

Penguatan Ketahanan Pangan Kabupaten Jember Melalui Analisis Nilai Tambah Komoditas Kedelai pada Agroindustri “Saudara Jaya”

Strengthening Food Security of Jember District Throug Commodity-Added Value Analysis Soybean in Agroindustry “Saudara Jaya”

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Abstrak

Salah satu keberhasilan pembangunan yaitu pada sektor pertanian yang berkaitan dengan pengelolaan komoditas pangan. Tanaman pangan merupakan salah satu subsektor pertanian yang memiliki peran penting dalam perekonomian Indonesia, seperti memberikan nilai tambah bagi komoditas yang mendapatkan perlakuan (agroindustri). Contoh nilai tambah yaitu menjadikan hasil pertanian sebagai produk baru yang berumur panjang dan siap untuk dikonsumsi. Nilai tambah yang dihasilkan dapat meningkatkan pendapatan. Salah satu subsektor pertanian yang banyak mendapatkan perlakuan (pengolahan) yaitu komoditas pangan contohnya kedelai. Kedelai dapat dikonsumsi langsung atau dalam bentuk olahan. Kedelai dalam bentuk olahan dapat dijadikan tahu, tempe, kecap, susu, preserved soy beans taugé, dan lain sebagainya. Tahu merupakan makanan ringan yang berbahan dasar kedelai dan dikonsumsi sebagai pendamping nasi. Kelurahan Gebang menjadi salah satu kelurahan di Kecamatan Patrang Kabupaten Jember yang memiliki banyak agroindustri tahu salah satunya agroindustri tahu “Saudara Jaya”. Tujuan dari penelitian ini yaitu untuk mengetahui nilai tambah pengolahan kedelai pada agroindustri tahu “Saudara Jaya”. Metode penelitian yang digunakan adalah metode deskriptif dan analitik. Metode pengumpulan data menggunakan data primer dan sekunder. Alat analisis data menggunakan analisis nilai tambah dengan menggunakan metode hayami. Hasil penelitian menunjukkan bahwa: Nilai tambah agroindustri tahu “Saudara Jaya” memberikan nilai positif sebesar Rp. 7.970/kg, rasio nilai tambah 32%, dan keuntungan sebesar Rp. 6.620/kg dengan tingkat keuntungan 27% untuk tahu ukuran besar. Sedangkan untuk tahu berukuran kecil memiliki hasil nilai tambah sebesar Rp. 20.792/kg dengan rasio nilai tambah 60%, keuntungan Rp. 20.214/kg dengan tingkat keuntungan 59%.

Kata Kunci: Agroindustri, Kedelai, Nilai Tambah

Abstract

One of the development successes is in the agricultural sector related to food commodities. Food crops are one of the farming subsectors that have an important role in the Indonesian economy, such as providing added value for commodities that get treatment (agro-industry). An example of added value is making agricultural products as new products that are long-lived and ready for consumption. The added value generated can increase revenue. One of the farming subsectors that gets a lot of treatment (processing) is food commodities such as soybeans. Soybeans can be consumed directly or in processed form. Soybeans in processed form can be used as, tempeh, soy sauce, milk, sauce, and so on. is a snack made from soybeans and consumed as a companion to rice. Gebang Village is one of the villages in Patrang District, Jember Regency which has many agro-industries, one of which is "Saudara Jaya". This study aims is to determine the added value of soybean processing in the "Saudara Jaya" agroindustry. The research methods used are descriptive and analytical. The data collection method uses primary and secondary data. Data analysis tools use value-added analysis using biological methods. The results showed that: The added value of "Saudara Jaya" agroindustry provides a positive value of Rp.7,970/kg, a value-added ratio of 32%, and a profit of Rp. 6,620/kg with a profit rate of 27% for large . Meanwhile, small-sized has a value-added result of Rp. 20,792/kg with a value added ratio of 60%, a profit of Rp. 20,214/kg with a profit rate of 59%.

Keywords: Agroindustry, Soybean , Value Added

INTRODUCTION

Development is a planned change process and an activity that gradually moves towards a better level. Therefore, to achieve this, economic development is one of the strategies for success in development. One of the development successes is in the agricultural sector, which is related to the management of food commodities. It is hoped that the agricultural sector's results can be utilized as well as possible (Isbah & Iyan, 2016). Food crops are one of the agricultural subsectors that have an important role in the Indonesian economy, such as providing added value to commodities that receive treatment (agro-industry). An example of added value is making agricultural products into new products that have a long life and are ready for consumption. The added value generated can increase income (Yanto et al., 2022).

