Journal of Economics, Finance and Management Studies

ISSN (print): 2644-0490, ISSN (online): 2644-0504

Volume 06 Issue 09 September 2023

Article DOI: 10.47191/jefms/v6-i9-12, Impact Factor: 7.144

Page No: 4252-4262

Analysis of Poverty Level and Income Inequality of Vegetable Farming Households in Ngadirejo Village, Pasuruan District

Muhammad Hafidhul Wahyi¹, Endang Yektiningsih ²,Dita Atasa³

^{1,2,3} Agribusiness Study Program, Faculty of Agriculture, University of Pembangunan Nasional "Veteran" Jawa Timur, Indonesia

ABSTRACT: The high production of vegetable commodities in Ngadirejo Village, Tutur District, Pasuruan Regency is not comparable to the level of welfare of vegetable farming households. This study aims to identify the various sources of household income of vegetable farmers, analyze their income and its contribution to total income. The total sample of 85 farmer households was taken using the simple random sampling method with the assumption that vegetable farming households are homogeneous. To analyze the data used (1) quantitative descriptive (2) Sajogyo's poverty theory approach, and gini ratio analysis. The results showed that the sources of household income for vegetable farmers varied, from on-farm and non-farm activities. This income is classified as high which is indicated by the high percentage of achievement, namely 81.52% of total income. This amount is above the Regional Minimum Wage (UMR) of Pasuruan Regency. The poverty rate for vegetable farming households is in the moderate category, with a percentage of 76.5%. The level of income inequality based on the calculation results of the Gini Ratio is at a low level with a Gini ratio value of 0.18.

KEYWORDS: vegetable farmer household income, income distribution, gini ratio, poverty

I. INTRODUCTION

The agriculture, forestry and fisheries sectors have an important role in economic activities in Indonesia, this can be seen from their contribution to the Gross Domestic Product (GDP) which reaches around 13.28 percent. East Java Province is one of the provinces in Indonesia with high production of agricultural commodities. One of the agricultural sectors that makes a major contribution to regional income in East Java Province is the horticulture sub-sector, namely vegetable, fruit and flower crops. Vegetable production in Indonesia reached 14,803,776 tons with a planting area of 1,266,363 hectares (Ministry of Agriculture, 2022).

Pasuruan Regency is one of the vegetable production centers in East Java Province which is dominated by potatoes and cabbage with the highest productivity. In 2022 it is capable of producing as much as 73.1% of the total production in East Java which is dominated by potato and cabbage production. Ngadirejo Village is one of the villages in Pasuruan Regency where most of the farmers are cultivating vegetables, especially cabbage and potatoes. This village has geological characteristics in the form of land suitable for agriculture and plantations, located on the slopes of Mount Bromo with an altitude between 600 - 1,600 meters above sea level. The soil conditions are fertile and the average air temperature is around 250 C. The vegetable farming contributes quite a lot to the income of farmer households in this region as a whole growing vegetables and this. The status of land tenure for farming in the village of Ngadirejo varies, such as: cultivator owners, cultivators and also farm workers. As a result, the level of welfare of the farming households also varies, there are farmer households with high to low welfare groups. The percentage of families with low welfare groups (pre-prosperous) occupies the highest number, which is around 49%.

The phenomenon of rural poverty is a very serious challenge, where the gap between the rich and the poor is widening. This study specifically focuses on the problems of farmers' lives from several aspects. The first aspect relates to the position of farmers in the social structure of village communities as a group whose income is uncertain and at risk of crop failure. Second, the research is focused on taking a closer look at the income and expenditure structure of farming households, to find out what poverty is like, the researchers hope to provide a satisfactory picture of poverty in vegetable farming households in Ngadirejo Tutur Village. District, Pasuruan Regency.

II. LITERATURE REVIEW

A. Income

According to Sadono (2006), income is the amount of income earned by the community for their work performance in a certain period, whether daily, weekly, monthly or yearly. Manurung (2001), states that income is the total receipt (money and not money) of a person or a household in a certain period. Based on these two definitions, it can be concluded that income is income received by the community based on its performance, both monetary and non-monetary income during a certain period, whether daily, weekly, monthly or yearly. While according to Suratiyah (2006), internal factors consist of age, education, knowledge, experience, skills, number of workers, land area and farmer's capital. External factors in the form of price and availability of means of production. Availability of facilities and prices cannot be controlled by individual farmers, even if funding is available. If one of the inputs is not available, the farmer will lower the price of using that input and means of production. Fertilizer prices are very high, even exorbitant, affecting costs and revenues.

