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THE EFFECT OF ISPO IMPLEMENTATION ON PALM OIL FARMERS' INCOME IN BANDAR PASIR MANDOGE, ASAHAN DISTRICT

Hasudungan Siregar[1], Yusniar Lubis[2], Syahbudin[3]

[1]Student at Masters of Agribusiness Program, Universitas Medan Area

[2,3]Lecturer at Masters of Agribusiness Program, Universitas Medan Area

Abstract

Indonesian Sustainable Palm Oil (ISPO) as an Indonesian-style sustainable palm oil certification system already has the principle of responsibility to workers or laborers, but in the field many companies have not implemented it. This study aims to find out and analyze how big the difference is in the level of production, price, income and use of production factors such as fertilization, use of pesticides and the labor of oil palm farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. This research method uses a quantitative approach. The research sample used in the study was 92 respondents, with the provisions of 46 ISPO farmers and 46 Non ISPO farmers. The analysis of this study was carried out using a different test (paired sample t-test). The results showed that there was a significant difference in the level of palm oil production that had ISPO and did not have ISPO in Bandar Pasir Mandoge District, Asahan Regency. There is a significant difference in the TBS price level of palm oil smallholders who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. There is a significant difference in the level of income of palm oil farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. There are significant differences in the level of use of production factors such as fertilization, use of pesticides and workers who have ISPO and do not have ISPO in Bandar Pasir Mandoge District, Asahan Regency. There is a significant difference in the TBS price level of palm oil smallholders who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. There is a significant difference in the level of income of palm oil farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. There are significant differences in the level of use of production factors such as fertilization, use of pesticides and workers who have ISPO and do not have ISPO in Bandar Pasir Mandoge District, Asahan Regency. There is a significant difference in the TBS price level of palm oil smallholders who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. There is a significant difference in the level of income of palm oil farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. There are significant differences in the level of use of production factors such as fertilization, use of pesticides and workers who have ISPO and do not have ISPO in Bandar Pasir Mandoge District, Asahan Regency.

Keywords ***: Income, Production, TBS Prices, Factors of Production, ISPO Application***

1.INTRODUCTION

Oil palm plantations in Indonesia, according to their concession status, are managed by smallholders (42.3 percent). Based on data from the Directorate General of Plantations (DITJENBUN), smallholder plantations have increased the area of plantations every year. The area of smallholder plantations will continue to increase to become the owner of the largest share of palm oil companies in Indonesia. This is due to the relatively limited land area in Indonesia, thereby limiting large companies from expanding the land area(Yutika et al., 2019). Expansion of oil palm plantation land is an important keyword to begin to understand the universe of oil palm problems in Indonesia (Dharmawan et al., 2019). One of the ways to overcome the environmental

damage caused by oil palm plantations is through ISPO certification. Indonesian Sustainable Palm Oil (ISPO) as an Indonesian-style sustainable palm oil certification system already has the principle of responsibility to workers or laborers, but in the field many companies have not implemented it.(Muaqien, Ramdlaningrum, Aidha, Ar Mintasari, & Ningrum, 2021). ISPO certification is a must for business actors, both companies and plasma and independent smallholders, with the consideration that the FFB (Fresh Fruit Bunches) products of farmers will also become part of the supply chain of palm oil processing factories (ISPO Commissionin Vicki et al., 2021). ISPO certification demands to maintain oil palm development in harmony with economic, social and cultural goals of environmental preservation, require independent smallholders to develop sustainable oil palm plantations (Lestari et al.in Vicki et al., 2021).

