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SINTA 2

Comparative Economic Competitiveness Analysis of Soybean Farming with and without Subsidy to Rice and Corn Farming in Bancak Sub-district, Semarang

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ABSTRACT
In Indonesia, soybeans are categorized as secondary crops with high demand. Indonesian government still emphasizes soybean self-sufficiency and efforts to grow soybean production, but the low yields and limited profitability of soybeans imply that Indonesian farmers will continue to grow other crops, namely rice or corn. This study aims to identify whether the Semarang district government must issue seed subsidies to support soybean competitiveness in terms of productivity and minimum prices so that it can compete with other crops, namely rice, and corn. Primary and secondary data are used in this study. Primary data were collected in a field survey in Bancak District. The sampling method uses a purposive sampling technique, which interviewed 45 farmers. Analyzed using descriptive statistics and competitiveness matrix analysis. The results showed that the analysis of soybean competitiveness was lower than rice and corn despite the existence of subsidy assistance.

Keywords: Soybean, Subsidy, Rice, Corn, Competitiveness

INTRODUCTION
In Indonesia, soybean is one of the commodities that is cultivated to support the nation's food security and acts as a source of vegetable protein for improving community nutrition and also as a functional food (Krisnawati, 2017). Other than that, there are no plant products that can function as side dishes that can be accepted by consumers regularly broad and continuous besides soy. Therefore the demand for soybean is stable in a sustainable manner, and therefore naturally the soybean production system is positioned very important, in line with rice (Sumarno & Adie, 2010).

In fact, soybean demand is not balanced with domestic production that make Indonesia is South-East Asia's second-largest soybean meal consumer (Byrne, 2018).

Based on Indonesia Center for Domestic Trade 2019 (Pusat Pengkajian Perdagangan Dalam Negeri, 2018), national soybean consumption is 4.4401 thousand tons while soybean productions is 2800 thousand tons (63,62%) and the remaining 36,38% is imported to meet needs. This decrease is influenced by the reduction of harvested land area in 2017 by 61.87%. The land area is very influential on production in farming (Rahmawati *et al*., 2018, Sofhan *et al*., 2019; Sa'diyah & Pudjiastuti, 2017). Gupito *et al*. (2016), in their study added that land contributes to farmers' incomes, the bigger the area of land cultivated, the income received by each farmer will be more promising.

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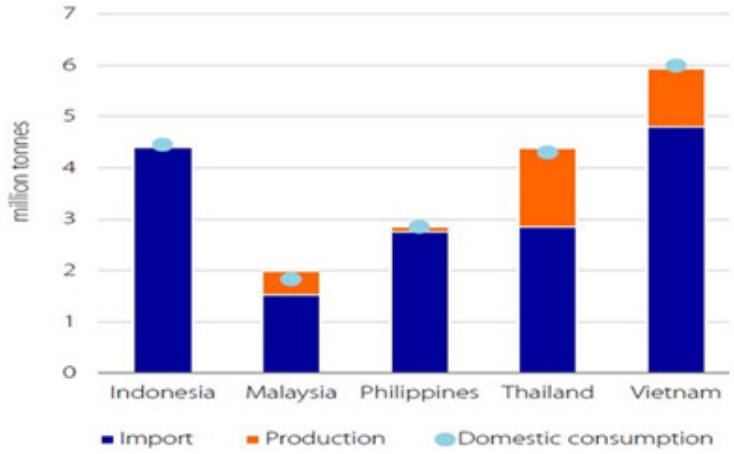


Source: USDA, Rabobank, 2018

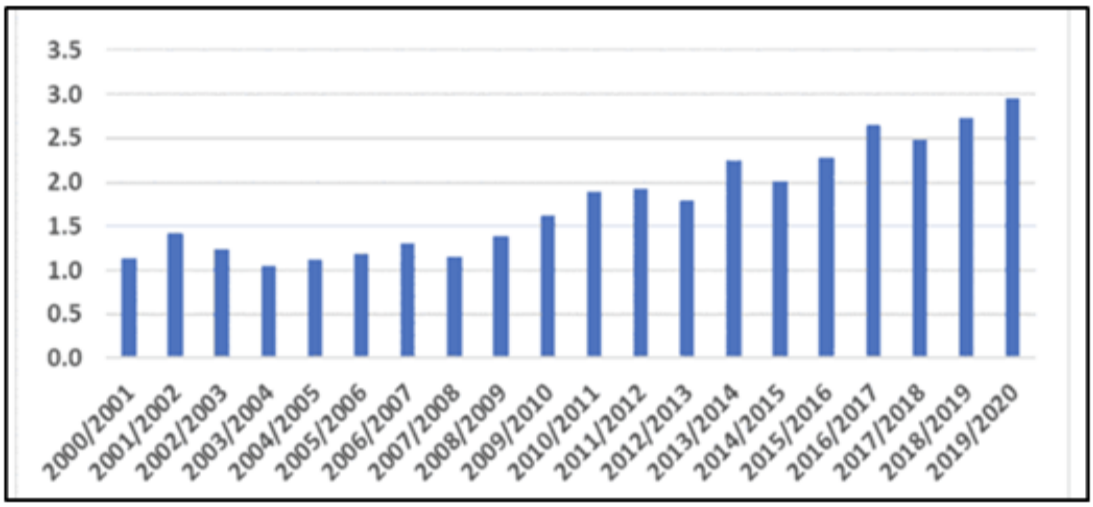
Figure 1
South East Asia Soymeal Supply and Demand

