

## ANALYSIS OF HOUSEHOLD INCOME AND EXPENDITURES OF RED CHILLIA FARMERS IN SAWANG DISTRICT ACEH UTARA REGENCY

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### Abstract

One of the vegetable crops that have high economic value and is always needed is red chili. Red chili farming in Sawang District is an activity of farmer households in obtaining income to meet household consumption needs in the form of food and non-food. The ability of farmers to obtain income that is used for household consumption will determine the level of welfare of red chili farmers' households. The purpose of this study was to analyze the household income and expenditure of red chili farmers in Sawang District, North Aceh Regency with a total sample of 40 families. Data were analyzed by quantitative descriptive method. The results showed that the household income of farmers came from agricultural and non-agricultural income with the total income of all respondents amounting to 62,523,981.25 IDR /production process or 10,420,663.54 IDR/month. The income is used to meet food and non-food needs in the amount of 3,579,227 IDR/month. Meanwhile, the welfare level of farmer households is low based on the income structure and expenditure structure.

**Keywords: Red Chili, Welfare, Income, Expenditure, Farmer's Household**

### 1. INTRODUCTION

Indonesia is an agricultural country with natural resources that are very capable of supporting the country's economy. Therefore, the agricultural sector is the main source of income for most of Indonesia's population. The agricultural sector plays a strategic role in economic development both nationally and regionally. Agricultural development includes the food crops and horticulture, plantation, forestry, fisheries and animal husbandry sectors with the aim of improving people's welfare (Husni et al., 2014). The agricultural sector is the mainstay sector for the people of North Aceh Regency, based on the results of the National Labor Force survey, more than 50% of the people of North Aceh Regency are in the agricultural sector. One of the mainstay sub-sectors is the food crops and horticulture sub-sector. Horticulture groups are vegetables, fruits, medicinal plants, ornamental plants and medicinal plants or spices (Purba et al., 2021).

The types of vegetable crops that are the mainstay of North Aceh Regency are long beans, shallots, spinach, large red chilies, cayenne pepper, mushrooms, kale, cucumbers, eggplant and tomatoes. Horticultural crops are superior crops that are much needed and in demand by the community. One of the vegetable crops that have high economic value and is always needed is red chili. The large red chili harvested area in North Aceh Regency occupies the third largest area of the harvested area of other vegetable crops. North Aceh chili harvest area is 195 hectares (BPS Aceh Utara, 2020). For Sawang District in 2020, the harvested area reached 23 ha with a total production of 127.19 tons and productivity reached 5.53 tons (BPS Sawang District, 2020).

Along with the development of the food industry, chili is one of the raw materials needed and widely cultivated by producers in various farming scales (Zamrodah & Pintakami, 2020). Red chili is also a food ingredient that contains nutrients and vitamins including protein and calories (Subagyono et al., 2010). If consumed, especially used as a cooking spice, it can increase appetite (Muchlisah & Hening, 1997). In addition, red chili is also used as an industrial raw material (Taufik, 2011), such as for medicines, cosmetics and dyes (Maflahah, 2010).

Running a red chili farming business, of course, the goal of earning income is a top priority. To be able to increase the income of red chili farming, the factors that affect the income must be utilized optimally. Farming is said to be good if the output produced is greater than the input used. In this case the level of efficiency of farming depends on how farmers can increase the

efficiency of the available production factors so that the resulting production is optimal. High chili prices provide high profits for farmers. There are many obstacles faced by farmers in cultivating red chili, one of which is pests and diseases such as whitefly, anthracnose, and fruit rot which causes crop failure and fluctuating prices. Low fruit productivity and long harvest time will certainly reduce the income ratio of chili farmers.

The welfare of rice farmer households can be seen from the ability of farmers to obtain household income which is used to meet the basic needs of family life such as clothing, food, housing, health, and education. When the farmer's income is able to meet household needs, then the farmer and his family are considered prosperous, but on the contrary if the income obtained has not been able to meet basic needs, then the farmer is said to be not prosperous. Welfare essentially consists of two dimensions, namely economic welfare and social welfare (Martina & Yuristia, 2021). In connection with the description above, the author was inspired to analyze the income and expenditure of household red chili farmers in Sawang District, North Aceh Regency.