Sustainability standards using the Indonesian Sustainable Palm Oil (ISPO) certification system were officially issued in March 2011 based on Indonesian Minister of Agriculture Decree No. 19/Permentan/OT.140/3/2011. One of the principles that must be fulfilled towards ISPO is the legality of the land as evidenced by the ownership of land certificates, deed of sale and purchase of land, and other valid proof of land ownership. Plantation land that is inside forest areas, state land, and Cultivation Rights (HGU) areas cannot have legal proof of land ownership. Land with overlapping claims is considered problematic land that must be excluded from ISPO(Dharmawan et al., 2019). The ISPO implementation policy is mandatory for plantation companies that carry out cultivation and processing, plantation companies that carry out cultivation, and plantation companies that carry out processing of plantation products, as stipulated in Article 2 Paragraph 2 of Minister of Agriculture No. 11 of 2015 concerning the ISPO Certification System. In the implementation of ISPO plantation management is needed. Plantation management is the process of overseeing the activities that occur in the garden. Good management must do planning (planning), organizing (organizing), actuating (directing), and controlling (supervision)(Terry and Leslie, 2015).

The production produced by ISPO oil palm farmers is different from non ISPO farmers, because there is surveillance of ISPO smallholders so that ISPO oil palm farming activities must be managed in accordance with ISPO principles and criteria. In accordance with the ISPO principles and criteria, smallholders carry out planting in accordance with the Best Oil Palm Cultivation Technical Guidelines (GAP), such as plant maintenance to support crop productivity, control of OPT (Plant Disturbing Organisms), harvesting, transportation of fruit, sales and price agreements of FFB, and others that listed in the ISPO principles and criteria. ISPO places more emphasis on the environment so that ISPO farmers will pay more attention to environmental aspects by not using excessive pesticides so as not to damage the environment.(Ningsih, 2022). The existence of knowledge of the community or smallholders about ISPO can increase the amount of production of palm oil, because ISPO certification can provide benefits in increasing palm oil production to increase sharply and increase the amount of world demand for palm oil. In addition, the price of palm oil which increased sharply had an effect on the demand for and price of FFB.(Suwaji & Hermanto, 2019).

With ISPO certification, farmers expect higher prices and production compared to farmers who are not ISPO certified, so they will receive higher revenue and income. However, in reality on the ground, based on information obtained from the chairman of the Ambar-Contract KPKS, there is no difference in the prices received by ISPO and non-ISPO farmers. The price from the company is the same for all farmers who sell to the company because the FFB production from the plantation is sold to the company based on the price agreed upon by both parties and depending on where the farmer will sell the FFB produced.(Ningsih, 2022). The biggest contributor to North Sumatra's economic growth is the oil palm agribusiness center areas(Ananda, 2017). In 2008, for example, around 76% of North Sumatra's economic growth was contributed by the oil palm agribusiness centers. The main centers of oil palm agribusiness are Medan, Langkat, Asahan, Deli Serdang, Serdang Bedagai, Simalungun, Batubara, and Labuhan Batu.(Abdina, 2019).

One of the oil palm plantation centers that contribute oil is the Asahan district.Based on the data the researchers obtained from the Asahan district's official website, it is known that the amount of oil palm production is the most abundant plantation product compared to other types of plantations. The following is a data presentation showing the results of smallholder plantation production in 2016-2020:

Table 1.1Data on Palm Oil Production in Asahan Regency in Ton units for 2016-2020

	2016	2017	2018	2019	2020
Palm oil	1,590,224.27	1,595,126.63	1,622,155.54	1,647,852.00	1,611,748.50

Source: data.asahankab.go.id/

The implementation of achieving ISPO certification has been carried out by one of the farmer cooperatives in Asahan District. This was conveyed by the Chairperson of the Ambar-Ambar Agreement KPKS saying that the KPKS won the ISPO certificate because it met the criteria set out in the Regulation of the Minister of Agriculture (Permentan) Number 11/Permentan/OT/140/3/2015 concerning the ISPO Certification System. The ISPO certificate was submitted to the Ambar Agreement KPKS from PT Agrindo Group Indah Persada (AIP). PT AIP is a palm oil company owned by the Wilmar Group and is the supervisor of the Ambar Agreement KPKS and PT AIP itself received the ISPO certificate. With the company's assistance so far, his party has been educated on how to manage the garden in a professional manner and according to sustainable standards(H. Hutabarat, 2020). PT AIP, which is a member of the Wilmar Group, won the ISPO certificate because it was considered successful in fostering and assisting sustainable palm oil management (ISPO) for smallholders in Asahan. The pattern of cooperation applied with the Amber Agreement KPKS is very appropriate. Apart from assisting in managing the plantation, his party also establishes mutually beneficial partnerships with farmers in an effort to maintain supply to the palm oil mills (PKS).(H. Hutabarat, 2020).