In 2013, agro-industry was the sector that had the largest share of GDP at 25.8% in 2010; 25.71% in 2011; 25.59% in 2012; and 25.53% in 2013. The agricultural sector is the sector with the third largest share in GDP after the trade, hotel, and restaurant sectors. Contribution of the agricultural sector 13.16% in 2010; 12.78% in 2011; 12.53% in 2012, and 12.26% in 2013. This data shows that the agricultural sector and industrial sector have a large role in Indonesia's economic development (Pratiwi, N.A. et al., 2017).

The dominant agricultural land in our country is the producer of the staple food (Prabowo et al., 2023). One of the agricultural subsectors that receives a lot of treatment (processing) is food commodities, for example soybeans. Soybeans are a food crop belonging to the legume group which has various contents that are good for the body such as protein, fat, carbohydrates and minerals (Alnapi, 2015). Demand for soybeans experienced fluctuations from 2019 to 2021. Meanwhile, consumption of soybeans from 2017 - 2021 experienced an increase. The development of increasing demand and consumption of soybeans can be due to increasing public awareness of the importance of consuming healthy and nutritious food, one of which is soybeans.

Meanwhile, the demand for soybeans is not supported by the amount of local soybean production which cannot meet community needs (Hafni, R. et al., 2022).

Indonesia has two types of soybeans, namely local soybeans and imported soybeans. The existence of imported soybeans is due to the increasing level of soybean consumption among Indonesian people. The high level of consumption of soybeans and their processed products was the main factor in imports of soybean commodities in 2019, reaching 2.67 million tons (BPS, 2022). This achievement is fresh soybeans, which will be used as raw material for making tempeh.

Soybeans can be consumed directly or in processed form. Soybeans in processed form can be made into tempeh, soy sauce, milk, preserved soybeans, and so on (Yanto et al., 2022). Processing soybeans into new products can provide positive results, because it can extend the shelf life and reduce the risk of loss of production. Soybean processing can also provide added value. Added Value is the addition of value to agricultural products that have undergone processing, storage, and transportation (Sumarti et al., 2023). One of the many soybean agro-industries in Jember Regency is the agro-industry. is a type of food made from soybeans, which is often consumed by people because it is easy to obtain and nutritious. The prospects for the business are currently quite profitable, and even now it is always in demand by the public because it is one of the popular traditional foods.

Jember Regency is one of the regencies that has a large number of agro-industry. This is supported by Jember Regency as one of the contributors to soybean production in East Java. It was recorded that in 2010, Jember Regency had approximately 742 agro-industries (Jember Regency Agriculture and Trade Services, 2010). Gebang Village is one of the Villages in Patrang District, which has several agro-industries. The following are several agro-industries located in Gebang Village. The agroindustry "Saudara Jaya" is one of the agro-industries located in Gebang Village, Patrang District. The "Saudara Jaya"

agroindustry processed soybeans starting in 1992.

The "Saudara Jaya" agroindustry is the one that uses the rawest materials with an average of 100 - 350kg of raw materials per day of production. One day of the "Saudara Jaya" agro-industry production process can produce ± 150 molds, where one mold will produce ± 80 - 165 pieces of with a weight per piece of 25 grams and 50 grams. The processing business that is run can provide added value because the processing process uses production inputs such as costs and labor. The "Saudara Jaya" agroindustry has several problems that often occur while running the business, such as soybean prices which often experience drastic increases. This increase in soybean prices will be very beneficial for small-scale business owners, which will have an impact on revenue and income.

From the problems above, the researcher draws the issue of whether the processing of soybeans into the "Saudara Jaya" agro-industry provides positive added value during the production period.

METHODS

The research area chosen was the "Saudara Jaya" tofu agroindustry located in Patrang District, Jember Regency. The basic

consideration in selecting the location is that this agro-industry uses quite high levels of raw materials, has a high production volume (± 900 kg of tofu), and is one of the agro-industry centers in Patrang District.

The research method uses descriptive and analytical methods. The data collection method uses primary data and secondary data with data collection techniques through interviews, observation, and documentation. The sampling method uses purposive sampling.

The data analysis method for solving problems is added value analysis using the Hayami method. The Hayami method is the best method for calculating the added value from processing soybeans into tofu in the "Saudara Jaya" tofu agroindustry. Completion of the added value analysis in the "Saudara Jaya" tofu agroindustry is calculated by the average daily use of raw materials. The first stage of calculating the Hayami method requires data regarding the amount of output, amount of input, labor (HOK), product prices, and the contribution of other inputs to the "Saudara Jaya" tofu agroindustry (Hikmah et al., 2022). Systematically, the value-added procedure of the Hayami method can be written as follows:

