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The Effect of the Implementation of Indonesian Sustainable Palm Oil (ISPO) on the Average Export Value of Indonesian Crude Palm Oil (CPO) to the Netherlands and Italy during the 2012-2017 Period

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Abstract

This study aims to determine the effect of the application of Indonesian Sustainable Palm Oil (ISPO) on the average export value of Indonesian Crude Palm Oil (CPO) to the Netherlands and Italy during the period 2012 - 2017. The choice of the two export destination countries was due to the two countries This is a member of the European Union that plans to implement a Renewable Energy Directive (RED) policy that has the potential to reduce CPO exports to these countries. The research method used in this study uses the average difference test method by comparing the average export value of Indonesian CPO before the implementation of ISPO in 2014 with the average export value of CPO after the implementation of ISPO. Research shows that there is no significant difference in the average value of CPO exports between before and after the implementation of ISPO. This shows that the implementation of ISPO has not been able to have a positive impact on increasing Indonesia's CPO exports to the Netherlands and Italy.

Keywords: *ISPO, average CPO exports, Pareto Principle, Time Series.*

I. Introduction

One sector that has an important role for the Indonesian economy is the agricultural sector. Even the contribution of the agricultural sector to GDP in the second quarter of 2020 has increased by 15.46% (BPS, 2020). The sub-sector that makes the most important contribution to the growth of the agricultural sector is the plantation sector, especially oil palm plantations. Oil palm is a plantation crop that is experiencing rapid production growth compared to other plantation crops in Indonesia. Based on data from the Central Statistics Agency (2017), Indonesia's palm oil production amounted to 29.28 million tons in 2014 to 34.94 million tons in 2017, with an average growth of 14% per year in the 2012-2016 period. Meanwhile, in the same period, rubber only experienced a growth of 2.95%, pepper 2.33%, cloves 2.69%, and cocoa 3.11%. With a relatively high level of palm oil production, it is not surprising that Indonesia is the largest palm oil producing country in the world.

The palm oil produced by Indonesia is exported in the form of crude palm oil (CPO) and crude palm kernel oil (Crude Palm Kernel Oil) to various export destination countries. Table 1 shows the number of Indonesian CPO exports to various countries from 2012 to 2016. As

can be seen in Table 1, there are several countries such as India, China, Pakistan, the Netherlands, Italy (the Netherlands and Italy are part of the European Union) which are the main destinations. Indonesian exports due to the consistency of export value that occurred to several countries / groups of countries.

Various conditions that occur in various main export destination countries for CPO present an opportunity to increase CPO exports from Indonesia:

1. The increase in Indonesia's CPO exports to India is driven by India's objective condition that does not develop oil palm plantations to meet its vegetable oil needs. The same applies to the large export of CPO to Pakistan
2. The European Union implements the Renewable Energy Directive which emphasizes the importance of environmentally friendly vegetable oil, preventing an increase in exhaust emissions, which Indonesia responded by campaigning for Indonesian Sustainable Palm Oil (ISPO) as a standard for environmentally friendly CPO management in Indonesia. This campaign has succeeded in attracting the interest of several European Union countries to import CPO from Indonesia
3. China's economic growth in the last ten years has driven the consumption of vegetable oils, especially CPO, whose main products and derivatives can be used for various industrial needs.

Table 1 Total Exports of Indonesian Crude Palm Oil (CPO) to Various Destination Countries 2012-2017 period

Country of destination	2012	2013	2014	2015	2016	2017
India	5 264.0	5 752.4	4 920.4	5 746.0	5 424.6	7 325.1
China	3 087.5	2 623.7	2 649.2	4 105.2	3 111.8	3 601.1
Pakistan	755.3	1 089.2	1 826,8	2 325.6	2 106.4	2 193.8
Netherlands	1 458.1	1 546.8	1 294.1	1 261.9	1 048.5	1 286.4
United States of America	57.6	463.0	491.8	732.7	955.8	1 153.4
Spanish	274.0	620.8	907.0	998.9	1 116.1	1 367.9
Egypt	508.0	746.4	1 038.1	1 156.3	999.2	1 201.4
Bangladesh	743.5	656.4	1 048.6	1 134.8	926.1	1 231.4
Italy	653.5	1 024.8	1 356.8	1 193.6	913.9	1 066.5
Singapore	952.1	844.0	789.6	782.0	718.7	610.8
Others	5 921.5	6 403.3	7 647.3	8 233.8	6 745.4	7 732.5
amount	**19 675.1**	**21 770.8**	**23 969.7**	**27 670.8**	**24 066.5**	**28 770.3**

