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Study of Local Commodity-Based Farming Development: Case Jujun Village, Keliling Danau District, Kerinci Regency

Fuad Muchlis[1], Lizawati[2], Fitry Tafzi[3], Endy Effran[4*]

[1,2,3,4]Faculty of Agriculture, Universitas Jambi, Jl. Jambi-Muara Bulian KM.15 Mendalo Indah, Muaro Jambi 36361, Jambi, Indonesia

ABSTRACT: Orange is one of the mainstays and potential local horticultural commodities in Jambi Province and is especially cultivated in Kerinci Regency. This research will be carried out in Jujun Village, Keliling Danau District, Kerinci Regency, with the consideration that this village is an Integrated Laboratory Village of the Faculty of Agriculture, University of Jambi. The research respondents were local citrus owners and cultivators. This study aims to describe the description of local citrus farming and feasibility analysis of local citrus farming in Jujun Village, Keliling Danau District, Kerinci Regency. The analytical method used is the R/C ratio and B/C ratio, to determine the feasibility of local citrus farming.

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Corresponding Author: Endy Effran

KEYWORDS: Development Farming; Farming Feasibility; Local Commodities; Citrus

INTRODUCTION

Local oranges (chayote, tangerine, lime, and others) as one of the national commodities that have competitive potential. Commodities can be increased through profitability and market share. Factors leading to competitiveness include technology, productivity, inputs and costs, industry structure, and demand conditions (A. N. Rahman, 2019). Efforts to increase the competitiveness of local oranges are through improving cultivation technology (including increasing productivity, quality, inputs, and costs), management of market structures, industrial structures, and local demand conditions for oranges. These efforts are expected to strengthen the national economy as well as citrus centers in particular.

Types of oranges that are export commodities are Siamese oranges or tangerines and large oranges. Based on data on the development of orange production in Indonesia in the last three years, namely in 2018 - 2020, there has been an increase in production. Table 1 below shows Indonesia's orange production in 2018-2020.

Table 1. Production of Siamese Oranges and Indonesian Large Oranges in 2018 - 2020

Year	Production	
	Siamese orange /Keprok (Tons)	Large oranges (Tons)
2018	2,408,043	102,399
2019	2,444,518	118,972
2020	2,593,384	129,568

Source: *Badan Pusat Statistik Republik Indonesia, 2021*

Based on these data it is known that the increase in production of Siamese oranges/tangerines and large oranges continues to experience an increase in production. This indicates that Indonesian citrus commodities can compete with citrus commodities from abroad and can compete in the global market. This citrus commodity needs attention from the government so that Indonesian citrus commodities will continue to exist in the future.

Jambi Province is one of the provinces in Indonesia which has citrus farming which is not inferior to oranges from other provinces in Indonesia. The orange production center in Jambi Province is Kerinci Regency where this area is one of the districts in Jambi Province with quite high local orange production. According to statistical data for the 2018-2020 Kerinci Regency there has been an increase in annual production. The following is a table of local orange production data for 2018 – 2020.

Table 2. Total Production of Local Oranges in Kerinci Regency in 2018-2020

No	Subdistrict	Produksi (Ton)		
		2018	2019	2020
1	Gunung Raya	4050	28200	5710
2	Bukit Kerman	25650	23460	24074
3	Batang Merangin	0	100	0
4	Keliling Danau	60830	79302	122328
5	Danau Kerinci	33843	500	800
6	Sitinjau Laut	0	50	400
7	Air Hangat	0	0	0
8	Air Hangat Timur	0	230	3305
9	Depati VII	26	185	212
10	Air Hangat Barat	0	356	968
11	Gunung Kerinci	360	3500	1578
12	Siulak	513	783	1481
13	Siulak Mukai	166	291	1875
14	Kayu Aro	9	204	213
15	Gunung Tujuh	1350	1900	1311
16	Kayu Aro Barat	225	1595	715
	Jumlah	127022	140656	164970

Source: Badan Pusat Statistik Kabupaten Kerinci, 2020

Based on the data in table 2 above, it can be seen that the growth trend for orange production from 2018 to 2019 is 90.3% or 140,656 Tons and the growth in orange production in 2020 has decreased to 85.3% or 1644,970 Tons. This happens due to immature plants and damaged plants. In general, the amount of orange production from 2018 – 2020 has increased significantly.