Table 1
Hayami Method of Calculating Added Value

No	Output, Input and Price	Unit	Formula
1	"Tofu"	Kg/Production Process	(1)
2	Soybean	Kg/ Production Proses	(2)
3	Labor	HOK	(3)
4	Conversion Factor		(1)/(2)
5	Labor Coefficient		(3)/(2)
6	Product Price	Rp/ Kg	(6)
7	Labor Wages	Rp/ HOK	(7)
Revenue, dan Profit/Kilogram Raw Material			
8	Soybean Raw Material Price	Rp/ Kg	(8)
9	Other Input Contributions	Rp/ Kg	(9)
10	Raw Material Value (production)	Rp/ Kg	(4)(6)
11	Value Added Analysis	Rp/ Kg	(10) – (8) – (9)
	• Value Added Ratio	%	(11)/(10)*100%
12	Labor Revenue	Rp/ Kg	(5)(7)
	• Labor Share	%	(12)/(11)*100%
13	Profit	Rp/ Kg	(11) – (12)
	• Profit Rate	%	(13)/(10)*100%
Remuneration for Production Factor Owners			

14	Margin	Rp/ Kg	(10) – (8)
	• Labor Revenue	%	(12)/(14)*100%
	• Other Input Contribution	%	(9)/(14)*100%
	• Profit	%	(13)/(14)*100%

Sumber : Hayami Method (Sumarti, et.al (2023))

Added value can be sought by calculating product value and raw material costs. The following is the formula for calculating added value:

$$VA = NP - IC$$

Information:

VA: Value added (Rp/Kg raw materials)

NP: Production value (Rp/Kg raw materials)

IC: Intermediate cost (Rp/Kg raw materials)

RESULTS AND DISCUSSION

Location of Agro-Industry Business Know "Saudara Jaya"

Jember Regency is one of the regencies in East Java Province. Jember Regency borders several regencies, such as to the north it borders Bondowoso, Situbondo and Probolinggo Regencies. To the east, it borders Banyuwangi Regency. To the west, it borders Lumajang and Probolinggo Regencies. To the south, it borders the Indian Ocean. Jember Regency has an area of around 3,293 km². Jember Regency has quite a large number of agro-industries processing agricultural products. One of the agro-industries in Jember Regency is located in Gebang Village. Gebang Village is one of the Villages in Patrang District. This sub-district has an area of around 4.26 km² or 426 ha with a population of 26,305 people. Gebang Village is one of the Villages in Patrang District that has tofu processing businesses, one of which is the "Saudara Jaya" agroindustry. The "Saudara Jaya" tofu agroindustry is located on Teratai street Number. XVI Block C Number.12 Gebang.

2. Aspects of Agro-Industry Human Resource Management Know "Saudara Jaya" Human Resources is an individual or group of people who are productive or work as drivers of an organization, whether an organization in an agency or a company. Human resources in a company are always equipped with functions management that will look at character, educational

The Value Added Criteria can be interpreted as follows:

1. VA > 0, soybean processing in the "Saudara Jaya" tofu agroindustry provides added (positive) value.

2. VA < 0, soybean processing in the "Saudara Jaya" agroindustry cannot provide added value (negative).

background, skills, and knowledge. The "Saudara Jaya" agroindustry has human resources in the form of workers who help with the tofu production process. There are 10 workers with the average workforce being male. The average workforce is 28 – 48 years old. Meanwhile, for education, the average workforce has a high school education. Ten workers in the "Saudara Jaya" tofu agroindustry have different duties, namely secretary and treasurer containing 1 worker, chef (soybean porridge cooker) 3 workers, assistant chef 4 workers, cashier 1 worker, and transportation 1 worker. The agro-industry workers know "Saudara Jaya" on average have worked for 1 - 5 years.

Analysis of the Added Value of the "Saudara Jaya" Agroindustry

Processing of agricultural products can generally provide added value for commodities that receive processing, one of which is processing soybeans into tofu. Added value in the "Saudara Jaya" agroindustry is carried out to see changes per kilogram of soybean raw materials in the tofu-making process. The added value in this research is the added value of soybeans into tofu, which is calculated using the Hayami method. The Hayami method can be used to observe changes per kilogram of raw materials by looking at the components that influence the calculation, such as raw material prices, contribution of other inputs, labor, profits, margins, and quantity of raw materials. One day of production uses an average of 250kg of raw materials, which

will be divided into two, for large-sized tofu 75kg, and small-sized tofu 175kg. The data used are the amount of soybeans (kg), the amount of tofu (kg), labor (HOK), the price of tofu, labor wages, the price of raw materials, and other input contributions. Apart from soybeans as the main raw material, there are additional materials used to support the tofu processing process such as firewood, electricity, packaging, gasoline, and equipment depreciation. The following is an analysis of the added value of the "Saudara Jaya" tofu agroindustry (Table 2).

grams/seed) and small tofu weighing (± 25 grams/seed). The average use of raw materials per day during August for large-sized tofu is 75kg of soybeans and small-sized tofu is 175kg of soybeans. The large amount of use of these raw materials will result in one day's production of 312kg (193,154 pieces) of large-sized tofu and 718kg (890,604 pieces) of small-sized tofu. Using the tofu raw material resulted in a conversion factor for large sized tofu of 4.15 and for small sized tofu of 4.10. This means that every 1kg of soybean raw materials used