Source: Central Statistics Agency, 2019

The export of Indonesian CPO products to various European Union countries although experiencing an increasing trend as stated in the press release of the Indonesian Palm Oil Entrepreneurs Association (GAPKI) (Hasan, 2016), is not without obstacles. Various environmental issues are often blamed on the palm oil industry in Indonesia which often leads to a ban on imports of CPO from Indonesia to certain European countries.

This paper aims to examine the average difference in Indonesia's CPO exports to European Union countries, especially the Netherlands and Italy before and after the implementation of the ISPO. The choice of two European Union countries as the unit of analysis is because the European Union plans to implement RED so whether the implementation of ISPO by palm

oil entrepreneurs in Indonesia is able to increase the amount of CPO exports to the Netherlands and Italy.

II. Literature Review

2.1 Indonesian Sustainable Palm Oil (ISPO)

The Indonesian Sustainable Palm Oil System (ISPO) is a policy taken by the Government of Indonesia, in this case the Ministry of Agriculture with the aim of increasing the competitiveness of Indonesian palm oil in Asia and the European Union and participating in fulfilling the commitment of the President of the Republic of Indonesia to reduce greenhouse gases. and pay attention to environmental problems.

ISPO was formed in 2009 by the Indonesian government to ensure that all oil palm companies meet permitted agricultural standards. ISPO is the country's first national palm oil standard, and other countries are now trying to consider implementing a similar standard among palm oil producers. Several things are applied in the clearing of new oil palm lands according to ISPO principles, namely:

- There are SOP / Instructions or technical procedures for new oil palm land clearing.
- Land clearing is carried out without burning and paying attention to land conservation.
- Before land clearing is carried out, business actors are required to carry out a feasibility study and AMDAL.
- Unplanted land with a slope of <30%, peatland with a depth of <3 meters and a stretch of more than 70%; customary lands, water sources, historical sites and so on are still preserved.
- Clearing of peatlands is only carried out on cultivated areas with a thickness of 3 meters of peat, sapric (ripe) and hemic (half-ripe) maturity and under the peat it is not a layer of quartz sand or acid sulphate soil layer and regulates drainage to reduce greenhouse gas emissions.
- Especially for peatlands, a water management system must be built in accordance with applicable regulations.
- Making roads, terracing, rorak, planting ground cover crops in the context of land conservation.
- Availability of an annual work plan (RKT) for new land clearing.
- Documented clearing activities (and the business actor's statement that land clearing was carried out without fuel.)

The government seeks to strengthen the implementation of Indonesian Sustainable Palm Oil (ISPO) by regulating it through a Presidential Regulation (Perpres). Previously, ISPO was regulated by the Minister of Agriculture Regulation. At least, there are four objectives to regulate ISPO by the Presidential Decree. First, ensuring sustainable palm oil management in Indonesia. Second, increasing economic scale, socio-culture, and environmental quality. Third, increase the competitiveness of Indonesian palm oil. Fourth, contributing to the reduction of Greenhouse Gas (GHG) emissions and the Intended Nationally Determine Contribution (INDC).

Even though ISPO was established in 2009, the palm oil industry was still given the opportunity to implement ISPO until 2014. Research conducted by Kartika (2016) shows that Indonesia is very easily influenced and influenced by the actions of the European Union, and vice versa. This can be seen from the influence of the Renewable Energy Directive (RED) policy which succeeded in blocking the entry of Indonesian palm oil into the European Union. To anticipate RED, Indonesia then issued a strategy to prevent disruption of Indonesian exports to the European Union which became known as Indonesian Sustainable

Palm Oil (ISPO). RED and ISPO interact with each other as seen from the adjustment of ISPO policy to RED policy.

