
The Contribution of Revenue and Consumption Cost of Soybean Farmers in Muara Batu Subdistrict Aceh Utara

The
Contribution of
Revenue and
Consumption

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Abstract

Purpose – This study aims to analyze the contribution of revenue and consumption cost of soybean farmers.

Design/Methodology/Approach – Data analysis was done by quantitative descriptive analysis. Data were obtained in the form of numbers then the results of the obtained data were presented in the form of a systematic description. The sample in this study is the entire population of soybean farmers in Muara Batu, Aceh Utara by using census method as much as 50 farmers.

Findings – The results showed that the contribution of soybean farm revenue amounted to 6.94%, non-soybean farming amounted to 48.12%, and out farm activities amounted to 44.94%. This indicates that soybean farming activities are enough to contribute to increase the family revenue. Meanwhile, the average amount of household cost for food is 16,696,800 IDR/Year and for non-food is 8,397,500 IDR/Year. The analysis shows that although the contribution of soybean farming revenue is the lowest than the other farms' revenue, it is very helpful to the farmers for fulfilling the needs of family consumption cost every year.

Research Limitations/Implications – The object of this research is to study all the farmers who utilize the land for soybean farming in Muara Batu. The research limitations are income contribution and consumption cost of soybean farmers.

Practical Implications – The amount of soybean production produced by farmers is much lower. However, the farmers can still increase their income if the amount of production can be increased by more intensification of soybean farming as tough as the use of superior varieties of soil processing, organic fertilizer on soil, balanced and integrated pest control, and harvesting and post-harvesting to reduce food losses.

Originality/Value – The farmers earned revenue not only from soybeans, but also from non-soybean farm and out farm. Soybean farming activities aim to increase revenues in order to meet the needs of the family that consist of food and non-food consumptions.

Keywords Contribution, consumption, soybean farmers

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1. Introduction

Indonesia has potential in improving the agricultural sector. However, the availability of land and natural resources is not balanced by the availability of sufficient agricultural products. The increase of soybean needs with the population growth and high per capita consumption value is not balanced, especially in the form of processed and the growth of animal feed industry as well as industrial raw materials scale to small or household (Siregar, 2003). In 2013, domestic soybean production only reached 779,992 tons. While in 2014 soybean production reached 954,977 tons, then increase in 2015 reached 963,183 tons or 43.78% of the total requirement or reaching 2.2 million tons (Central Bureau of Statistics, 2016). Hence, the deficiency is about 1.23 million tons.

The problems caused the gap between national soybean production and consumption (Ministry of Agriculture, 2010; Suyanto and Ni Nyoman, 2010) are as follows: (1) Owing to the low level of productivity and profit of soybean farming compared to other commodities such as rice and maize, farmers are less interested in planting soybean and moving to other farms which are more profitable. As a result, the consumption of soybean food has decreased sharply and national soybean production has also decreased. (2) The development of soybean seed industry. (3) Soybeans are vulnerable to pests and diseases so the stability is low. (4) Competition of land with other commodities. (5) Private sector is less interested in developing soybean because of the high risk of failure and less income. (6) Farmers have no intensive knowledge about soybean, it is a means of modern agriculture. (7) Soybean trading system is not conducive, soybean import is easier and cheaper, so farmers who have average small farming are able to compete less.

In Aceh Utara the soybean demand still relies on imported soybean so it encourages the government to cooperate with farmers and Kodim 0103 to conduct food security program by utilizing the land for the soybean farming activities in Muara Batu, Aceh Utara. The area of land for soybean farming is 40 Ha. Unused land is an abandoned agricultural area, with no exploitation efforts on the land. Most of the unused land is owned by government or certain agencies that are not utilized for any purpose. It can be used for agricultural activities starting from plantations such as oil palm, rubber, and cocoa. Utilization of unused land can also be used for horticultural farming such as fruits and vegetables and for corn, soybean, and the other commodities. Utilization of unused land can also reduce the dependence of farmers on livelihoods that largely depend on rice farming. Therefore, utilization of unused land can help in improving the farmer's economy and sustaining life to fulfill the needs of the farmer's family. Thus the farmer's welfare level will increase along with the income obtained from the amount of production produced by farmers able to fulfill the needs of farmers' households, especially food needs.