Tuwo (2011) conclude that agricultural income is income from all agricultural sources, including the sale of crops, livestock, fish or products sold, products consumed by entrepreneurs and families during their activities and the increase in the value of stocks, in this case it is. In the case of farm income, it has a form of income. from the source of farm income itself Agricultural income is a multiplier of production which is achieved by selling prices. There are several things that need to be considered in calculating farm income, namely being more careful in calculating farm production, and when agricultural researchers use respondents, good interview techniques are needed with farmers (Soekartawi, 2006). Farm household income is income that comes from agricultural and non-agricultural sources. Household income is defined as the income of all family members, including husband, wife and children (Lathifaturrahmah et al., 2021). There are other receipts that households receive, namely transfers (free gifts), estimated income (imputation) from the house owned by the household that is occupied alone or occupied by another party rent-free, and the production of goods/services from activities that are not classified as household business activities. Transfers received come from the government, business entities, non-profit institutions, other households, and from abroad (Central Bureau of Statistics, Indonesia, 2022).

B. Expenditure

According to Lathifaturrahmah et al., (2021), household expenses are expenses incurred to cover living expenses for one year, and consist of expenses for eating and not for eating. Central Bureau of Statistics, Indonesia (2022) divides expenditure into two, namely food and non-food expenditure. Food expenditures consist of grains, tubers, fish/shrimp/squid/scallops, meat, eggs and milk, vegetables, nuts, fruits, oil and coconut, beverage ingredients, spices, ingredients other foods, prepared foods and beverages, cigarettes and tobacco. Non-food expenditure consists of housing and household facilities, various goods and services, footwear and headgear, durable goods, levy taxes and insurance, party and ceremonial needs.

The higher the proportion of food expenditure, the lower the level of household welfare. The decline in the level of household welfare means that there are more and more poor households. Under these circumstances, households prioritize fulfilling their food needs and only focus on food that is cheap and useful for overcoming hunger, so that food quality is given less attention. Households with a high level of welfare will be able to meet their needs not only for food, but also for non-food items. This is like what applies to Engel's law, that the proportion of total expenditure allocated to food will decrease as income increases. In addition, with increased income, households can buy food that is good in terms of nutrition, so that it not only serves to overcome hunger, but also to meet the nutritional needs of household members (Praza, R., & Shamadiyah, N., 2020).

C. Poverty

Poverty is a structural problem and a cultural problem which includes political issues, social assets and natural resources. The poverty of farmer households is the low availability of food, low capital and lack of income. (Zal, Rahman, Anuar, Salleh and Rasdi, 2020).

One that affects household poverty is due to the number of family members. This causes irregular household expenditure so that it can be a factor causing poverty. The number of family dependents is the number of people who are related or considered related (Wang, Zhao, Bai, Zhang & Yu, 2020). The number of family members affects the consumption expenditure level of farmer households, both food and non-food, because of the level of income, so it can be assumed that the more the number of family members, the greater the fulfillment of family food needs. At the same time, the effect of having more family members can reduce poverty. In addition, the weakness of farmers lies in the level of education and capital. (Daulay, Elfindri, Sjafrizal and Sofyrdi, 2019).

Education is an important factor for the creation of quality human resources for village development. Most of the heads of farmer households have an elementary school education background. The assumption is that the higher the level of education, the higher the productivity and ability to manage farming and the courage to take risks in farming (.....). While in reality there are

still many farmers who do not complete their education to a higher level. Etuk, E.A., & Ayuk, J.O. (2021) stated that low education is the reason why farmers still use simple farming tools. Ignorance of modern agricultural tools and economic inability to buy them causes farmers to be less productive.

In addition, due to low farmer income and poverty, farmers are also faced with over-exploitation by the owners of capital (middlemen) so that direct payments to farmers are required. The marketing of agricultural products is aimed at alleviating the poverty of farming households with narrow land scales. This is due to very limited access to marketing and poor handling of crop yields. There are still obstacles to the marketing mechanism at the level of vegetable buyers, such as late payments and fluctuating market prices.

The impact of poverty is far-reaching and has long-term consequences for both individuals and society as a whole. Poverty can lead to social exclusion, marginalization and stigma. It can also contribute to poor health conditions, decreased life expectancy, and lower educational attainment. In addition to the impact on the individual level, poverty can also have broader social impacts, such as increased crime, slowing economic growth, and political instability. Various government programs to increase funding have been announced, such as providing fertilizer subsidies, increasing human resources, increasing access to capital, increasing market access, and improving technology, but these efforts have not helped most farmers escape the shackles of poverty. This is because the poverty of rural farmers must not only be seen as a cultural problem, but also must be seen as a structural problem. Poverty of farmers is not only due to insufficient human resources or laziness, nor is it due to backwardness or inadequate technology.

D. Income Inequality

According to Sukirno (2013), income distribution is basically a concept that refers to the distribution of income to each person or household in a society. There are two main concepts related to the measurement of income distribution, namely absolute inequality and relative inequality. The concept of absolute inequality is a concept that measures inequality using parameters of absolute value, while the concept of relative inequality is a concept for measuring inequality in income distribution by comparing the amount of income received by a person or group of members of society with the total income received by society as a whole.