According to (Suratiyah, 2009), viewed from the point of efficiency, the more land cultivated the higher the production and income per unit area. Based on this, local orange production can still be increased by optimizing immature crops.

Some things that need to be considered in local orange farming are labor production factors, the availability of labor In general, local orange farming in Kerinci Regency uses labor from within the family itself, consisting of father, mother and child, this is done to streamline expenses, especially labor costs, but does not rule out the possibility of using labor outside the family for certain jobs.

Later in the process Production activities also require capital. According to (Hanafie, 2010), (Suratiyah, 2009), (Shinta, 2010), and (Soekartawi, 2006) the size of capital in agricultural business depends on the scale of the business, the size of the business scale is largely determined by the size of the capital used. The larger the scale of the business, the greater the capital used. The capital used in local citrus farming in Kerinci Regency is used to buy seeds, medicines and buy fertilizers.

Judging from the use of technology in local citrus farming in Kerinci Regency, it still uses simple farm management technology. Based on development data, it is known that local citrus farming has a great opportunity to be developed even though production is still relatively fluctuating. This study aims to describe the description of local citrus farming and feasibility analysis of local citrus farming in Jujun Village, Keliling Danau District, Kerinci Regency.

RESEARCH METHODS

The design of this research is cross-sectional. The research will be carried out in Jujun Village, Keliling Danau District, Kerinci Regency. The choice of location was based on local orange production, which has the largest amount of production compared to other villages. The time of research will be carried out in May - November 2022. The object of the research is to identify the feasibility of local citrus farming.

The research variables are all costs incurred by farming in the form of investment, costs of agricultural equipment, labor, fertilizers, and medicines. Research data is sourced from primary and secondary data taken using observation, direct interviews, and in-depth interviews.

Research data collection was carried out in two stages. The first stage is collecting data (questionnaire test, testing the validity and reliability of the instrument). The second stage is primary data and secondary data. Determination of the sample area is done by survey method amounted to 25 respondents.

The data analysis method used in this research is descriptive research analysis. Descriptive analysis is used to describe the conditions and situations in the research in the form of statements, which are described in words, and to see the general description

and characteristics of the respondents in this study (respondents). Knowing the feasibility of local citrus farming is used analysis of the R/C ratio and B/C ratio.

RESULTS AND DISCUSSION

Description of the Research Area

Kerinci Regency is one of the western tip areas of Jambi Province which is directly adjacent to West Sumatra Province and Bengkulu Province. Geographically, Kerinci Regency is located between 1º40'-2º26' South Latitude and 101º08'-101º50' East Longitude. In general, the Kerinci Regency area has the following administrative boundaries:

North: South Solok Regency, West Sumatra Province;
South: Merangin Regency, Jambi Province and Muko-Muko Regency, Bengkulu Province;
West : City of Sungaipuh, Jambi Province and Pesisir Selatan Regency, West Sumatra Province;
East: Bungo and Merangin Regencies, Jambi Province.

