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ASSESSING THE COST STRUCTURE, INCOME, AND EFFICIENCY OF RED CHILI FARMING IN KAYU ARO DISTRICT, KERINCI REGENCY, AND IMPLICATIONS FOR RURAL GOVERNMENT POLICIES

Penilaian Struktur Biaya, Pendapatan, dan Efisiensi Usahatani Cabai Merah di Daerah Kayu Aro, Kabupaten Kerinci, dan Implikasi untuk Kebijakan Pemerintah Pedesaan

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ABSTRACT

This research aims to describe a general overview of red chili farming in Kayu Aro Sub-district and Kerinci Regency generally, analyze the cost structure and income and the feasibility of red chili farming, and to analysis implementation to rural goverment. This research was conducted in Kayu Aro Sub-district, specifically in Batang Sangir and Sungai Tanduk villages. The number sampled in this study was 54 farmers. Both primary and secondary data were utilized. The data analysis methods used were descriptive analysis and quantitative analysis. The research shows that red chili farming in the research area is a traditional practice that has been passed down through generations and remains deeply rooted in the culture. Consequently, all basic farming activities are based on traditional experiences. The first step in red chili farming is seed preparation, where farmers use local seeds known as LOKER (Local Kerinci), obtained from previous harvests, eliminating the need to purchase seeds. Generally, red chili farmers in the research location have small land holdings where they own on average 0.18 hectares. The red chili farming maintenance activities include transplanting, staking, weeding, fertilization, as well as pest and disease control. The cost structure consists of fixed costs *amounting to IDR 1,413,000/MT/year and variable costs amounting to IDR 27,985,000/MT/year. The income obtained from red chili farming is IDR 18,963,400/farmer/MT. The R/C ratio for red chili farming is 1.70, indicating that the farming activity in the research area is profitable and viable to pursue.*

Keywords: cost structure, income, red chili farming, R/C ratio

ABSTRAK

Penelitian ini bertujuan untuk untuk mendeskripsikan gambaran umum usahatani cabai merah di Kecamatan Kayu Aro Kabupaten Kerinci, untuk menganalisis struktur biaya dan pendapatan usahatani cabai merah dan kelayakan usahatani cabai merah serta untuk menganalisis implementasi bagi pemerintah desa. Penelitian ini dilaksanakan di Kecamatan Kayu Aro tepatnya di Desa Batang Sangir, dan Desa Sungai Tanduk. Jumlah petani sampel dalam penelitian ini adalah 54 orang. Metode analisis data yang digunakan adalah analisis deskriptif dan analisis kuantitatif. Hasil penelitian dapat diketahui bahwa Usahatani cabai merah di daerah penelitian merupakan hasil kegiatan turun temurun yang masih membudaya, sehingga segala bentuk dasar kegiatan yang dilakukan dalam usahatani yaitu berdasarkan pengalaman turun temurun. Hal pertama yang dilakukan dalam usahatani cabai merah adalah persiapan benih, petani menggunakan benih lokal yaitu benih jenis LOKER (lokal Kerinci), benih tersebut didapat dari hasil panen sebelumnya sehingga petani tidak melakukan pembelian benih. Rata-rata petani cabai merah pada lokasi penelitian memiliki luas lahan yang sempit. Hal ini dibuktikan dengan banyaknya jumlah petani yang hanya memiliki luas lahan rata-rata yaitu 0,18 ha. Kegiatan pemeliharaan cabai merah di daerah penelitian meliputi: penyulaman, pengajiran, penyiangan, pemupukan, dan pengendalian hama dan penyakit tanaman. Hasil penelitian menunjukkan bahwa biaya terdiri dari biaya tetap sebesar Rp 1.413.000/MT/Tahun, biaya variabel Rp 27.985.000/MT/Tahun. Pendapatan yang diperoleh pada usahatani cabai merah di daerah penelitian adalah sebesar Rp.18.963.400/Petani/MT. Besaran R/C Rasio usahatani cabai merah sebesar 1,70 yang menunjukkan bahwa kegiatan usahatani cabai merah di daerah penelitian menguntungkan atau layak untuk diusahakan.