## 2. IMPLEMENTATION METHOD

This research was conducted in Sawang District, North Aceh Regency. The population in this study were all chili farmers in Sawang District. The sample is homogeneous so that in this study 40 families were taken which were considered representative in this study (Marcoulides & Hershberger, 2014). The sampling method uses the Snowball Sampling technique, which is a technique of determining the sample which is initially small in number, then the sample chooses his friends to be sampled and so on, so that the number of samples increases. Like a rolling snowball, it gets heavier and heavier (Sugiyono, 2013).

The data analysis used in this research is descriptive quantitative data analysis, namely the data obtained based on the results of interviews with 40 red chili farmers are in the form of numbers which are then presented in the form of a systematic description.

To calculate the net income of red chili farming, the formula (Suratiah, 2006) following :

$$\Pi = TR - TC$$

$$TR = P \times Q$$

$$TC = TFC + TVC$$

Information :

$\Pi$  = Red Chili Farming Income

TR = Total Revenue

TC = Total Cost

P = Price of output

Q = Number of outputs

TFC = Total fixed costs

TVC = Total variable cost

To calculate the total household income of red chili farmers, the formula (Shinta, 2001) following :

$$P_n = P_1 + P_2$$

Information :

$P_n$  = Total household income of red chili farmers

$P_1$  = red chili farming income

$P_2$  = non-farming income of red chili

To find out the household expenditure of red chili farmers, the equation model is used (Suggestion et al., 2015) following :

$$C_t = C_a + C_b$$

$C_t$  = Total household expenditure

$C_a$  = Expenditure on food consumption

$C_b$  = Non-food consumption expenditure

To find out the welfare of red chili farmers' households based on the structure of red chili farmers' household incomes, red chili farmers' households used the following equation:

$$PSPP = (TPSP / TP) \times 100\%$$

Information :

- PPSP = Share of red chili farming income (%)  
 TPSP = Total income of red chili farming (IDR/year)  
 TP = Total farmer household income (IDR/year)

Based on the household expenditure structure of red chili farmers, the following equation is used:

$$PEP = (VAT/\Sigma TE) \times 100\%$$

Information :

- PEP = Share of expenditure on food (%)  
 PPN = Share of expenditure on food (IDR/year)  
 TE = Total household expenditure of farmers

### 3. RESULTS AND DISCUSSION

#### 3.1 Analysis of Household Income of Red Chili Farmers

Agricultural activities are the main source of livelihood for most households in rural areas. Households of red chili farmers in Sawang District have several sources of income including income from red chili farming and other non-agricultural businesses. The entire income is allocated by farmers to meet household needs such as food and non-food needs. Household income sourced from red chili farming is the net income received by farmers after the receipts are deducted by the production costs of red chili farming.

Production costs in red chili farming consist of fixed costs and variable costs. Fixed costs are costs that are relatively the same in number and do not affect the amount of red chili production. These costs are in the form of depreciation costs for equipment used in red chili farming in the form of hoes, keri and ground harrows. While variable costs (variable costs) are costs incurred and discharged in one production process. These costs are in the form of land rent, seeds, fertilizers, pesticides, and labor. The total cost of production in red chili farming is the sum of variable costs and fixed costs which can be seen in Table 1 below:

**Table 1.** Production Costs of Red Chilli Farming for Production Process

No	Fee Type	Average Per Farmer (IDR/pp)	Average per Hectare (Ha/pp)
1.	Fixed cost	85,593.75	397,648.08
2.	Variable Cost	968,786.30	38,751,451.80
3.	Total Cost	1,054,380.05	39,149,099.88

Source: Primary Data (processed), 2021

Based on Table 1, it can be seen that the average fixed costs incurred by farmers are 85,593.75 IDR and variable costs of 968,786.30 IDR, so that the total cost incurred by farmers per production process is 1,054,380.05 IDR with an average land area of 0.23 Ha if averaged per Ha, the total cost incurred by farmers is 39,149,099.88 IDR/ha/pp. The total cost of red chili production in Sawang District is very high compared to the research conducted (Agung et al., 2019), The total cost incurred in conducting red chili farming is 16,402,500 IDR/ha/production process.

Revenue is the amount of red chili production produced per unit of land area multiplied by the price sold by farmers to consumers. The average price sold by red chili farmers at the time of the study in Sawang District was 37,000 IDR/kg. While the average amount of red chili production in one production process on an area of 0.23 ha is as much as 1,507,725 Kg or as much as 6.701

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Kg/Ha. So that the income obtained by farmers is 55,785,825 IDR/pp or 247,937,000IDR/Ha. For details, see the following table.