2.2 Renewable Energy Directive (RED)

The Renewable Energy Directive (RED) is a step by the European Union to ensure the security of their energy supplies and reduce greenhouse gas emissions through the use of renewable fuels such as biofuels as a substitute for fossil fuels.

The Renewable Energy Directive (RED) is a step by the European Union to ensure the security of their energy supplies and reduce greenhouse gas emissions through the use of renewable fuels such as biofuels as a substitute for fossil fuels. RED encourages EU member states to implement the use of biofuels in their citizens' daily lives, including transportation (Schaus and Lendle 2010). Even so, oil production within the European Union, such as rapeseed oil, is low, so that the European Union exports a lot of biofuel from other countries, especially Indonesia. Trade relations in the Crude Palm Oil (CPO) sector are important for both the European Union and Indonesia. European Union countries, under RED, are required to meet a minimum of 20% of renewable energy needs by 2020, with 10% of the target renewable energy resources being used for transportation. To achieve the 10% national renewable energy target, European Union countries have made biofuel and bioliquid energy as alternatives (DG-Energy 2015). Energy from biofuels is then mostly imported from CPO producing countries such as Indonesia, Malaysia, or Argentina (Smith et al. 2014).

Trade in the biofuel sector encountered obstacles after the implementation of the RED sustainability standards. In early 2013, the European Union halted imports and imposed an entry ban on Indonesian CPO. This is related to green politics set by the European Union, which makes access to the market can be blocked when imported goods do not meet the standards of domestic goods. The main reason for the European Union to refuse Indonesian CPO is environmental problems. The European Union considers Indonesian CPO not environmentally friendly. One of the reasons is that the use of peatlands and the conversion of forests as land for oil palm plantations is considered to have caused deforestation of tropical forests, loss of wildlife habitat, forest fires, and contributing to additional greenhouse gas emissions.

III. Research Methodology

The research method used in this research is descriptive analytical method using the average difference test to find out a significant difference between the average Indonesian CPO exports to the Netherlands and Italy before the implementation of ISPO in 2014 and the average Indonesian CPO exports to the Netherlands. and Italy after the implementation of ISPO.

To obtain comparisons according to the periodization of analysis needs, the average CPO exports from Indonesia to the Netherlands and Italy used in this study were obtained by averaging the export value of CPO in 2012-2014 as the average CPO export value before the implementation of ISPO will be compared with the average CPO export value for the period 2015-2017 as the average value of CPO exports from Indonesia to the Netherlands and Italy after the implementation of ISPO.

Data used in this study is time series data on the value of Indonesia's CPO exports to various states from 2012 to 2017.

IV. Results and Discussion

Based on the data presented in Table 2, it shows that the average CPO exports to the Netherlands and Italy tend to experience a decline. The implementation of ISPO in 2014 did

not succeed in increasing much of Indonesia's CPO exports to the Netherlands and Italy. This decline appears to be the result of the implementation of the Renewable Energy Directive (RED) by the European Union in 2015 which was only 1 year after the ISPO campaign by the Indonesian government.

Table 2 Total Exports of Indonesian Crude Palm Oil (CPO) to the Netherlands and Italy During the Period of 2012 - 2017

Country of destination	2012	2013	2014	2015	2016	2017
Netherlands	1458.1	1546.8	1294.1	1261.9	1048.5	1286.4
Average	4299			3596.8		
Italy	653.5	1024.8	1356.8	1193.6	913.9	1066.5
Average	2381.6			2260.1		

Source: BPS data reprocessed

Even though the application of the ISPO standard by Indonesia aims to convince policy makers in the European Union that the management of the palm oil industry in Indonesia has been adjusted to various standards requested by the European Union, especially those related to the issue of deforestation and the use of peatlands for massive oil palm cultivation. in Sumatra and Kalimantan that are of concern.