The challenge to increase the competitiveness of soybean commodities is a matter of productivity. Although Indonesia's emphasis on soybean self-sufficiency and efforts to grow production, the program faced obstacles. Low yields and limited profitability from soybeans imply that Indonesian farmers will continue to plant rice or corn. Various obstacles in the development of soybeans, including in economic terms, namely: (1) farmers are not yet interested in growing soybeans because the level of financial incentives is not attractive; (2) the industrial seed system for soybeans has not yet been developed; (3) it is difficult for farmers to obtain fertilizers and expensive pesticides, even though soybeans are plants that are susceptible to plant pests; (4) the partnership pattern has not yet developed, because the private sector is not yet interested in soybean agribusiness; (5) lack of partiality of government policies (Zakaria, 2010).

The increase of productivity and quality of soybean requires support and policies from the government especially subsidizing production facilities for farmers. Okfrinanda *et al.* (2013), in their research explained that there is a revitalization of agriculture by the government and state-owned enterprises (SOEs) to provide assistance with the aim of improving the quality of crops.

Many policies were enacted as a response to social circumstances, primarily concerning the soybean competitiveness. Subsidies on input and extension services was two effort supporting soybean farming and farmer welfare. In economic theory, subsidies can be used to offset market failures and externalities in order to achieve greater economic efficiency. The two policies were given to soybean farmer at Bancak sub-district, Semarang Regency. The seed subsidy program was expected to encourage farmers to grow soybean increase farmers' income, and increase soybean farming competitiveness. Competitiveness in this case is the ability to produce a commodity so that it can compete with other commodities in economic activities (Nowak & Kaminska, 2016).

According to UU No. 18 of 2021, PP No. 17/2015 special efforts were taken to accelerate soybean self-sufficiency through the aid of seeds, fertilizers, agricultural machine tools, and mentoring counselors. Many program were implemented to support soybean farming, such SLPTT (Integrated Crop Management Field School) and BLBU (Seeds Direct Assistance Excellence) programs, the level of participation and the interest of the farmers to produce soybean



Source: USDA, 2019

Figure 2
Indonesian Soybean Imports (million tons)

would be improved toward self-sufficiency in soybean.

Input subsidies are an effective policy in supporting farmers' productivity and income. Case example in the United States as the main exporting country for soybeans has spent US $ 796-5,053 million to help producers (producer support estimate = PSE). Assistance can be in the form of input subsidies or equipment to reduce production costs, or in the form of export subsidies for businesses that export soybeans to developing countries (Swastika *et al*., 2007)**.**

The objectives of this study were to identify whether it is worthwhile for the Semarang district government to spend subsidy to support the competitiveness of soybeans in terms of productivity and minimum prices so can compete with other crops, i.e. rice and corn. The input subsidy policy in the soybean development program in Semarang District includes soybean seed assistance, chemical fertilizer subsidy assistance, and farming assistance by extension services and universities.

METHODOLOGY

Both primary and secondary data were used in this study. The primary data were collected in Bancak sub-district, Semarang Regency, from December 2018- March 2019. The research was conducted by purposive with the consideration that the Bancak sub-district is one of the places in the target of soybean self-sufficiency by the government and also soybean production centers from a total of 19 districts in Semarang Regency.

The population in the study were respondents who planted soybeans, rice, and corn 454 people with a sample size of 10% of the population in Mboto, Bantal and Plumutan village. The sampling method was purposive sampling based on characteristics of farmers, i.e. farmers who plant soybeans, rice, and corn, also able to do input and output calculations. The selected respondent is in the same condition that was using a polyculture planting pattern between soybean, corn, and rice. A total sample 45 farmer were interviewed.