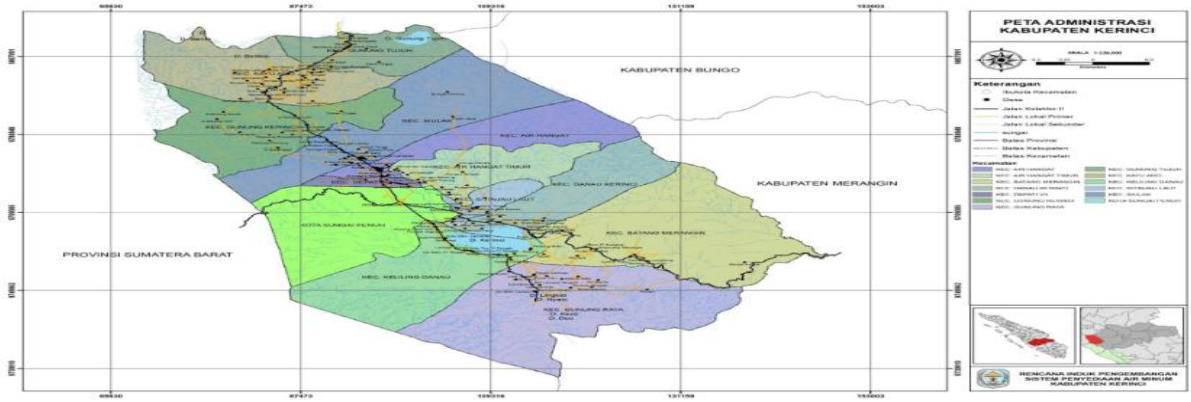

Figure 1. Administrative Map of Kerinci Regency

Kerinci Regency can be grouped into several morphological units, namely plains, smooth undulating hills medium wave hills, and mountains. Judging from the morphology and distribution of the rocks, an orientation towards the north will find a higher morphology, namely the morphology of wave hills to mountains, followed by variations in the types of rocks present. Whereas in the southward orientation, you will find relatively similar lowland morphology and rocks. Areas with low morphology have narrow plains, whereas the lowlands are the cracks of the hills. This condition will certainly affect the distribution of natural resources and as a consideration in determining the allocation of space in the future.

The undulating and hilly morphology of the area is an obstacle to the development of regional infrastructure, especially the development of the road network. Facing rough terrain with steep, hilly cliffs and frequent landslides necessitates the application of special technology in the construction of the road network. Development of built-up areas, in addition to the limited land area of TNKS and productive rice fields, the condition of undulating land with a high degree of steepness in hilly areas is one of the obstacles in the development of settlements outside of productive land

The total area of Kerinci Regency is 332,814 Ha or 3,328.14 km^2, where more than half of the total area, namely 1990.89 km^2, is the TNKS area and 1337.15 km^2 is for cultivation areas with an area of 1337.16 km^2 and the rest is for residential areas. The administrative area of Kerinci Regency consists of 16 sub-districts with a total of 285 villages and 2 sub-districts with 12 sub-districts. The districts that have the largest area in Kerinci Regency are Batang Merangin (14.30%), Keliling Danau District (11.00%), Gunung Raya (10.40%) and followed by other Regencies, where the area for each sub-district area in The scope of Kerinci Regency is presented in the following figure.

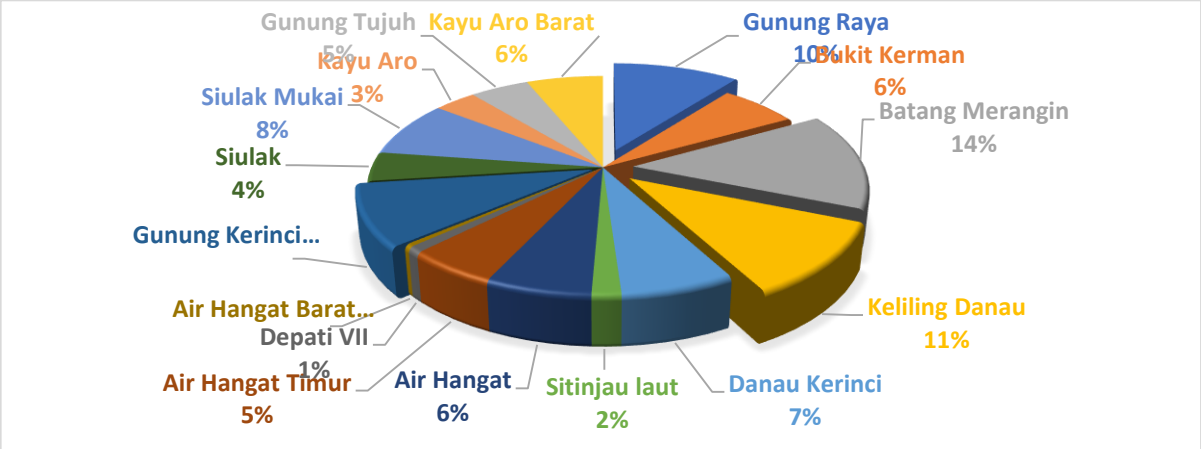

Figure 2. Subdistrict area in Kerinci Regency
Source: *BPS Kerinci Regency 2020.*