Kata kunci: struktur biaya, pendapatan, usahatani cabai merah, R/C ratio

INTRODUCTION

The agricultural sector is classified into several sub-sectors, namely food crops, horticulture, plantations, fisheries, livestock, and forestry. Horticulture is one of the agricultural sub-sectors that play a crucial and strategic role due to its high economic value and broad market, both domestically and internationally (Zulkarnain, 2010). One horticultural plant with significant economic value is the red chili (*Capsicum annuum*). Red chili is an agricultural commodity widely consumed by households and various food industries. Indonesian society, in general, enjoys spicy dishes, leading to the use of chili in various traditional

Indonesian dishes such as meatball soup, soto (traditional soup), siomay (dumplings), bakwan (fritters), satay, and other culinary creations. Besides being used as a cooking spice, chili is processed into instant condiments like sambal (chili sauce), various spicy snack products, chili powder, and more. Additionally, red chili is also utilized in medicinal and cosmetic products (Salim, 2013).

Red chili plants are short-lived and are usually cultivated at the end of the rainy season and the beginning of the dry season (Maharti et al., 2019). According to Swastika et al., (2017), red chili peppers require warm daytime temperatures to support their flowering. Thus, slightly dry months with sufficient water availability are ideal for the plant's growth and optimal yields. Red chili plants grow like shrubs or bushes and can reach a height of 1.5 meters. Red chilies contain 0.1-1% spiciness produced by the compound capsaicin (Harpenas & Dermawan, 2014). Higher plants tend to yield more fruits. With increased production, the quality of the chili, including its spiciness, texture, and color, needs to be maintained (Cahyono, 2003).

Chili plants have high adaptive capabilities as they can thrive in both lowland and highland areas, making red chili a potentially viable commodity for development. This is supported by the presence of chili centers in Indonesia, found in lowland and highland regions (Redaksi Trubus, 2013). Excessive rainfall is unsuitable for red chili's adaptation, as they cannot tolerate waterlogging (Widiwurjani, 2016). Waterlogging can lead to root rot, failed flowering, and fruit drop. Excess water can also increase susceptibility to diseases like bacterial wilt (Ralstonia) and anthracnose (BPTP Jateng, 2010).

Overproduction of red chili peppers occurs during the peak harvest, especially in the dry season, leading to a drop in prices due to an excess supply of red chili peppers compared to market demand (Parining & Ratna, 2018). Fluctuations in production and prices during the dry and rainy seasons impact the cost structure and farming income. Moreover, rising farm labor costs contribute to increased expenses. Rofatin & Jati (2020) stated pests and disease control require a lot of labor and high costs of labor. Conversely, the harvest season during the dry season also increases labor costs in harvesting activities. This situation leads to higher expenses for red chili farming, which requires intensive care, in each season.

The demand for red chili pepper commodities has shown an increasing trend throughout the years 2014-2018. The production is consistently tied to planting seasons that will impact an unbalanced supply of red chili throughout the year. Red chili peppers are also vulnerable to price increases, particularly caused by weather disturbances or supply disruptions. This results in fluctuating red chili pepper prices.

The price of red chili peppers tends to sharply rise during the rainy season and major holidays. Extreme weather conditions during the rainy season limit the supply from farmers due to crop failure, causing prices to increase. Similarly, during holidays, increased demand leads to higher market prices (Wibisonya, 2022).

Jambi Province is one of the provinces in Indonesia where the agricultural sector serves as the main livelihood for the majority of its population. Among the horticultural sub-sector commodities produced in Jambi Province are red chili, shallots, bird's eye chili, potatoes, cabbage, tomatoes, and others. Among the various horticultural commodities, red chili is one of the leading products in Jambi Province, cultivated over an area of 4,375 hectares with a production of 471,331 quintals. One of the significant producers of red chili in Jambi Province is Kerinci Regency. Kerinci Regency is the largest producer of red chili in Jambi Province, evidenced by its significant contribution to the total harvested area, equal to 66.31%, and its production contributing 79.12% (Badan Pusat Statistik, 2021).