The method of analysis to measure the competitiveness of soybean farming to rice and corn was using matrix analysis of minimum production and minimum prices. This matrix measures the costs and profits of farming. To find out the minimum production, the minimum price of soybean farming, in order to compete with rice and corn, a competitive advantage analysis framework is used as in Table 1.

The non-subsidized assumptions data analysis used in the study of soybeans farming using market price. The analysis will highlight the lower price that the farmers will get if they received assistance to buy chemical fertilizers such as urea, Ponska, and TSP 36 compared to the price if they buy the chemical fertilizers directly (which is not subsidized), while the seeds are given for free.

RESULTS AND DISCUSSION

Characteristics of Respondents

The sample farmers are within the average age of 46 years. This age is still classified as the productive age 41-60 (61.95). The average education level of respondents is relatively low, that is elementary school. Those characteristics heavily affect the human resources of farmers and their knowledge about technology in agriculture. Additionally, the average farming experience is 4 years. The average number of family members of the sample is four to six people. A large number of family members among smallholder farmers will provide the necessary labor in farming activity.

The land use in the study site, plant more than one type of plant in one land with one year period of time, which each part of the land has been divided to be used as a system for processing soybean, rice, and corn farming. From the total of 39 respondents, 28 people worked on soybean, rice, and corn, 2 people worked on soybeans and rice, 8 people worked on soybeans and corn, one person worked on soybeans.

Table 1
Competitive Advantage Analysis

Commodities	Production (ton/ha^{-1})	Price (IDR kg)	Cost (IDR ha^{1})	Profit (IDR ha^{1})
Soybean with subsidy	Y11	H11	D11	E11
Soybean without subsidy	Y12	H12	D12	E12
Rice	Y2	H2	D2	E2
Corn	Y3	H3	D3	E3
Soybean subsidy advantage				
Against rice	F11	P11		
Against corn	F21	P21		
Soybean subsidy advantage				
Against rice	F12	P12		
Against corn	F22	P22		

Source: Saraswati *et al*., 2011

Note:

F1 = Minimum productivity of soybean in order to be competitive against rice

F2 = Minimum productivity of soybean in order to be competitive against corn

P1 = Minimum price of soybeans in order to be competitive with rice

P2 = Minimum price of soybeans in order to be competitive with corn

Formula:

F1=(E2+D1)/H1; P1=(E2+D1)/Y1

F2=(E3+D1)/H1; P2=(E3+D1)/Y1

Table 2
Soybean Farmer Characteristic in Bancak, Semarang

Characteristic	Category	Total	
		Farmer	(%)
Age	<40	7	17.95
	41-60	24	61.54
	>61	8	20.51
Total		39	100
Averages (year)	49		
Education	Primary school	27	69.23
	Secondary school	4	10.26
	High school	7	17.95
	Bachelor degree above	1	2.56
Total		39	100
Average	Primary school		
Farming experience	0-3	7	17.95
	4-6	31	79.49
	>7	1	2.56
Total		39	100
Average (year)	4		
Family number	0-3	18	46.15
	4-6	21	53.85
	>7	0	-
Total		39	100
Family number (person)	4		
Land size (m^2)	<5.000	1	2.56
	5.000 – 10.000	19	48.72
	>10.000	19	48.72
Total		39	100
Average (m^2)	10.000		

Source: Primary Data Analysis, 2019

The main reason for growing soybean by the farmer in Indonesia in 1983/1984 was to increase farm income, but that reason was no longer suitable with the current condition. Almost all farmers grow soybeans because of government programs.

Cost and Income Soybean Farming Analysis

There are two harvesting systems in soybean planting, namely the pruning of young plants (green pods) and pruning of old plants (mature pods). Most farmers sell all their grain immediately if they require cash for their next crop or for other urgent needs. None of the farmers sell their crop before harvest.

This research found that labor and land rent were two of the high input costs in soybean farming. The result of this research was different with Suminartika *et al*., (2019), that the highest input costs in cultivation on the variety of soybean production are explained by 94.9 percent of seed, Urea, NPK and SP36 variables,

the remaining 5.9 percent is explained by other variables. To increase soybean production, it is necessary to intensify production inputs in terms of labor, land rent, use of fertilizers, pesticides and seed.

The subsidized and non-subsidized soybean farming consisting of variable costs and fixed costs in Bancak sub-district, divided into.

Seed

The seeds used by farmers in the Bancak sub-district of Semarang Regency are Grobogan varieties. Due to the very narrow use of land for soybean farming, the total average seed use per hectare is only 21.63 kg.