The phenomenon that occurred after receiving the ISPO Certification was the discovery of difficulties in its application for smallholders, especially ex-plasma farmers who had managed their oil palm plantations independently. Because of this, it is necessary to collaborate between farmers through the Ambar-Contract KPKS with plantation companies and other supporting institutions as partners to assist farmers in implementing ISPO. This cooperation can be realized in the effective and efficient empowerment of farmer organizations. ISPO's own funding comes from the Wilmar Group and partly comes from the income generated by the Cooperative at the Ambar-Concession KPKS. To get ISPO certification,(Ningsih, 2022).

Another phenomenon is also found in the factors of production carried out by the Ambar-Ambar Agreement KPKS which in this case helps farmers in cooperative credit in the form of savings and loans for certain needs such as fertilizers, production facilities to consumptive funds, and KPKS also provides information related to coconut issues. palm oil to farmers. The Ambar-Accord KPKS also plays a role in assisting farmers in providing technical assistance to their gardens and facilitating farmer needs such as infrastructure and assisting farmers in obtaining permits which are difficult for farmers to do alone. The Ambar-Amber PKPS also plays a role in assisting oil palm smallholders in buying or selling FFB. In the process of reselling the FFB yields purchased from the farmers, the Ambar-Ambar Agreement KPKS cooperates with the Wilmar Group The Ambar-Amber KPKS only takes Rp. 10, - per kg of each disbursement of FFB funds to farmers. However, there are also farmers who are not ISPO who sell their palm oil production to the closest middlemen where in selling the palm oil FFB production the farmers are not bound by the Amber-Agreement KPKS so farmers are free to sell their palm oil production to the middleman or sell directly to the company(Ningsih, 2022).

The existence of a phenomenon that occurs in the Ambar-Amber PKPS is a form of participation in assisting oil palm smallholders in buying or selling FFB. This is because the Ambar-Ambar Agreement KPKS is the only farmer who has ISPO certification. This study seeks to

make a distinction in knowing the various differences that exist among oil palm farmers who are ISPO and those who are not related to the level of production and the price level of FFB which is very closely related to people's income, then regarding production factors such as fertilization, use of pesticides and labor of oil palm farmers who have ISPO and not ISPO. With this research, it seeks to provide great benefits to oil palm smallholders in all asahan farmer cooperative units in obtaining and preparing themselves to achieve ISPO so that they have the ability to make a major contribution to encouraging the Indonesian government to comply with Minister of Agriculture regulations No.11/2015 concerning the Indonesian Sustainable Palm Oil Certification System (ISPO). This is done in the context of developing sustainable oil palm plantations. Thus ISPO is a practice of sustainable oil palm development that has been adapted to the legal regulations in force in Indonesia.

2. RESEARCH METHOD

The research was conducted in Asahan District with a total of 120 farmers in this study, consisting of 60 farmers who had not yet ISPO and 60 farmers who had ISPO. Determining the sample size in this study uses the Slovin formula, this is because the population size is unknown. Here's Slovin's formula(Sugiyono, 2018):

$$n = \frac{N}{1 + N(e)^2}$$

Information:

n =Sample size

N= Population size

e = Desired critical value (accuracy limit) (percent allowance for inaccuracy due to sampling error) is 5%