In the Kerinci Regency, the production of red chili peppers by farmers is also confronted with high cultivation costs. Red chili farming requires higher costs per unit of land area, particularly for labor and production facilities. The significant contribution of labor costs is due to activities ranging from land preparation to harvesting, leading to substantial labor expenses (Latifa & Sinta, 2022). It may be expensive to acquire sufficient land for the production of chili peppers, particularly in Kerinci District's highly populated areas. Additionally, labor expenses can be high, particularly during the busiest farming seasons. These costs include employing farm laborers to help with planting, harvesting, and upkeep. After then, quality chili pepper seeds or other gardening supplies might get pricey. In order to assure higher yields and resistance to pests and diseases, farmers frequently need to invest in hybrids or enhanced cultivars. To grow, chili peppers need a variety of nutrients, and fertilizers may get pricey. In addition, pests and illnesses can pose a serious problem while growing chili peppers, necessitating the use of pesticides and other costly preventative treatments. Chili peppers need regular watering, and in Kerinci District, it may be essential to pump water from deep wells or carry it over long distances, which raises the expense of irrigation. Infrastructure is also important for effective farming. This includes irrigation systems, storage facilities, and transportation tools. These resources might have a significant up-front cost. Energy expenditures for farming activities, such as diesel for equipment and electricity for irrigation systems, may make up a sizable portion of total costs.

There are several cost gaps in the marketing challenge. When the chili peppers are harvested, the cost of transporting them to markets may increase. This is particularly valid if the farm is situated distant from large urban areas or distribution locations. Market access may be expensive and competitive. To guarantee that their chili peppers efficiently reach customers, farmers may need to engage in marketing and distribution operations. However, red chili farming requires relatively more attention in its maintenance, necessitating the allocation of labor and cost for its cultivation. Therefore, farmers in Kerinci Regency need to consider cost structures to maximize their income which will affect their sustainability in farming. The differences in income and cost structures incurred by farmers in each season consequently have implications on the profit received by farmers (Puspitasari, 2020; Susanti, 2021). This is important because agricultural income is one of the considerations in cultivating a particular commodity. In other words, if agriculture is not profitable, there is a possibility for farmers to switch to other commodities or sectors of business (Nuha et al., 2023). In addition, it's essential to consider implications for future farming developments.This research aims to 1) describe a general overview of red chili farming in Kayu Aro Sub-district and Kerinci Regency generally, 2) analyze the cost structure and income and the feasibility of red chili farming, and 3) Implication analysis to rural goverment.

RESEARCH METHOD

The research sample selection technique in Kayu Aro Sub-district involves three villages, namely Batang Sangir Village and Sungai Tanduk Village. This selection was made purposively because Batang Sangir Village has the highest productivity, while Sungai Tanduk Village has moderate productivity in Kayu Aro Sub-district.

The simple random sampling method was used to determine the sample of farmers. Simple random sampling is a method of randomly selecting samples from a population without considering any strata within that population (Sugiyono, 2021). The approach applied in the field involved identifying a list of red chili farmers' names (sample frame) in the research location. Then, a lottery was conducted to select the samples, resulting in a total sample size of 54 farmers. Sampling activities use the census method, which is a sampling technique where researchers collect data from every single member or unit of the population rather than selecting a subset or sample from the population. In essence, it involves carrying out an exhaustive census of the whole population. This approach stands in contrast to numerous sampling techniques, where researchers collect data from a sample that is typical of the entire population and then use statistical methods to derive conclusions about the entire population.

The research methods used in this study are descriptive analysis and quantitative analysis. First, descriptive analysis was used to provide a general overview of red chili farming in Kayu Aro Sub-district, Kerinci Regency. Second, quantitative analysis was used to analyze the cost structure and income of red chili farming in the research location.

The calculation of the total cost can be done using the following formula.

$$TC=FC+VC$$

Note: TC= total cost (IDR); FC= fixed cost (IDR); VC= variable cost (IDR)