This figure is still below the standard of the Agricultural Research and Development Agency (2016), which requires 40 kg of seeds per hectare. The subsidized seed is given free of charge by the government while non-subsidized seeds are bought at seed stalls at a selling price of 25,000 IDR/kg. With the help of subsidies from the government helping farmers in Bancak sub-district in soybean farming so that the costs for spending on input purchases are reduced as in research Farikin *et al*. (2016), that the cost of seeds is very influential on soybean farming. If the expenditure for the purchase of soybean seeds is high, the expenditure for seed input costs incurred

Table 3
Cost and Income Young Soybean Pods Farming Analysis

No	Input	Unit	Total	Cost with subsidy	%	Cost non subsidy	%
1.	Seed	kg/ha	22.93	-	-	573.250,00	16.90
2.	Fertlizer :						
	Urea	kg/ha	67.78	122,004.00	5.34	338,900.00	9.99
	NPK (Ponska)	kg/ha	59.26	130,372.00	5.71	355,560.00	10.48
	TSP 36	kg/ha	33.89	77,947.00	3.41	169,450.00	5.00
	Manure	kg/ha	123.33	98,664.00	4.32	98,664.00	2,91
3.	Pesticide :						-
	Matador	ltr/ha	0.62	37,200.00	1.63	37,200.00	1.10
	Dencis	ltr/ha	0.72	46,800.00	2.05	46,800.00	1.38
	Starban	ltr/ha	0.06	4,500.00	0.20	4,500.00	0.13
4.	Herbicide :					-	
	Roundap	ltr/ha	0.14	11,900.00	0.52	11,900.00	0.35
	Noxson	ltr/ha	0.08	5,200.00	0.23	5,200.00	0.15
5.	Labor :				-		-
	a. Tractor	kg/ha		16,155.56	0.71	16,155.56	0.48
	b. Within-family labor	HKO/ ha	19.61	1,176,444.44	38.52	1,176,444.44	28.28
	d. Hired labor	HKO/ ha	3.98	238,666.67	7.82	238,666.67	5.74
	f. Threshing	IDR/ ha	-	-		-	-
6.	Land rent	IDR/ ha	-	1,000,000.00	43.78	1,000,000.00	29.49
7.	Property Taxes	IDR	-	87,990.20	3.85	87,990.20	2.59
	Total cost			3,053,843.86	100,00	4,160,680.86	100,00

Source: Primary Data Analysis, 2019

by the farmer will be higher as well. This is what helps farmers, if subsidies are given, the expenditure costs for purchasing seeds are reduced and greatly helps the farmers in cultivating soybeans.

Fertilizer

Fertilizers used by respondents included urea, NPK Ponska, and TSP 36. Subsidized fertilizers cost 1,800 IDR/kg for urea, 2,300 IDR/kg for Ponska NPK and 2,300 IDR/kg for TSP while non-subsidized urea fertilizers cost 5,000 IDR/kg for urea, 6,000 IDR/kg for NPK Ponska and 5,000 IDR/kg for TSP 36. The price of subsidized fertilizer is more profitable because of the smaller costs so as to ease the burden on the supply and use of fertilizers for soybean farming activities so that it will significantly affect the income received by soybean farmers and the variable costs for fertilizer

Table 4
Cost and Income Old Soybean Pods Farming Analysis

No	Input	Unit	Total	Cost with Subsidy	%	Cost non Subsidy	%
1.	Seed	kg/ha	21.63	-	-	540,750.00	11.45
2.	Fertlizer:						
	Urea	kg/ha	86.26	155,268.00	6.53	431,300.00	9.13
	NPK (Ponska)	kg/ha	93.40	205,480.00	8.65	560,400.00	11.86
	TSP 36	kg/ha	68.16	156,768.00	6.60	340,800.00	7.22
	Manure	kg/ha	322.90	258,320.00	10.87	258,320.00	5.47
3.	Pesticide:						
	Matador	ltr/ha	0.32	19,200.00	0.81	19,200.00	0.41
	Dencis	ltr/ha	0.36	23,400.00	0.98	23,400.00	0.50
	Dursban	ltr/ha	0.05	500.00	0.02	500.00	0.01
	Starban	ltr/ha	0.14	10,920.00	0.46	10,920.00	0.23
4.	Herbicide:						
	Roundap	ltr/ha	0.27	22,950.00	0.97	22,950.00	0.49
	Noxson	ltr/ha	0.13	8,450.00	0.36	8,450.00	0.18
	Polaris	ltr/ha	0.02	1,240.00	0.05	1,240.00	0.03
	Kayabas	ltr/ha	0.03	300.00	0.01	300.00	0.01
	Rumpas	ltr/ha	0.02	1,700.00	0.07	1,700.00	0.04
5.	Labor:						
	a. Tractor		-	26,323.81	1.11	26,323.81	0.56
	b. Within-family labor	HKO/ha	45.73	2,743,727.89	66.60	2,743,727.89	42.43
	d. Hired labor	HKO/ha	4.41	264,761.90	6.43	264,761.90	4.09
	f. Threshing	IDR/ha	-	102,495.24	4.31	102,495.24	2.17
6.	Land rent	ha	-	1,000,000.00	0.39	1,000,000.00	21.17
7.	Property Taxes	IDR	-	108,710.53	4.57	108,710.53	2.30
	Total cost			4,119,682.04	100,00	6,466,249.38	100,00