Law No. 7/1996 on Food, defines food security as a condition of food fulfillment for every household, as reflected by the availability of adequate food, both quantity and quality, safe, equitable, and affordable. The definition of food security includes the macro-aspect, namely the availability of adequate food; and also the micro-aspect, namely the fulfillment of food needs of every household to lead a healthy and active life (Republic of Indonesia, 2012). Therefore, the farmer's income will increase with the ability of farmers to fulfill the needs of family food which is a basic need that must be fulfilled and it cannot be replaced with the other needs. But the basic need is not only for food, but also the non-food needs such as housing, clothing, education, and health. Based on the above description, the problem in this study is how big is the contribution of income from soybean farming and how much is the cost of consumption of soybean farmer's family in Muara Batu, Aceh Utara? Thus this study aims to analyze the contribution of soybean farming and household consumption cost of soybean farmers in Muara Batu, Aceh Utara.

2. Methods and Materials

The study was conducted in Muara Batu sub-district, Aceh Utara. Site selection is done with the consideration that the area has soybean farming activities on the unused land. The object of this research is all the farmers who utilize the land for soybean farming in Muara Batu. The research scope is income contribution and consumption cost of soybean farmer. Data in this research consist of primary data and secondary data. Primary data are data obtained through direct interviews with farmers using a list of questions that have been arranged in a systematic and field visit. Secondary data are obtained through the literature study, the Central Bureau of Statistics, the agriculture service, and by utilizing the results of research experts.

The population is all farmers whose do soybean farming on the land in Muara Batu, Aceh Utara. The sample in this study is the entire population of soybean farmers in Muara Batu, Aceh Utara by using census method as much as 50 farmers. Data analysis was done by quantitative descriptive analysis. Data were obtained in the form of numbers then the results of the obtained were data presented in the form of a systematic description. To answer the first research purpose, soybean farming income contribution to total household income of farmers, we use the following formula (Suratiah, 2008):

$$Kontribusi = \frac{PUK}{\sum PTK} \times 100 \quad (1)$$

where *PUK* is the soybean farming revenue (IDR/Year) and *PTK* the total farmer family income (IDR/Year).

With the following criteria:

- Dominant: soybean farming revenue $\geq 50\%$ to total revenue.
- Not-dominant: soybean farming revenue $< 50\%$ to total revenue.

To answer the second objective, the cost of household consumption of soybean farmers, we used the following formula:

$$BK = BKp + BKnp \quad (2)$$

where *BK* is the total cost consumption (IDR/Year), *BKp* the food consumption cost (IDR/Year), and *BKnp* the non-food consumption cost (IDR/Year).

3. Result and discussion

Soybean farming activities are farming activities conducted on the land in Muara Batu to increase the income and welfare of farmers. In addition, the production of soybeans produced by farmers is expected to reduce the demand for imported soybean in Aceh Utara and surrounding areas. Based on the results of research conducted then, the calculation results obtained for the first purpose is presented in Table 1.

Variables	Total (IDR/Year)	Average Total Cost of Production, Gross Revenue, and Income of Soybean Farming in 2016
Gross revenue	4,741,680	
Production cost	1,950,400	
Income	2,791,280	

Table 1.

The calculation of soybean farming income is derived from the amount of soybean production multiplied by soybean price at harvest time then reduced by total production cost consisting of variable cost and fixed cost starting from planting, maintenance, and harvesting activities. Variable costs are the costs incurred by farmers that exhausted in one year of production including the cost of seeds, fertilizers, pesticides, and labor wages. While the fixed cost is not exhausted in one year of production which includes the cost of depreciation of equipment such as hoes. The land rent is not issued by farmers because the land used is previously the unused land and also land processing is assisted by Kodim 0103. The total production costs incurred in one year of production is 1,950.400 IDR.

The acceptance of soybean farming is the multiplication of the amount of soybean production in a year with the price of soybean per kilogram. The average of soybean farming area is 0.8 Ha and the soybean is capable of producing 79,028 kg/Year with selling price 6,000 IDR/kg. The total production of the farmers received revenue of 4,741.680 IDR. So farmers earn an income of 2,791.280 IDR/Year. If converted, soybean production in research area is 98,785 kg/Ha/Year, thus soybean production amount is much lower than the potential yield that can be reached, that is, 3 ton/Ha/Year (Aldilah, 2014). The dominant factors causing low productivity of food farming are as follows: (a) low application of cultivation technology in the field; (b) soil fertility level continues to decline, and (c) exploration of plant genetic potential that is still not optimal (Hutapea, and Ali Zum, 2010).

From Table 2, it can be seen that the income of farmers' families is not only from soybean farming but also non-soybean farming activities. The farming activities other than soybean farming are paddy field farming. Rice farming is actually the main work of farming families and soybean farming is a side activity undertaken by farmers in the framework of government programs in cooperation with Kodim 0103 to realize food security programs, especially soybean. This is done because most of the needs of soybean in the region still rely on imports. In addition, soybean farming is done by farmers to help farmers to increase their family income. Non-soy farm income earned by farmers amounted to 19,354.760 IDR/Year. It is earned from revenue minus total cost of production in one year of production.

