

# Analysis of Income Levels and Welfare of Coffee Farmers in Sumbertani Village, North Lampung Regency

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**Abstract.** According to statistical data from the Indonesian Directorate General of Agriculture, Lampung Province is able to produce approximately 110,000 tons of coffee per year. This shows that the existence and existence of coffee farmers in Lampung Province are very good and productive in producing coffee. The type of research conducted is quantitative descriptive. Quantitative descriptive is a type of research used to analyze data by describing or describing the data that has been collected as it is. Descriptive quantitative research uses a correlational approach. The income obtained by each farmer is different because it is influenced by several factors, such as the area of treatment land in the treatment consisting of fertilizing, cleaning weeds and pruning farmers' welfare can be selected from the value of the classification level of each indicator. The average income at IDR. 22,327,380.00 for each land area of 20,285.71m<sup>2</sup>. with the lowest farmer income of IDR.7,538,095.00. The welfare level of the 42 samples of farmers who are included in the prosperous group is twenty-three samples with a percentage of (55%) and the sample that is included in the not prosperous group is nineteen samples with a percentage of (45%).

## 1 Introduction

Drinking coffee become culture in most of places in Indonesia [1–3]. It is supported by the developing coffee plantation in some areas of Indonesia [4]. Sumbertani Village is one of the villages that is administratively within the autonomy of North Lampung Regency. Most of the area of Sumbertani Village is a highland used by the community for farming, especially for coffee plants. The people in Sumbertani Village make coffee plants as their main agricultural commodity. Therefore, Sumbertani Village is one of the coffee bean producing areas in North Lampung Regency. Lampung Province is able to produce approximately 110,000 tons of coffee per year. Every year, Lampung Province is able to achieve an increase in productivity of up to 3.50%. With an increase in productivity, coffee plantations there can encourage an increase in the level of welfare of the community. To be able to measure the level of community welfare, the right indicators are needed.

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Based on data from the Central Statistics Agency of Lampung Province until 2020, the Human Development Index reached 69.69%. Lampung Province is a potential Robusta coffee plantation area and produces productive coffee [5]. The following is data on Robusta Coffee produced by farmers in Lampung Province based on data [6].

Lampung Province is one of the regions in Indonesia that produces a large amount of coffee every year. With coffee production activities in this province, it has caused a problem for people who work as coffee farmers. The same applies to the community in Sumbertani Village, Abung Pekurun District, where most of the community's professions are coffee farmers, in addition to several other sub-districts in North Lampung that produce coffee as the main commodity, including; Bukit Kemuning, Abung Tinggi, Tanjung Raja and many more. Therefore, Coffee Farmers as coffee producers need an in-depth and accurate analysis of the level of welfare so that they can find out what causes the welfare they have or have not achieved [7,8]. Therefore, this study aims to analyze the income level and welfare of coffee farmers in Sumbertani Village, North Lampung Regency, the results of which can also be used as a reference by farmers in other sub-districts in North Lampung regarding coffee production in Lampung province.

## 2 Research Method

This research is descriptive quantitative research. Namely presenting data obtained factually and analyzing causal relationships or correlations (correlational research). This study aims to analyze and measure the income level of coffee producers in Sumbertani Village as the basis for selecting quantitative descriptive materials used in the research carried out by the researcher.

This research was conducted in March – May 2022 in Sumbertani Village, Abung Pekurun District, North Lampung Regency. The research site was chosen deliberately (porposive). The people of Sumbertani Village mostly work as coffee farmers. The coffee production produced by farmers can be said to be quite large. This phenomenon can occur because the location of villages in mountainous areas supports coffee farming. According to the proportional random sampling approach, samples are taken from the entire population and each farmer has an equal chance to be selected as a sample. The sampling technique used is simple random sampling which gives each part of the population the same qualification opportunity to be used as a selected sample.