**Table 2.** Total Cost, Revenue and Income of Red Chili Farming

Information	Average of a Farmer (IDR/pp)	Average of Ha/pp (IDR)
Total Cost (TC)	8,426,843.75	39,149,099.88
Reception	55,785,825.00	247,937,000.00
Net income	47,358,981.00	208,787,900.12

Source: Primary Data (Processed)

Based on Table 2, it can be seen that the average net income from red chili farming in one production process is 47,358,981 IDR which is obtained from revenue minus the total cost of red chili farming activities. The amount of production costs of red chili farming, can affect the level of profit. Profit/net income obtained is lower than the research conducted (Agung et al., 2019), where the profit obtained is 83,594,714 IDR/Ha/production process and the research conducted by Baru et al (2015) from chili farming obtained a profit of 86,186,000 IDR/production process.

Household income of red chili farmers in the District, apart from red chili farming, also comes from other activities, such as civil servants, non-red chili farming, traders, teachers, brick craftsmen, laborers and others. The average household income of farmers from non-red chili farming is 15,165,000 IDR/pp. In one production process, red chili farming is calculated within a period of six (6) months, so one month the average income of farmers from non-red chili farming is 2,527,500 IDR. For more details can be seen in the following table:

**Table 3.**Total Household Income of Red Chili Farmers

Income Type	Average Amount of Farmer's Household Income (IDR/pp)	Average Peani Household Income (IDR/Month)	Percentage (%)
Red Chili Farming	47,358,981.25	7,893,163.54	75.7
Non Red Chili Farming	15,165,000.00	2,527,500,00	24.3
Total income	62,523,981.25	10,420,663.54	100

Source: Primary Data (processed), 2021

Based on the table above, the total income of farmer households comes from red chili farming activities and non-red chili farming activities. The income obtained by households from red chili farming is 47,358,981.25 IDR / production process or 7,893,163.54 IDR/ month. In one production process, the total income of the farmer's household is 62,523,981.25 IDR and if calculated monthly the average total income of farmer households is 10,420,663.54 IDR. The description of farmer household income can be seen in the following table:

**Table 4.**Interval of Household Income of Red Chili Farmers

No	Interval Average Income/month	Number (Soul)	Percentage (%)
1	>1,000,000 – 3,000,000	0	0
2	>3,000,000 - 5,000,000	0	0
3	>5,000,000 - 7,000,000	2	5
4	>7,000,000	38	95
	<b>Amount</b>	<b>40</b>	<b>100</b>

Source: Primary Data (processed), 2021

Based on Table 4, it can be seen that household income is dominated by income > 7,000,000. Household income of red chili farmers is classified as very high with an average income of 10,420,663.54 IDR of month. This income is higher than the UMP (Provincial Minimum Wage) in Aceh in 2021, which is 3,165,030IDR/month. The level of income of farmers at the time of the study was high, where most of the income was obtained from red chili farming activities. At the time of the study, the price of red chili obtained by farmers was relatively high, namely 37,000 IDR/kg.

### 3.2 Household Expenditures of Red Chili Farmers in Sawang District

A very important benchmark to see the welfare of farmers is household income, because some aspects of welfare depend on the level of farmers' income. The amount of farmer's income itself will affect the basic needs that must be met, namely, food, clothing, housing, health and employment or can be grouped into food and non-food consumption expenditures. Household consumption is expenditure for the purchase of final goods and services in order to get satisfaction or fulfill household needs. Households with high incomes will consume high levels of income and households with low incomes will also consume low incomes.

Household expenditures for red chili farmers in Sawang District, North Aceh Regency are in the form of food and non-food expenditures. Food expenditures include expenditures to meet food needs in the form of rice, eggs, fish, tofu, tempeh, vegetables, drinks and others. As seen in the following table:

**Table 5.** Average Household Food Expenditure of Red Chili Farmers

Food Type	Total Monthly Expenditure(IDR)	Percentage (%)
Rice	264,250	14.14
Fish	191,750	10.26
Egg	62,526	3.18
Know	25,075	1.34
Tempe	30,079	1.53
Vegetables+Spices	127,875	6.84
Cooking oil	102,675	5.50
Fruit	68,125	3.65
Water gallon	38,750	2.07
The	67,150	3.59
Coffee	353,750	18.93
Milk	29,750	1.59
Sugar	86,800	4.65
Other drinks	23,375	1.25
Cigarette	274,375	14.69
Snack	100350	5.37
Other food	26,375	1.41
<b>Total Food</b>	<b>1,868,400</b>	<b>100</b>