Since the total study population was 120 farmers, the allowance percentage used was 5%, and the tally findings may have been aggregated to allow for adjustments. So, using the following calculations, determine the research sample:

$$n = \frac{120}{1 + 120\ (0{,}05)^2}$$

$$n = \frac{120}{1{,}3} = 92{,}3 = 92 \text{ petani}$$

Then the results obtained the number of samples needed in this study were 92 respondents, with the provisions of 46 ISPO farmers and 46 Non ISPO farmers. The sample selection criteria are divided into inclusion and exclusion criteria. The inclusion and exclusion criteria in this study are as follows:

1. Inclusion Criteria
   a. Oil palm smallholders who are ISPO participants.
   b. The size of the land for oil palm farmers with a standard of 20 ha.
   c. Farmers already have at least 5 years experience in agriculture./ evidence from ISPO group.
   d. Has superior varietiesOil palm is obtained from crossing the elders of Dura and Pisifera which will produce the hybrid D x P variety, also known as Tenera.
2. Exclusion Criteria
   a. Oil palm smallholders who are not ISPO participants.
   b. Land less than 20 ha.
   c. Farmers experience under 5 years in agriculture.
   d. Does not have superior varietiesPalm oil

The data analysis method used in this study uses a different test analysis (paired sample t-test).regarding differencesproduction levels, differences in FFB price levels, differences in income levels, levels of use of production factors such as fertilization, use of pesticides and labor of oil palm farmers who have ISPO and not ISPOin Bandar Pasir Mandoge District, Asahan Regency. As for this study, the form of the equation, among others:

Y= a+b1X1+b2X2+ b3X3+….+bnXn
Y = Income
X1= Production
X2 = FFB price
X3 = Efficiency of Using Production Factors
a = Constant (Y value if X1, X2….Xn=0)
b = Regression coefficient (value of increase or decrease)

Results and Discussion

The different test in this study was used to determine differences in production, FFB prices and the use of production factors on oil palm smallholders who had ISPO and not ISPO using a significance level of 5%.

Table 1. Test of Different Levels of Palm Oil Production with ISPO and Non ISPO in Bandar Pasir Mandoge District, Asahan Regency

Paired Samples Test									
		Paired Differences					t	f	Sig. (2-tailed)
		Means	std. Deviation	std. Error Means	95% Confidence Interval of the Difference				
					Lower	Upper			
air 1	ISPO Farmer Production - Non-Ispo Farmer Production	8.26087	3.13003	.46150	7.33136	9.19037	17,900	5	.000

Source: SPSS Output Results, 2023.

The results of the different test through the paired sample t-test showed that a sig.(2-tailed) value of 0.000 was obtained. This shows that the significance value is less than 0.05 (0.000 <0.05). So it can be concluded that there is a significant difference in the production level of oil palm farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. ISPO-approved palm oil production can increase due to better management practices, both in terms of environmental sustainability as well as social and labor aspects. These practices contribute to increasing the productivity and quality of palm oil, as well as creating a more stable and motivating work environment for workers.

1. ISPO-approved palm oil has better management practices in accordance with sustainability standards set by the Indonesian government.
2. Better management practices include using environmentally friendly cultivation techniques, judicious use of fertilizers and pesticides, and effective pest and disease control.
3. These practices increase the productivity and quality of oil palm plants that have ISPO.
4. ISPO-approved palm oil also adheres to social and fair employment aspects, including protection of workers' rights, safe working conditions, and a positive contribution to the local community.

5. Compliance with good social and employment aspects can create a stable work environment and increase the motivation of workers.
6. A good working environment can have a positive impact on the level of palm oil production that has ISPO.