Population Conditions

The population is the condition of people living in an area who have potential resources and play a role in the growth and development of the economy in that area. This is because residents have the knowledge and ability to develop a particular area. The population of Kerinci Regency in 2020 is 238,682 people (Badan Pusat Statistik Kabupaten Kerinci, 2020)

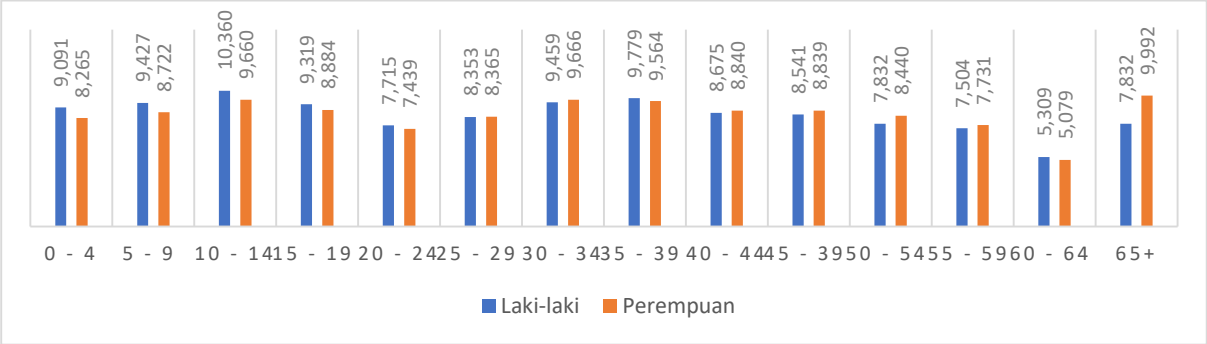

Figure 3. Total Population of Kerinci Regency by Age and Gender in 2020
Source: *BPS Kerinci Regency 2020*

Based on BPS data for Kerinci Regency 2020, it is known that the female population is more than the male, namely 119,486 female residents and 119,196 male residents. Based on the productive age, namely between the ages of 15-59 years, there were 154,945 people. Most of the population aged 15 years and over (61.76%) work and depend on their livelihood as farmers. The large number of residents entering old age and entering the non-productive age will indirectly affect the development of businesses in the agricultural sector. Where the younger population, especially those working in agriculture, tend to have a strong and dynamic physique in managing their business, so they can work stronger than older people (wiyono, 2015).

The population of a region is a potential that influences the economic growth and development of a region. The number of residents in Jujun Village in 2021 is 706 people consisting of 357 male souls and 349 female souls. The following is a classification of the population based on gender in Jujun Village.

Table 3. Classification of Population-Based on Gender in Jujun Village Year 2022

Hamlet	Resident		Amount (Person)	Percentage (%)
	Man (Person)	Woman (Person)		
Dusun Lamo	100	108	208	28,5
Dusun Baru	151	154	305	41,8
Dusun Talang Banjir	114	102	216	29,6
Jumlah	**365**	**364**	**729**	**100,0**

Source: Jujun Village Office, 2022

Based on Table 3, it is known that the percentage distribution of the population by sex in Jujun Village is highest in Dusun Baru with 151 men and 154 women with a percentage of 41.8% and the number between men and women is almost the same, namely respectively as many as 365 people and 364 people. This shows that the growth between men and women in Jujun Village is almost balanced with a percentage difference of 0.1%. The total population of Jujun Village is 729 people, there are 258 heads of families. The population growth rate in Jujun Village has increased by 12 people in 1 year and the population density in Jujun Village is still relatively low, namely 33.9 people/Km2 because the large area owned by Jujun Village is quite large for the agricultural sector.