Income distribution is one aspect of poverty that needs attention because income distribution is basically a measure of relative poverty. There are two types of poverty levels, namely absolute poverty and relative poverty. Absolute poverty is a condition where a person's income is not enough to meet basic needs. Relative poverty is a measure of poverty based on regional income distribution (Sukirno, 2013). Income inequality is the difference in income generated by a society in such a way that there is a striking difference in income in society (Todaro, 2011). As a result, the rich are getting richer and the poor are getting poorer. Income distribution reflects the fairness or uneven distribution of a country's development results to its people. Inequality in income distribution between regions can be caused by differences in growth rates, regional boundaries, and the fact that development tends to be concentrated in developed regions. This causes an imbalance in the distribution of income between regions and is one of the factors that encourages the widening of inequality in the distribution of income between regions.

The Gini ratio is a measure of income or wealth inequality in a population. In the context of poverty in farm labor households, the Gini ratio can be used to measure the level of income or wealth inequality among farm labor households. The Gini ratio helps the government to analyze the economic feasibility of the community because it is an indicator of the level of equity in a country. A coefficient that is close to 0 means that income distribution is more even, while a coefficient that is close to 1 means that income distribution is more unequal. A low Gini coefficient indicates a more even distribution of income, while a higher Gini coefficient indicates a more unequal distribution (gap) among income recipients. In the extreme, it is explained that a Gini coefficient of 0 means there is perfect equality (everyone earns exactly the same income) and a Gini coefficient of 1 indicates perfect, perfect inequality (where one person owns or controls all of his income, while the other receives no income). The criteria for income inequality are based on the Gini coefficient, according to Todaro (2011) greater than 0.5 is a high level of inequality, between 0.35 and 0.5 is moderate inequality, below 0.35 is low inequality.

The Lorenz curve shows the quantitative relationship between the percentage of the population and the percentage of income they receive. The farther the Lorenz curve is from the diagonal line (perfect evenness), the higher the degree of inequality shown. The most extreme situation of perfect inequality, for example a situation where all income is only received by one person, will be indicated by the alignment of the Lorenz curve with the lower horizontal axis and the right vertical axis (Arsyad, 2010). The Lorenz curve is a curve that describes the distribution of cumulative income. This curve is in a square with the vertical sides representing the cumulative percentage of national income, and the lower end representing the cumulative percentage of the population. The closer the Lorenz curve is to the diagonal (straight), the more even the distribution of national income will be. Conversely, if the Lorenz curve is further away from the diagonal line (curved), it reflects a worsening situation, with an increasingly

unequal distribution of national income. The Lorenz curve itself describes the quantitative relationship between the percentage of the population and the percentage of income received by the population during a certain period of time.

III. RESEARCH METODOLOGI

The research was conducted in February-March 2023. The research location was in Ngadirejo Village, Tutur District, Pasuruan Regency. The determination of the research location was carried out purposively, with the consideration that the area is the residential area of the Ngadirejo Village community's households, all of whom work as vegetable farmers. Determining the number of household samples using Slovin using an error rate of 10%

$$n = \frac{N}{1 + Ne^2}$$

Notes:

n: Sample Size

N: Population Size

e²: Looseness of Accuracy Uncertainty or Degree of Tolerance

The number of this population is the size of the population (N) in the slovin formula. The specified degree of tolerance is 10%. The following is a sample calculation using the slovin formula:

$$n = \frac{461}{1 + (461 \times 0.1^2)} = 82,17$$

Based on the results of calculations using the slovin formula above, the number of samples used in this study is 82.17 (rounded to 85).

The analysis model is used to answer the first objective regarding income and expenditure of farming households in Ngadirejo Village using descriptive analysis by describing income and expenditure by type

Farm income is the difference between the total receipts that received from the results of farming with the total cost issued production. Mathematically to calculate farm income formulated as follows:

$$\pi = Y. Py - \sum X i. Pi$$

Notes:

 π = Income of vegetable farming (Rp)

Y = Production of vegetable farming (Kg)

Py = Price of production of vegetable farming (Rp/Kg)

 $\Sigma Xi = Number of factors of production to-i (i = 1,2,3,...n)$

Pi = Price of the-I factor of production (Rp)

Household income is income that comes from farming (on farm), non-farming (off farm), and from outside farming (non farm). Income is calculated by calculating the difference between the total income from operations and the total production costs incurred by farmers for one year. Vegetable farmer household income is calculated using the following formula::

Inc_rt = Inc_vegetable farming + Inc_non vegetable farming + Inc_off-farm + Inc_non-farm

Notes:

Inc rt = Vegetable farmer household income per year

Inc_vegetable farming = Income from vegetable farming

Inc non-vegetable farming = Farming income besides vegetables

Inc_off-farm = Income from non-vegetable farming

Inc_non-farm = income from outside agriculture

The analysis used to determine the household expenditure of vegetable farming workers is a quantitative descriptive analysis, this analysis aims to find out how the expenditure structure of vegetable farming families is. This analysis contains the household expenses of vegetable farming workers based on food and non-food expenditure. The indicators for food are rice as a staple food, side dishes, cakes, and others within the range of food consumption. Indicators for non-food expenditure are education, health, housing, clothing, loans, transportation, telephone, electricity, dues, recreation, and others with the following formula:

TE = E1 + E2

Notes:

TE = Total Expenditures (Rp)

E1 = Expenditure on food (Rp)

E2 = Expenditures for non-food (Rp)

Data analysis was used to answer the second objective, namely knowing the poverty classification of farming households in Ngadirejo Village, Tutur District, Pasuruan Regency with theory (Sajogyo 1977) carried out by quantitative descriptive analysis. According to Sajogyo, poverty is measured by expenditure per family member (Kg of rice/year). Below is a classification of poverty based on the theory of Sajogyo:

Table 1. Sajogyo poverty classification

Clasification	Kg of rice/year
Poorest	<180
Extremely poor	180-240
Poor	240-320
Nearly poor	320-480
Enough	480-960
Decent life	>960

Data analysis was used to answer the third research objective, namely the unequal distribution of household income of vegetable farmers in Ngadirejo Village by using the Gini ratio calculation and then describing it with the Lorenz curve. Below is the Gini ratio formula to calculate inequality in income distribution:

$$GR = 1 - \sum_{1}^{n} f_i x (Y_i + Y_{i-1})$$

Notes:

GR = Gini coefficient (%)

fi = The cumulative Number of recipients in class-I (%)

Yi = The cumulative amount of income in class I (%)

IV. RESULT AND DISCUSSION

A. Responden Characteristics

Characteristics of respondents regarding the household conditions of the Ngadirejo,

Table 2. Characteristic of respondents

No	Description	Number of Respondents	Percentage (%)	
1	Gender			
	Male	76	89,4	
	Female	9	10,6	
2	Age (Years)			
	20-29	2	2,4	
	30-39	17	20,0	
	40-49	25	29,4	
	50-59	27	31,8	
	60-69	11	12,9	
	70-79	3	3,5	
3	Education Head of the Household			
	No completed in primary school	13	15,3	
	Primary school	42	49,4	
	Junior High	23	27,1	
	High School	7	8,2	

Source: Primary data analysis, 2023

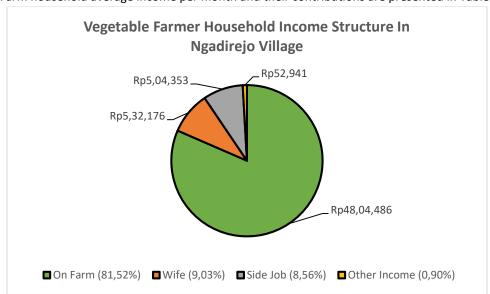
The results showed that the Ngadirejo Village Households in Tutur District with the Description of Respondents Based on Gender above, it was known that of the 85 respondents studied, 76 respondents or the equivalent of 89.4% of them were male. Meanwhile, only 9 or 10.6% were female. It can be concluded that the heads of fishing families in Ngadirejo Village who were the majority of research respondents were men. This shows that men have thought of working and earning a living for all household

members, only the work done by farming households in Ngadirejo Village is farming. Being a farmer is not only a livelihood, but is the only way of life. Therefore, in general, these farmers will pass on farming traditions to the next generation even though their livelihoods are marginal.

Age Productivity can affect productivity and is considered to have high enthusiasm in doing a job. It can be seen that respondents who work as heads of households and work as fishermen are quite dominant, namely at the age of 50-59 years. A total of 27 people or 31.8%. And the majority of minority respondents are heads of households who work as farmers, aged 20-29 years, as many as 2 or 2.4% of respondents. In agriculture, most of the heads of families who feel that they are still strong enough to work also continue to farm, whether it's just to help accompany their children or to their neighbors as farm labourers. This is done to meet the needs of household life.

B. Household Income

The source of income for farmer households is obtained income from farming or cultivation (on farm), farming outside farming activities (off farm), and non-agricultural business (non-farm). Source farmers' income from on-farm activities is still made the largest contribution (86.81 percent) compared to other sources of income (off-farms and non-farms). That statement shows that vegetable farmers are still rely on agriculture as a resource their main income amidst the shift labor from the agricultural sector to other sectors. This means that the economic transformation in rural areas still put the agricultural sector as sectors that play an important role. Farm household average income per month and their contributions are presented in Table 3.