Source: Primary Data Analysis, 2019

greatly affect the production volume as in the study (Nuswantara *et al*., 2018).

Pesticide

The pesticides used in the Bancak sub-district of Semarang Regency did not receive assistance from the government where respondents bought their own. The use of pesticides is done if pests attack soy plants such as leaf flies, fruit caterpillars, and fruit grinders.

Labor

The labor force used is classified based on labor within the family and outside the family which is divided into male and female workers. The use of labor is applied to various farming activities including land management, planting, weeding, fertilizing, controlling plant pests, harvesting, and post-harvesting. Wages given to workers amount to 60,000 IDR/day. Young soybean pod farm laborers are more efficient because it does not require costs for labor harvest until post-harvest, and also for threshing costs are not needed.

Competitive Advantage Analysis

Result of the research indicated that soybean productivity strongly influenced by water availability during the growth period. The competitive advantage level of soybean farming on rice and corn in Bancak sub-district can be known through the analysis of price and production levels. The results of the analysis are evaluated from the minimum level of farming in order to be competitive with rice and corn commodities. The planting process of rice and corn has been done using polyculture. This shows that in the use of land there has been competition between one food commodity with other food crops. It should be noted that the potential of agricultural land is thus a top priority for meeting the needs by considering economic, social and ecological aspects so that farming activities are sustainable (Keratorop *et al*., 2016). Mahyuddin & Ananda (2017), said that production costs and selling prices affect income.

Therefore, this study is focused on soybean commodity which is then analyzed competitively with rice and corn as presented in Table 5 and 6.

The results of the analysis based on the competitive advantage that can be seen in Tables 5 and 6 show that soybeans both young and old pods for the production level cannot compete with rice and corn. To be able to compete with rice in terms of productivity, young soybean pods must have the minimum productivity of 5,265.75 kg/ha - 5,831.49 kg/ha and old pods of 3,894.76 kg/ha - 4,065.30 kg/ha, while to be able to compete with corn, the minimum productivity for young soybean pods should be at least of 2,827.52 kg / ha - 3,290.67 kg / ha and for old pods of 2,269.28 kg/ha - 2,371.42 kg/ha. As for the price level, in order to compete with rice, the minimum price for young soybean pods should be at 7,672,19 IDR /kg - 8,496.47

Table 5
Analysis of Subsidized Competitive Advantage

Commodities	Productivity (ton/ha)	Price (IDR/kg)	Cost (IDR/ha)	Income (IDR/ha)
Young soybean pods	2,745.37	4,000.00	3,053,843.86	1,612,822.80
Old soybean pods	3,497.55	6,000.00	4,119,682.04	4,399,297.56
Rice	8,799.64	6,216.67	5,827,351.16	20,272,121.06
Corn	8,029.36	4,506.25	5,304,055.00	10,108,824.17
Soybean advantage	Young soybean pods		Old soybean pods	
Against rice	5,831.49	8,496.47	4,065.30	6,973.98
Against corn	3,290.67	4,794.50	2,371.42	4,068.14

Source: Primary Data Processed, 2019

Table 6
Analysis of Non-subsidized Competitive Advantage

Commodities	Productivity (ton/ha)	Price (IDR/kg)	Cost (IDR/ha)	Income (IDR/ha)
Young soybean pods	2,745.37	4,000.00	,160,680.86	505,985.80
Old soybean pods	3,497.55	6,000.00	,466,249.37	2,052,730.22
Rice	8,830.11	6,216.67	,197,161.34	6,902,310.88
Corn	8,029.36	4,506.25	,263,471.67	7,149,407.50
Soybean advantage	Young soybean pods		Old soybean pods	
Against rice	5,265.75	7,672.19	3,894.76	6,681.42
Against corn	2,827.52	4,119.70	2,269.28	3,892.92

Source: Primary Data Processed, 2019

IDR /kg and old pods at 6,681.42 IDR / kg – 6,973.98 IDR /kg. For corn prices, in order to be competitive, the price of young soybean pods is IDR 4,119.70/kg – IDR 4,794.50/kg and old pods 3,892.92 IDR / kg – 4,068.14 IDR/kg. Soybean farming cannot compete with rice and corn in Bancak sub-district, it is influenced by the low productivity of soybean plants and the soybean harvesting process is divided into 2 young pod production and old pod production. A similar study from (Tuminem *et al*., 2018) that soybean cannot compete where there is a change of function of agricultural land to non-agricultural land, while in (Bowo *et al*., 2016) soybeans did not have a competitive advantage over rice and corn because there is no government policy in protecting soybean farmers.