Residents carry out various activities whether it is main or priority or side. Activities carried out by residents are also a process of empowering and utilizing the potential of existing resources both from the physical, economic, social, and cultural environment in humans which are commonly referred to as livelihoods. Residents in Jujun Village have a variety of livelihoods as a source of main or side activities and a source of income to make ends meet. The following are some of the livelihoods of residents in Jujun Village in 2022 which can be seen in Table 4 as follows. It can be seen in Table 4 that the majority of the population in Jujun Village earns a living as farmers with 178 people with a percentage contribution of 69.3% of the 257 residents based on livelihood. This shows that the people in Jujun Village are dominated by livelihoods in the agricultural sector where the area has high potential resources in the agricultural sector. The agricultural sector occupied by farmers in Jujun Village is mostly engaged in farming the commodities of paddy rice, Siam oranges, honey, and cinnamon.

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Table 4. Population Distribution Based on Livelihoods in Jujun Village in 2022

Work	Number of Population (Person)	Percentage (%)
Farmer	178	69,3
Trader	26	10,1
Civil Servant	14	5,4
Honorary Teacher	7	2,7
Village Midwife	1	0,4
Pensionary	4	1,6
Police/Army	3	1,2
Driver/Transport	2	0,8
Fisherman	15	5,8
Daily Labor	7	2,7
Jumlah	257	100

Source: Jujun Village Office, 2022

Referring to table 4 above, the majority of the main livelihoods are in the agricultural sector. One of the livelihoods of the population in the research area is local citrus (orange siam madu) farming. This citrus plant is a plant that has been growing for a long time, even this plant has been cultivated by residents for commercial purposes. One of the supporting factors for citrus plants to be easily cultivated in this area is the agro-climatic factors which are very suitable for citrus plants such as climate, soil or land conditions, altitude, temperature, and rainfall.

The suitability of the Siamese orange cultivation techniques carried out by farmers can be seen by comparing the Siamese orange cultivation techniques carried out by farmers with the Standard Operating Procedures (SOP) of Siamese oranges. It is known that 46% of the cultivation techniques carried out by farmers are not following Siamese orange SOP. Incompatibility of cultivation techniques occurs in fertilizing, watering, and spraying activities to control pests and plant diseases. Where in fertilizing activities and spraying activities for pests and plant diseases the dose and frequency carried out by farmers exceeds the limits recommended in the SOP for Siamese oranges.

Cost of Local Citrus Farming

This local citrus cultivation process requires farming costs where production costs include the real costs of labor and the real costs of production facilities. In farming income, two elements are used, namely the elements of income and expenses from the farming business. In Table 5 it can be seen that the cost calculation is taken from the real costs paid by farmers in citrus farming. The costs paid in citrus farming activities carried out by respondents are in the form of planting, maintenance, harvesting, and others (Gustiyana, 2004).

Table 5. Cost of Local Citrus Farming in the research area in 2022

No	Production Cost (Rp)	Average /Ha (Rp)
1	Fertilizer	1,914,200
2	Drugs	714,640
3	**Labor**	**1,006,400**

Source: *Primary Data, 2022*

Based on table 5 it is known that the average production cost of citrus farming in the study area is Rp. 3,635,240, - per farmer. This production cost consists of the cost of fertilizers, medicines, and labor.

Revenue and Income of Local Citrus Farming

Then seen from the income where the income is the difference between revenue and farming costs incurred. The income of a farm includes income from the main farm and other farms. According to (Soekartawi, 2002) Farming revenue is the multiplication of production with the selling price of the product. In farming, it is often also called the gross farm income or production value. The amount of revenue received by citrus farmers in the study area is Rp. 18,915,600, - and the net income of citrus farming is revenue minus costs incurred, which is Rp. 15,280,360, - per farmer. In detail regarding costs, receipts, and income can be seen in the following table.