Picture 1. Contribution of various sources of income to household income farmer Source: Primary data analysis, 2023

The average household income of vegetable farmers in Ngadirejo Village, Tutur District, Pasuruan Regency is IDR 5.893.956/month. Each activity makes a different contribution to total household income. Vegetable farmer household income comes from farming activities (on farm) IDR 4.804.486 per month (81,52%), from the wife of IDR 532,176 per month (9,03%), from a side job of IDR 504,353 per month (8,56%) and other income of IDR 52,941 per month (0,90%).

Based on the results of this study, it can be concluded that to fulfill their daily needs, farmers in Ngadirejo Village, Kata District, do vegetable farming, wife's income, side jobs, and income from other sources. Farmers carry out businesses outside of vegetable farming and businesses outside of farming activities to be able to make ends meet when the vegetable crops they cultivate are immature. The household income of vegetable farmers in the village of Ngadirejo is above the regional minimum wage for the Pasuruan district, which is Rp4, 365,133.19.

C. Household Expenditure

The average total expenditure of corn farmer households in Ngadirejo Village, Tutur District is IDR 1,745,400/month, which consists of spending on food needs Rp1,256,947/month (72%) and non-food expenditure Rp488,453/month (28%). Vegetable farmer household expenditure for food needs is greater than for non-food expenditure. This shows that farmers prioritize the fulfillment of food needs. Farm household average expenditure per month and their contributions are presented in Table 3.

Table 3. Total food and non-food expenditure

Food					
No	Type of expenditure	Expenditure average/month (Rp)	Percentage (%)		
1	Grains	337.412	19,3		
2	Tubers	15.041	0,9		
3	Fish/shrimp/squid/mussels	81.012	4,6		
4	Meat	89.282	5,1		
5	Egg dan milk	69.129	4,0		
6	Vegetables	21.353	1,2		
7	Beans	8.882	0,5		
8	Fruits	20.365	1,2		
9	Oil dan fats	102.694	5,9		
10	Beverage ingredients	36.741	2,1		
11	Spices	48.718	2,8		
12	Other foodstuffs	39.682	2,3		
13	Prepared food and beverage	181.459	10,4		
14	Cigarettes and tobacco	205.176	11,8		
Total		1.256.947	72		
Non-	food				
No	Type of expenditure	Expenditure average/month (Rp)	Percentage (%)		
1	Housing and household facilities	224.012	12,8		
2	Various goods and services	108.459	6,2		
3	Clothing, footwear and headgear	37.729	2,2		
4	Durable goods	52.224	3,0		
5	Taxes, levies, and insurance	44.429	2,5		
6	Needs for parties and ceremonies / kenduri	21.600	1,2		
Total		488.453	28		
Total	amount of food and non-food	1.745.400	100		

Source: Primary data processing, 2023

D. Poverty Level

According to Sayogyo (1997), household poverty rate measurement is done by calculating per capita expenditure per year which is measured using the standard price of rice per kilogram at the place and time of the study. Household expenditure is divided into expenditure for food and non-food expenditure. In this study, food expenditure is distinguished from expenditure on grains, tubers, fish/shrimp/squid/scallops, meat, eggs and milk, vegetables, nuts, fruits, oil and coconut, beverage ingredients, spices, other food ingredients, prepared food and beverages, cigarettes and tobacco. While non-food expenditure consists of housing and household facilities, various goods and services, footwear and headgear, durable goods, taxes and insurance, party and ceremonial needs.

Table 4. Poverty level of farmer households

Classification		Number of farmers	Percentage (%)					
Poorest	<180 Kg	0	0%					
Extremely poor	180-240	0	0%					
Poor	240-320	0	0%					
Nearly poor	320-480	7	8,2%					
Enough	480-960	65	76,5%					

Decent life	>960	13	15,3%
Total		85	100%

Source: Primary data analysis, 2023

Farmers who live decent lives in Ngadirejo Village are farmers who have quite a lot of business diversity in their households. These business activities do not only rely on vegetable farming but there are other side jobs that these farmers do in the form of farm laborers and there are also farmers who earn income outside of agriculture such as trading and services. The number of vegetable farmer households belonging to the near-poor category was 7 people (8.2%), 65 people (76.5%) classified as decent living in Ngadirejo Village and 13 vegetable farmer households belonging to a decent living classification were 13 people (15.3%).

In calculating the poverty rate, this study uses the Sajogyo indicator which looks at the poverty of a household based on the calculation of farm household expenditures for both food and non-food items. Sajogyo (1977) explains that the level of poverty is measured using the concept of expenditure per capita per year which is measured using the standard price of rice per kilogram in place.