As in the case of soybean prices received by farmers in the Bancak sub-district there is a gap in soybean prices at the farmer's level of IDR 6,000 while the price based on the determination (Pusat Pengkajian Perdagangan Dalam Negeri, 2019) is IDR 8,500 / kg. This greatly affects the income of farmers in the Bancak sub-district as research (Roessali *et al*., 2019) low soybean price stability so that the price of soybeans received by farmers fluctuates. Factors affecting soybean farming in Bancak sub-district have no competitiveness are influenced by human resources as seen from the level of education of farmers in Bancak sub-district, most of them have elementary school education which is very influential on how to manage farming due to lack of innovation and inadequate use of technology and institutional marketing of soybean products which is not good as stated by (Porter, 1990) that the condition, physical input and labor factors influence productivity.

The factor of farmers in the Bancak sub-district is that they are reluctant to plant soybeans because the yields are not proportional to production, the marketing institutions are not good and local soybeans are unable to compete with imported. Rice farming is cultivated more because it is a basic need of the community at the study site, corn is seen to be profitable from the bigger production because it does not require too much cost for purchasing pesticides, while soybeans are more vulnerable to pests, so it requires costs for pesticides (Astuti *et al*, 2019). The obstacles faced in managing rice irrigation are determined by the availability of water to avoid drought (Makarim *et al.*, 2017),while the drought tolerance for Grobogan soybean varieties requires water between 4.87¬_mm to 4.98_mm (Suryanti *et al*, 2015), while corn for 100 days requires 614_mm (Muamar *et al*, 2012). Soybean commodities are more resistant to drought. In Bancak, water availability still relies on the rainy season as a good irrigation facility for plants, and there is only one irrigation, so it is not sufficient to use water in the research location. In general, soybeans can compete for both, in terms

of price and productivity with other crops, namely corn. Similar research results were also addressed by (Mutmaidah & Fachrur, 2016) that soybeans can compete with corn if the results are 2,219-2,225 kg/ha and the price is Rp7,216 - Rp7,241/kg while the mung beans are 1,917 kg/ha or at a price of Rp6,218/kg.

Soybean productivity needs to be increased in order to exceed the minimum productivity of rice and corn. The productivity needs can be fulfilled by producing soybeans in the form of dry beans and the rate of increase in productivity is determined from the percentage of dry seed, in this case, old soybean pods. However, in reality soybean farmers in Bancak sub-district not only produce old soybean pods but also young soybeans pods. The difference between the two types of harvest lies in: first, the gap in production activities, Second, the price of old and young pods offered at the farm level. Those differences affect the increase in soybean production experience a decrease, so that it does not reach the targets set by the Ministry of Agriculture. The price decision needs a policy to determine the selling price given by the government in protecting soybean prices at the domestic farmer level during the main harvest so that the selling price for soybean commodities does not drop and the farmers can cultivate soybeans in order to compete with imported soybeans. Thus, there is no need to import soybeans from outside. As in (Krisdiana, 2012) research, it is necessary to increase the productivity and selling prices of soybean. Rizma, (2014) research, needs to increase import prices for soybean commodities so that producers prefer to buy soybeans domestically so that they are motivated by farmers to continue to cultivate soybeans.

CONCLUSION

Analysis of the competitiveness of subsidized and non-subsidized soybeans cannot compete with rice and corn which are influenced by aspects of productivity and low prices. For this reason, subsidies are still provided so that interest in growing soybeans will continue. It is recommended for the government to increase selling prices at the farm level, productivity and reduce soybean imports, so the farmer will prefer to plant soybeans.