The analysis of farmer income requires the determination of total revenue and expenses over a specified period (Sundari, 2011). According to Suratiyah (2015) and Deniel (2001), agricultural revenue refers to the total income obtained from agricultural activities during a specific accounting period, calculated from sales proceeds or by multiplying the production quantity with the unit price. The formula for analyzing agricultural revenue is as follows:

$$TR = Y \times Py$$

Note: TR= total revenue; Y= production quantity; Py= product price

According to Soekartawi (2016), income is the total revenue minus the total cost, which can be mathematically written as follows:

$$Pd = TR - TC$$

Note: Pd = Total Income (IDR/Ha/MT) TR = Total Revenue TC = Total Cost

To address the third research question, the Revenue and Cost Ratio (R/C Ratio) is used. The R/C Ratio can be calculated using the following formula (Suratiyah, 2015):

$$R/C\ Ratio = (Total\ Revenue\ (TR))/(Total\ Cost\ (TC))$$

Third, In order to analyze policy implications for the regional government, descriptive methods were used. Descriptive analysis is a technique for summarizing and presenting data in an understandable and educational way without inferring anything or reaching any judgments about correlations or causality. It may assist provide a clear image of different aspects of governance, demography, services, and infrastructure in rural regions when applied to local government. Making implications and guiding policy decisions may then take place using this information. For rural governments, descriptive analysis is a useful tool for understanding their populations, identifying needs, and formulating effective policies. It offers a data-driven framework for tackling the particular difficulties and possibilities that rural communities confront, thereby enhancing the standard of chilli farmer for rural populations.

RESULT AND DISCUSSION

Farmer's Characteristics

This information provides a snapshot of the characteristics of the sample of red chili farmers, including their age distribution, education levels, family sizes, and farming experience. It can be valuable for understanding the demographics and experience levels of the farmers in the sample, which can be used for various research or policy analysis purposes related to red chili farming. The characteristics of farmers are assessed based on age, education level, family size, and farming experience. The highest age distribution of respondent farmers is in the range of 42-52 years, with a total of 25 individuals a percentage of 46% of the respondents. The education level of farmers in the research area is generally limited to primary school (SD), indicating that the farmers' education level is still relatively low. In line with the research from. Afrizal et al. (2022) also stated that the low education level could impact the technology adoption rate because they tend not to do it more effectively and efficiently. Farmers with less education could be less technologically literate. They might discover it difficult to understand how modern agricultural technology function, how to use them, and how to resolve typical problems. Effective adoption and use of technology can be significantly hindered by this lack of knowledge.

Table 1. The Average Characteristics of Sampled Farmers In 2023

No	Characteristics of Sample Farmer	Red Chili Farmer	
		Interval	Percentage (%)
1	Farmer's age (year)	42-52	46
2	Education Level	Primary School	35
3	Family size (people)	4-5	50
4	Farmer's experience (year)	1-8	54

In the research area, respondent farmers continue to practice farming in a simple manner, following traditional farming practices they have been accustomed to, and relying only on information exchanged among fellow farmers. The average number of dependents in respondent farmers' families is between 4 to 5 individuals, with a frequency of 27 farmers, approximately 50% of the 54 farmers surveyed. The large family size will impact the level of their needs. A larger family frequently has more labor resources available for farming duties. In Indonesia's rural regions, where there are a lot of chili farms, family members frequently contribute significantly to the agricultural labor force. Farmers may benefit from having more family members if they require extra help with planting, weeding, harvesting, and other labor-intensive jobs. This can lessen the requirement for expensive technology or the hiring of more staff.

General Overview of Red Chili Farming

It's possible that farmers acquire knowledge (particularly related to red chili farming) through non-formal education such as training and counseling or through their experiences as farmers (Fatmawati, 2019). Red chili farming in Kerinci Regency is also a traditional practice that has been passed down through generations, making all farming activities based on traditional experiences. The combined experience and knowledge passed down from each generation to the next is beneficial to red chili cultivation in Kerinci Regency. Farmers rely on tried-and-true customs and methods that have stood the test of time. This information includes everything from seed selection to techniques of growing, controlling pests and diseases, and harvesting.