Sampling was done at random with simplicity. Sumbertani Village is located in Abung Pekurun District where most of the farmers cultivate coffee plantations, so the population of this study is coffee farmers who live there. The total sample taken in this study with the assumption that it can represent the population of coffee farmers (407) is 42 farmers. By taking samples, it is possible to analyze the welfare of farmers in producing coffee, but if it is a sample, the research will be more validated and get other analyses.

The analysis of the data obtained will include the level of income measured by subtracting total receipts from total explicit expenses. These results will provide assistance in knowing the profits they get during coffee production. Meanwhile, welfare is measured using variables such as population, nutrition and health, education, employment, consumption levels and patterns, housing and the environment, and the last is social and others. This category aims to find out whether by producing coffee the needs needed by farmers have been met, or with these criteria can support farmers to make more profits in producing coffee. The welfare level category adjusts to the standards of the Central Statistics Agency: a score of 7-14 means not prosperous, and a score of 15-21 means prosperity.

## 3 Results and Discussion

### 3.1 Farmers' Characteristic

#### 3.1.1 Age

The age of the farmer has a fairly important role in a farming business because usually the age of the farmer affects the agricultural production itself which is influenced by the farmer's own manpower [9–12], the older the farmer's age, the manpower that has to carry out farming is no longer strong enough, from the results of the research that has been carried out, a sample of the farmer's age is obtained. The following is a table of the average age of farmers:

Table 2. Farmer Age

Age (Years)	Freq	Percent
25 – 35	2	4.76
36 – 45	18	42.86
46 – 55	5	11.90
56 – 65	16	38.10
66	1	2.38
<b>Total</b>	<b>42</b>	<b>100.00</b>

From table 2 of the age of farmers, the age group of farmers is the most farmers between 36 and 45 years old, totaling 18 farmers with a percentage (42.86%), and farmers whose age group is the least is 66 years old with a percentage (2.38%).

#### 3.1.2 Education Level

The level of education can reflect the mindset of the farmers themselves in carrying out farming, which can affect the results of the farming business. The following is a table of education levels obtained from the results of research that has been carried out:

Table 3 Education Level

Education	Freq.	Percent
No school	4	9.52
Elementary School	17	40.48
Junior High School	13	30.95
Senior High School	8	19.05
<b>Total</b>	<b>42</b>	<b>100</b>

From the table 3 Education Levels of the Sumbertani Village community above, it can be seen that the level of education of farmers, the most farmer education group is farmers who have graduated from elementary school (SD) with a percentage of 17 people (40.48%), and the least farmer group who are not in school has 4 farmers with a percentage of (9.52%).

### 3.1.3 Family Member

Presenting farmer household data related to the number of household aggota that can affect the expenditure that must be spent by a household. The following is a table of the number of dependents of a household:

Table 4 Number of Household Dependents

Family Member	Freq.	Percent
2	7	16.67
3	9	21.43
4	19	45.23
5	7	16.67
<b>Total</b>	<b>42</b>	<b>100.00</b>

From table 8, it can be seen that the largest number of household members is 4 consisting of 19 farmer households with a percentage (45.24%). And the least group of household members is those who number 2 and 5 because the number is the same, namely 7 farmers with a percentage of (16.67).

### 3.1.4 Land Size

Land area has a very important role in a farming business, because land area is one of the factors that determines the amount of production from a farming business. The following is a table of farmers' land area:

Table 5 Land Size

Land Size	Freq.	Percent
5,000-15,000	19	45.24
16,000-25,000	14	33.33
26,000-35,000	5	11.91
>36,000	4	9.52
<b>Total</b>	<b>42</b>	<b>100.00</b>

From table 5, it can be seen that the largest group of farmers are farmers who have a land area of 5,000m<sup>2</sup> to 15. 000m<sup>2</sup>, which is 19 farmers with a percentage of (45.24%), the least group of farmers who have a land area of more than 36,000m<sup>2</sup> is 4 farmers with a percentage (9.52%).