Table 6. Production, Prices, Production Costs, Acceptance and Income of Local Citrus Farming in the Research Area in 2022.

No	Description	Average /farmer
1	Production (kg)	69,960
2	Selling Price (Rp)	6,760
3	Revenue (Rp) (3)	18,915,600
4	Production Cost (Rp) (4)	3,635,240
	Income (Rp) (3-4)	15,280,360

Source: *Primary Data, 2022*

The production received by farmers is not always the same, where there are mostly farmers who do have a large income and that is due to the use of sufficient production costs and the process of planting, fertilizing, and caring for sweet orange plants themselves is carried out properly, while there are farmers who have income which is not that big is due to limited production costs so that the process of fertilizing and caring for local citrus plants is not optimal.

Feasibility of Local Citrus Farming

Based on the income of the local citrus farmers above, it is necessary to analyze the investment criteria used to measure the financial feasibility of local citrus farming in the study area, which includes analysis of the Net Benefit Cost Ratio (Net B/C Ratio), and Revenue Cost Ratio (R/C). The interest rate or discount rate used is 6%. Orange farming in Keliling Danau District can continue to be implemented if it meets the eligibility requirements of all investment criteria. The results of the financial feasibility analysis of local citrus farming in Keliling Danau District can be seen in the following table.

Table 7. Criteria for the Feasibility of Local Citrus Farming in the Research Area 2022

Investment criteria	Value	Feasiblity
Net B/C ratio	10.8	Feasible
R/C ratio	10.4	Feasible

Source: *Primary Data 2022*

Based on the value of the Net B/C Ratio obtained from the sum of the present value of positive net beneficial cash flows divided by the sum of the present value of negative net beneficial cash flows in the early year of farming. The results of calculating the Net B/C Ratio on citrus farming with an interest rate of 6% is greater than 1, which is equal to 10.8. This value indicates that

real farming is feasible to be cultivated. The Net B/C value of 10.8 means that farming will bring benefits of 10.8 times the costs incurred by farmers. This value indicates that citrus farming can still provide greater revenue (benefit) than the costs incurred.

The results of this study are in line with research conducted by (Sumartono et al., 2019), in his research stated that the results of the comparison between the positive present value and the negative present value obtained a Net B/C value of 6.53. This means that every expenditure of one rupiah will provide benefits for citrus farmers in the research location of Rp. 6.53 and seen from the calculation of the Net B/C this business is feasible to run with an indicator of a Net B/C value greater than one (Net B/C> 1).

Based on the results of this study it can be interpreted that local citrus farming is in a profitable position and it is predicted that citrus farming in the research area will continue to develop in the future, with the condition that farming management needs to be improved so that product quality is of the best quality. Then with the many requests for oranges both from within Jambi province and outside the province, including from West Sumatra, Jakarta, and other areas.

in accord with (Soekartawi, 2002) states that the feasibility analysis of the R/C ratio is a comparison between revenue and costs incurred. In this analysis, with a high R/C value, the profits for farmers will also increase. From the analysis results obtained results of 10.4. This explains that every expenditure of Rp. 1.00 will generate revenue of Rp. 10,4. From these results, it can be explained that R/C> 1, which means greater revenue so farming can be said to be feasible.

CONCLUSION

Based on the results and discussion regarding the feasibility of local citrus farming in Jujun Village, Keliling Danau District, Kerinci Regency, it can be concluded: (1) Local citrus farming in the study area is classified as conventional farming, this local citrus farming system is still not managed properly. (2). The Net B/C value and R/C ratio is more than 1, indicating that citrus farming can still provide greater revenue (benefits) than the costs incurred. Based on the relatively large potential of orange products, it is necessary to develop collaboration between stakeholders, both government, universities, and the private sector to develop the potential of orange products in the Kerinci district. Assistance from extension agents regarding skills and knowledge of good citrus farming management is urgently needed by local citrus farmers so that the farming continues and produces production. With this considerable potential, a good downstream system is needed in marketing local oranges originating from Kerinci Regency.

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