The first step in red chili farming is seed preparation, where farmers use local seeds known as LOKER (local Kerinci) obtained from the previous harvest, eliminating the need to purchase seeds. Generally, red chili farmers in the research location have small land holdings where they own on average 0.18 hectares. Due to their small land holdings, these farmers have limited resources of cultivated agricultural land. Their capacity to increase output or diversify into different crops may be severely hampered by this restriction. Farmers must make the most of their limited land resources. Many of these farmers may practice subsistence farming since they have tiny plots of land, which means they mostly cultivate food for their personal use and to fulfill the basic requirements of their family. This may have an effect on farmer revenue by limiting the amount of excess available for market sale. While some farmers may focus exclusively on subsistence farming, others may depend on the sale of their chili crops to support their families. The small land size could necessitate a focus on high-value crops like chili peppers to maximize income per unit of land. According to Usman & Juliyani (2018), the profits obtained from small-scale farming and limited land ownership are generally insufficient to meet the needs of farmers and their families. Furthermore, the extent of land cultivated by farmers also influences the adoption and implementation of technology (Andrias et al., 2017).

Land preparation involves clearing plant residues and weed roots, also hoeing the land to a depth of approximately 30-40 cm, aiming to loosen and level off the soil for easy planting. Next, farmers sow organic and chemical fertilizers on the land using a hoe to mix them with the soil before planting. Subsequently, raised beds are constructed with a height of 30-40 cm and a width of 70-80 cm. After that, plastic mulch is applied on top, and the covered raised beds are left for about 6-10 days before planting. The last step involves creating planting holes, with the distance between plants 60x60 cm apart to accommodate the red chili seedlings. The stated procedure consists of a number of well considered phases that are created for effectiveness and precision. Each step, from preparing the soil to digging the planting hole, is meant to increase the likelihood that the chili crop will succeed. Better crop management and higher yields can result from this degree of attention to detail.

Red chili maintenance activities in Kerinci Regency include thinning, watering, fertilizing, and pest and disease control. Red chili plants are among those that require a relatively high amount of nutrients such as nitrogen (N), phosphorus (P), and potassium (K), making the use of fertilizers a solution to fulfill their nutrient requirements (Olata et al., 2021). Red chilies can be harvested at 4-5 months old up to 6-7 months old. Harvesting can be done every 2-7 days, depending on fruit maturity and market demand. The red chilies are manually harvested by hand, selecting ripe fruits characterized by their red color, medium firmness, and maximum length. Manual harvesting allows for selective picking, ensuring that only the ripest and highest-quality chilies are collected. This efficiency in the harvest process can reduce waste and labor costs associated with sorting out unripe or damaged chilies later. Manual harvesting is generally gentler on the plants compared to mechanical harvesting methods. This can help minimize damage to the chili plants, ensuring their continued productivity.

Soekartawi (2011) stated that factors of production are everything used in producing output or products. In red chili farming, the use of production factors (production inputs) can affect the increase or decrease of red chili production. The utilization of production inputs in red chili farming in the research area can be observed in the following table.

Table 2. The Average of Production Input Usage on Red Chili Farming, 2023

No	Production Input	Usage	
		Range	Percentage (%)
1	Land size (ha)	0.001-0.160	63
2	Seed (kg)	0.001-0.250	63
3	Pesticides (L)	1-10	47
4	Fungicides (kg)	1-5	59
5	Herbicides (L)	1.5-2	74
6	Organic fertilizer (kg)	100-600	55
7	NPK fertilizer (kg)	1-100	61
8	KCL fertilizer (kg)	1-75	74
9	Sp-36 fertilizer (kg)	1-50	74
10	Labor (Total Working Days)	51-100	81

Table 2., This represents the range of land sizes used for chili farming, with the majority of farmers (63%) having land sizes between 0.001 and 0.160 hectares. Larger land sizes can potentially lead to higher chili production. The range of seed usage indicates the quantity of chili seeds sown per hectare of land. In this case, 63% of farmers use between 0.001 and 0.250 kilograms of seeds per hectare. Farmers use pesticides to control pests in their chili crops. The range of pesticide usage varies from 1 to 10 liters, with 47% of farmers falling within this range.

Fungicides are used to manage fungal diseases. A majority of farmers (59%) use between 1 and 5 kilograms of fungicides. Herbicides are used to control weeds. A significant percentage of farmers (74%) use between 1.5 and 2 liters of herbicides. This represents the amount of organic fertilizer applied per hectare of land. Organic fertilizer usage ranges from 100 to 600 kilograms, with 55% of farmers falling within this range. NPK fertilizers provide essential nutrients to the chili plants. The range of usage is from 1 to 100 kilograms, with 61% of farmers using this range. Potassium chloride (KCL) fertilizer usage ranges from 1 to 75 kilograms, with 74% of farmers using this range. SP-36 fertilizer, which provides phosphorus, is used in quantities ranging from 1 to 50 kilograms, with 74% of farmers in this range. The total number of working days needed for chili farming ranges from 51 to 100 days, with 81% of farmers falling within this range. This indicates that chili farming often requires significant labor input.