E. Income Inequality

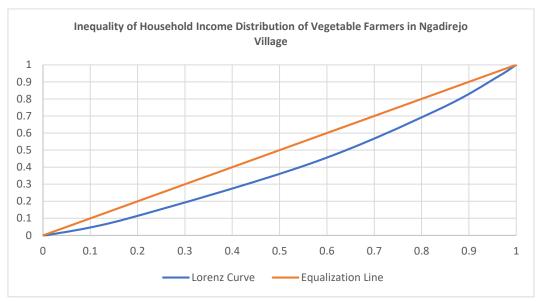
Measurement of the income distribution of vegetable farming households was carried out to see whether the income received by residents in Ngadirejo Village was properly distributed. The income distribution of farmer households in farming vegetables, especially cabbage and potatoes, can be analyzed using the Gini ratio concept. Based on total income, the index value of the Gini ratio is 0.22, indicating that inequality in income distribution is almost even or low inequality.

Table 5. Poverty level of farmer households

ole 5.1 overty level of further flouseholds											
No	Income Group (000)	Fre que ncy	F. Relat ive	F. Cum ulativ e (Xk)	Avegare Income (000)	Total Income (000)	F. Relativ e Incom e	F.Cum ulative Incom e (Yk)	Xk-Xk-	Yk+Yk- 1	Xk*YK
1	<2.000	1	0,012	0,012	Rp1.227	Rp1.227	0,002	0,002	0,165	0,099	0,016
2	2.000 - 3.999	14	0,165	0,176	Rp3.358	Rp47.016	0,094	0,096	0,388	0,517	0,201
3	4.000 - 5.999	33	0,388	0,565	Rp4.917	Rp162.28 4	0,324	0,420	0,270	1,157	0,313
4	6.000 - 7.999	23	0,270	0,835	Rp6.898	Rp158.66 6	0,317	0,737	0,129	1,673	0,216
5	8.000 - 9.999	11	0,129	0,965	Rp9.056	Rp99.622	0,199	0,936s	0,035	1,936	0,068
6	>10.000	3	0,035	1	Rp10.66 7	Rp32.003	0,064	1			0,815
	SUM	85	1			Rp500.82 0	1				
Gini l	Gini Ratio					1 - (Xk-Xk-1) × (Yk+Yk-1)					
Gini Ratio					1 - 0,814964115						
Gini I	Gini Ratio					0,185035885					

Source: Primary data processing, 2023

The state of the Gini Ratio value of the income distribution of cocoa farming households can be seen in the Lorenz Curve. Based on picture 1 the level of inequality in income distribution, the income of the household of vegetable farmers in Ngadirejo Village has low inequality with a Gini index value of 0,18. This low level of income inequality is in line with the poverty rate based on Sajogyo's theory which is in the sufficient category. Conditions of low levels of income inequality between vegetable farming households and poverty conditions in the moderate category indicate that vegetable farming households in Ngadirejo Village are prosperous, although the vegetable farmers in Ngadirejo Village have different land areas, there is no high income inequality, this can be caused by income from other sectors obtained by farming households with a narrow land area. Many of the vegetable farming households who only have narrow agricultural land work sideways and get additional income, moreover their wives also have income from working both in the agricultural sector (as laborers) and working in the non-farm sector.



Picture 2. Income inequality lorenz curve

Source: Primary data analysis, 2023

The figure above shows the condition where the Lorenz curve is almost parallel to the evenness line, this shows that the income distribution of vegetable farming households in Ngadirejo Village is at low inequality. In the Lorenz curve of income distribution, income inequality is relatively low, even though vegetable farming households have different land areas. This can happen because many of those who do farming on narrow land have side jobs and even their wives also work. Side jobs, income from wives, and other income play an important role in increasing the household income of vegetable farmers who work on small plots of land. Based on the results of research by household farmers who do farming in a narrow family, they have various kinds of side jobs to fulfill their primary needs.

V. CONCLUSIONS

Based on the research that has been done, it can be concluded that the household income of vegetable farmers comes from vegetable farming income, wife's income, side jobs, and other sources of income. Farmers' income from on-farm activities contributed more (86.81%) compared to income from other activities. The largest total farm household expenditure was in the food category at 72% and was greater than non-food expenditure. Based on Sajogyo's criteria (1997), most vegetable farmers in Ngadirejo Village, Tutur District, Pasuruan Regency, were in the enough category 76.5%. The level of income inequality based on the results of calculating the Gini ratio is at a low level with a Gini ratio value of 0.22 which indicates that the distribution of income in vegetable farming households in Ngadirejo village is even.