### 3.1.5 Land Ownership

Land ownership will affect the income that will be obtained by the farmer if the farmer cultivates the land instead of owning it himself, the income that has been obtained will be divided in half by the land owner so that the farmer's income is reduced. From table 6 of farmers' land ownership above, it can be seen that the land ownership status of 42 farmers, farmers who have their own land consist of 39 farmers with a percentage of (92.86%), and while farmers who do not have their own land are 3 farmers with a percentage of (7.14%). Farmers who do not have their own land usually cultivate other people's land by sharing the results, namely (50%:50%) so that it affects farmers' income.

Table 6 Land Ownership

<b>Ownership</b>	<b>Freq.</b>	<b>Percent</b>
Own	39	92.86
Rent	3	7.14
<b>Total</b>	<b>42</b>	<b>100.00</b>

### 3.2 Net Revenue

Explicit costs are not the costs used in coffee farming in Abung Pekurun District, North Lampung Regency, consisting of out-of-family labor costs, equipment depreciation costs, garden tax costs, fertilizer costs, and sack costs.

#### 3.2.1 External labor costs

The cost of labor outside the family is a cost that must be incurred in each season. Farmers in Sumbertani village use labor outside the family only during the season, why do farmers in Sumbertani village only use labor during the harvest season because during the harvest season it is a very hard job and is chased by time, why is it chased by time because if the harvest is slow, the ripe coffee will dry on the tree and will reduce the weight of the coffee beans. To calculate the wages of outsourced workers, the labor working hour unit is used. The average labor working hour used by farmers for harvesting labor is 13.19 for each land with an area of 20,285.71m<sup>2</sup>. with a wage of IDR. 50,000.00 per day, the farmer must spend IDR. 659,500.00.

#### 3.2.2 Shrinkage of the tool

The depreciation cost of the tool is the cost incurred for the depreciation cost of a tool every year, the tool that can be calculated is the tool that is used not only once the season is a tool that can be used in several seasons in the coffee farming business, there are several tools that are used, there are spray tools and there are also containers for the time of coffee harvest, namely ginjar.

It can be seen from table 18 that there are two tools used in coffee farming, namely a spray tool and a coffee picking container, each of which has a different age of use, therefore each tool has a different depreciation value. For the spray tool, the average depreciation of the tool is IDR. 70,569.00 and for the coffee picking container tool has an average depreciation of IDR. 17,024.00 so that the amount of depreciation of the tools used in coffee farming is IDR. 87,593.00

Table 7. Shrinkage of the tool

<b>Equipment</b>	<b>Depreciation Rate per Year (IDR)</b>
Sprayer	70,569
<i>Ginjar</i> (coffee bucket)	17,024
<b>Total</b>	<b>87,593</b>

#### 3.2.3 Pesticide

Pesticides are materials that contain chemical substances that farmers use to eradicate pests and weeds, the people of Sumbertani Village use pesticides to clean their

weeds using several types of pesticide brands that they use, namely gramaxone, noxone, roundup, Rambo, primastar, bimastar. The average pesticide used by farmers is 3.86 liters for each land with an area of 20,285.71m<sup>2</sup>. With an average price per liter of IDR. 99,125.00 and an average cost amount of IDR. 382,828.00 incurred by farmers.

### 3.2.4 Land Tax

Garden tax is an expense that must be paid by farmers every year, garden taxes are usually assisted by the village, so farmers only have to pay garden taxes from village officials who handle it, the value of garden taxes is in accordance with the area of land owned and the value of the land, why garden taxes are included in the category of fixed costs because the amount of garden taxes in each year is the same. The average plantation land tax that farmers must pay every year must pay a sum of IDR. 27,690.00 for each land with an area of 20,285.71m<sup>2</sup>.