These data points shed light on the land, seeds, fertilizers, pesticides, and labor input techniques of red chili growers. Understanding these input ranges can aid in the formulation of suggestions for the red chili farming industry that optimize resource usage, boost production, and ensure sustainable agricultural techniques. Resources utilization or production inputs in the Kayu Aro Sub-district for red chili farming include the use of seeds, pesticides, fungicides, herbicides, organic fertilizers, NPK fertilizers, KCL fertilizers, SP-36 fertilizers, and labor.

Cost Structure and Income of Red Chili Farming

In general, the costs expensed in the production process consist of fixed costs and variable costs. Fixed costs include production equipment depreciation and land rent, while variable costs consist of costs related to production facilities and labor expenses. According to Yunus & Hastuti (2007), costs are the sacrifices made by producers (farmers, fishermen, and livestock breeders) in managing their businesses to achieve maximum results.

Based on Table 3., the cost structure consists of fixed costs, which include land rent and equipment depreciation, while variable costs comprise seed costs, pesticide costs, fungicide costs, herbicide costs, organic fertilizer costs, NPK fertilizer costs, KCL fertilizer costs, SP-36 fertilizer costs, external labor costs, stakes (stems) costs, raffia rope costs, polybag costs, and sack purchases. The average production cost for one planting season is IDR 29,398,000/Farmer/MT.

The cost structure in Table 3. also indicates a relatively high average total variable cost due to several production expenses being quite expensive. For instance, the cost of pesticide usage reaches an average of IDR 10,133,000 due to the high prices of pesticides and their extensive use, especially during the rainy season when pesticide application tends to increase. The cost of external labor is also quite high at IDR 6,101,000 per farmer per metric ton. This is because local farmers employ external labor for certain labor-intensive stages of farming, such as land preparation, planting, and harvesting. In line with the study by Effran & Kurniasih (2021), the increase in pesticides and labor costs in the research area has a significant impact on the revenue of red chili farming.

Table 3. The Average of Total Cost Production on Red Chili Farming, 2023

	Description	Costs (IDR/MT)
A	FIXED COSTS	
1	Land rent cost	1,333,000
2	Production equipment depreciation	80,000
	Total Fixed Cost	1,413,000
B	VARIABLE COSTS	
1	Seed Costs	24,000
2	Pesticides Costs	10,133,000
3	Fungicides Costs	1,434,000
4	Herbicides Costs	237,000
5	Organic Fertilizer Costs	1,298,000
6	NPK Fertilizer Costs	2,491,000
7	KCL Fertilizer Costs	911,000
8	SP-36 Fertilizer Costs	256,000
9	External Labor Costs	6,101,000
10	Family Labor Costs	1,049,000
11	Stakes Costs (Stem)	350,000
12	Rafia ropes Costs	25,000
13	Polybag Costs	665,000
14	Sacks Costs	185,000
	Total Variable Costs	27,985,000
	Total Costs	29,398,000

Considered costs are those assumed to be paid during the farming period, such as land rent, equipment depreciation, and family labor. Paid costs are the expenses actually paid or incurred by the farmer during the farming period. All paid costs come from variable expenses. These two types of costs are distinguished because in farming activities, land rent and family labor costs may not actually be paid by the farmer, but they are taken into account to calculate the total cost and agricultural profit. Through the calculations in Table 4., it can be seen that farming income is higher than farming profit because the amount of income obtained by the farmer is highly influenced by the magnitude of the paid production costs. These findings align with the research conducted by Damayanti & Herdian (2016), stating that the selling price of red chili peppers exceeds their production costs, resulting in profits that cover the production expenses.