REFERENCES

Agricultural Research and Development Agency. (2016). *Pedoman Umum PTT Kedelai*. http://webcache.googleusercontent.com/search?q=cache:4O9MphSzkDYJ:pangan.litbang.pertanian.go.id/files/pedumpajale/pttkedelai.pdf+&cd=3&hl=en&ct=clnk&gl=id

Astuti, H. B., Hartanto, R., & Rambe, S. S. M. (2019). Analisis Finansial Usahatani Jagung dan Tumpang Sari Sistem Jajar Legowo Jagung Kedelai di Kabupaten Seluma. *Jurnal AGRISEP : Kajian Masalah Sosial Ekonomi Pertanian Dan Agribisnis*, *18*(1), 107–114. https://doi.org/10.31186/jagrisep.18.1.107-114

Bowo, P. A., Nurayati, A., & Imleesh, R. M. M. (2016). Analysis of Competitiveness and Government Policy on Rice, Corn and Soybean Farming. *Jejak (Journal of Economics and Policy)*, *9*(2), 159–169. https://doi.org/10.15294/jejak.v9i2.8235

Byrne, J. (2018). soybean demand is not balanced with domestic production that make Indonesia is South-East Asia's second-largest soybean meal consumer. *Feed Navigator,Com*. https://www.feednavigator.com/Article/2018/11/10/Could-a-soybean-crushing-industry-develop-in-Indonesia

Farikin, M., Suparto, S., & Suharyono, E. (2016). Analisis Usahatani Kedelai Varietas Grobogan Di Desa Pandanharum Kabupaten Grobogan. *Agromedia*, *34*(1), 56–63.

Gupito, R. W., Irham, I., & Waluyati, L. R. (2016). Analisis Faktor-Faktor Yang Mempengaruhi Pendapatan Usahatani Sorgum Di Kabupaten Gunungkidul. *Agro Ekonomi*, *24*(1). https://doi.org/10.22146/agroekonomi.17383

Keratorop, M., Widiatmaka, & Suwardi. (2016). Arahan Pengembangan Komoditas Unggulan Pertanian Tanaman Pangan Di Kabupaten Boven Digoel Provinsi Papua. *Plano Madani*, *5*(2), 143–157. http://journal.uin-alauddin.ac.id/index.php/planomadani

Krisdiana, R. (2012). Daya Saing Dan Faktor Determinan Usahatani Kedelai Di Lahan Sawah. *Jurnal Penelitian Pertanian Tanaman Pangan*, *31*(1), 6–12. https://doi.org/10.21082/jpptp.v31n1.2012.p

Krisnawati, A. (2017). Kedelai sebagai Sumber Pangan Fungsional. *Iptek Tanaman Pangan*, *12*(1), 57–65. http://pangan.litbang.pertanian.go.id/files/06-IPTEK12-01-2017-Ayda.pdf

Mahyuddin, T., & Ananda, E. R. (2017). Pengaruh Harga, Produksi Dan Tenaga Kerja Terhadap Pendapatan Usaha Pengolahan Gula Aren Di Kecamatan Rantau Kabupaten Aceh Tamiang. *Jurnal Penelitian Agrisamudra*, *4*(2), 29–38. https://ejurnalunsam.id/index.php/jagris/article/download/282/213/

Makarim, A. K., Ikhwani, & Mejaya, M. J. (2017). Rasionalisasi Pola Rotasi Tanaman Pangan Berbasis Ketersediaan Air. *Iptek Tanaman Pangan*, *12*(2), 83–90. http://ejurnal.litbang.pertanian.go.id/index.php/ippan/article/view/8173

Muamar, Triyono, S., Tusi, A., & Rosadi, B. (2012). Analisis Neraca Air Tanaman Jagung (Zea Mays) Di Bandar Lampung. *Jurnal Teknik Pertanian Lampung*, *1*(1), 1–10.

Mutmaidah Siti, & Fachrur, R. (2016). Daya Saing Kedelai terhadap Tanaman Pesaing pada Tingkat Usahatani. *Prosiding Seminar Hasil Penelitian Tanaman Aneka Kacang Dan Umbi*, 343–348.

Nowak, A., & Kaminska, A. (2016). Agricultural competitiveness: The case of the European Union countries. *Agricultural Economics (Czech Republic)*, *62*(11), 507–516. https://doi.org/10.17221/133/2015-AGRICECON

Nuswantara, B., Prihtanti, T. M., Banjarnahor, D. R. V., Suprihati, S., & Nadapdap, H. J. (2018). Kelayakan Ekonomi Usahatani Kedelai Varietas Grobogan di Kabupaten Semarang. *Unri Conference Series: Agriculture and Food Security*, *1*, 134–141. https://doi.org/10.31258/unricsagr.1a18

Okfrinanda, E., Hanafi, I., & Riyanto. (2013). Implementasi Revitalisasi Pertanian (Studi Pada Perusahaan Perbenihan PT Dewi Sri Malang). *Jurnal Administrasi Publik*, *1*(7), 1305–1312. https://media.neliti.com/media/publications/75408-ID-implementasi-revitalisasi-pertanian-stud.pdf

Porter, M. (1990). *The Competitive Advantage of Nations, New York*.