### 3.2.5 Pupuk

Fertilizer is a compound that is useful for referring soil that is no longer fertile, fertilizer itself consists of several types of fertilizers, namely chemical fertilizers, and compost fertilizers for farmers in Sumbertani village, some use both, some use only one of them. The average amount that farmers have to spend for fertilization costs is IDR. 1,944,609.14 for each land with an area of 20,285.71m<sup>2</sup>. The following is a table of the average fertilizers used by farmers: Table 8. Average fertilizer use (source: research data). Of the several types of fertilizers above, the fertilizer that is most used by farmers is compost fertilizer because compost fertilizer has the cheapest price compared to other fertilizers.

Table 8 Fertilizer Usage

<b>Fertilizer</b>	<b>Average/ Farmer</b>	<b>Average price/kg</b>	<b>Cost (IDR)</b>
Animal Manure	15	1,000	22,000
Urea	4.21	106,316	447,590
Phonska	3.29	155,882	512,851
Compost	15.25	10,000	152,500
Mutiara Fertilizer	1	606,667	606,667
<b>Total</b>	<b>38.75</b>		<b>1,944,609</b>

### 3.2.6 Sack

Sacks are used as containers when harvesting takes place, sacks are used for coffee containers from the garden to be brought home, these sacks usually have a lifespan of only one season after the season is over, the sacks can no longer be used. The average farmer in the season uses 1.98 kodi with the average price of the perkodi sack is IDR. 60,000.00 and the average price spent by farmers is IDR. 118,880.00 for each land with an area of 20,285.71m<sup>2</sup>.

### 3.2.7 Total Cost

One of the most important aspects of an agricultural venture is the total cost. The costs paid by farmers during one coffee production season include the cost of labor outside the family (TKLK), depreciation costs of tools, garden tax costs, pesticide costs, fertilizers, and sack purchases. The average total cost expenditure incurred by farmers is IDR. 3,220,600.14 for each land with an area of 20,285.71m<sup>2</sup>. The breakdown of the total cost based on expenditure on coffee farming can be seen in the following table:

Table 9 Production Cost Per Year

<b>Component</b>	<b>Cost (IDR)</b>
Non Family Labor	659,000
Equipment Depreciation	87,593
Land Tax	27,690
Pesticide	382,828
Fertilizer	1.944,609
Sack	118,880
<b>Total</b>	<b>3,220,600</b>

From Table 9, it can be seen that the average total cost incurred by coffee farmers in the research area is IDR. 3,220,600.14 for each land with an area of 20,285.71m<sup>2</sup>. These costs consist of labor costs outside the family, depreciation costs, garden tax costs, pesticide costs, fertilizer costs, and sack costs of some of these costs, the largest cost is the cost for the purchase of fertilizer, which is IDR. 1,944,609.14 which makes the cost of fertilizer large is the price of chemical fertilizers which is quite expensive.

### 3.2.8 Revenue

Receipts are the results of coffee production that are sold at the current selling price at the time of sale. Revenue is obtained from multiplying the amount of coffee produced by the unit of kilo grams multiplied by the price that is currently in effect at the time of sale with the unit of rupiah/kilogram. The following is the average income obtained by farmers in Sumbertani Village:

Table 10. Revenue

<b>Revenue</b>	<b>Total</b>
Production (Kg)	1,279
Price (IDR)	20,997
<b>Total</b>	<b>26,855,163</b>

It can be seen in table 10 above that the average production yield obtained by farmers in Sumbertani Village, Abung Pekurun District, North Lampung Regency is 1,279 Kg for each land with an area of 20,285.71 m<sup>2</sup> with the average selling price applicable in 2021 is IDR. 20,997.00 so that the income obtained by farmers from the multiplication between the production obtained and the price that is in force at that time is obtained revenue of IDR 26,855,163 This revenue can change depending on the amount of production obtained and the price that is currently in effect.