Table 4. The Average of Income on Red Chili Farming, 2023

	Description	Per Farmer
A	REVENUE	
1	Red Chili Production (kg)	2,022
2	Price (IDR/kg)	22,700
	Total Revenue (IDR/MT)	45,899,400
B	IMPUTED COST (IDR)	
1	Land rent cost	1,333,000
2	production equipment depreciation	80,000
3	Family Labor Cost	1,049,000
	Total Imputed Cost (IDR/MT)	2,462,000
C	PAID COST (IDR)	
1	Seed Costs	24,000
2	Pesticides Costs	10,133,000
3	Fungicides Costs	1,434,000
4	Herbicides Costs	237,000
5	Organic Fertilizer Costs	1,298,000
6	NPK Fertilizer Costs	2,491,000
7	KCL Fertilizer Costs	911,000
8	SP-36 Fertilizer Costs	256,000
9	External Labor Cost	6,101,000
10	Stakes Costs (Stem)	350,000
11	Rafia ropes Costs	25,000
12	Polybag Costs	665,000
13	Sacks Costs	185,000
	Total Paid Cost (IDR/MT)	26,936,000
D	Total Cost (B+C) (IDR/MT)	29,398,000
E	Profit (A-D) (IDR/MT)	16,501,400
F	Income (A-C) (IDR/MT)	18,963,400

Based on Table 4. shows that the average income of red chili farming in the research area is IDR 18,963,400/farmer/MT. This table provides a comprehensive overview of the financial aspects of red chili farming per farmer, including revenue, costs (both imputed and paid), profit, and income. It's a valuable tool for analyzing the economic aspects of chili farming and making informed decisions regarding resource allocation and profitability. There are imputed costs as well as paid costs. According to Table 4., the Price of red chili was IDR 22,700/kg in Kerinci during the research period. The price is higher compared to the price in the previous year (2022), which was only IDR 13,517/kg with a total production average of 1,279/Kg/Ha/MT in Maros Regency (Arti et al., 2023). Another study conducted by Sari et al. (2020) also showed different results, where in 2018 the price of red chili was IDR 8,000 per kg with an average production of 4,064 Kg/Ha/MT. It means the income received by farmers also depends on the production quantity and its price, which will possibly be different in each month, year, and place.

Efficiency Analisys of Red Chili Farming

The revenue per farmer is IDR 45,899,400 and the paid costs are IDR 26,936,000 per farmer, resulting in an R/C Ratio of 1.70 per farmer, indicating that red chili farming in the research area is profitable. According to the theory (Soekartawi, 2016), if R/C > 1, then the business is profitable or worth pursuing. An R/C Ratio value of 1.70 means that for every rupiah spent on red chili farming, the farmer will obtain revenue of IDR 1.70. The R/C Ratio is a critical indicator of profitability in agricultural ventures. In the case of red chili farming, a higher R/C Ratio indicates better profitability.

Compared with the previous research by Ridiyanto et al. (2023), where the R/C Ratio value for red chili farming in the Suka Maju Village, Cihaurbeuti District, Ciamis Regency was 2.51, this value is much higher than the R/C Ratio value in the research area, which is 1.70. This suggests that, in the Suka Maju Village case, red chili farming was more profitable compared to the research area you mentioned. The R/C Ratio is a critical indicator of profitability in agricultural ventures. In the case of red chili farming, a higher R/C Ratio indicates better profitability. The previous research in Suka Maju Village reported a significantly higher R/C Ratio (2.51) compared to the research area, suggesting that farmers in Suka Maju Village may have achieved better returns on their investment in red chili farming. The difference in R/C Ratios emphasizes the importance of conducting location-specific analyses for agricultural ventures. Farmers should consider the local context, input costs, and market conditions to assess the potential profitability of chili farming accurately. Farmers in the research area with the lower R/C Ratio may explore opportunities to improve their profitability. This could involve optimizing input costs, enhancing crop management practices, and seeking strategies to secure better market prices for their chili produce. In summary, while red chili farming in the research area is profitable with an R/C Ratio of 1.70, it's essential to acknowledge the variation in profitability across different regions in Indonesia. The comparison with the previous research case highlights the need for farmers and policymakers to adapt strategies and practices based on local conditions to maximize profitability in chili farming. Similar results are also demonstrated in studies conducted by Chonani et al. (2014) and Maharti et al. (2019), where the benefit-cost ratio (R/C) was also greater than 1, namely 1.80 and 2.83, respectively. These three research outcomes collectively indicate that red chili farming is indeed feasible and profitable for farmers, especially in Kerinci Regency.