Source: Processed Data, 2021

Based on the table above, it can be seen that the largest food expenditure costs are for the purchase of cigarettes, coffee, and rice. The total household food expenditure is IDR 1,868,400/month. Not much different from the results of research conducted(Martina & Yuristia, 2021), that the total household food expenditure of rice farmers in Sawang District is 1,481,102.38 IDR/month.

In addition to food needs, households also have non-food expenditures which are described in the following table:

**Table 6.** Average Non-Food Expenditure of Red Chili Farmers

Non-Food Type	Total Expenditure/month (IDR)	Percentage (%)
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Education	711,500	41.59
Health	47,646	2.78
Clothes	175,417	10.25
House Rent/Repair	6,250	0.37
Transportation	369,375	21.59
Social activities, and other customs	88,000	5.14
Entertainment	103,462	6.05
Toiletries, washing and beauty	61,190	3.58
Electricity	60,438	3.53
LPG gas	24,300	1.42
Other non-food costs	63,250	3.70
<b>Total Non-Food Cost</b>	<b>1,710,827</b>	<b>100</b>

Source: Primary Data (processed), 2021

Based on Table 6 above, the total monthly non-food expenditure is 1.710827 IDR. The largest non-food expenditure was for education, which was 41.29% and transportation costs were 21.59%. Education costs incurred by households are for payment of school fees/semester fees, the need for buying books and children's pocket money. The education that the chili farmer's children go through is that they attend state schools, dayah, and study at universities so that the costs incurred are quite high. While transportation is used by members of farmer households to buy fuel or expenses incurred for daily activities outside the home.

### 3.3 Household Welfare of Red Chili Farmers Based on Income and Expenditure

The welfare of red chili farmers in Sawang District can be said to be a household condition that is able to meet food and non-food needs from income sourced from red chili farming activities. Based on the results of the research, it is known that the total income of red chili farmers originating from red chili farming activities monthly income is 10,420,663.54 IDR/month. From this amount of income, it can be seen that the income structure based on red chili farming income is 75.5% of the total household income of red chili farmers.

Apart from the income structure, the welfare of farmer households can also be seen from the share of household food expenditure. The following is the result of calculating the share of household food expenditure of red chili farmers in Sawang District, North Aceh Regency.

**Table 7.** Share of Household Expenditure

<b>Output Type</b>	<b>Total Expenditure per month (IDR)</b>	<b>Percentage (%)</b>
Food Expenditure	1,868,400	52.2
Non-Food Expenditure	1,710,827	47.8
Total	3,579,227	100

Source: Primary Data (processed), 2021

Based on the table above, it is known that the total household expenditure of red chili farmers is 3,579,227 IDR/month. These expenditures were dominated by food expenditures of 1,868,400 IDR, while non-food expenditures were of 1,710,827 IDR, similar to the research conducted (Martina et al, 2018), that household food consumption of soybean farmers is greater than non-food consumption. According to Ernest Engel in BPS (2014), that the percentage of expenditure on food will decrease in line with the increase in income. Therefore, the composition of household expenditure can be used as an indicator for the welfare of the population. The lower the percentage of expenditure on food to total expenditure, the better the economic level of the population and vice versa.

Based on the results of the research, the household income of farmers originating from red chili farming is relatively high and when viewed from the nominal. All farmers' income from red

chili farming has been able to cover all household expenses, even though the income is still in surplus. This can explain that red chili farmer households in Sawang District are prosperous households.

#### 4. CONCLUSION

Based on the results of the study it can be concluded that:

- a. The average total household income of chili farmers is 62,523,981.25 IDR/production process and if it is calculated monthly the average total income of farmers' households is 10,420,663.54 IDR which comes from agriculture and non-agriculture.
- b. The household expenditure of chili farmers in Sawang District, North Aceh Regency is used to meet the basic needs of farmer households, namely, food, clothing, housing, health, and employment in the amount of 3,579,227 IDR/month;
- c. Household welfare based on the household income structure of red chili farmers in Sawang District, North Aceh Regency is 24.3%;

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