### 3.2.9 Net Revenue

Income is a very important component in a farming business, income is a nominal to know how much nominal money can be obtained in one season to calculate income or find out how much money is earned in one season by subtracting the total revenue by all explicit costs incurred. It can be seen from table 11 to find out the income of coffee farming in Sumbertani Village, Abung Pekurun District, North Lampung Regency, which is calculated, namely reducing revenue with explicit costs. The average revenue obtained by farmers is IDR. 26,855,163 and the explicit cost incurred by farmers is IDR. 3,220,600.14 for each land with an area of 20,285.71m<sup>2</sup>. So the income that farmers get from the reduction is IDR. 23,634,562.86 The income can change which is affected by how much revenue is obtained and how much explicit costs are incurred.

Table 11. Net Revenue

Component	Total
Revenue	26,855,163.00
Explicit Cost	3,220,600.14
Net Revenue	23,634,562.86

### 3.3 Farmers' Welfare

Based on the analysis of the level of welfare of farmers in semi-farming villages using indicators of welfare level, BPS (2014) in which there are seven indicators, namely, population indicators, health and nutrition indicators, education indicators, labor indicators, consumption level and pattern indicators, housing and environmental indicators, and social indicators and others.

From these seven indicators to determine the level of farmers' welfare using the scoring method, namely by giving a score or value to each answer answered by the respondent on each indicator and then after getting the score or value will be calculated again using the score range formula which later there will be two classifications, namely prosperous farmers and farmers who have not prospered, In this research, 42 respondents were used. The following is the level of well-being according to each indicator:

#### 3.3.1 Population indicators

In the population indicator, there are 31 families with a good classification, with a percentage of (73.81%), 10 families with a sufficient classification with a percentage of (23.81%), and families with a low classification as many as 1 family with a percentage of (2.38%). In the population indicator, it can be said to be prosperous in the population indicator if the number of family members living in the house  $\leq 4$  people, the number of people outside the family living in the house  $\leq 1$  person, the number of dependents in the family  $\leq 4$  people, the number of male family members  $\leq 4$  people and the number of female family members  $\leq 4$  people.

#### 3.3.2 Health and nutrition indicators

In the Health and Nutrition indicator, the classification of families that have a good classification, as many as 7 families, with a percentage of (16.67%), families that have a sufficient classification as many as 20 families with a percentage of (47.62%), and families

that have a classification of less as many as 15 families with a percentage of (35.71%). It can be said to be prosperous in health and nutrition indicators if the number of healthy family members is more than family members who have health problems, have insurance or other health insurance, types of health facilities that can be reached by families when receiving treatment, childbirth, and getting medicine based on their financing ability such as hospitals, health centers and *Posyandu* (health service in hamlet level).

### **3.3.3 Educational Indicators**

In the Education indicator, the classification of families that have a good classification, as many as 14 families, with a percentage of (33.33%), families that have a sufficient classification as many as 19 families with a percentage of (45.24%), and families that have a low classification as many as 9 families with a percentage of (21.33%). It can be said to be prosperous in educational indicators if there are many family members of productive age who are literate, a good mindset towards the importance of education

For each family member, they have the ability in terms of financing for family members in accessing the education provided, the length of time needed by each family member in completing their education in accordance with the level of education being carried out. In addition, the high level of education obtained by each family member, as well as the existence of facilities that support family members in completing education such as attending tutoring/courses outside of formal education.

### **3.3.4 Employment indicators**

In the employment indicators, of the three classifications, the employment indicator of families that have a good classification, as many as 14 families, with a percentage of (33.34%), families that have a sufficient classification as many as 23 families with a percentage of (54.76%) and families that have a less classification as many as 5 families with a percentage of (11.90%).

Based on this data, it can be concluded that a family is said to be prosperous in the employment indicator if the number of productive age family members who work is more than the productive age family members who have not worked or do not work, the length of working time in a week reaches  $\geq 35$  hours, the perspective of family members regarding the importance of doing work with skills.