Implication Policy for Red Chili Farming by Rural Goverment

These three research outcomes collectively indicate that red chili farming is indeed feasible and profitable for farmers, especially in Kerinci Regency. The village government has an important role in supporting chili farming in Kerinci District. They can take concrete steps to help chili farmers increase production, efficiency, and sustainability in their farming.

1. Rural governments can provide chili farmers with access to the latest information on best farming techniques, pest and disease management, fertilization, and sustainable agricultural practices. They can also conduct training and workshops for farmers to adopt the latest practices. All rural governments combined extension help, such as classes on agricultural practices and optimization strategies, with input support instruments like gardening tools, seeds, and fertilizer. All of the studies assessing these strategies found that the production of the targeted crops increased (Lencucha et al., 2020).
2. Help farmers gain access to important resources such as affordable and suitable-quality seeds, fertilizers, and pesticides. This can be done through collaboration with suppliers or government programs that provide agricultural input assistance.
3. It helps in water management, including efficient irrigation. This will help farmers face the challenges of dry and rainy seasons and increase crop yields. Through an increase in salinization and water pollution, irrigation water management methods and procedures at the plot/field level as well as at the level of canal command systems have had a negative impact on land and water resources. The development of scientific engineering methods and techniques for optimal irrigation management, environmental considerations for the existence of existing natural resources related to agriculture, and the choice to adopt site-specific agronomical practices are the ways to construct irrigated agriculture sustainablym (Rajput, 2023).
4. Help farmers sell their crops in a profitable way. This may involve the formation of farmer cooperatives, access to local or national markets, and the promotion of local agricultural products.
5. Encourage the adoption of more modern and innovative agricultural technology, such as sensor-based agricultural monitoring, automatic irrigation systems, or environmentally friendly organic farming practices. Small-scale farmers may face major obstacles because of the initial investment in technology, worries about data privacy, and problems with technology's compatibility with current agricultural techniques. Furthermore, these technologies' scalability and adaptation to various farming situations may restrict their application in some areas. To overcome these obstacles, education and training programs must be put in place to

provide farmers the knowledge and abilities they need to use these technology efficiently (Karunathilake et al., 2023).

6. Encourage the active participation of farmers in decision-making related to agriculture in their villages. This could involve them in agricultural planning, resource allocation, and relevant policymaking.
7. Rural governments have an important role in facilitating cooperation between farmers, providing resources, and creating an environment that supports sustainable and profitable chili farming. With effective village government assistance, chili farmers can increase their harvests, increase their income, and contribute to the progress of the agricultural sector in the village.

CONCLUSION AND SUGGESTION

Conclusion

Red chili farming in the research area is a traditional practice that has been passed down through generations and remains deeply rooted in the culture. Thus, all the basic practices carried out in farming are based on traditional experience. The first step in red chili farming is seed preparation, where farmers use local seeds known as LOKER (local Kerinci) obtained from the previous harvest, eliminating the need for seed purchases. Generally, red chili farmers in the research area have small land holdings where they own on average 0.18 hectares. The red chili farming maintenance activities include transplanting, staking, weeding, fertilization, as well as pest and disease control. The research results show that the income obtained from red chili farming is IDR 18,963,400/farmer/MT. The R/C Ratio for red chili farming is 1.70, indicating that the farming activity is profitable and worth pursuing in the research area. These three research outcomes collectively indicate that red chili farming is indeed feasible and profitable for farmers, especially in Kerinci Regency. The village government has an important role in supporting chili farming in Kerinci District. They can take concrete steps to help chili farmers increase production, efficiency, and sustainability in their farming.

Suggestion

Based on the conclusions, it is recommended that farmers continue their cultivation of red chili peppers as the commodity proves to be viable and provides high income. Rural governments have a significant role in promoting farmer collaboration, providing resources, and fostering an atmosphere that fosters successful and long-lasting chili farming. Chili farmers may boost their yields, raise their incomes, and advance the community's farming sector with the help of an efficient rural government.

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