Palm oil production from farmers who already have ISPO certification can be of good quality. ISPO certification ensures sustainability in palm oil production, including in terms of water and land conversion, employee welfare, and other aspects(Natawijaya et al., 2019)

Table 2. Different Test of FFB Price Levels for Palm Oil Farmers Who Have ISPO and Non-ISPO in Bandar Pasir Mandogek Subdistrict, Asahan Regency

Paired Samples Test									
		Paired Differences					t	f	Sig. (2-tailed)
		Means	std. Deviation	std. Error Means	95% Confidence Interval of the Difference				
					Lower	Upper			
air 1	Ispo Smallholder FFB Prices - Non-Ispo Farmer FFB Prices	8.86957	2.68004	.39515	8.07369	9.66544	22,446	5	.000

Source: SPSS Output Results, 2023.

The results of the different test through the paired sample t-test showed that a sig.(2-tailed) value of 0.000 was obtained. This shows that the significance value is less than 0.05 (0.000 <0.05). So it can be concluded that there is a significant difference in the FFB price level of oil palm smallholders who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. In general, palm oil that has ISPO tends to fetch a slightly higher price than palm oil that is not ISPO. This is due to higher demand from markets that prioritize sustainability and social justice. ISPO-approved palm oil producers can take advantage of their competitive advantage because they meet the sustainability standards set by the government. The higher FFB price for ISPO-approved palm oil also reflects the trust and appreciation for smallholder efforts in meeting the stringent requirements for sustainable management practices. According to Mr. Hendra Simanjuntak, oil palm farmers who have ISPO in Bandar Pasir Mandoge District, Asahan Regency, receive an average price of around IDR 2,000 per kilogram, with fluctuations between IDR 2,400 and IDR 2,500 per kilogram. This price difference provides incentives for farmers to adopt sustainable management practices and obtain ISPO certification. this is because farmers who have ISPO are more likely to have standardization in the management of oil palm plantations so that they can produce good quality products,

Table 3. Different Tests of Income Levels of Palm Oil Farmers Who Have ISPO and Not ISPO in Bandar Pasir Mandoge District, Asahan Regency

Paired Samples Test									
		Paired Differences					t	f	Sig. (2-tailed)
		Means	std. Deviation	std. Error Means	95% Confidence Interval of the Difference				
					Lower	Upper			
air 1	Ispo Farmer's Income - Non-Ispo Farmer's Income	10.28261	4.89291	.72142	8.82959	11.73562	14,253	5	.000

Source: SPSS Output Results, 2023.

The results of the different test through the paired sample t-test showed that a sig.(2-tailed) value of 0.000 was obtained. This shows that the significance value is less than 0.05 (0.000 <0.05). So it can be concluded that there is a significant difference in the level of income of palm oil farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency. . Oil palm smallholders who have ISPO have better access to markets, receive slightly higher prices for their crops, and have better access to lucrative export market opportunities. ISPO certification reflects better product quality and sustainable management practices. As a result, Palm oil smallholders who have ISPO generally have the potential to earn higher income than those who have not obtained this certification. Price increases in recent years have also had a positive impact on farmers' incomes, with a significant increase in supply from around 1000 to 3000 to almost 4000 rupiah per kilogram. the more effective farmers are in carrying out good management in oil palm farming through the application of ISPO, the higher the production rate of good quality palm oil, this of course has an impact on the price level of fresh fruit (FFB) which tends to be higher with a significant increase in supply from about 1000 to 3000 to almost 4000 rupiah per kilogram. the more effective farmers are in carrying out good management in oil palm farming through the application of ISPO, the higher the production rate of good quality palm oil, this of course has an impact on the price level of fresh fruit (FFB) which tends to be higher with a significant increase in supply from about 1000 to 3000 to almost 4000 rupiah per kilogram. the more effective farmers are in carrying out good management in oil palm farming through the application of ISPO, the higher the production rate of good quality palm oil, this of course has an impact on the price level of fresh fruit (FFB) which tends to be higher

Table 4. Different Tests on the Levels of Use of Production Factors Such as Fertilization, Use of Pesticides and ISPO and Non-ISPO Workers in Bandar Pasir Mandoge District, Asahan Regency

Paired Samples Test									
		Paired Differences					t	f	Sig. (2-tailed)
		Means	std. Deviation	std. Error Means	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Use of Production Factors of Ispo Farmers - Use of Production Factors of Non-Ispo Farmers	9.30435	3.53943	.52186	8.25327	10.35543	17,829	5	.000

Source: SPSS Output Results, 2023.