REFERENCES

- 1) Adetoro, A. A., Ngidi, M. S. C., Danso-Abbeam, G., Ojo, T. O., & Ogundeji, A. A. (2022). Impact of irrigation on welfare and vulnerability to poverty in South African farming households. Scientific African, 16, e01177. https://doi.org/10.1016/j.sciaf.2022.e01177
- 2) Alamgir, M. S., Furuya, J., Kobayashi, S., Mostafiz, R. B., & Ahmed, M. R. (2021). Farm income, inequality, and poverty among farm families of a flood-prone area in Bangladesh: climate change vulnerability assessment. GeoJournal, 86(6), 2861–2885. https://doi.org/10.1007/s10708-020-10231-2
- 3) Arsyad, L. (2010). Ekonomi Pembangunan, edisi kelima. Yogyakarta: Upp Stim Ykpn.
- 4) Badan Pusat Statistik Nasional. (2022). Profil Kemiskinan di Indonesia. Jakarta Pusat : Badan Pusat Statistik.
- 5) Etuk, E. A., & Ayuk, J. O. (2021). Agricultural commercialisation, poverty reduction and pro-poor growth: evidence from commercial agricultural development project in Nigeria. Heliyon, 7(5).
- 6) Eyasu, A. M. (2020). Determinants of poverty in rural households: Evidence from North-Western Ethiopia. Cogent Food and Agriculture, 6(1). https://doi.org/10.1080/23311932.2020.1823652
- 7) Fahad, S., Nguyen-Thi-Lan, H., Nguyen-Manh, D., Tran-Duc, H., & To-The, N. (2023). Analyzing the status of multidimensional poverty of rural households by using sustainable livelihood framework: policy implications for economic

- growth. Environmental Science and Pollution Research, 30(6), 16106–16119. https://doi.org/10.1007/s11356-022-23143-0
- 8) Giller, K. E., Delaune, T., Silva, J. V., van Wijk, M., Hammond, J., Descheemaeker, K., van de Ven, G., Schut, A. G. T., Taulya, G., Chikowo, R., & Andersson, J. A. (2021). Small farms and development in sub-Saharan Africa: Farming for food, for income or for lack of better options? Food Security, 13(6), 1431–1454. https://doi.org/10.1007/s12571-021-01209-0
- 9) Hong, Z., & Sun, Y. (2020). Power, capital, and the poverty of farmers' land rights in China. Land Use Policy, 92(September 2019), 104471. https://doi.org/10.1016/j.landusepol.2020.104471
- 10) Issahaku, G., & Abdulai, A. (2020). Household welfare implications of sustainable land management practices among smallholder farmers in Ghana. Land Use Policy, 94(December 2019), 104502. https://doi.org/10.1016/j.landusepol.2020.104502
- 11) Kementerian Pertanian. (2021). Angka Tetap Hortikultura Tahun 2021. Direktorat Jenderal Hortikultura Kementerian Pertanian, 197.
- 12) Koo, J., Mamun, A., & Martin, W. (2021). From bad to worse: Poverty impacts of food availability responses to weather shocks. Agricultural Economics (United Kingdom), 52(5), 833–847. https://doi.org/10.1111/agec.12657
- 13) Lalljee, S. V., Soundararajan, C., Singh, Y. D., & Sargison, N. D. (2019). The potential of small ruminant farming as a means of poverty alleviation in rural southern India. Tropical Animal Health and Production, 51(2), 303–311. https://doi.org/10.1007/s11250-018-1686-4
- 14) Lathifaturrahmah, Choibar, A., & Tridakusumah. (2021). Analisis Pendapatan dan Tingkat Kesejateraan Rumah Tangga Petani Sayuran Dalam Program Tanggung Jawab Soial Perusahaan. Mimbar Agribisnis, 7(1), 60–73.
- 15) Li, E., Deng, Q., & Zhou, Y. (2022). Livelihood resilience and the generative mechanism of rural households out of poverty: An empirical analysis from Lankao County, Henan Province, China. Journal of Rural Studies, 93(March 2018), 210–222. https://doi.org/10.1016/j.jrurstud.2019.01.005
- 16) Manurung, P. R. dan M. (2001). Teori Ekonomi Makro. Fakultas Ekonomi Universitas Indonesia.
- 17) Mhlanga, D. (2020). Financial inclusion and poverty reduction: Evidence from small scale agricultural sector in Manicaland Province of Zimbabwe. May.
- 18) Mulokozi, D. P., Mmanda, F. P., Onyango, P., Lundh, T., Tamatamah, R., & Berg, H. (2020). Rural aquaculture: Assessment of its contribution to household income and farmers' perception in selected districts, Tanzania. Aquaculture Economics and Management, 24(4), 387–405. https://doi.org/10.1080/13657305.2020.1725687
- 19) Murtisari, A., Irham, I., Mulyo, J. H., & Waluyati, L. R. (2021). Household poverty analysis of local farmers and transmigrants in Gorontalo District. Sustainable Agricultural Socio-Economics, Agribusiness, and Rural Development (ICSASARD), 199(Icsasard), 190–193.
- 20) Mwatawala, H., Mwatawala, H. W., Mponji, R., & Sesela, M. (2019). Role of Tomato Production in Household Income Poverty Reduction in Mvomero District, Tanzania. International Journal of Progressive Sciences and Technologies, 14(1), 107–113. https://ijpsat.ijsht-journals.org/index.php/ijpsat/article/view/792
- 21) Ogundipe, A. A., Ogunniyi, A., Olagunju, K., & Asaleye, A. J. (2019). Poverty and Income Inequality in Rural Agrarian Household of Southwestern Nigeria: The Gender Perspective. The Open Agriculture Journal, 13(1), 51–57. https://doi.org/10.2174/1874331501913010051
- 22) Ogutu, S. O., Ochieng, D. O., & Qaim, M. (2020). Supermarket contracts and smallholder farmers: Implications for income and multidimensional poverty. Food Policy, 95(June), 101940. https://doi.org/10.1016/j.foodpol.2020.101940
- 23) Ojo, T. O., & Baiyegunhi, L. J. S. (2021). Climate change perception and its impact on net farm income of smallholder rice farmers in South-West, Nigeria. Journal of Cleaner Production, 310(June 2020), 127373. https://doi.org/10.1016/j.jclepro.2021.127373
- 24) Osewe, M., Liu, A., & Njagi, T. (2020). Farmer-led irrigation and its impacts on smallholder farmers' crop income: Evidence from southern tanzania. International Journal of Environmental Research and Public Health, 17(5). https://doi.org/10.3390/ijerph17051512
- 25) Sadono, Sukirno. (2006). Ekonomi Pembangunan: Proses, Masalah, dan Dasar Kebijakan. Prenada Media Group.
- 26) Sadono Sukirno. (2013). Makroekonomi: Teori Pengantar. Rajawali Pers.
- 27) Sajogyo. (1997). Garis Kemiskinan dan Kebutuhan Minimum Pangan. LPSB IPB.
- 28) Su, F., Song, N., Ma, N., Sultanaliev, A., Ma, J., Xue, B., & Fahad, S. (2021). An assessment of poverty alleviation measures and sustainable livelihood capability of farm households in rural china: A sustainable livelihood approach. Agriculture (Switzerland), 11(12). https://doi.org/10.3390/agriculture11121230

