is converted to a land area 0.2 ha, the R/C ratio in Lareh Sago Halaban sub-district is still low, due to several factors such as pests and fertilizer dosage.

Profitability/profitability level of certified organic rice farming in Lareh Sago Halaban Sub-district is obtained by farmers after spending production costs at harvest time in running their farming. Based on the calculations that have been obtained, the profitability/profit level of certified organic rice farming in Lareh Sago Halaban is 57%, which means that organic rice farming is able to get a profit of 57% in one growing season period or for 4 months.

CONCLUSIONS AND POLICY IMPLICATIONS

Conclusions

Conclusions from the results of research conducted are as follows:

1. The application of organic rice cultivation standards in Lareh Sago Halaban Sub-district is in accordance with SNI 6729: 2016 concerning Organic Farming Systems with a percentage of 100%. However, there are some things that have not been implemented 100% such as the use of trap crops, the use of vegetable pesticides, and livestock grazing according to commodities with the percentages of 90%, 60%, and 30% respectively.
2. Organic rice farming in Lareh Sago Halaban Sub-district is feasible to be cultivated with the following analysis results:
   a. BEP receipts of Rp. 3.153.000/planting season > BEP revenue Rp. 2.887.179 /planting season
   b. BEP production of 538 kg > BEP production of 502 kg and
   c. BEP price of Rp. 3.719/kg
   d. R/C ratio >1 which is 1.57
   e. Profitability/profit rate obtained by 57%

Policy Implications

Policy implications that can be taken from this research are as follows:

1. Farmers should fertilize compost according to the recommended dose and also in handling pigs and deer pests should be controlled by making fences or traps, because this affects the amount of production.
2. The relevant government should pay more attention to post-harvest facilities and infrastructure such as rice milling, because the availability of facilities also affects the level of income that will be received by farmers.

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