### **3.3.5 Indicators of consumption levels and patterns**

In the level and consumption pattern classification indicators, the level and consumption pattern indicators of families that have a good classification are 11 families, with a percentage of (26.19%), families that have a sufficient classification as many as 23 families with a percentage of (54.76%), and families that have a low classification of 8 families with a percentage of (19.05%). It can be concluded that a family is said to be prosperous in terms of consumption level and pattern indicators if the main type of carbohydrates consumed daily is rice, family economic stability in meeting food and non-food needs every month, family ability to meet other primary needs such as clothing and boards, family ability in saving.

### 3.3.6 Housing and environmental indicators

In the housing and environmental indicators, the classification of housing and family environment has a good classification, as many as 26 families, with a percentage of (61.90%), families that have sufficient classification as many as 14 families with a percentage of (33.34%), and families that have less classification as many as 2 families with a percentage of (4.76%). It can be concluded that a family can be said to be prosperous in housing and environmental indicators if it has land and buildings that are inhabited, the type of housing used is made of permanent materials, uses electricity as lighting, uses LPG gas as fuel in cooking, the type of water source used for daily needs is water source, ownership the toilets, as well as the garbage disposal used are special garbage pits.

### 3.3.7 Social and other indicators

In social indicators and other social and other classifications, farmers who have a good classification, as many as 2 families, with a percentage of (4.76%), the family is included in the good welfare classification because the number of sectors obtained by farmers is in good calcification, in other words, the farmer can meet social and other needs well, families that have enough classification as many as 19 families with a percentage of (45.24%), and families that have less classification as many as 21 families with a percentage of (50%).

It can be concluded that a family can be said to be prosperous in social indicators and others if it has easy access to tourist attractions, the ability to use technology such as mobile phones/cellphones and computers/laptops. As well as the ownership of special funds for tourism and sports. The score range is then determined based on the results of the calculation of the classification level on the seven welfare indicators listed above. The score interval will describe the level of welfare of coffee farmer households. The relationship between the score interval and the level of well-being is:

- a. If the score is between 7-14 farmer households, it can be categorized as not prosperous
- b. If the score is between 15-21 farmer households, it can be categorized as prosperous

It can be seen in table 12 above the table of farmers' welfare levels in Sumbertani village, from 42 farmer respondents who met the welfare classification as many as 23 samples with a percentage (54.76%) and farmers who did not meet the welfare classification as many as 19 samples, with a percentage of (45.24%). The average score obtained in 7 welfare indicators of 15 can be concluded that the average farmer in Sumbertani Village, Abung Pekurun District is included in the prosperous group.

Table 12 Groups of farmers' welfare levels in Sumbertani village

Category	Freq.	Percent
Prosperous	23	54.76
Not prosperous yet	19	45.24
<b>Total</b>	<b>42</b>	<b>100.00</b>

## 4 Conclusion

Based on the research that has been carried out in Sumbertani Village, the following conclusions can be obtained: 1. The average income is IDR. 23,634,562.86 for each land with an area of 20,285.71 m<sup>2</sup>. with a farmer's income of IDR. 7,538,095, then the largest income

of the people of Sumbertani Village is IDR. 98,670,000. The level of welfare of forty-two samples of farmers who were in the prosperous group was 23 samples with a percentage of (55%) and the samples that were not in the prosperous group were as many as 19 samples with a percentage of (45%). The average score obtained in 7 welfare indicators of 15 can be concluded that the average farmer in Sumbertani Village, Abung Pekurun District is included in the prosperous group. To increase income, farmers need to increase the production of their coffee plantations by increasing the maintenance of their coffee plantations by fertilizing at the right time and the right dose because if fertilization is not right, the time and dosage are not right, the results produced will not be optimal because fertilization in The right time and the right dose have a great influence on production, if the production goes up, the income that will be 59 by farmers will also increase and if the income increases, welfare will also increase.

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