- 29) Suratiyah, ken. (2006). Ilmu Usahatani. Penebar Swadaya.
- 30) Symmetric, E., Fully, B., & Encryption, H. (2021). Kwara state university, malete, nigeria.
- 31) Todaro, M. P., & Smith, S. C. (2011). Pembangunan Ekonomi Edisi 11. Jakarta: Erlangga.
- 32) Toyib Daulay, M., ., E., ., S., & ., S. (2019). Effect of Diversification of Business and Economic Value on Poverty in Batubara Regency. KnE Social Sciences, 3(14), 388–401. https://doi.org/10.18502/kss.v3i14.432
- 33) W. A. Amir Zal, Nur Hanan Abdul Rahman, Tengku Fauzan Tengku Anuar, Hafizi Mat Salleh & Siti Asma Md Rasdi (2020) An Innovation in Poverty Measurement Based on Community Capital: A Case Study of Young Fishermen in Malaysia, Journal of Poverty, 24:7, 543-567, DOI: 10.1080/10875549.2020.1737299
- 34) Wang, H., Wang, X., Sarkar, A., & Qian, L. (2021). Evaluating the impacts of smallholder farmer's participation in modern agricultural value chain tactics for facilitating poverty alleviation—a case study of kiwifruit industry in shaanxi, china. Agriculture (Switzerland), 11(5). https://doi.org/10.3390/agriculture11050462
- 35) Wang, X., & Fu, Y. (2022). Digital financial inclusion and vulnerability to poverty: evidence from Chinese rural households. China Agricultural Economic Review, 14(1), 64–83. https://doi.org/10.1108/CAER-08-2020-0189
- 36) Wang, Y., Jia, S., Qi, W., & Huang, C. (2022). Examining Poverty Reduction of Poverty-Stricken Farmer Households under Different Development Goals: A Multiobjective Spatio-Temporal Evolution Analysis Method. International Journal of Environmental Research and Public Health, 19(19). https://doi.org/10.3390/ijerph191912686
- 37) Wossen, T., Alene, A., Abdoulaye, T., Feleke, S., Rabbi, I. Y., & Manyong, V. (2019). Poverty Reduction Effects of Agricultural Technology Adoption: The Case of Improved Cassava Varieties in Nigeria. Journal of Agricultural Economics, 70(2), 392–407. https://doi.org/10.1111/1477-9552.12296
- 38) Zhou, Y., Guo, Y., & Liu, Y. (2020). Health, income and poverty: Evidence from China's rural household survey. International Journal for Equity in Health, 19(1), 1–12. https://doi.org/10.1186/s12939-020-1121-0



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0

(https://creativecommons.or/licenses/by-nc/4.0/), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.