Table 2

Added Value of The "Saudara Jaya" Agroindustry In One Day Of Production

No	Output, Input dan Price	Unit	Large Tofu Yield (± 50 grams/seed)	Small Tofu Yield (± 25 grams/seed)
1	Tofu Product	Kg/day	312	718
2	Soybean Raw Material	Kg/day	75	175
3	Labor Input	HOK	1,125	1,125
4	Conversion Factor		4,15	4,10
5	Labor Coefficient		0,015	0,006
6	Product Price	Rp/Kg	6.000	8.400
7	Average Wages of Workers	Rp/HOK	90.000	90.000
Revenue, and Profit in Raw Material Kilogram				
8	Soybean Raw Material Price	Rp/kg	10.642	10.642
9	Other Input Contribution	Rp/Kg	6.311	3.041
10	Product Value (Tofu)	Rp/kg	24.923	34.475
11	Added Value	Rp/kg	7.970	20.792
	• Value Added Ratio	%	32%	60%
12	Labor Income	Rp/kg	1.350	579
	• Labor Share	%	17%	3%
13	Profit	Rp/kg	6.620	20.214
	• Profit Level	%	27%	59%
Remuneration for Production Factor Owners				
14	Margin	Rp/kg	14.281	23.833
	• Labor Income	%	9%	2%
	• Other Input Contribution	%	44%	13%
	• Profit	%	46%	85%

Source: Primary Data Processed, 2023

Based on table 2, it shows that the "Saudara Jaya" agroindustry has two sizes of tofu, namely large tofu weighing (± 50

will produce 4kg of tofu, 4.15kg of large-sized tofu (83 seeds) and 4.10kg of small-sized tofu (164 seeds). The "Saudara Jaya"

agroindustry requires a workforce of $\pm 5 - 7$ people to process the raw material of 250kg of soybeans, which is divided into two, namely large-sized tofu with 75kg of soybeans and small-sized tofu with 175kg of soybeans. The labor coefficient for large-sized tofu is 0.015 HOK and small sized tofu is 0.006 HOK. The labor coefficient results are obtained from labor (HOK) divided by output.

The average price of raw materials obtained in August 2023 is IDR. 10,642/kg. The total use of other inputs in 1kg of raw materials for large tofu is IDR 6,311 and IDR. 3,041 for small-sized tofu which consists of packaging, firewood, electricity, gasoline, and equipment depreciation. So that the value of the tofu product is Rp. 24,923 for large tofu and Rp. 34,475 for small tofu. This means that the value of tofu for every 1kg of raw material used is IDR. 24,923 for large tofu and Rp. 34,475 for small tofu.

Tofu processing at the "Saudara Jaya" agro-industry obtains added value for large-sized tofu amounting to IDR. 7,970. Meanwhile, for small-sized tofu, it is IDR. 20,792. This means that every use of 1kg of raw material can provide added value for large-sized tofu amounting to IDR. 7,970 and small tofu for Rp. 20,792. The added value ratio in processing large-sized tofu is 32% and small-sized tofu is 60%. The labor earned income in producing large tofu is IDR. 1,350 and small tofu for Rp. 579. The labor force obtained by large-sized tofu was 17% and small sized tofu was 3%. This means that every Rp. 100 added value then there is Rp. 17 parts of labor compensation for knowing

large sizes and Rp. 3 to know the small size. The tofu processing process at the "Saudara Jaya" agroindustry provides a profit for large sized tofu of Rp. 6,620 and small tofu Rp. 20,214 with a profit rate for large tofu of 27% and small tofu of 59%.

Based on the results of the added value analysis of the Hayami method for both sizes, tofu has added value, value added ratio, profit, profit ratio, and product value more than zero. Based on the results of this analysis, the soybean processing process in the "Saudara Jaya" tofu agroindustry can be said to provide positive added value because the resulting added value is greater than zero ($VA > 0$).

CONCLUSION

The added value of the "Saudara Jaya" agroindustry has a positive influence ($VA > 0$) on the added value of large-sized tofu (± 50 grams) and small-sized tofu (± 25 grams). Big added value for large tofu Rp. 7,970/kg with a value-added ratio of 32%. Small sized tofu gets an added value of IDR. 20,792/kg with a value-added ratio of 60%. This shows that every kilogram of soybeans, after undergoing processing, can provide added value for large-sized tofu and small-sized tofu. Small sized tofu has a higher added value, because more raw materials are used and the selling price of the product is higher, resulting in a larger tofu output, even though the conversion factor for small sized tofu has a smaller result than large sized tofu.

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