The results of the different test through the paired sample t-test showed that a sig.(2-tailed) value of 0.000 was obtained. This shows that the significance value is less than 0.05 (0.000 <0.05). So it can be concluded that there are significant differences in the level of use of production factors such as fertilization, use of pesticides and workers who have ISPO and do not have ISPO in Bandar Pasir Mandoge District, Asahan Regency. In using pesticides, oil palm farmers who have ISPO are expected to implement prudent use of pesticides. They may use pesticides selectively and only when necessary, observing recommended dosages and schedules. This practice aims to minimize excessive use of pesticides and negative impacts on the environment and human health. As a result, farmers who have ISPO may be more likely to manage pesticide use more effectively. ISPO-approved oil palm smallholders are expected to adhere to the protection of workers' rights, including safe working conditions, decent wages, and positive contributions to the local community.

By adopting good labor practices, farmers who have ISPO can create a more stable working environment, increase worker motivation, and reduce the risk of unskilled or untrained labour. ISPO-approved oil palm smallholders are expected to adhere to the protection of workers' rights, including safe working conditions, decent wages, and positive contributions to the local community. By adopting good labor practices, farmers who have ISPO can create a more stable working environment, increase worker motivation, and reduce the risk of unskilled or untrained labour. ISPO-approved oil palm smallholders are expected to adhere to the protection of workers' rights, including safe working conditions, decent wages, and positive contributions to the local community. By adopting good labor practices, farmers who have ISPO can create a more stable working environment, increase worker motivation, and reduce the risk of unskilled or untrained labour. The multiple linear regression analysis test in this study aims to determine the direction and how much influence production, FFB prices and the use of production factors have on farmers' income. The results of the multiple linear regression analysis test can be seen in the table below:

Table1.Multiple Linear Regression Analysis Test

Coefficientsa				
Model		Unstandardized Coefficients		Standardized Coefficients
		B	std. Error	Betas
	(Constant)	36,981	10,530	
	ISPO Farmer Production	089	.232	056
	Ispo Farmers FFB Prices	.285	.222	.190
	The Use of Ispo Farmers Production Factors	-.433	.173	-.369
a. Dependent Variable: Income of Ispo Farmers				

Source: SPSS Output Results, 2023.

The results of the multiple linear regression analysis test in table 4.5 have the following equation:

Y = 36.981 + 0.089 + 0.285 + (-0.433)

1. The constant value obtained was 36.981 with a positive value, this indicated that if farmer production, FFB prices and the use of production factors increased by 1%, it would increase the farmer's income value by 36.981.
2. The production regression coefficient obtained a value of 0.089 with a positive value, this indicates that if the production value increases by 1%, it will increase the farmer's income value by 0.089.
3. The FFB price regression coefficient obtained a value of 0.285 with a positive value, this indicates that if the FFB price value increases by 1%, it will increase the farmer's income value by 0.285.
4. The regression coefficient of the use of production factors is -0.433 with a negative value, this indicates that if the value of the use of production factors increases by 1%, it will reduce the value of farmers' income by -0.433.

3. CONCLUSION

1. There is a significant difference in the level of production of oil palm smallholders who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency.
2. There is a significant difference in the FFB price level of oil palm smallholders who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency.
3. There is a significant difference in the level of income of palm oil farmers who have ISPO and not ISPO in Bandar Pasir Mandoge District, Asahan Regency.
4. There are significant differences in the level of use of production factors such as fertilization, use of pesticides and workers who have ISPO and do not have ISPO in Bandar Pasir Mandoge District, Asahan Regency.
5. The variable that influences the income of oil palm farmers is production, while the FFB price and the use of production factors have no effect.

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