However, it seems that the experiences of various European Union countries in using biodiesel fuel based on CPO are not encouraging. European Union environmentalists accuse the use of biodiesel based on CPO that is not environmentally friendly and causes large carbon emissions. This resulted in European Union countries implementing RED II which, among other things, was looking for environmentally friendly biofuels and abandoning the use of CPO-based biofuels.

To find out whether the implementation of the ISPO policy from the Indonesian side and the implementation of RED I and RED II from the European Union had a significant effect on Indonesia's CPO exports to the Netherlands and Italy during the 2012-2017 period, two different tests were carried out on the average Indonesian CPO exports to Indonesia. Netherlands and Italy. The first average is the average amount of Indonesian CPO exports to the Netherlands and Italy before the implementation of ISPO which covers the period 2012-2014. The second average is the average CPO exports from Indonesia to the Netherlands and Italy after the implementation of ISPO which covers the 2015-2017 period.

Based on the descriptive analysis presented in Table 3, it can be seen that the average export value in the Netherlands before ISPO was higher, namely by 1433 compared to after ISPO, which was 1198.93. Meanwhile, in Italy the average export value before ISPO was lower at 1011.7 than after ISPO, which was 1057.9.

Table 3 **Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Before ISPO_Netherlands	3	1294.10	1546.80	1433,0000	128,20620
After ISPO_Netherlands	3	1048.50	1286.40	1198,9333	130.85375
Before ISPO_Italia	3	653.50	1356.80	1011,7000	351,83296
After ISPO_Italia	3	913.60	1193.60	1057,9000	140,19797
Valid N (listwise)	3				

Source: Primary data that has been reprocessed

The hypothesis that will be proposed and verified is as follows:
H0: μ1 = μ2
Meaning: There is no difference in export value before and after ISPO in the Netherlands and Italy
Ha: μ1 ≠ μ2
Meaning: There are differences in export values before and after ISPO in the Netherlands and Italy

To test the significance of the regression coefficient partially, the t statistical test was used at the significance level of α (5%). The level of significance α (5%) and degrees of freedom dk = n-1 = 3-1 = 2 is found that the t table value of the t table value of the two-party t distribution is 4.303. Where the decision-making criteria used are:

tcount> 4.303 and the significance value is less than 0.05, then H0 is rejected.
tcount <4.303 and a significance value of more than 0.05 then H0 is accepted.

By using the help of the SPSS 23 program, the hypothesis testing is obtained as follows: (see Table 4).

Table 4 **Paired Samples Test**

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Mean Error	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before ISPO_Belanda - After ISPO_Belanda	234.07	247.48	142.88	-380.71	848.85	1,638	2	, 243
Pair 2	Before ISPO_Italia - After ISPO_Italia	-46.20	437.00	252.30	-1131.78	1039.38	-,183	2	, 872

Source: Primary data that has been reprocessed

Based on the table above, it can be seen that with a significance level (α) of 5% obtained in the Netherlands, the t-count value of 1.638 is smaller than 4.303 and Sig. (2-tailed) of 0.243, greater than 0.05, so that H0 is accepted, which means that there is no difference in export value before and after ISPO in the Netherlands.
Likewise, in Italy, the t value of -0.183 is smaller than 4.303 and Sig. (2-tailed) of 0.872, greater than 0.05, so that H0 is accepted, which means that there is no difference in export value before and after ISPO in Italy.

V. Conclusion

1. The application of the Indonesian Sustainable Palm Oil (ISPO) standard has not been able to increase Indonesia's CPO exports to the Netherlands and Italy
2. The decline in Indonesia's CPO exports to the Netherlands and Italy occurred due to changes in biodiesel fuel consumption in European Union countries due to the application of Renewal Energy Directive I and II.
3. Although there has been a decline in Indonesia's CPO exports to the Netherlands and Italy after the implementation of ISPO and after the implementation of RED, the difference in

the average Indonesian CPO exports to the Netherlands and India is not significant. This means that there is hope for Indonesia to increase CPO exports to the Netherlands and Italy in the future by improving the quality of CPO to make it more environmentally friendly.

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