Farmers' income is also sourced from outsourcing activities of farmers, the activities carried out by farmers to earn income by working on non-farm activities such as construction laborers, motorcycle taxi drivers, coffee shops, laundry workers, brick making, and others. Total income earned by farmers from non-farm activities is 18,072.000 IDR/Year.

From Table 3, it can be seen that the average income of soybean farmer's household is 40,218.040 IDR/Year. The income is obtained from farmers from soybean farming, non-soybean farming, and non-farming. The contribution of soybean farming <50% is 6.94%, lower than non-soybean farming and non-farm activities. This shows that the contribution of soybean farming income is less dominant than the total revenue obtained. However, the income of soybean farming is very beneficial for farmers, it helps farmers to fulfill the cost of family consumption, besides soybean farming can reduce imported soybean. This means that the contribution of soybean farming income has a very important role for farmers and also for the region.

Table 2.

Average Farmers
Income from Non-
Soybean Farming
and Outside Farming
in 2016

Variables	Total (IDR/Year)
Non-soybean farming	
Gross revenue	24,096,960
Production cost	4,742,200
Income	19,354,760
Non-farming	18,072,000

Revenue earned by farmers from the activities undertaken is to fulfill the needs of family *that consist* of food and non-food consumptions. The amount of income spent on food and non-food needs can be an indication of the level of welfare of soybean farmers. The results of the two goal research can be seen in Table 4.

From Table 4, it can be seen that household needs of farmers consists of food consumption and non-food consumption. Food consumption is a basic need in the form of food for the family that must be fulfilled by the farmers. This consumption consists of rice, fish, cooking oil, sugar, and others. Total cost incurred by farmers to fulfill food consumption is 16,696.800 IDR/Year. In addition to the food consumption, there are also non-food consumption that must be met by farmers which consist of tuition, clothing, electricity, transportation, health, and others. The cost incurred to meet non-food consumption is 8,397.500 IDR/Year.

Of the household income of farmers and the cost of household consumption, soybean farming income is a little helpful in the cost of household consumption of farmers. However, if farmers do no soybean farming, it is not a problem because the income from non-soybean farming and non-farming activities has been able to fulfill the cost of household consumption of farmers. But if they rely only on soybean and non-soybean farming, the income is also not able to fulfill the cost of family consumption. Therefore, all farmers who become respondents have outside jobs of farming. Revenue earned by farmers is utilized to fulfill the household consumption cost. The ability of farmers in accessing food and non-food shows a prosperous life for farmers, one way that farmers have done is to utilize the unused land.

The percentage of spending on food will decrease in line with rising incomes. Therefore, the composition of household consumption can be used as an indicator for the welfare of the population. The lower the percentage of spending on food on total consumption, the better the economy of the population. The results of the study showed that the cost of food consumption is greater than the cost of non-food consumption. Costs incurred by farm households to fulfill food consumption cost are 66.54% and non-food consumption costs of 33.46% which means that the level of soybean farmers “welfare is still low” even though farmers’ income comes from soybean, non-soybean, and outside farming.

Table 3.
Contribution
of Household Income
of Soybean Farmers
in 2016

Variables	Total (IDR/Year)	Contribution (%)
Soybean farming	2,791,280	6.94
Non-soybean farming	19,354,760	48.12
Non-farming	18,072,000	44.94
Total	40,218,040	100

Table 4.
Average Cost
of Household
Consumption of
Soybean Farmers in
2016

Variables	Total (IDR/Year)	Percentage (%)
Food consumption	16,696,800	66.54
Non-food consumption	8,397,500	33.46
Total	25,094,300	100

4. Conclusions

From the results of this study, it can be concluded that if the contribution of farmers' income from soybean farming is <50%, it indicates that the income of soybean farming is not dominant in the total family income. The cost of soybean farmers' consumption is 25,094.300 IDR which consists of food consumption cost of 16,696.800 IDR/Year and non-food consumption cost of 8,397.500 IDR/Year.

5. Recommendation

The amount of soybean production produced by farmers is much lower. However, the farmers can still increase their income if the amount of production can be increased by more intensification of soybean farming as tough as the use of superior varieties of soil processing, organic fertilizer on soil, balanced and integrated pest control, and harvesting and post harvesting to reduce food loses This can be achieved by government assistance through agricultural extension activities such as education, mentoring, and training for farmers to develop soybean farming.

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