Pusat Pengkajian Perdangan Dalam Negeri. (2018). *Analisis Perkembangan Harga Bahan Pangan Pokok di Pasar Domestik dan Internasional*. http://bppp.kemendag.go.id/media_content/2018/12/Bapok_Bulan_November_2018.pdf

Pusat Pengkajian Perdangan Dalam Negeri. (2019). *Analisis Prkembangan Harga Bahan Pangan Pokok di Pasar Domestik dan Internasional*. http://bppp.kemendag.go.id/media_content/2019/07/Bapok_Bulan_Mei.pdf

Rahmawati, A., Agustono, & Adi, R. K. (2018). Usahatani Organik Padi Putih dan Padi Hitam: Pendekatan Pendapatan, Fungsi Produksi Cobb-Douglas dan VPM. *Caraka Tani: Journal of Sustainable Agriculture*, *33*(1), 8. https://doi.org/10.20961/carakatani.v33i1.19358

Rizma Aldillah. (2014). Analisis Produksi Dan Konsumsi Kedelai Nasional [Institut Pertanian Bogor]. In *Analisis Produksi Dan Konsumsi Kedelai Nasional*. http://repository.ipb.ac.id/jspui/bitstream/123456789/73016/1/2014tri.pdf

Roessali, W., Ekowati, T., Prasetyo, E., & Mukson. (2019). Economic aspects of soybean farming sustainability in Central Java, Indonesia. *IOP Conference Series: Earth and Environmental Science*, *250*(1), 0–7. https://doi.org/10.1088/1755-1315/250/1/012022

Sa'diyah, A. A., & Pudjiastuti, A. Q. (2017). Faktor Penentu Produksi Sayuran Dataran Tinggi Di Kecamatan Sukapura Kabupaten Probolinggo. *Agriekonomika*, *6*(2), 186–196. https://doi.org/10.21107/agriekonomika.v6i2.3082

Saraswati, R., Sutrisno, S., & Adisarwanto, T. (2011). Analisis Daya saing Kedelai Terhadap Tanaman Padi dan Jagung. *Buana Sains*, *11*(1), 97–102.

Sofhan, Alam, M. N., & Adam, R. P. (2019). Analisis Produksi dan Pendapatan Usahatani Padi Sawah di Kecamatan Dampelas Kabupaten Donggala. *Jurnal Mitra Sains*, *7*(1), 83–95. http://jurnal.untad.ac.id/jurnal/index.php/MitraSains/article/download/12844/9889

Sumarno, & Adie, M. M. (2010). Strategi Pengembangan Produksi Menuju Swasembada Kedelai Berkelanjutan. *Pusat Penelitian Dan Pengembangan Tanaman Pangan*, *5*(1), 49–63. http://ejurnal.litbang.pertanian.go.id/index.php/ippan/article/download/2614/2253

Suminartika, E., Sulistiyowati, L., & Kusno, K. (2019). Efesiensi Faktor-Faktor Produksi Usahatani Kedelai. *Jurnal Ilmu-Ilmu Sosial Dan Humaniora*, *21*(2), 194–199. https://doi.org/10.24198/sosiohumaniora.v21i2.14879

Suryanti, S., Indradewa, D., Sudira, P., & Widada, J. (2015). Kebutuhan Air, Efisiensi Penggunaan Air Dan Ketahanan Kekeringan Kultivar Kedelai. *Agritech*, *35*(1), 114–120. https://jurnal.ugm.ac.id/index.php/agritech/article/viewFile/9426/7000

Swastika, K. D. , Nuryanti, S., & Sawit, M. H. (2007). *Kedelai:teknik produksi dan pengembangan* (K. H. Sumarno, Suyamto,Widjono A, Hermanto (ed.)).

Tuminem, Supardi, S., & Ferichani, M. (2018). Peranan Komoditas Tanaman Pangan Unggulan terhadap Kesempatan Kerja dan Pendapatan di Kabupaten Sukoharjo (Analisis Input-Output). *Jurnal Pangan*, *27*(3), 203–214. https://doi.org/10.33964/jp.v27i3.397

Zakaria, A. K. (2010). Kebijakan Pengembangan Budidaya Kedelai Menuju Swasembada Melaluipartisipasi Petani *Analisis Kebijakan Pertanian*, *8*(3), 259–272. https://media.neliti.com/media/publications/56932-ID-kebijakan-pengembangan-budi-daya-kedelai.pdf